MXview User's Manual

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Table of Contents

1

Key Features

Moxa MXview network management software gives you a convenient graphical representation of your Ethernet network, and allows you to configure, monitor, and diagnose Moxa networking devices. MXview provides an integrated management platform that can manage Moxa networking devices, such as Ethernet switches and wireless APs, and SNMP-enabled and ICMP-enabled devices installed on subnets. MXview includes an integrated MIB complier that supports any third-party MIB. It also allows you to monitor third-party OIDs and Traps. Network and Trap components that have been located by MXview can be managed via web browsers from both local and remote sites—anytime, anywhere.

The following topics are covered in this chapter:

- **Web-based Operation**
- **Auto Discovery and Topology Visualization**
- **Event Management**
- **Configuration and Firmware Management**
- **Traffic Monitoring**

Web-based Operation

MXview uses the client-server model. You will need to install the MXview server on a Windows computer connected to the network(s) that are to be managed. After installing MXview, the network can be managed with Internet Explorer or Firefox, without installing additional software.

Auto Discovery and Topology Visualization

Within the scan range, MXview locates networking devices with SNMP or ICMP services enabled. MXview can collect topology information from devices with LLDP capability and draw the topology of the network, which shows physical connections. For ICMP devices without LLDP, MXview's advanced auto-topology function can verify the connection relationship through ARP algorithms, and help you create an accurate drawing of the network topology. If any managed PoE switches are in your network, the PoE power output information will also be visualized automatically (for more details on PoE visualization, refer to the PoE **Power Consumption Visualization section** in Chapter 8.)

Event Management

For troubleshooting purposes, MXview logs events that match preset conditions, such as link up/down, device unreachable, or traffic overloading. The most recent events will show up on the dashboard. Devices and links that generate events will be highlighted with different colors. When an event occurs, users can be notified in a number of different ways, including SMS, email, popup window, sound, or external program.

Configuration and Firmware Management

MXview provides an interface for managing Moxa networking devices from a central location. Users can remotely backup or update configuration files, and upgrade firmware.

Traffic Monitoring

MXview can log the network traffic of network devices that have been discovered.

2

System Requirements and Supported Devices

The following topics are covered in this chapter:

- **System Requirements**
- **Supported Devices**

System Requirements

The computer that MXview is installed on must satisfy the following system requirements:

	System Requirements
CPU	2 GHz or faster dual core CPU
RAM	2 GB or higher
Hard Disk Space	10 GB or higher
OS	Windows XP Professional, Windows 7 (32/64-bit), Windows 8 (32/64-bit), Windows Server 2008 (32/64-bit), Windows Server 2012 (32/64-bit), Windows Server 2012 R2

Supported Devices

- MXview supports a full range of functions, such as network status, traffic log, and configuration/firmware file management.
- For other SNMP-enabled devices, MXview supports standard management functions, such as link up, link down, and SNMP MIBII information.
- MXview can only monitor the connectivity of devices that support ICMP.

3

Installation and System Backup

The following topics are covered in this chapter:

- **Installation Procedure**
- **Uninstallation**
- **System Backup**
- **System Restore**

Installation Procedure

1. Execute the installation program or insert the auto-run CD.
2. During the installation, you can choose the directory in which MXview will be installed and the default language, or leave the settings at the default values.
3. For the commercial version, you will be asked to enter a license key; the license key can be found on a label attached to the protective sleeve of the CD-ROM.
4. After the installation is complete, shortcuts for launching the MXview server will be created on the desktop and in the start menu.

Uninstallation

1. Select **Start → Control Panel**, and then select **Add** or **Remove Programs**.
2. Select MXview
3. Select Remove

You can also uninstall the software by selecting
Start → All Programs → Moxa → MXview → Uninstall MXview.

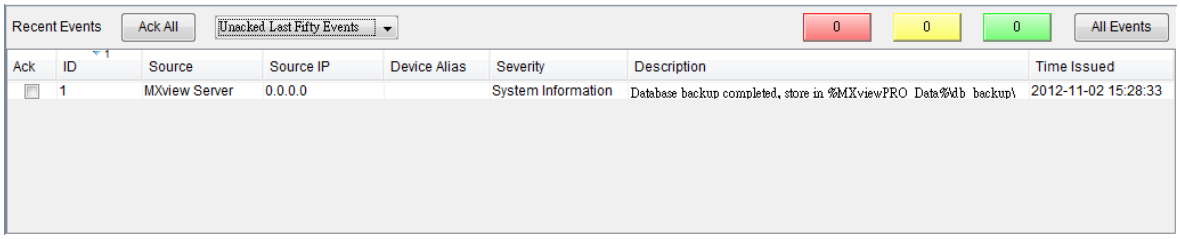
System Backup

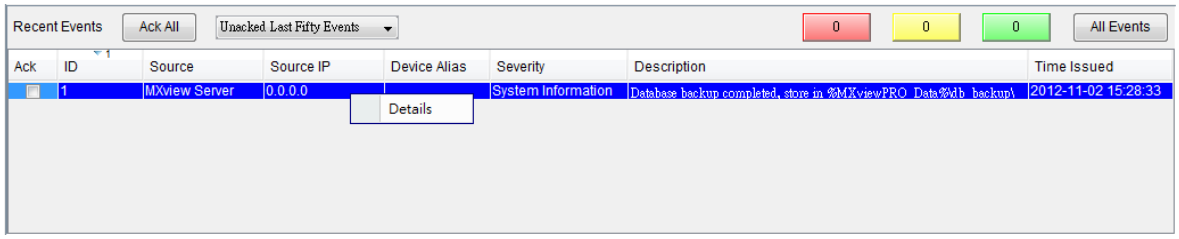
To back up the system database and configuration, use **Project → Database Backup** to save the backup files. The **Backup startup** window will pop up.

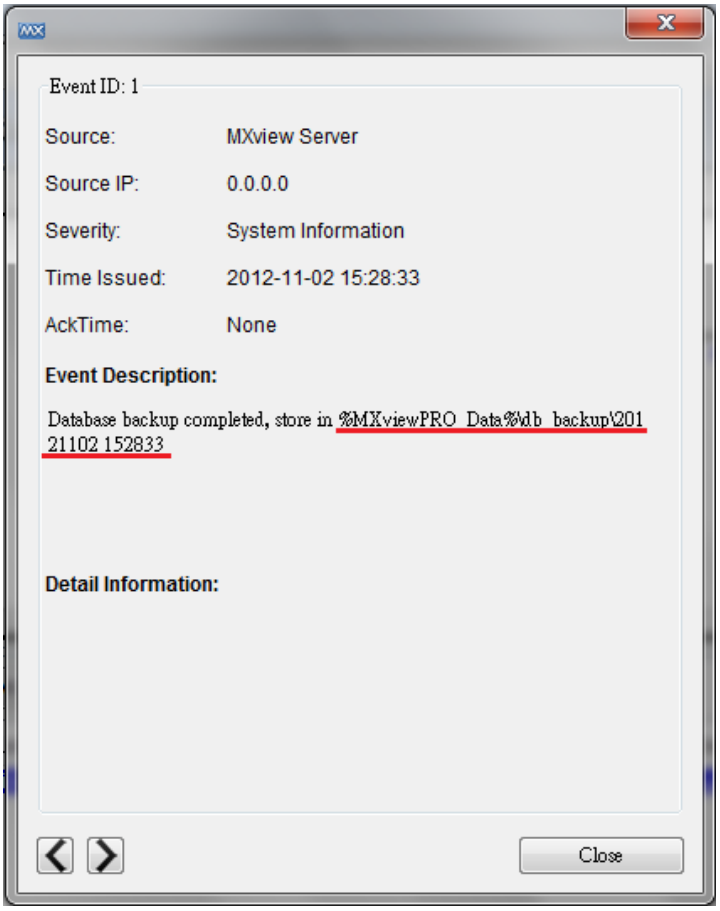
The system exports the backup database to a directory. Use the following link to open the directory:

%MXviewPro_Data%\db_backup

Eventually, the **Database backup completed** event will appear on the **Recent Events** list. Right-click on the event to show the details, which includes the file path of the backup files.







The backup folder uses the following naming convention: **YYYYMMDD HHMMSS**

The items included in the system backup are listed below:

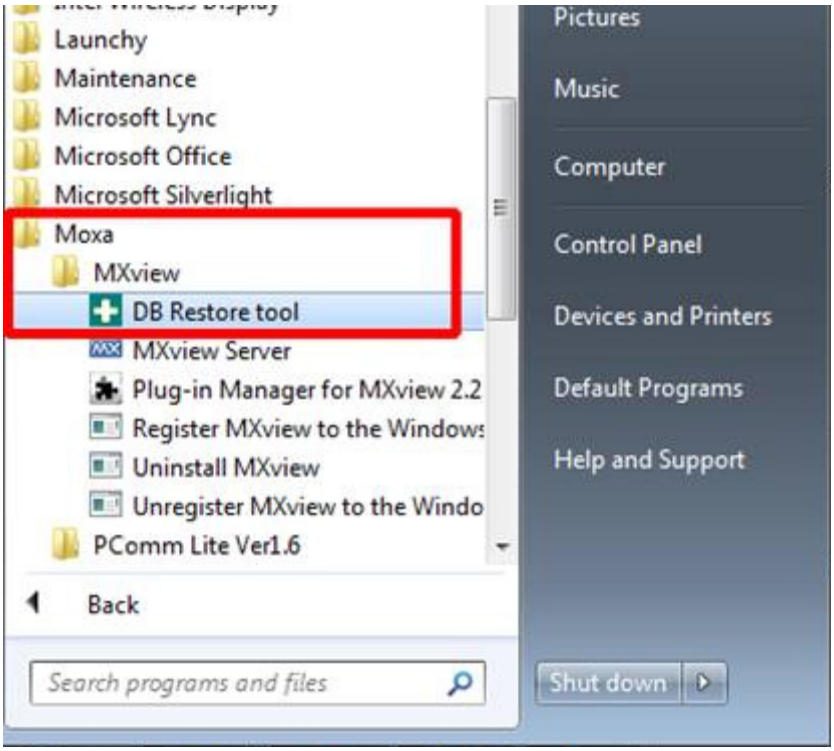
- Topology
- Traffic
- Availability
- Event
- Threshold settings
- Job scheduler settings
- OID items
- Trap items
- System settings

System Restore

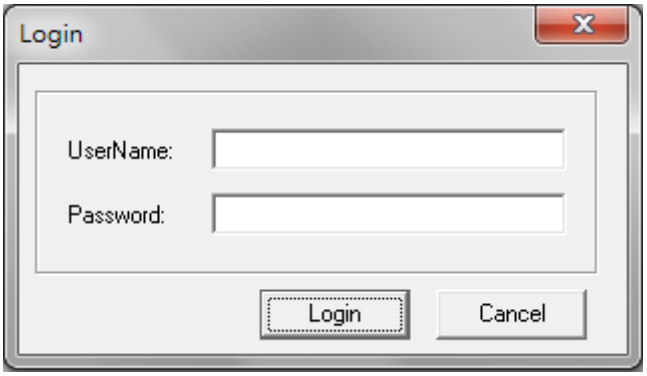
MXview versions 2.2 and higher supports configuration backup files, which use the file extension *db3. To restore a system configuration from a backup file, first shut down MXview. Then, select the **DB Restore tool** in **Start → All Programs → Moxa → MXview → DB Restore tool**. Log in using your username and password. Next, identify where the backup files are located: (1) MXview's archive repository, or (2) A custom specific directory. Identify the folder where your backup files are located, and then click **Restore**. The MXview system will restore the backup files.

This process is illustrated step-by-step below:

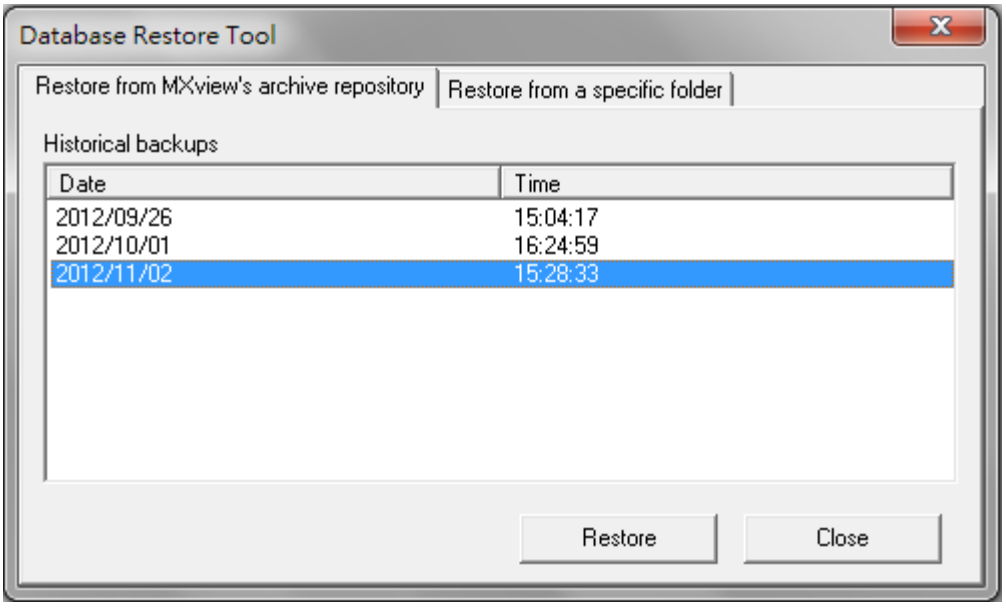
1. Select **Start → All Programs → Moxa → MXview → DB Restore tool**



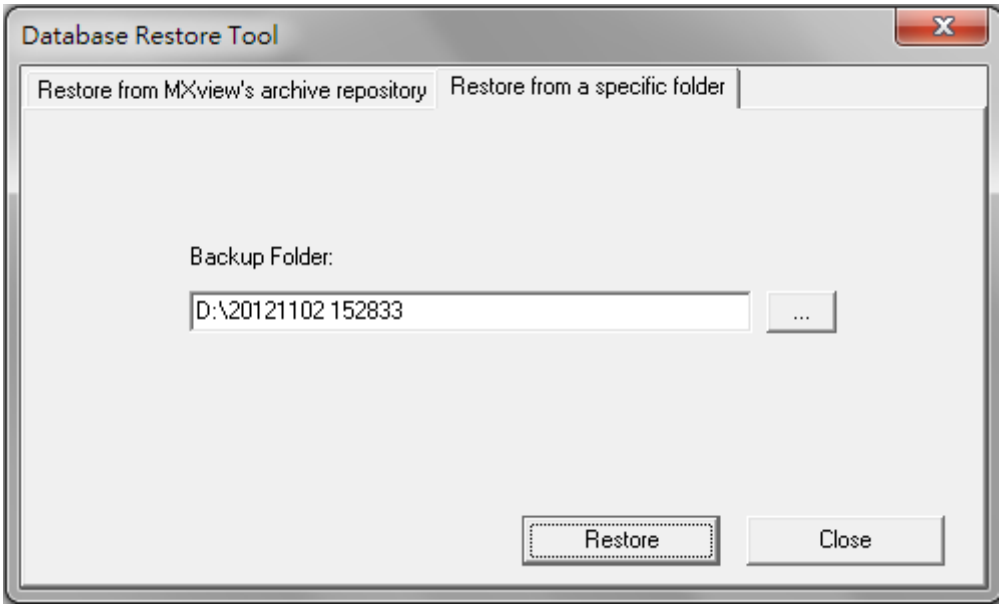
2. Login with your username and password

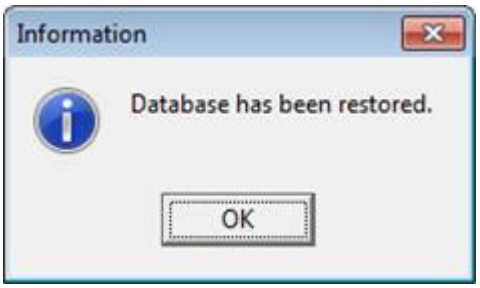


3. Choose the folder where the backup files are located



4. Click Restore





MXview versions 2.1 and earlier use *.dat backup files. To restore the system database and configuration from a .dat file, use **Project → Import MXview Configuration file**, and then select the backup file to restore.

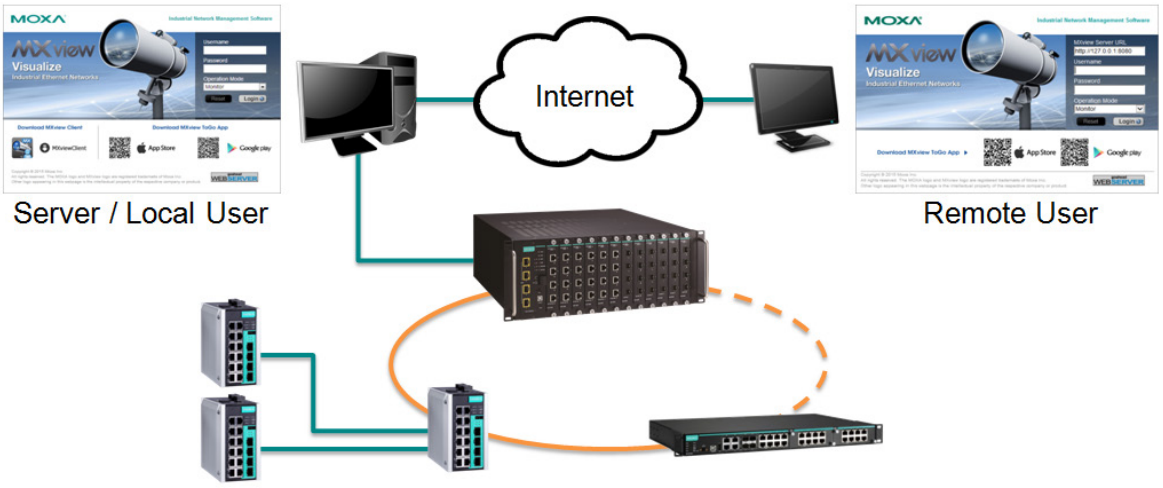
4

Getting Started

The following topics are covered in this chapter:

- **MXview Server Startup**
- **Login**
- **Login Messages**
- **Account**
- **Password Policy**
- **Auto Installation of Runtime Environment (Java Runtime Environment)**

MXview is implemented as a web server to realize remote management through a single portal. The following figure illustrates the operational model.



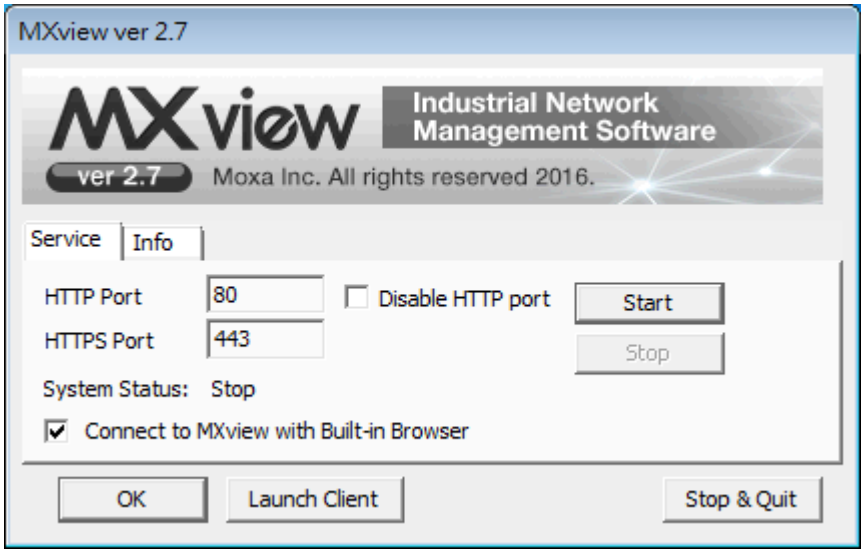
The MXview server runs in the background on a Windows PC and communicates with network devices using Simple Network Management Protocol (SNMP) and a Moxa proprietary protocol that periodically polls specific MIB data and stores data in a local database.

The MXview client uses web browsers to provide a uniform web interface that enables network operators to access and operate over an intranet or the Internet.

MXview Server Startup

To start the MXview server, first double-click the MXview desktop shortcut. When the MXview window (shown below) pops up, configure the listening port of the server (or leave it at the default value of 80) and examine the runtime information. The server will launch when you click **Start**.

Clicking **Launch Client** will start the MXview client on the local computer. To learn how to use the MXview client remotely, refer to the **Login** section below.



NOTE Selecting "Connect to MXview with Built-in Browser" is recommended.

Login

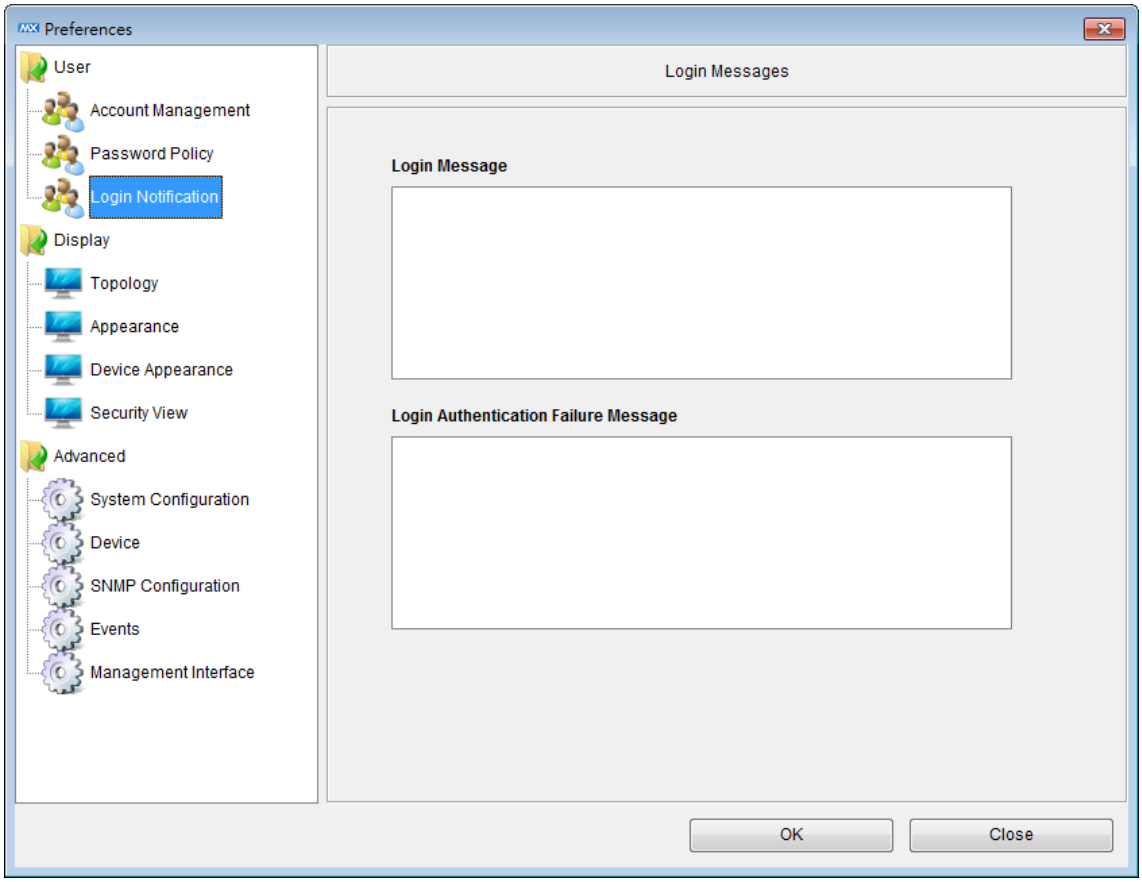
To launch the MXview client, open a web browser and input the MXview server's IP address or domain name in the address field. Note that if the server's listening port changes, you will need to input the IP address as follows: http://[IP address]:[Port] (e.g. http://192.168.1.250:8080). If you are using the server computer as the client, you may also click **Launch Client** on the control panel. The default account is **admin**. For MXview version 2.6 and earlier, no password is required. For MXview version 2.7 and later, the default password is **moxa**.

NOTE A maximum of 10 users can log in to the system at the same time.

NOTE For remote users, downloading "MXviewClient" from the MXview server, and using "MXviewClient" to login are recommended.

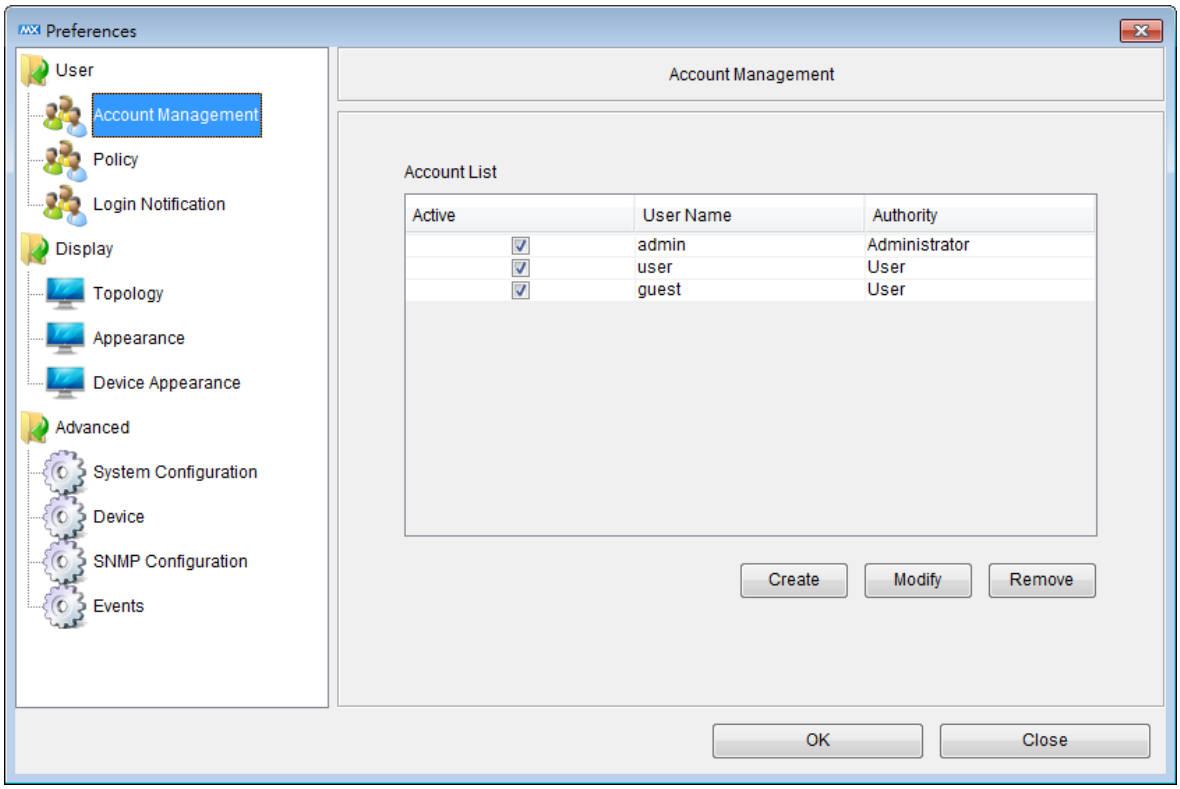
Login Messages

1. Navigate to **Project → Preferences → Login Notification**.
2. Users can set their Login Message and Login Authentication Failure Message.



Account

There are 3 default accounts (admin, user and guest) with 2 different authorities (Administrator and User), as shown below.



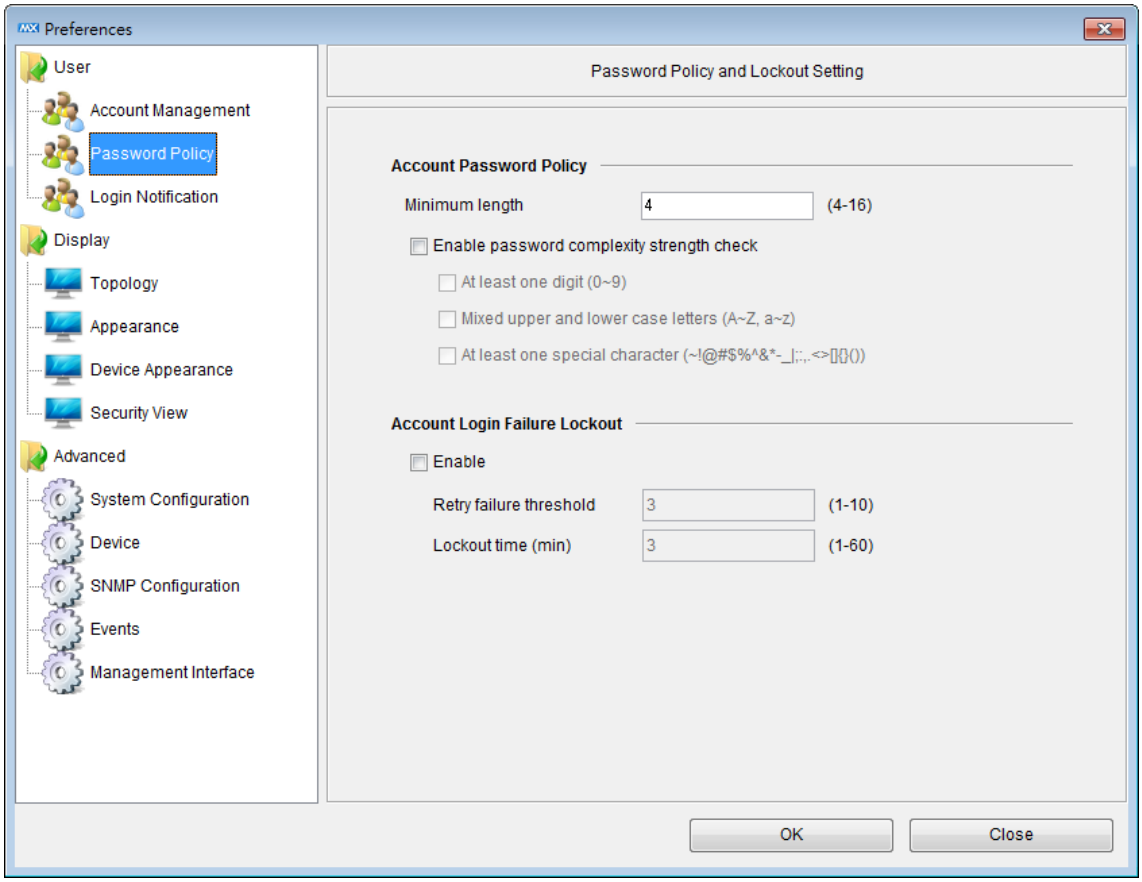
Default User Name	Default Password	Authority
admin	moxa	Administrator
user	-	User
guest	-	User

The "Administrator" can change configurations in MXview, such as topology and scan range. The "User" authority has read-only permission. For MXview version 2.7 and later, accounts can be created, modified and removed and given different authority permissions.

NOTE Up to 100 accounts can be created.

Password Policy

1. Navigate to **Project → Preferences → Password Policy**.
2. For the Account Password Policy, users can set a minimum length for the password and enable the password complexity strength check.
3. For the Account Login Failure Lockout, users can set the retry failure threshold and lockout time.



Auto Installation of Runtime Environment (Java Runtime Environment)

The MXview client must run in a JRE environment. For users who do not have the appropriate version of JRE, MXview will guide users to install the appropriate version of JRE automatically.

5

Quick Start Using the Setup Wizard

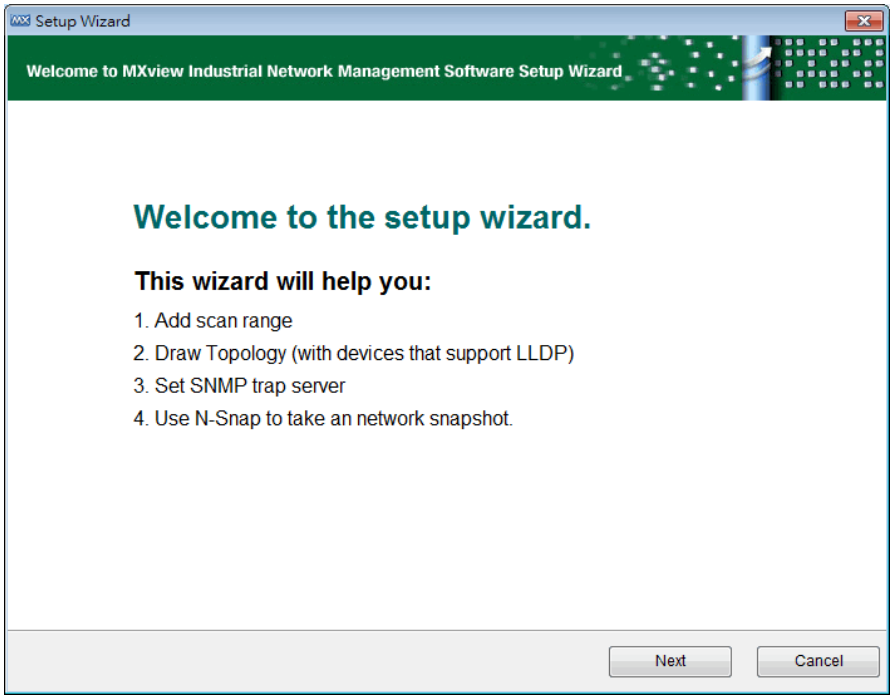
MXview provides a Setup Wizard that can be used to quickly determine the network topology and handle basic configuration tasks.

The following topics are covered in this chapter:

- **Using the Setup Wizard**
  - Step 1: Create Group
  - Step 2: Configure the SNMP Community String
  - Step 3: Add the networks you want to scan
  - Step 4: Draw the topology
  - Step 5: Set the SNMP Trap Server to get events in real time
- **Virtual Demo Network**

Using the Setup Wizard

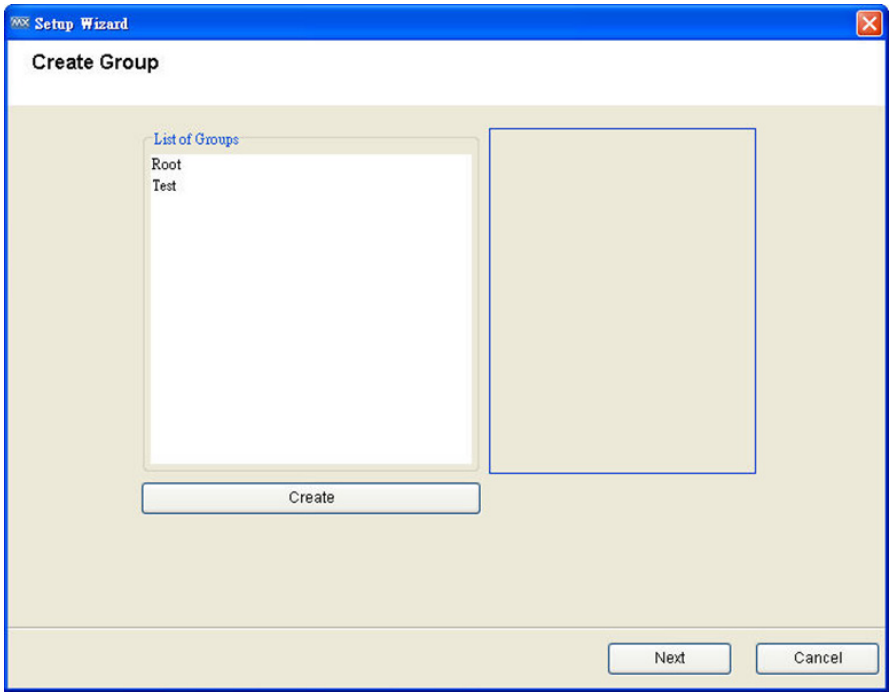
The wizard will launch automatically when the software does not contain any nodes. To launch the Setup Wizard manually, select **Project → Wizard**. You should see the following window:



The wizard will guide you through five basic steps, described below.

Step 1: Create Group

Devices scanned by MXview can be organized into a multi-layer tree structure. Before finding devices, groups need to be created. Root is the only default group. All other created groups are placed under the next level of Root.

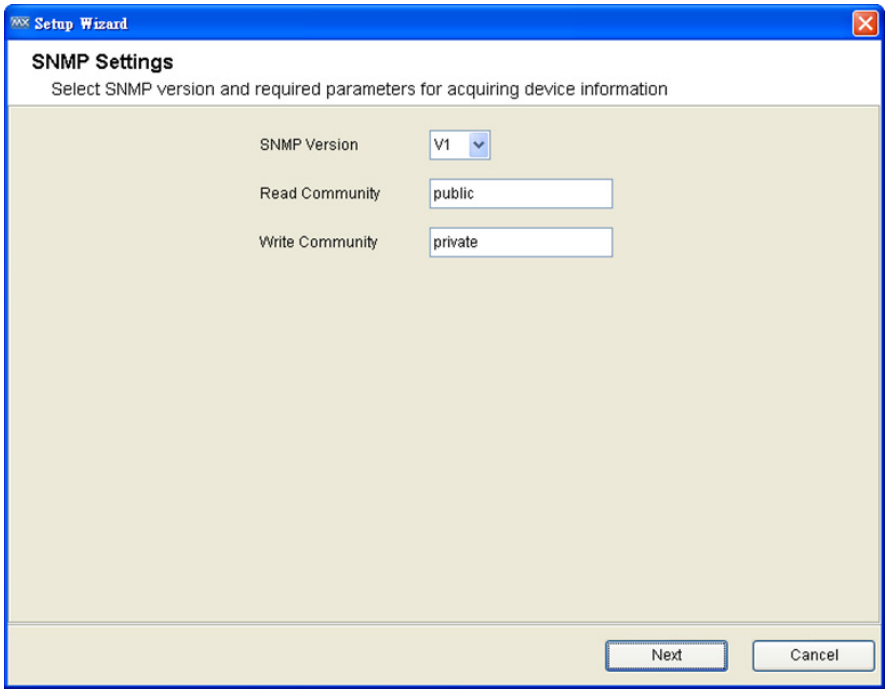


Step 2: Configure the SNMP Community String

MXview uses SNMP to collect device information. The default SNMP configurations are:

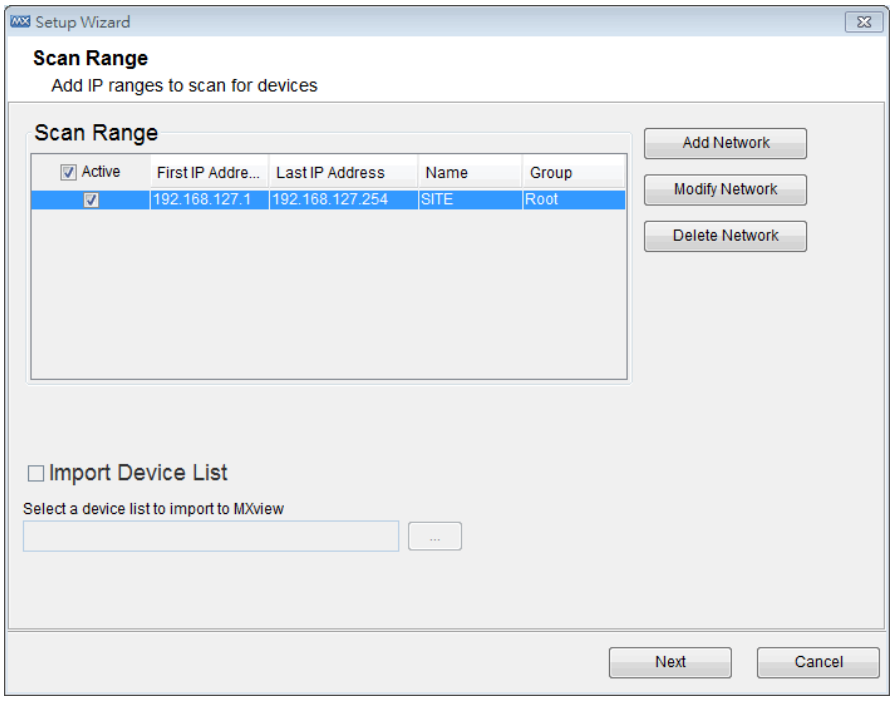
- Version: v1
- Read community string: public
- Write community string: private

If necessary, update this information at this time:



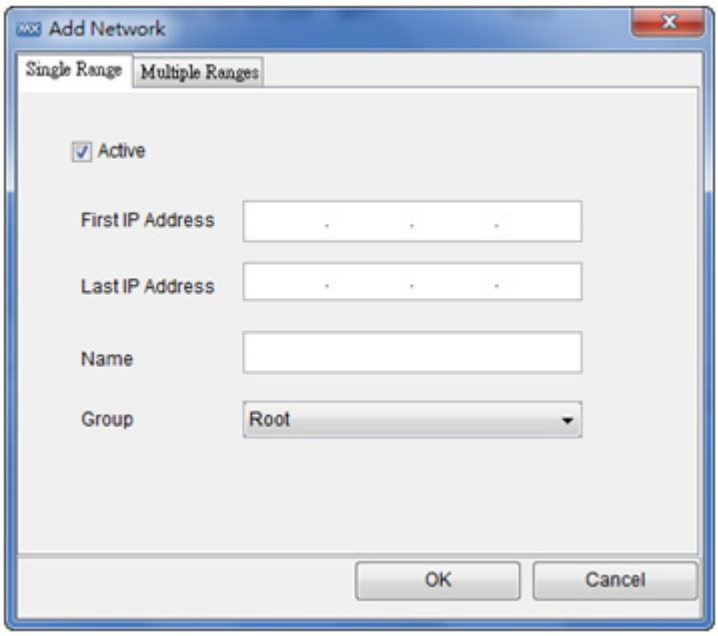
Step 3: Add the networks you want to scan

MXview's operation is based on IP (Internet Protocol). Other devices in the scan range that use IP to operate will be located and monitored.

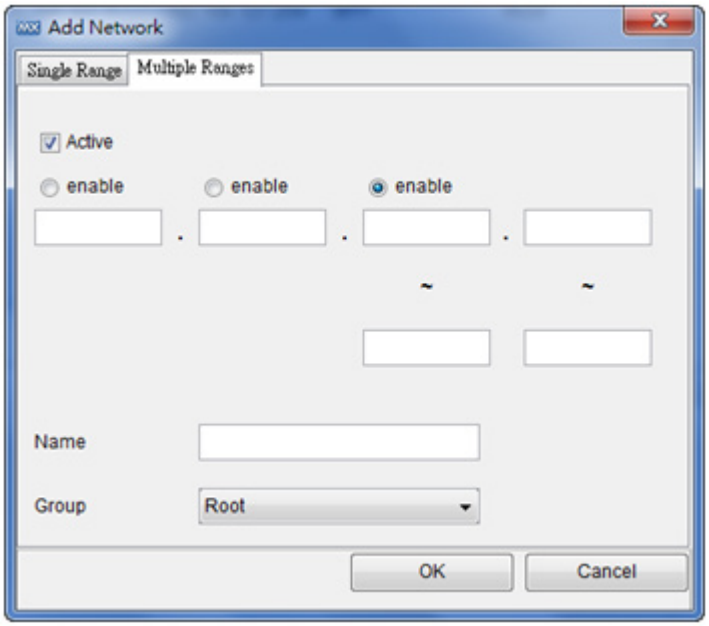


Click **Add Network** to add a network range to scan. A window will pop up, with two tabs: **Single Range** and **Multiple Ranges**.

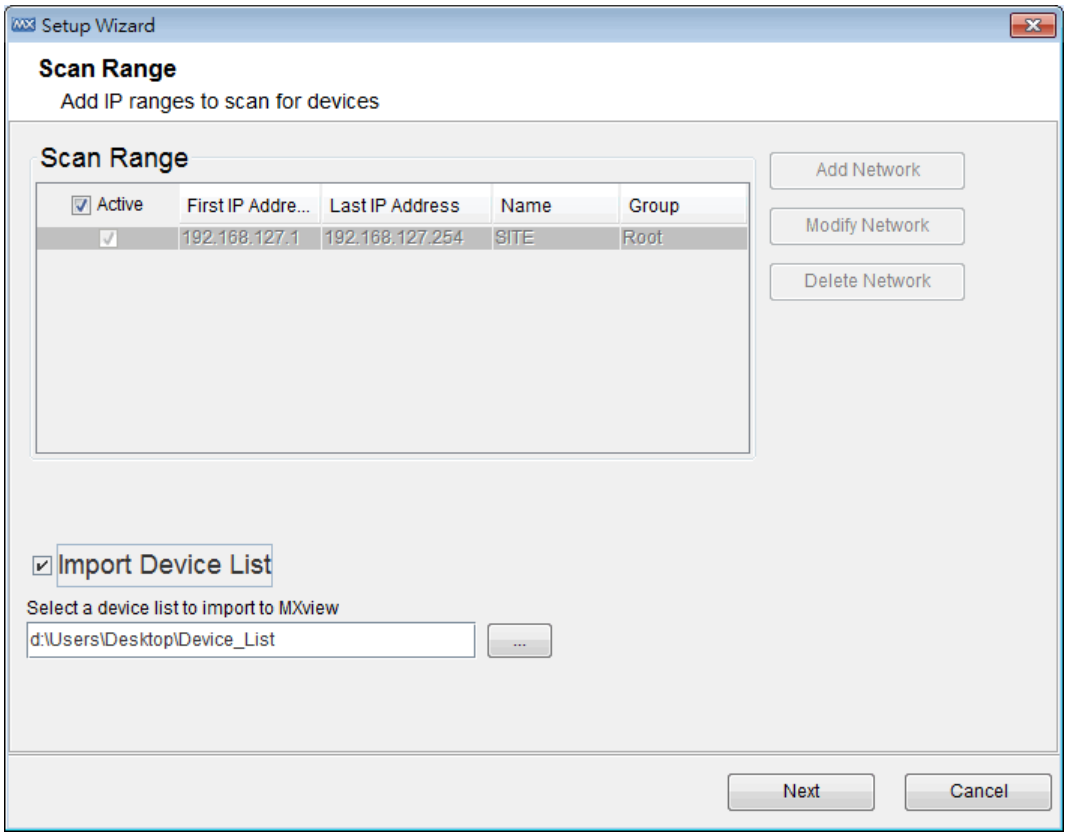
Single Range: Enter the first and last IP address in the desired range. Name this range in the **Name** field.



Multiple Ranges: The Multiple Ranges tab allows you to set up a complicated subnet for scanning. Select **enable** for the subnet range, similar to using a subnet mask. You can also name the scan range, as in the Single Range tab.

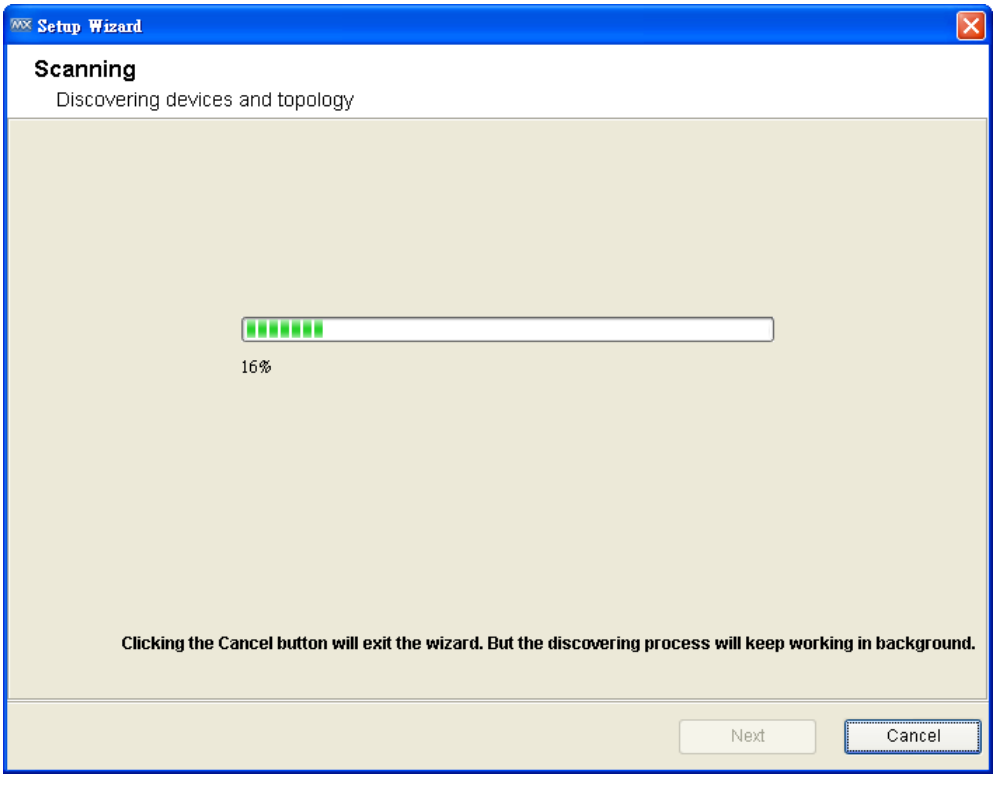


Another way to scan the network is to **Import Device List**. Click **Import Device List** and select a list file to load the devices into MXview.



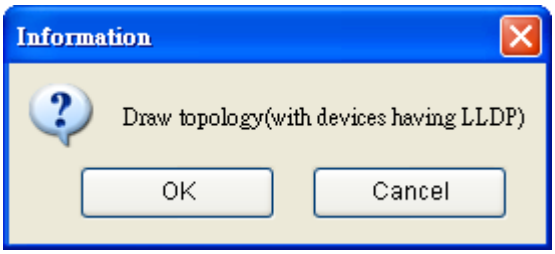
NOTE A device's IP address must be configured properly before it can be managed by MXview.

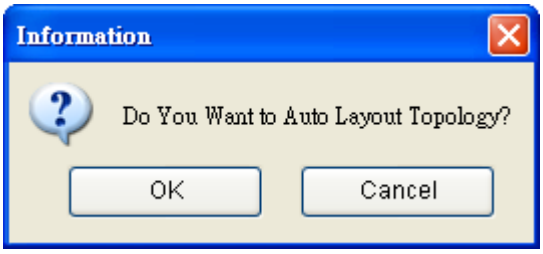
At this point, MXview will enter the discovery stage. The time needed to complete this stage depends on the size of the scan range. Click **Cancel** at this point to exit the wizard; however, the configurations entered previously will be saved and the discovery process will continue running in the background.



Step 4: Draw the topology

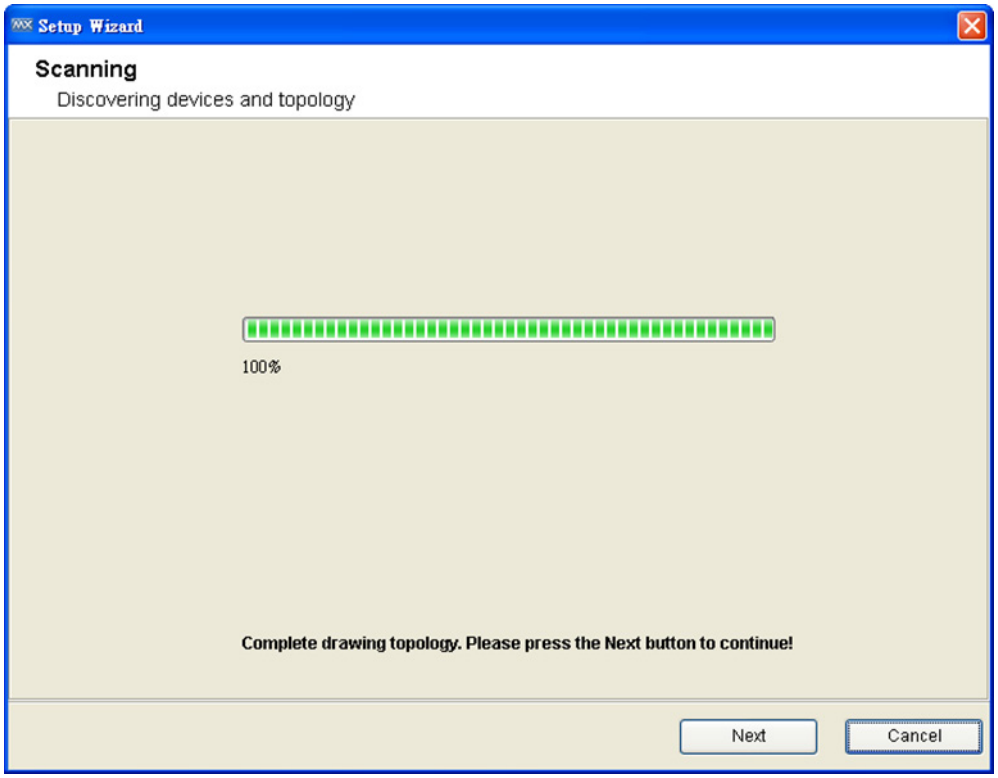
After all devices have been located, MXview will be able to draw the topology for LLDP devices.





For devices without LLDP functionality, the topology can be drawn manually after the wizard is finished.

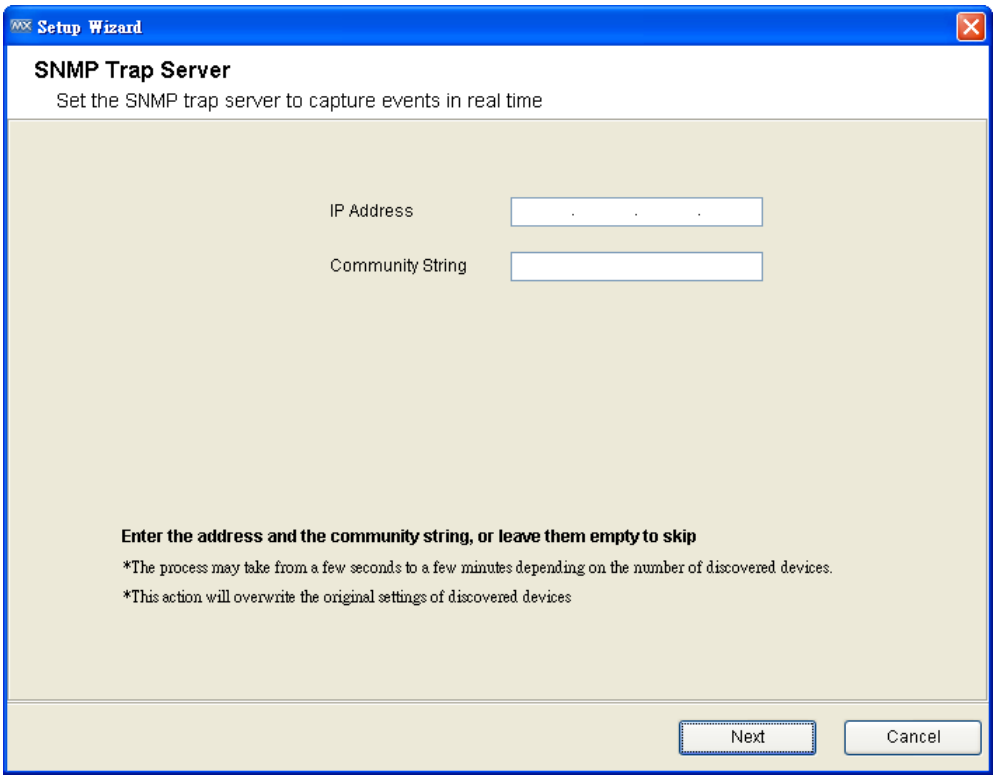
After all devices have been discovered and the topology has been created, click **Next** to continue to the next step.



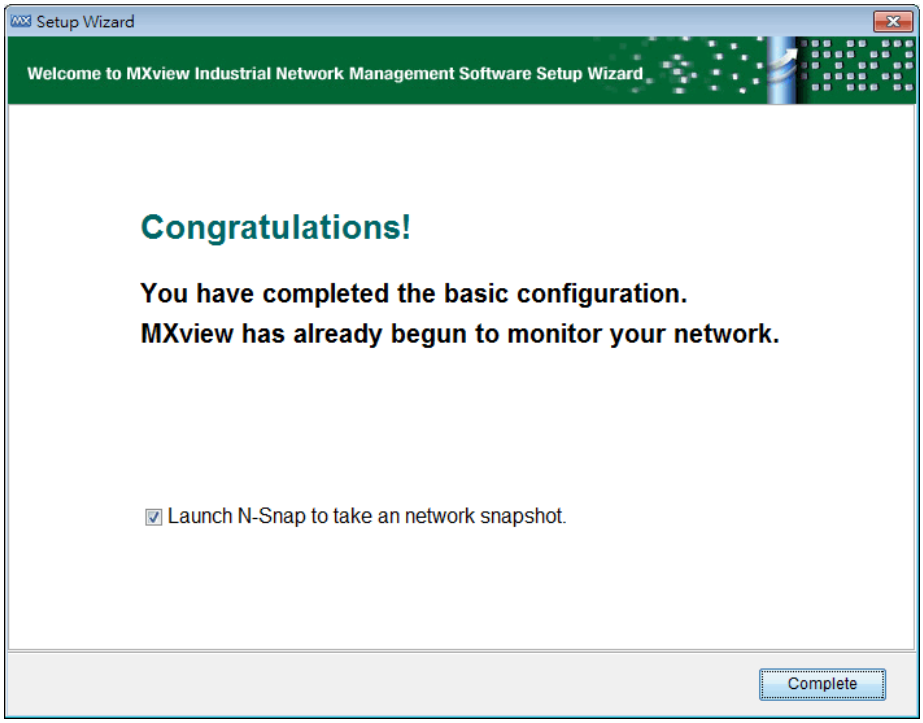
Step 5: Set the SNMP Trap Server to get events in real time

To enable real-time event generation, the MXview server's IP address needs to be configured as a trap server. To do this, enter the IP address of the MXview Server and then click **Set** to activate the change.

If this step is skipped, devices can still be monitored by polling periodically, although a time latency will be introduced.



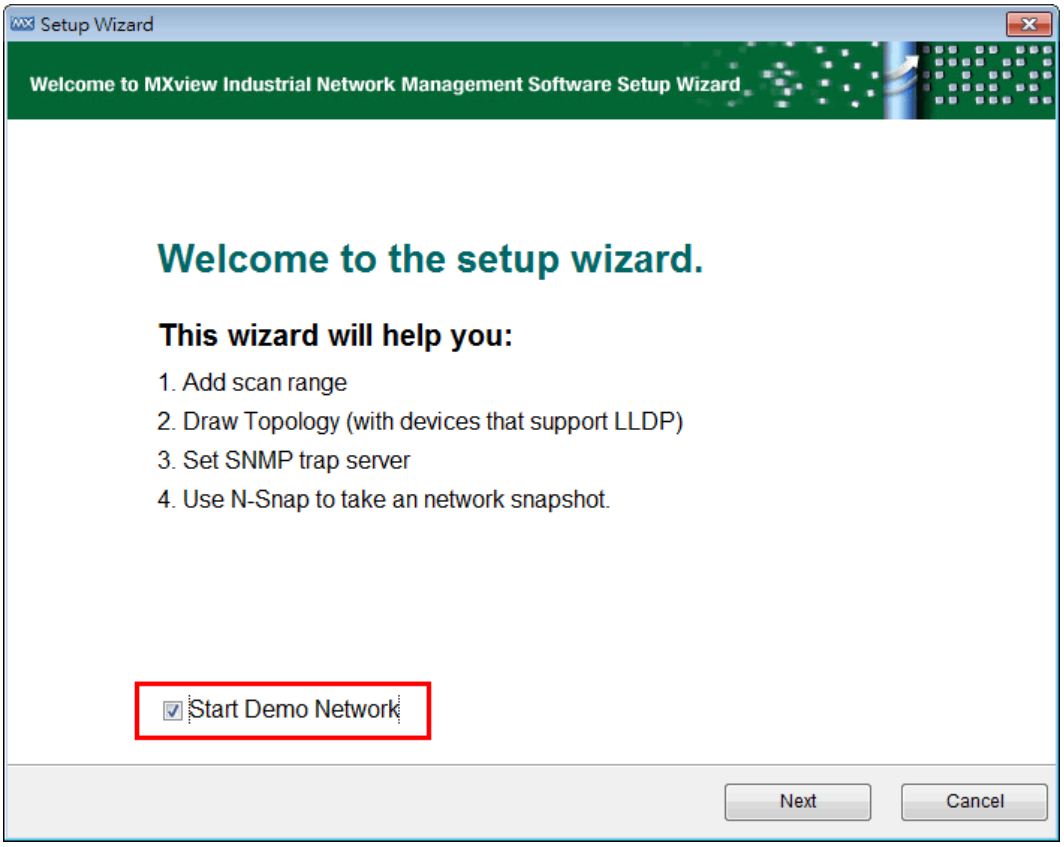
After this point, MXview initialization is complete.

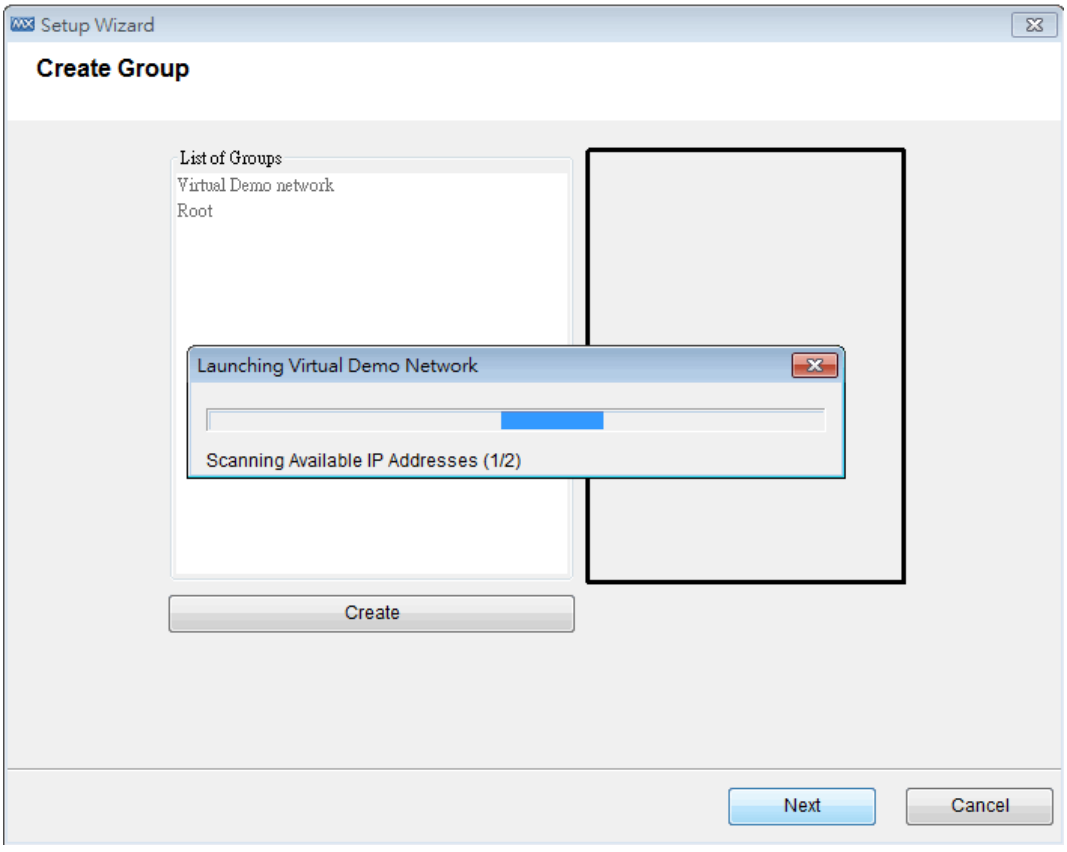


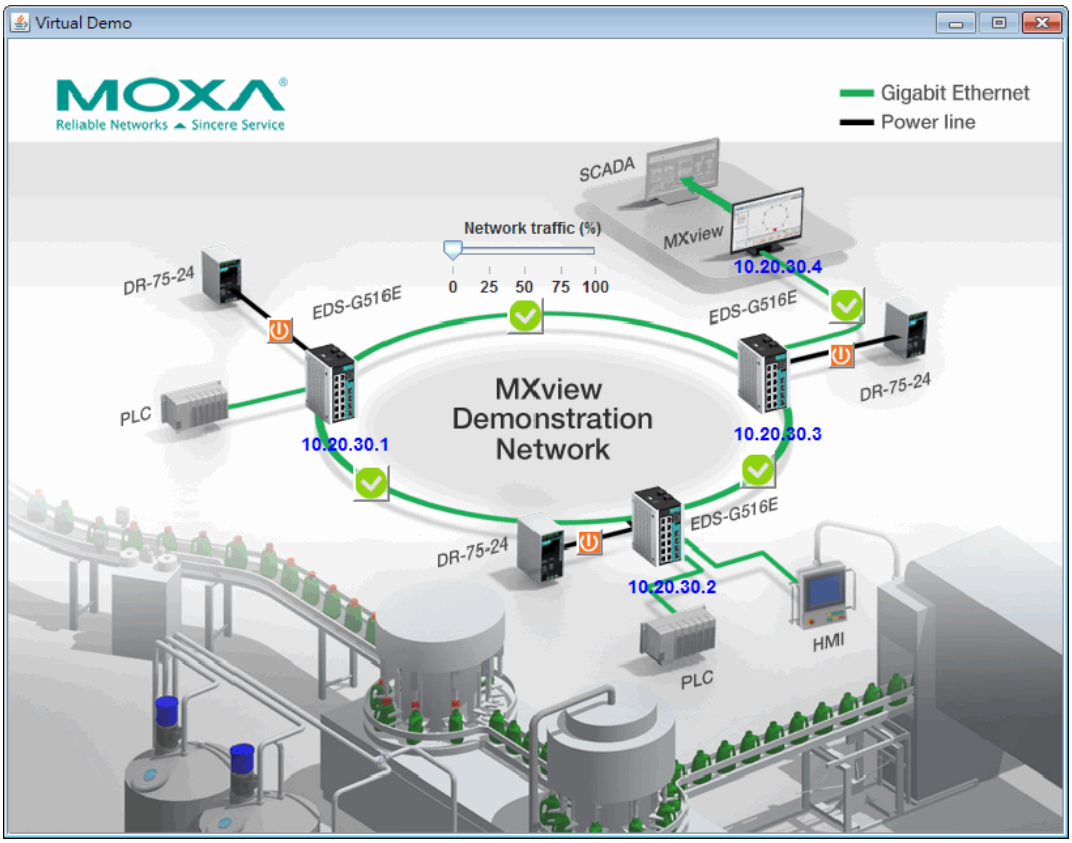
NOTE For quick troubleshooting in the future, follow the setup wizard to take a snapshot of your network.

Virtual Demo Network

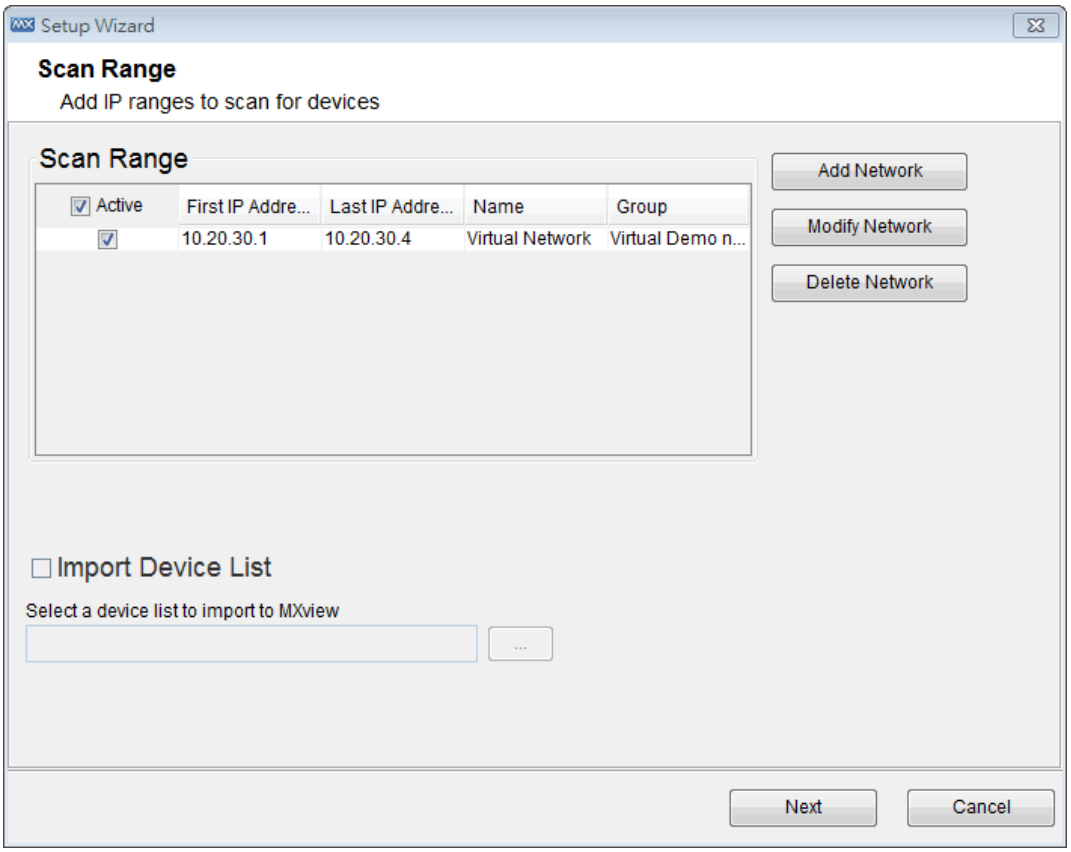
MXview provides a virtual demo network that can be used to evaluate many features of MXview. To activate the virtual demo network, run Setup Wizard and select the **Start Demo Network** option at the bottom of the window.



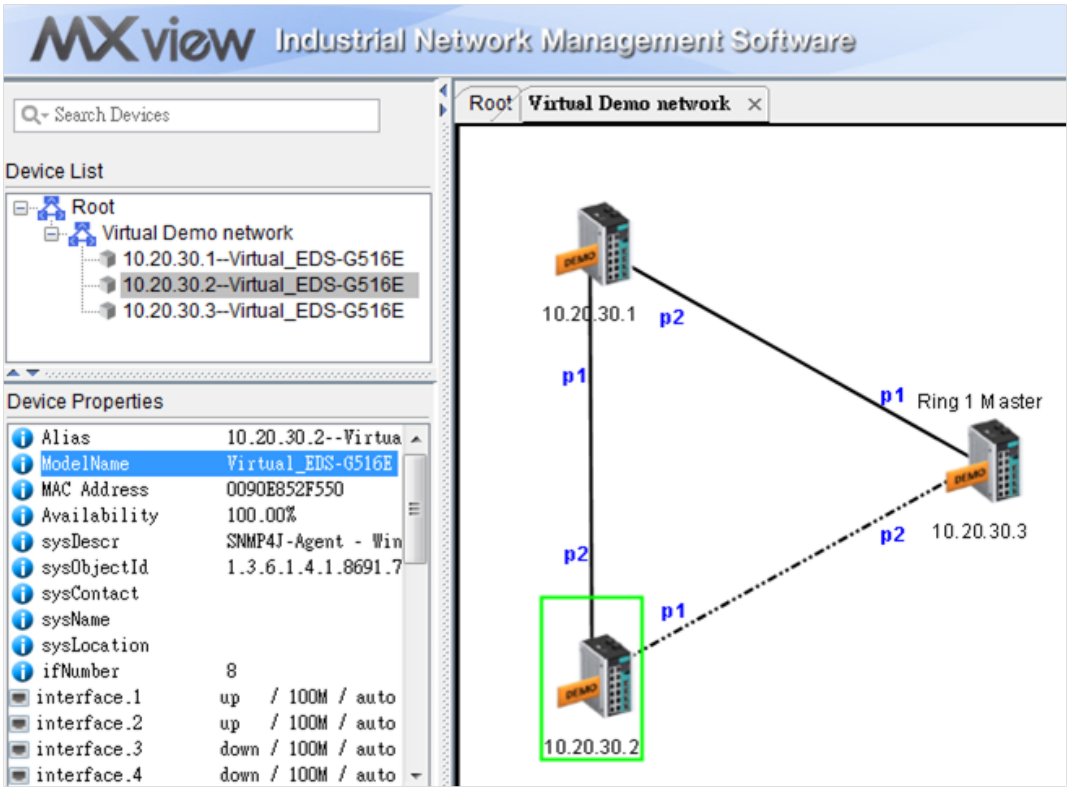




By following the MXview Setup Wizard, you can easily build up the network environment.



After the Setup Wizard is done, you can experience MXview with the virtual demo network.

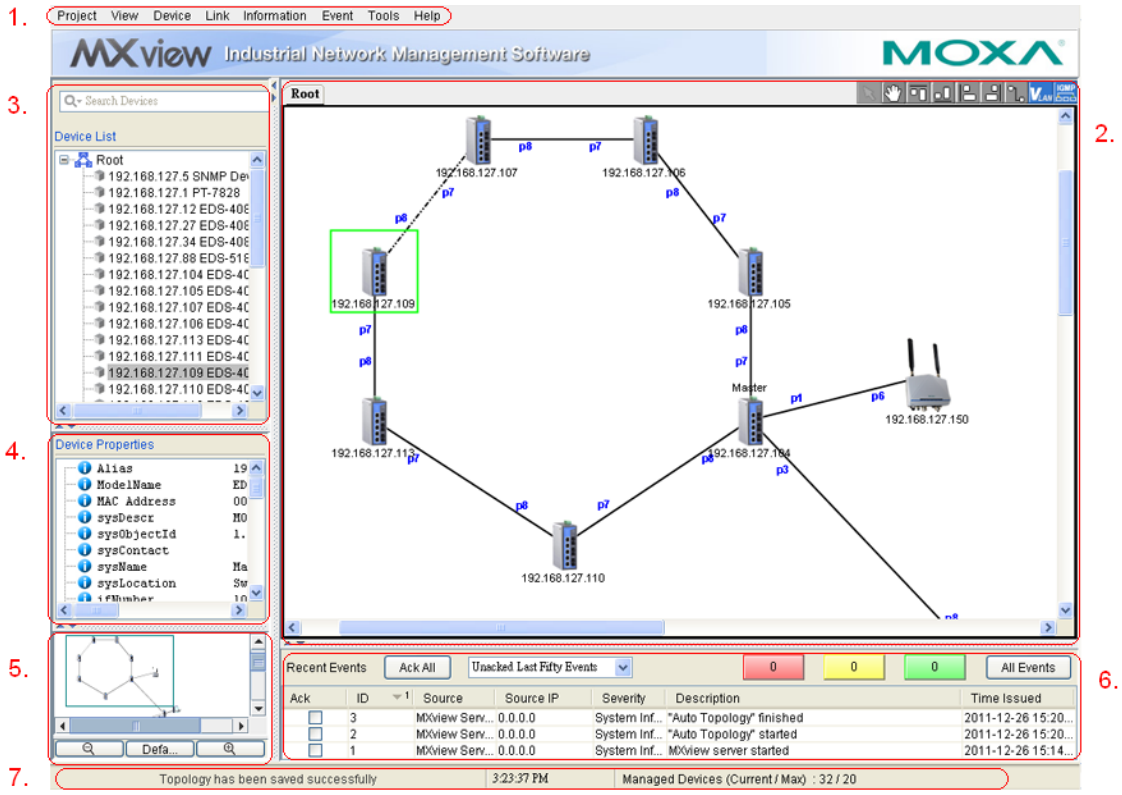

MXview Industrial Network Management Software
Search Devices
Device List
Root
Virtual Demo network
10.20.30.1--Virtual_EDS-G516E
10.20.30.2--Virtual_EDS-G516E
10.20.30.3--Virtual_EDS-G516E
Device Properties
Alias 10.20.30.2--Virtua
ModelName Virtual_EDS-G516E
MAC Address 0090E852F550
Availability 100.00%
sysDescr SNMP4J-Agent - Win
sysObjectId 1.3.6.1.4.1.8691.7
sysContact
sysName
sysLocation
ifNumber 8
interface.1 up / 100M / auto
interface.2 up / 100M / auto
interface.3 down / 100M / auto
interface.4 down / 100M / auto
Root
Virtual Demo network
10.20.30.1
p2
p1
p1
Ring 1 Master
p2
10.20.30.3
p2
p1
10.20.30.2

6

Dashboard Overview

The Dashboard should appear when you log in to MXview. When using MXview, you will spend most of your time working from the Dashboard, which is divided into the following sections:

1. Menu Bar
2. Topology Map
3. Device List
4. Device Properties List
5. Small Scale Topology Map
6. Recent Event List
7. Status Bar



The following topics are covered in this chapter:

- **Menu Bar**
- **Topology Map**
- **Device List**
- **Device Properties List**
- **Recent Events List**

Menu Bar

All operations can be accessed from the following menu bar items:

Project

Use the **Project** menu to scan devices with multiple IP ranges, add devices with a specific IP address, maintain network groups, set up MXview preferences, or start the Setup Wizard. Also, you can back up data and configurations of the monitored networks, event history, job schedules, or network topology to a local file, or import a project file to create monitored networks on the fly.

View

Use the **View** menu to change the appearance of the Topology Map. For example, you can adjust the resolution or create a topology map.

Device

Use the **Device** menu to configure or examine the properties of objects.

Link

Use the **Link** menu to delete a link or get traffic reports.

Information

Use the **Information** menu to examine network-wide properties.

Event

Use the **Event** menu to examine events and set up notifications.

Tools

Use the **Tools** menu to launch additional services or programs, such as Moxa IP Configurator.

MIB

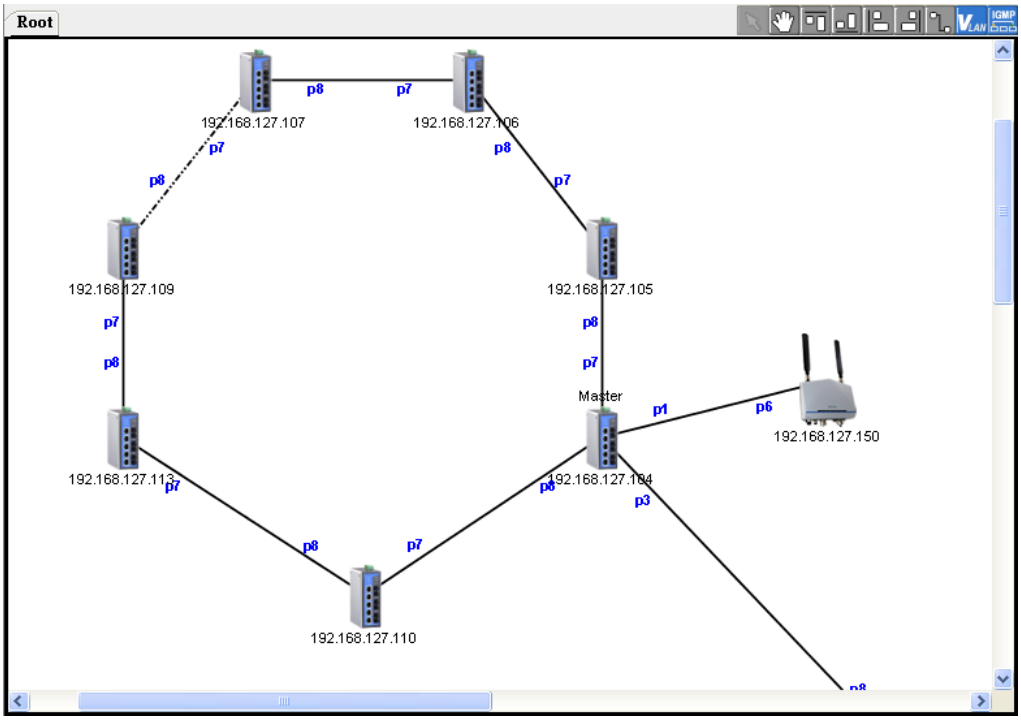
Use the **MIB** menu to compile or browse for a third party MIB. Import third party OIDs and Traps through the OID import manager and the Trap import manager.

Help

Use the **Help** menu to view license information or information about MXview.

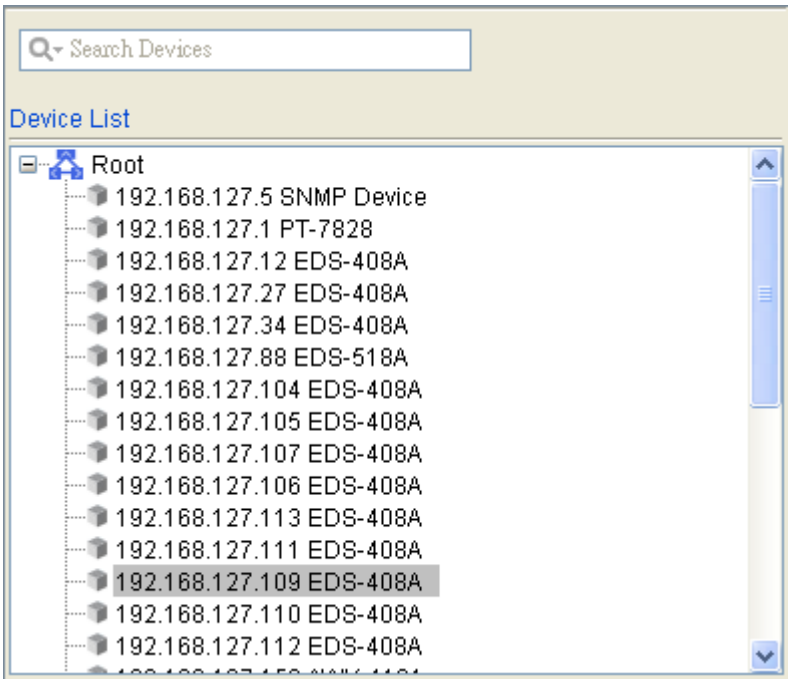
Topology Map

The **Topology Map** displays connection relationships of monitored devices. For devices with LLDP capability, the connections can be drawn automatically.



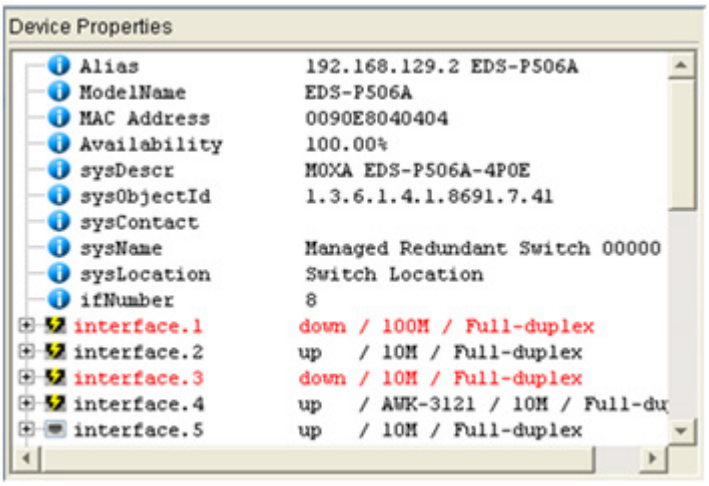
Device List

The **Device List** shows the Topology Map structure in tree format. Note that link information is not shown. Type all or part of a device name in the "Search Devices" input box to only show devices whose names contain that keyword (for example, type "EDS" to show all EDS devices, or type "EDS-G509" to show all EDS-G509 switches in the network.



Device Properties List

The **Device Properties** list shows the properties of the device that is currently selected. If a device's interface is a PoE port, the icon will change to include a yellow electric charge.

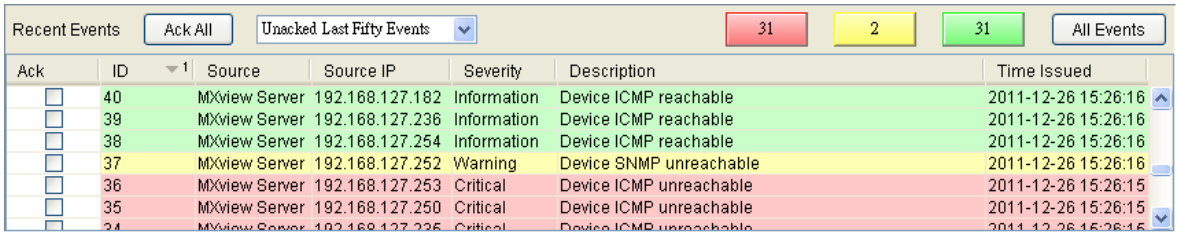


Recent Events List

This list shows the events that have occurred most recently.

Event Count lists the total number of events of different types, with different event types identified by different colored rectangles (e.g., red, yellow, and green, as shown in the following screen shot).

All Events is the shortcut of the menu item **Event → All**. When you click **All Events**, a window will pop up showing all events.



7

Device Discovery and Polling

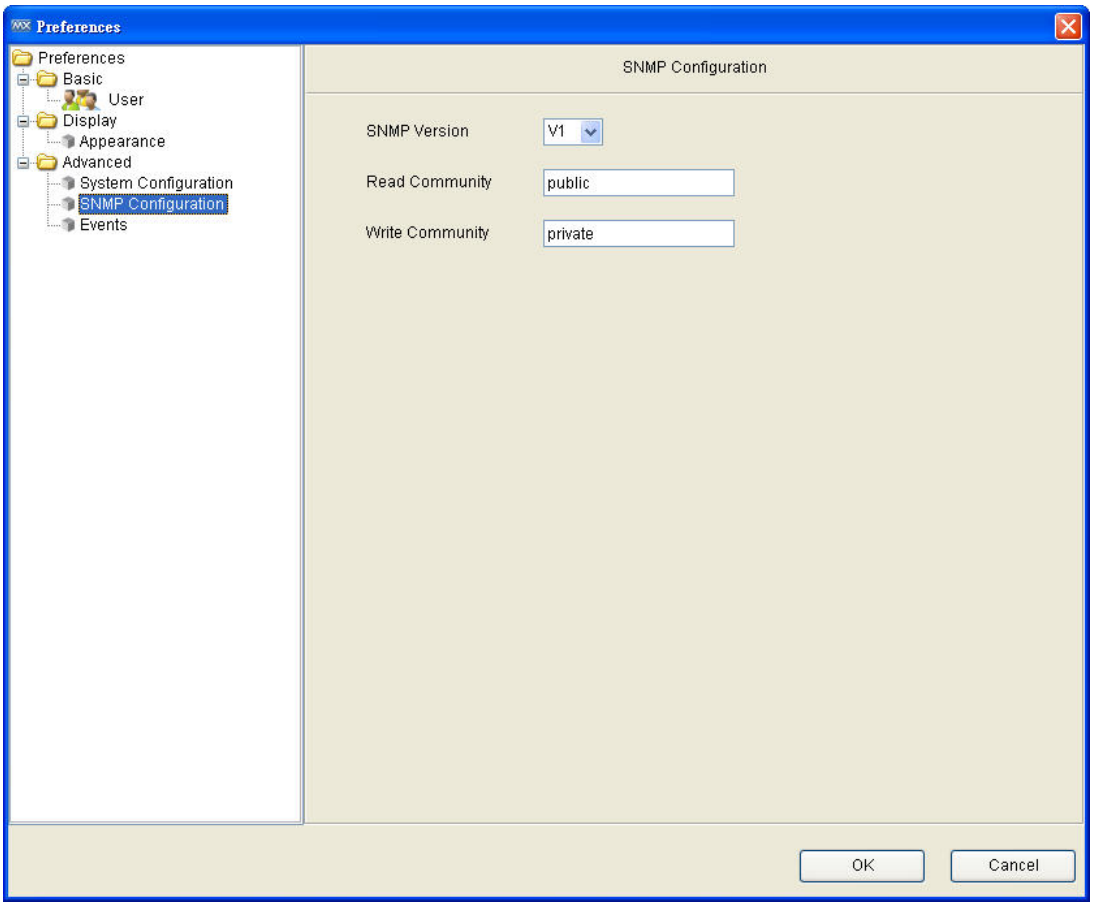
Devices in the assigned scan range can be discovered via SNMP and ICMP protocols. After a device is discovered, MXview will use SNMP and ICMP to poll the device periodically. To configure this function properly, you will need to know the following information:

1. The IP addresses of the devices on the network.
2. The Read community name assigned to the devices on the network.

Changing the Read Community String

The default Read community string that is used to discover devices is **public**. Take the following steps to change the value:

1. Select **Project → Preferences → SNMP Configuration**.
2. Enter the new Read community string.

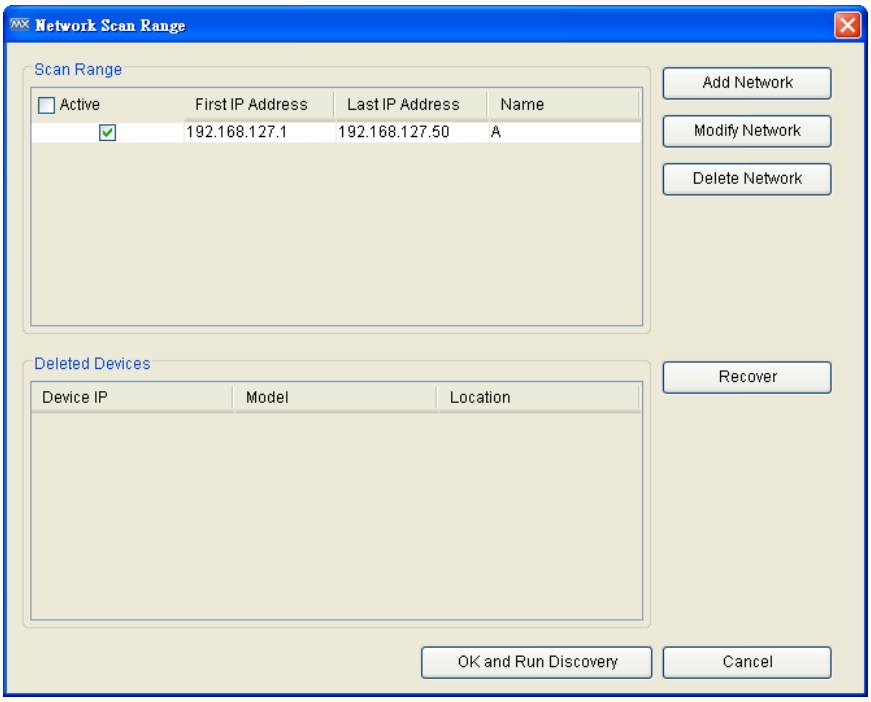


Scan Range

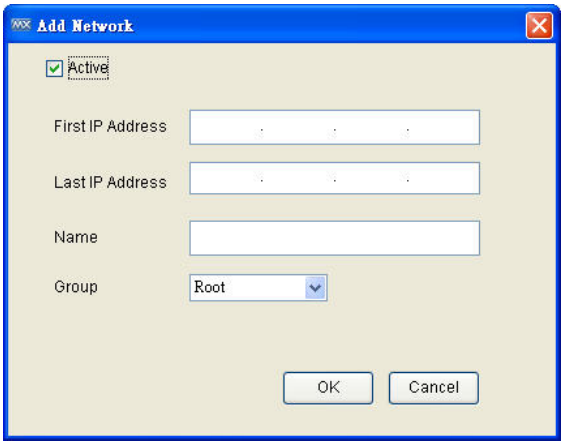
You can assign multiple scan networks, with each network defined by a starting IP address and an ending IP address. MXview will discover all active devices that belong to the scan networks.

Take the following steps to add a scan network:

1. Select **Project → Scan Range**.



2. Click **Add Network.**



3. Input the starting and ending IP addresses of the range, and then click **OK**.
4. Click **OK & Discovery** to start discovery.

NOTE Device discovery will require more time for larger networks. For this reason, if possible you should avoid defining large scan ranges.

Deleting a scan network will remove the monitored devices that belong to the network. Take the following steps to delete a scan network:

1. Select **Project → Scan Range**
2. Select a row in the table **Scan Range**
3. Click **Delete Network**
4. Click **OK** to activate the change

Modifying a scan network will remove devices that do not belong to the new network, and discover new devices within the new network. Take the following steps to modify a scan network:

1. Select **Project → Scan Range**
2. Select a row in the table **Scan Range**
3. Click **Modify Network**
4. Modify the starting and ending IP address of the range, and then click **OK**
5. Click **OK** to activate the change.

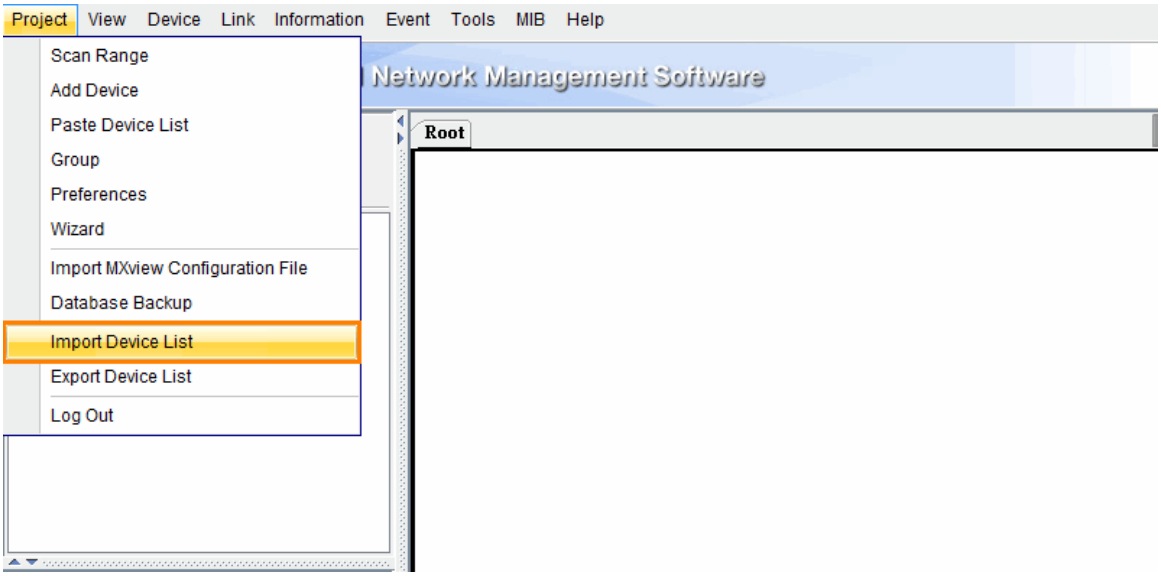
Deselecting the **Active** checkbox of a scanned network will stop device discovery for that network. Previously discovered devices will continue to be monitored, with the current status shown on the topology map.

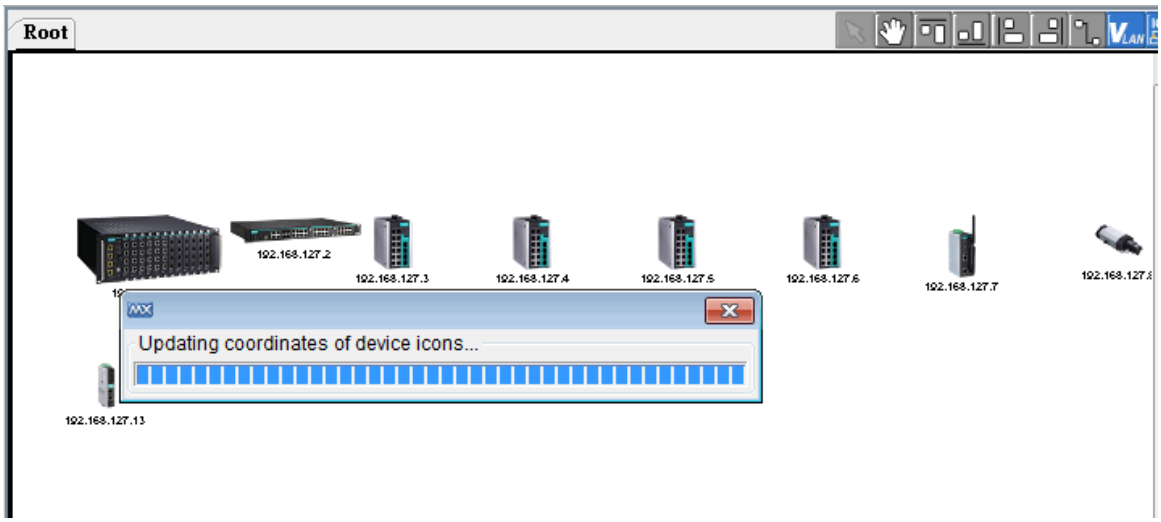
Import/Export Device List

By using this function, users can easily export any device into a device list, and also can import any device list into MXview.

Import Device List

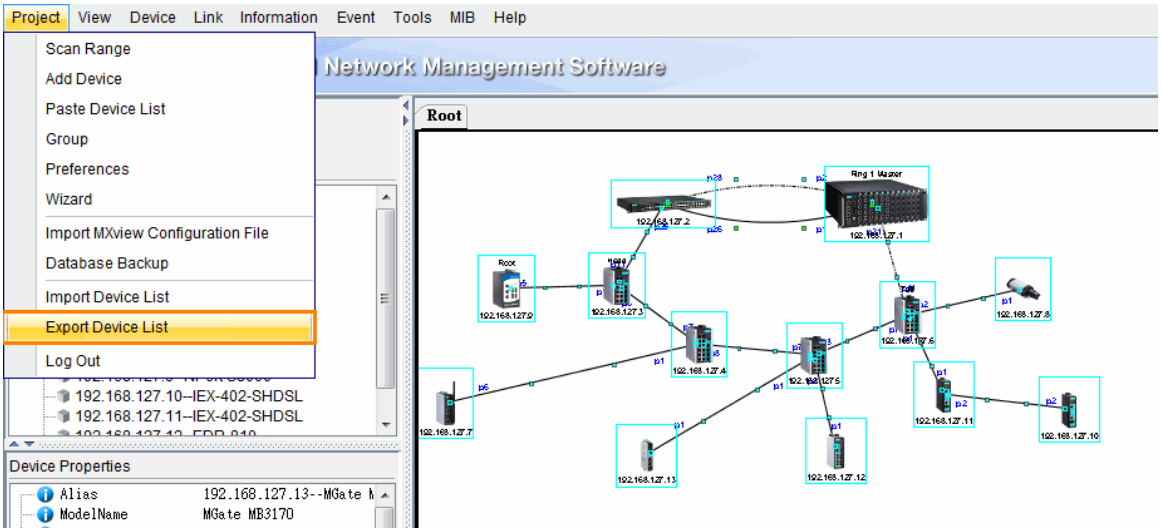
1. Select **Project → Import Device List**
2. Select a list and click **Open**
3. All the devices in the list are imported into MXview





Export Device List

1. On the Topology Map, Select the devices which will be exported into the list
2. Select **Project → Export Device List**
3. Enter a file name and click **Save**
4. The device list is saved



NOTE The **Device List** can be utilized in all the software of MXstudio, including MXconfig, MXview, and N-Snap.

Device Discovery

MXview will use SNMP and ICMP to discover devices within the scan ranges. When a Moxa device has been located, MXview will use an actual image of the device, such as the one shown here, to indicate the device's location on the network.

MXview will also list detailed properties and configuration parameters, including the following:

- MAC address
- Model name
- IP address
- Netmask
- Gateway
- Trap server address
- Auto IP configuration
- Type of redundancy protocol
- Role in redundancy protocol
- Status and properties of the port
- Status of the power
- Status and version of the SNMP protocol

MXview will use one of the following graphics to indicate devices:

Moxa devices with SNMP enabled.	
Third party devices with SNMP enabled.	
Third party devices with ICMP enabled.	

The IP address and location name of the discovered device will be shown under the image of the device. Take the following steps to change the location name:

1. Select the device
2. Select **Device→ Maintenance→ Configure IP & SNMP**
3. Select the **Basic** tab and then enter the new location name.

MXview will run conduct device discovery periodically to find new devices in the scan ranges. You may also use the following steps to conduct device discovery manually:

1. Select **project → Scan Range**
2. Click **OK & Run Discovery**

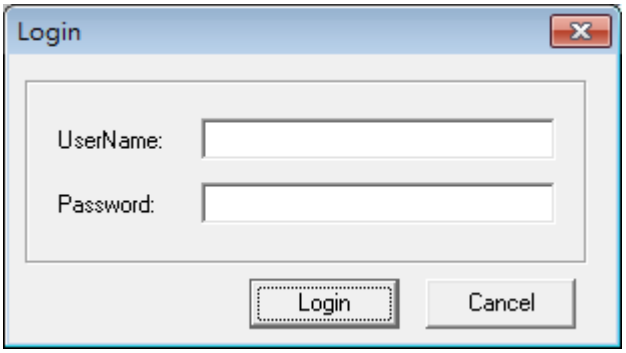
Discovered devices will be polled periodically by ICMP and SNMP. This is done for the following reasons:

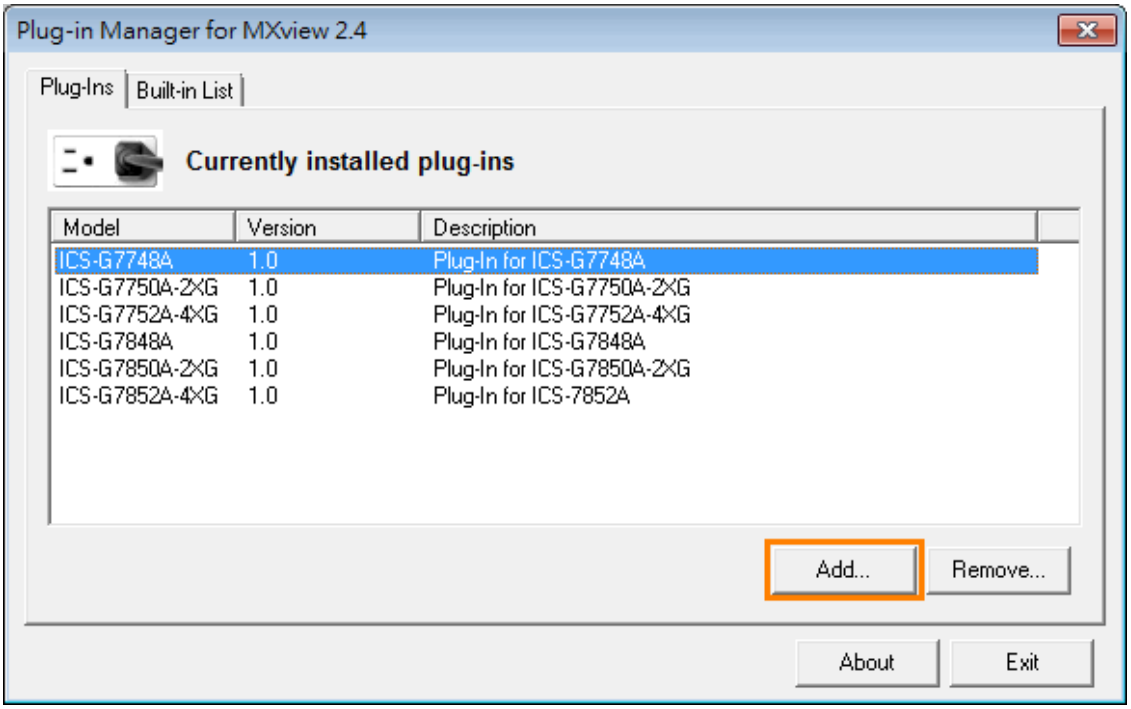
1. To monitor the availability of devices.
2. To update properties and configuration parameters of devices.
3. To update traffic information, such as utilization.

Plug-in Manager for MXview

For Moxa devices without default support by MXview, add the Plug-in Kits of these devices into MXview through the **Plug-in Manager**, and the devices' icons will be shown on the MXview **Topology Map**.

1. Select **MXview → Plug-in Manager for MXview** in Start menu
2. Enter the username and password which are the same as MXview
3. In **Plug-Ins** page, click **Add** and select a Plug-in Kit folder
4. The Plug-in models are shown in the list and successfully added into MXview
5. Exit **Plug-in Manager** and login MXview, and these models' icons can be shown on **Topology Map**





8

Topology Management

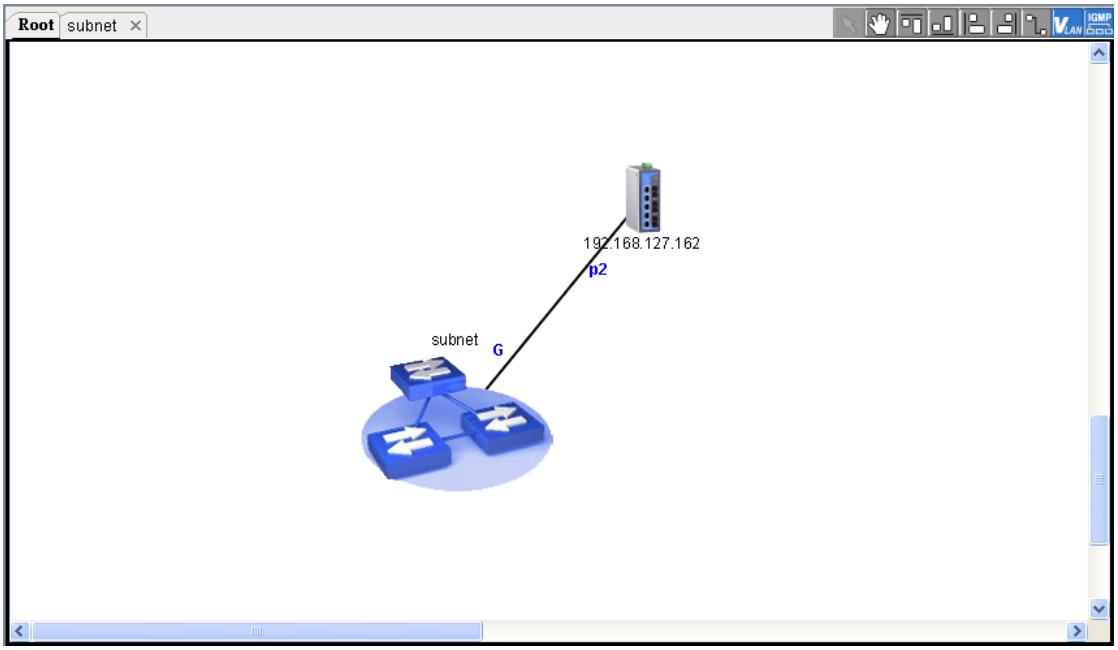
The **Topology Map** is the core of MXview, and can be used to complete most actions. The Topology Map shows a graphical representation of the devices in your networks, and can be used to do the following:

- Display a graphical representation of a real network.
- Show connecting relationships between devices.
- Indicate the status of devices and links.

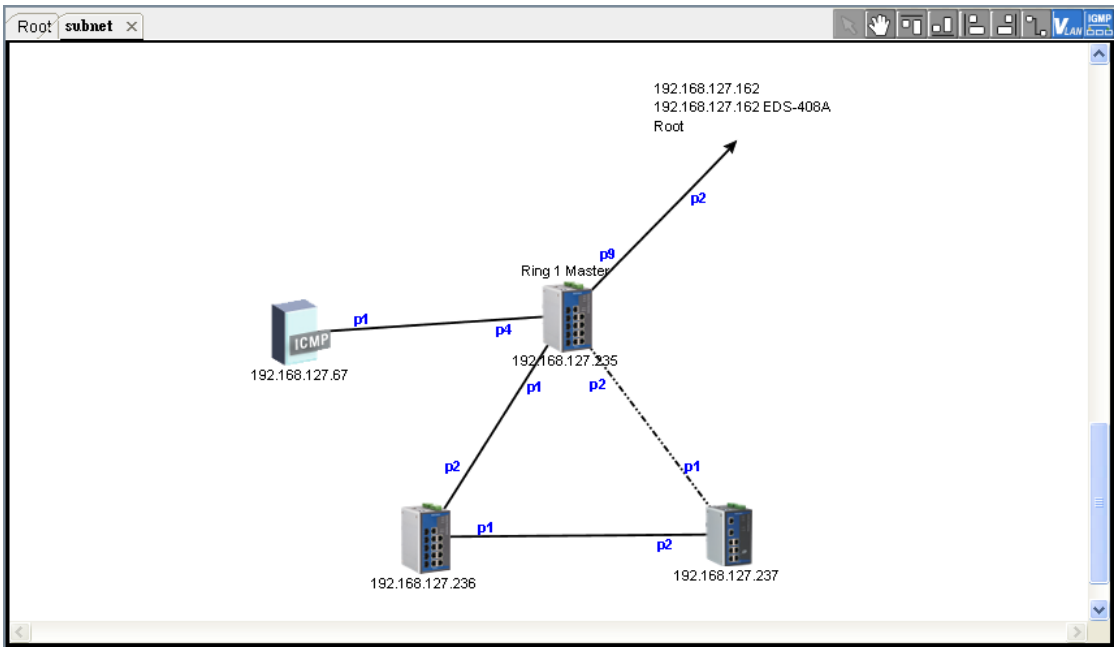
Multi-layer Tree Structure

The Topology Map can be organized into a multi-layer tree structure of up to 5 layers. It helps users manage a large number of nodes on the computer screen. For example, users can move nodes of the same subnet or location into the same group. Root, which is the only one group at the first layer, exists by default and cannot be deleted. Groups created by users are in the layer under Root. Devices can be moved between groups. MXview uses an icon to indicate user-defined groups:

The first layer will be shown as:



The second layer will be shown as:



The map is represented as a tabbed window, in which each tab is a group. Double clicking a group icon in Root will open the corresponding tab.

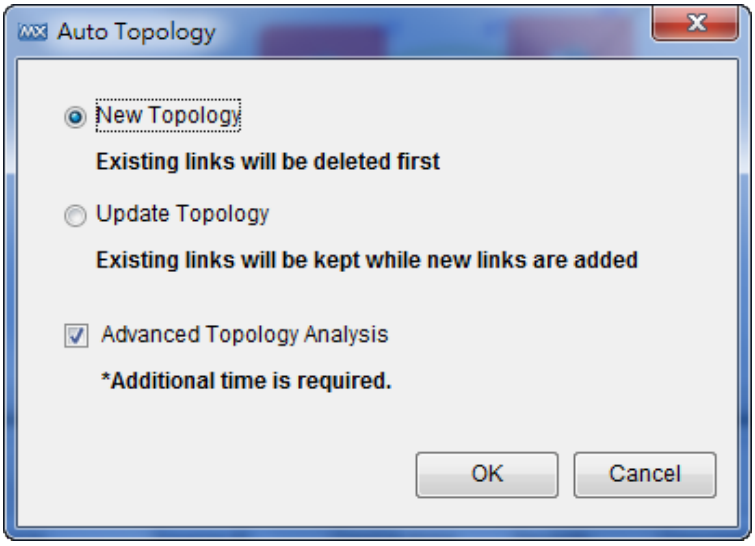
Auto Topology and Auto Layout

For devices with LLDP functionality, MXview can draw the physical topology map, down to the port level of the devices. For devices without an LLDP MIB, MXview is able to draw links by using ARP. To activate this function, select the **Advanced Topology Analysis** checkbox.

MXview can do the following two tasks automatically: (1) Create a new topology, and (2) Update the existing topology.

Creating a new topology deletes all links, requests LLDP information from devices, and draws topology maps based on the gathered information.

1. Select **View → Auto Topology**
2. Select **New Topology**
3. Click **OK**



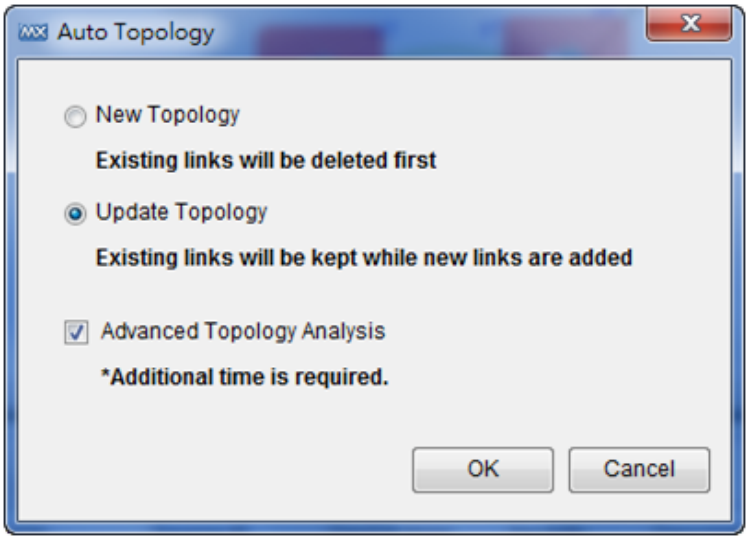
NOTE Links drawn manually will be also deleted by this action.

NOTE Your devices must have firmware version 3.1 or higher to use **Advanced Topology Analysis**.

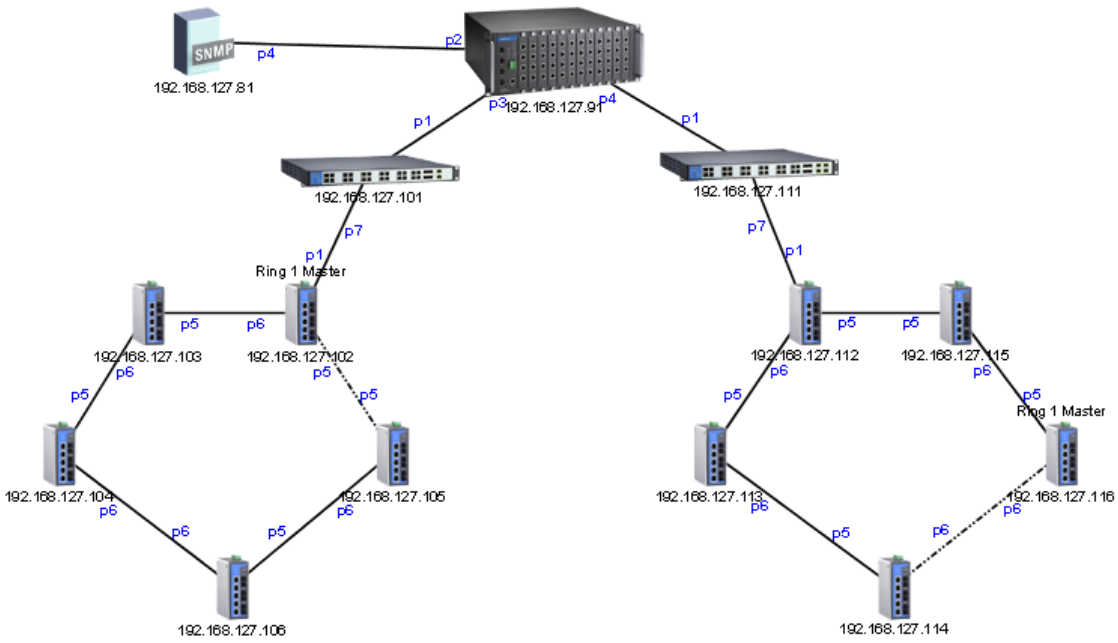
NOTE If the AutoTopology function does not create an accurate representation of the actual network, deselect the **Advanced Topology Analysis** check box and try again.

Updating the existing topology adds new links and updates existing links, but does not change the status of links that are indicated as having been disconnected or links that were drawn manually.

1. Select **View → Auto Topology**
2. Select **Update Topology**
3. Click **OK**



The following figure shows an example of a topology map:



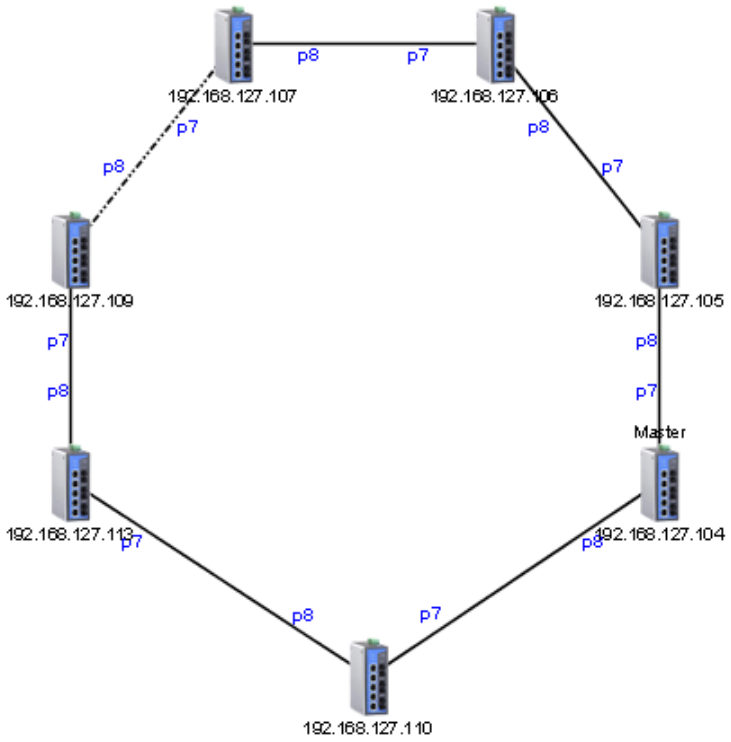
Auto topology supports third-party devices which are compatible with LLDP MIB.

	Moxa Device*	Third-party SNMP Device	IP Device
Auto Topology	LLDP MIB ARP-based auto topology (Moxa switch w/firmware 3.1)	LLDP MIB	Supported if connected to a Moxa switch.

NOTE LLDP is enabled by default on Moxa devices. Please keep LLDP enabled to use the **Auto Topology** function.

Redundant Topologies

Redundant topologies have at least one backup link, which will be indicated with a dashed line:



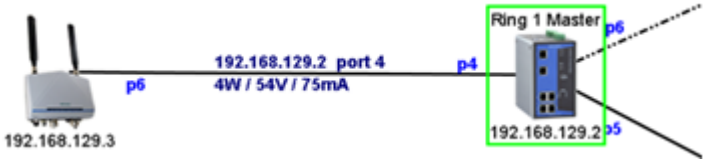
For devices that play a particular role in the topology, MXview will label the devices by displaying the roles above the images of the devices. Backup links will be indicated with dotted lines.

- RSTP has a **Root**
- Turbo Ring has a **Master**
- Turbo Chain has a **Head** and a **Tail**

NOTE Only auto topology can draw dashed lines for redundancy links. Manually drawn redundant links will appear as solid lines.

PoE Power Consumption Visualization

By periodic polling, a PoE link will display the port number, power (watts), voltage (V), and current (mA) directly on the topology map.



VPN Tunnel Visualization

The VPN tunnel link will be indicated using different colored lines, as shown below. An icon in one of three different colors indicates VPN statuses:

- **Blue:** All VPN tunnels are connected

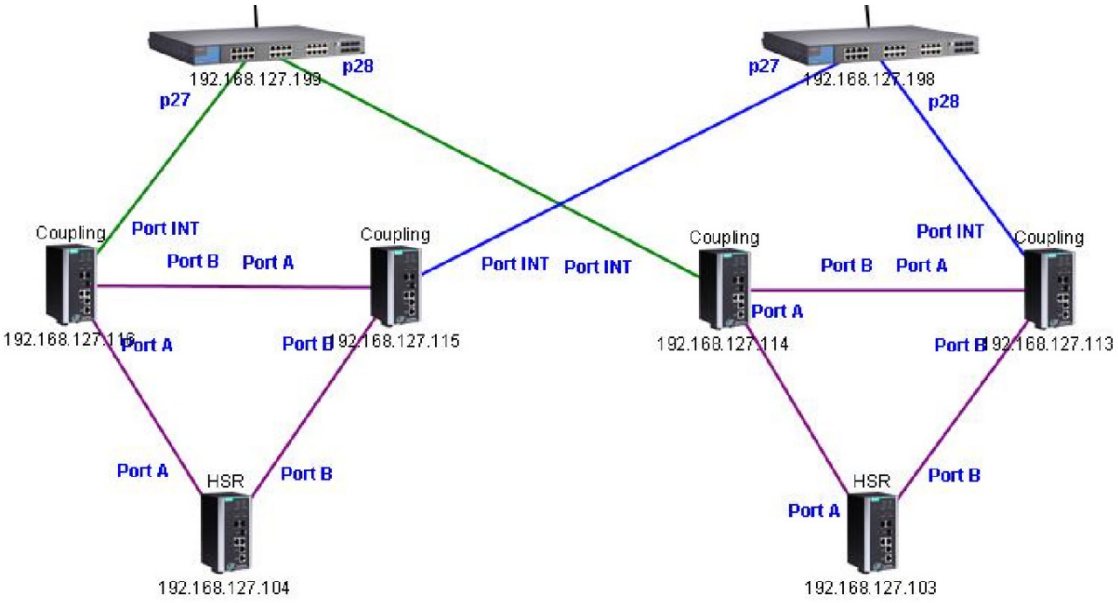
- **Yellow:** At least one VPN tunnel is disconnected

- **Red:** All VPN tunnels are disconnected

NOTE VPN Tunnel Visualization is only available on Moxa's EDR-810 series of secure routers.

PRP/HSR Visualization

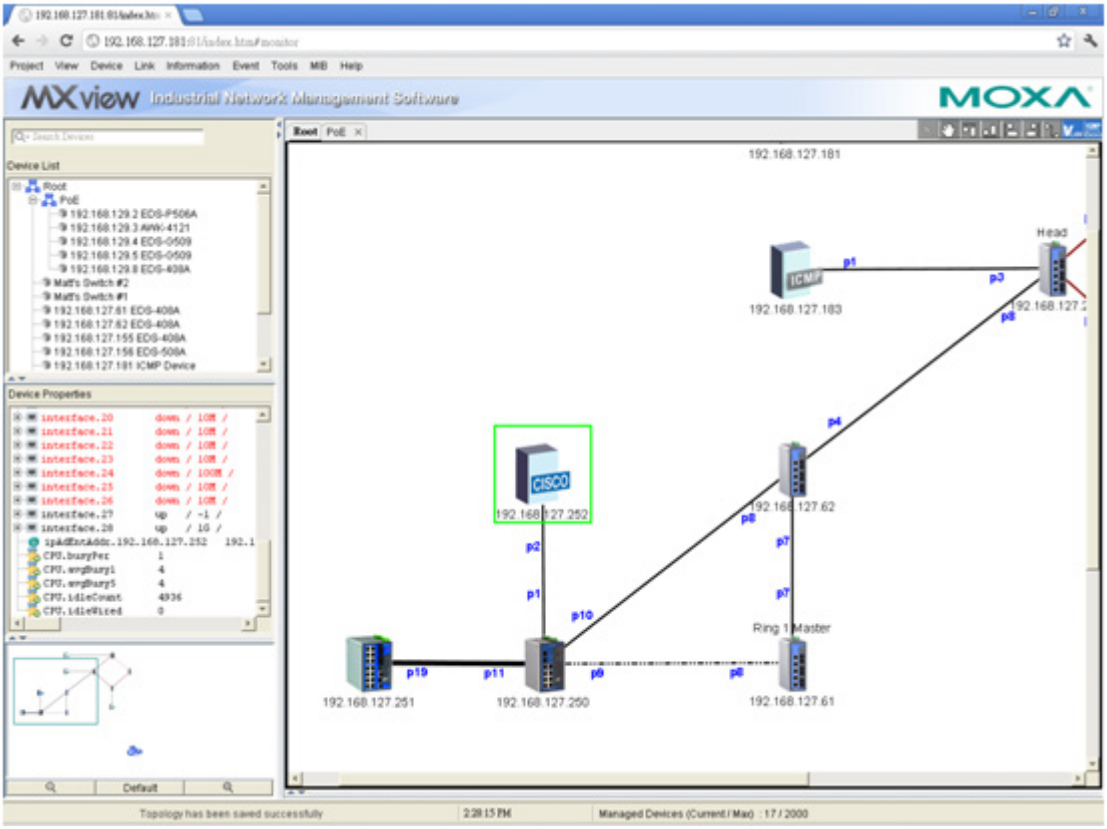
MXview is able to indicate different roles of PRP/HSR technology, including PRP, HSR, Coupling, and Quadbox. The links of PRP/Coupling LAN A, LAN B, and HSR Ring are indicated with different colored lines.



NOTE PRP/HSR Visualization is only available with Moxa's PT-G503 series.

Third-Party Icons

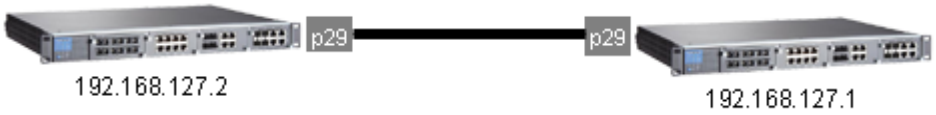
MXview is able to support most network devices, even those made by many different vendors. Below is an example of a network which includes Moxa devices and a Cisco device. MXview will change the device icon to indicate that the device is a Cisco device.



Vendors with MXview support includes: ABB, CISCO, Emerson, Hirschmann, Rockwell, Schneider, and Siemens.

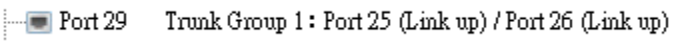
Port Trunking

Port trunking, also called link aggregation, involves grouping links into a link aggregation group. Trunking links will be indicated with thick, solid lines.



NOTE Only auto topology can draw thick lines for trunking links. Manually drawn trunking links will appear as solid lines.

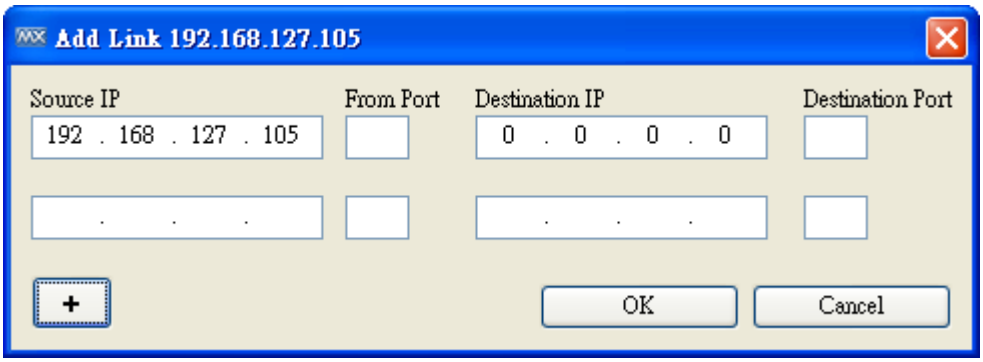
NOTE For trunked link, check "Device Properties" to get the port number corresponding to the trunking group.



Add Link

Use one of the following two options to connect two devices with a link in a topology map:

1. Right click on a device and then select **Add Link**.
2. Click on a device to select it and then click **Link → Add Link** on the menu bar.
3. Enter the ports and IP addresses corresponding to the link. Use the plus sign at the left bottom corner to add multiple entries at one time.



NOTE Trunking and redundancy links added manually will appear as solid lines.

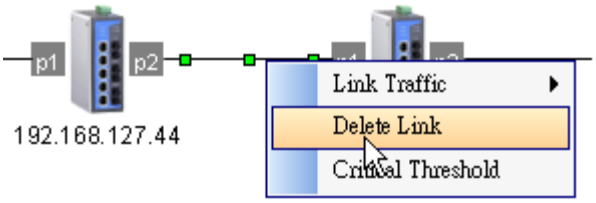
NOTE Port numbers must be numeric and entered correctly to obtain the correct traffic information.

NOTE For modular switches, a port number depends on the chassis to which the port belongs, but not on how many modules are inserted. For switches such as the PT-7828, the first module's port numbers are from 1 to 8, the second module's port numbers are from 9 to 16, and so on. The port number depends only on which slot the module is in; in other words, the port number is the same regardless of whether other slots are empty or occupied.

Delete Link

Use the following steps to remove a link in the topology map:

1. Select the link.
2. Right-click the link and select **Delete Link**, or select **Link → Delete Link.**



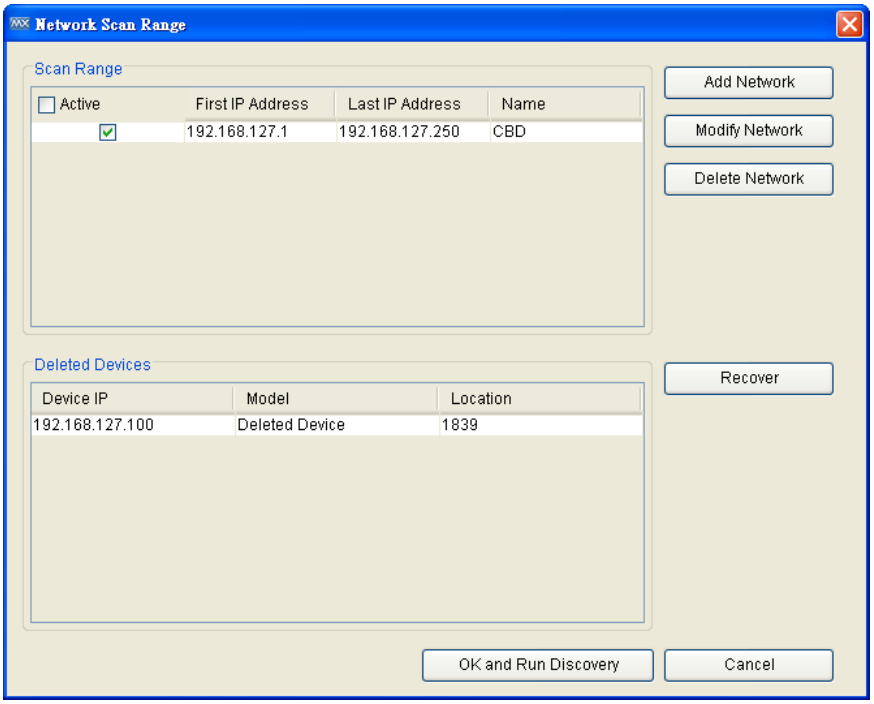
NOTE Deleting a link will delete a link from the topology map, but it will not affect the actual network configuration.

Delete Device

You can delete devices from the topology map. After a device is deleted, it will be removed from the topology map and scan range, and the device would not be polled or located when conduction device discovery. Take the following steps to delete a device:

1. Select the device
2. Right-click the device
3. Select **Delete Device**

Deleted devices will be recorded in **Project → Scan Range**.

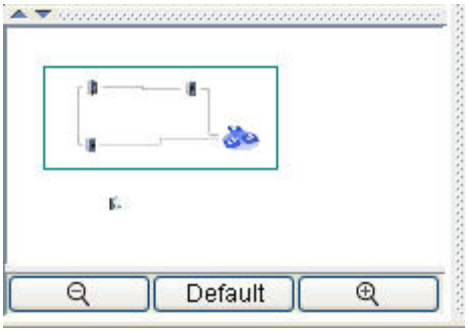


You may recover devices that have been deleted. Once recovered, the devices will be polled and located when conducting device discovery Take the following steps to recover deleted devices:

1. Select **Project → Scan Range**
2. Select a row in table **Deleted Devices**
3. Click **Recover** and then click **OK**

Navigation

Mini map is a frame with a slider for adjusting the resolution. This function helps users zoom in to enlarge devices or zoom out to view more devices on the screen.



Background

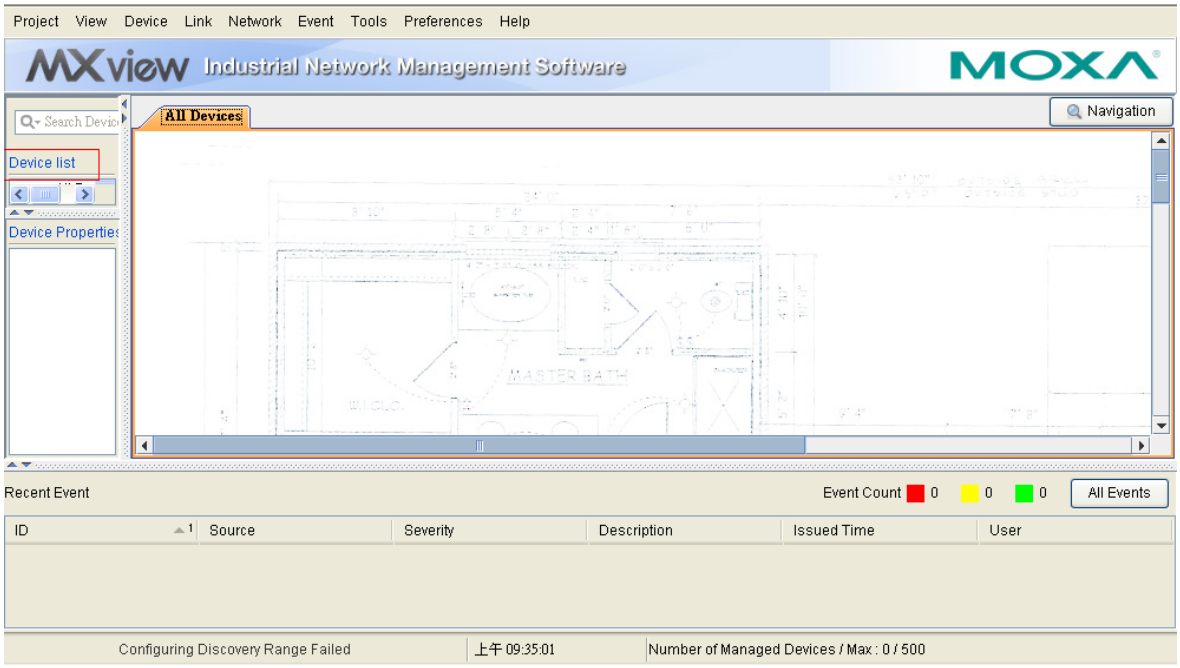
You may insert a background image into the topology map to provide additional references, such as geographical information or deployment layout.

Take the following steps to insert or change a background image:

1. Select **View → Set Background**
2. Choose an image from the local file system.

Take the following steps to delete the background image from the topology map:

Select **View → Delete Background**



Export Topology

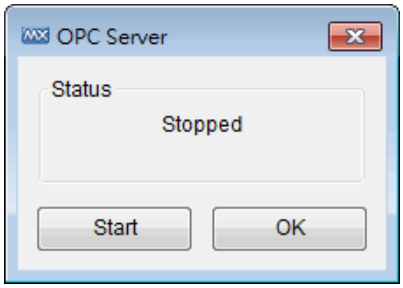
The topology map can be exported as a JPEG image. Take the following steps to export the topology map:

1. Select **View → Export Topology**
2. Choose the location to which the image is saved.

OPC Tag Generation

MXview can generate OPC 2.0-compliant tags of device and link properties. OPC clients such as SCADA Systems can access and use these tags.

1. Select **Tools → OPC Server**
2. Click **Start**



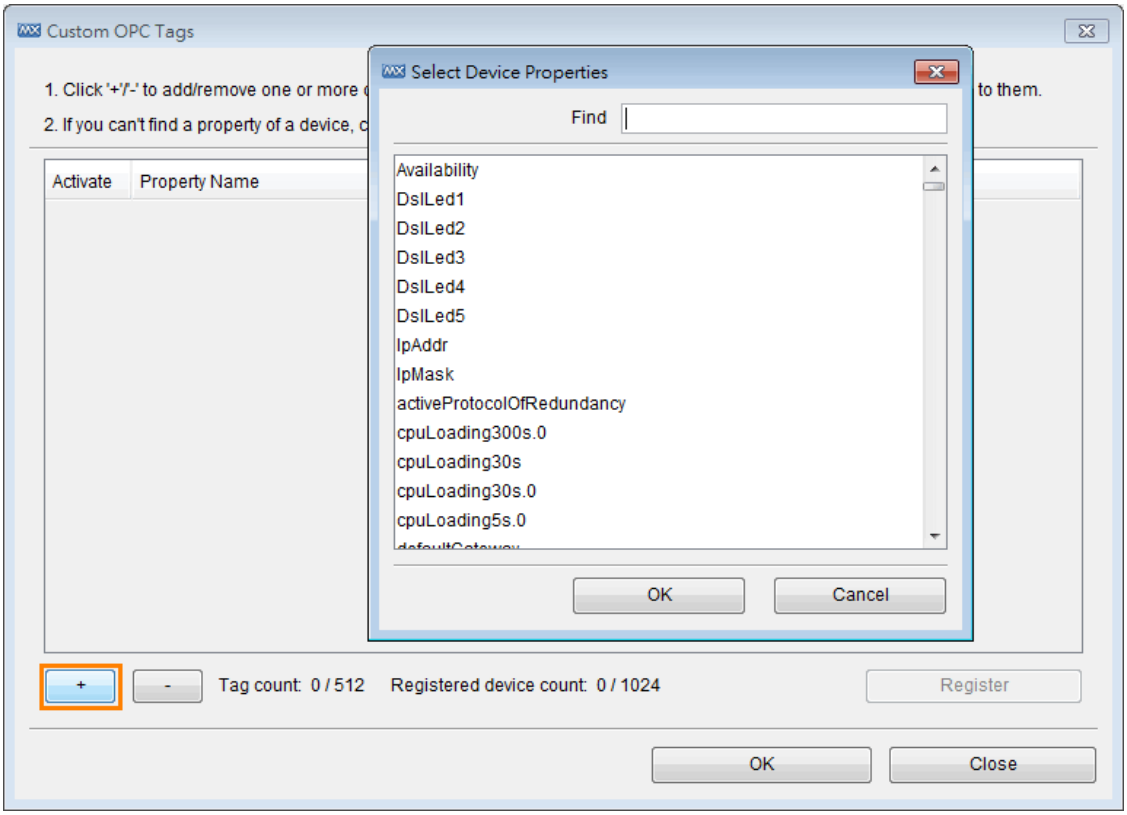
Currently, the default information that MXview can prepare as tags includes:

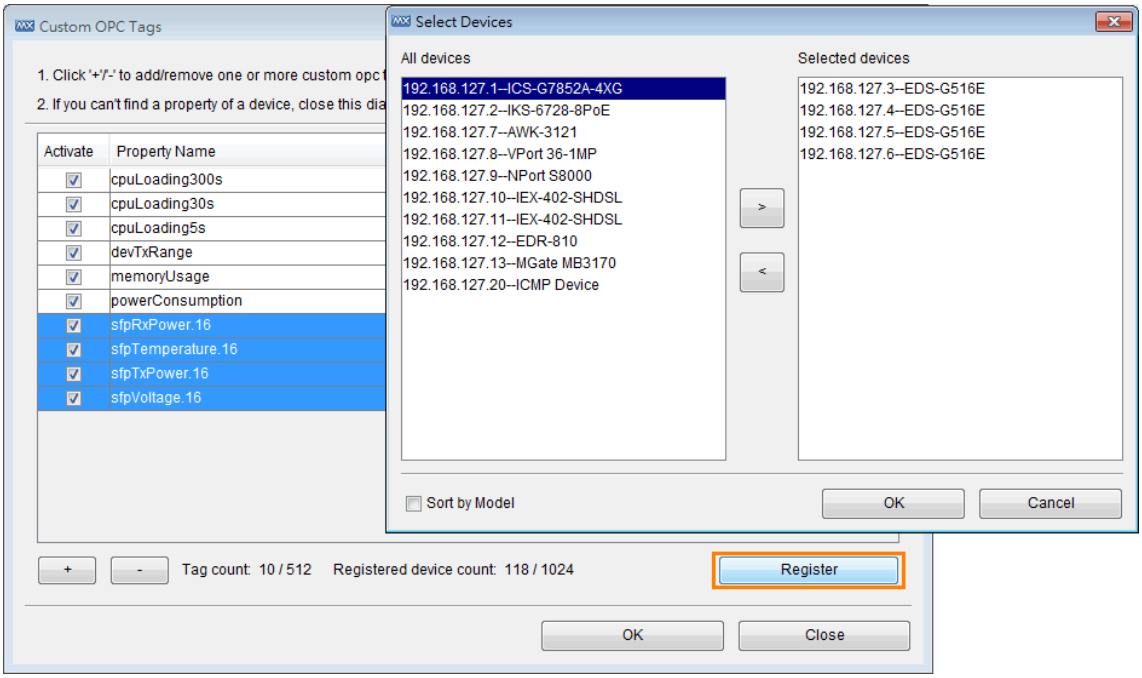
1. A **Health** tag, which represents the health status of whole network.
2. Device **IP address**, **MAC address**, and **status**, which are labeled beginning with **D_**.
3. A link's corresponding IP address and ports, which are labeled beginning with **L_**.

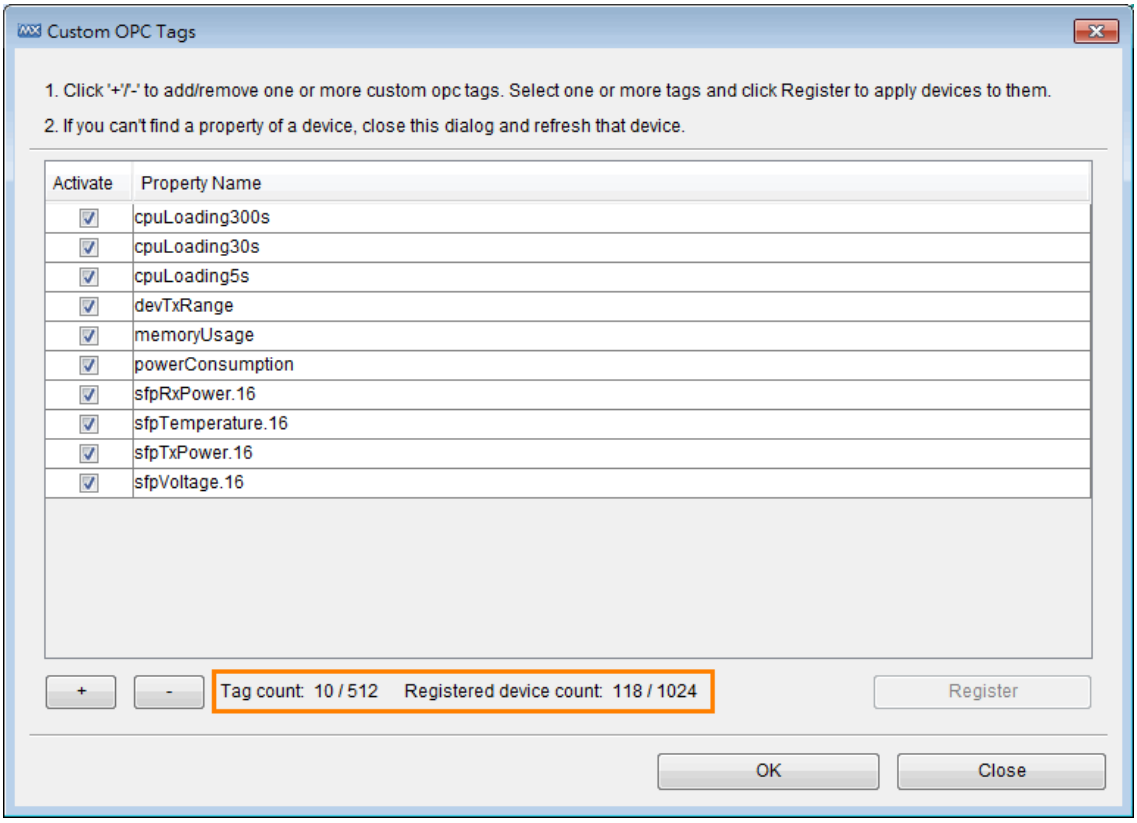
NOTE The **Health** tag represents the health status of the entire network. There are three levels: Normal, Warning, and Critical, with the values 0, 1, and 2 respectively. MXview allows users to use only one tag to monitor the status of the whole network

MXview can also transfer all the SNMP properties in Device Properties List to OPC tags.

1. Select Tools → Custom OPC Tags
2. Click + to manually add properties into list
3. Select properties in the list and click Register to implement them on devices
4. It shows Tag count and Registered device count
5. Click OK and finish transferring





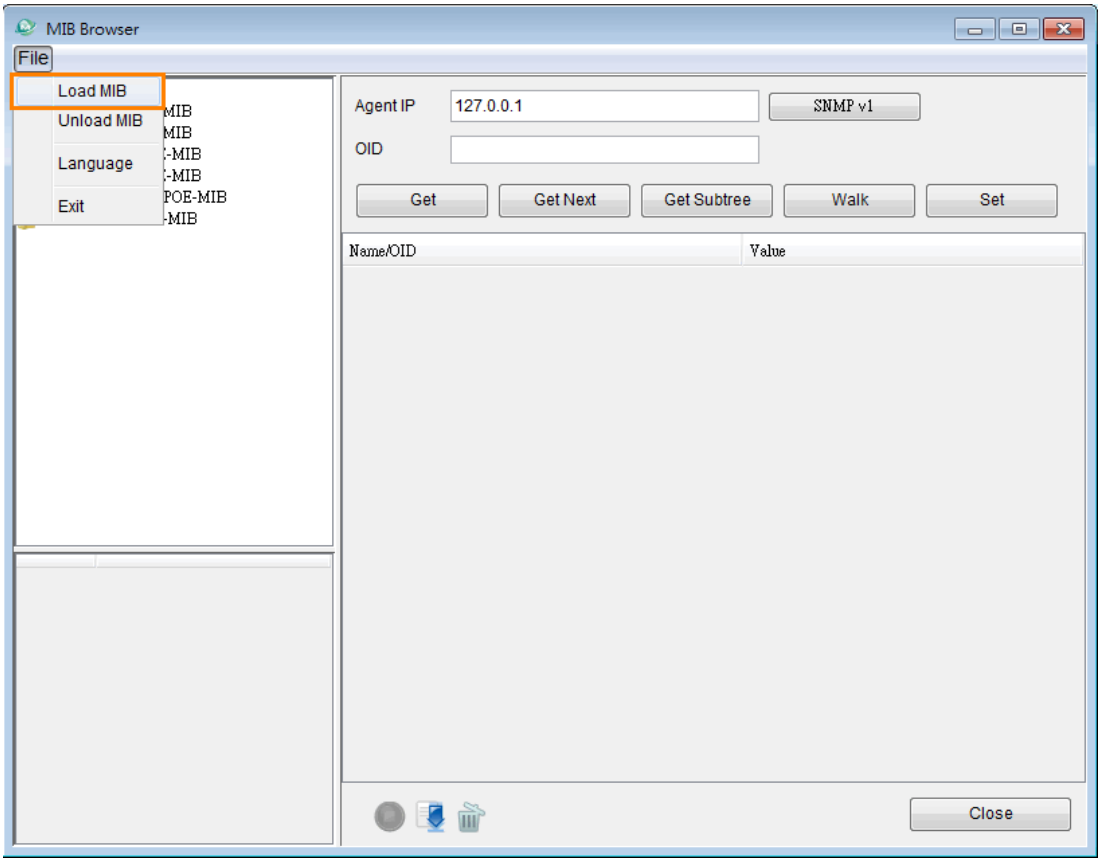


If the properties that you want to transfer are not shown in the properties list, you can use the MXview **MIB Browser** to manually import the MIB files. Then, the **OID Import Manager** can help import the OIDs into Devices Properties List and they will be easily transferred to OPC tags. In the same way, any third-party proprietary MIB can generate its OPC tag.

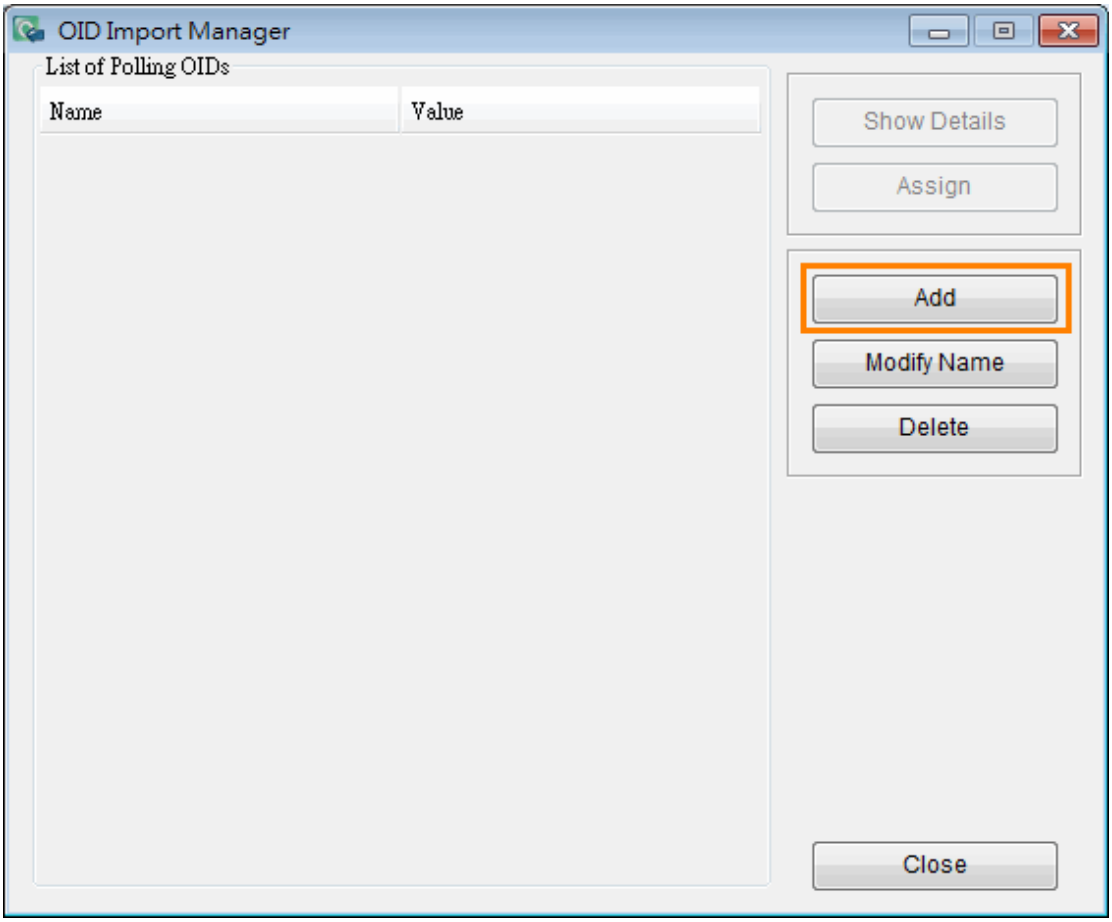
Example: Retrieving transmission distance though MXview OPC Server

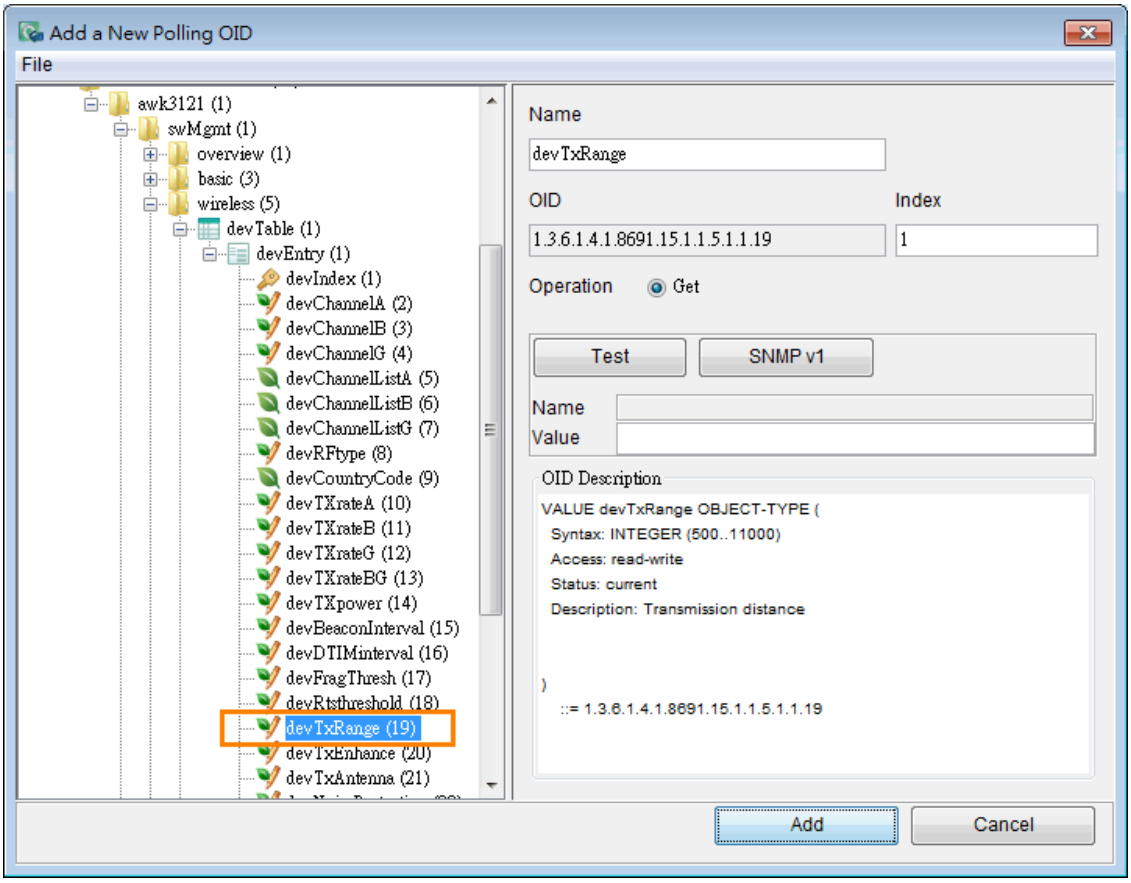
To retrieve transmission distance through MXview OPC Server, the first step is load the relative MIB, and import the transmission distance SNMP OID "devTxRange" into Device Properties List. Then, users can easily find the property in the properties list and transfer it to an OPC tag.

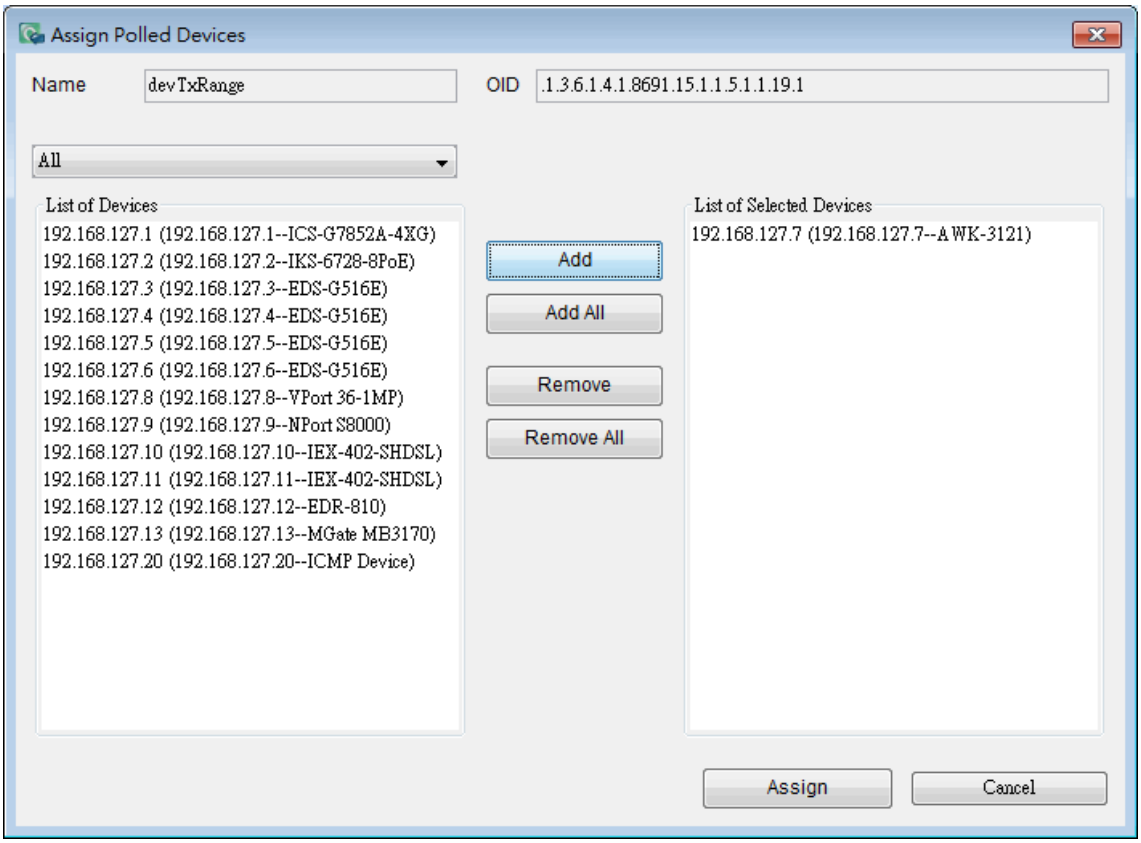
1. Select **MIB → MIB Browser**
2. Select **File → Load MIB**
3. Select the SNMP MIB and add it into the MIB list

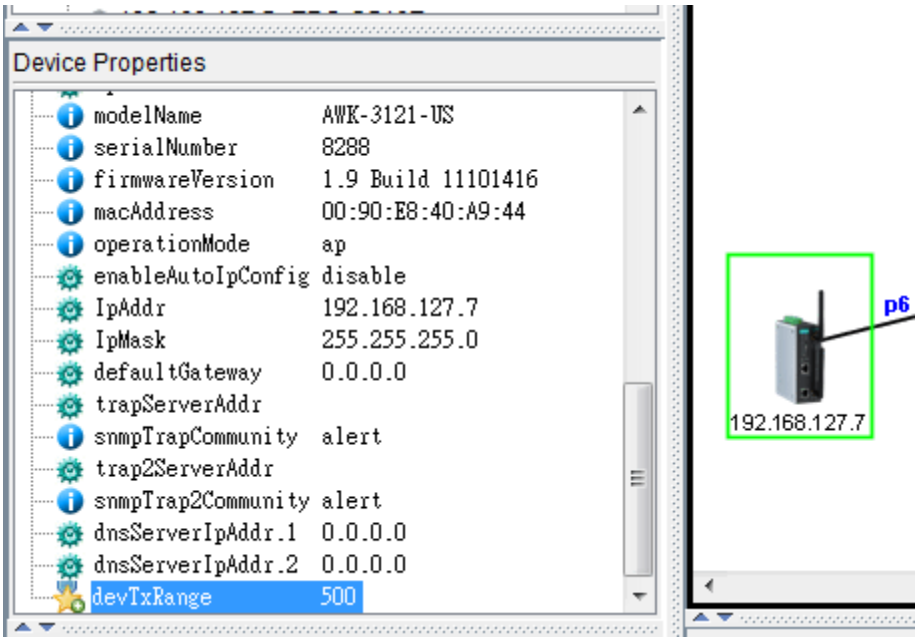


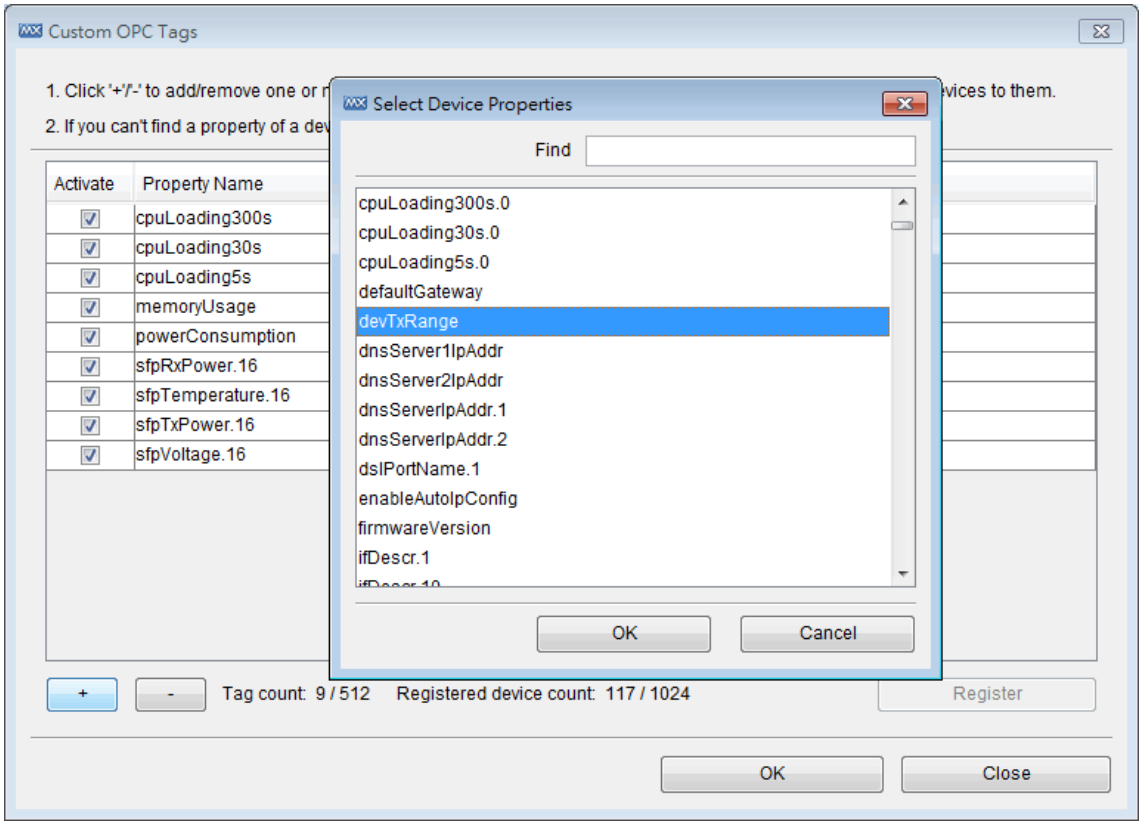
4. Select **MIB → OID Import Manager**
5. Click **Add** and select the specific OID
6. Assign this OID to selected devices
7. The new OID appears in the **Devices Properties List**
8. The property "devTxRange" is shown in the properties list and can be transferred to an OPC tag


OID Import Manager
List of Polling OIDs
Name
Value
Show Details
Assign
Add
Modify Name
Delete
Close


Add a New Polling OID
File
awk3121 (1)
swMgmt (1)
overview (1)
basic (3)
wireless (5)
devTable (1)
devEntry (1)
devIndex (1)
devChannelA (2)
devChannelB (3)
devChannelG (4)
devChannelListA (5)
devChannelListB (6)
devChannelListG (7)
devRFtype (8)
devCountryCode (9)
devTXrateA (10)
devTXrateB (11)
devTXrateG (12)
devTXrateBG (13)
devTXpower (14)
devBeaconInterval (15)
devDTIMinterval (16)
devFragThresh (17)
devRtsthreshold (18)
devTxRange (19)
devTxEnhance (20)
devTxAntenna (21)
Name
devTxRange
OID
Index
1.3.6.1.4.1.8691.15.1.1.5.1.1.19
1
Operation
Get
Test
SNMP v1
Name
Value
OID Description
VALUE devTxRange OBJECT-TYPE (
Syntax: INTEGER (500..11000)
Access: read-write
Status: current
Description: Transmission distance
)
::= 1.3.6.1.4.1.8691.15.1.1.5.1.1.19
Add
Cancel


Assign Polled Devices
Name
devTxRange
OID
.1.3.6.1.4.1.8691.15.1.1.5.1.1.19.1
All
List of Devices
192.168.127.1 (192.168.127.1--ICS-G7852A-4XG)
192.168.127.2 (192.168.127.2--IKS-6728-8PoE)
192.168.127.3 (192.168.127.3--EDS-G516E)
192.168.127.4 (192.168.127.4--EDS-G516E)
192.168.127.5 (192.168.127.5--EDS-G516E)
192.168.127.6 (192.168.127.6--EDS-G516E)
192.168.127.8 (192.168.127.8--VPort 36-1MP)
192.168.127.9 (192.168.127.9--NPort S8000)
192.168.127.10 (192.168.127.10--IEX-402-SHDSL)
192.168.127.11 (192.168.127.11--IEX-402-SHDSL)
192.168.127.12 (192.168.127.12--EDR-810)
192.168.127.13 (192.168.127.13--MGate MB3170)
192.168.127.20 (192.168.127.20--ICMP Device)
Add
Add All
Remove
Remove All
List of Selected Devices
192.168.127.7 (192.168.127.7--AWK-3121)
Assign
Cancel


Device Properties
modelName AWK-3121-US
serialNumber 8288
firmwareVersion 1.9 Build 11101416
macAddress 00:90:E8:40:A9:44
operationMode ap
enableAutoIpConfig disable
IpAddr 192.168.127.7
IpMask 255.255.255.0
defaultGateway 0.0.0.0
trapServerAddr
snmpTrapCommunity alert
trap2ServerAddr
snmpTrap2Community alert
dnsServerIpAddr.1 0.0.0.0
dnsServerIpAddr.2 0.0.0.0
devTxRange 500
p6
192.168.127.7


Custom OPC Tags
1. Click '+'/'-' to add/remove one or r
vices to them.
2. If you can't find a property of a dev
Activate
Property Name
cpuLoading300s
cpuLoading30s
cpuLoading5s
memoryUsage
powerConsumption
sfpRxPower.16
sfpTemperature.16
sfpTxPower.16
sfpVoltage.16
Select Device Properties
Find
cpuLoading300s.0
cpuLoading30s.0
cpuLoading5s.0
defaultGateway
devTxRange
dnsServer1IpAddr
dnsServer2IpAddr
dnsServerIpAddr.1
dnsServerIpAddr.2
dslPortName.1
enableAutoIpConfig
firmwareVersion
ifDescr.1
OK
Cancel
+
-
Tag count: 9 / 512
Registered device count: 117 / 1024
Register
OK
Close

9

Event and Notification

The following topics are covered in this chapter:

- **Monitoring Methods**
  - Monitoring via SNMP Trap Messages
  - Monitoring via Periodic Polling
  - Color Coding Indicates Problems
- **Event Recovery**
- **Severity Level**
- **Custom Events**
- **Recent Events**
- **Event History**
- **Notification**
  - Add an SMS Action
  - Add an Email Action
  - Add an SNMP Trap
  - Add a Mobile Notification
  - Add a Sound
  - Add an External Program
  - Add a Message Box
- **Syslog Event**
- **Network Event Playback**
  - Enable Playback Mode
  - Enter Playback Mode
  - Time Mode and Event Mode
  - Overview of Playback User Interface

Monitoring Methods

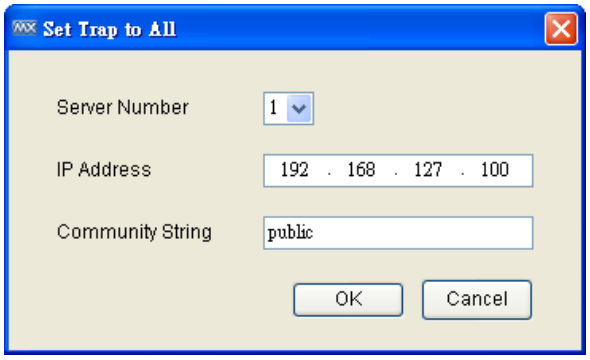
Monitoring can be conducted using SNMP trap messages, periodic SNMP polling, periodic ICMP polling, or color coding, as described in the following subsections.

Monitoring via SNMP Trap Messages

By using the MXview server as a trap destination of a device, events associated with the device will be sent to the server in real time, and can be seen by remote clients.

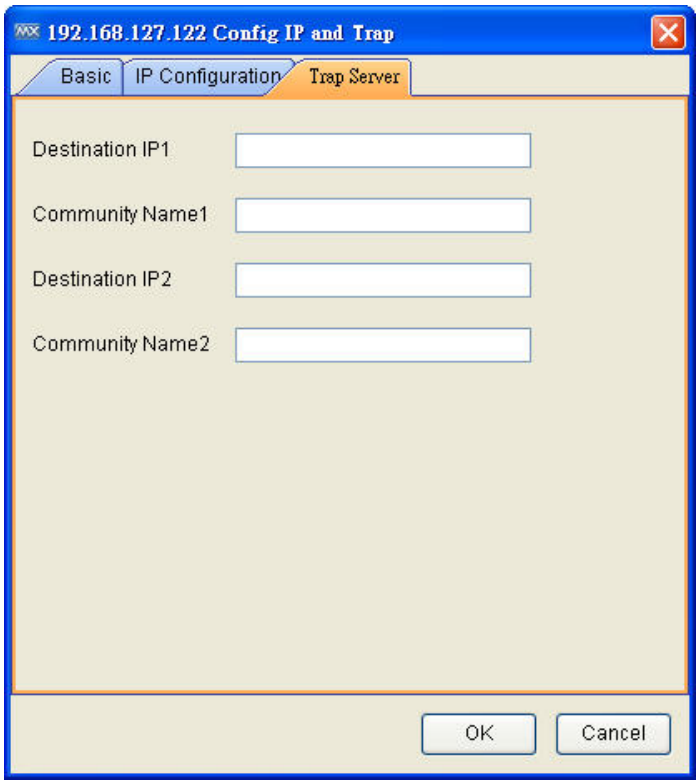
Take the following steps to set the trap destination of all devices:

1. Select **Tools → Set Trap Server to All**
2. Enter the IP address of the MXview server and the community string.



Take the following steps to set the trap destination of one device:

1. Select **Device→ Maintenance→ Configure IP & Trap**
2. Choose tab **Trap Server**
3. Enter the IP address of the MXview server and community string



The event types include port link up/down, power on/off, topology change, and configuration change.

Each discovered device will be monitored automatically by trap once its trap destination is configured correctly.

Monitoring via Periodic Polling

After a device has been discovered, MXview polls the status of the device's active port periodically. Keep in mind that since trap messages are transmitted by UDP protocol, there is no absolute guarantee that the messages will be received. What periodic polling does is provide a higher level of reliability for monitoring devices.

With periodic polling, MXview can passively monitor the device's SNMP service, bandwidth utilization, error packet rate, and collision rate. MXview can also actively monitor device availability through ICMP polling. MXview pings devices every 10 seconds, and calculates average availability in 24 hours.

Separate thresholds can be used for bandwidth utilization, error packet rate, collision rate, and device availability, respectively. When any of these thresholds are surpassed, the device will indicate that an event has occurred.

Color Coding Indicates Problems

When a link causes a warning to be issued or a critical event occurs (link down, for example), the color of the corresponding link line will change:

When a device causes a warning or a critical event occurs (device failure, for example), the errant device will be indicated with a box with red borders.

In addition, the events will be added to the recent events list.

ID	Source	Severity	Description	Issued Time	User
225	192.168.127.36	Critical	Port 1 Link Down	2009-11-24 21:36:51	
226	192.168.127.34	Critical	Port 2 Link Down	2009-11-24 21:36:52	

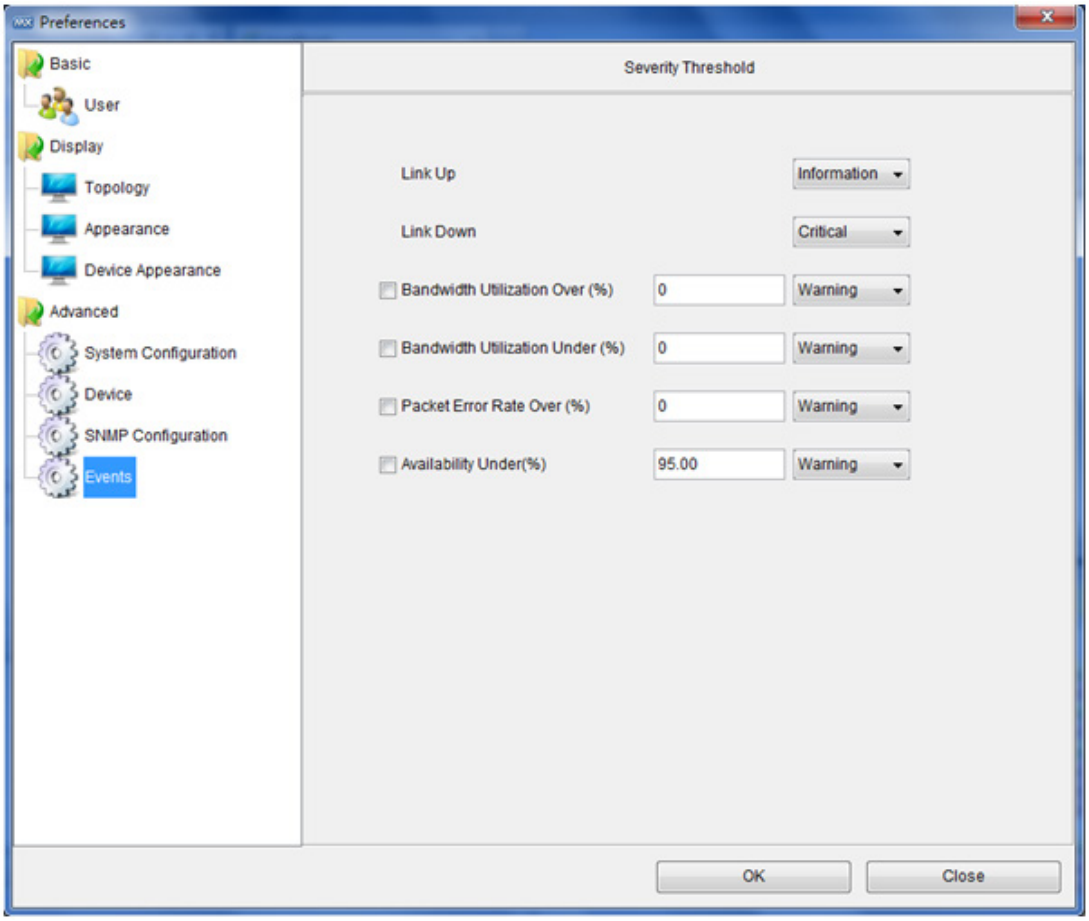
Event Recovery

Events will be recovered automatically when condition that caused the event is resolved.

ID	Source	Severity	Description	Issued Time	User
225	192.168.127.36	Critical	Port 1 Link Down	2009-11-24 21:36:51	
226	192.168.127.34	Critical	Port 2 Link Down	2009-11-24 21:36:52	
227	192.168.127.36	Information	Port 1 Link Down Recovery	2009-11-24 21:38:14	

Severity Level

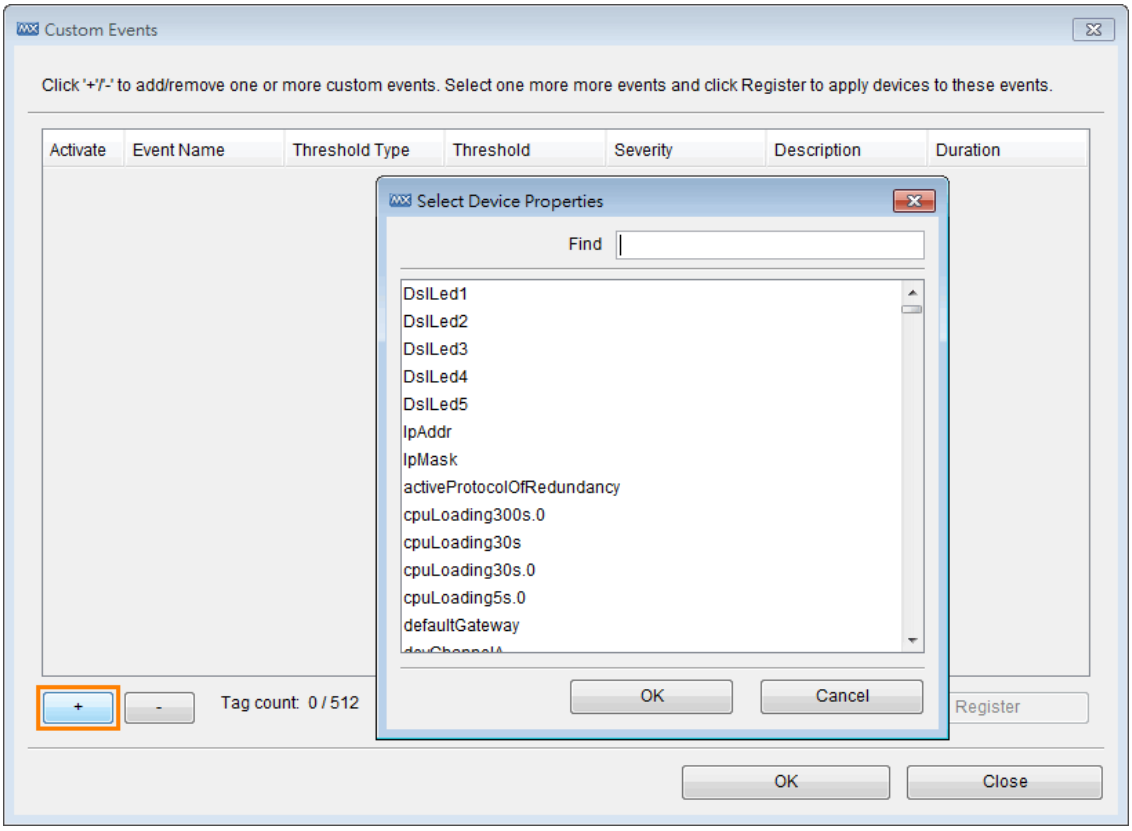
Events can be set to one of three severity levels: critical, warning, or information. The conditions that give rise to a particular severity level can be configured by the user. To configure the severity levels, select **Project → Preferences → Events**, and then modify the settings.

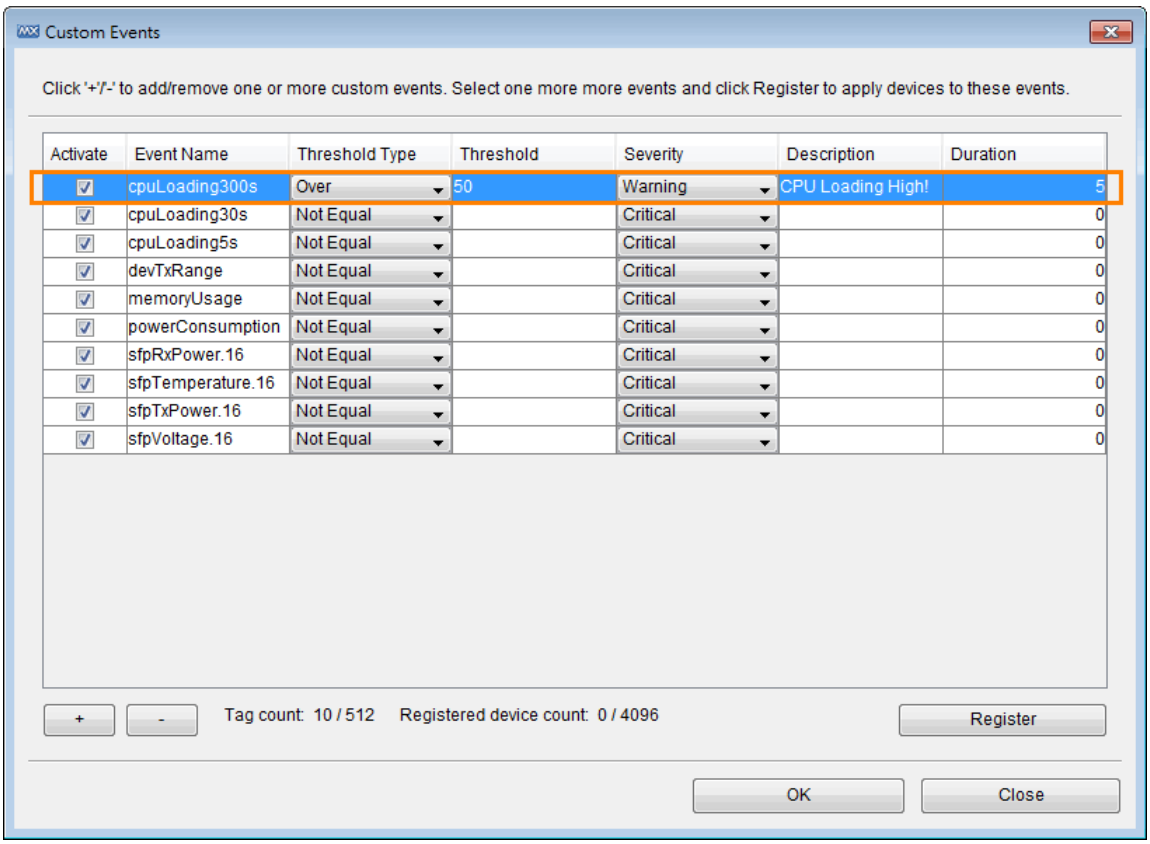


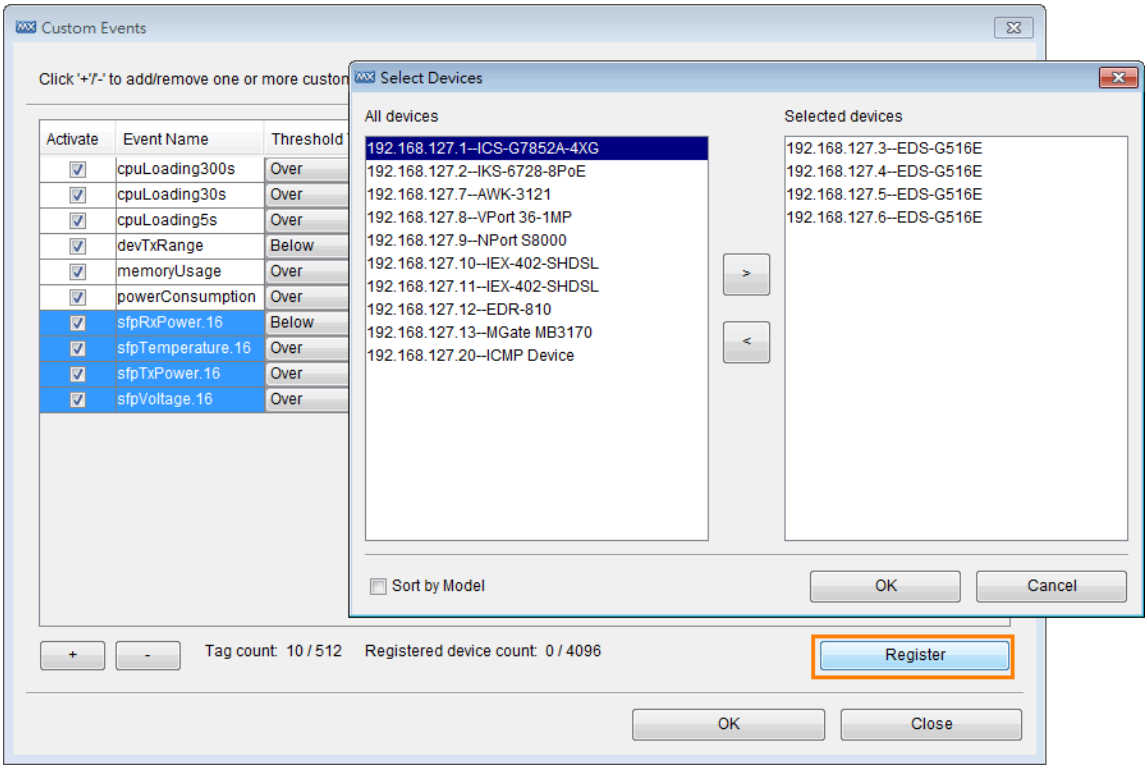
Custom Events

By using the MXview Custom Events, users can define their own events with flexible thresholds, severity, description, and duration.

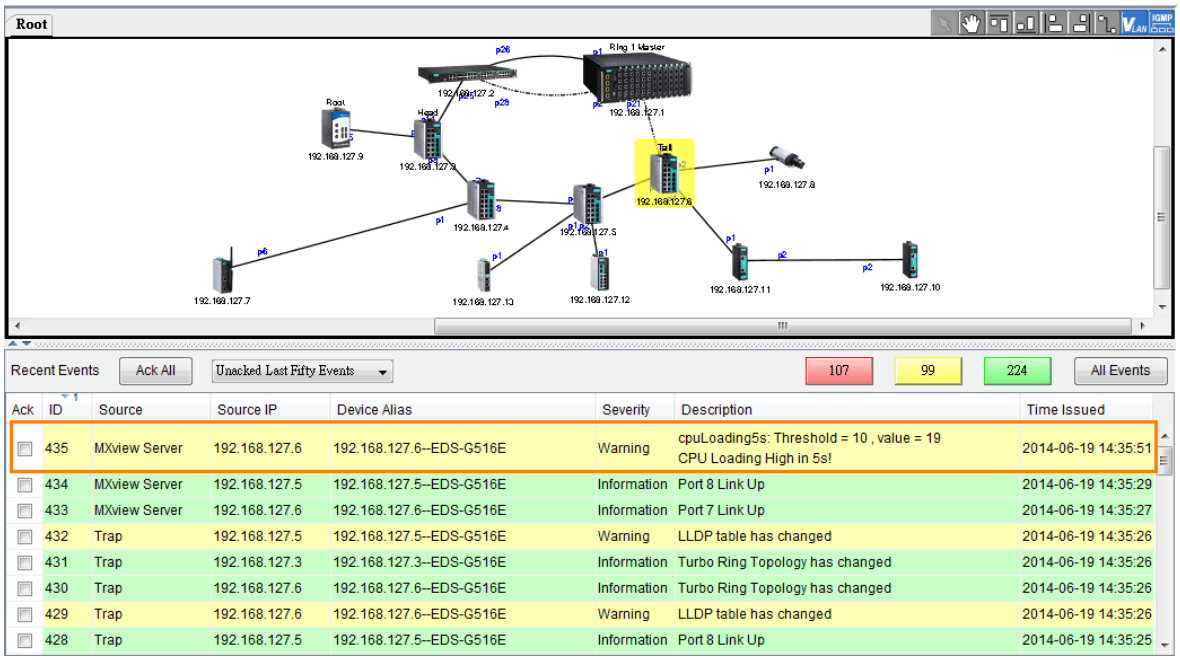
1. Select **Event → Custom Events**
2. Click + to manually add properties into list
3. Set the **Threshold Type**, **Threshold number**, **Severity**, **Description**, and **Duration**
4. Select the properties in the list and click **Register** to implement them on devices
5. It shows **Tag count** and **Registered device count**
6. Click **OK** and finish setting


Custom Events
Click '+'/'-' to add/remove one or more custom events. Select one more more events and click Register to apply devices to these events.
Activate
Event Name
Threshold Type
Threshold
Severity
Description
Duration
Select Device Properties
Find
DslLed1
DslLed2
DslLed3
DslLed4
DslLed5
IpAddr
IpMask
activeProtocolOfRedundancy
cpuLoading300s.0
cpuLoading30s
cpuLoading30s.0
cpuLoading5s.0
defaultGateway
OK
Cancel
+
-
Tag count: 0 / 512
Register
OK
Close

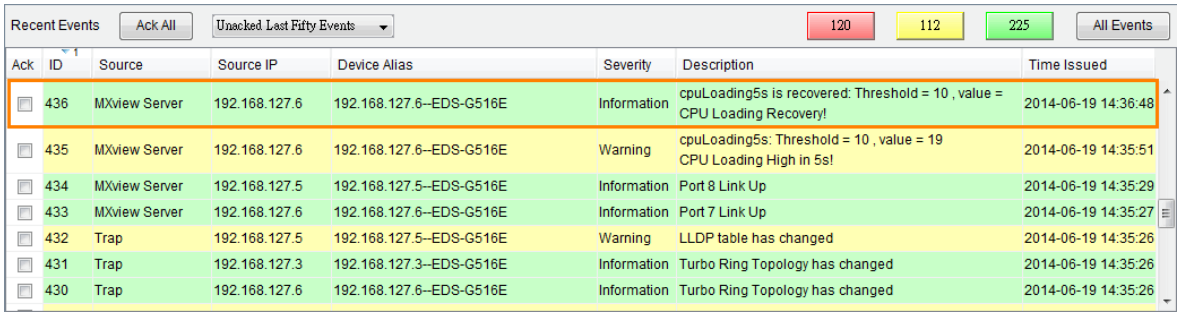

Custom Events
Click '+'/'-' to add/remove one or more custom events. Select one more more events and click Register to apply devices to these events.
Activate
Event Name
Threshold Type
Threshold
Severity
Description
Duration
cpuLoading300s
Over
50
Warning
CPU Loading High!
5
cpuLoading30s
Not Equal
Critical
0
cpuLoading5s
devTxRange
memoryUsage
powerConsumption
sfpRxPower.16
sfpTemperature.16
sfpTxPower.16
sfpVoltage.16
+
-
Tag count: 10 / 512
Registered device count: 0 / 4096
Register
OK
Close



While the events are triggered, they will be shown in the **Recent Events List** and the related devices will be marked in color.



Once the triggered properties are back to normal status, MXview will show recovery events in the **Recent Events List**.

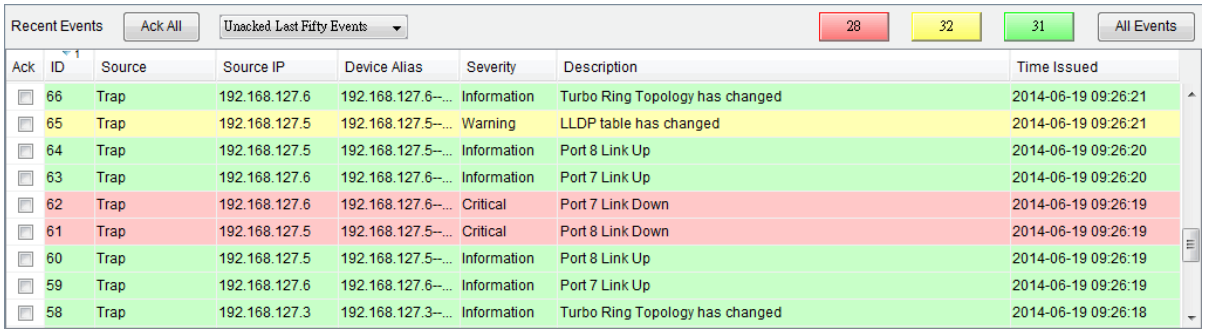


Ack	ID	Source	Source IP	Device Alias	Severity	Description	Time Issued
	436	MXview Server	192.168.127.6	192.168.127.6--EDS-G516E	Information	cpuLoading5s is recovered: Threshold = 10 , value = CPU Loading Recovery!	2014-06-19 14:36:48
	435	MXview Server	192.168.127.6	192.168.127.6--EDS-G516E	Warning	cpuLoading5s: Threshold = 10 , value = 19 CPU Loading High in 5s!	2014-06-19 14:35:51
	434	MXview Server	192.168.127.5	192.168.127.5--EDS-G516E	Information	Port 8 Link Up	2014-06-19 14:35:29
	433	MXview Server	192.168.127.6	192.168.127.6--EDS-G516E	Information	Port 7 Link Up	2014-06-19 14:35:27
	432	Trap	192.168.127.5	192.168.127.5--EDS-G516E	Warning	LLDP table has changed	2014-06-19 14:35:26
	431	Trap	192.168.127.3	192.168.127.3--EDS-G516E	Information	Turbo Ring Topology has changed	2014-06-19 14:35:26
	430	Trap	192.168.127.6	192.168.127.6--EDS-G516E	Information	Turbo Ring Topology has changed	2014-06-19 14:35:26

NOTE The unit of duration is minutes, and only integer values can be set.

Recent Events

MXview shows recent events at the bottom of the Dashboard.

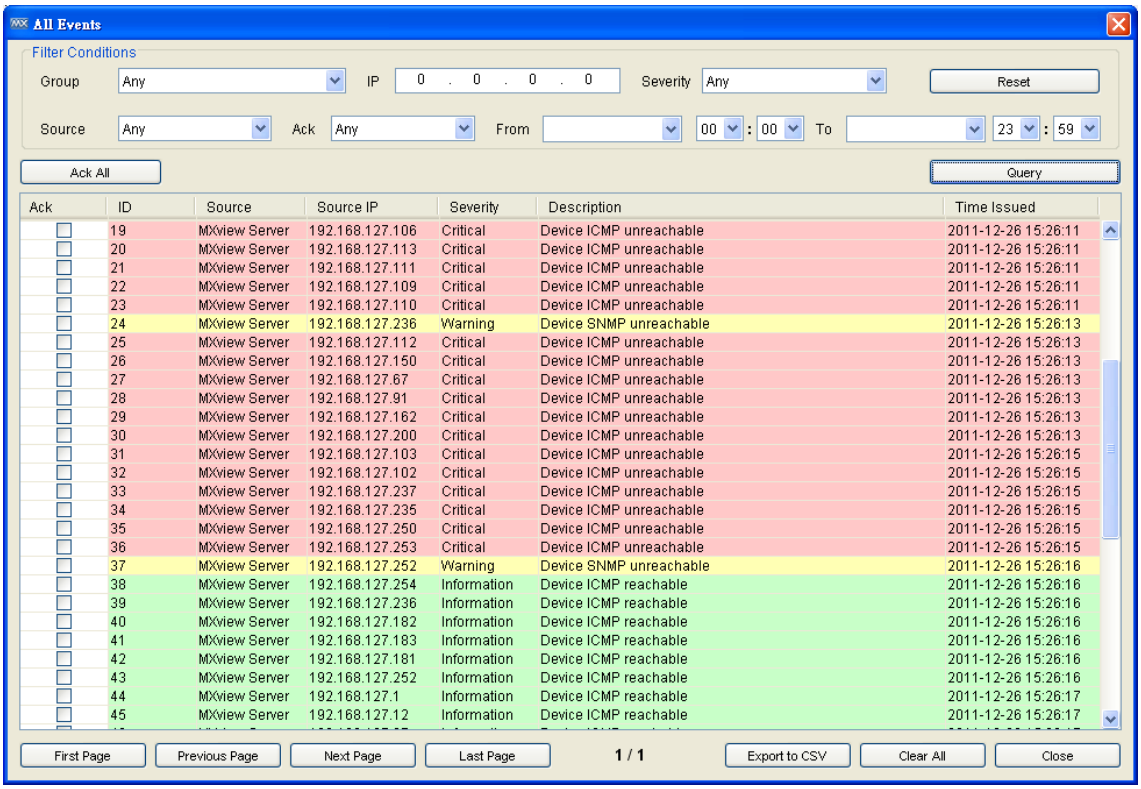


Ack	ID	Source	Source IP	Device Alias	Severity	Description	Time Issued
	66	Trap	192.168.127.6	192.168.127.6--...	Information	Turbo Ring Topology has changed	2014-06-19 09:26:21
	65	Trap	192.168.127.5	192.168.127.5--...	Warning	LLDP table has changed	2014-06-19 09:26:21
	64	Trap	192.168.127.5	192.168.127.5--...	Information	Port 8 Link Up	2014-06-19 09:26:20
	63	Trap	192.168.127.6	192.168.127.6--...	Information	Port 7 Link Up	2014-06-19 09:26:20
	62	Trap	192.168.127.6	192.168.127.6--...	Critical	Port 7 Link Down	2014-06-19 09:26:19
	61	Trap	192.168.127.5	192.168.127.5--...	Critical	Port 8 Link Down	2014-06-19 09:26:19
	60	Trap	192.168.127.5	192.168.127.5--...	Information	Port 8 Link Up	2014-06-19 09:26:19
	59	Trap	192.168.127.6	192.168.127.6--...	Information	Port 7 Link Up	2014-06-19 09:26:19
	58	Trap	192.168.127.3	192.168.127.3--...	Information	Turbo Ring Topology has changed	2014-06-19 09:26:18

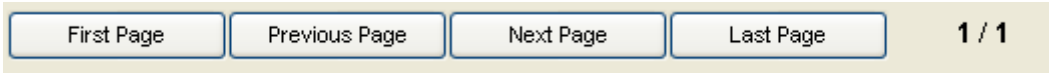
Event History

To show the event history of all devices, select **Event → All** from the menu bar.

To show the event history of a single device, right click the device and select **Events**.



The table contains 40 entries on a page. Use the page controls at the bottom to navigate between pages.



You can sort the table by clicking the header cells.

To filter the table, use the selection box of the header cell and select a value.

NOTE The sorting and filtering functions only affect table entries currently showing on the screen. They do not regenerate the entire table. This remains true even if there are currently fewer than 40 entries showing.

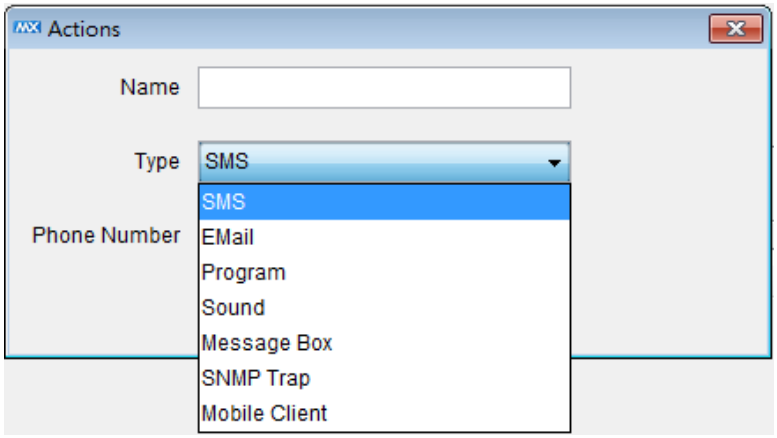
You can export all events to a CSV file, or delete all events from the database.

Notification

You can associate an action, such as send a text message, send an email, make a sound, or run an external program, with a combination of a type of event, a source IP address, and a severity level.

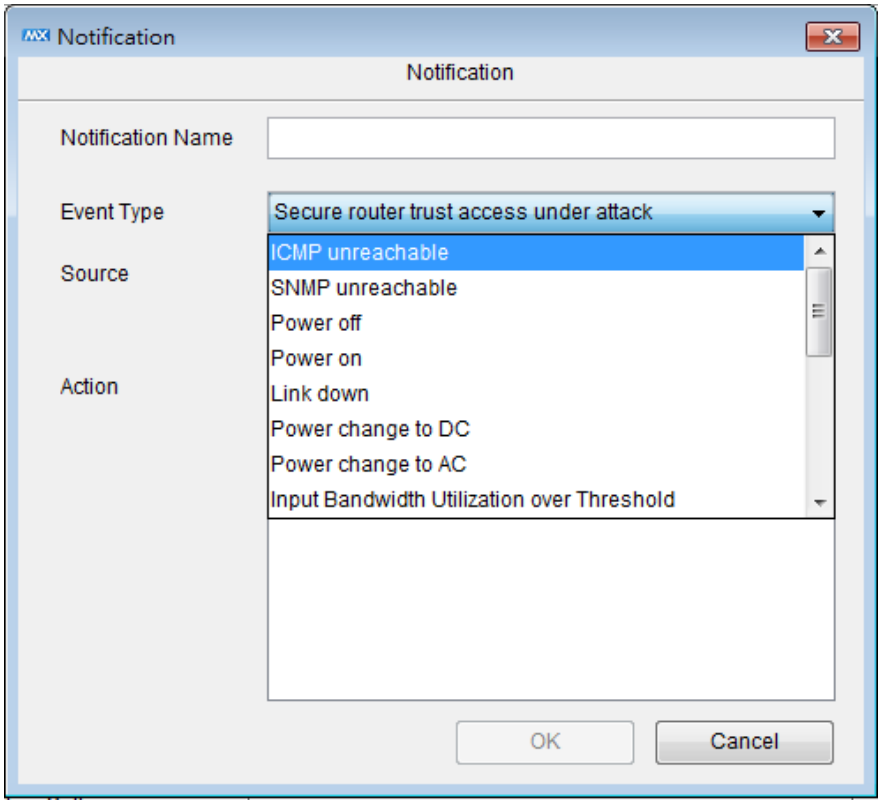
There are 7 actions:

- SMS – send a SMS text message
- Email – send an email
- Program – run an external program
- Sound – make a sound
- Message Box – show a message box
- SNMP Trap – send a SNMP trap to other SNMP trap server
- Mobile Client – send a push notification to mobile devices



There are 19 event types:

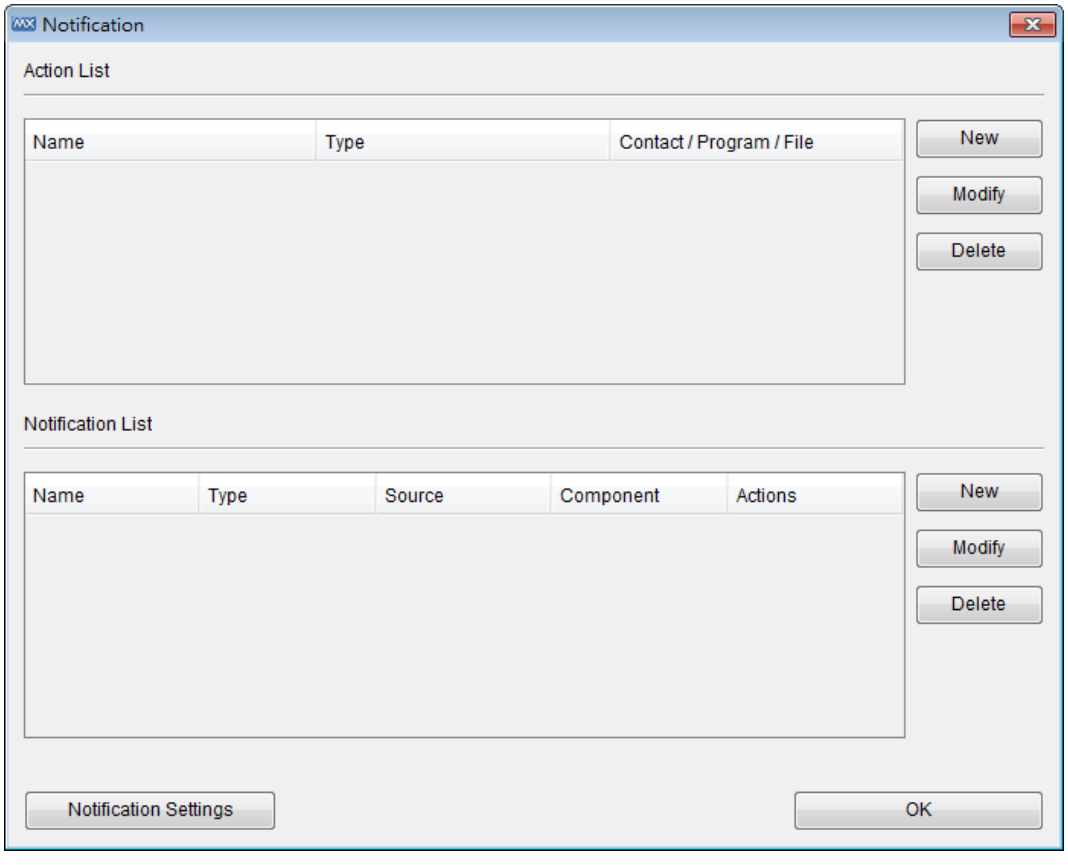
- ICMP unreachable
- SNMP unreachable
- Power off
- Power on
- Link down
- Power change to DC
- Power change to AC
- Input Bandwidth Utilization over Threshold
- Input Bandwidth Utilization under Threshold
- Output Bandwidth Utilization over Threshold
- Output Bandwidth Utilization under Threshold
- Input Packet Error Rate over Threshold
- Output Packet Error Rate over Threshold
- Device availability under Threshold
- A custom event is triggered
- A custom event is recovered
- Secure router under DDoS attack
- Secure router firewall under attack
- Secure router trust access under attack



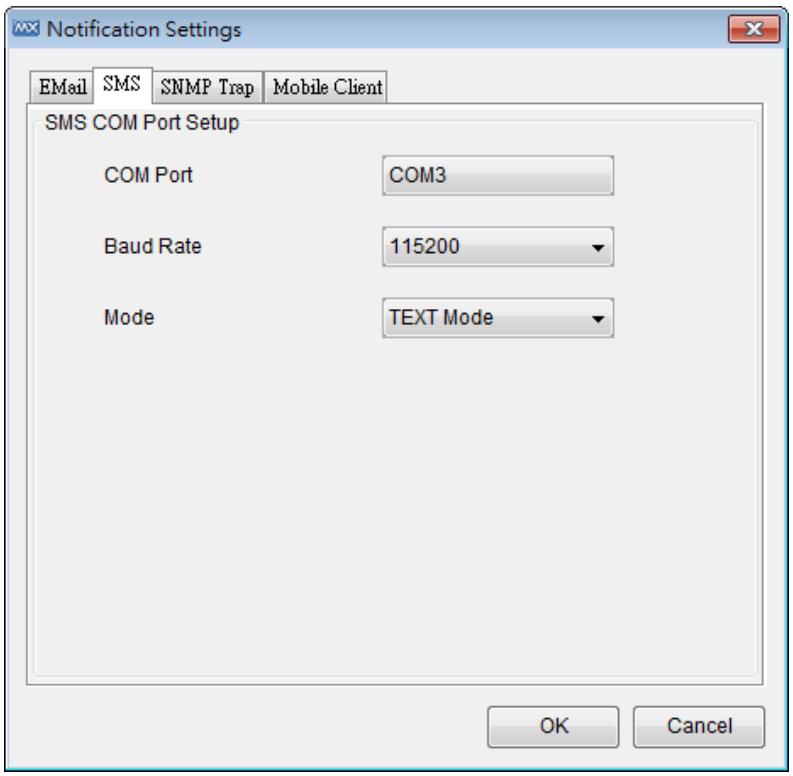
Add an SMS Action

To send an SMS notification, first connect an SMS modem, such as the Moxa Oncell, to an MXview Server COM port. Take the following steps to configure SMS notification:

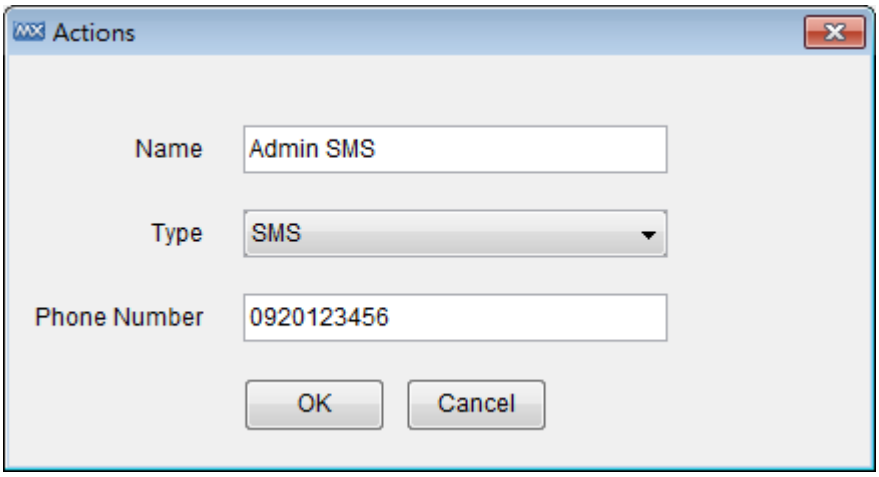
1. Select **Event → Notification.**



2. Click **Notification Settings.**

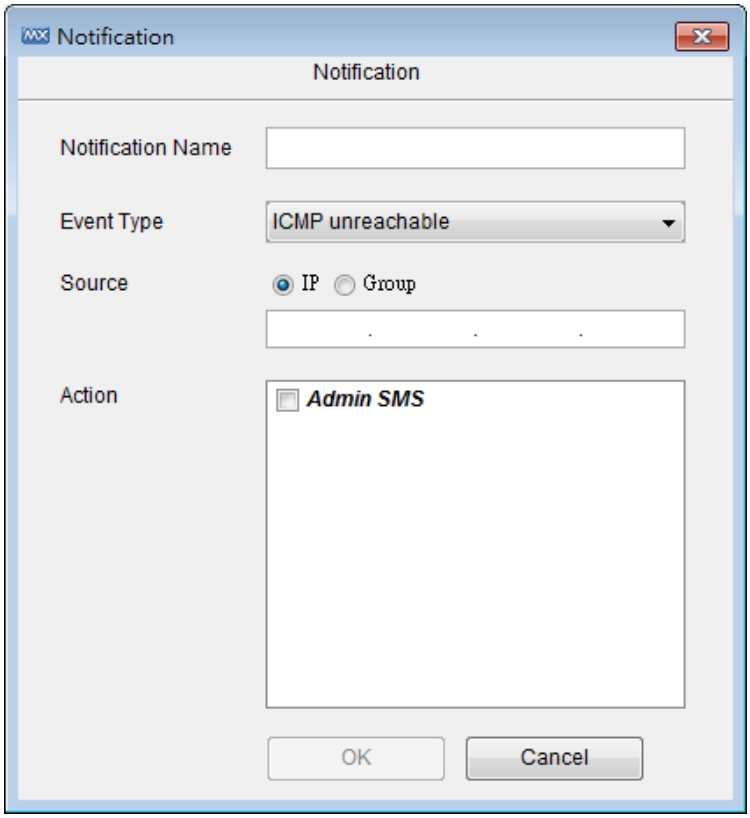


3. Turn to SMS page. Select the COM port, Baud Rate, and Mode to which the modem is connected, and then click **OK.**
4. Click **New** in the Action List.
5. Select SMS as the type, type the phone number, give the action a name, and then click **OK.**



6. Click **New** in the Notification List.

7. Select the action just added and the corresponding event type, source IP.

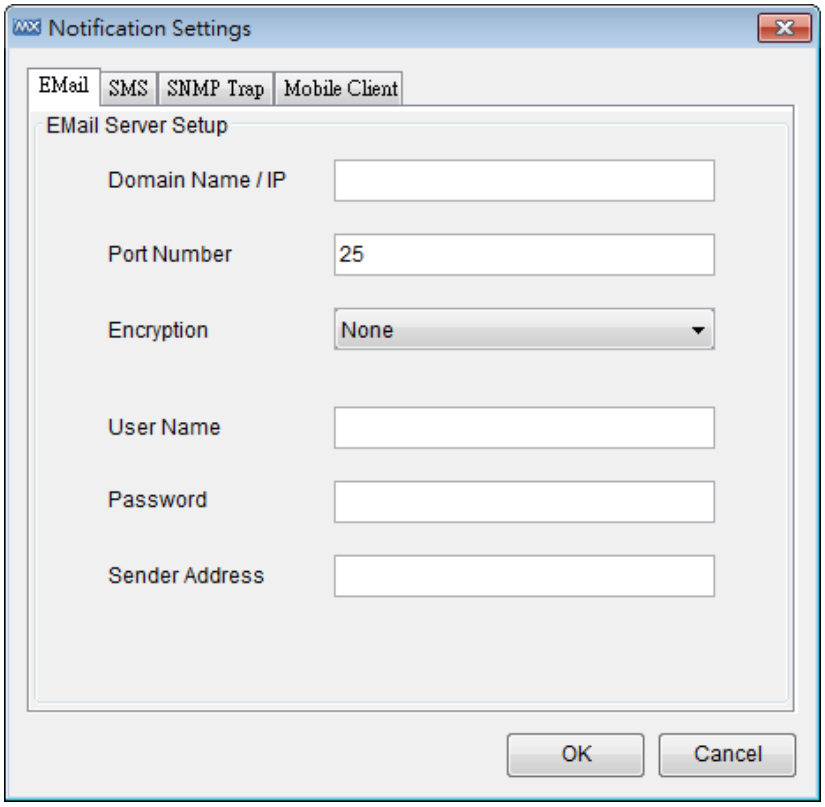


8. Click **OK**.

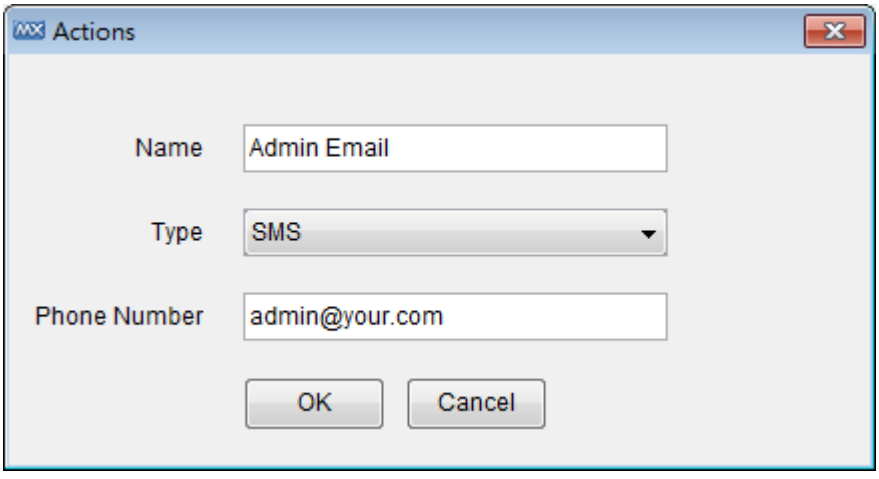
Add an Email Action

Take the following steps to configure the Email (SMTP) server to send an Email notification:

1. Select **Event → Notification.**
2. Click **Notification Settings.**



3. Turn to Email page. Input the SMTP server that can send an e-mail and the user name and password needed to log in to the server, and then click **OK**.
4. Click **New** in the Action List.
5. Select **Email** as the type, type the email address, give the action a name, and then click **OK**.

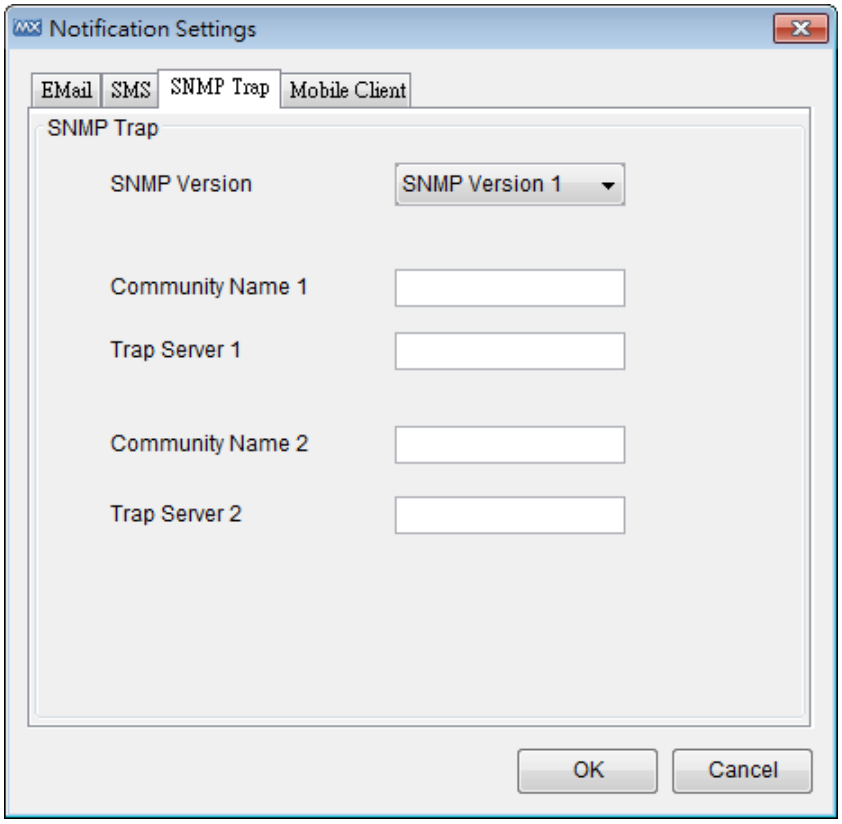


6. Click **New** in the Notification List.
7. Select the action just added and the corresponding event type, source IP.
8. Click **OK**.

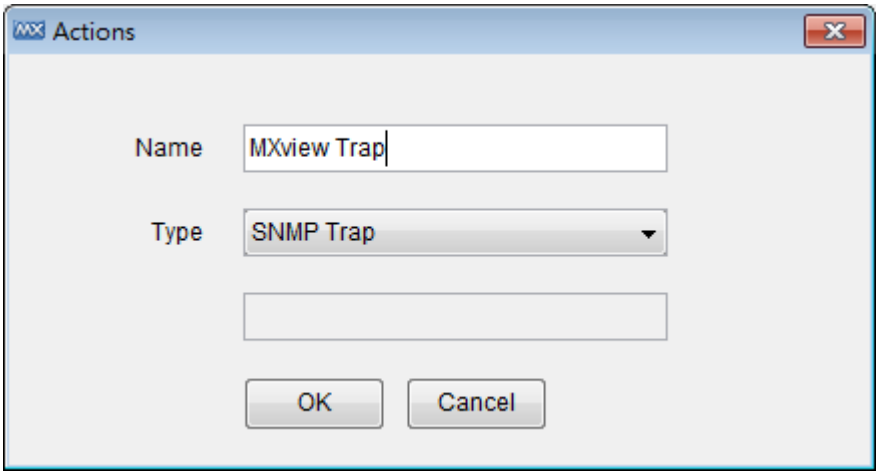
Add an SNMP Trap

MXview can collaborate with other network management software, and send SNMP Traps to third-party NMSes. MXview supports up to two trap servers. Take the following steps to add an SNMP Trap:

1. Select **Event → Notification.**
2. Click **Notification Settings.**



3. Click the **SNMP Trap** tab. Enter the SNMP version and trap server information, and then click **OK**.
4. Click **New** in the Action List.
5. Select SNMP Trap as the Type, give the action a name, and then click **OK**.

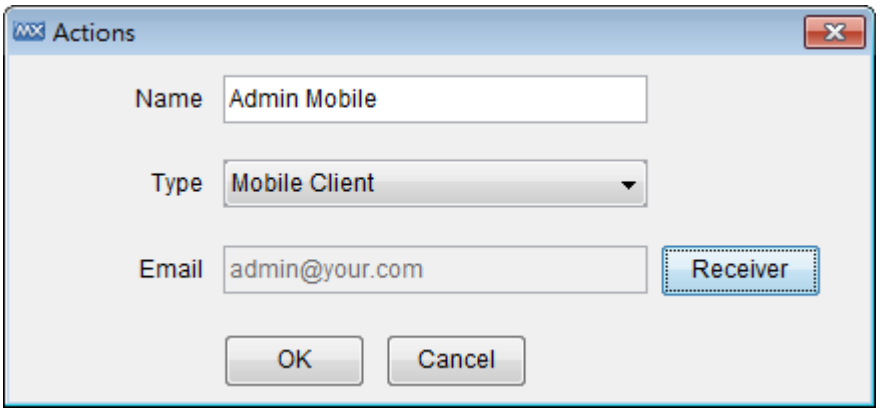


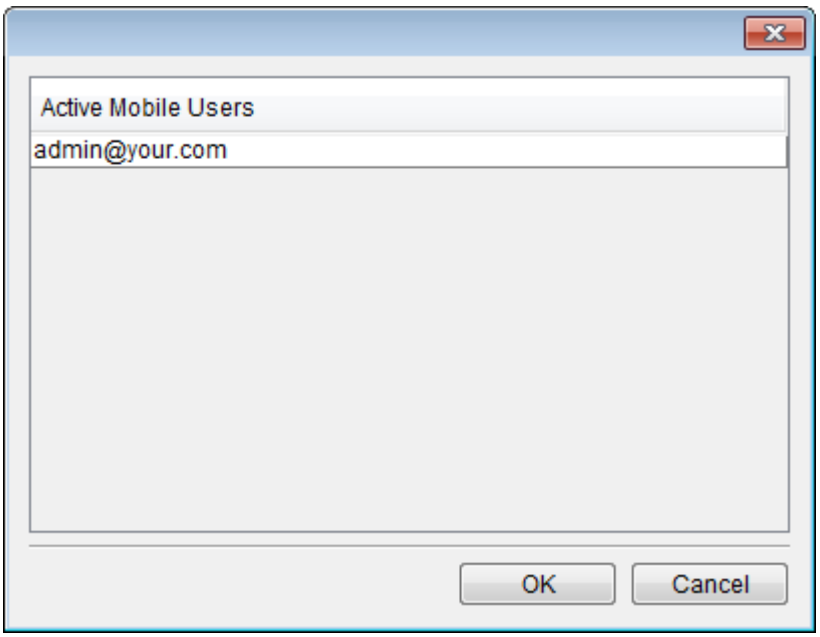
6. Click **New** in the Notification List.
7. Select the action just added and the corresponding event type, source IP.
8. Click **OK**.

Add a Mobile Notification

MXview can send mobile notifications through Apple APNS or Google C2DM with Moxa's mobile APP *MXview ToGo*.

1. Select **Event → Notification.**
2. Click **New** in Action List.
3. When the **Actions** window opens, type in a **Name** and select **Mobile Client** as the type.
4. Click **Receiver** to select an Email as identification.
5. Click **OK.**





6. Click **New** in Notification List.
7. Type in a **Notification Name**, select **Event Type**, enter **Source IP**, and click the **Actions**.
8. Click **OK**.

NOTE This function should be used with Moxa's mobile APP *MXview ToGo*. After setting an Email as identification in *MXview ToGo* and connecting to MXview Server, you will be able to find the Email in the **Receiver** list.

NOTE Using Mobile Notification should give MXview server the capability to connect to Apple APNS or Google C2DM. Please allow the following outgoing ports in your firewall policies:

- Google: 5228, 5229, and 5230
- Apple: 443, 2194, 2195, and 5223

NOTE Use the following commands to review communication between MXview server and Apple APNS or Google C2DM:

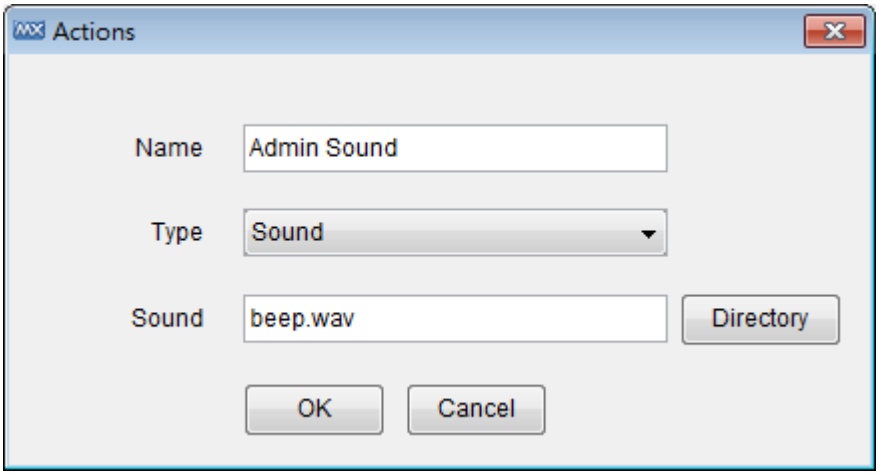
- telnet gcm.googleapis.com 5228
- telnet gateway.sandbox.push.apple.com 443

NOTE The Apple APNS certificate should be renewed annually. Please check Moxa's website for latest APNS certificate.

Add a Sound

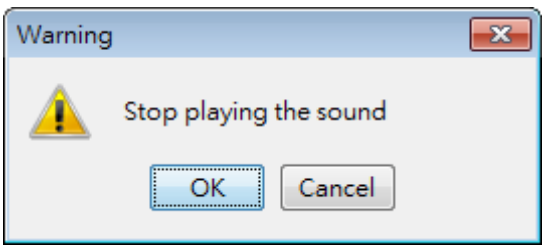
When a sound notification is triggered, the MXview server will play the associated sound file. The sound will play repeatedly until some stops it manually. Take the following steps to add a sound:

1. Select **Event → Notification.**
2. Click **New** in Action List.
3. Select Sound as the type, select a file from the local computer, give the action a name, and then click **OK**. The file will be uploaded to the MXview server.



4. Click **New** in the Notification List.
5. Select the action just added and the corresponding event type, source IP.
6. Click **OK.**

When an associated event occurs, the sound file will be played and a window will pop up:



The sound will not stop until someone clicks **OK**.

NOTE When more than one event occurs, the sound file corresponding to the first event will be played first, and the sounds corresponding to subsequent events will be queued. After first sound is stopped, the next sound in the queue will be played.

NOTE Only the wav format is supported.

Add an External Program

When a program notification is triggered, the MXview server will execute the associated program. Take the following steps to add a program:

1. Select **Event → Notification**.
2. Click **New** in the Action List.
3. Select Program as the type, select a file from the local computer, give the action a name, and then click **OK**. The file will be uploaded to the MXview server.
4. Click **New** in the Notification List.
5. Select the action just added, the corresponding event type, and the source IP.
6. Click **OK**.

When an associated event occurs, the program file will be executed.

Add a Message Box

When a message box notification is triggered, the MXview server will display the message box. You can create a new message box by following the steps below:

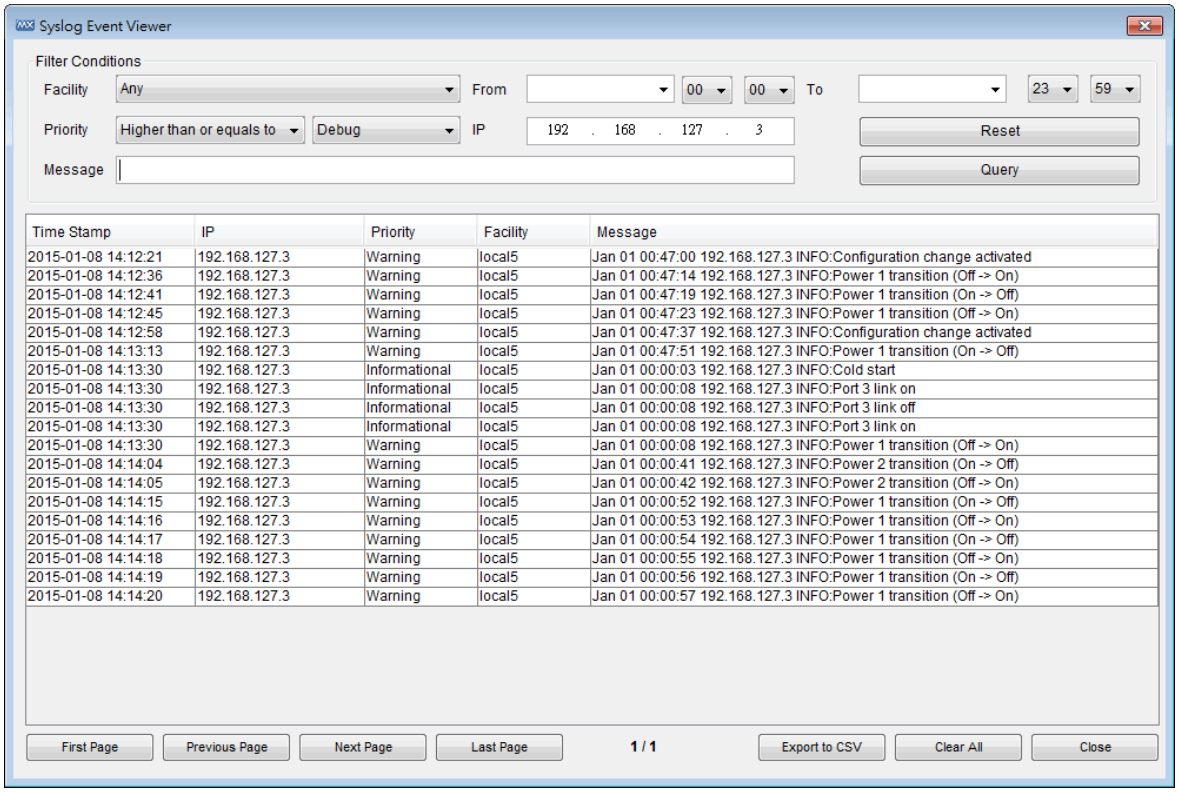
1. Select **Event → Notification**.
2. Click **New** in the Action List.
3. Select **Message Box** as the type, give the action a name, and then click **OK**.
4. Click **New** in the Notification List.
5. Select the action just added, the corresponding event type, and the source IP.
6. Click **OK**.

When an associated event occurs, the system will show the message box.

Syslog Event

MXview can act as a Syslog Event Server with Syslog Event Viewer. Take the following steps to use the viewer to check all syslog events:

1. Select **Event → Syslog Event Viewer**
2. Enter **Filter Conditions**
3. Click **Query**



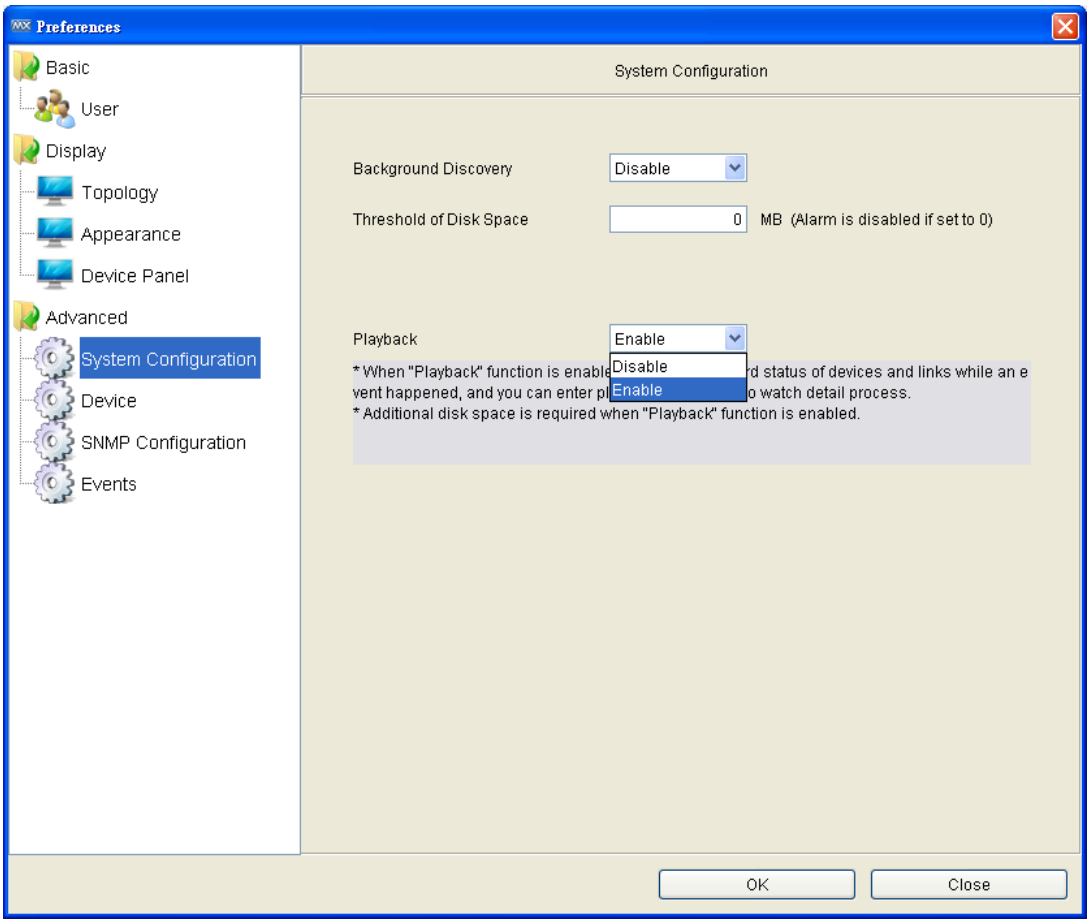
Network Event Playback

Whenever MXview detects that a device under its management is experiencing an event, such as link down, MXview will update the device status in the topology map. Moreover, MXview will keep records of status changes in a database for up to 30 days, and provides an interface that allows users to go back and check network status from any time within 30 days in a visualized way.

Enable Playback Mode

The playback mode is disabled by default. To enable it:

1. Select **Project → Preferences**
2. Click **System Configuration**, choose **Enable** for Playback



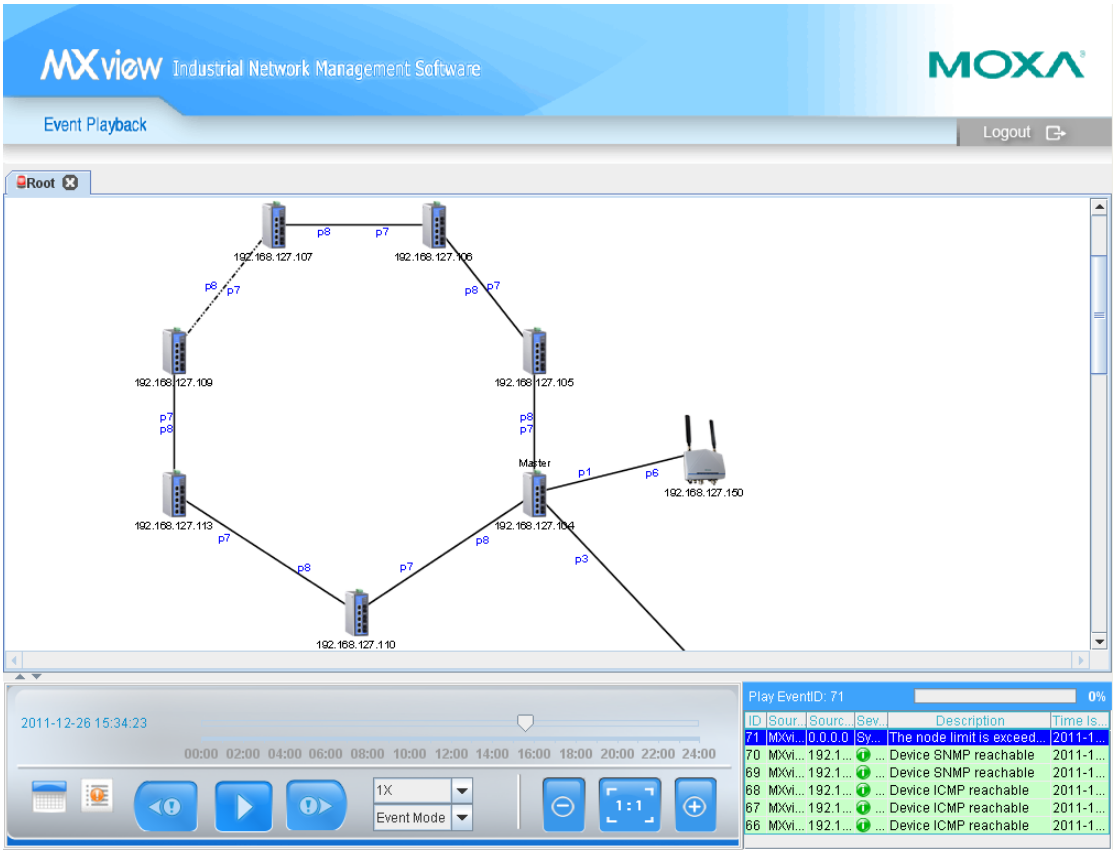
Enter Playback Mode

To enter the playback mode, choose Playback as operation mode at the index page.

Time Mode and Event Mode

There are two event playback modes. In time mode, MXview will replay the event on the topology map on a second-to-second basis. In event mode, MXview will replay event by event. Users can select playback speeds from 1X to 16X.

Overview of Playback User Interface



- **Topology map**
  The topology map displays the network status at the time indicated in the time indicator.
- **Event List and All Event button**
  The events surrounding the current displayed event are displayed in this window. The most recent event is highlighted. Click **All Events** to access an all events search box, with filters. In the filtered results, you can click on a filtered event to jump straight to that event in the playback.
- **Control pane**
  The control pane includes a time indicator, time slider, and calendar, which correspond to the network currently displayed on the topology map.

Users can slide to the time point they would like to check. The slider covers 24 hours in the selected date. To change the date, users can click on the calendar and choose a different date.

10

Traffic Reporting

MXview compiles traffic statistics for devices running on the network. The statistics are used to create reports that show trend utilization and performance of the device interfaces. Statistics are complied for the following items:

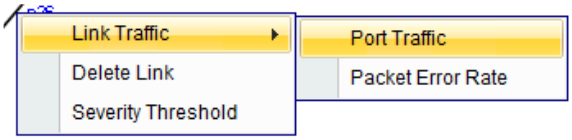
- Traffic utilization (%)
- Error packet rate (%)

Events will be generated when one of these items is above or below the corresponding thresholds.

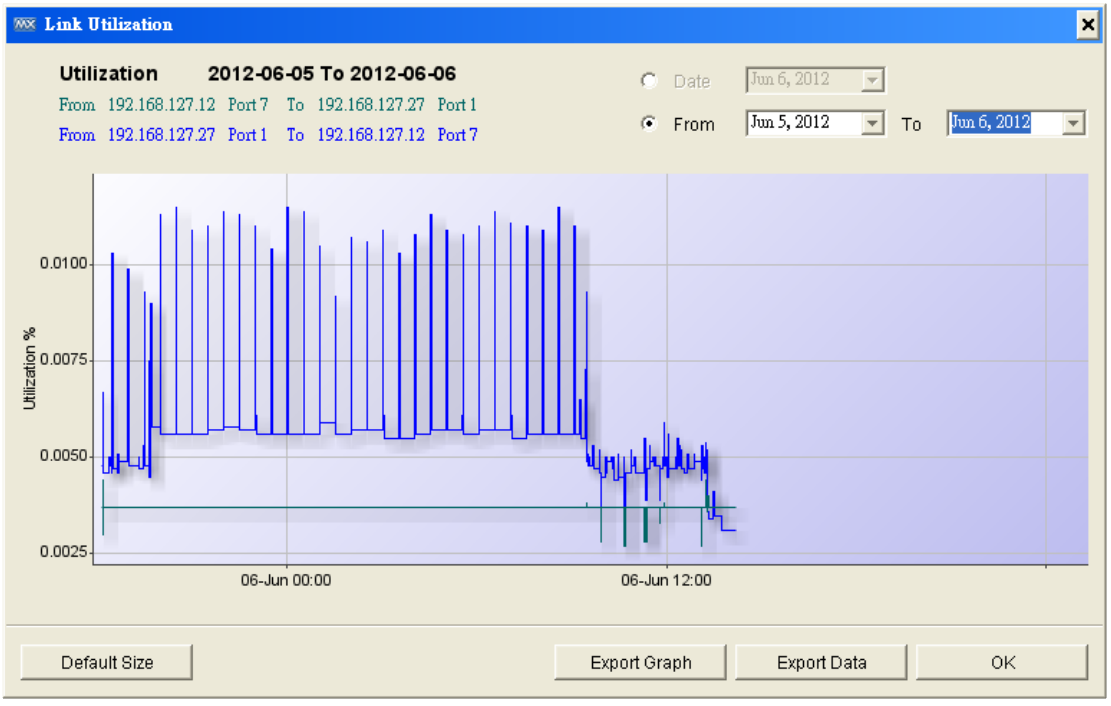
Checking the Trend

Before MXview can collect traffic statistics between two devices, a link must be created (see the section "Adding a Link" in chapter 8 to see how to add a link).

Right-click on a link, then choose **Link Traffic**, and choose either **Port Traffic** or **Packet Error Rate** monitoring mode.



In Port Traffic mode, the graph shows the utilization percentage by a specific time period. You can define your time period at the window's top right corner. The minimum interval is one day.



The Y-axis scale (percentage) is adjustable, and is accurate to 4 decimal points. To change the Y-axis scale, you just need to roll your mouse wheel down or up. No matter what scale you change it to, you can press the **Default Size** to restore graph scale back to the original setting.

The data shown here can be exported. At the bottom of the window, you can export the graph as a PNG file or export the data as a CSV file.

The interface for **Packet Error Rate** and **Port traffic** monitoring is identical.

Threshold & Event Notification

The traffic conditions below can trigger events:

1. Bandwidth utilization is over a threshold.
2. Bandwidth utilization is under a threshold.
3. Packet error rate is over a threshold.

Since a link is bidirectional, the event will be triggered when one of the directions satisfies any event's trigger condition.

To learn how to change the threshold, refer to **Monitoring Methods → Color Coding Indicates Problems → Severity Level** in Chapter 9.

To learn how to configure notification, refer to **Monitoring Methods → Color Coding Indicates Problems → Notification** in Chapter 9.

11

Device Management

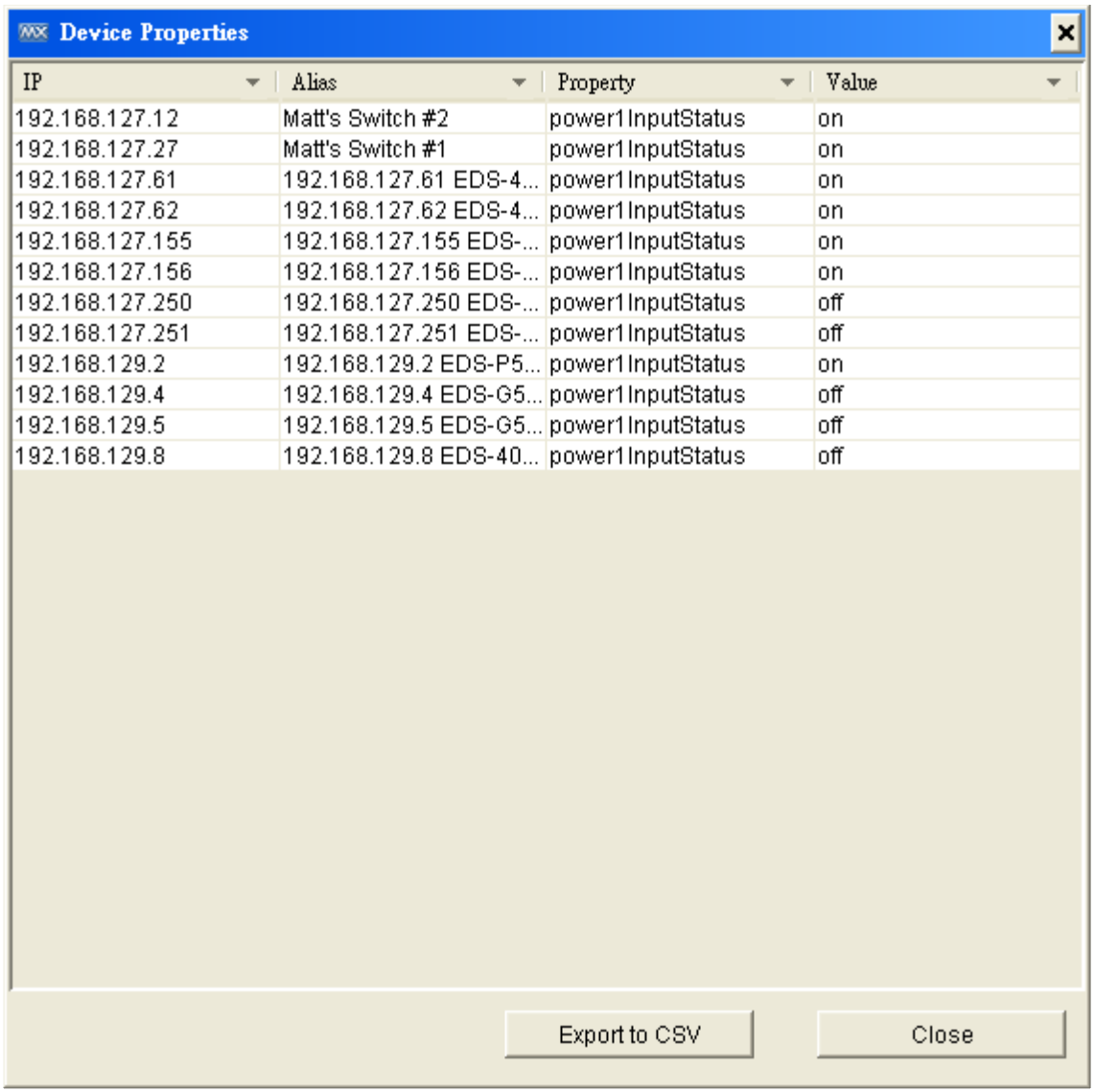
The following topics are covered in this chapter.

- **Device Properties**
- **Device Virtual Panel**
- **Changing Device Properties**
- **Assign Icon**
- **Web Console Login**
- **Management Interface**
- **Configuration Backup and Restoration (Moxa devices only)**
- **Firmware upgrade**
- **Refresh Status**
- **Mass Operation Configuration Export/Import and Firmware Upgrade**
  - Export Configurations from Multiple Devices
  - Import a Configuration to Multiple Devices
  - Upgrade Firmware on Multiple Devices
  - Scheduled Configuration Export/Import
  - Configuration Change History and Comparison
- **Device and Inventory Report**

Device Properties

MXview provides three ways to view device properties.

1. Device Property box in main window
   (see the Device Property List section in chapter 4)
2. Fast Device Property
   Right click on a device in the main screen and click **property**.
   You may select a device and right click on it. Properties that are listed include model name, MAC address, IP address, Netmask, gateway, port type and status, power status, redundancy protocol, SNMP, and ICMP availability.
3. Customizable Device Property
   In the menu bar, select **Information→Device Property**
   Device property provides a highly customizable table to view the device properties in your network. On the top of the window, editable optional items include **IP, Alias, Property** and **Value**.
   By selecting the drop-down menu on each option item, you can filter specific items which you wish to display.
   The p**roperty** item has the same property as an **inventory report** (Refer to the section **Inventory Report** in Chapter 11). As a result, you can use device property to filter out the specific property you want to see.

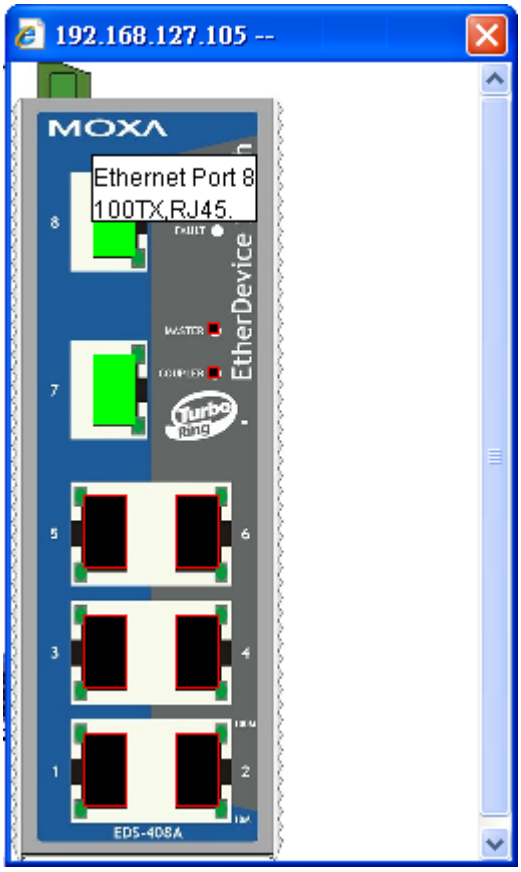


The **Device Property** window is able to export to a CSV file. To do this, simply click the **Export to CSV** button.

Device Virtual Panel

MXview can show the front panel of Moxa switches, and indicate the active status of ports and LED indicators:

Right click on a device and select **Panel**



Changing Device Properties

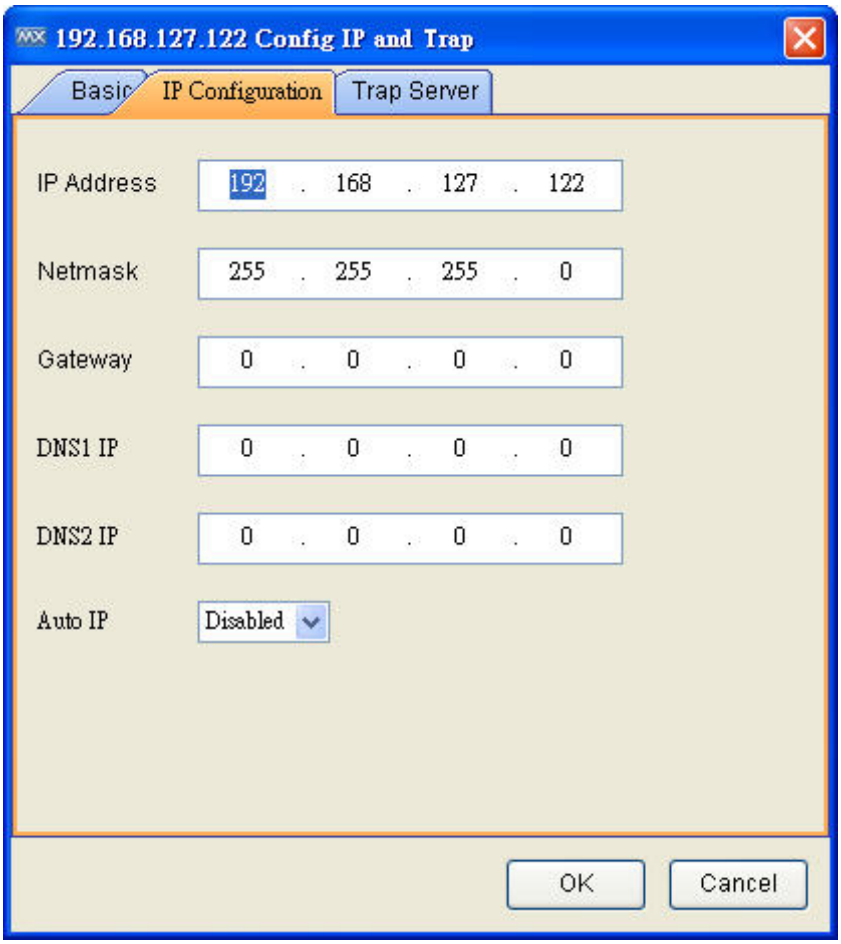
Take the following steps to change a device's location, name, contact, IP, netmask, gateway, trap server, and SNMP configuration:

1. Select a device.
2. Select **Device → Maintenance → Configure IP & Trap.**

Click the **Basic** tab to change the name, location, and contact information for a device. The new values will be written to the device's firmware.

Click the **IP Configuration** tab to change a device's IP address, netmask, gateway, DNS server, and method of obtaining the IP.

Click the **Trap Server** tab to change IP addresses and community strings of trap servers. Moxa switches can send trap messages to at most 2 trap servers.

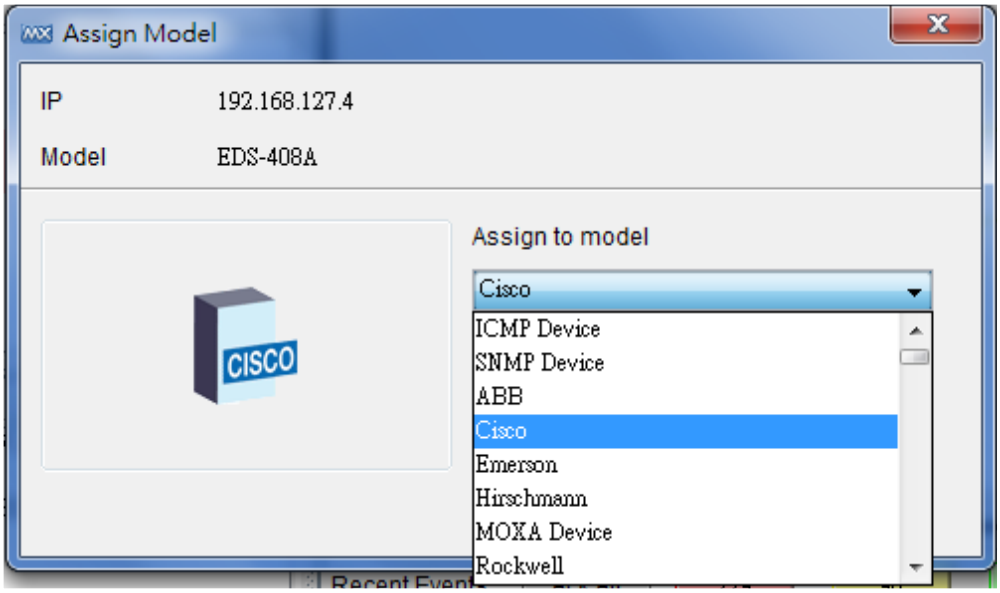


Assign Icon

MXview allows users to change the device icon manually. Follow the steps below to select a device icon from within MXview's icon database.

1. Select a device.
2. Select **Device →Maintenance → Assign model.**

You will see the **Assign Model** window pop up. Select a switch model from the drop-down list, and click the **Assign** button to confirm your selection.



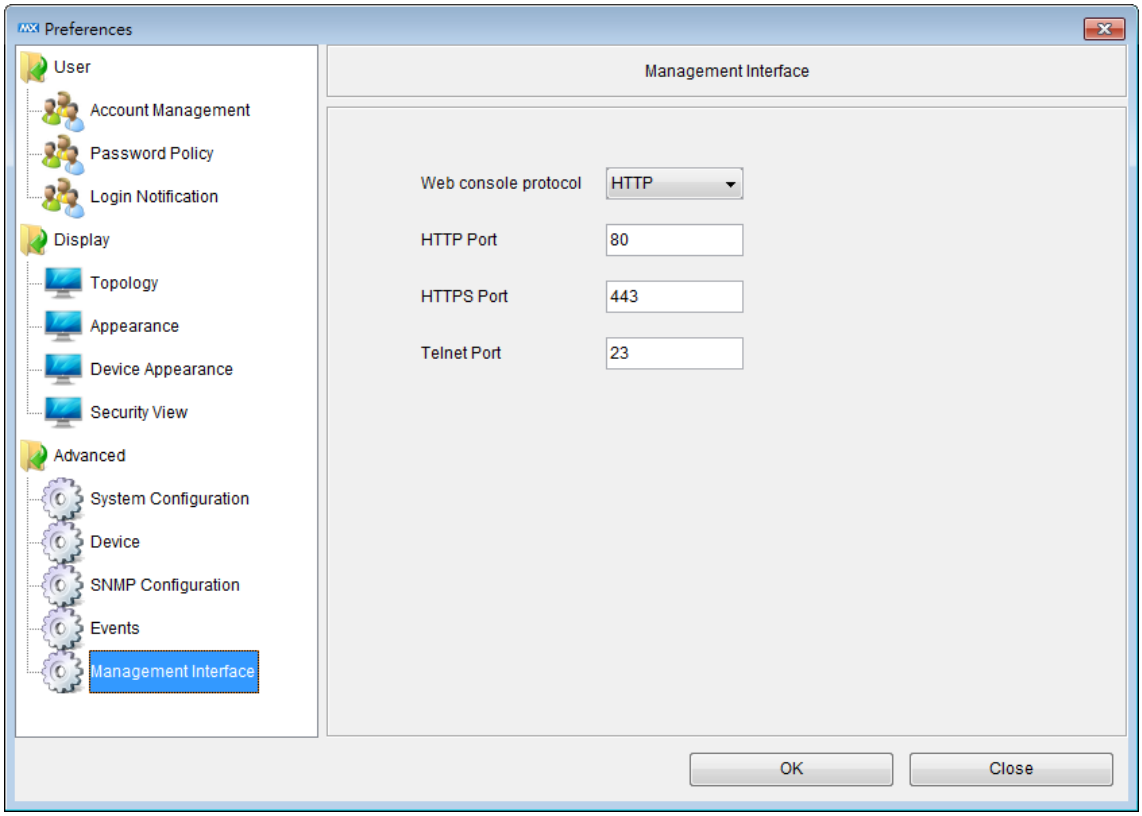
Web Console Login

To log in to the device's web console, select **Device → console**.

NOTE For IE6, MXview will open the console in the window of the MXview Client.

Management Interface

1. Navigate to **Project → Preferences → Management Interface**.
2. The Web console protocol can be set to HTTP or HTTPS, and then the port numbers of the HTTP and HTTPS can be set by users. In addition, the Telnet port can be set as well.



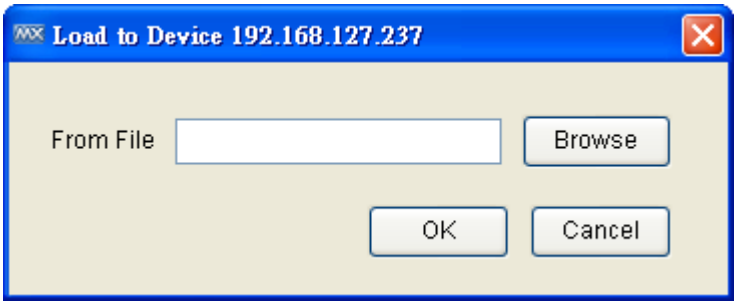
Configuration Backup and Restoration (Moxa devices only)

Take the following steps to back up a device's configuration file to a local computer:

1. Select **Device → Maintenance → Configuration → Load from Device**.
2. Choose the location where you would like to save the file.

Take the following steps to restore a device's configuration file:

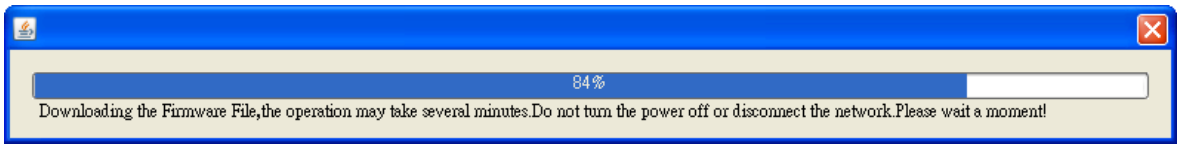
1. Select **Device → Configuration → Load to Device**.



2. Choose the file and click **OK**.

Firmware upgrade

To up upgrade a device's firmware, select **Device → Firmware Upgrade**. The firmware will be uploaded to and installed on the device.



NOTE After the firmware has been installed successfully, the device will restart. This action could take a few seconds.

Refresh Status

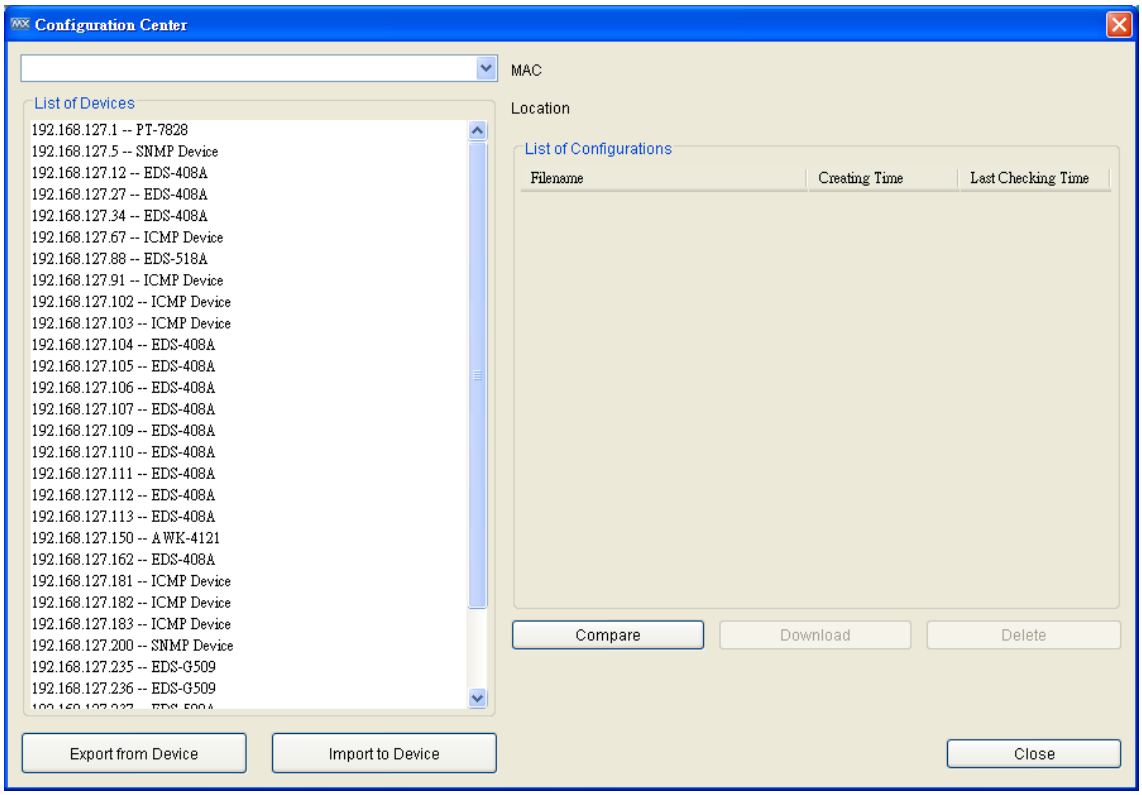
Since some device data is collected by polling, there may be a time delay for some data. To refresh a device to get its updated status, select **Device → Refresh.**

Mass Operation Configuration Export/Import and Firmware Upgrade

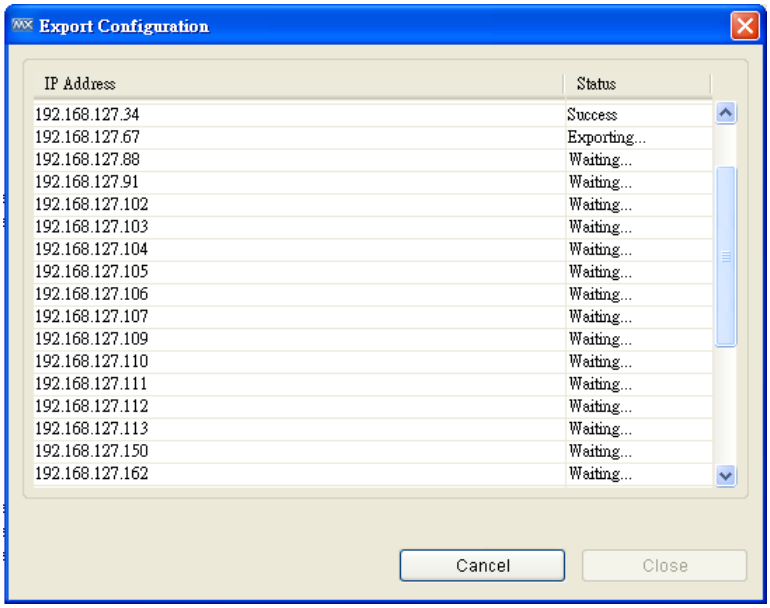
MXview lets users export/import configuration and upgrade firmware in a mass deployment to a group of devices.

Export Configurations from Multiple Devices

1. Select **Tools → Configuration Center**



2. Click **Export from Device**
3. Select a folder in which to store configuration files
4. Select devices to export configuration files from and add them to the list. Click **Export**



After a few seconds, the configuration files will be exported to the designated folder, with IP addresses and timestamps in the filenames.

Import a Configuration to Multiple Devices

Moxa switches can import a segment of a configuration file and change device configurations based on the parameters the segment describes. MXview helps users import a segment of a configuration file to multiple devices.

1. Select **Tools → Configuration Center**
2. Click **Import to Device**
3. Select a configuration file segment
4. Select devices to import configuration files to and add them to the list. Click **Import**

After a few seconds, the configuration file segment will be imported to devices and activated.

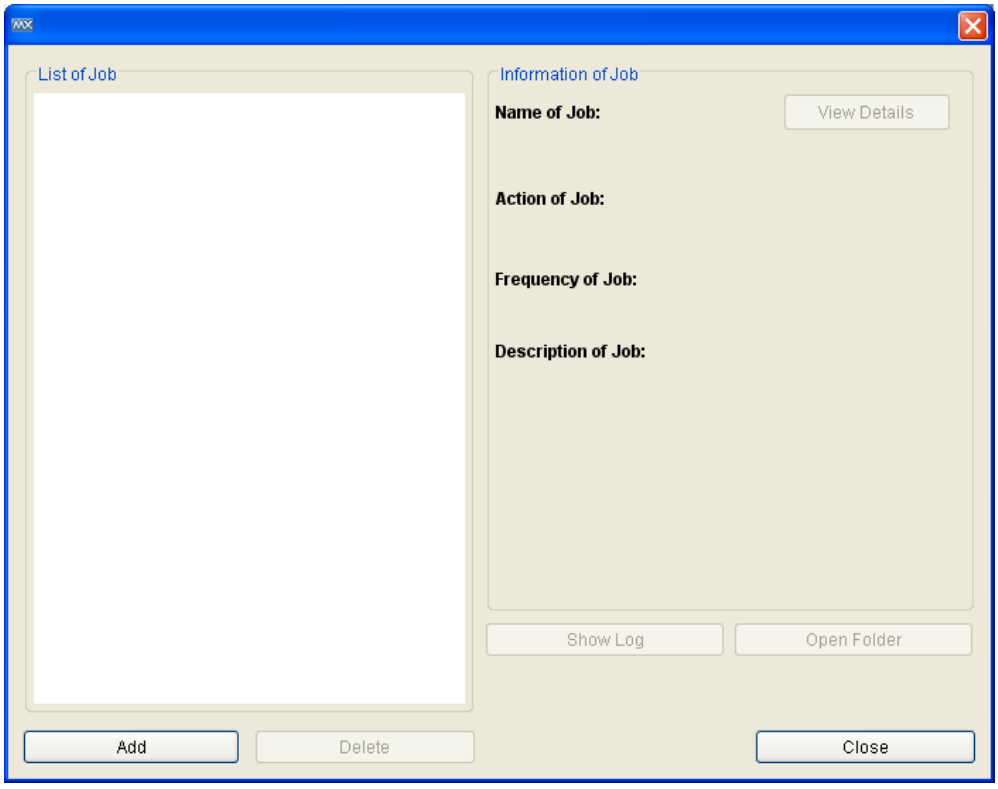
Upgrade Firmware on Multiple Devices

1. Select **Information → Firmware Version**
2. Click **Upgrade**
3. Select a firmware file
4. Select devices that upgrade firmware and add to the list. Click **Upgrade**

The firmware will be upgraded to devices one by one. MXview will wait for 30 seconds before upgrading the next device on the list, in order to give the upgrading devices sufficient time to finish the process.

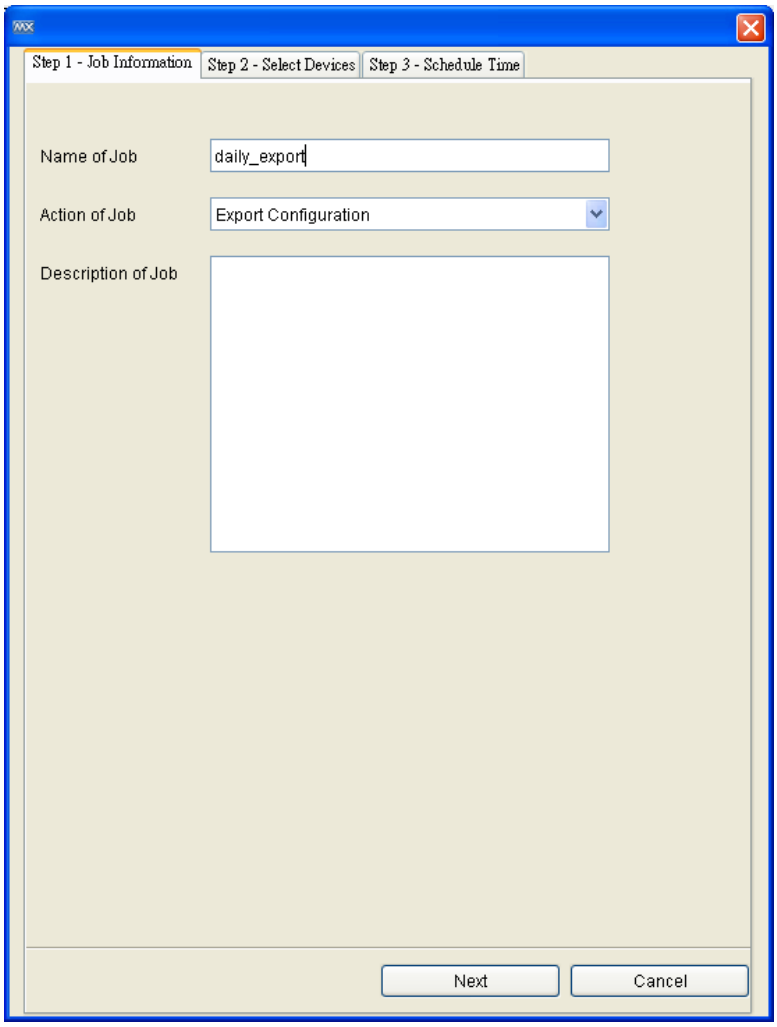
Scheduled Configuration Export/Import

1. Select **Tools → Job Scheduler**



2. Click **Add.**

3. Enter a job name and select **Import Configuration**, **Export Configuration** or **Database Backup** in the drop-down box.



4. Select the devices that apply and add them to the list. Click **Next**
5. Select the execution routine.

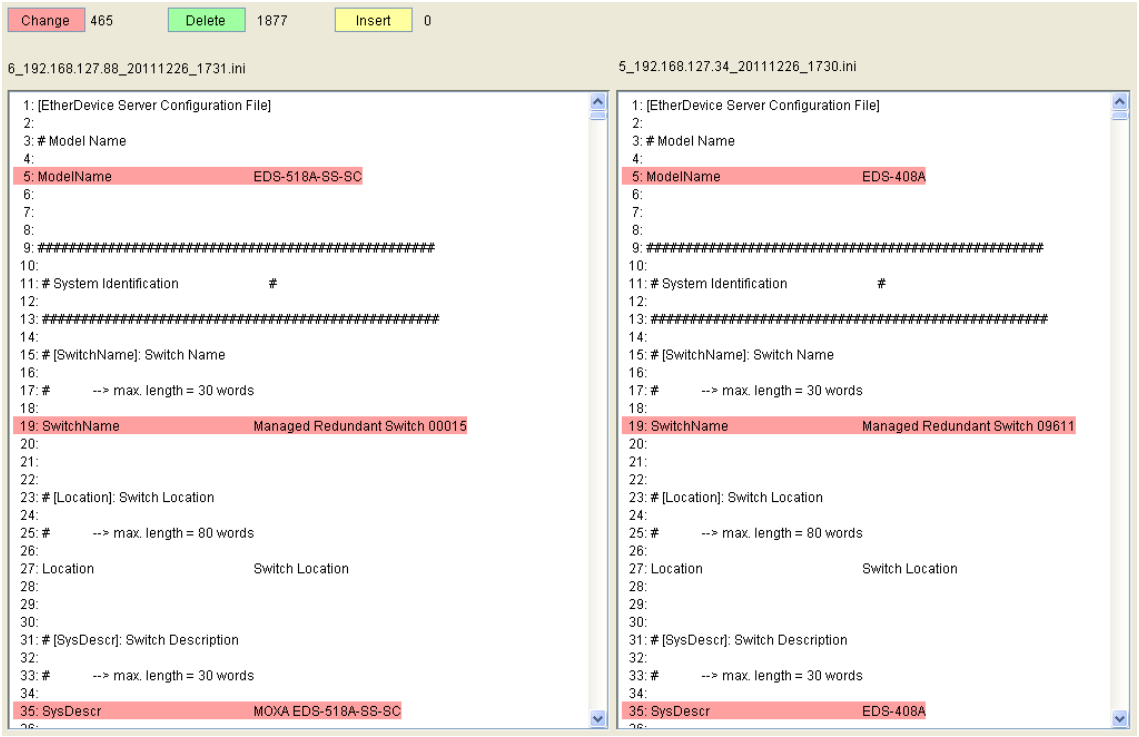
Configuration Change History and Comparison

When MXview exports configurations from devices, whether manually or by schedule, MXview will compare the exported configuration with the last configuration exported and stored on the MXview server. If there is any difference MXview will save the configuration on the MXview server. Users can then check the change history of the configuration file:

1. Select **Tools → Configuration Center**
2. Check **List of Configurations**

And users can compare any 2 stored configurations at MXview server

1. Select **Tools → Configuration Center**
2. Click **Compare**
3. Select two IP addresses and their configurations



The inserted, deleted and modified lines in the configuration will be highlighted.

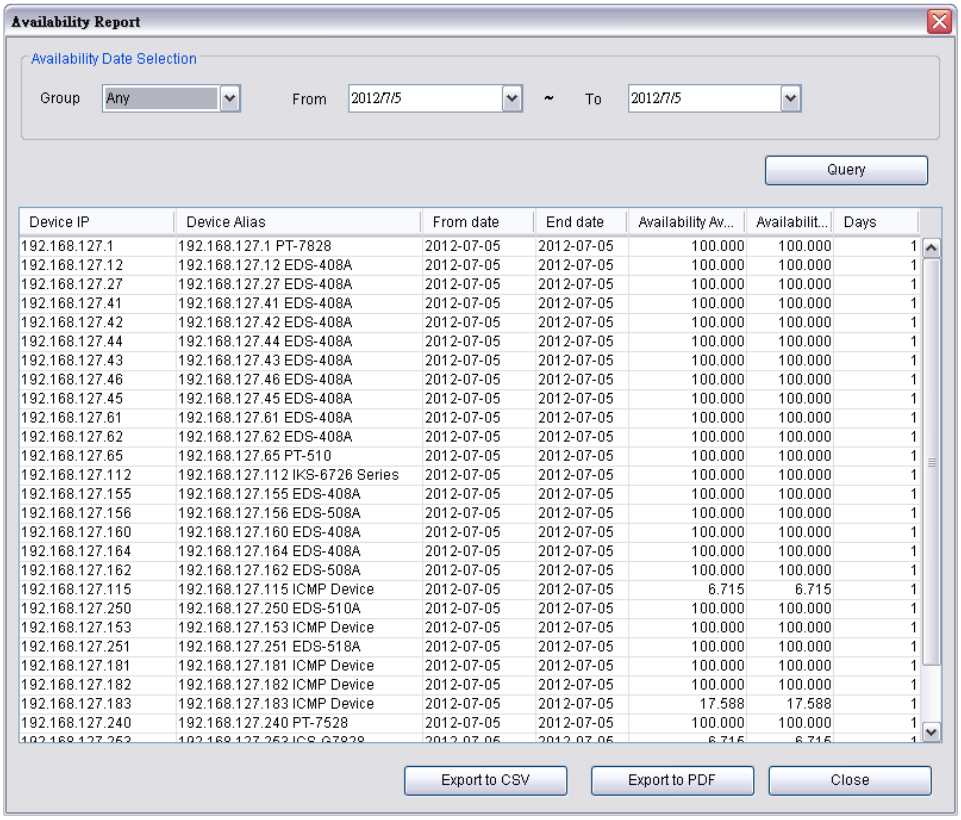
Device and Inventory Report

MXview can summarize device information in a formal report. Both a Device Availability Report and Inventory Report are available.

Device Availability Report

The device availability report includes information about Device IP, Device Alias, Availability average, and Availability worst data. You can narrow the report by a specific time period by dates and groups.

Select **Information → Availability Report**



The availability report can be exported to a PDF or CSV file.

Availability Report

From date:2012-07-05
End date:2012-07-05

Report Generate date:2012-07-05

Device IP	Device Alias	Availability Average	Availability Worst	From date	End date	Days
192.168.127.1	192.168.127.1 PT-7828	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.12	192.168.127.12 EDS-408A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.27	192.168.127.27 EDS-408A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.41	192.168.127.41 EDS-408A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.42	192.168.127.42 EDS-408A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.44	192.168.127.44 EDS-408A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.43	192.168.127.43 EDS-408A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.46	192.168.127.46 EDS-408A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.45	192.168.127.45 EDS-408A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.61	192.168.127.61 EDS-408A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.62	192.168.127.62 EDS-408A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.65	192.168.127.65 PT-510	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.112	192.168.127.112 IKS-6726 Series	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.155	192.168.127.155 EDS-408A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.156	192.168.127.156 EDS-508A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.160	192.168.127.160 EDS-408A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.164	192.168.127.164 EDS-408A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.162	192.168.127.162 EDS-508A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.115	192.168.127.115 ICMP Device	6.715	6.715	2012-07-05	2012-07-05	1
192.168.127.250	192.168.127.250 EDS-510A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.153	192.168.127.153 ICMP Device	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.251	192.168.127.251 EDS-518A	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.181	192.168.127.181 ICMP Device	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.182	192.168.127.182 ICMP Device	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.183	192.168.127.183 ICMP Device	17.588	17.588	2012-07-05	2012-07-05	1
192.168.127.240	192.168.127.240 PT-7528	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.253	192.168.127.253 ICS-G7828	6.715	6.715	2012-07-05	2012-07-05	1
192.168.127.248	192.168.127.248 ICMP Device	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.249	192.168.127.249 ICMP Device	100.000	100.000	2012-07-05	2012-07-05	1
192.168.127.254	192.168.127.254 ICMP Device	100.000	100.000	2012-07-05	2012-07-05	1

	A	B	C	D	E	F	G
1	Device availability						
2	Device IP	Device Alias	Availability Average	Availability Worst	From date	End date	Days
3	192.168.127.1	192.168.127.1 PT-7828	100	100	2012/7/5	2012/7/5	1
4	192.168.127.12	192.168.127.12 EDS-408A	100	100	2012/7/5	2012/7/5	1
5	192.168.127.27	192.168.127.27 EDS-408A	100	100	2012/7/5	2012/7/5	1
6	192.168.127.41	192.168.127.41 EDS-408A	100	100	2012/7/5	2012/7/5	1
7	192.168.127.42	192.168.127.42 EDS-408A	100	100	2012/7/5	2012/7/5	1
8	192.168.127.44	192.168.127.44 EDS-408A	100	100	2012/7/5	2012/7/5	1
9	192.168.127.43	192.168.127.43 EDS-408A	100	100	2012/7/5	2012/7/5	1
10	192.168.127.46	192.168.127.46 EDS-408A	100	100	2012/7/5	2012/7/5	1
11	192.168.127.45	192.168.127.45 EDS-408A	100	100	2012/7/5	2012/7/5	1
12	192.168.127.61	192.168.127.61 EDS-408A	100	100	2012/7/5	2012/7/5	1
13	192.168.127.62	192.168.127.62 EDS-408A	100	100	2012/7/5	2012/7/5	1
14	192.168.127.65	192.168.127.65 PT-510	100	100	2012/7/5	2012/7/5	1
15	192.168.127.112	192.168.127.112 IKS-6726 Series	100	100	2012/7/5	2012/7/5	1
16	192.168.127.155	192.168.127.155 EDS-408A	100	100	2012/7/5	2012/7/5	1
17	192.168.127.156	192.168.127.156 EDS-508A	100	100	2012/7/5	2012/7/5	1
18	192.168.127.160	192.168.127.160 EDS-408A	100	100	2012/7/5	2012/7/5	1
19	192.168.127.164	192.168.127.164 EDS-408A	100	100	2012/7/5	2012/7/5	1
20	192.168.127.162	192.168.127.162 EDS-508A	100	100	2012/7/5	2012/7/5	1
21	192.168.127.115	192.168.127.115 ICMP Device	6.715	6.715	2012/7/5	2012/7/5	1
22	192.168.127.250	192.168.127.250 EDS-510A	100	100	2012/7/5	2012/7/5	1
23	192.168.127.153	192.168.127.153 ICMP Device	100	100	2012/7/5	2012/7/5	1
24	192.168.127.251	192.168.127.251 EDS-518A	100	100	2012/7/5	2012/7/5	1
25	192.168.127.181	192.168.127.181 ICMP Device	100	100	2012/7/5	2012/7/5	1
26	192.168.127.182	192.168.127.182 ICMP Device	100	100	2012/7/5	2012/7/5	1
27	192.168.127.183	192.168.127.183 ICMP Device	17.588	17.588	2012/7/5	2012/7/5	1
28	192.168.127.240	192.168.127.240 PT-7528	100	100	2012/7/5	2012/7/5	1
29	192.168.127.253	192.168.127.253 ICS-G7828	6.715	6.715	2012/7/5	2012/7/5	1
30	192.168.127.248	192.168.127.248 ICMP Device	100	100	2012/7/5	2012/7/5	1
31	192.168.127.249	192.168.127.249 ICMP Device	100	100	2012/7/5	2012/7/5	1
32	192.168.127.254	192.168.127.254 ICMP Device	100	100	2012/7/5	2012/7/5	1

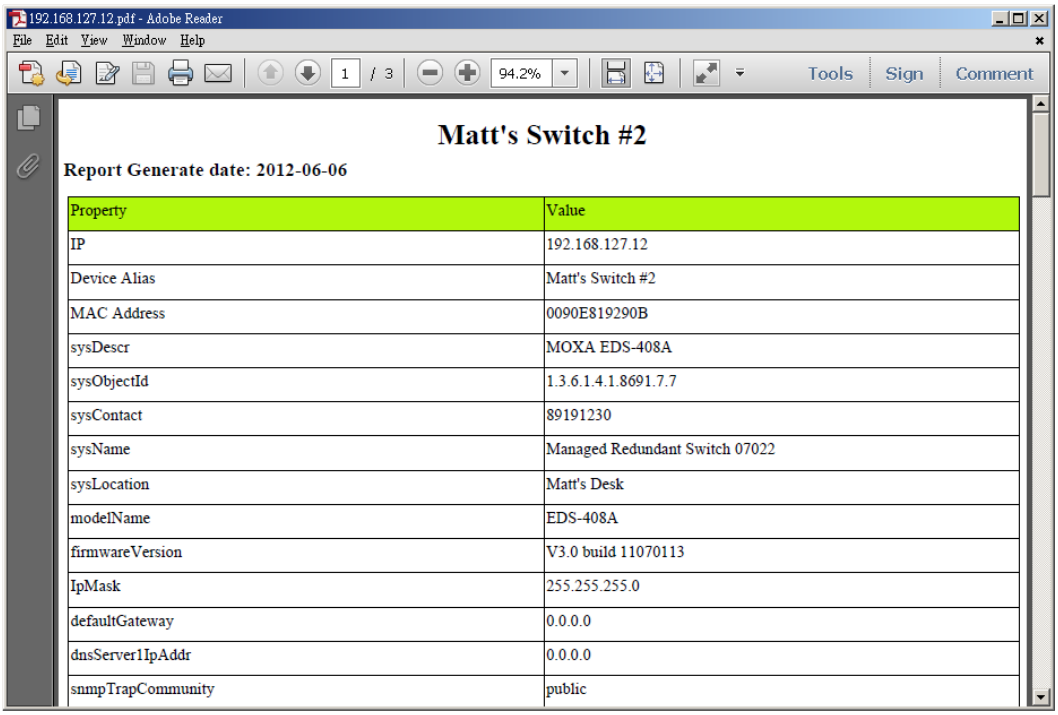
By default, the availability is calculated based on 24-hour intervals. To change this, in the menu select **Project →Preferences →Advanced →Devices →Timeframe for availability calculation**

Enter the calculation timeframe base in the box and click **OK.** Units are entered in hours..

Inventory Report

Select **Information →Inventory Report** to generate an inventory report.

Inventory report provides a summary of each device's properties. With **Inventory Report**, MXview will export reports separately for all the devices in your network. Each device has a single PDF Report. The PDF filename is determined by device IP. The title of the report is the device alias, which you can edit in MXview. If there is any third-party MIB compiled in, the proprietary information will be included into the report (refer to **Chapter 13- MIB**).



Matt's Switch #2

Report Generate date: 2012-06-06

Property	Value
IP	192.168.127.12
Device Alias	Matt's Switch #2
MAC Address	0090E819290B
sysDescr	MOXA EDS-408A
sysObjectId	1.3.6.1.4.1.8691.7.7
sysContact	89191230
sysName	Managed Redundant Switch 07022
sysLocation	Matt's Desk
modelName	EDS-408A
firmwareVersion	V3.0 build 11070113
IpMask	255.255.255.0
defaultGateway	0.0.0.0
dnsServer1IpAddr	0.0.0.0
snmpTrapCommunity	public

12

Visualization Mode

The following topics are covered in this chapter.

- **VLAN Visualization**
- **IGMP Snooping Visualization**
- **Traffic Load Visualization**
- **Security View**
- **Wireless Dashboard**

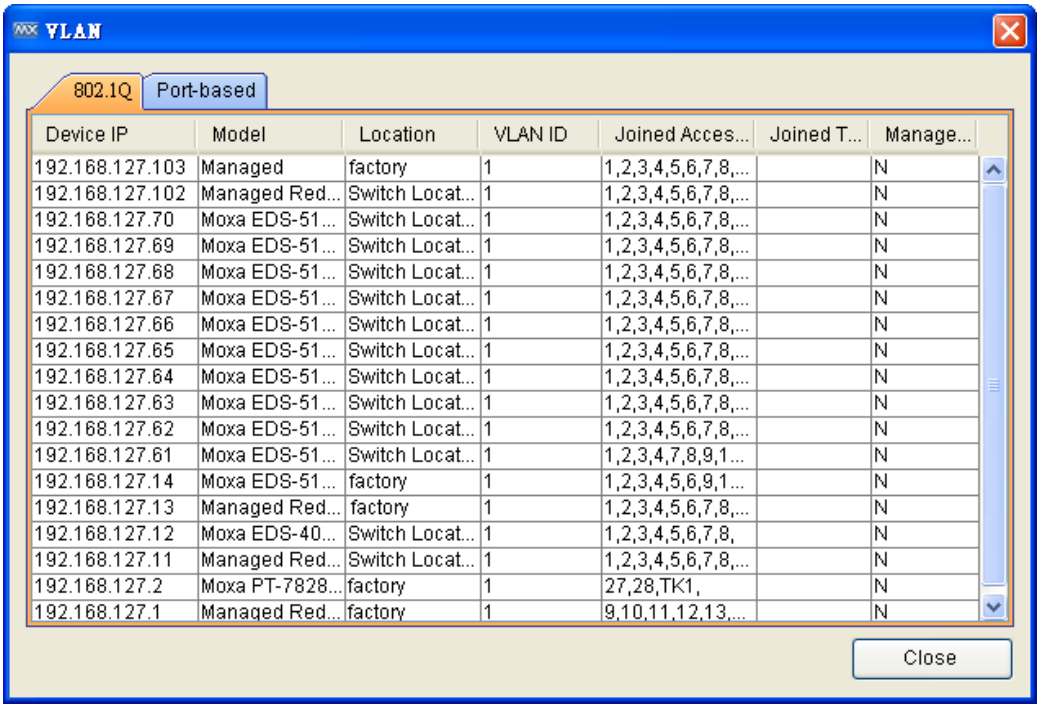
VLAN Visualization

Moxa switches support 802.1Q tagged VLAN. MXview collects each device's VLAN configuration and integrates the information with color-coded visualization to provide a network-wide view.

1. Click the VLAN icon in the topology toolbox.

2. After selecting a specific VLAN ID, devices, ports and links that are associated with the ID will be color-coded.

To view the VLAN information in a table format, select **Network → VLAN**



Device IP	Model	Location	VLAN ID	Joined Acces...	Joined T...	Manage...
192.168.127.103	Managed	factory	1	1,2,3,4,5,6,7,8,...		N
192.168.127.102	Managed Red...	Switch Locat...	1	1,2,3,4,5,6,7,8,...		N
192.168.127.70	Moxa EDS-51...	Switch Locat...	1	1,2,3,4,5,6,7,8,...		N
192.168.127.69	Moxa EDS-51...	Switch Locat...	1	1,2,3,4,5,6,7,8,...		N
192.168.127.68	Moxa EDS-51...	Switch Locat...	1	1,2,3,4,5,6,7,8,...		N
192.168.127.67	Moxa EDS-51...	Switch Locat...	1	1,2,3,4,5,6,7,8,...		N
192.168.127.66	Moxa EDS-51...	Switch Locat...	1	1,2,3,4,5,6,7,8,...		N
192.168.127.65	Moxa EDS-51...	Switch Locat...	1	1,2,3,4,5,6,7,8,...		N
192.168.127.64	Moxa EDS-51...	Switch Locat...	1	1,2,3,4,5,6,7,8,...		N
192.168.127.63	Moxa EDS-51...	Switch Locat...	1	1,2,3,4,5,6,7,8,...		N
192.168.127.62	Moxa EDS-51...	Switch Locat...	1	1,2,3,4,5,6,7,8,...		N
192.168.127.61	Moxa EDS-51...	Switch Locat...	1	1,2,3,4,7,8,9,1...		N
192.168.127.14	Moxa EDS-51...	factory	1	1,2,3,4,5,6,9,1...		N
192.168.127.13	Managed Red...	factory	1	1,2,3,4,5,6,7,8,...		N
192.168.127.12	Moxa EDS-40...	Switch Locat...	1	1,2,3,4,5,6,7,8,		N
192.168.127.11	Managed Red...	Switch Locat...	1	1,2,3,4,5,6,7,8,...		N
192.168.127.2	Moxa PT-7828...	factory	1	27,28,TK1,		N
192.168.127.1	Managed Red...	factory	1	9,10,11,12,13,...		N

IGMP Snooping Visualization

Moxa switches support IGMP snooping. MXview collects each device's IGMP snooping configuration and visualizes the information to provide a network-wide view.

1. Click the IGMP icon in the topology toolbox.

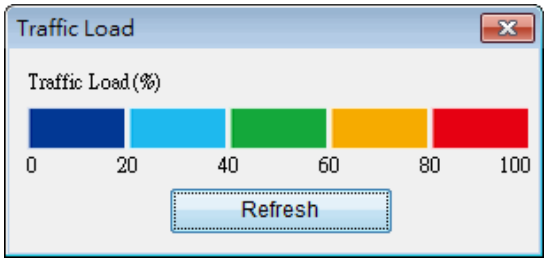
2. After selecting a specific VLAN ID and multicast address, devices, ports and links that are associated with the stream will be color-coded.

Traffic Load Visualization

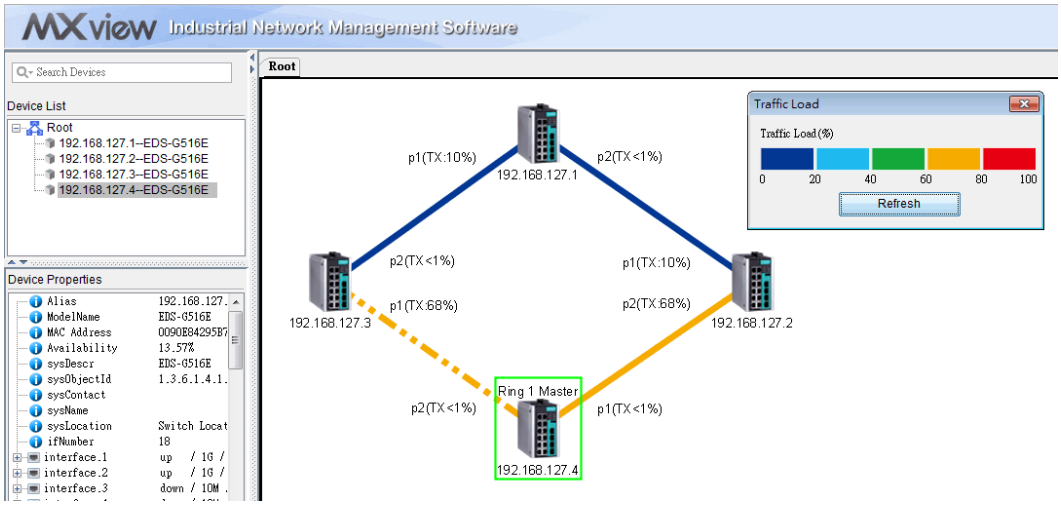
MXview collects the traffic load information of every link and displays the information to provide users with a network-wide view.

1. Click the Traffic Load icon in the topology toolbox.

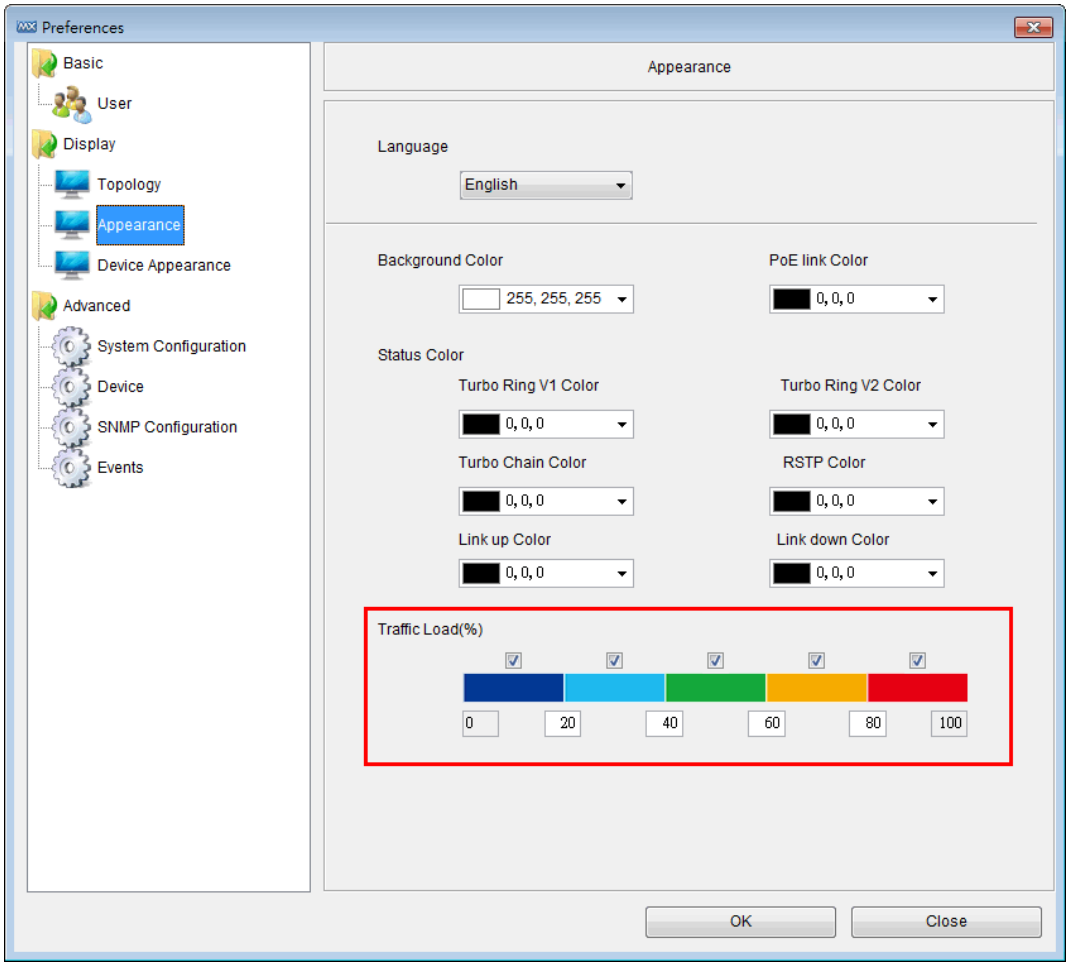
2. The Traffic Load window pops up. It uses different colors to differentiate between different traffic load levels.



3. All of the links will be color-coded to indicate how much traffic they are carrying.



4. Navigate to **Project → Preferences → Appearance** to redefine the traffic load levels.



Security View

ISA/IEC 62443 is a continuously evolving cybersecurity standard whose guidelines have already been adopted in many industrial automation applications. This standard, including its subsections, aims to cover points such as general requirements, policies & procedure, system-level requirements, and component-level requirements.

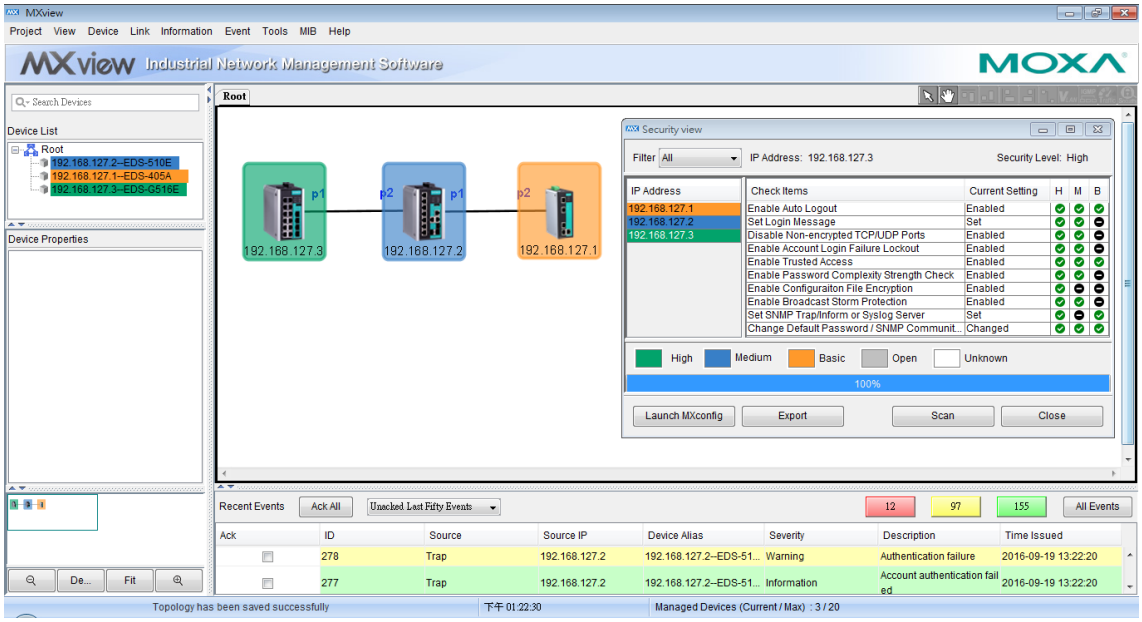
Moxa's MXview follows Moxa's security guidelines, which are based on the current IEC 62443-4-2 component-level recommendations. Security View checks the security level of Moxa's network devices. There are five levels for checking the results in Security View:

- High: IEC 62443-4-2 level 2
- Medium: IEC 62443-4-2 level 1
- Basic: General baseline
- Open: Security Level below basic
- Unknown: Devices without security-related information for MXview

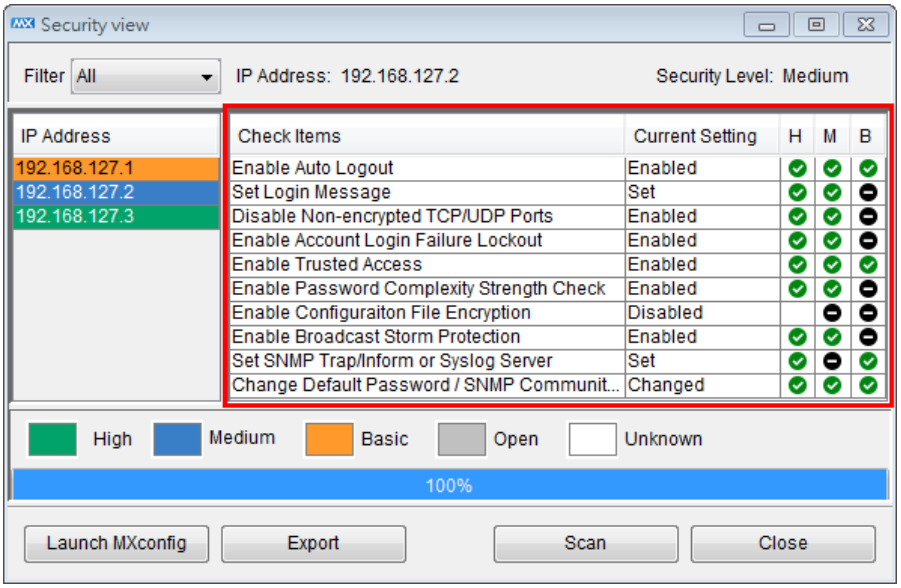
NOTE The definition of general baseline is based on several industrial cybersecurity policies and requirements.

1. Click the Security View icon in the topology toolbox

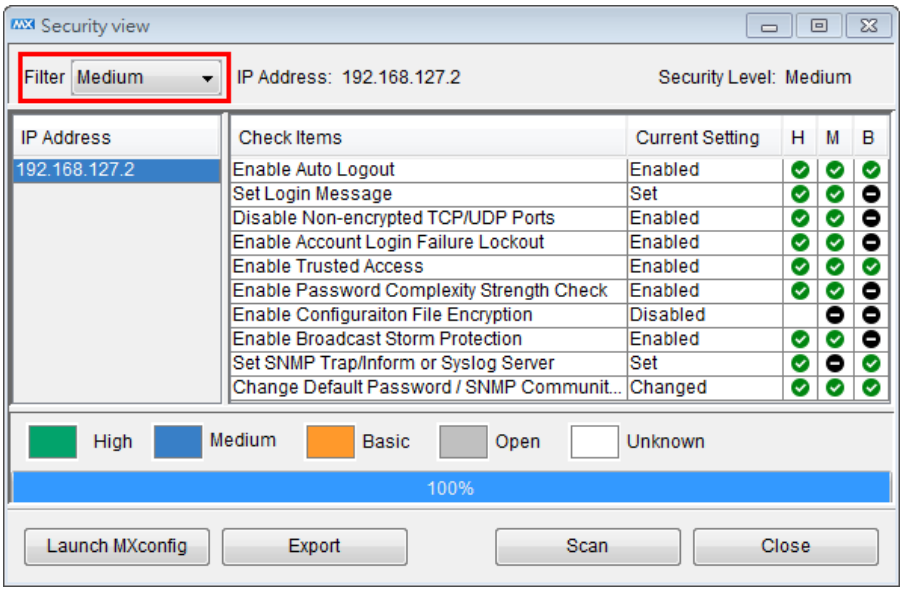
2. The Security View window pops up. Different colors indicate different security levels, and all devices are color-coded with their respective security levels.



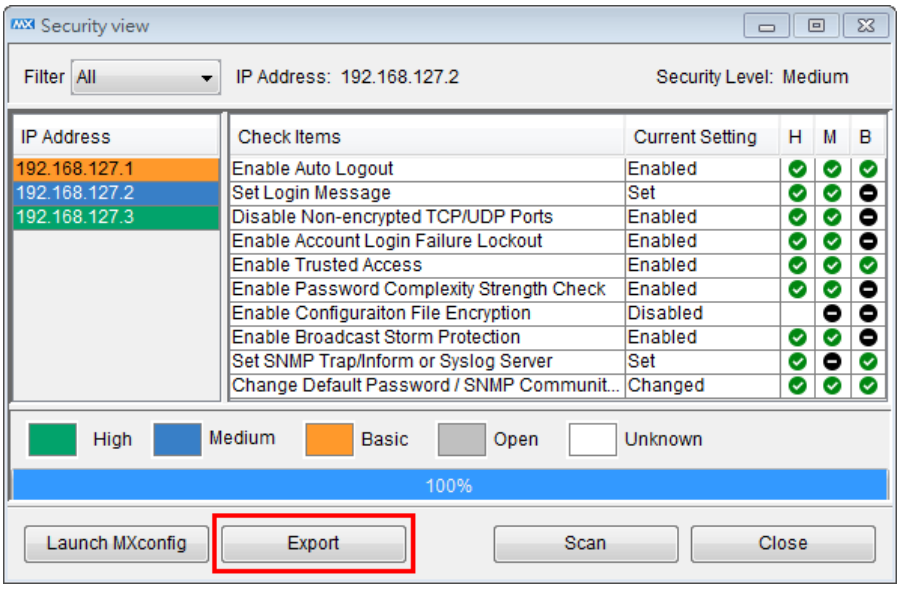
3. Users can see the Check Items and Current Settings in the window. H, M, B indicates High, Medium, and Basic levels. ✅ indicates the Check Item has been successfully setup, ⛔ indicates the Check Item is unnecessary for that level, and BLANK indicates the Check Item has not been successfully setup yet.



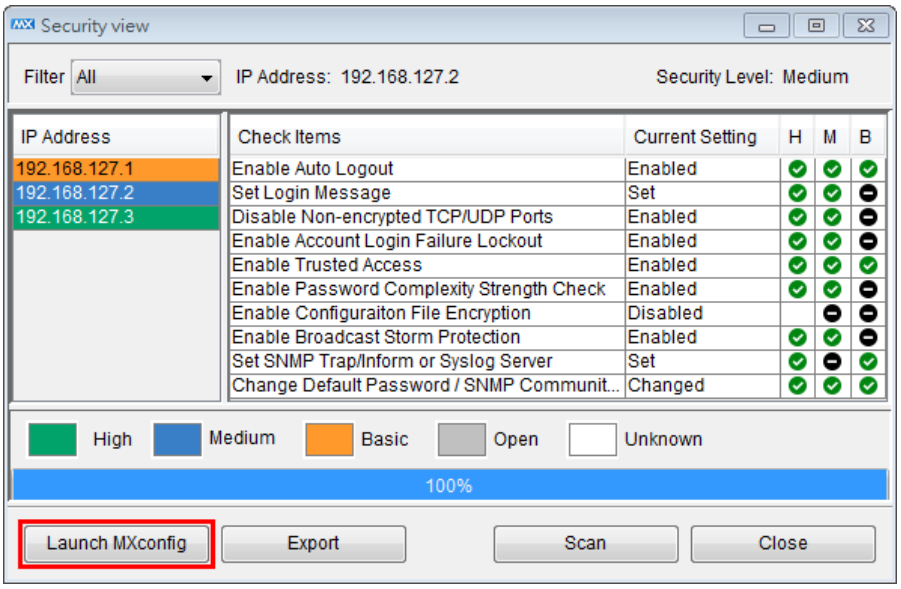
4. By using Filter, users can select devices with a specific security level in the window.

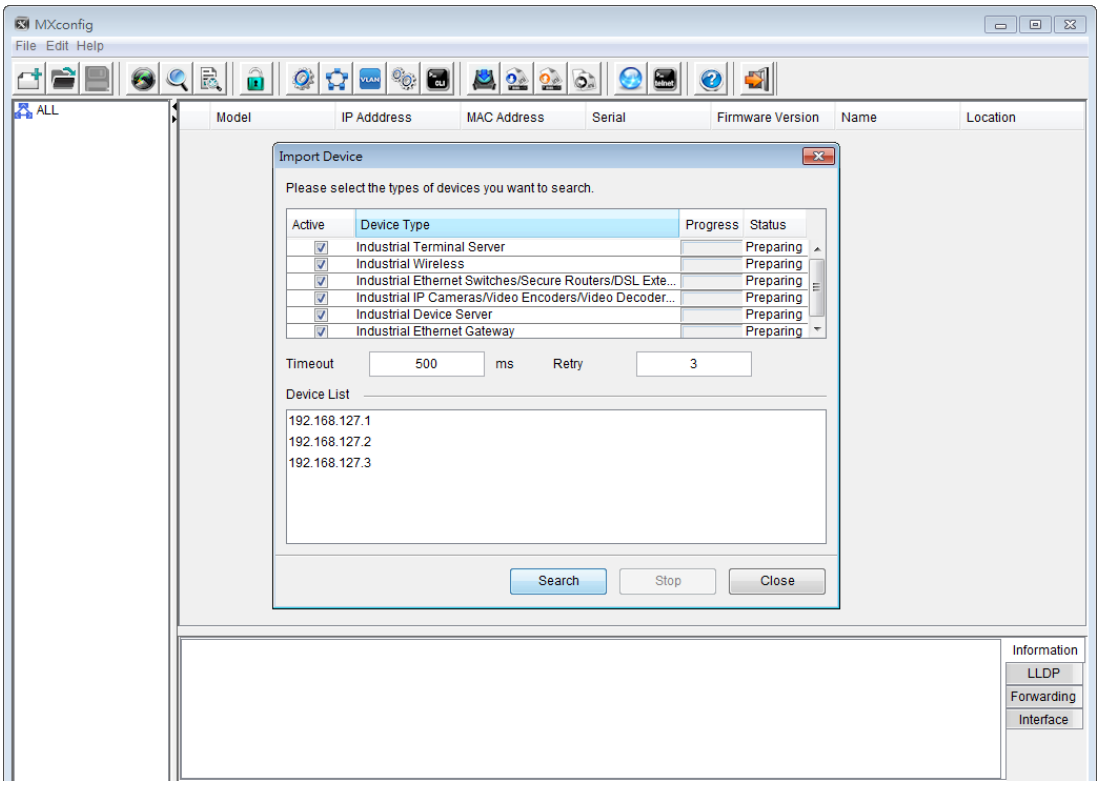


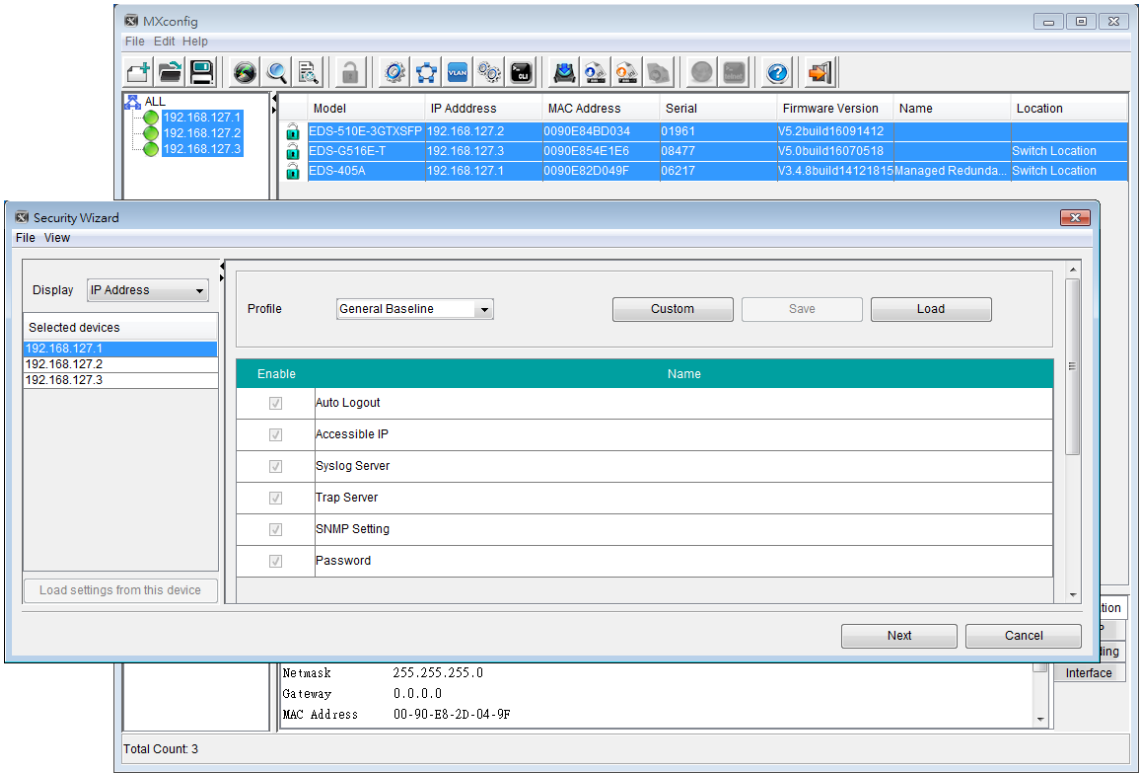
5. Click Export to export the details of the devices' IP addresses, Check Items, and Current Settings in a CSV file.



6. Click Launch MXconfig to activate MXconfig for mass configuration of security-related parameters. In the Security Wizard of MXconfig, all parameters relating to the different security levels can be listed, and users can easily enter their information for mass configuration.

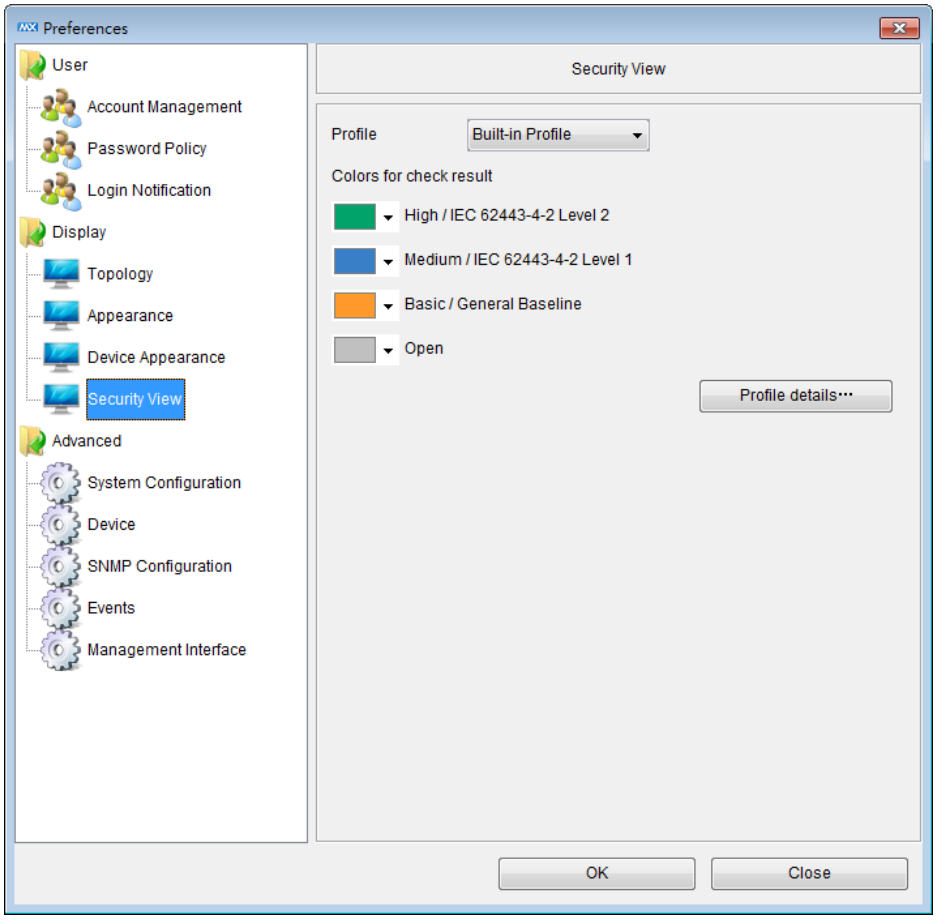


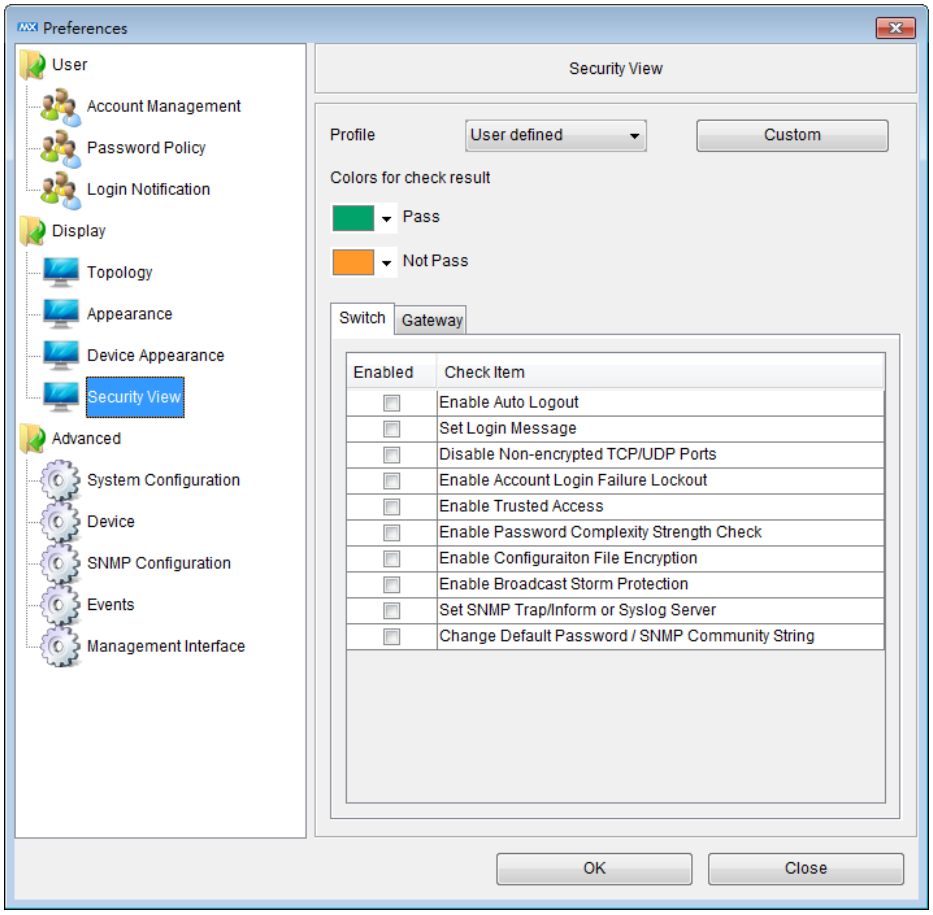




NOTE For a detailed introduction of MXconfig Security Wizard, please see MXconfig HELP.

7. Navigate to **Project → Preferences → Security View** to redefine the color of the different security levels. Users can also define their own security profile by selecting User-defined Profile. All of the check items can be set for Security View, and it shows Pass or Not Pass for checked results.





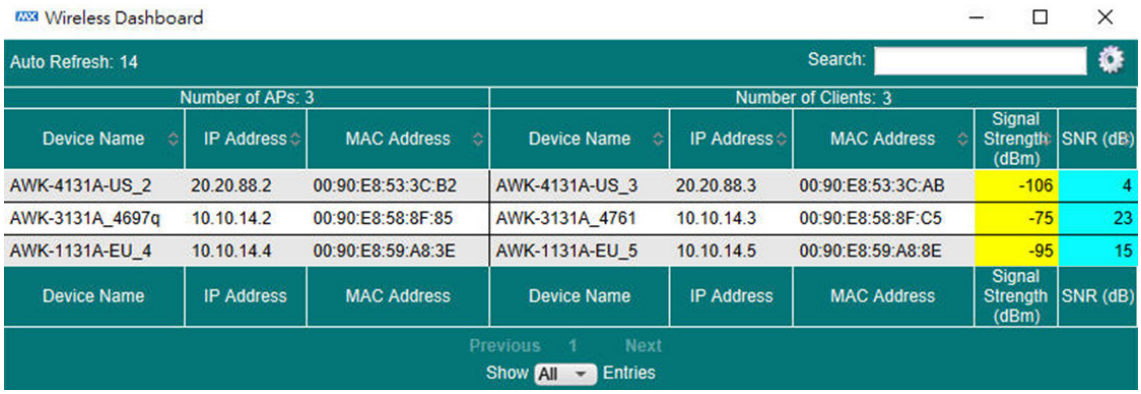
Below is the detailed description for each item:

- **Enable Auto Logout:** Check if the Auto Logout function is enabled or not
- **Set Login Message:** Check if the Login Message is set or not
- **Disable Non-encrypted TCP/UDP Ports:** Check if the Non-encrypted TCP/UDP Ports are disabled or not
- **Enable Account Login Failure Lockout:** Check if the Account Login Failure Lockout function is enabled or not
- **Enable Trusted Access:** Check if the Trusted Access function is enabled or not
- **Enable Password Complexity Strength Check:** Check if the Password Complexity Strength Check function is enabled or not
- **Enable Configuration File Encryption:** Check if the Configuration File Encryption function is enabled or not
- **Enable Broadcast Storm Protection:** Check if the Broadcast Storm Protection function is enabled or not
- **Set SNMP Trap/Inform or Syslog Server:** Check if the SNMP Trap/Inform or Syslog Server is set or not
- **Change Default Password/SNMP Community String:** Check if the Default Password or SNMP Community String is set or not

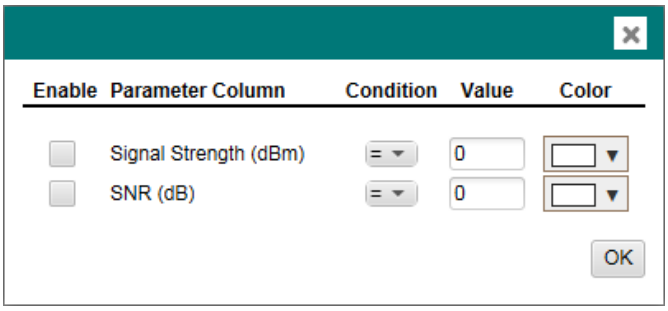
Wireless Dashboard

MXview collects the wireless information from all the Moxa AWK series devices, and displays the information into a Wireless Dashboard for an overview.

1. Navigate to **Information → Wireless Dashboard** to activate the Wireless Dashboard.
2. All the Access Points (APs) and Clients are listed. Device Name, IP Address, MAC Address, Signal Strength, and SNR are shown on the dashboard. Furthermore, the connection between the APs and Clients can also be shown on the dashboard.



3. By clicking the icon, users can set the threshold for Signal Strength and SNR. In the meantime, different colors can be set for indication on the dashboard.



NOTE Only the AWK-1131A series, AWK-3131A series, and AWK-4131A series support Wireless Dashboard.

NOTE Wireless Dashboard is refreshed automatically every 15 seconds.

13

MIB

MXview's embedded MIB compiler supports third-party MIB files. After compiling the MIB file, any device's parameter can be monitored in MXview.

This chapter covers the following application tools of the MIB compiler:

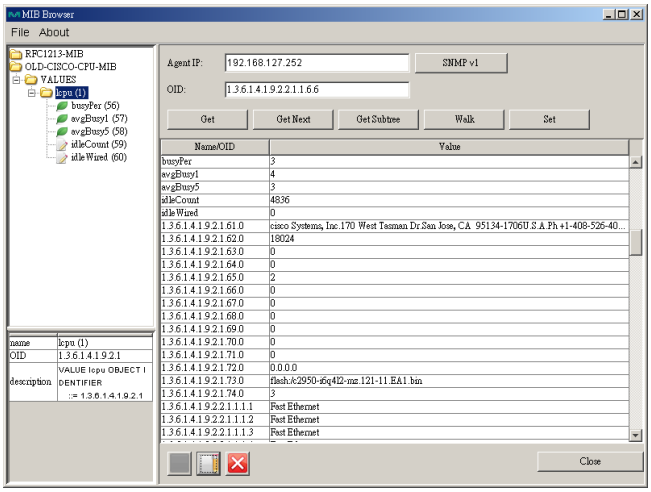
- **MIB Browser**
- **OID Import Manager**
- **Trap Import Manager**

MIB Browser

MIB browser provides an easy and comfortable browsing interface for reading proprietary MIB parameters. OID import manager makes all monitored parameters customizable, and they can be read in the device properties window list. With Trap Import Manager, the third-party traps can be displayed in the event history box.

MIB Browser is a simple and fast interface that lets you browse MIB files. It is able to load third-party MIB files. After loading the MIB, the OID tree will be listed in the left column. You can unfold these OIDs and get the parameter you need.

To open the MIB Browser: Select **MIB →MIB Browser**

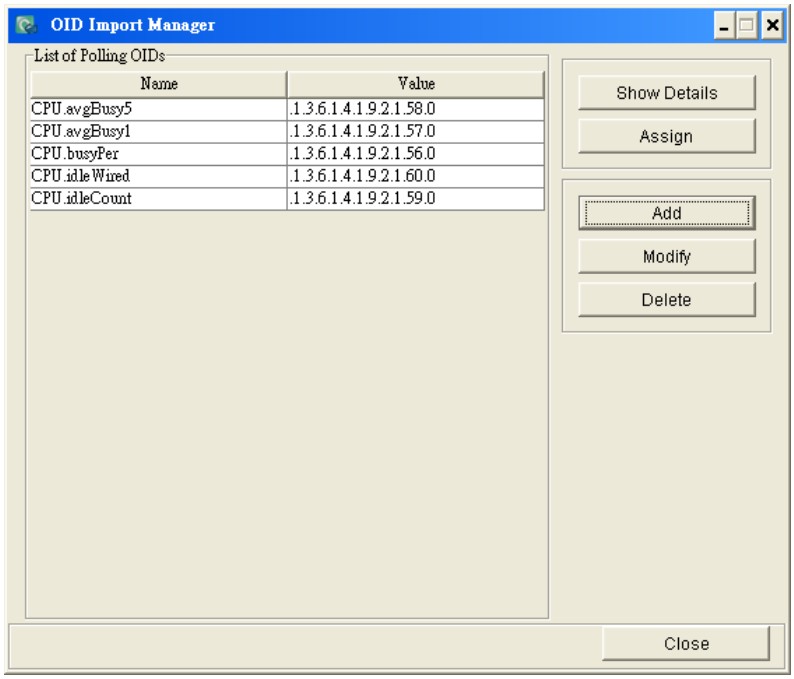


- Click **File →Load MIB** to load a MIB file.
- Select the item in the MIB tree:
- Click **Get** to get the parameter of selected item.
- Click **Get Next** to get the OID next to the item you selected.
- Click **Get Subtree** to get all the OIDs in the sub tree folder.
- Click **Walk** to get the OID's parameter in sequence.
- Click **Set** to set up parameters of the selected OID.

OID Import Manager

OID Import manager helps to add specific OID items for SNMP polling. It supports third-party MIB with polling. After compiling the MIB files, you can monitor third-party OIDs through SNMP polling.

To open the import manager: Select **MIB → OID Import Manager**

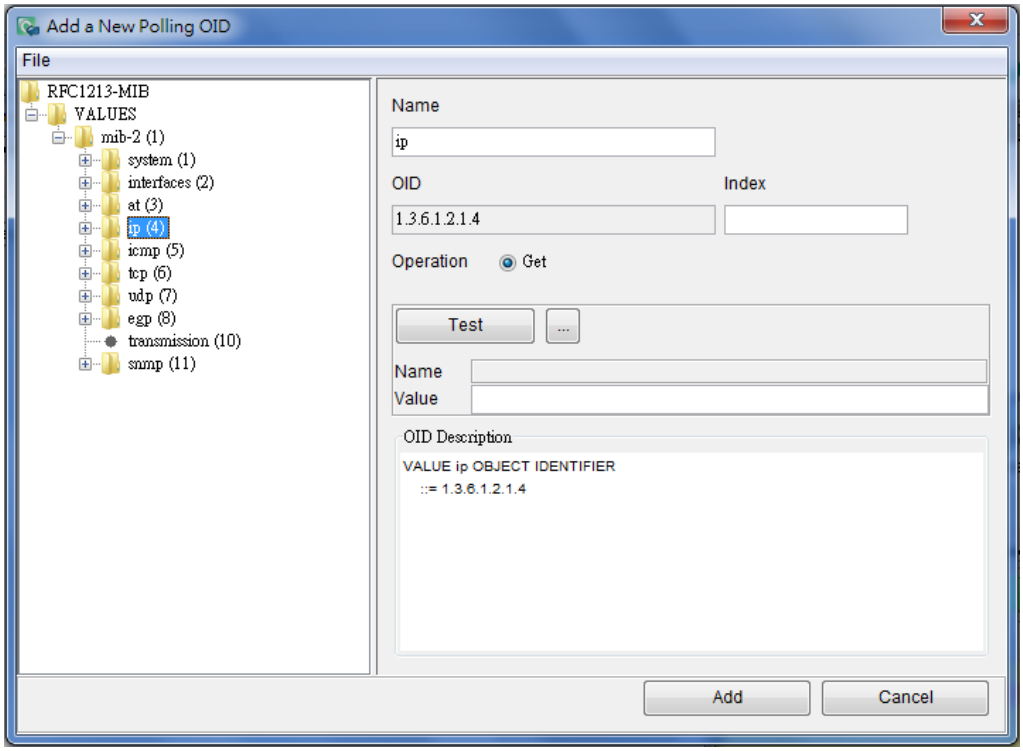


- **List of Polling OIDs** lists all specific polling items.
- Click **Show Details** to see the OID name, OID, and the devices which this OID is assigned to.
- Click **Add** to add an OID form the standard MIB or a third party MIB
- Click **Modify** to modify an imported OID's name.
- Click **Delete** to remove an imported OID

There are two steps to add a new OID and assign it to the specific device.

1. Add a specific OID

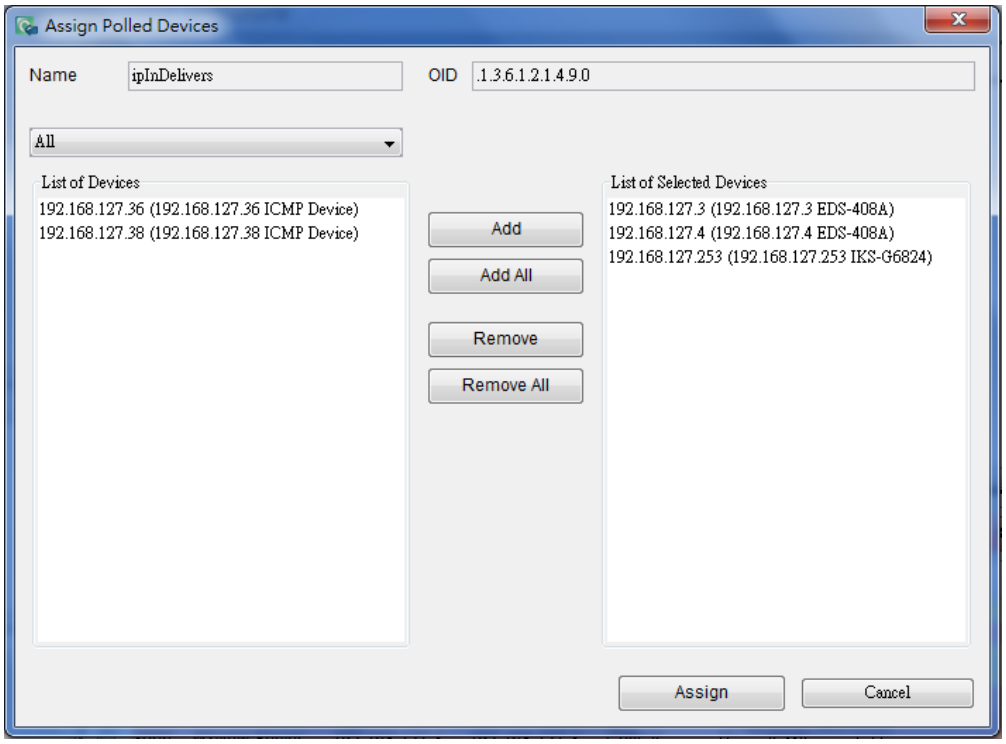
   Click **Add** to add a new OID for polling. A window will pop up. You can import MIB files by selecting **File → Load MIB.** In this window you can edit the **Name** for the OID you selected. This name will be displayed in the device properties window.



Click the **Test** button to try to get the OID parameter first. You can find the description for this OID in the **OID description** window. Click the **Add** button to add this OID into the import manager.

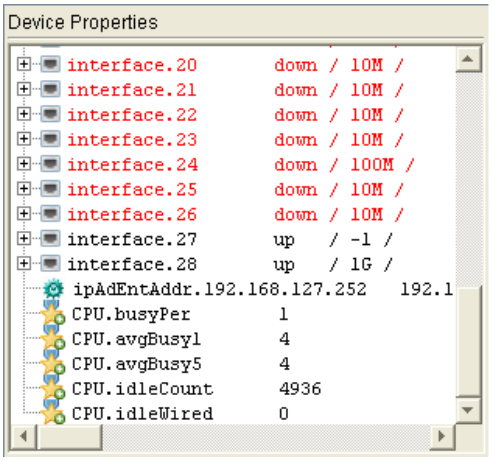
2. Assign polling OID to the device

   Click the **Assign** button in OID import manager. An **Assign Polled Devices** window will pop up



This window will list all devices in the network. Select the device you wish to assign then click **Add.** The selected device will be moved to the right. After selecting the device, click **Assign** to finish.

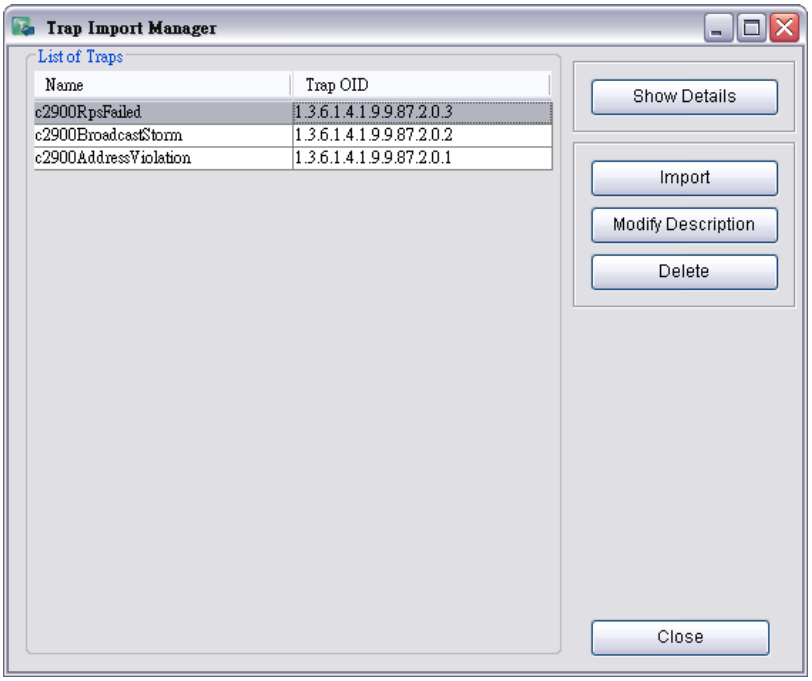
After adding a device, click the device in the main screen. The third-party MIB OID can be read in the device property window.



Trap Import Manager

Trap Import Manager can read third-party MIB files, and compile the MIB into MXview. With this tool, MXview can understand traps from third-party MIBs.

To open the trap import manager, select **MIB → Trap Import Manager**



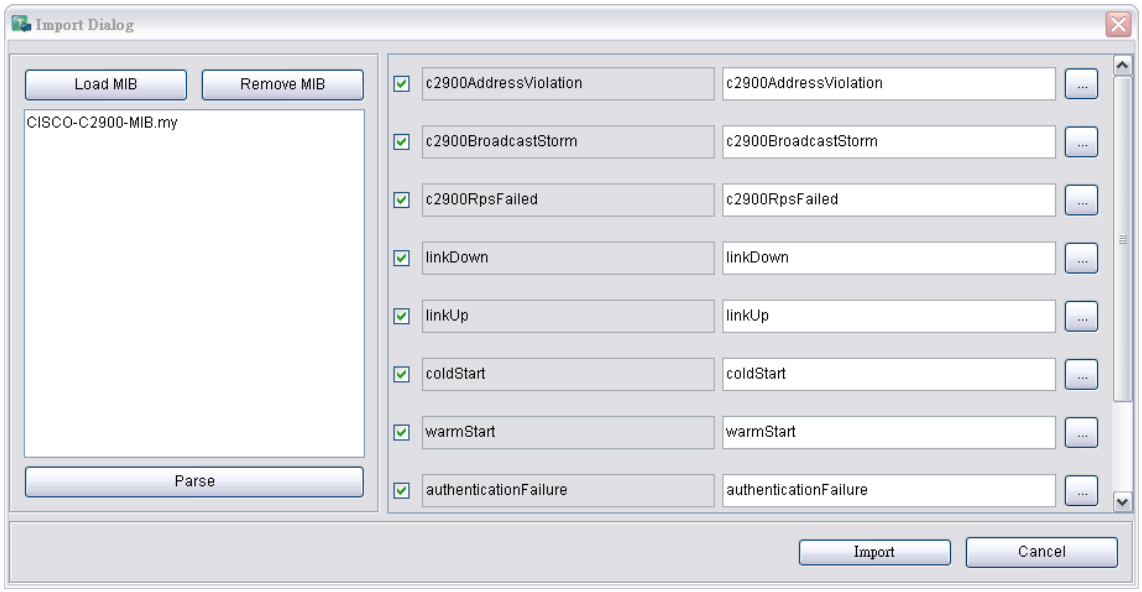
- The **list of traps** column will list all the traps which are already imported.
- Click **Show Details** to read detailed information, including Trap Name, OID, and its descriptions.
- Click **Import** to load MIB files and select the trap to import.
- Click **Modify Description** to name the description for the Trap. The description here will be the trap event which shows in the event list.
- Click **Delete** to remove an imported Trap.

There are three steps to add a new Trap to MXview.

1. Load a MIB

   Click the **Import** button. The **Import Dialog** window will pop up. Then click **Load MIB** and select a MIB file to load.

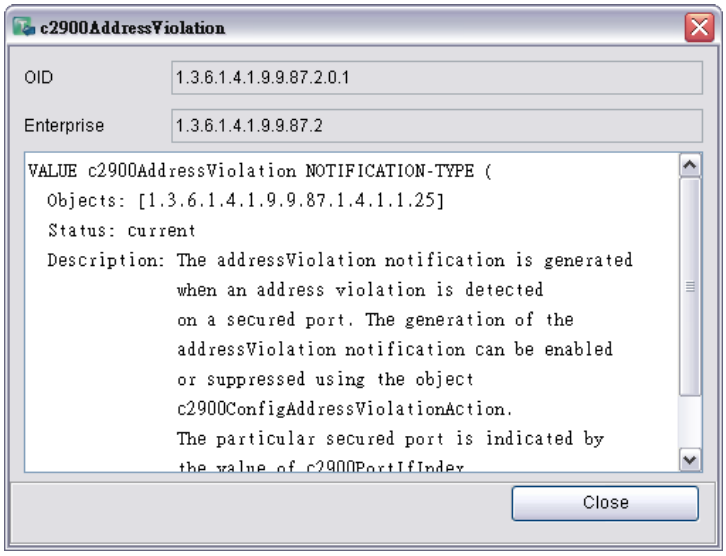
   After the MIB is loaded, click **Parse**. The column on the right will list all the Traps.



2. Select Trap to import

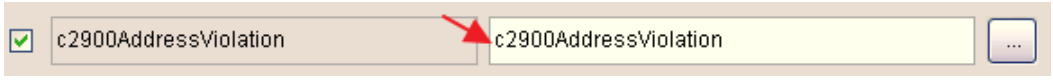
   Select the check box corresponding to the Trap you would like to import.

   Click the button behind each Trap to show its OID and the original description of its MIB.

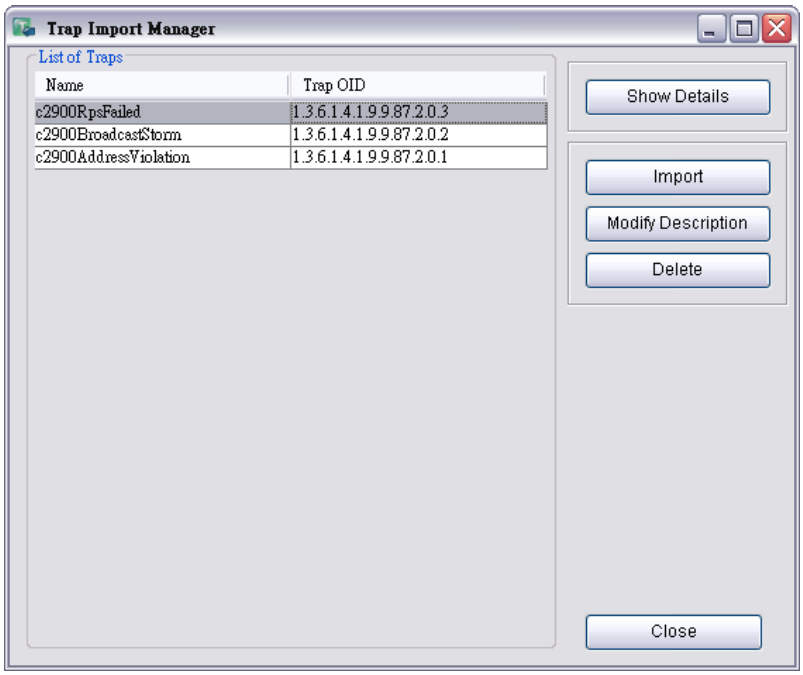


3. Edit description

   In the Trap list, the description field is editable. You are able to write a customized description here.



When finished, click the **Import** button. The dialog will be closed and returned to the **Trap Import Manager** window. You will find imported Traps in your List.



NOTE The system will notify you with a pop-up window if an OID has already been imported.

14

MXview License

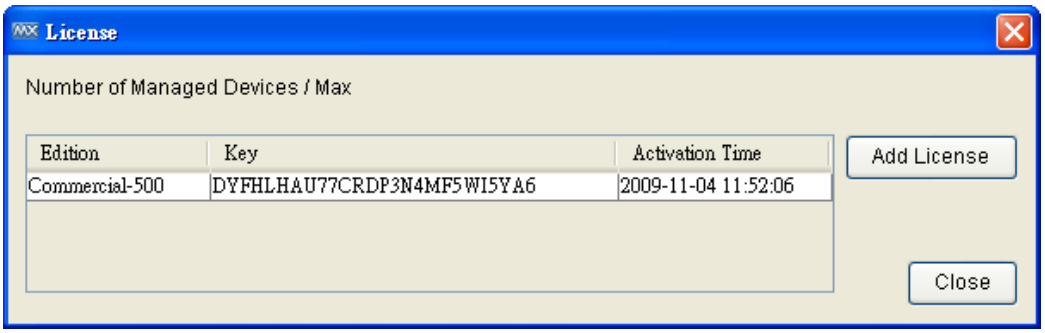
MXview is available in different versions, which the different versions supporting different numbers of nodes. For example, if your version of MXview supports 250 nodes, then during device discovery MXview will only recognize up to 250 nodes. MXview will stop the device discovery procedure once it reaches the 250-node limit.

The MXview license that you purchase specifies the node limit for that version of MXview. To increase the node limit, you can purchase license upgrade and import the upgrade into MXview.

Checking the License

The number of currently managed nodes and the node limit is shown in the Status Bar on the Dashboard.

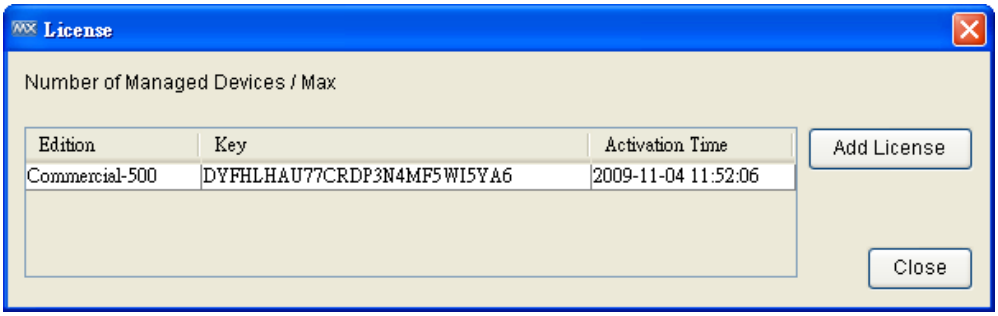
To check the details, select **Help → License**.



License Upgrade

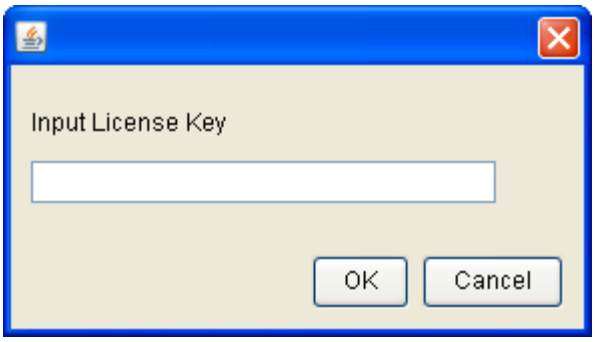
To increase the node limit of your MXview, you need upgrade the license.

1. Select **Help → License**.
2. Click **Add License**.



3. Find the license label in the software package, which is shown as:

4. Enter the key of the new license and click **OK**.



5. **Restart** the MXview client.

A

FAQ

Why do events show up late?

Make sure you have configured your switches' SNMP trap server to the MXview server's IP address, since doing so will provide real-time responses to events. Otherwise, MXview will collect information periodically.

Why can't I discover all of the devices on my network?

Please check the following:

1. Make sure your license supports a sufficient number of nodes.
2. Make sure your scan range includes all of the IP addresses of devices on your network.
3. Make sure your switches do not go into protection mode because they consider MXview packets to be part of a broadcast storm.

Why does one device have more than one icon?

MXview identifies devices by IP address. For this reason, if one device has more than one IP address within the scan range, the device will be viewed as multiple devices.

Will deleting a link in MXview cause the link to be disconnected in the real network?

No. The topology map shows the status of the real network, but cannot be used to configure the real network.

After a link in a ring is disconnected, why does it take a few seconds for the redundant link to become solid in the topology map?

MXview uses polling to determine if redundant links have become non-redundant. For this reason, the topology map will not be updated until all devices in the network have been polled. In addition, since it takes a finite amount of time to transmit the network status to the MXview server, it will take at least that amount of time for the topology map to be updated.

B

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