MXview User's Guide

Second Edition, September 2010

www.moxa.com/product

MXview User's Guide

Technical Support Contact Information

www.moxa.com/support

Moxa Americas:
Toll-free: 1-888-669-2872
Tel: +1-714-528-6777
Fax: +1-714-528-6778

Moxa China (Shanghai office):
Toll-free: 800-820-5036
Tel: +86-21-5258-9955
Fax: +86-21-5258-5505

Moxa Europe:
Tel: +49-89-3 70 03 99-0
Fax: +49-89-3 70 03 99-99

Moxa Asia-Pacific:
Tel: +886-2-8919-1230
Fax: +886-2-8919-1231

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 troubleshoot 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. Network 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.

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:

CPU:	Intel Core 2 Duo, 2.4 GHz or faster.
RAM:	1 GB or more
Hard Disk Space:	10 GB or more
Operating System:	Windows XP Professional/7/Server 2008
Browser:	IE 6/7/8, Firefox 3 with JRE 6
User Interface Language:	English or Simplified Chinese

Supported Devices

- The Moxa networking devices listed in the "Required Firmware Version Table" below can be used with MXview, provided the device is running the firmware version listed in the table. These Moxa networking devices support a wide range of functions, such as network status, traffic log, and configuration / firmware file management (see the "Function Support Table" below).
- 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.

Function Support Table

	Moxa Device		Non-Moxa Device	
	Managed switch supportive firmware (table below)	1. Managed switch with old firmware 2. Other SNMP devices	SNMP device	ICMP device
Auto Topology	✓	–	–	–
Device Recognition	✓	–	–	–
Active Event Notification	✓	–	–	–
Configuration/Firmware Management	✓	–	–	–
Traffic Report	✓	✓	✓	–
Passive Event Notification	✓	✓	✓	✓
Availability Check	✓	✓	✓	✓

Required Firmware Version Table

Model Name	Required Firmware Version
EDS-400A	2.6 or higher
EDS-500A	2.6 or higher
EDS-G509	2.6 or higher
EDS-P510	2.6 or higher
EDS-600	2.6 or higher
EDS-728	2.6 or higher
EDS-828	2.6 or higher
IKS-6726	2.6 or higher
PT-7710	1.2 or higher
PT-7728	2.6 or higher
PT-7828	2.6 or higher
PT-G7509	1.1 or higher
TN-5508/TN-5510	1.1 or higher
TN-5516/TN-5518	1.2 or higher
Additional model names will be added. Please check Moxa's website for the most up-to-update information.	

3

Installation and Migration

The following topics are covered in this chapter:

- **Installation Pocedure**
- **Uninstallation**
- **Migration**
- **Version Upgrade**

Installation Pocedure

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 the license key; input the character string printed on the cover of the CD.
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.

Migration

To migrate the software from one computer to another, first use **Project →Export** to save the system's current device list and topology to a file, and then use **Project → Import** to transfer the system to another computer.

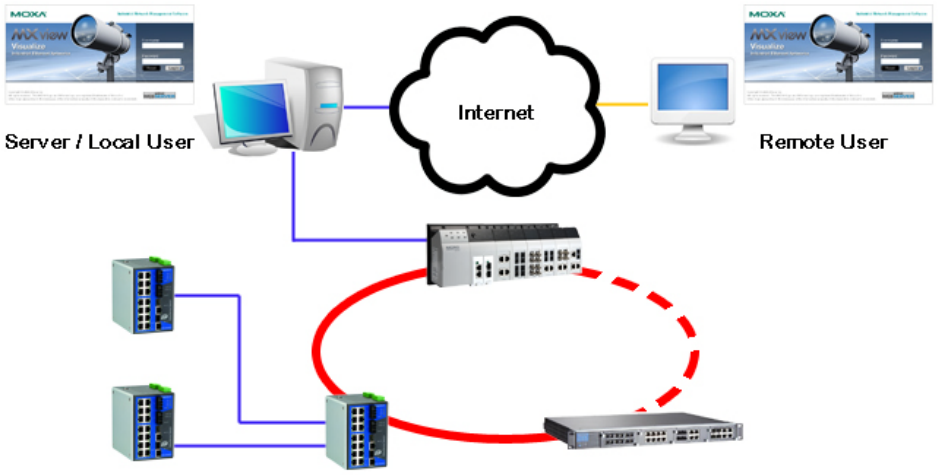
Version Upgrade

To upgrade the software to a new version, first use **Project** -> **Export** to save the system's current device list and topology to a file. Then, install the new version. Finally, use **Project** -> **Import** to upgrade the system to the new version.

4

Getting Started

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 SNMP Plus, 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.

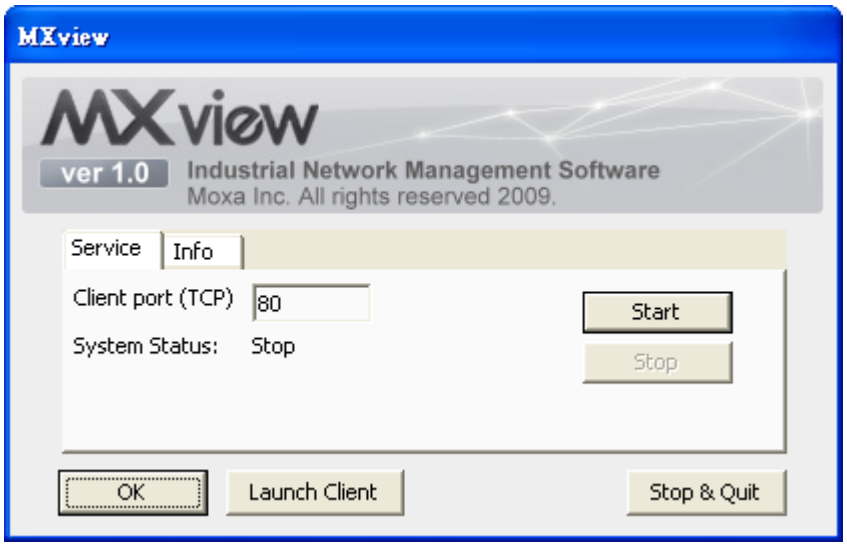
This chapter covers the following topics:

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

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.



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://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** with no password.

Note: At most 3 users can log in to the system at the same time.

Account

There are 2 accounts: admin and guest. The admin account possesses the privileges to change configurations in MXview, such as topology and scan range. The guest account is a read-only account. By default, the password of both accounts is empty, which can be changed in Preferences.

Auto Installation of Runtime Environment (Java Runtime Environment)

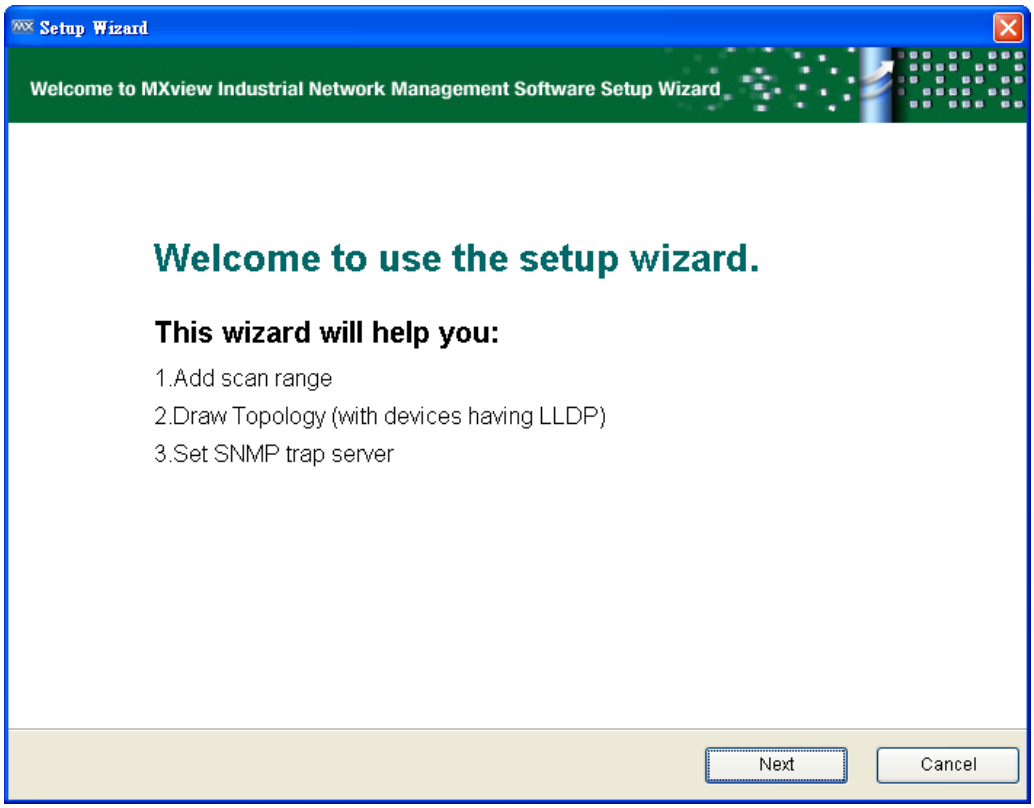
The MXview client must run in a JRE 6 environment. For IE users who do not have the appropriate version of JRE, installation of the update will start automatically.

If you are using a browser other than IE, you will need to download JRE 6 from Java's official website (http://java.sun.com/javase/downloads/index.jsp) and then install it on your computer.

5

Quick Start Using the Setup Wizard

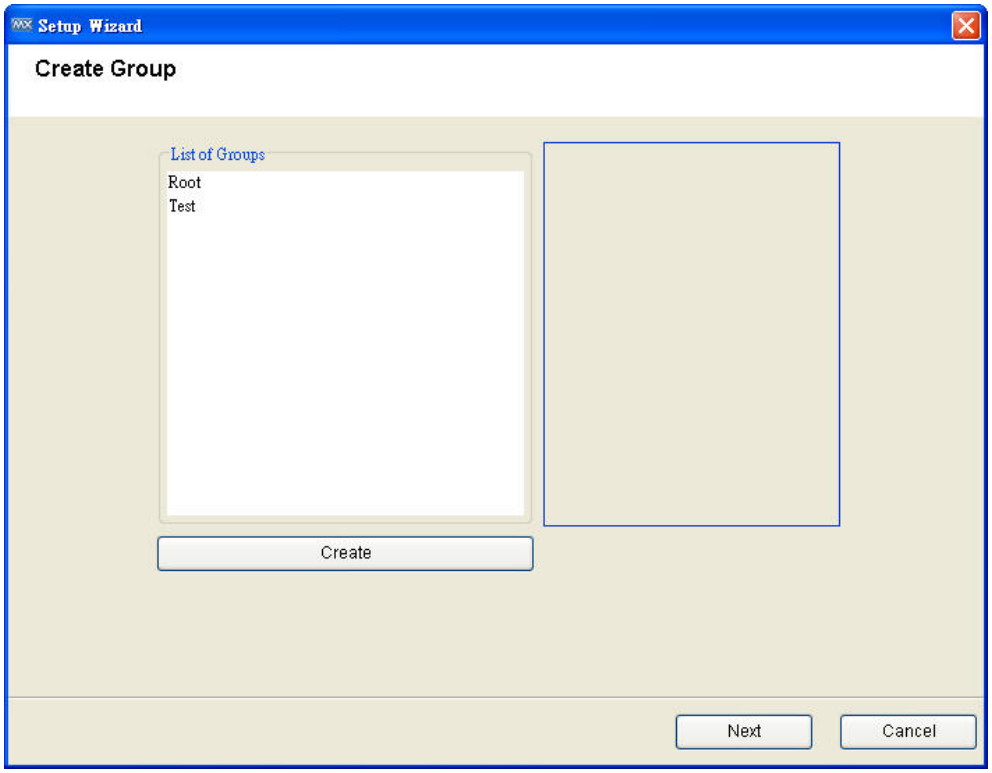
MXview provides a Setup Wizard that can be used to quickly determine the network topology and handle basic configuration tasks. The wizard will launch automatically when the software does not contain any nodes. To launch the Setup Wizard manually, select **Project → Wizard**. You should see the following window:



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

Step 1: Create Group

Devices scanned by MXview can be organized into a two-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.

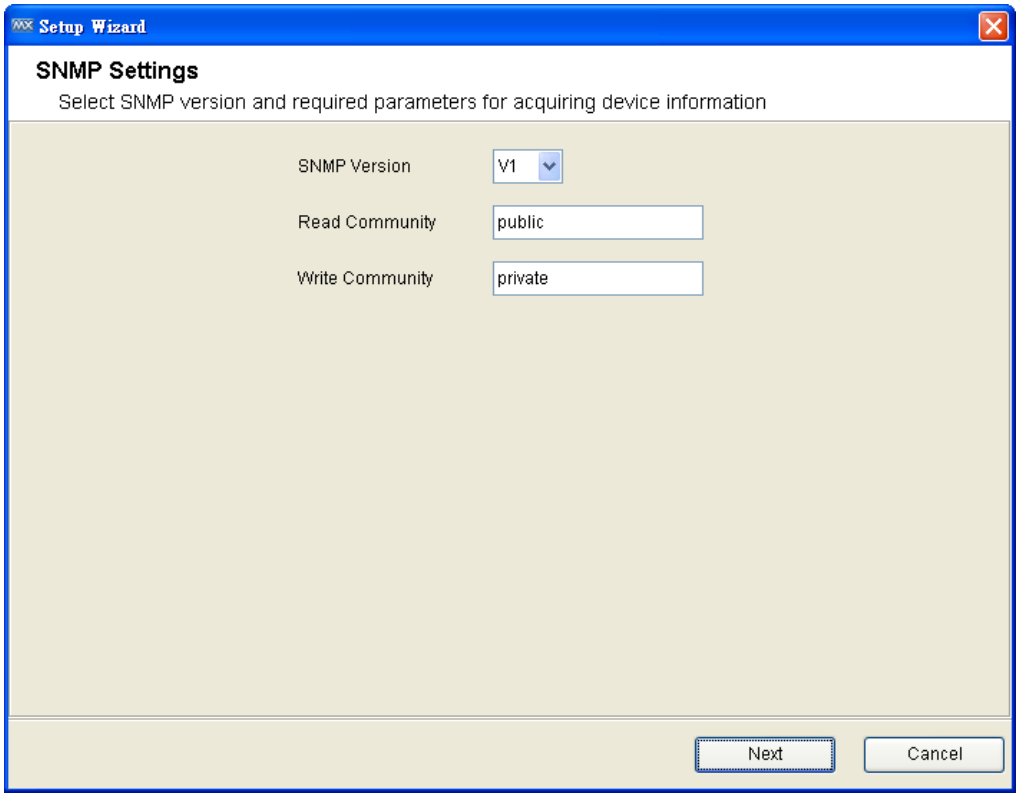


Step 2: Configure the SNMP Community String

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

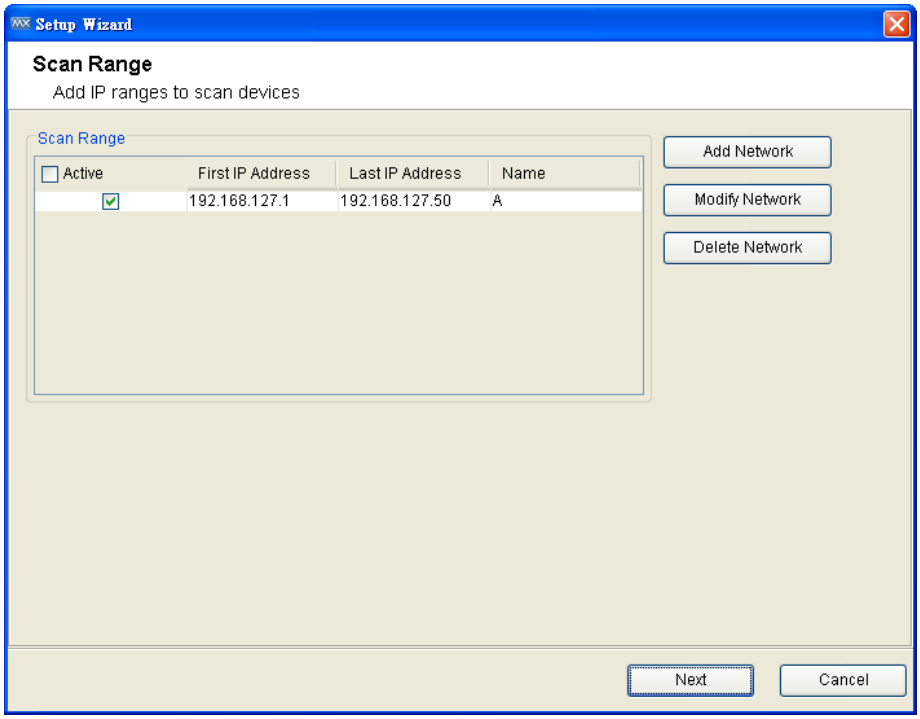
- Version: v1
- Read community string: public
- Write community string: private

If necessary, update this information at this time:



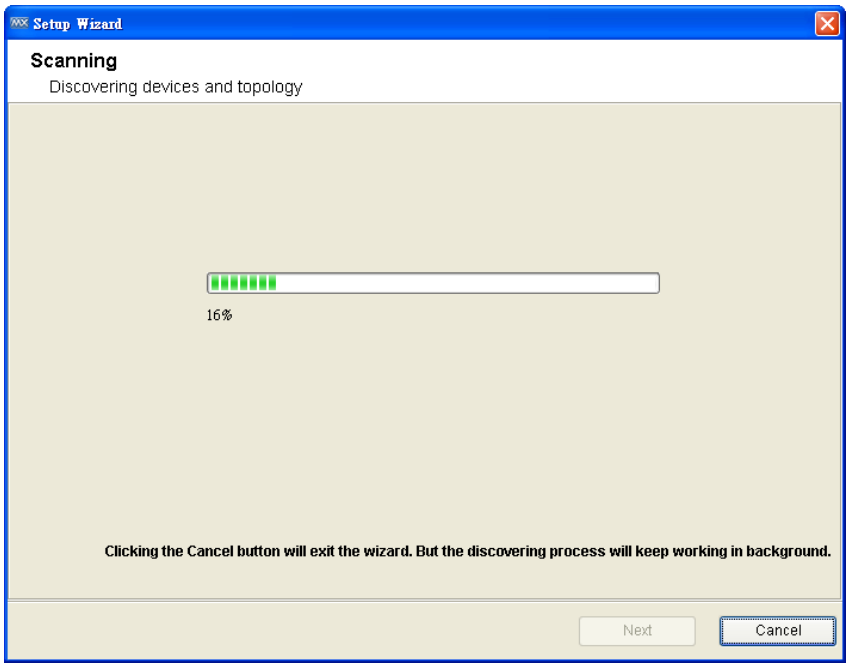
Step 3: Add the networks you want to scan

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.



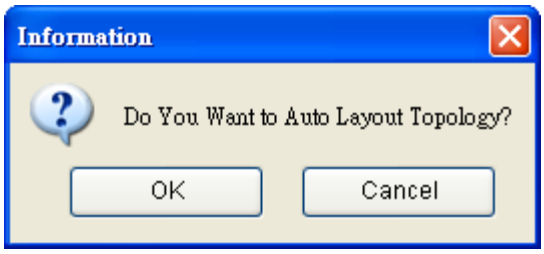
Note: A device's IP address must be configured properly before it can be managed by MXview.

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.



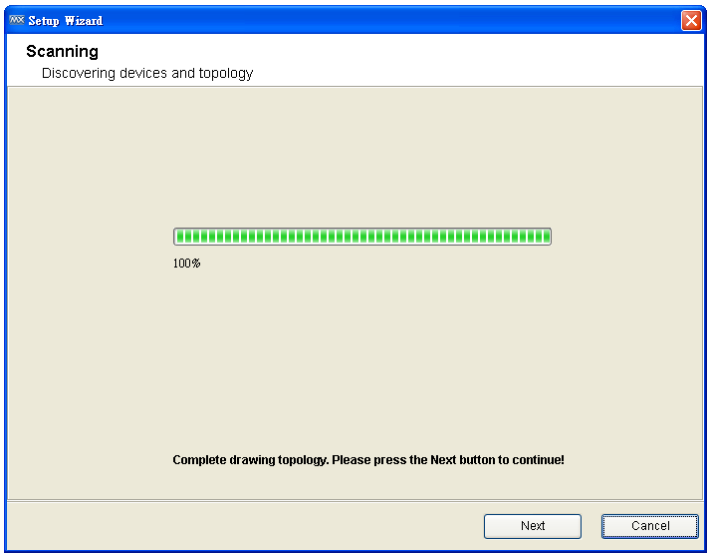
Step 4: Draw the topology

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

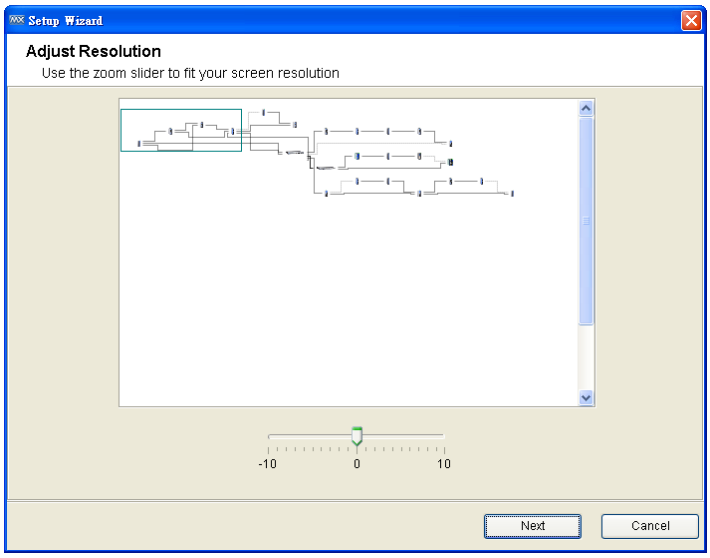


For devices without LLDP functionality, the topology can be drawn manually after the wizard is finished.

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



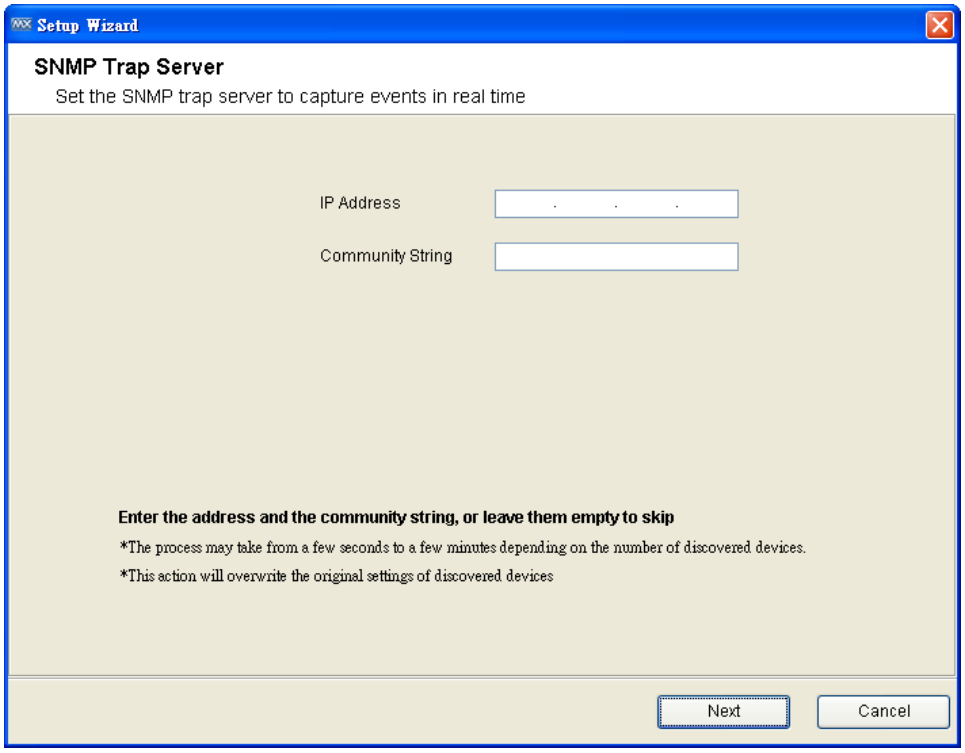
If necessary, use the slider shown in the following figure to adjust the resolution.



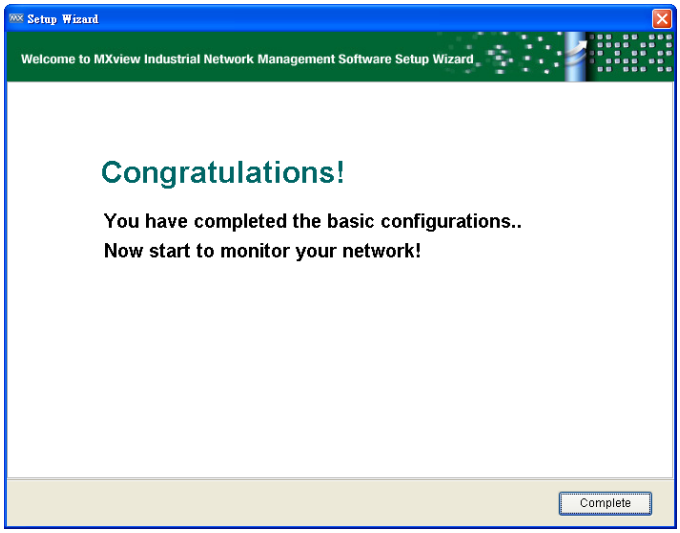
Step 5: Set the SNMP Trap Server to get events in real time

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.



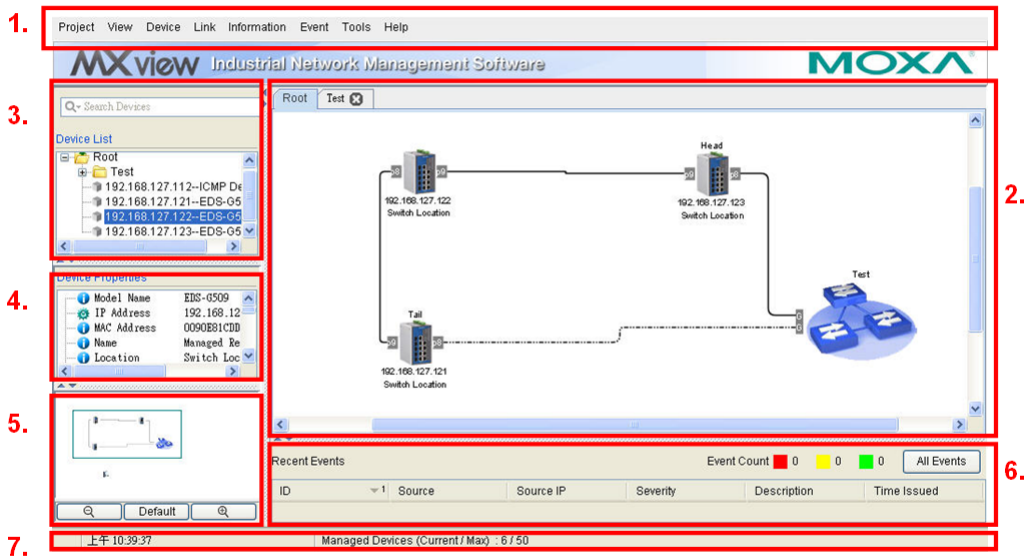
After this point, MXview initialization is complete.



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.



- **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 export data and configurations of the monitored networks 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.

Tools

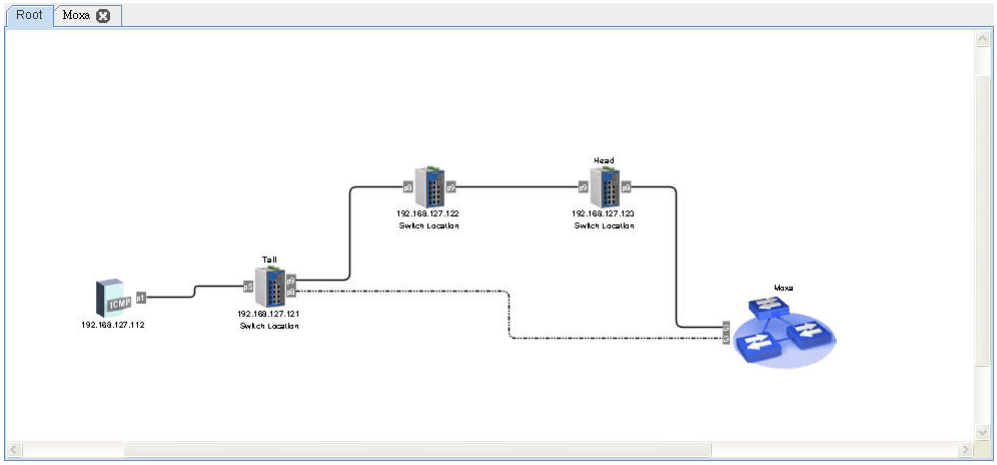
Use the **Tools** menu to launch additional services or programs, such as Moxa IP Configurator.

Help

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

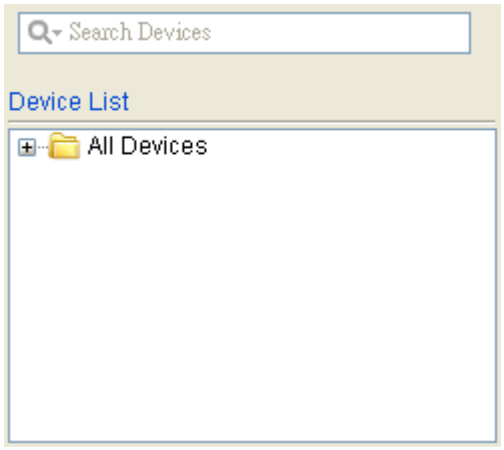
Topology Map

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



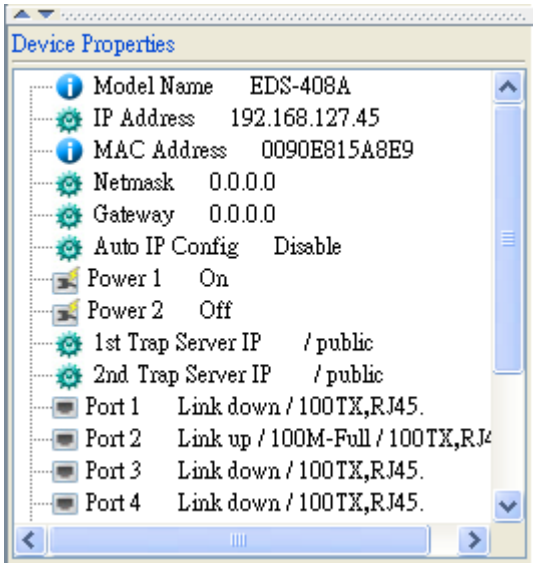
Device List

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.

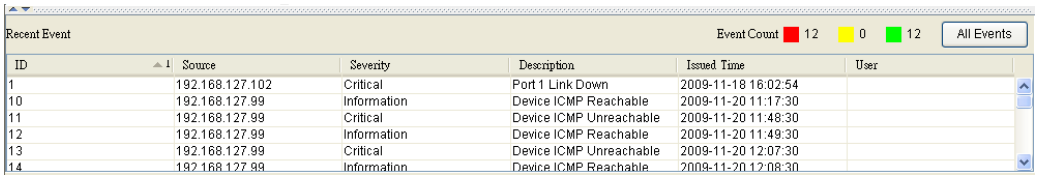


Recent Events List

This list shows 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

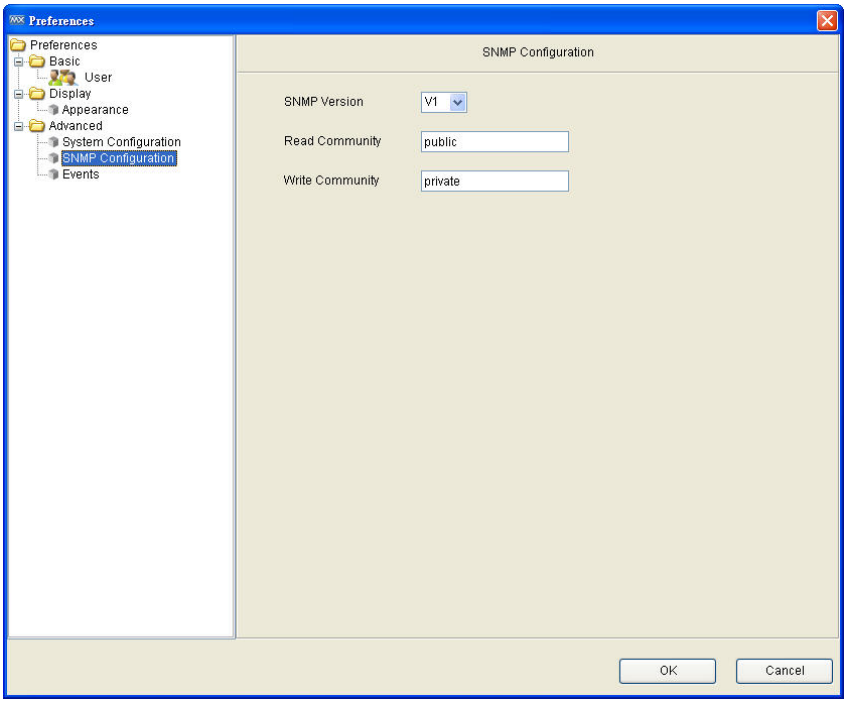
Devices in the assigned scan range can be discovered via SNMP and ICMP protocols. After a device is discovered, MXview will use SNMP and ICMP to poll the device periodically. To configure this function properly, you will need to know the following information:

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

Change 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.

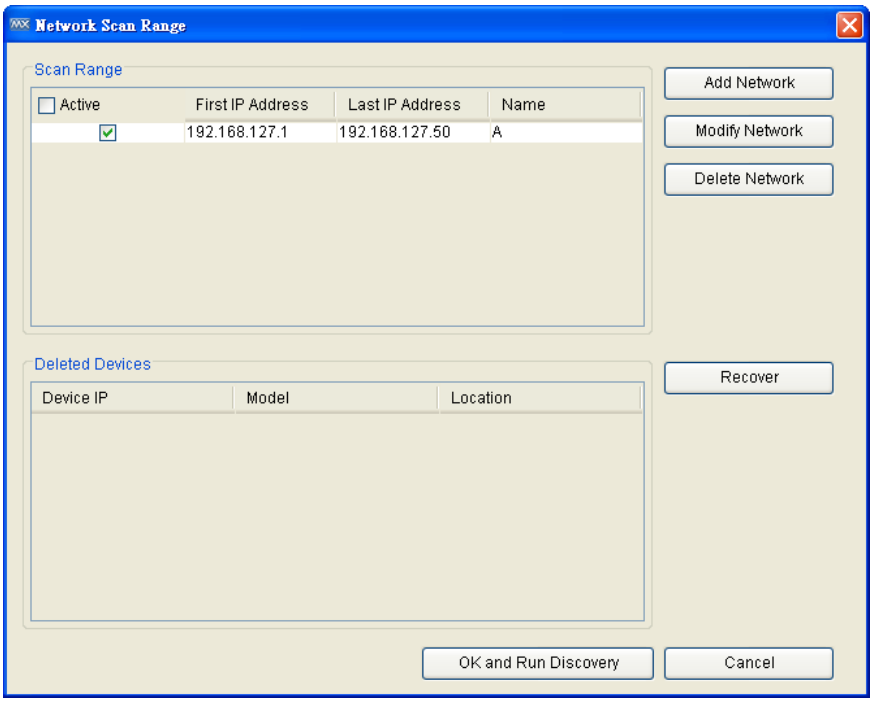


Scan Range

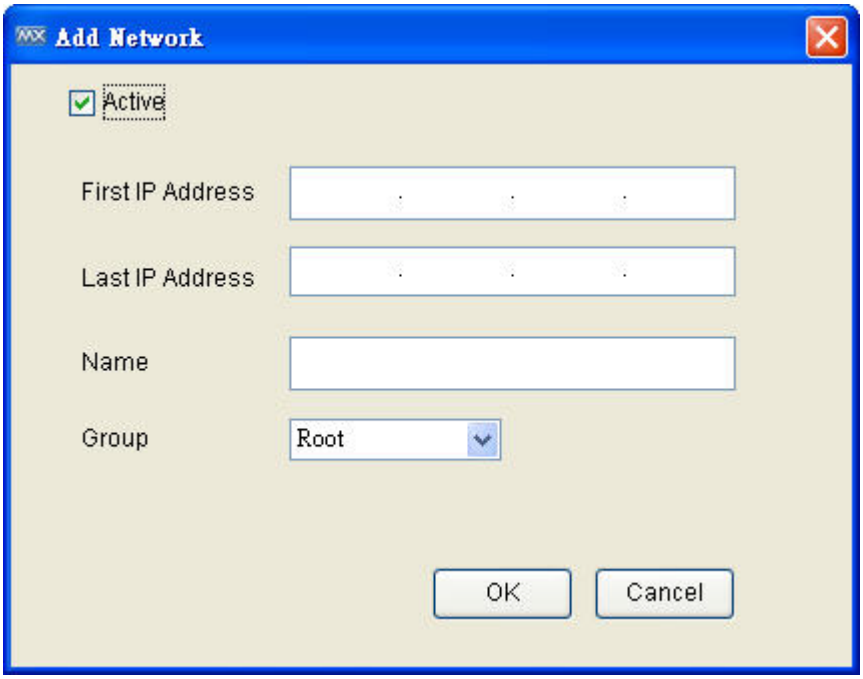
You can assign multiple scan networks, with each network defined by a starting IP address and an ending IP address. MXview will discover all active devices that belong to the scan networks.

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.

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 below, to indicate the device's location in 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.

8

Topology Management

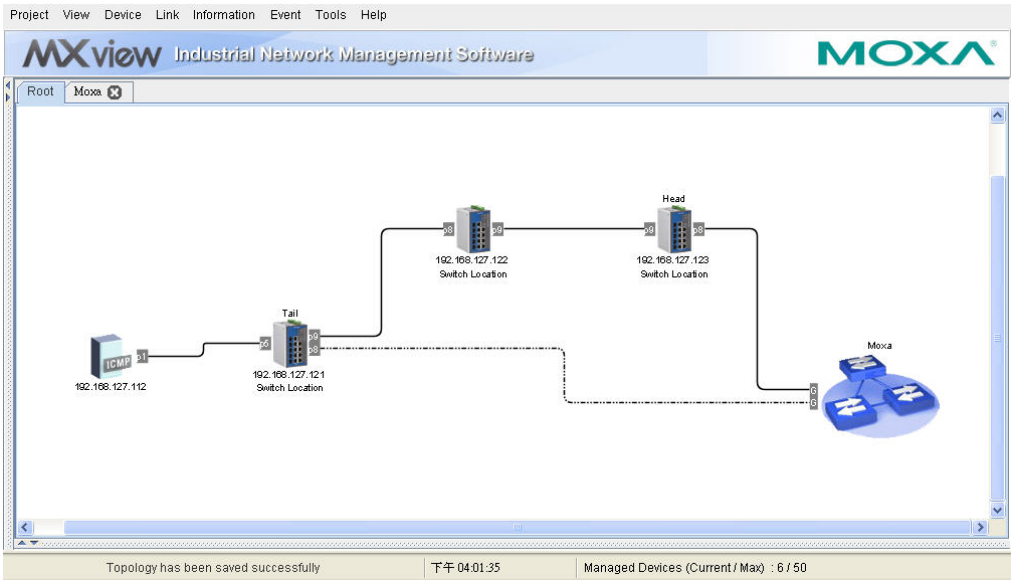
The **Topology Map** is the core of MXview, and can be used to complete most actions. The Topology Map shows a graphical representation of the devices in your networks, and can be used to do the following:

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

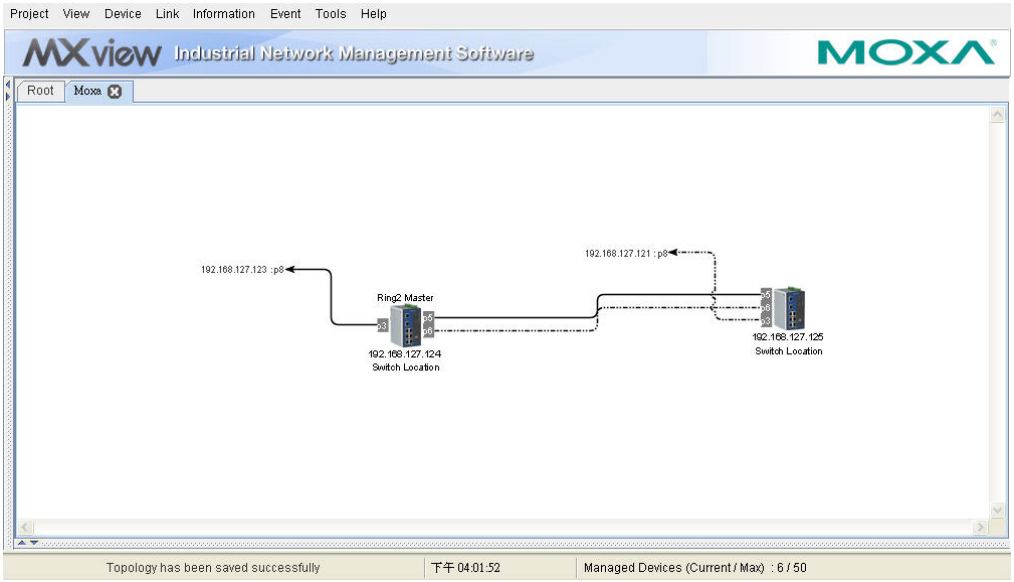
Two-layer Tree Structure

The Topology Map can be organized as a two-layer tree structure. It helps users manage a large number of nodes, up to 1,000, 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 second 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. 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.

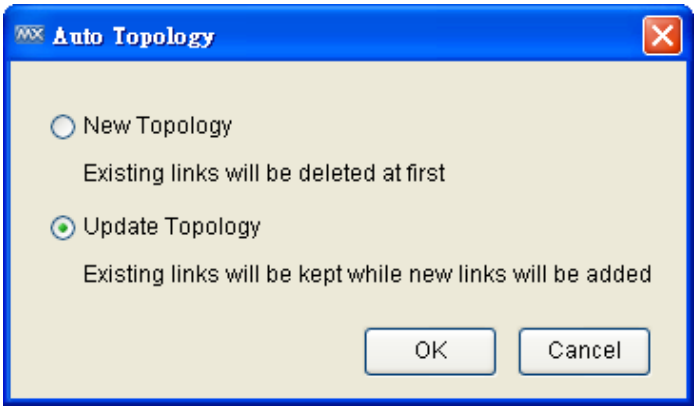
1. Select **View → Auto Topology**

2. Select **New Topology**
3. Click **OK**

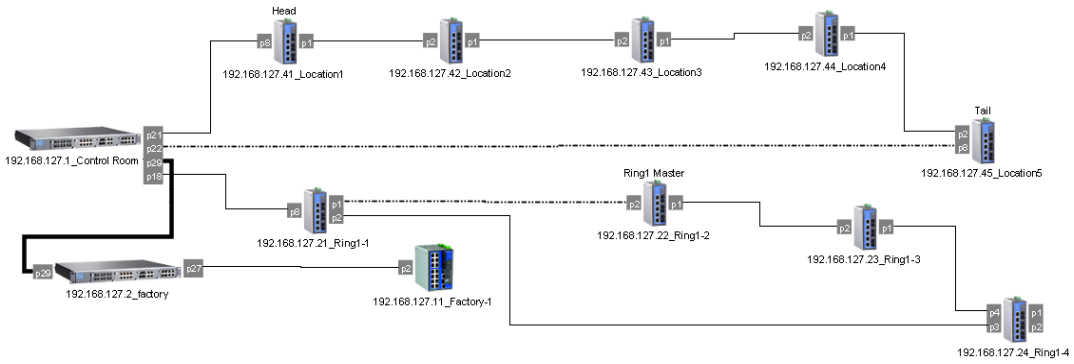
Note: Links drawn manually will be also deleted by this action.

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**

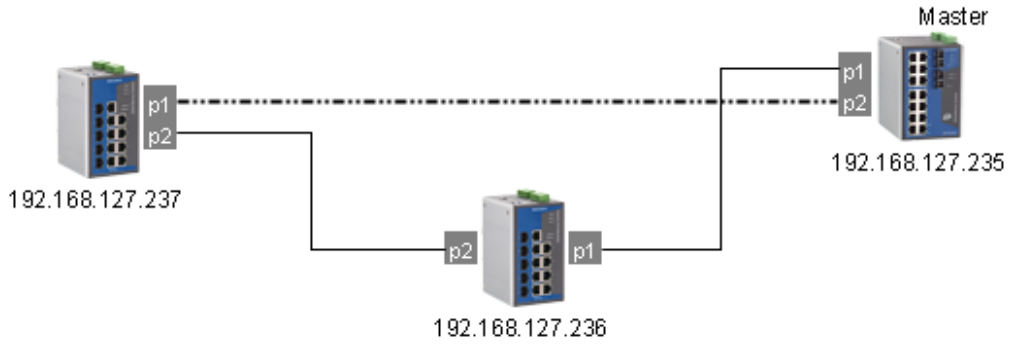


The following figure shows an example of a topology map:



Redundant Topologies

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



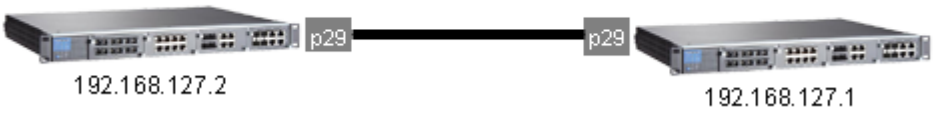
For devices that play a particular role in the topology, MXview will label the devices by displaying the roles above the images of the devices. Backup links will be indicated with dotted lines.

- 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.

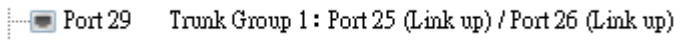
Port Trunking

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.

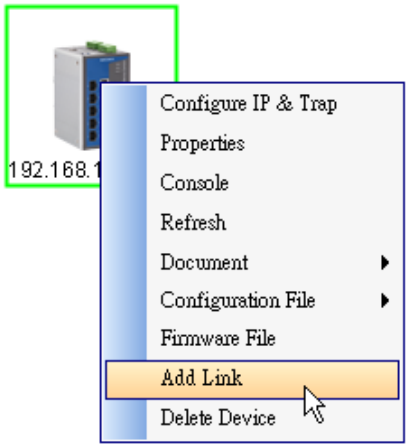
Note: For trunked link, check "Device Properties" to get the port number corresponding to the trunking group.



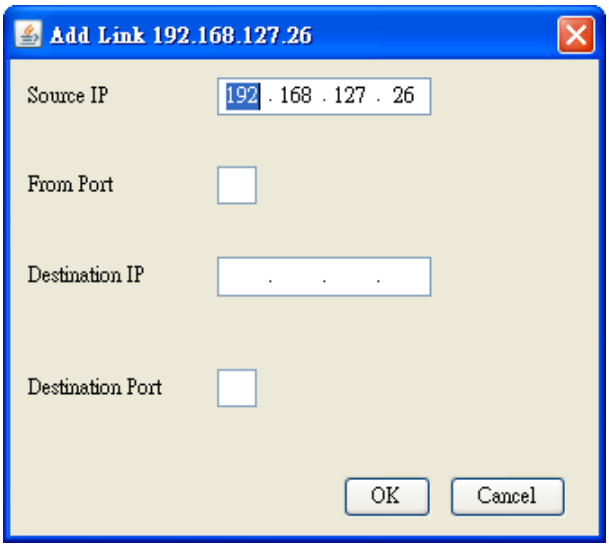
Adding a Link

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.



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

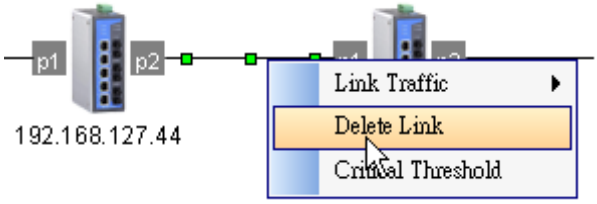
Note: Port numbers must be numeric and entered correctly to obtain the correct traffic information.

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 a 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.**

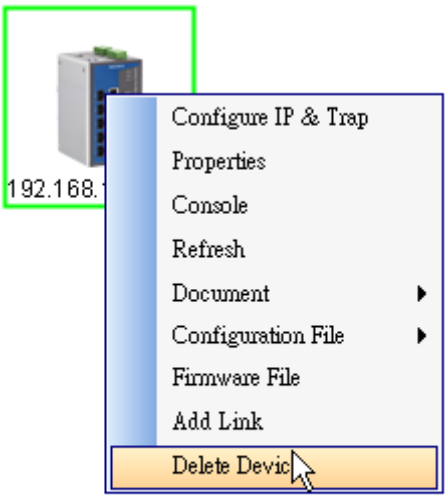


Note: Deleting a link will delete a link from the topology map, but it will not affect the actual network configuration.

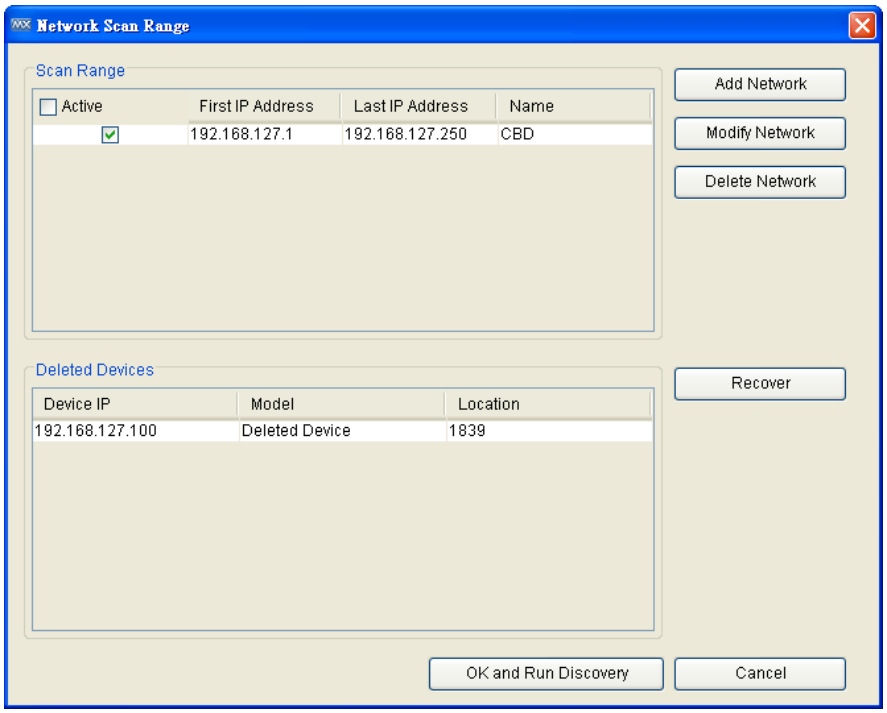
Delete a Device

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**.

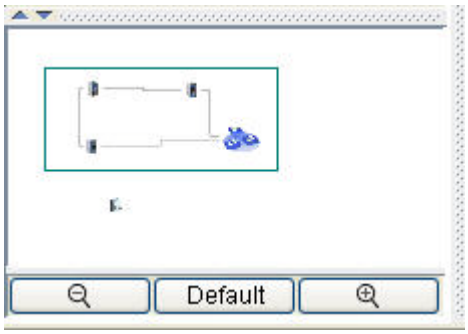


You may recover devices that have been deleted. Once recovered, the devices will be polled and located when conducting device discovery Take the following steps to recover deleted devices:

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

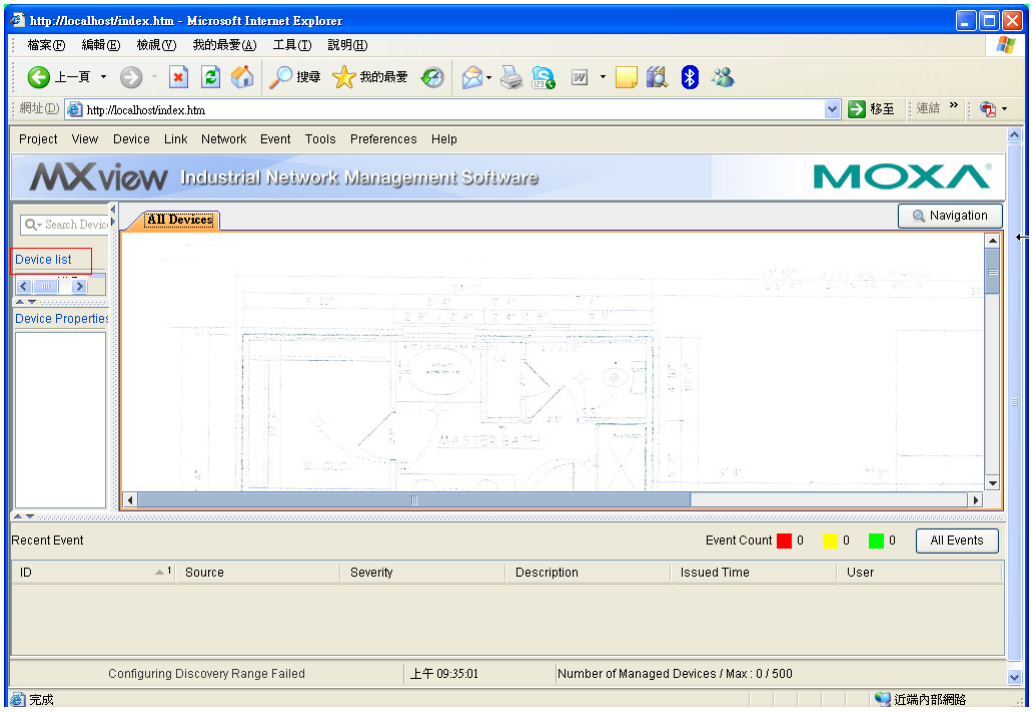
You may insert a background image into the topology map to provide additional references, such as geographical information or deployment layout.

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

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

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

Select **View → Background → Delete**



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 for device and link properties. Then, OPC clients such as SCADA systems can access and use these tags.

1. Select **Tools** -> **OPC Server**
2. Click **Start**.

Currently, information that MXview can prepare as tags include: a device's IP address, MAC address, description, location and status, which are labeled beginning with D_, and a link's corresponding IP addresses and ports, which are labeled beginning with L_.

9

Event and Notification

Monitoring Methods

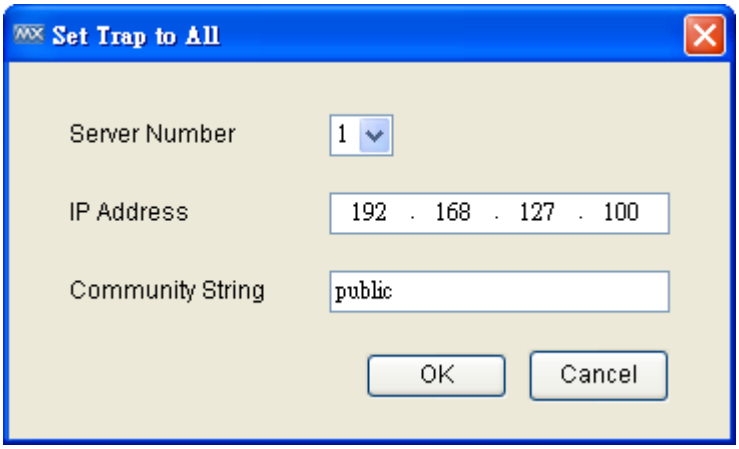
Monitoring can be conducted using SNMP trap messages, periodic polling, or color coding, as described in the following subsections.

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.

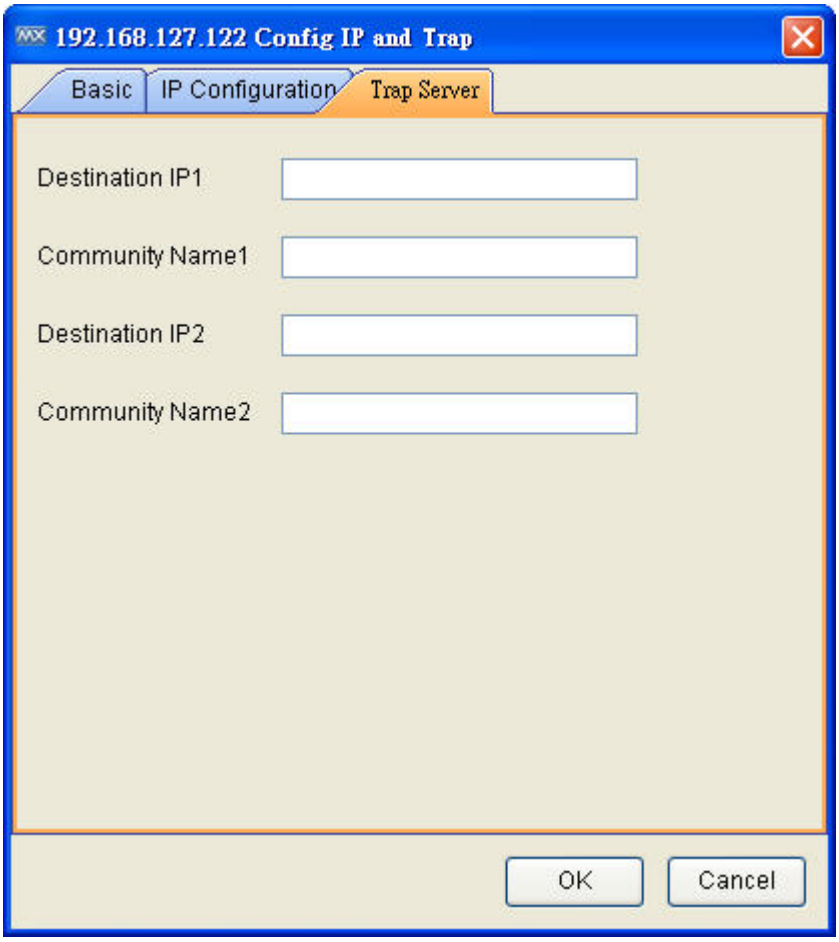
Take the following steps to set the trap destination of all devices:

1. Select **Network → Set SNMP 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.

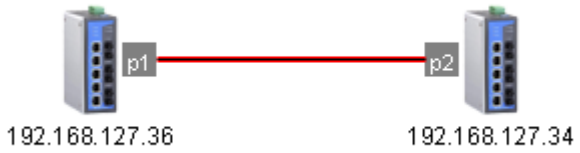
Monitoring via Periodic Polling

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 availability of a device's SNMP service, bandwidth utilization, error packet rate, and collision rate. Separate thresholds can be used for bandwidth utilization, error packet rate, and collision rate, 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	

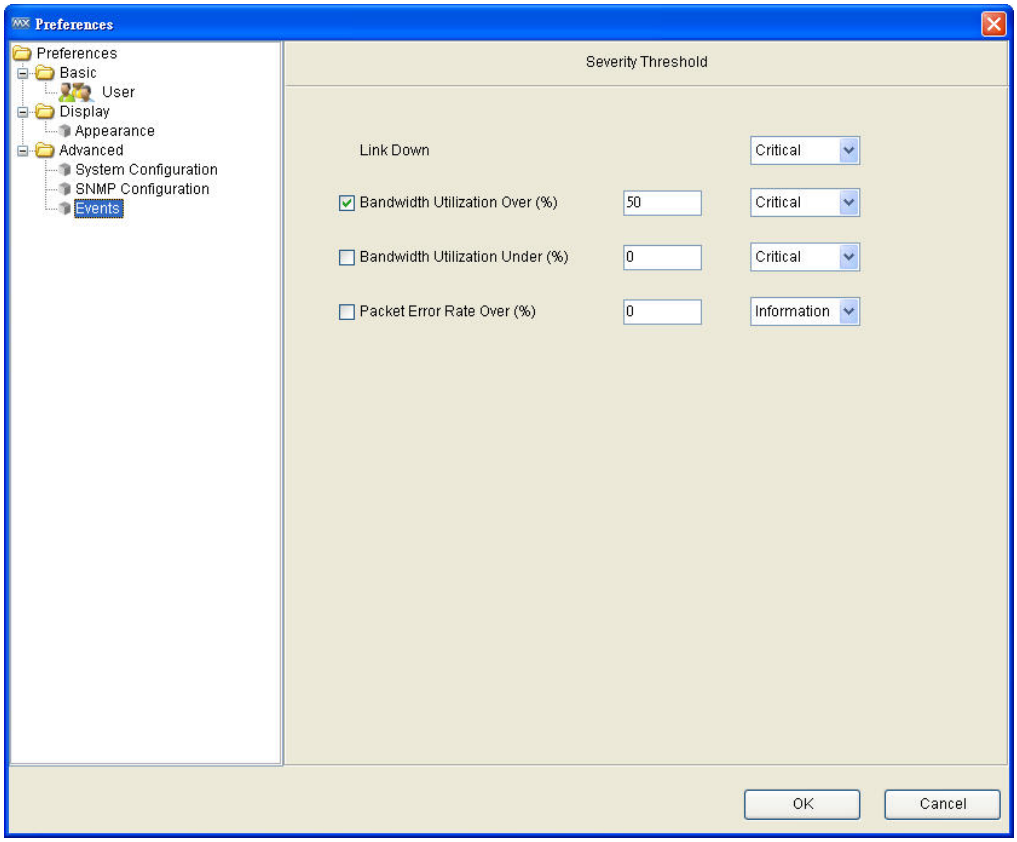
Event Recovery

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.



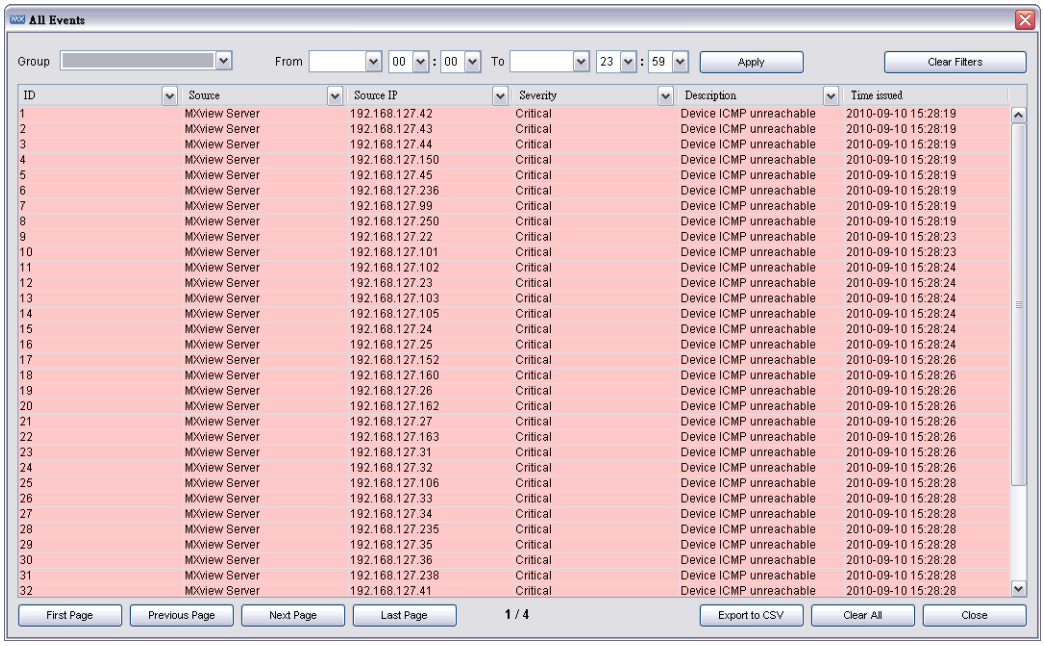
Recent Events

MXview shows recent events at the bottom of the Dashboard.

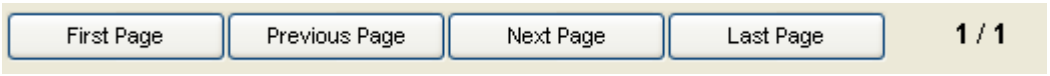
Event History

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

To show the event history of a single device, click the device to select it, and then select **Event → Device** from the menu bar.

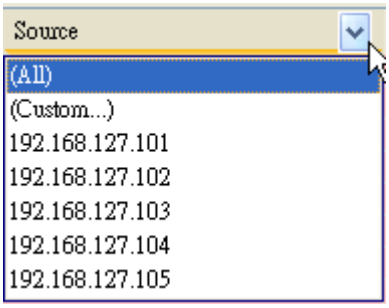


The table contains 40 entries on a page. Use the page controls at the bottom to navigate between pages.



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.

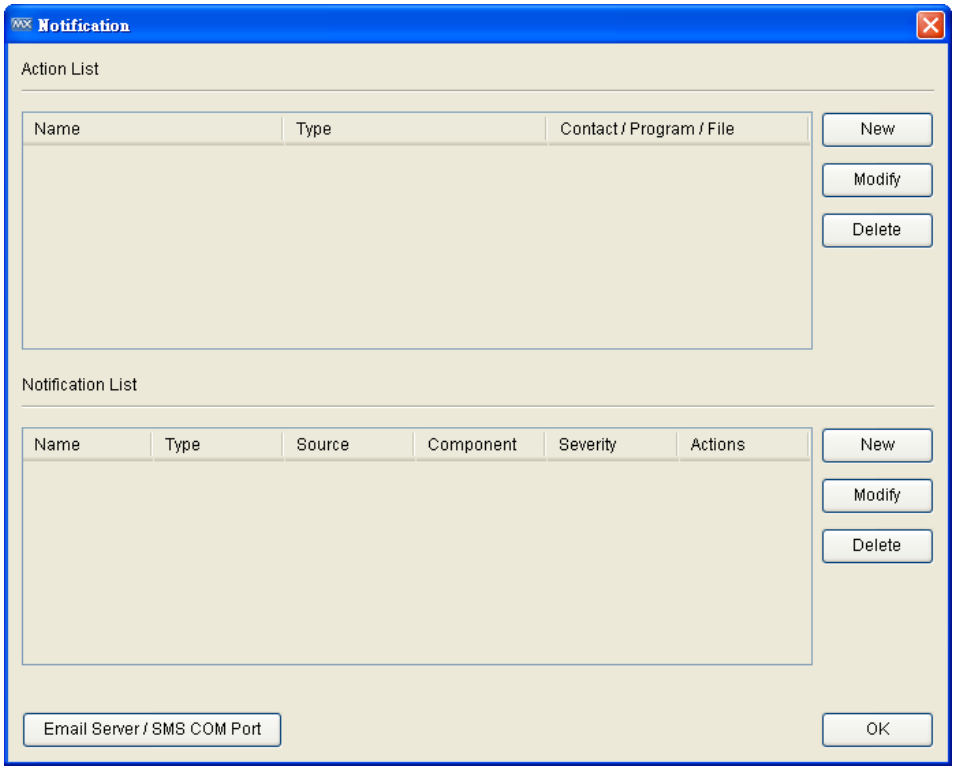
Notification

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.

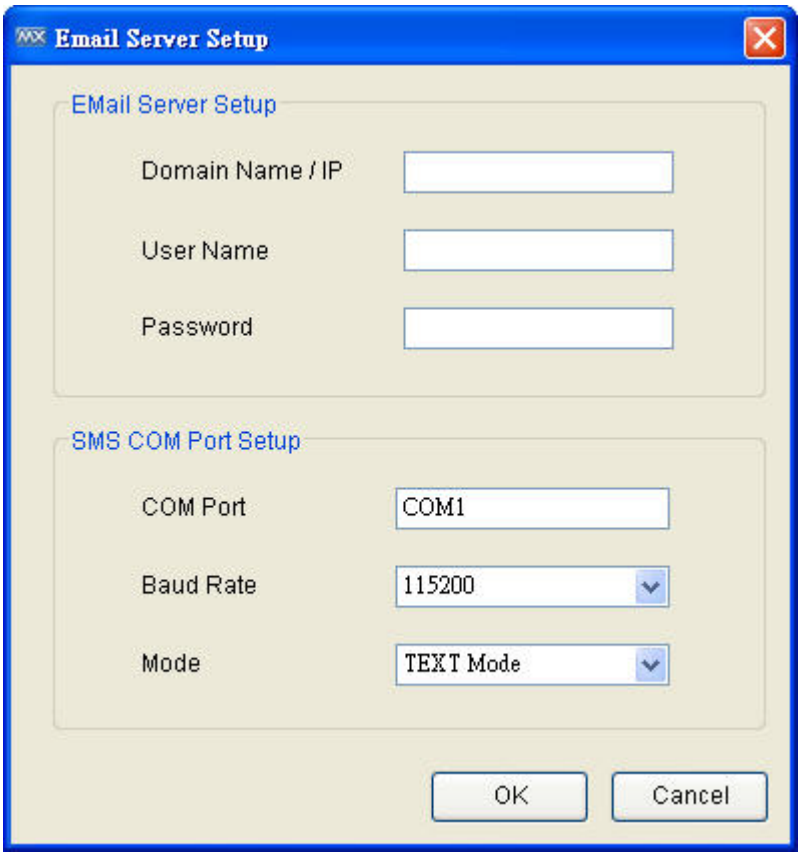
Add an SMS Action

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:

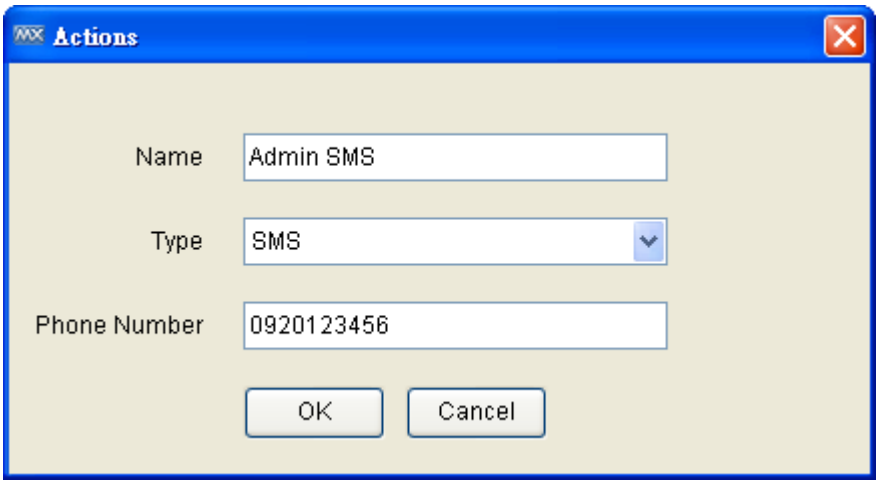
1. Select **Event → Notification**



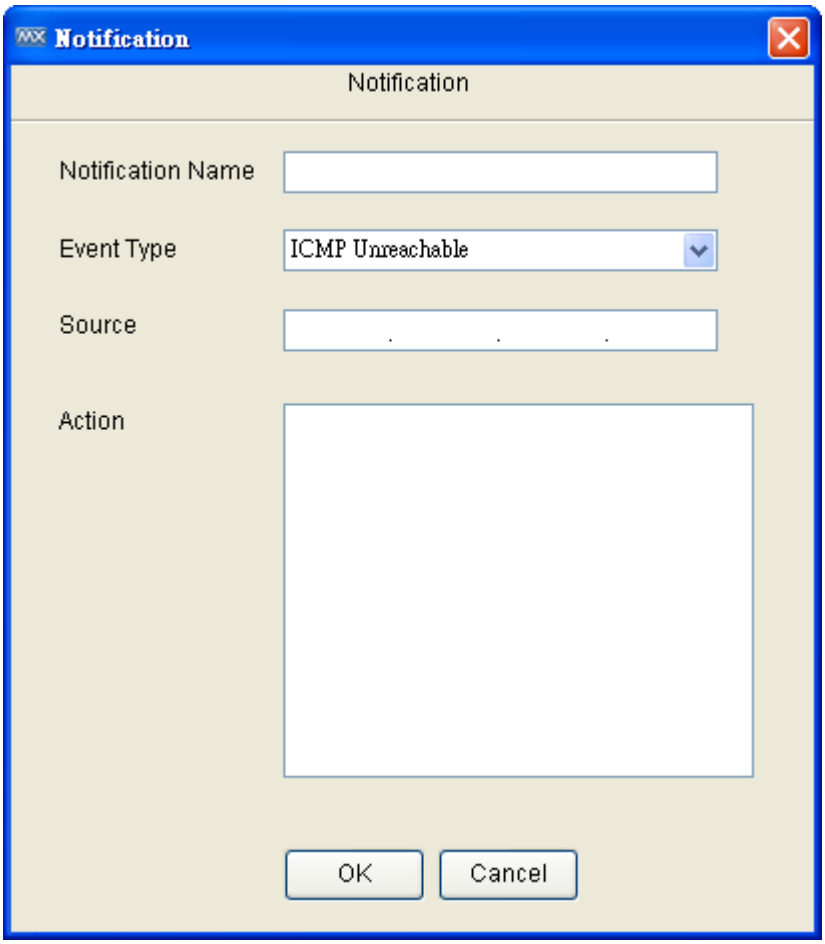
2. Click Email Server / SMS COM Port



3. Select the COM port 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.

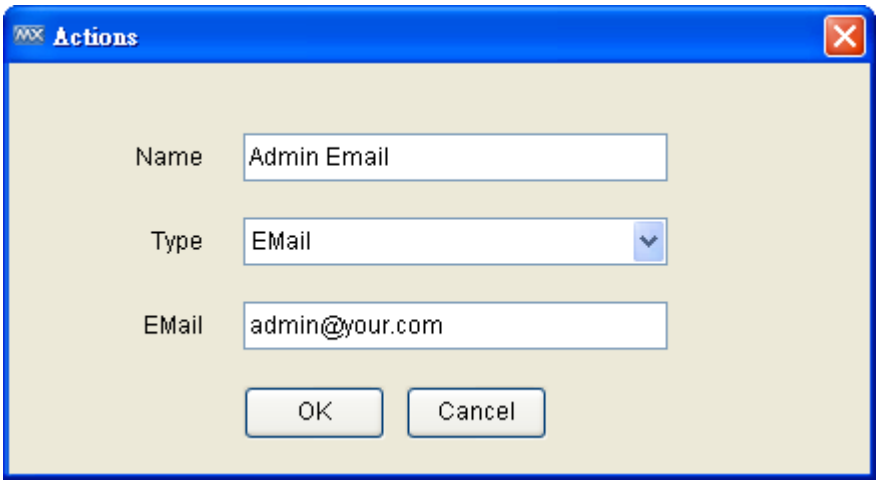


8. Click **OK**.

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 **Email Server / SMS COM Port**
3. 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**.

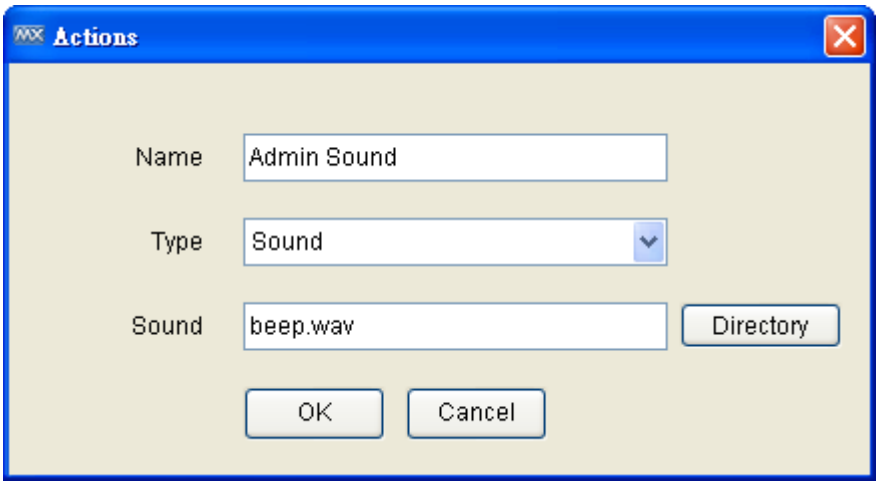


6. Click **New** in the Notification List.
7. Select the action just added and the corresponding event type, source IP.
8. Click **OK**.

Add 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 a 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.

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:

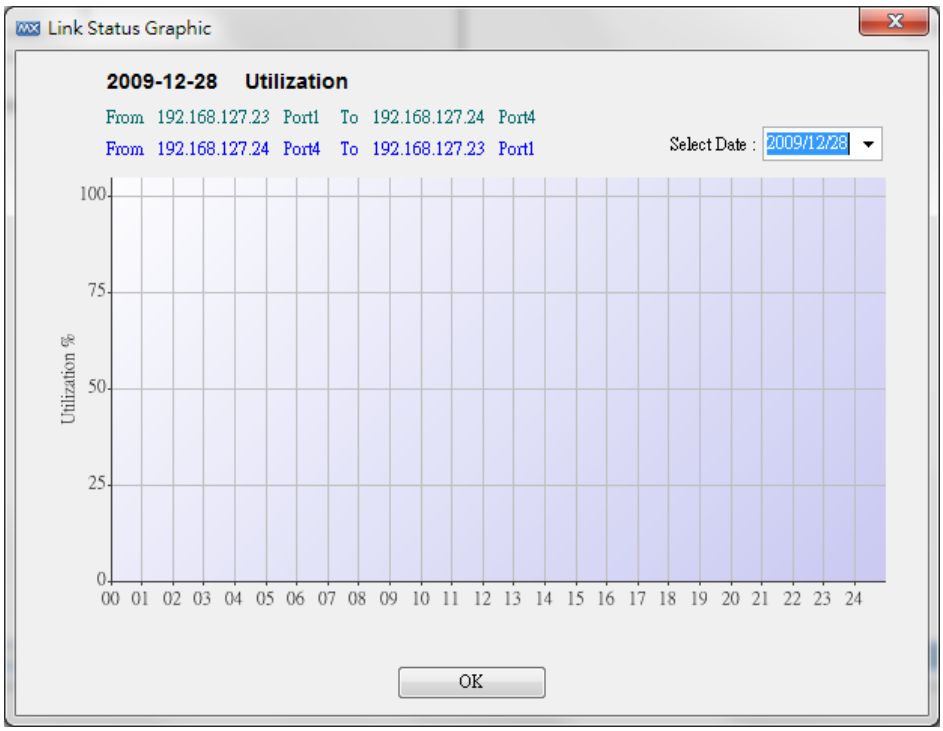
- Traffic utilization (%)
- Error packet rate (%)
- Collision rate (%)

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).

The graph shows data for a particular day. The x-axis unit is hours. To check the graph for a different date, use **Select Date**.



Threshold & Event Notification

There are 4 conditions related to traffic that 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.
4. Packet collision 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

Properties

You may select a device and check its properties in Device Properties. 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.

Changing Device Properties

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

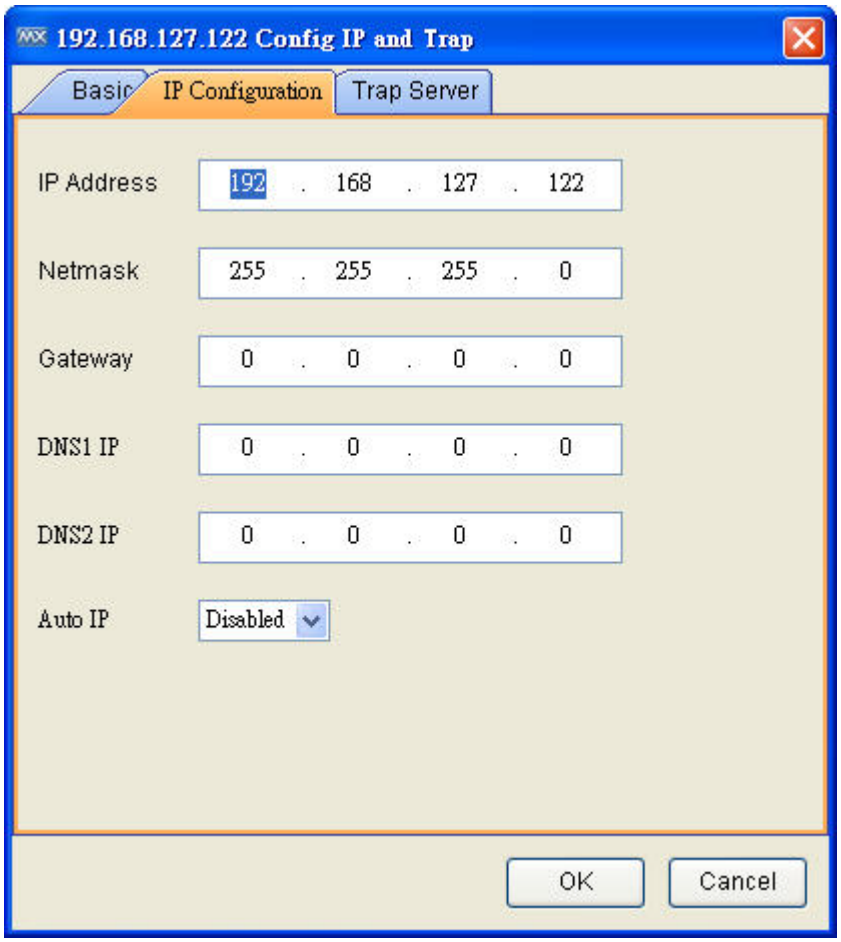
1. Select a device.
2. Select **Device → Maintenance → Configure IP & Trap.**

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.

Click the **SNMP Configuration** tab to choose the SNMP version and enter the corresponding parameters.



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.

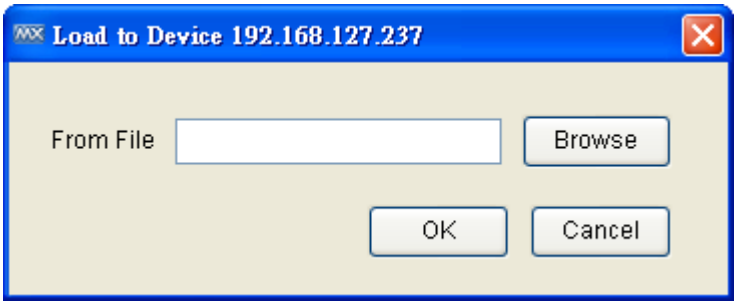
Configuration Backup and Restoration (Moxa devices only)

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:

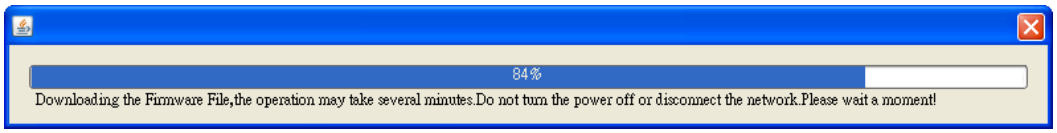
1. Select **Device → Configuration → Load to Device**.



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.

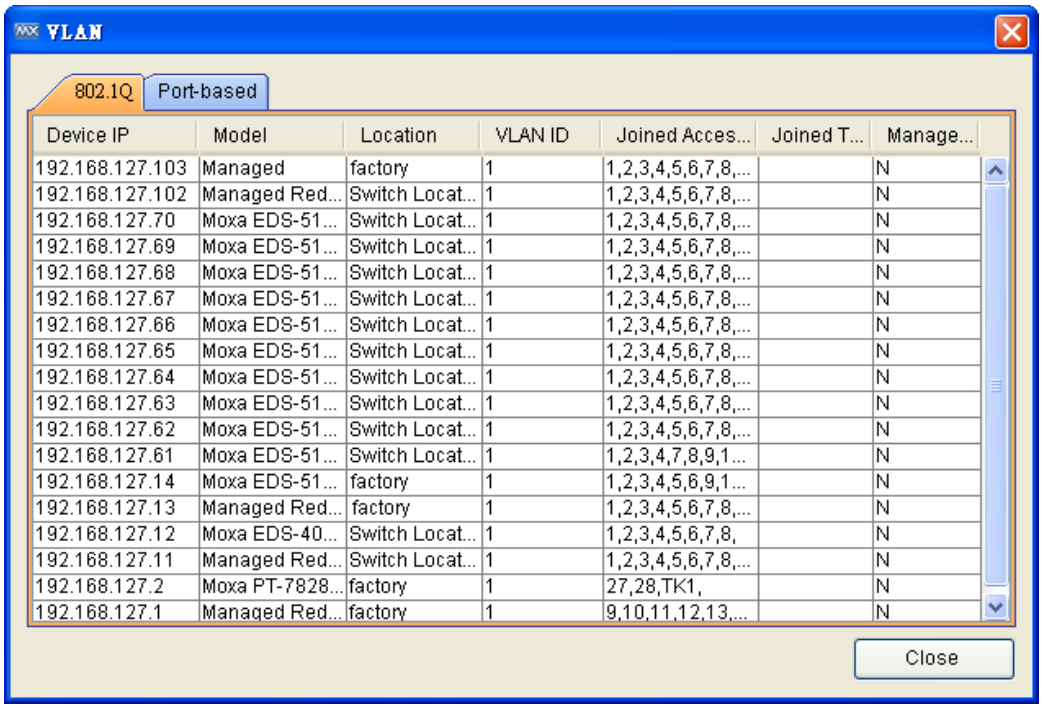
Refresh Status

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.**

12

VLAN

Moxa switches support 802.1Q tagged VLAN and port-based VLAN. MXview collects each device's VLAN configuration and integrates the configurations into one table to provide a network-wide view. To view the table, 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

13

MXview License

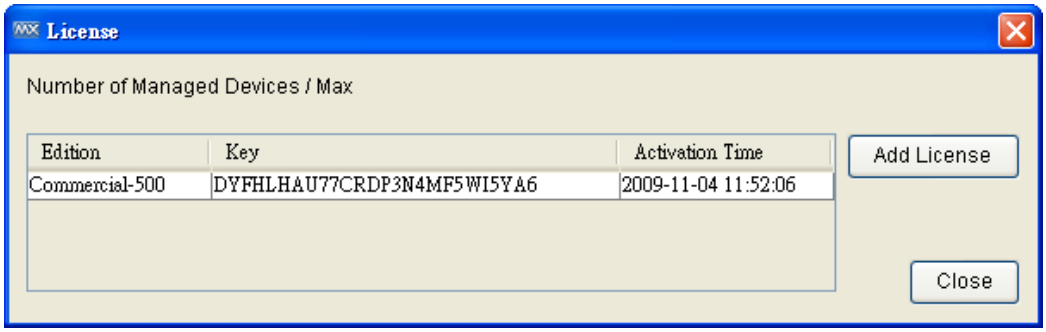
MXview is available in different versions, which the different versions supporting different numbers of nodes. For example, if your version of MXview supports 250 nodes, then during device discovery MXview will only recognize up to 250 nodes. MXview will stop the device discovery procedure once it reaches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

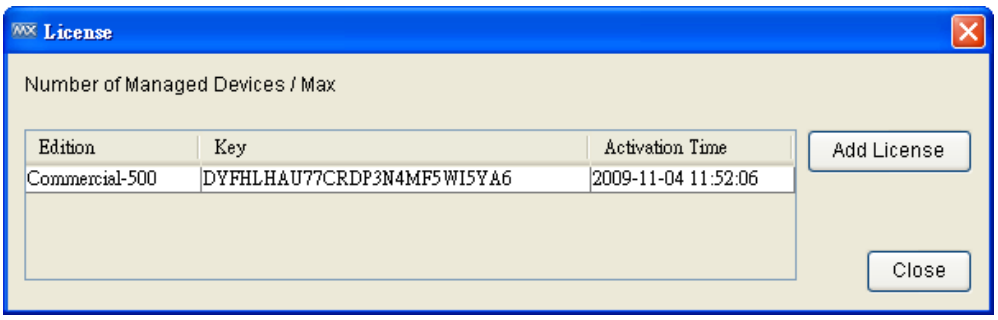
To check the details, select **Help → License**.



License Upgrade

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

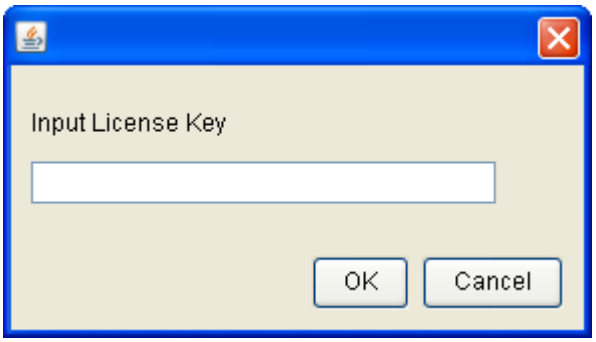
1. Select **Help → License.**
2. Click **Add License**.



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

MXview Upgrade-50
Key: XXXXXXXXXXXXXXXXXXXXXXXXX

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

License

License (Net-SNMP)

Various copyrights apply to this package, listed in several separate sections below.

Please carefully review all sections of the license information.

---- Part 1: CMU/UCD copyright notice: (BSD like) -----

Copyright 1989, 1991, 1992 by Carnegie Mellon University

Derivative Work - 1996, 1998-2000

Copyright 1996, 1998-2000. The Regents of the University of California

All Rights Reserved

Permission to use, copy, modify and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appears in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of CMU and The Regents of the University of California not be used in advertising or publicity pertaining to distribution of the software without specific written permission.

CMU AND THE REGENTS OF THE UNIVERSITY OF CALIFORNIA DISCLAIM ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL CMU OR THE REGENTS OF THE UNIVERSITY OF CALIFORNIA BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM THE LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

---- Part 2: Networks Associates Technology, Inc copyright notice (BSD) -----

Copyright (c) 2001-2003, Networks Associates Technology, Inc

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of the Networks Associates Technology, Inc nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS"' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 3: Cambridge Broadband Ltd. copyright notice (BSD) -----

Portions of this code are copyright (c) 2001-2003, Cambridge Broadband Ltd.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* The name of Cambridge Broadband Ltd. may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 4: Sun Microsystems, Inc. copyright notice (BSD) -----

Copyright © 2003 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara,

California 95054, U.S.A. All rights reserved.

Use is subject to license terms below.

This distribution may include materials developed by third parties.

Sun, Sun Microsystems, the Sun logo and Solaris are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of the Sun Microsystems, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

---- Part 6: Cisco/BUPTNIC copyright notice (BSD) -----

---- Part 7: Fabasoft R&D Software GmbH & Co KG copyright notice (BSD) -----

Copyright (c) Fabasoft R&D Software GmbH & Co KG, 2003

oss@fabasoft.com

Author: Bernhard Penz

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* The name of Fabasoft R&D Software GmbH & Co KG or any of its subsidiaries, brand or product names may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,

WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 8: Apple Inc. copyright notice (BSD) -----

Copyright (c) 2007 Apple Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of Apple Inc. ("Apple") nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY APPLE AND ITS CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL APPLE OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 9: ScienceLogic, LLC copyright notice (BSD) -----

Copyright (c) 2009, ScienceLogic, LLC

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of ScienceLogic, LLC nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The MIT License (Libxml2)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

License Agreement (GoAhead)

THIS LICENSE AGREEMENT IS BETWEEN YOU AND GOAHEAD (BOTH AS DEFINED BELOW). THIS AGREEMENT GRANTS YOU ONLY A LIMITED LICENSE TO USE GOAHEAD PROPRIETARY COMPUTER SOFTWARE. BY EXECUTING THIS AGREEMENT OR USING THE SOFTWARE, YOU CERTIFY THAT YOU WILL USE THE SOFTWARE ONLY IN THE MANNER PERMITTED HEREIN.

1. Definitions.

"**Documentation**" means any documentation GoAhead provides with the Original Code.

"**GoAhead**" means GoAhead Software, Inc.

"**Agreement**" means this document.

"**Modifications**" means any addition to or deletion from the substance or structure of either the Original Code or any previous Modifications.

"**Original Code**" means the source code to GoAhead's proprietary computer software entitled GoAhead WebServer that is provided to You by GoAhead.

"**You**" means an individual or a legal entity exercising rights under, and complying with all of the terms of, this license or a future version of this license. For legal entities, "You" includes any entity that controls, is controlled by, or is under common control with You. For purposes of this definition, "control" means (a) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (b) ownership of fifty percent (50%) or more of the outstanding shares or beneficial ownership of such entity.

"**Response Header**" means the first portion of the response message output by the GoAhead WebServer, containing but not limited to, header fields for date, content-type, server identification and cache control.

"**Server Identification Field**" means the field in the Response Header which contains the text "Server: GoAhead-Webs".

2. License.

Limited Original Code Grant.

Subject to the terms of this Agreement, GoAhead hereby grants You a worldwide, royalty-free, nonexclusive, nontransferable license, without right of sublicense, subject to third party intellectual property claims, (a) to use and reproduce the Original Code, (b) to create Modifications from the Original Code, and (c) to distribute source code copies of the Original Code form solely when embedded in other software (in a manner that does not allow the Original Code to be separated) that provides material functionality in addition to the functionality provided by the Original Code.

Binary Code.

Subject to the terms of this Agreement, GoAhead hereby grants You a worldwide, royalty-free, nonexclusive, nontransferable license, without right of sublicense, to copy and distribute binary code copies of the Original Code together with Your Modifications in binary code.

Restrictions on Use.

You may sublicense third parties to use Your Modifications if You enter into a license agreement with such third parties that bind such third parties to all the obligations under this Agreement applicable to You and that are otherwise substantially similar in scope and application to this Agreement (without limiting the protections afforded to GoAhead). You may not rent, lease, or loan the software.

Documentation.

Subject to the terms of this Agreement, GoAhead hereby grants You a worldwide, royalty-free, nonexclusive, nontransferable license, without right of sublicense, to copy and distribute the Documentation in connection with the authorized distribution of the Original Code and Modifications.

Copyright Notice.

You agree to include copies of the following notice (the "Notice") regarding proprietary rights in all copies of the Original Code and Modifications that You distribute, as follows: (a) embedded in the binary code; and (b) on the title pages of all documentation. Furthermore, You agree to use commercially reasonable efforts to cause any licensees of your products to embed the Notice in object code and on the title pages or relevant documentation. The Notice is as follows: Copyright (c) 20XX GoAhead Software, Inc. All Rights Reserved. Unless GoAhead otherwise instructs, the year 20xx is to be replaced with the year during which the release of the Original Code containing the notice is issued by GoAhead. If this year is not supplied with Documentation, GoAhead will supply it upon request.

License Back to GoAhead.

You hereby grant in both source code and binary code to GoAhead a world-wide, royalty-free, non-exclusive license to copy, modify, display, use and sublicense any Modifications You make that are distributed or planned for distribution. Within 30 days of either such event, You agree to ship to GoAhead a file containing the Modifications (in a media to be determined by the parties), including any programmers' notes and other programmers' materials. Additionally, You will provide to GoAhead a complete description of the product, the product code or model number, the date on which the product is initially shipped, and a contact name, phone number and e-mail address for future correspondence. GoAhead will keep confidential all data specifically marked as such.

3. Terms, Trademards and Brand.

License and Use.

GoAhead hereby grants to You a limited world-wide, royalty-free, non-exclusive license to use the GoAhead trade names, trademarks, logos, service marks and product designations posted in Exhibit A (collectively, the "GoAhead Marks") in connection with the activities by You under this Agreement. Additionally, GoAhead grants You a license under the terms above to such GoAhead trademarks as shall be identified at a URL (the "URL") provided by GoAhead. The use by You of GoAhead Marks shall be in accordance with GoAhead's trademark policies regarding trademark usage as established at the Web site designated by the URL, or as otherwise communicated to You by GoAhead at its sole discretion. You understand and agree that any use of GoAhead Marks in connection with this Agreement shall not create any right, title or interest in or to such GoAhead Marks and that all such use and goodwill associated with GoAhead Marks will inure to the benefit of GoAhead.

Promotion by You of GoAhead WebServer Mark.

In consideration for the licenses granted by GoAhead to You herein, You agree to notify GoAhead when You incorporate the GoAhead WebServer in Your product and to inform GoAhead when such product begins to ship. You agree to promote the Original Code by prominently and visibly displaying a graphic of the GoAhead WebServer mark on the initial Web page of Your product that is displayed each time a user connects to it. You also agree that GoAhead may identify your company as a user of the GoAhead WebServer by placing your company logo on its Web site. You may further promote the Original Code by displaying the GoAhead WebServer mark in marketing and promotional materials such as the home page of your Web site or Web pages promoting the product. You also agree to use the latest available logo and script code from GoAhead available from the official GoAhead download location.

No Modifications to Server Identification Field.

You agree not to remove or modify the Server identification Field contained in the Response Header as defined in Section 1.7 and 1.8.

4. Term.

This Agreement and license are effective from the time You execute this Agreement until this Agreement is terminated. You may terminate this Agreement at any time by uninstalling or destroying all copies of the Original Code including all binary versions and removing any Modifications to the Original Code existing in any products. This Agreement will terminate immediately and without further notice if You fail to comply with any provision of this Agreement. All restrictions on use, and all other provisions that may reasonably be interpreted to survive termination of this Agreement, will survive termination of this Agreement for any reason. Upon termination, You agree to uninstall or destroy all copies of the Original Code, Modifications, and Documentation.

5. Warranty Disclaimers.

THE ORIGINAL CODE, THE DOCUMENTATION, AND THE MEDIA UPON WHICH THE ORIGINAL CODE IS RECORDED (IF ANY) ARE PROVIDED "AS IS" AND WITHOUT WARRANTIES OF ANY KIND, EXPRESS, STATUTORY OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND NON-INFRINGEMENT.

The entire risk as to the quality and performance of the Original Code (including any Modifications You make) and the Documentation is with You. Should the Original Code or the Documentation prove defective, You (and not GoAhead or its distributors, licensors or dealers) assume the entire cost of all necessary servicing or repair. GoAhead does not warrant that the functions contained in the Original Code will meet your requirements or operate in the combination that You may select for use, that the operation of the Original Code will be uninterrupted or error free, or that defects in the Original Code will be corrected. No oral or written statement by GoAhead or by a representative of GoAhead shall create a warranty or increase the scope of this warranty.

GOAHEAD DOES NOT WARRANT THE ORIGINAL CODE AGAINST INFRINGEMENT OR THE LIKE WITH RESPECT TO ANY COPYRIGHT, PATENT, TRADE SECRET, TRADEMARK OR OTHER PROPRIETARY OR INTELLECTUAL PROPERTY RIGHT OF ANY THIRD PARTY AND DOES NOT WARRANT THAT THE ORIGINAL CODE DOES NOT INCLUDE ANY VIRUS, SOFTWARE ROUTINE OR OTHER SOFTWARE DESIGNED TO PERMIT UNAUTHORIZED ACCESS, TO DISABLE, ERASE OR OTHERWISE HARM SOFTWARE, HARDWARE OR DATA, OR TO PERFORM ANY OTHER SUCH ACTIONS.

Any warranties that by law survive the foregoing disclaimers shall terminate 90 days from the date You received the Original Code.

6. Limitation of Liability.

YOUR SOLE REMEDIES AND GOAHEAD'S ENTIRE LIABILITY ARE SET FORTH ABOVE. IN NO EVENT WILL GOAHEAD OR ITS DISTRIBUTORS OR DEALERS BE LIABLE FOR DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE ORIGINAL CODE, THE INABILITY TO USE THE ORIGINAL CODE, OR ANY DEFECT IN THE ORIGINAL CODE, INCLUDING ANY LOST PROFITS, EVEN IF THEY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

You agree that GoAhead and its distributors and dealers will not be LIABLE for defense or indemnity with respect to any claim against You by any third party arising from your possession or use of the Original Code or the Documentation.

In no event will GoAhead's total liability to You for all damages, losses, and causes of action (whether in contract, tort, including negligence, or otherwise) exceed the amount You paid for this product.

SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, AND SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.

7. Indemnification by You.

You agree to indemnify and hold GoAhead harmless against any and all claims, losses, damages and costs (including legal expenses and reasonable counsel fees) arising out of any claim of a third party with respect to the contents of the Your products, and any intellectual property rights or other rights or interests related thereto.

8. High-Risk Activities.

The Original Code is not fault-tolerant and is not designed, manufactured or intended for use or resale as online control equipment in hazardous environments requiring fail-safe performance, such as in the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life support machines or weapons systems, in which the failure of the Original Code could lead directly to death, personal injury, or severe physical or environmental damage. GoAhead and its suppliers specifically disclaim any express or implied warranty of fitness for any high-risk uses listed above.

9. Government Restricted Rights.

For units of the Department of Defense, use, duplication, or disclosure by the Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013. Contractor/manufacturer is GoAhead Software, Inc., 10900 N.E. 8th Street, Suite 1200, Bellevue, Washington 98004.

If the Commercial Computer Software Restricted rights clause at FAR 52.227-19 or its successors apply, the Software and Documentation constitute restricted computer software as defined in that clause and the Government shall not have the license for published software set forth in subparagraph (c)(3) of that clause.

The Original Code (i) was developed at private expense, and no part of it was developed with governmental funds; (ii) is a trade secret of GoAhead (or its licensor(s)) for all purposes of the Freedom of Information Act; (iii) is "restricted computer software" subject to limited utilization as provided in the contract between the vendor and the governmental entity; and (iv) in all respects is proprietary data belonging solely to GoAhead (or its licensor(s)).

10. Governing Law and Interpretation.

This Agreement shall be interpreted under and governed by the laws of the State of Washington, without regard to its rules governing the conflict of laws. You hereby consent to the exclusive jurisdiction of the state and federal courts located in King County, Washington over any disputes arising out of related to this Agreement. If any provision of this Agreement is held illegal or unenforceable by a court or tribunal of competent jurisdiction, the remaining provisions of this Agreement shall remain in effect and the invalid provision deemed modified to the least degree necessary to remedy such invalidity.

11. Entire Agreement.

This Agreement is the complete agreement between GoAhead and You and supersedes all prior agreements, oral or written, with respect to the subject matter hereof.

License (OpenSSL)

This is a copy of the current LICENSE file inside the CVS repository.

LICENSE ISSUES

==========

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit.

See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

OpenSSL License

/* ==

* Copyright (c) 1998-2008 The OpenSSL Project. All rights reserved.

* Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgment: "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact openssl-core@openssl.org.
5. Products derived from this software may not be called "OpenSSL" nor may "OpenSSL" appear in their names without prior written permission of the OpenSSL Project.
6. Redistributions of any form whatsoever must retain the following acknowledgment: "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)"

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

* ==

* This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

/

Original SSLeay License

Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)

All rights reserved.

This package is an SSL implementation written by Eric Young (eay@cryptsoft.com).

The implementation was written so as to conform with Netscapes SSL.

This library is free for commercial and non-commercial use as long as the following conditions are aheared to. The following conditions apply to all code found in this distribution, be it the RC4, RSA, lhash, DES, etc., code; not just the SSL code. The SSL documentation included with this distribution is covered by the same copyright terms except that the holder is Tim Hudson (tjh@cryptsoft.com).

* Copyright remains Eric Young's, and as such any Copyright notices in the code are not to be removed.

* If this package is used in a product, Eric Young should be given attribution as the author of the parts of the library used.

* This can be in the form of a textual message at program startup or in documentation (online or textual) provided with the package.

* Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software must display the following acknowledgement: "This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)"The word "cryptographic" can be left out if the rouines from the library being used are not cryptographic related :).
4. If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement: "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

* The licence and distribution terms for any publically available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution licence [including the GNU Public Licence.]

/

License (zlib)

/* zlib.h -- interface of the "zlib" general purpose compression library version 1.2.3, July 18th, 2005

Copyright (C) 1995-2005 Jean-loup Gailly and Mark Adler

This software is provided "as-is", without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly jloup@gzip.org

Mark Adler madler@alumni.caltech.edu

/