Industrial Innovation Network Management System (Korenix NMS)

User Manual

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www.korenix.com

Industrial Innovation Network Management System User Manual

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1 Introduction

Welcome to the Industrial Innovation Network Management System User Manual. Following topics are covered in this section:

1.1 Overview

1.2 Major Features

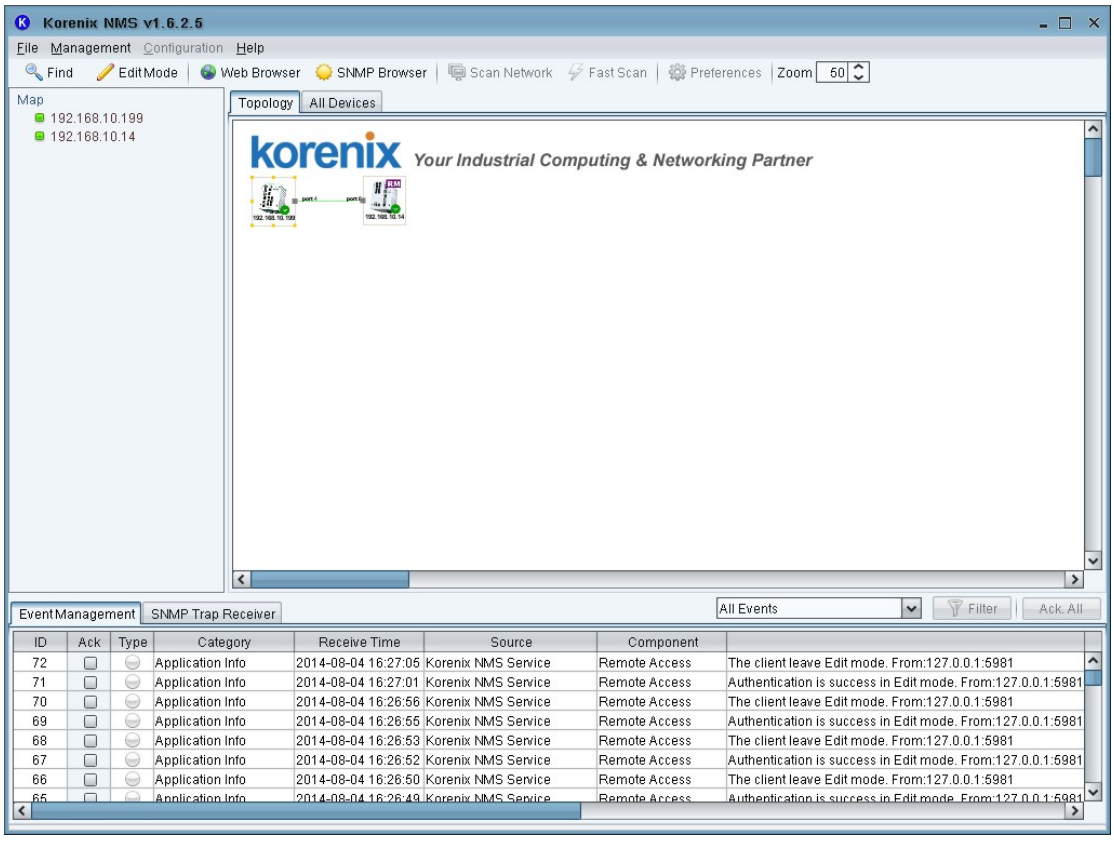
1.3 Supported Devices

1.4 Support MIBs

1.5 Ordering Information

1.1 Overview

Korenix NMS is an Industrial Innovation Network Management System (i^2-NMS).



Korenix NMS is specifically designed for mission critical industrial environments. The Korenix NMS provides a comprehensive platform for monitoring, configuring, and maintaining mission-critical IP-based communication networks, such as IP surveillance, factory automation, mining, substation, maritime and military applications.

1.2 Major Features

Korenix i^2-NMS has the following features:

- Manage IP-based devices from both central office and remote sites
- Automated network discovery and topology visualization
- Event handling via polling, syslog, email, and SNMP trap. Notifications can be sent via email, application programs, SNMP trap, SMS, and MSN Messenger
- Device configurations via SNMP, Web, Telnet, and SSH
- Provide SNMPv1/v2c/v3 Browser and SNMP MIB compiler
- MSR group management
- Provide performance management
- Provide accounting management
- Centralized management to reduce network traffic.

1.3 Supported Devices

Supported Devices by functions:

- Auto Topology (LLDP), device management, and device discovery features

  Auto Toplogy, device management, and device discovery features can be applied in the IP-enabled devices which support LLDP and SNMP features. For instances, JetNet series, JetPoE series, JetRock series and 3rd party devices that support LLDP and SNMP features.

  - JetNet series: JetNet7850G, JetNet6852G, JetNet6524G, JetNet6059G, JetNet5628G, JetNet5828G, JetNet5228G, JetNet5428G, JetNet5018G, JetNet5012G, JetNet4518, JetNet5010G, JetNet4510(f), JetNet4508(f)V2, JetNet4006(f)
  - JetPoE series: JetNet6710G, JetNet5710G, JetNet6810G, JetNet5728G-24P, JetNet5728G-16P, JetNet5720G-8P, JetNet5310G, JetNet4706(f)
  - JetRock series: JetNet4506-M12, JetNet4506-RJ
- Device management and device discovery features

  Device management and device discovery features can be applied in the IP-enabled devices which support SNMP feature. For instances, JetNet series and 3rd party devices that support SNMP.

  - JetNet series: JetNet4508(f)
  - JetBox series, JetPort series, JetIO series and JetWave series
- Device discovery feature

  Device discovery feature can be widely applied in all the IP-enabled devices. For example, JetNet series and 3rd party devices that support WEB or telnet features and general windows PCs.

  - JetNet series: JetNet4010(f)
  - JetPoE series: JetNet3706(f)

1.4 Support MIBs

Korenix NMS supports the following standard MIBs in addition to the Korenix private MIBs.

- RFC1213-MIB-II.mib
- RFC1215-MIB-II.mib
- RFC1398-ETHER.mib
- RFC1493-BRIDGE.mib
- RFC1724-RIP.mib
- RFC1757-RMON.mib
- RFC1850-OSPF.mib
- RFC3621-PSE.mib

1.5 Ordering Information

A trial version that supports monitoring of 16 IP-enabled devices is available for authorized distributors.

Request licenses as follows:

- 32 – manage 32 devices
- 64 – manage 64 devices
- 128 – manage 128 devices
- 256 – manage 256 devices
- 1024 – manage 1024 devices
- Unlimited – unlimited devices

For more detailed information, please contact your local sales representative.

2 Installation

This section includes software installation. Following topics are covered in this section:

2.1 System Requirements

- Hardware:
  - ✧ Processor

    Minimum Intel Core 2 Duo CPU 2.5 GHz or higher
  - ✧ RAM

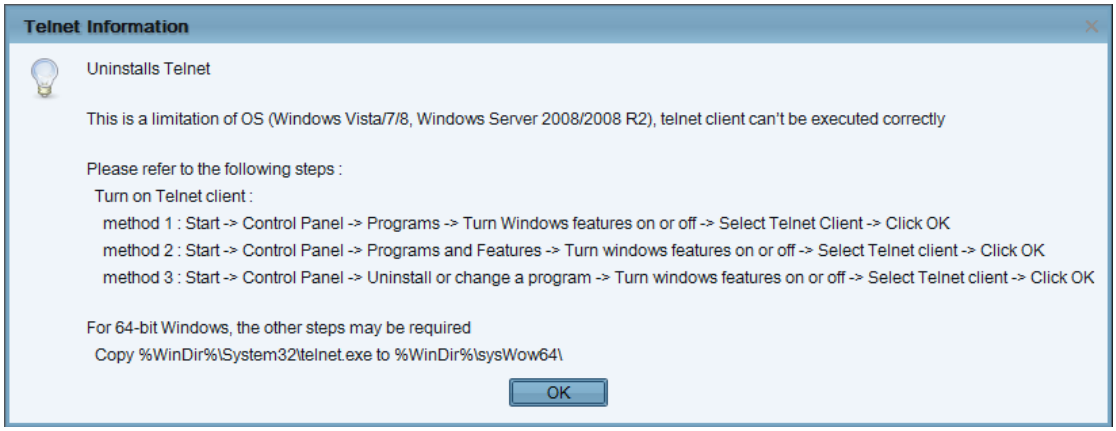
    1GB RAM
  - ✧ Disk

    1GB hard disk
- Software
  - ✧ Operation system

    Windows XP/2000/2003 platforms

    Windows Vista/7 platforms
- Windows Vista/7 notice
  - ✧ Execution Korenix NMS using the system administrator
  - ✧ Turn on telnet and tftp system commands

    Turn on Telnet client:



method 1 : Start -> Control Panel -> Programs -> Turn Windows features on or off -> Select Telnet Client -> Click OK

method 2 : Start -> Control Panel -> Programs and Features -> Turn

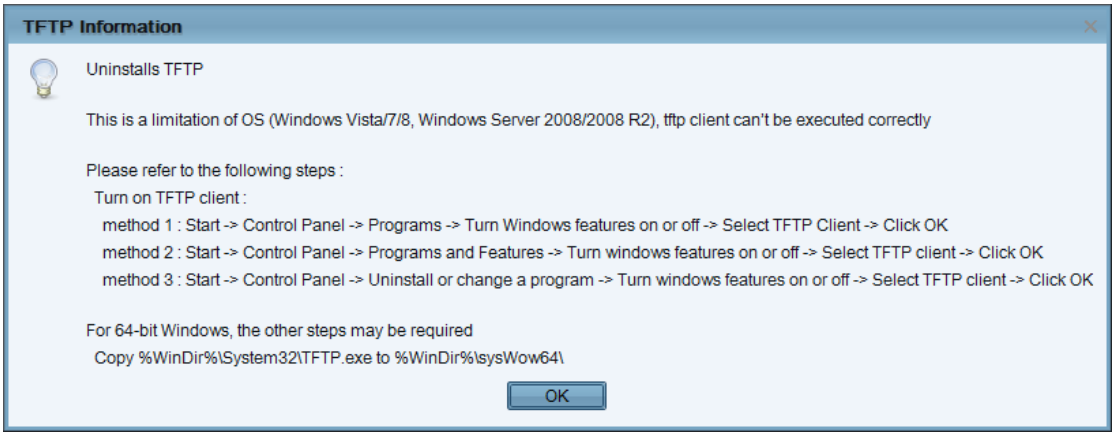
windows features on or off -> Select Telnet client -> Click OK

method 3 : Start -> Control Panel -> Uninstall or change a program -> Turn windows features on or off -> Select Telnet client -> Click OK

For 64-bit Windows, the other steps may be required:

Copy %WinDir%\\System32\\telnet.exe to %WinDir%\\sysWow64\\

Turn on TFTP client:



method 1 : Start -> Control Panel -> Programs -> Turn Windows features on or off -> Select TFTP Client -> Click OK

method 2 : Start -> Control Panel -> Programs and Features -> Turn windows features on or off -> Select TFTP client -> Click OK

method 3 : Start -> Control Panel -> Uninstall or change a program -> Turn windows features on or off -> Select TFTP client -> Click OK

For 64-bit Windows, the other steps may be required:

Copy %WinDir%\\System32\\TFTP.exe to %WinDir%\\sysWow64\\

✧ Windows Firewall

The Windows Firewall may affect the function of backing up JetNet device's configuration. Therefore, it is suggested to turn off Windows Firewall or enable tftp port on Windows Firewall.

✧ Antivirus Software

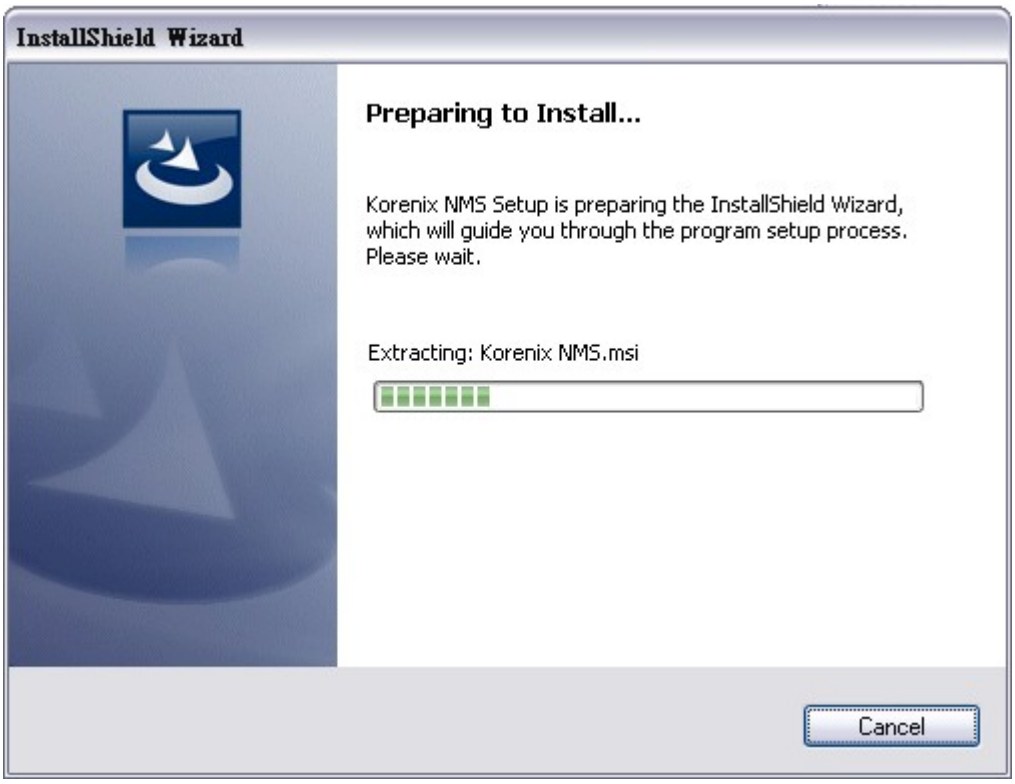
Some of the antivirus software may affect the Korenix NMS function, it is suggested to turn off the Antivirus Software, if possible.

- Screen Resolution

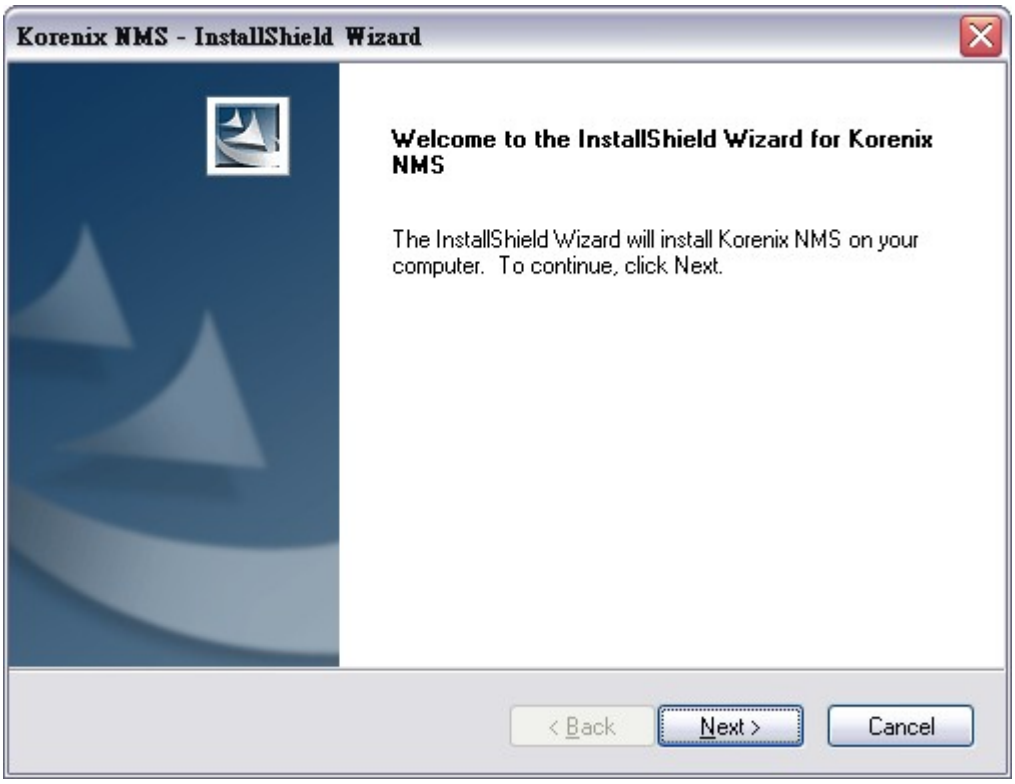
  It is optimized for a screen resolution of 1024x768

2.2 Installation

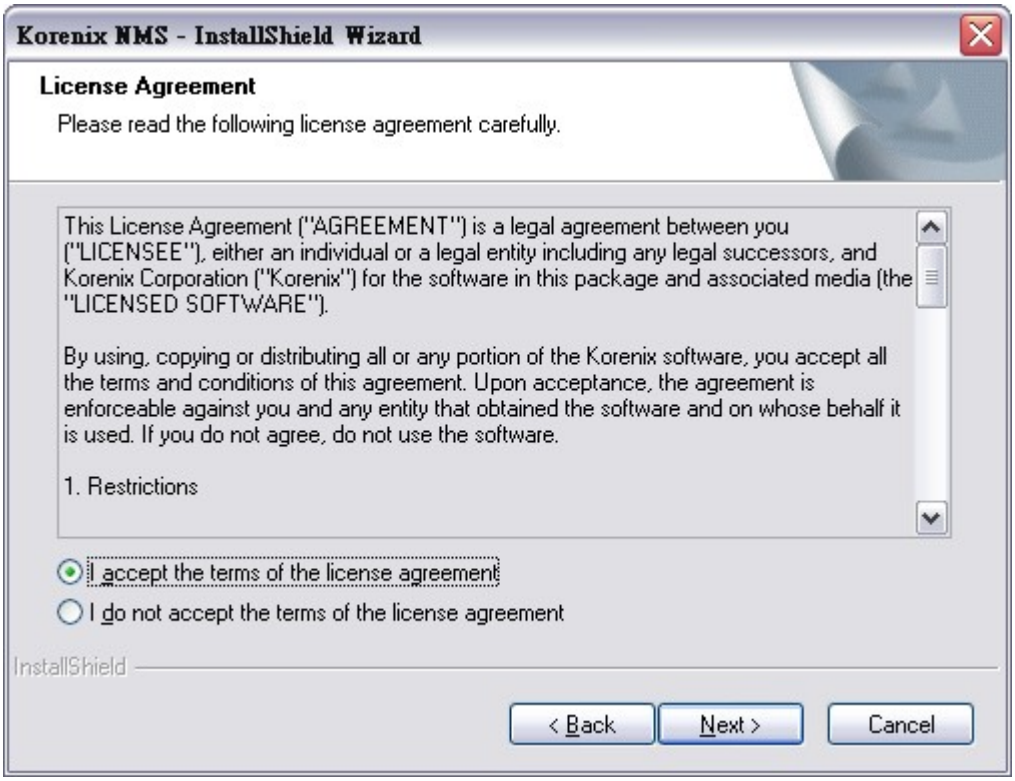
1. Run setup.exe



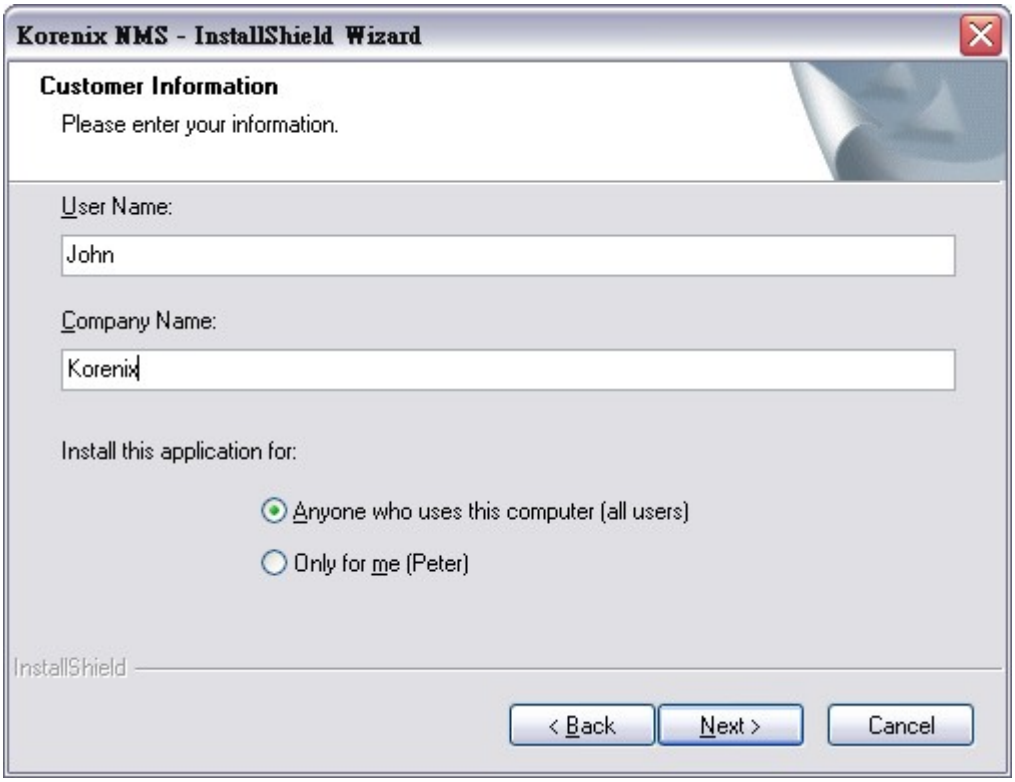
2. Press **Next** to the next screen**.**



3. Please read the license agreement and select “I accept the terms of the license agreement. Press Next to next screen.

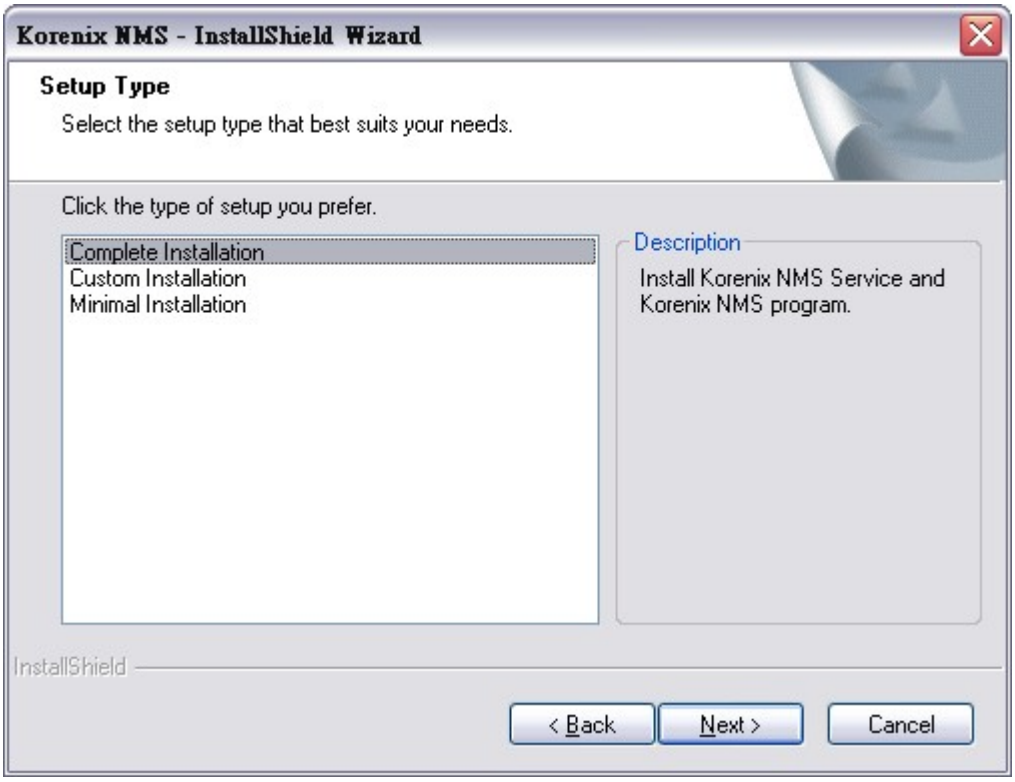


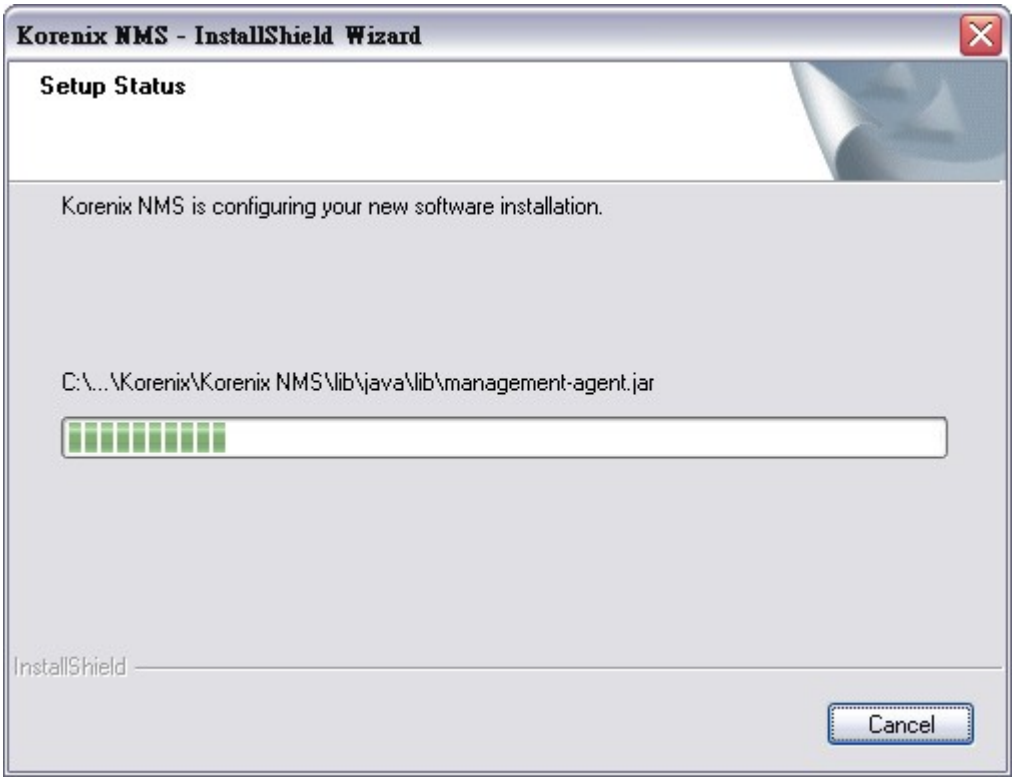
4. Input User Name and Company Name and press **Next** to next screen.



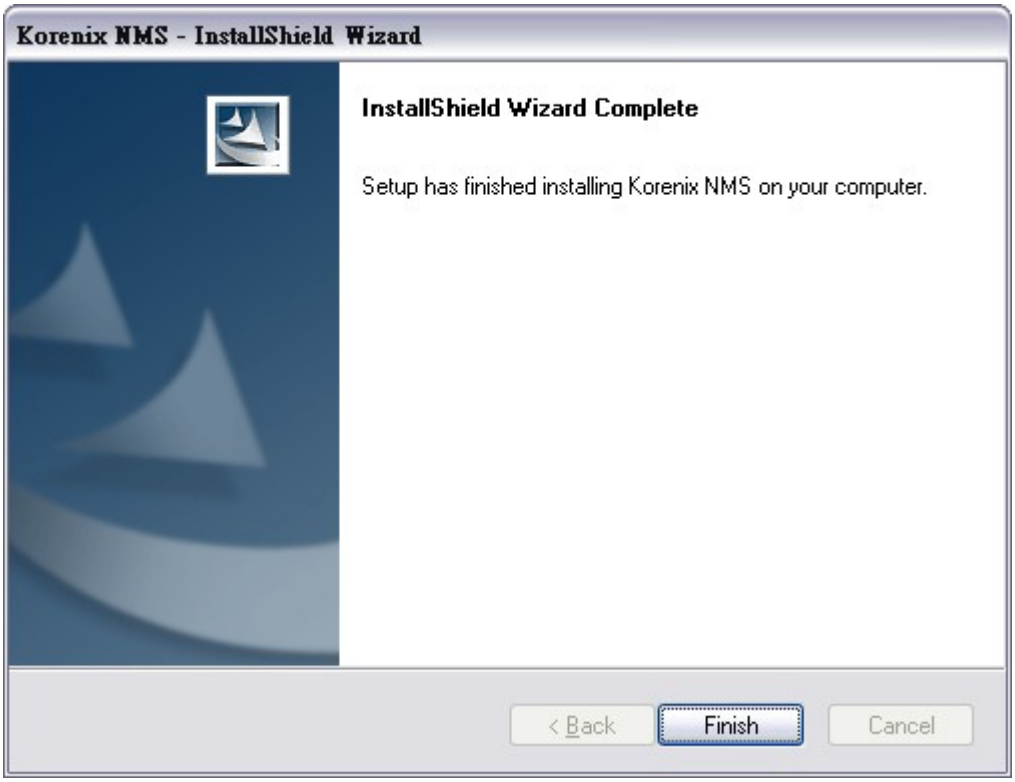
5. Select the type of setup and press **Next** to next screen.

Note: Minimal installation (Korenix NMS program) cannot run standalone without complete installation (Korenix NMS Service and Korenix NMS program).





6. Press **Finish** to end installation.



On the desktop or in **Start** / **Programs** / **Korenix** / **Korenix NMS** /,, there are two program shortcuts (as figure).

This shortcut is for local host connection.

This shortcut will be asked to connect to remote server.

2.3 Uninstallation

Remember to quit the Korenix NMS program before you get starting the uninstallation

Follow below steps to uninstall

1. To uninstall Korenix NMS, select **Start** / **Control Panel** / **Add or Remove Program**.
2. Select the program "**Korenix NMS**".
3. Click on **Remove** and follow the instructions of the uninstallation routine.

Or directly run this shortcut

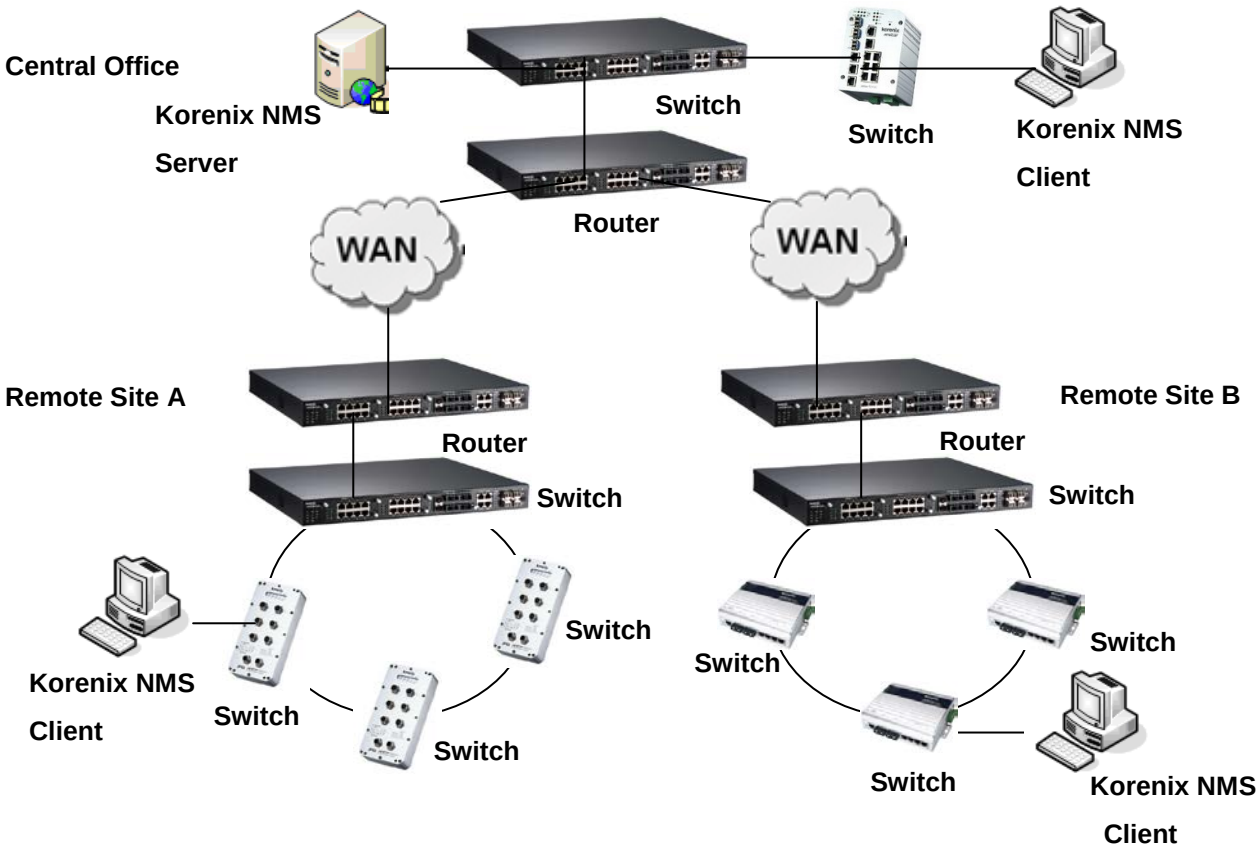
Start / **All Programs** / **Korenix** / **Korenix NMS** / **Uninstall Korenix NMS**

3 Getting Started

Following topics are covered in this section:

3.1 Korenix NMS Applications

Korenix NMS is a client/server based network system. One Korenix NMS server can serve many remote access Korenix NMS clients (maximum is 5)[1] (see figure below).



[1] **Only one remote client connection per computer is possible. The server will refuse the new connection if already one session exists.**

Due to the accounting management, only one client can enter the **Edit** mode at the same time and other clients are in the **Monitor** mode. The default password to enter the two modes is “korenix”. The **Monitor** mode can only allow viewers to browse the topology. The **Edit** mode can use all functions.

3.2 Run Korenix NMS server and remote access clients

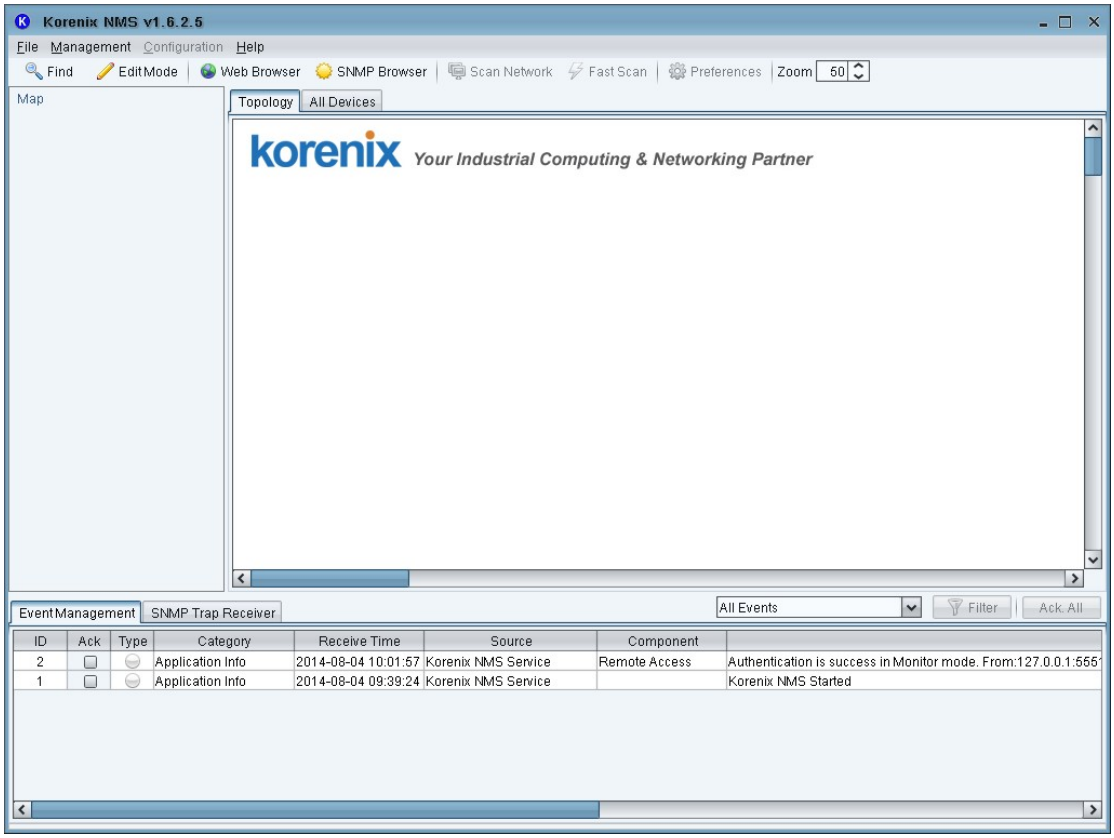
“Korenix NMS Service” starts automatically when Windows XP starts. You can get the status of the service in Windows XP under Start / Control Panel / Administration / Services. This service has a connection to a database containing all the relevant data for the settings of Korenix NMS. Note that when the service is stopped, the relevant monitored data cannot be recorded into the database.

For Windows XP, it starts automatically “Korenix NMS Service” after installation. You can change Startup type of this service to Manual if you don’t want the service to run after your pc boot up.

3.2.1 Start Korenix NMS server on Server site

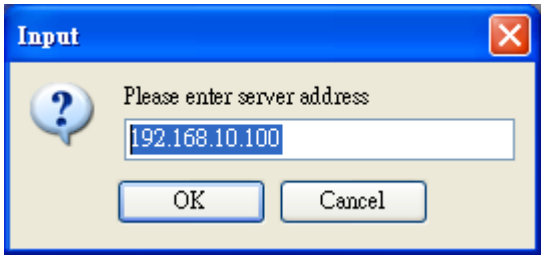
1. **Start** / **Programs** / **Korenix** / **Korenix NMS** / **Korenix NMS (localhost)**

2. Display Korenix NMS main window

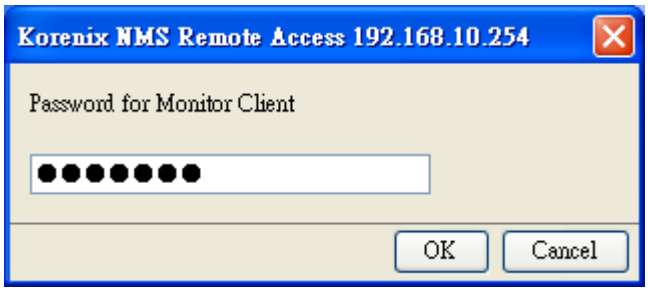


3.2.2 Start Korenix NMS client (connect to server)

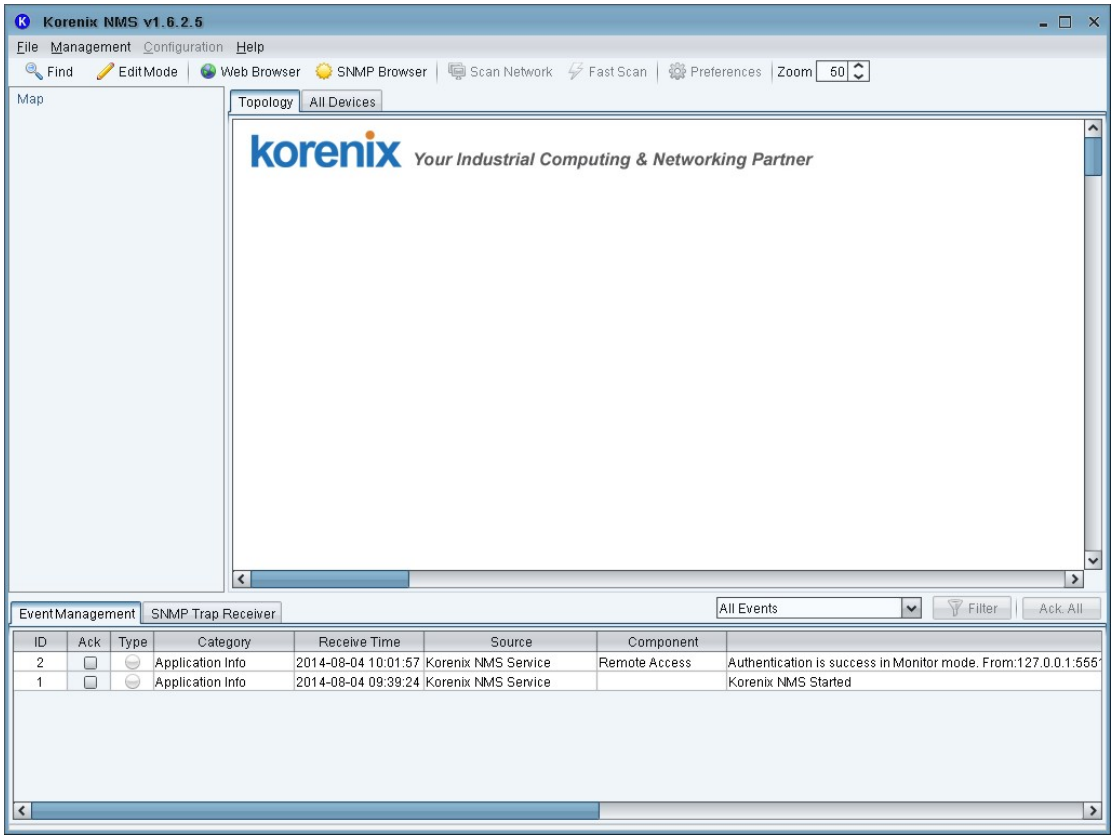
1. **Start / Programs / Korenix / Korenix NMS / Korenix NMS**
2. Enter server address to connect. (ex. Server IP: 192.168.10.100)



3. Enter password into monitor mode and press Ok.[2]



4. Display Korenix NMS main window



[2] **Note that the default password for Monitor Mode access is "korenix".**

4 Interface of Korenix NMS

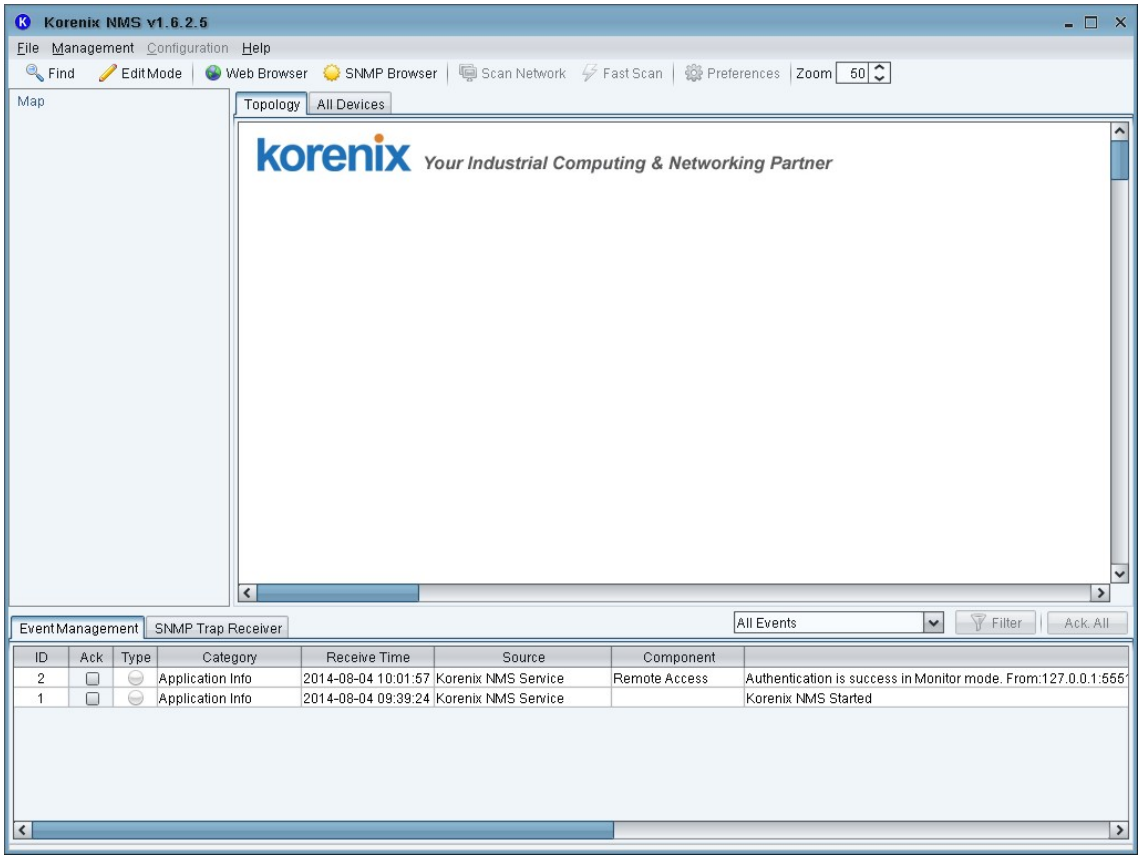
Following topics are covered in this section:

4.1 Main Window of Korenix NMS

4.1.1 Main Window

When you start Korenix NMS, the main window appears on the screen. It consists of the following parts:

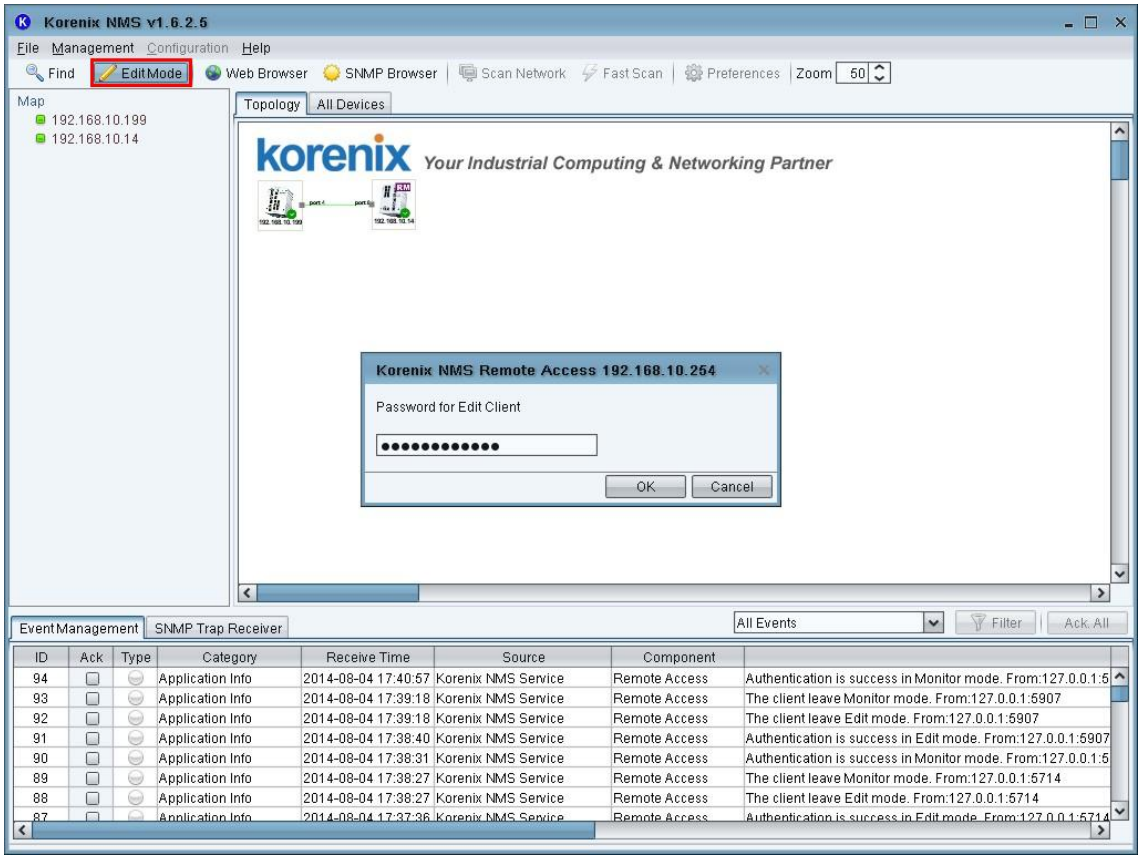
- Menu Function
- Toolbar Function
- Map Tree
- Topology Tab
- All Devices Tab
- Event Management Tab
- SNMP Trap Receiver Tab



4.1.2 Enter the Edit Mode

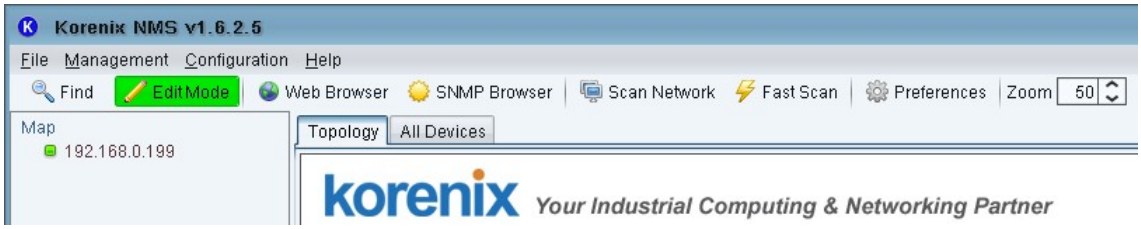
The **Monitor** mode is only able to “view” the topology when starting Korenix NMS into main window.
To change the settings, need to enter **Edit** mode.

1. Click on Edit Mode on the toolbar, it displays Password dialog.



2. Input password and press Ok.[3]

3. After entering Edit Mode, the button will become green.



In the **Edit** mode, all functions are available. If return to **Monitor** mode, click on **Edit Mode** again.

4.2 Menu Function

The menu function contains the following selection items:

- File
- Management
- Configuration

[3] **Note that the default password for Edit Mode is "korenix".**

- Help

4.2.1 File Submenu

File - Open: opens the previous saved database file.

File - Save: saves the current database into file.

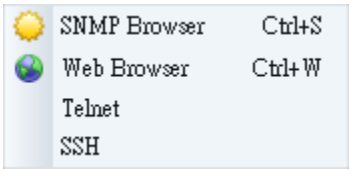
File - Export: exports the displayed map in the Topology Map as Image file (BMP, JPEG, PNG format)

File - Print: exports the displayed map in the Topology Map as PDF file.

File - Exit: closes the Korenix NMS Main Window.

File - Exit and Stop Service: closes Korenix NMS Main Window and stops Korenix NMS Service

4.2.2 Management Submenu



Please refer to section 7.4 for more information.

4.2.3 Configuration Submenu

Please refer to section 9 for more information.

4.2.4 Help Submenu

It shows the version and release date of Korenix NMS.

4.3 Toolbar Function

- Find

  Quickly find out the selected device by IP address.

- Edit Mode

  Click on **Edit Mode** to enter into Edit mode by input password.

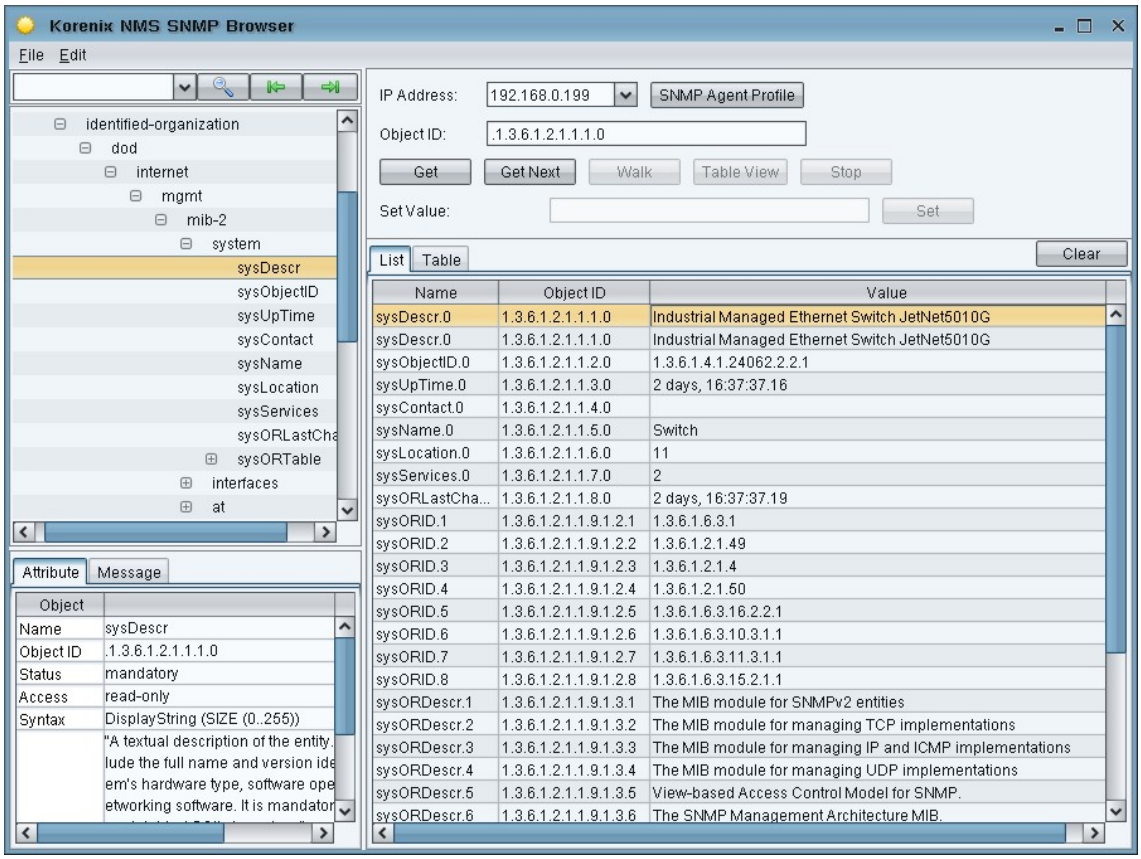
- Web Browser

  Run web browser to configure by Java Applet on Korenix's switch device

- SNMP Browser

  The SNMP Browser tool lets you read and write the MIB of the IP-Address device.

  Please refer to section 7.4.2 for more information



- Scan Network

  Find out specified IP range assigned.

- Fast Scan

  Find out all switch devices by the **Korenix View** protocol.[4]

- Preferences

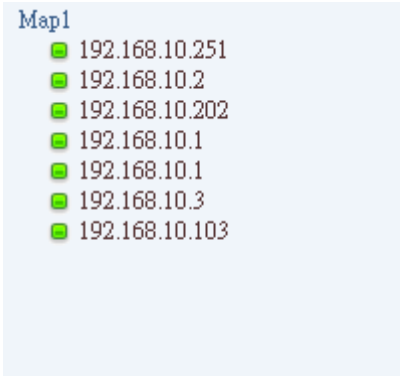
  Please refer to section 9 for more information.

- Zoom

  Zoom in and out the device icons, texts and others only on the **Topology** tab.

4.4 Map Tree

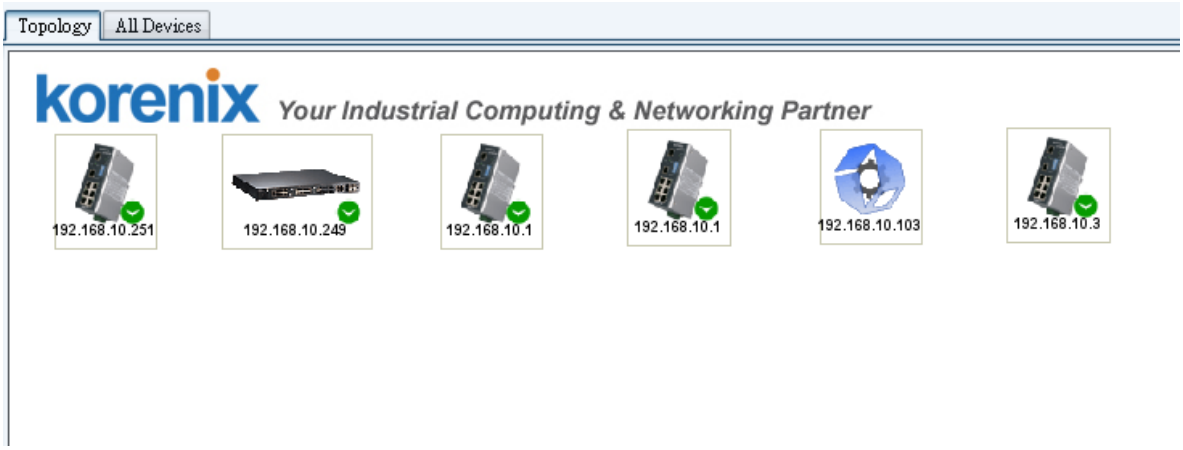
Click on the tree node to select the device on the **Topology** tab.



[4] **Only Korenix devices can be found**

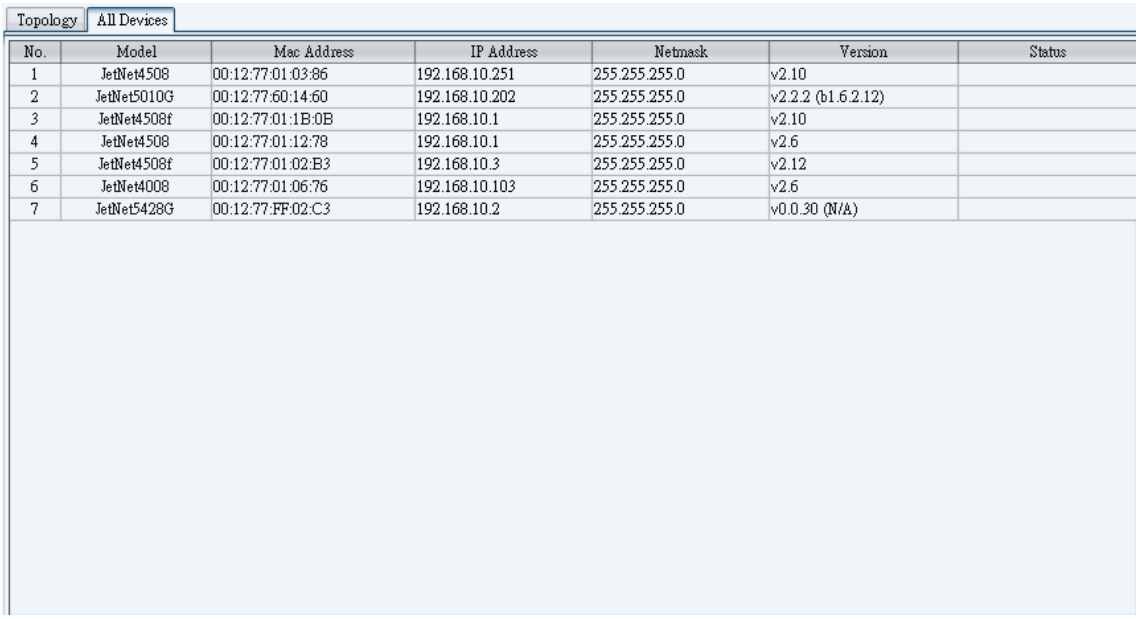
4.5 Topology Tab

This page displays the icons for monitored devices.



4.6 All Devices Tab

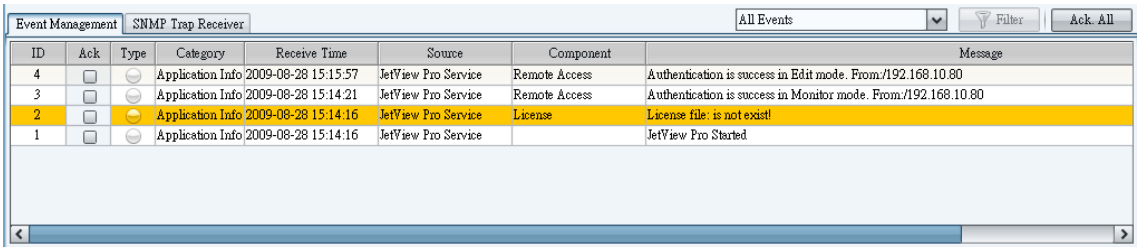
This page displays the icons for monitored devices (as **Topology** tab)



No.	Model	Mac Address	IP Address	Netmask	Version	Status
1	JetNet4508	00:12:77:01:03:86	192.168.10.251	255.255.255.0	v2.10	
2	JetNet5010G	00:12:77:60:14:60	192.168.10.202	255.255.255.0	v2.2.2 (b1.6.2.12)	
3	JetNet4508f	00:12:77:01:1B:0B	192.168.10.1	255.255.255.0	v2.10	
4	JetNet4508	00:12:77:01:12:78	192.168.10.1	255.255.255.0	v2.6	
5	JetNet4508f	00:12:77:01:02:B3	192.168.10.3	255.255.255.0	v2.12	
6	JetNet4008	00:12:77:01:06:76	192.168.10.103	255.255.255.0	v2.6	
7	JetNet5428G	00:12:77:FF:02:C3	192.168.10.2	255.255.255.0	v0.0.30 (N/A)	

4.7 Event Management Tab

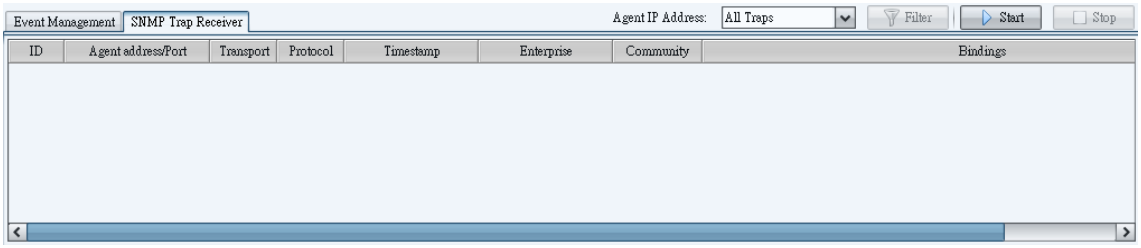
The event displays on the **Event Management** tab page while the event happens.



ID	Ack	Type	Category	Receive Time	Source	Component	Message
4			Application Info	2009-08-28 15:15:57	JetView Pro Service	Remote Access	Authentication is success in Edit mode. From:/192.168.10.80
3			Application Info	2009-08-28 15:14:21	JetView Pro Service	Remote Access	Authentication is success in Monitor mode. From:/192.168.10.80
2			Application Info	2009-08-28 15:14:16	JetView Pro Service	License	License file: is not exist!
1			Application Info	2009-08-28 15:14:16	JetView Pro Service		JetView Pro Started

4.8 SNMP Trap Receiver Tab

The SNMP trap displays on the **SNMP Trap Receiver** tab page while the trap happens. The SNMP Trap Receiver support SNMP v1/v2c traps receiving.



5 Device Discovery

To see the installed devices on the **Topology** tab or the **All Devices** tab, you have to add devices. How to do add devices and delete devices? How to quickly update the installed devices? This section gives answers to all the above questions.

Following topics are covered in this section:

5.1 Add Devices

5.2 Delete Devices

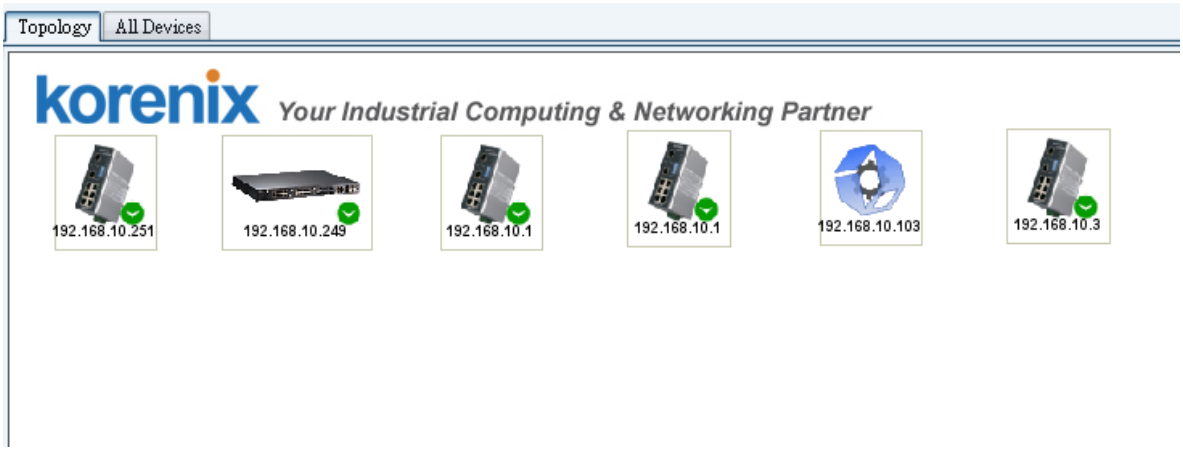
5.1 Add Devices

5.1.1 Fast Scan

This function is to discovery devices using the **Korenix View** protocol in the local network. Korenix NMS discovers all network devices on the subnet network via the selected interface on the PC. This function adapts to setup a newly installed network.

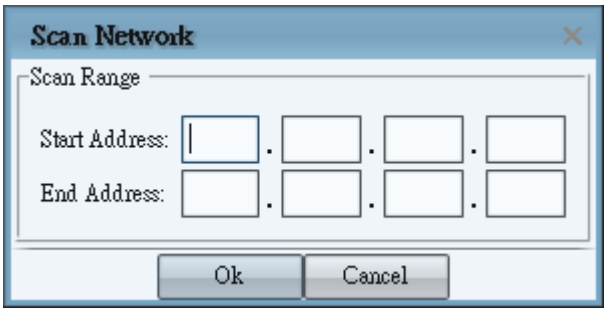
To update installed network components (or devices), click on Fast Scan on the toolbar and select one of your NIC which connect to network devices.

It displays all Korenix devices in the network on the **Topology** tab.



5.1.2 Scan Network

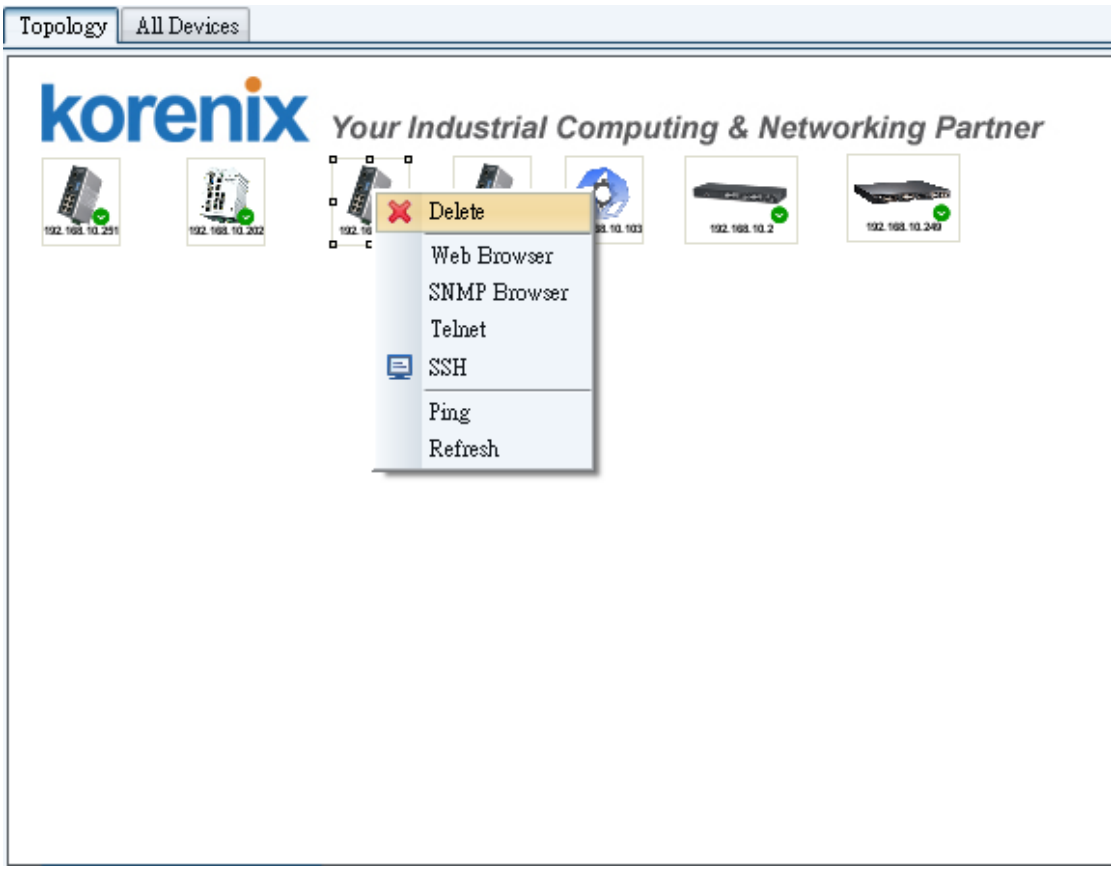
This function is to discovery devices via the assigned IP address range. While you want to add the specified IP-enabled device, this function is suitable.



Note: The “End Address” should great or equal then “Start Address”

5.2 Delete Devices

You can delete any device on **Topology** tab. Use the mouse to select multiple devices by **CTRL** key and right-click the selected device. Then display a pop-up menu and click on **Delete** menu item.


Topology
All Devices
korenix
Your Industrial Computing & Networking Partner
Delete
Web Browser
SNMP Browser
Telnet
SSH
Ping
Refresh

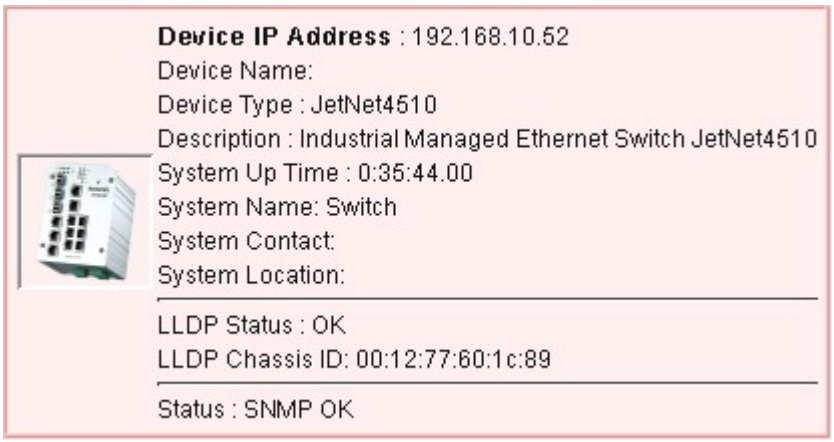
6 Topology Map

Following topics are covered in this section:

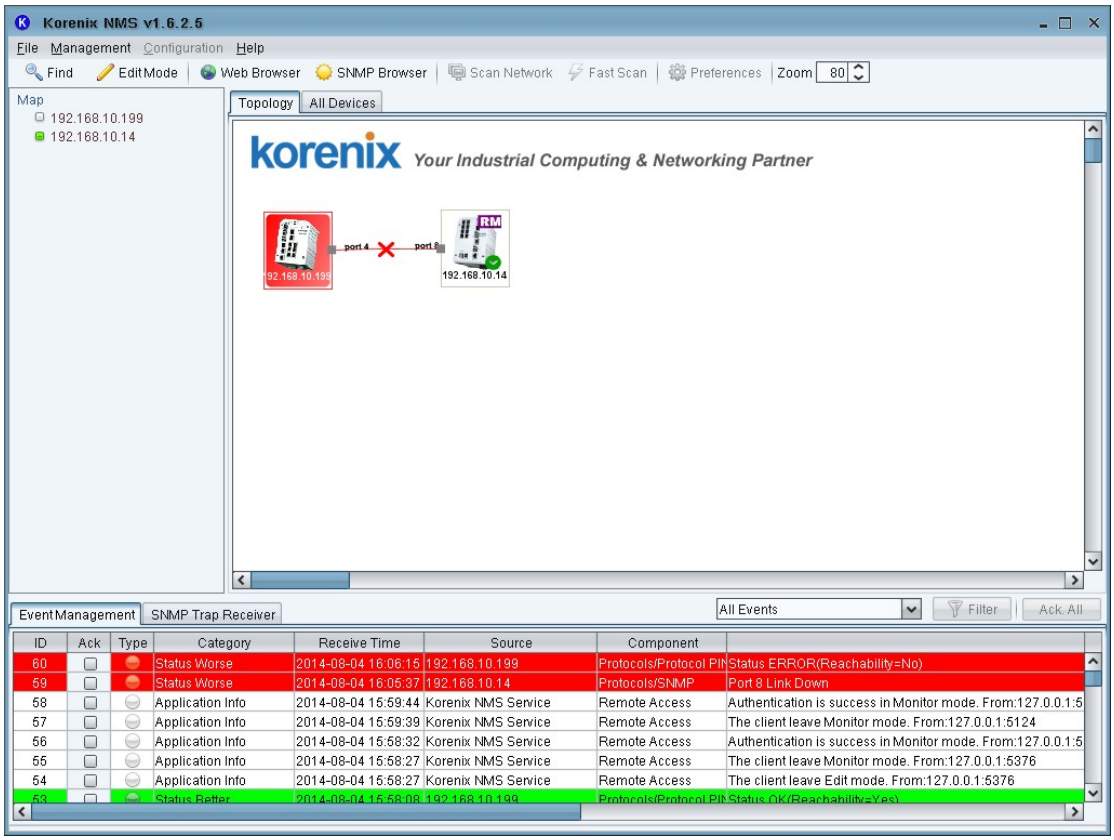
6.1 Device Information

6.1.1 Device Status

- Move mouse cursor over the switch device icon on **Topology** tab. It will show the following status for the device.



- The device (IP address: 192.168.10.1) lists in left tree panel with a status icon use to show its online/offline status. Green means online, while white means offline. The device icon on **Topology** tab also shows its status in the background. If the color is red, which indicates an error status (hint: the detail is in Event management tab). In other words, Korenix NMS sends ICMP Ping request and then receives incorrect response (unreachable).



- There is a green check on right-bottom of the device. This green check indicates the normal status for SNMP[5].

6.1.2 Device refresh

To update the device status, select one more device (especially on error status) and right-click mouse on the selected device. Then pop up as follows:

[5] You may need to wait 0.5 minute to let Korenix NMS collect devices' information.

6.1.3 Device delete

To remove the device nodes, select one or one more devices and right-click mouse on the selected device. Then pop up as follows:

6.1.4 Managing devices

To manage the devices, select one device and right-click mouse on the selected device. It will pop up a dialog as follows. Choose to use Web Browser, SNMP Browser, Telnet, SSH, or Ping to manage the device. Also refer to section 7.4 for more details.

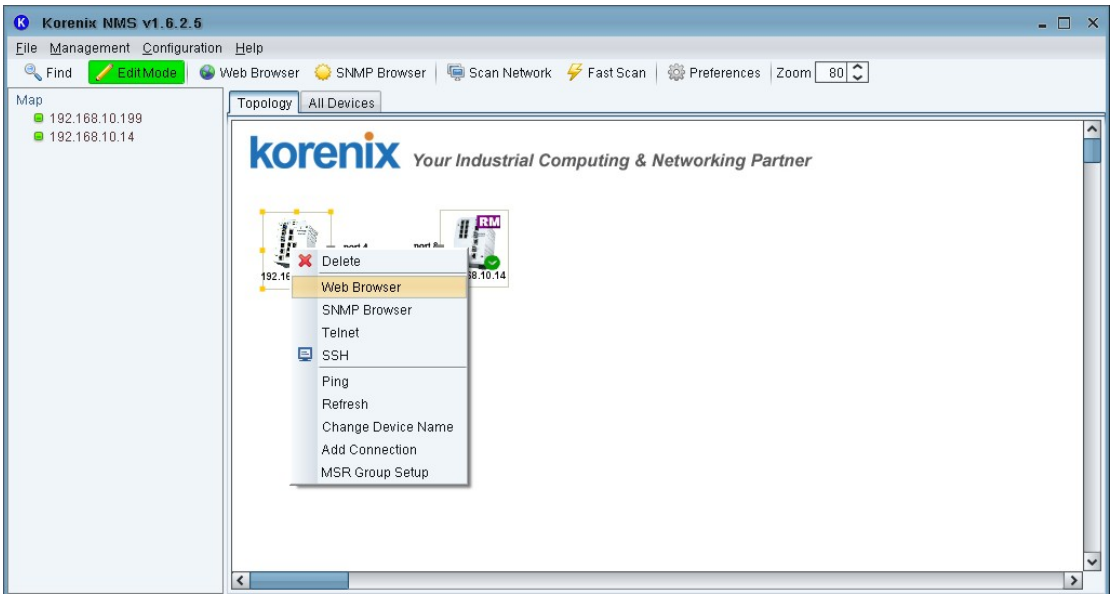
6.2 Auto Topology

The Auto Topology function allows you to automatically create the **links** (connections) between the devices (nodes). To support this function, the devices must support with LLDP and SNMP. LLDP enables the user to have automatic topology recognition for his LAN. Therefore the devices support for LLDP and SNMP and have to be configured to ready state.

6.2.1 Enable LLDP

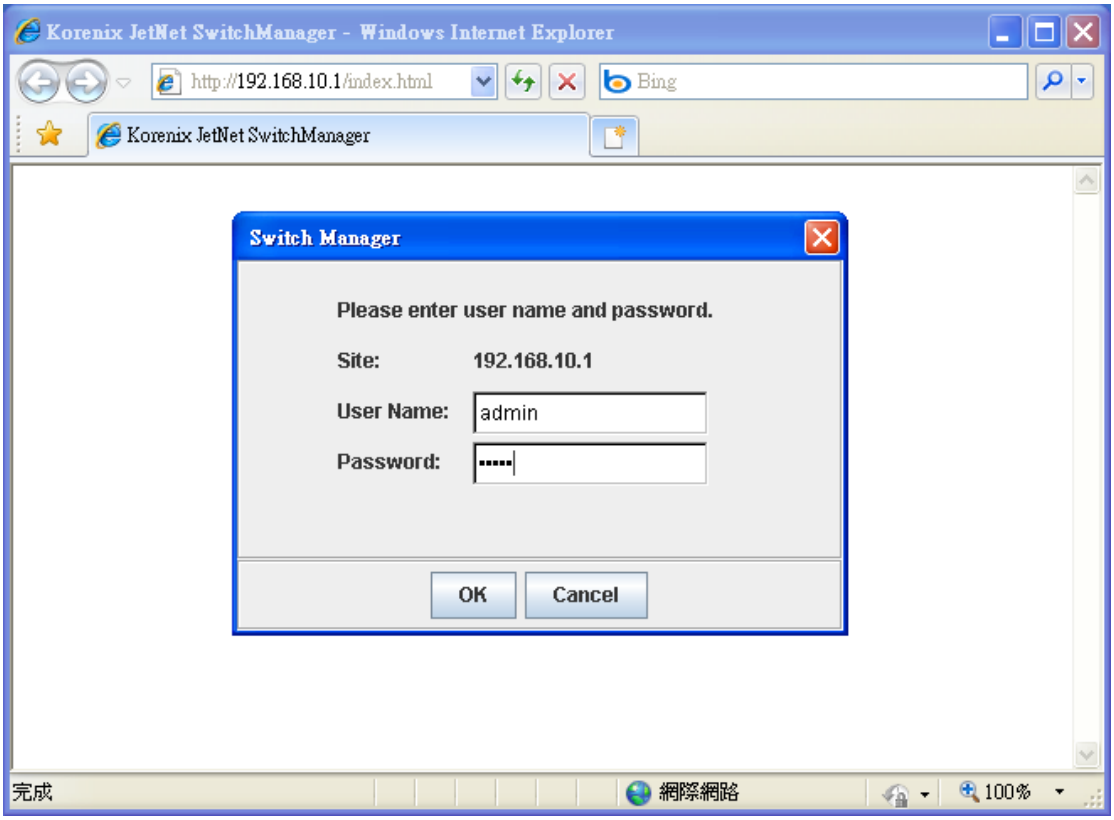
To let “Auto Topology” working, each device MUST enable LLDP function on installed network devices. You can use Web browser to confirm whether LLDP is enabled.

1. Use mouse to select one device on the Topology tab which you want to enable as LLDP.
2. Mouse right-click on the selected device and click on the **Web Browser** menu-item of pop-up menu.

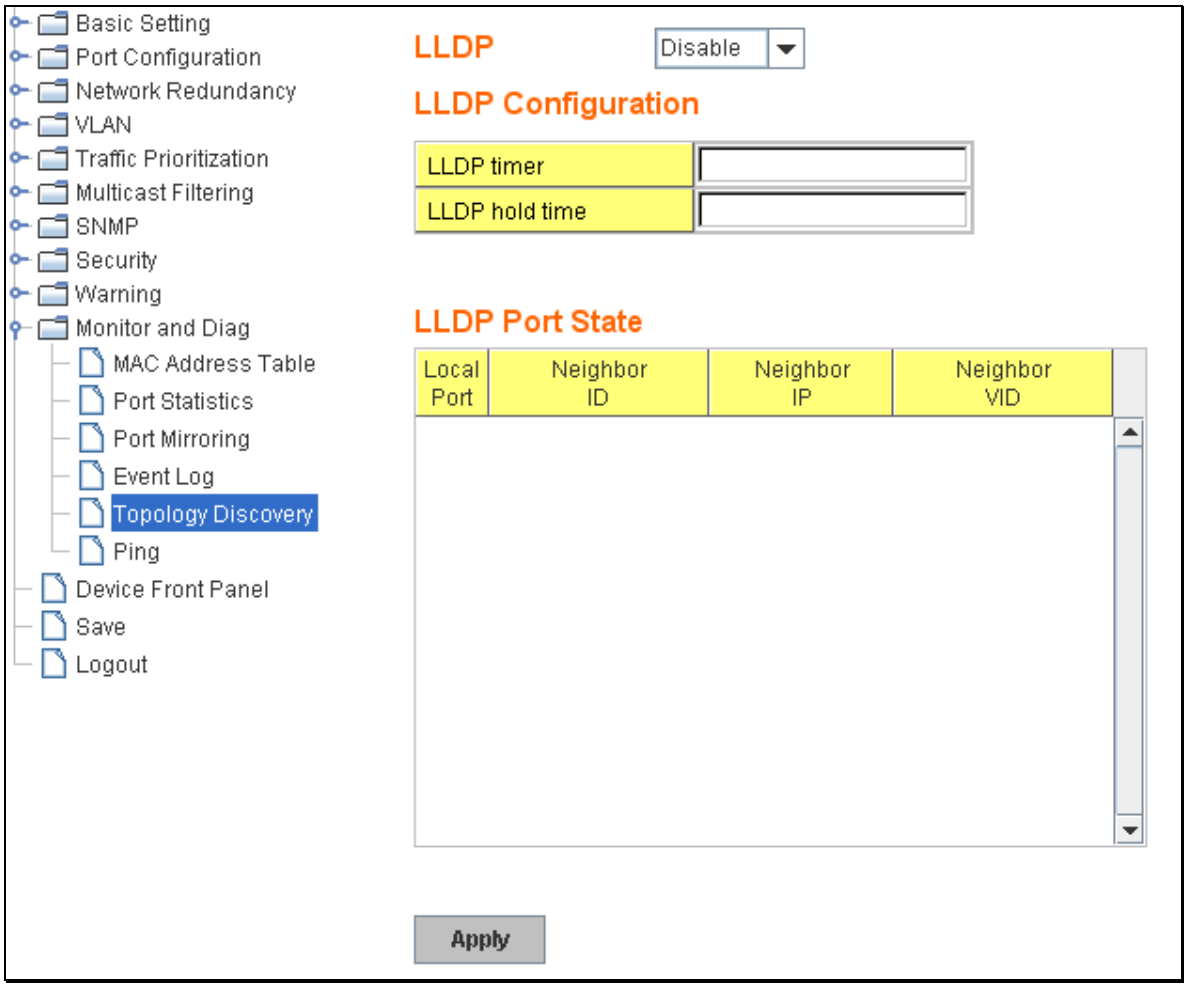


3. When the login screen appears, login with the user name and password.[6]

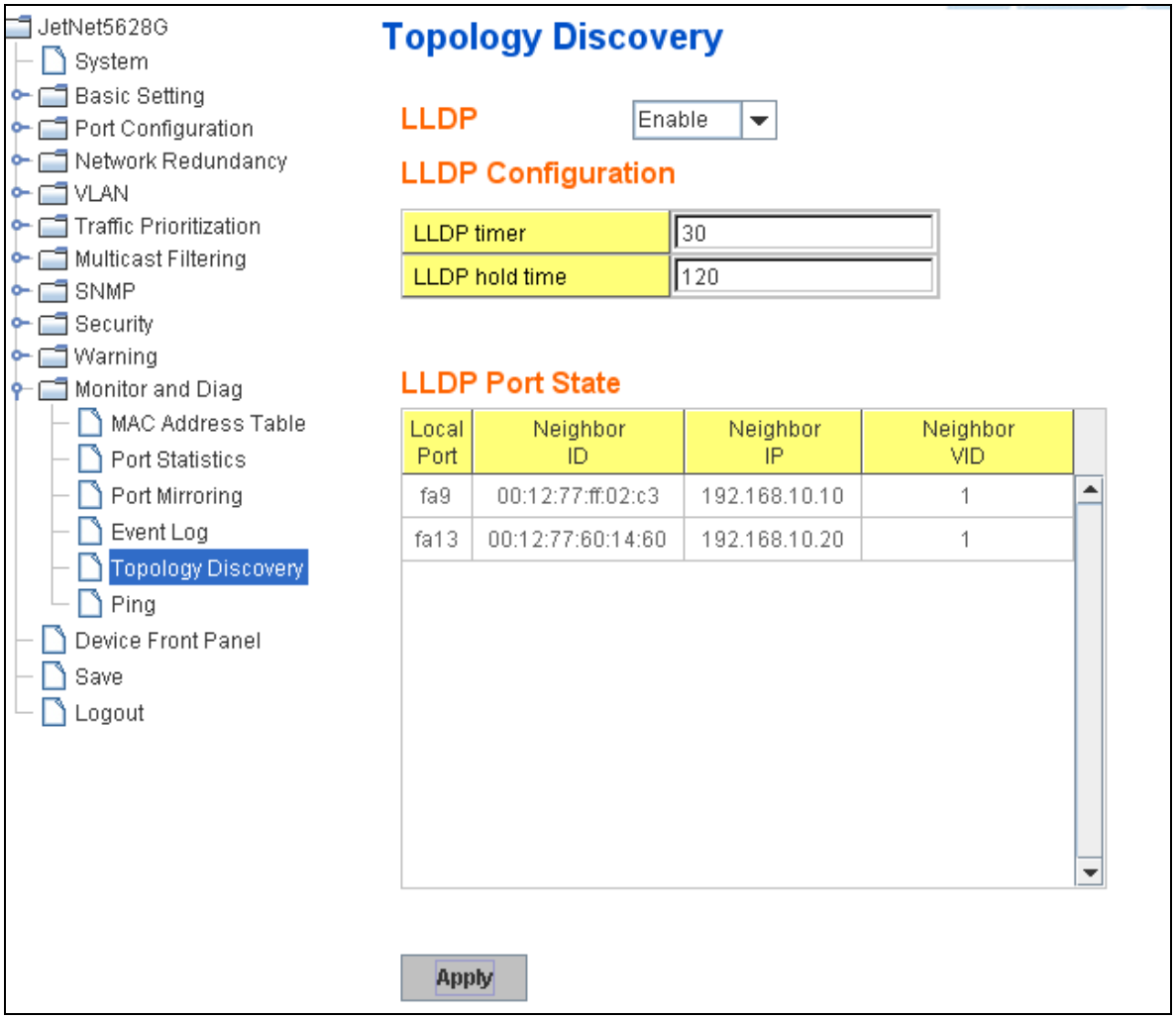
[6] **Note: The default login User Name and Password: admin/admin**



4. Click on the tree node **Topology Discovery**.



5. Confirm whether LLDP is enabled. If it is Disable, please set Enable and press **Apply**. You can manual set the timers of LLDP. The range of LLDP timer is 5~254 and LLDP hold time is 10~255.



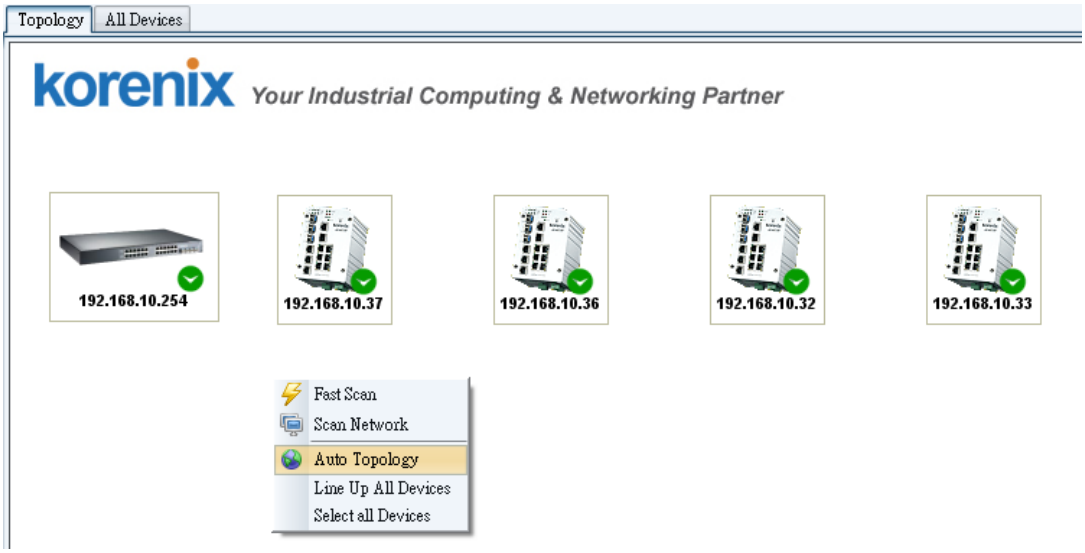
6.2.2 Generate connections

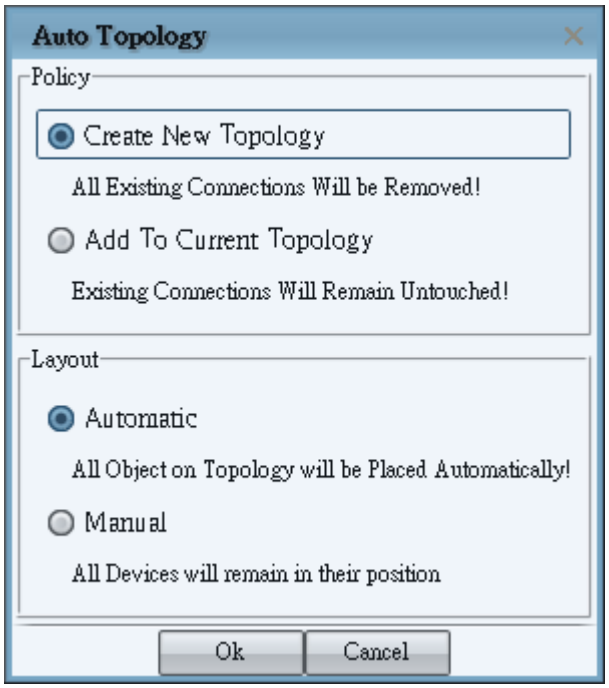
Generate connections between the devices.[7]

1. Check every devices' icon that each one has a green check on it. Device icon without check icon can't access by SNMP.

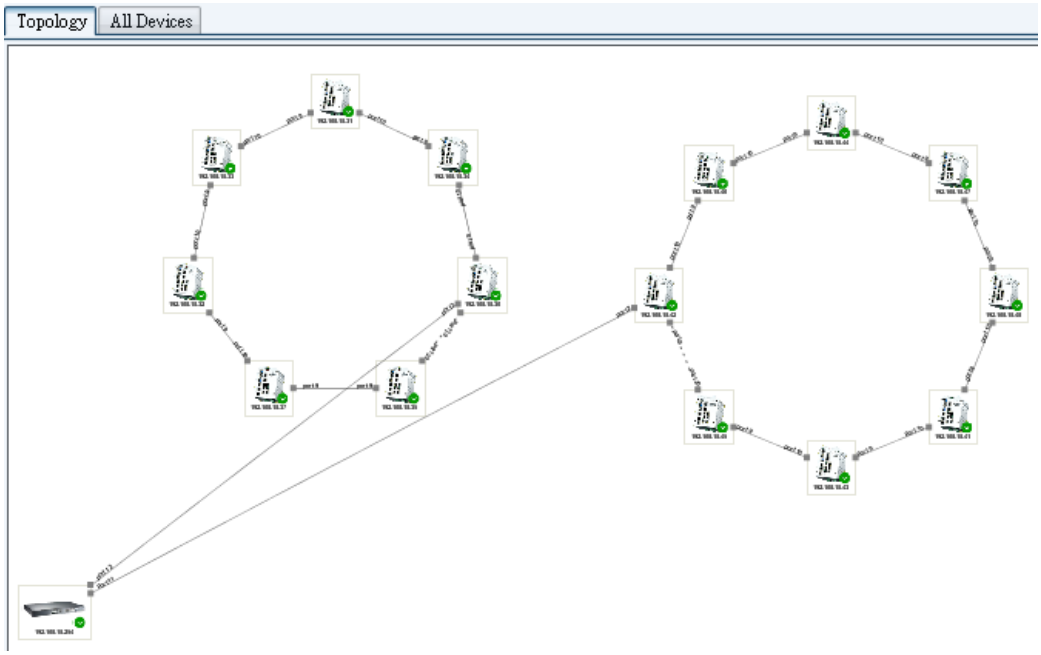
2. Mouse right-click on the Topology tab and click on Auto Topology on pop-up menu. It will display as follows:

[7] **In the example below, Korenix NMS add connections and place all devices according to the SNMP mib.**





3. Press OK to display the following of screen.



Auto Topology Check List:

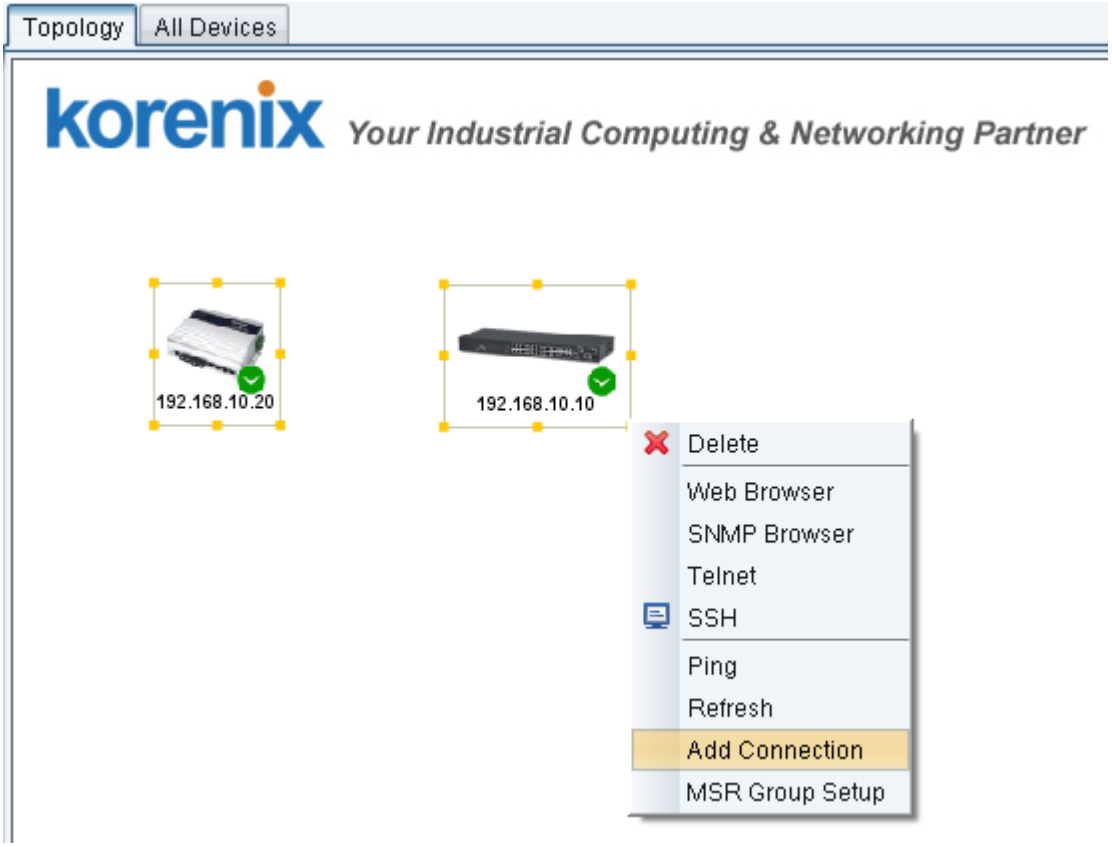
Yes/No	Requirement
	Does every device enable SNMP?
	Does any device not using default SNMP community? (public, private)
	Does every devices' icon show green?
	Does every device enable LLDP?
	If the device show red (not reachable), after you fix the problem, did you refresh the device?

Note: The L3 interface (IP interface) may not be displayed correctly in the version of korenix NMS v1.6.x.

6.3 Manual Add Connection and Delete

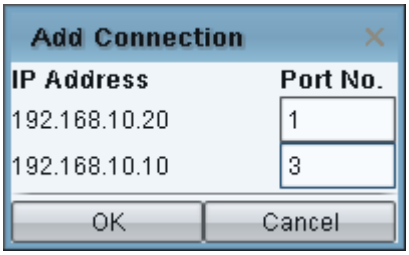
6.3.1 Manual Add connection

Select two switch icons and mouse right-click to show popup menu.

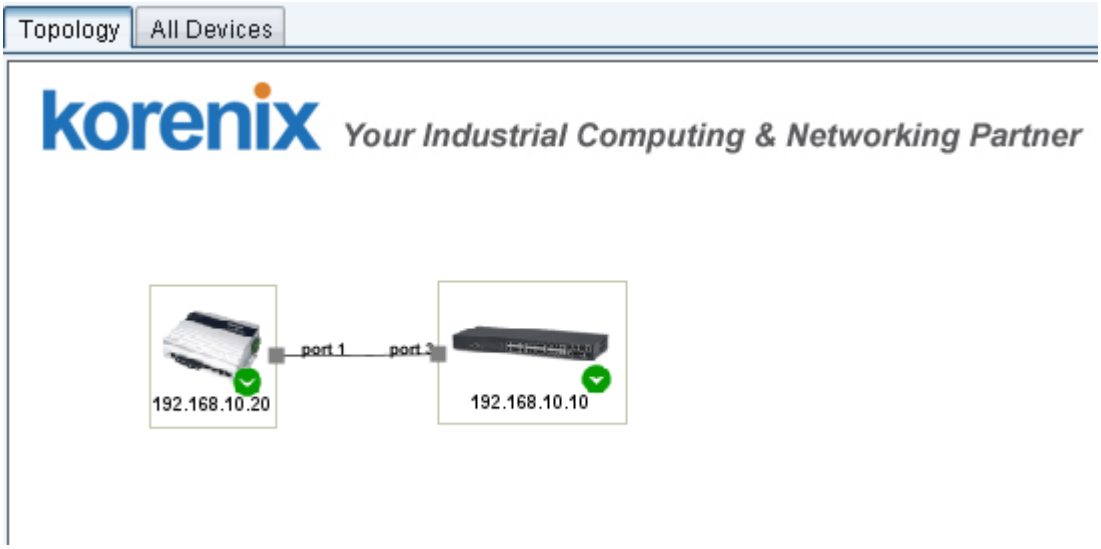


Click on **Add Connection** menu item of the pop menu. It will show this Add Connection dialog.

Enter two port number connected between two switches and press OK.

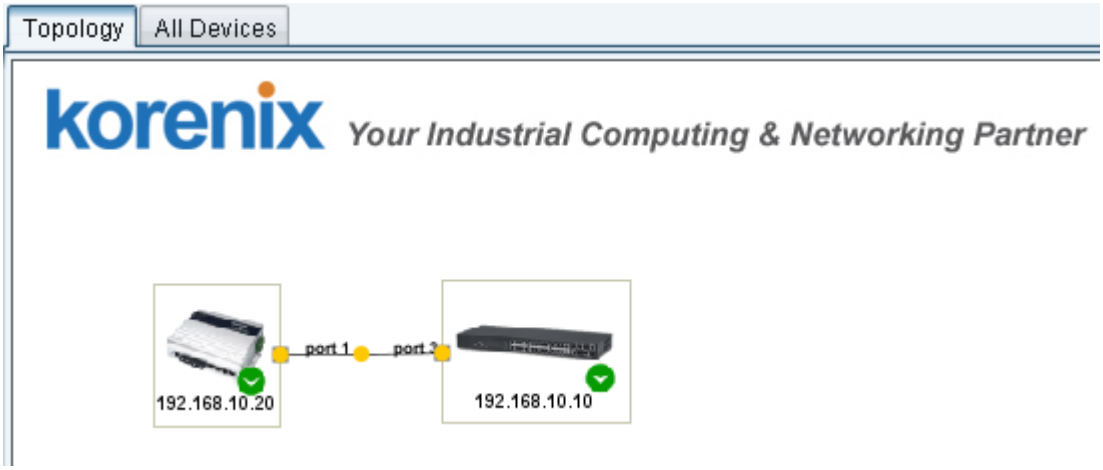


The screen will display that there is a connection between two switches.

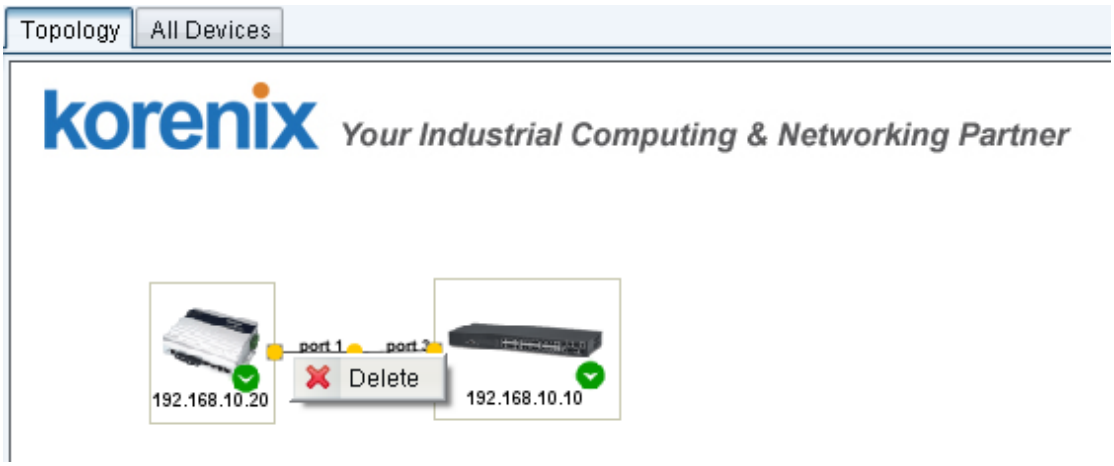


6.3.2 Manual Delete connection

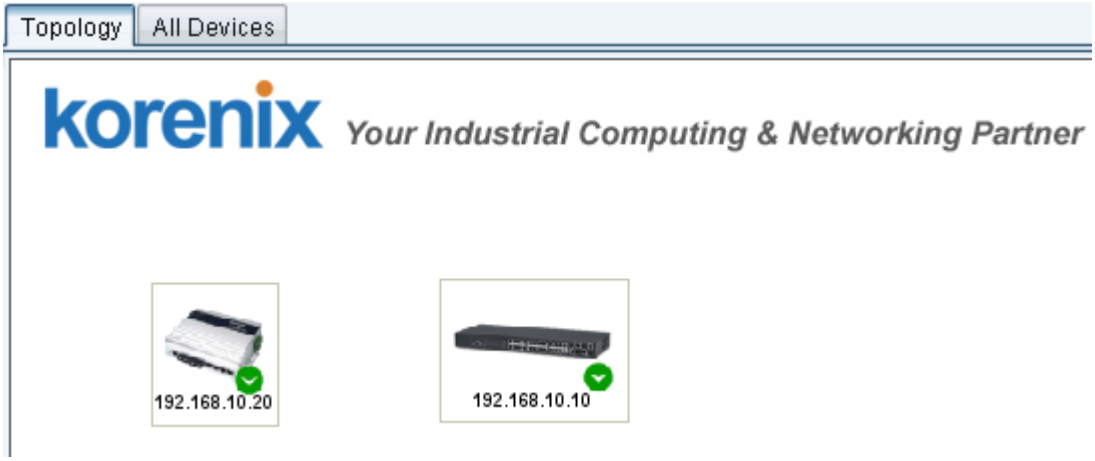
Select the connection between 192.168.10.20 and 192.168.10.10 by Mouse-Click.



Mouse Right-Click the connection and pop up **Delete** menu-item of pop-up menu.



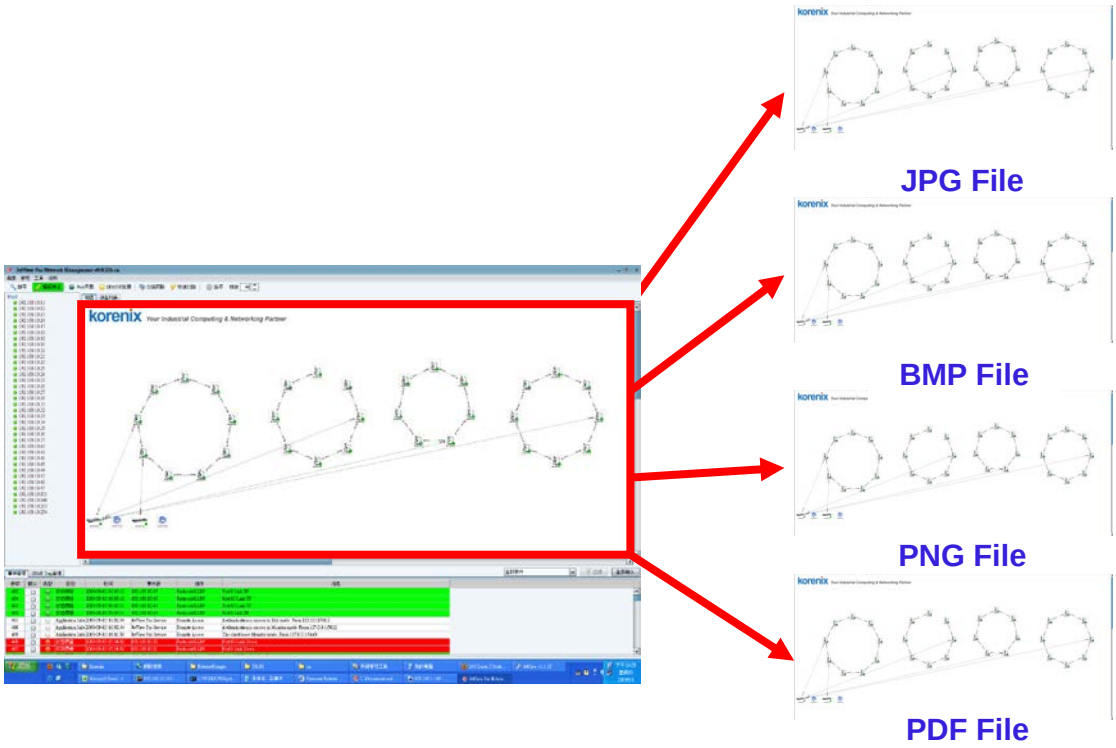
Click **Delete** to delete the connection.



6.4 Save Topology Map

To present to Topology Map, you could need to get topology map.

6.4.1 Save Topology Map as file

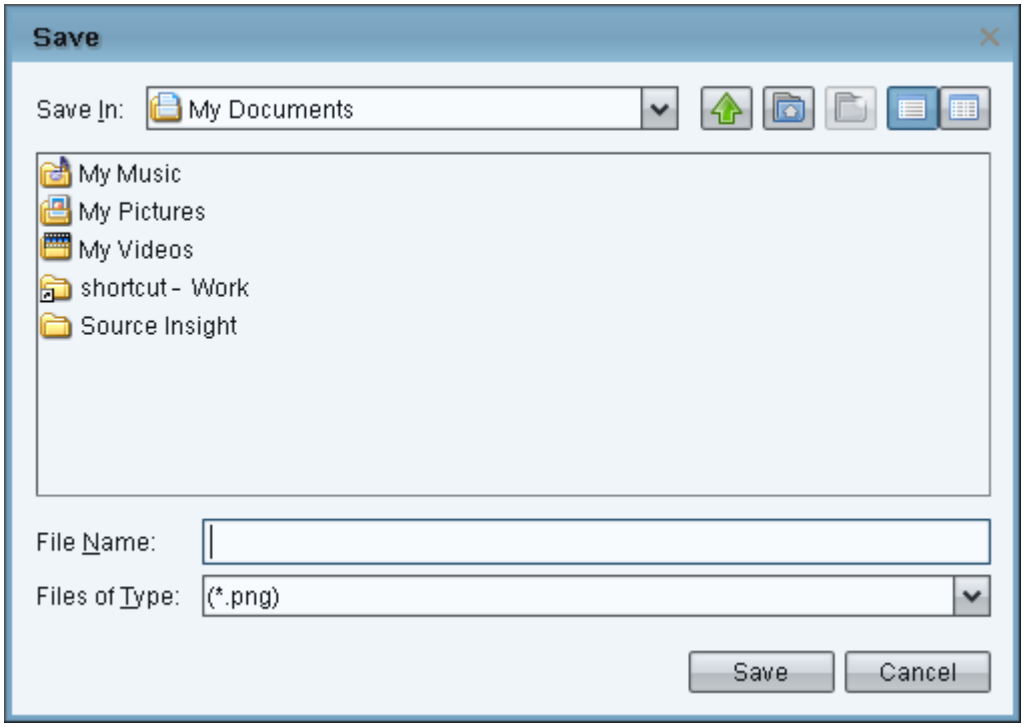


These two methods can help you save currently displayed map in the Topology Map to file.

1. Image format file (BMP, JPEG, PNG)

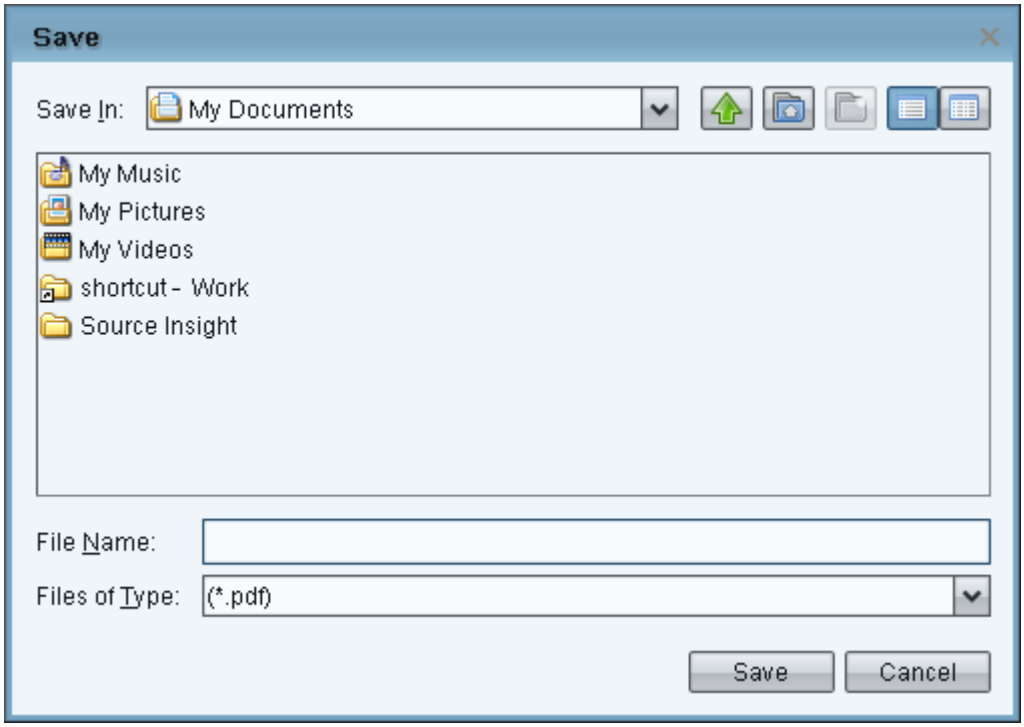
Click on **File** / **Export…**. Choose File of Type to use BMP, JPEG, PNG image format.

Input **File Name** and press **Save** to save the file.



2. PDF file

Click on **File** / **Print**. Input **File Name** and press **Save** to save the file.

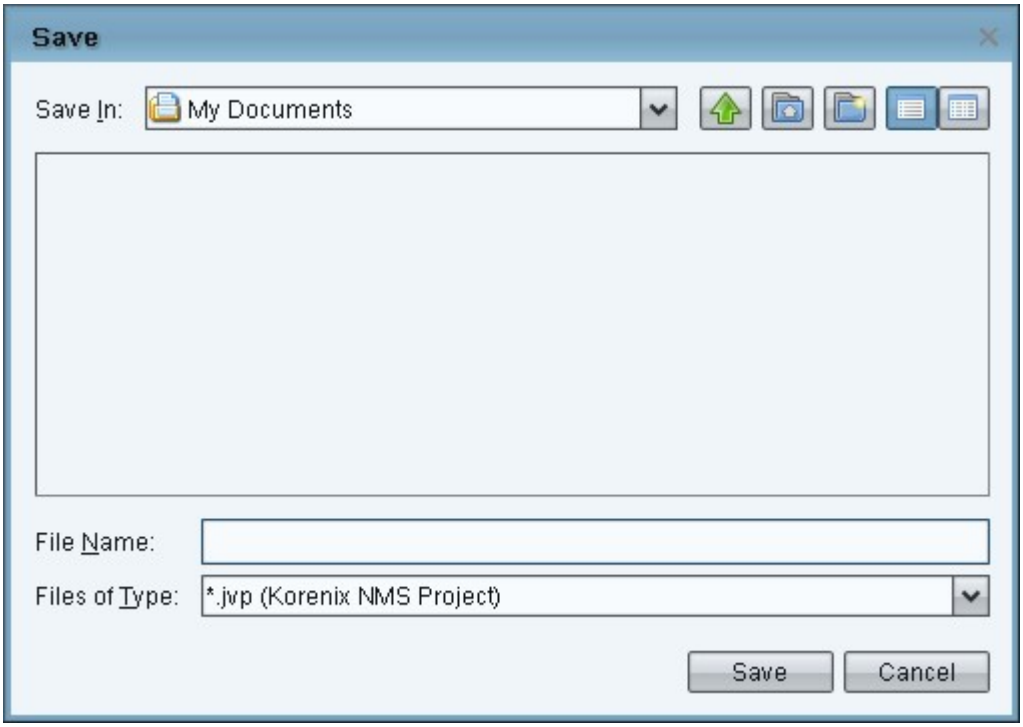


A PDF file will be generated. You can print it with the print function of your PDF viewer.

6.4.2 Save Topology Map as database file (*.jvp)

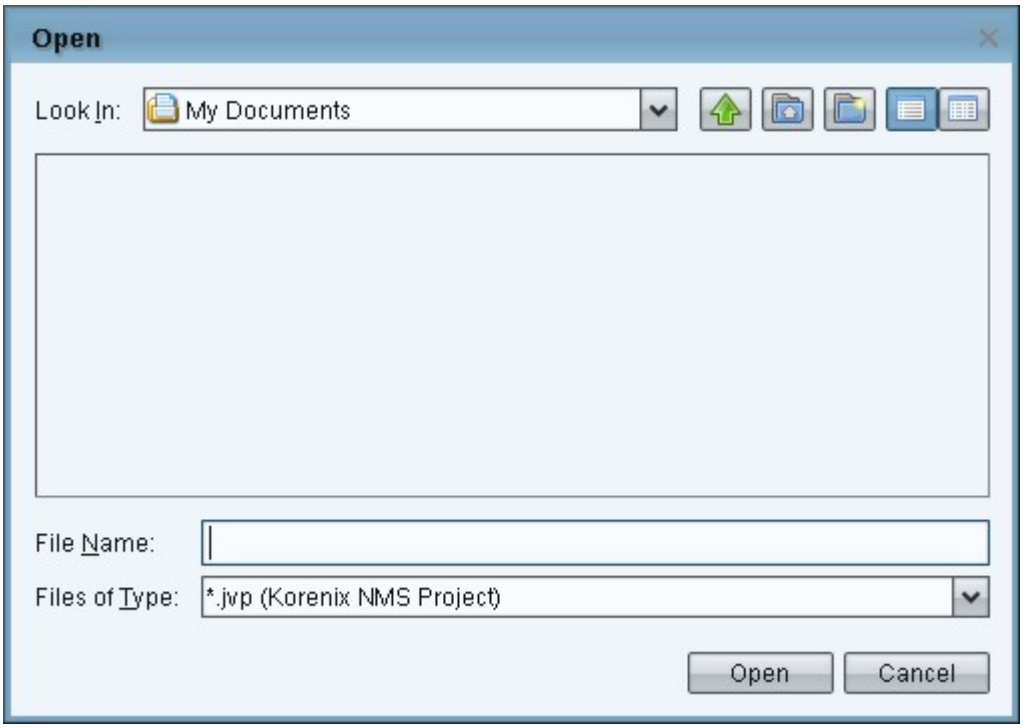
To record current displayed map in the Topology Map, use this map again. First, you need to save Topology Map as database file.

Click on **File** / **Save**. Input **File Name** and press **Save** to save the file. (ex. demo.jvp)



To restore previous saved Topology Map, you click on File / Open…

Set File Name (ex. demo.jvp) and press **Open** to restore previous saved Topology Map.



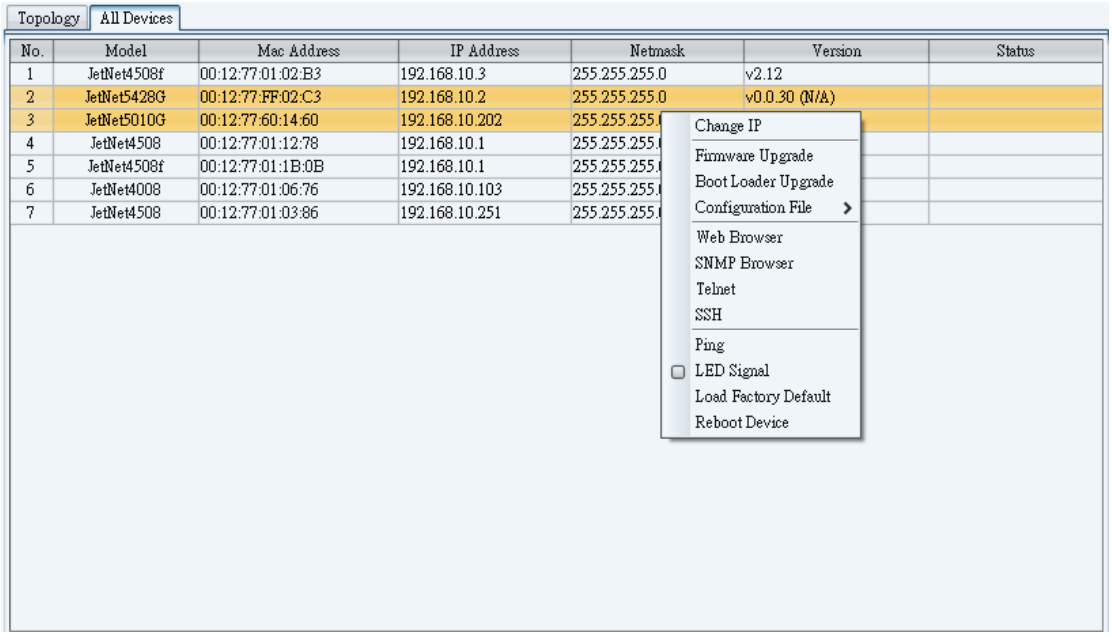
Note: This function only available on server. Remote client can't backup/restore database due to security precautions.

7 Device Configuration

This section explains the device configuration on the **All Devices** Tab. One switch device can be configured by one mouse selection. Group devices can also be configured by many selections at a time.

The methods of mouse selection can be single selected any rows by **Ctrl** + mouse click or continuously selected by first mouse click and then **Shift** + mouse click. Remember that first mouse select the switch devices to configure before the following of device configurations.

After having one more devices selections, show pop-up menu by mouse right-click.



Following topics are covered in this section describing the pop-up menu functions:

7.1 Global Settings

7.2 MSR group setup

7.3 Firmware Upgrade

7.4 Configure File Operation

7.5 Manage by Application

Note: Before using pop-up menu functions, remember to select the target device (mouse selection) that should be configured.

7.1 Global Settings

7.1.1 Change IP

You can assign the new IP address to the switch devices.

7.1.2 LED Signal

This function is convenient for searching the switch device. While this function is enabled, the light of the LED on the switch device constantly twinkles.

7.1.3 Load Factory Default

You can reset all the configurations of the switch to default setting.

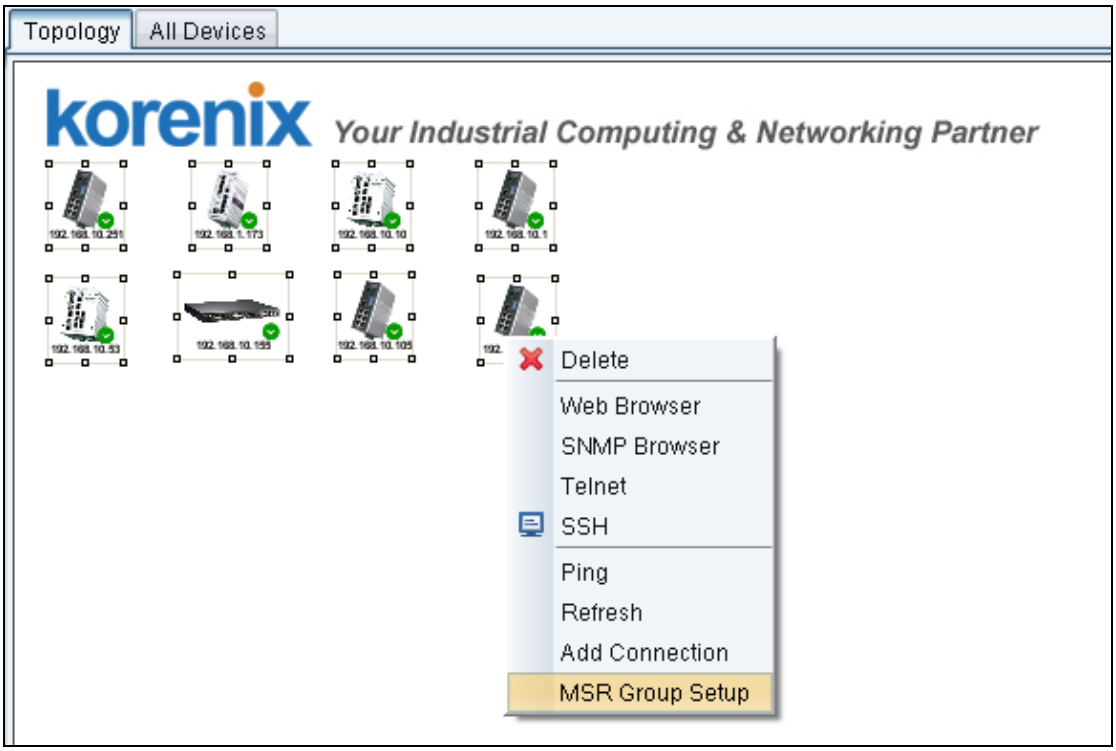
7.1.4 Reboot Device

Some of the feature change to require you rebooting the system. Click on **Reboot Device** on pop-menu to reboot your device.

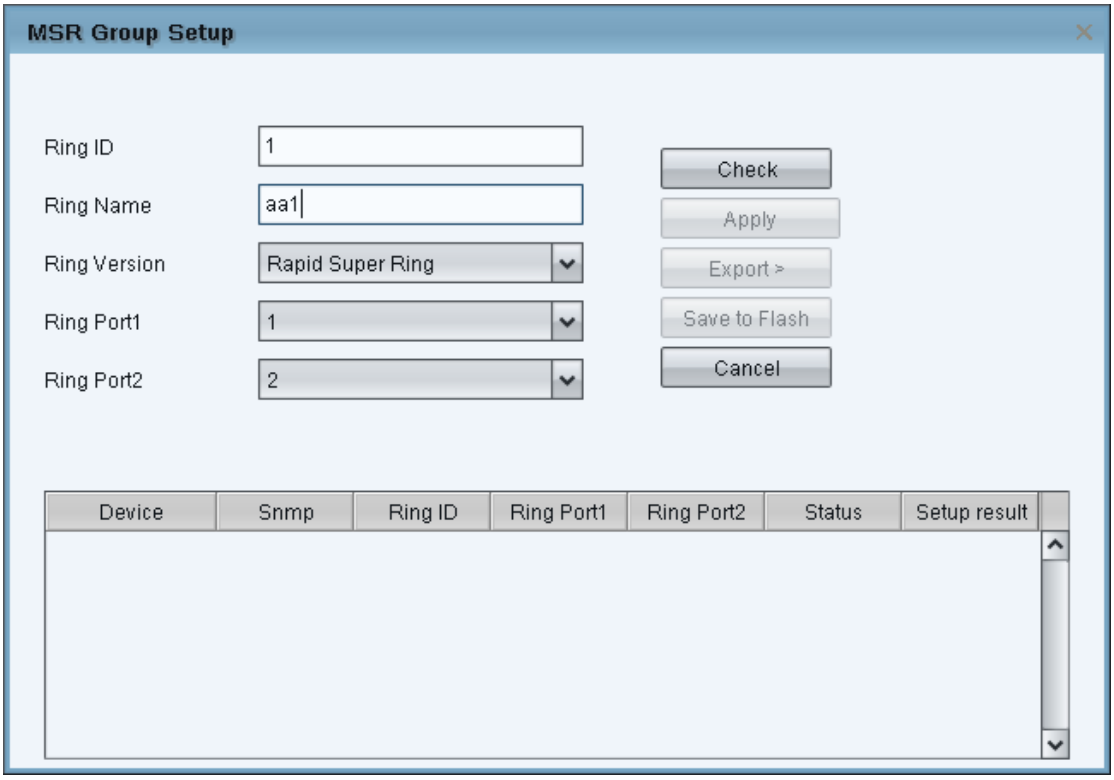
7.2 MSR group setup

To let “Auto Topology” to generate Ring Topology, devices in the install ring network have to setup Multiple Super Ring (MSR) function.

1. Use mouse right click to select multiple devices on the Topology tab by CTRL key which you want to setup MSR function.
2. Mouse right-click on the selected device and click on the **MSR Group Setup** menu-item of pop-up menu.



3. It will show **MSR Group Setup** window. Set **Ring ID** (0~31), **Ring Name**, **Ring Version**, **Ring Port1** and **Ring Port2** for MSR setup. Then press **Check** button



4. It will show check status of selected device in the bottom of **MSR Group Setup** window. The columns in the table explain as follow:

   a. Device: IP address

   b. Snmp: Connect via SNMP is available

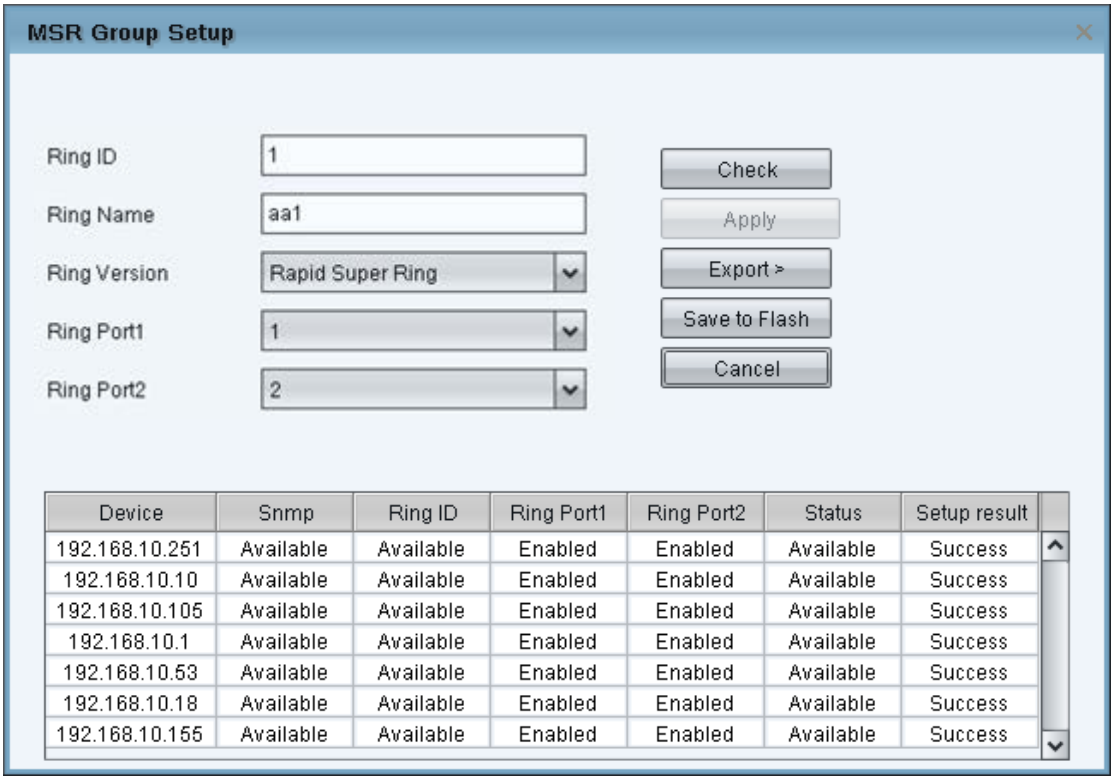
   c. Ring ID: whether Ring ID is used or exceeds the ring number limit

   d. Ring Port1: whether Ring Port1 is enabled or exceed the port number limit for device

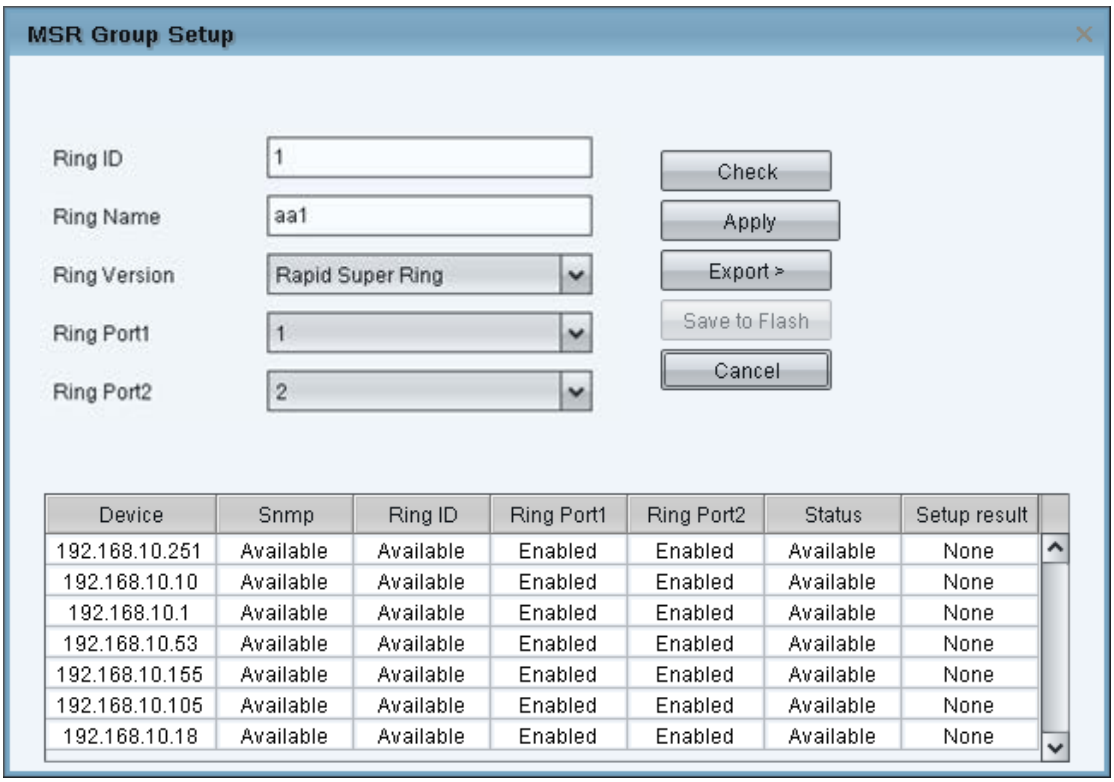
   e. Ring Port2: whether Ring Port2 is enabled or exceed the port number limit for device

   f. Status: the device status based on the status of Snmp, RingID, Ring Port1, Ring Port2.

   g. Setup result: response this column after pressing **Apply** button



5. To indicate that there is at least one of device in the unavailable status if the **Apply** is disabled. Press Check button again after solving the problem for unavailable devices. If all the selected devices are in the available status, the **Apply** button will enable. Then press **Apply** button to setup MSR setting for all selected devices. Final, the setup result will show the last column in the table.



6. If you want to use these settings for rebooted devices, you MUST press **Save to Flash** button to save these settings into flash for each devices.

7.3 Firmware Upgrade

In this section, you can update the latest firmware for your switch. Korenix provides the latest firmware in Korenix Web site. The new firmware may include new features, bug fixes or other software changes. We'll also provide the release notes for the update as well. For technical viewpoint, we suggest you use the latest firmware before installing the switch to the customer site.

The UI also shows you the version and built date of current firmware. Please check the version number after the switch is rebooted.

Note: The system will be automatically rebooted after you finished upgrading new firmware/bootloader. Please remind the attached users before you do this.

7.4 Configure File Operation

The configuration file of the switch is a pure text file. You can open it by word/txt read file. You can also modify the file, add/remove the configuration settings, and then restore back to the switch.

7.4.1 Backup

With Backup function, you can save current configuration file saved in the switch's flash

7.4.2 Restore

This will allow you to go to Restore function later to restore the configuration file back to the switch.

7.4.3 Load default

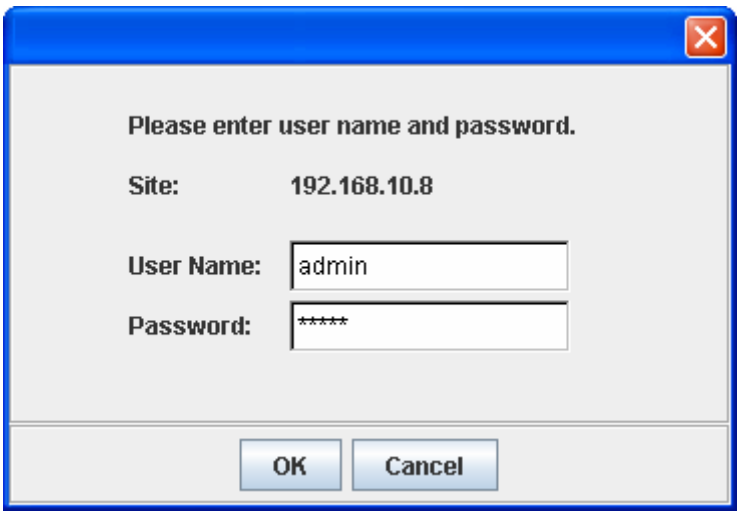
All of the configurations will be rollback to the factory default settings, except the device IP address.

7.5 Manage by Application

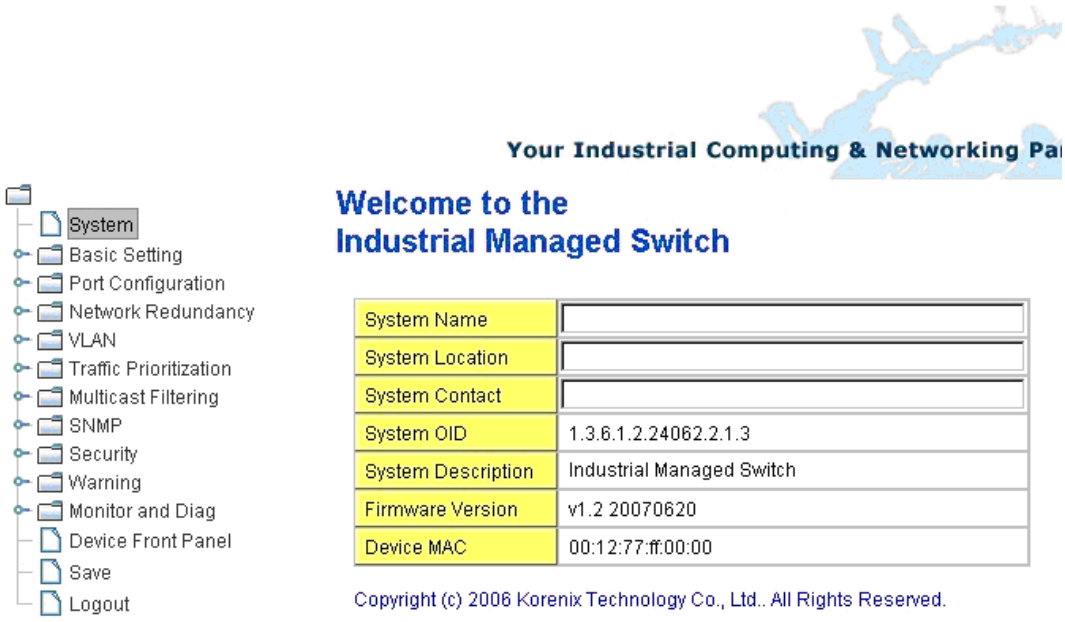
7.5.1 Web browser

For managing Korenix's Ethernet switch devices, you need to consider that they have web management function. Korenix web management page is developed by JAVA. It allows you to use a standard web-browser such as Microsoft Internet Explorer, or Mozilla, to configure and interrogate the switch from anywhere on the network.

1. Use mouse to select one device on the Topology tab which you want to configure.
2. Mouse right-click the selected device and click on the **Web Browser** menu-item of pop-up menu.
3. The login screen will appear next.
4. Key in user name and the password. Default user name and password are both **admin**.



Click on **Enter** or **OK**. Welcome page of the web-based management interface will then appear.



5. Once you enter the web-based management interface, you can freely change the IP address to fit your network environment.

7.5.2 SNMP Browser

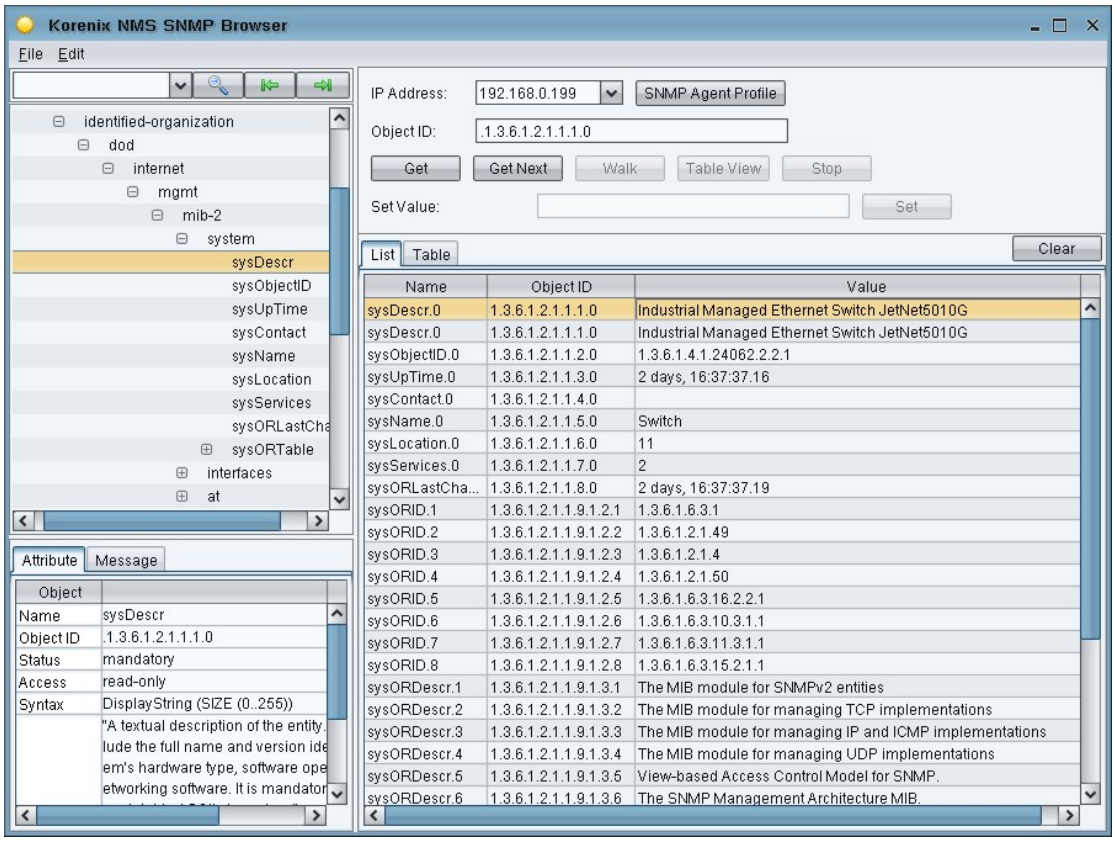
Korenix NMS provides a SNMP browser for user to management SNMP devices. The SNMP Browser supports SNMP v1/v2c/v3 get, get next, walk, table view and set functions. And the SNMP Browser provides MIB file compiler tool “MIB File Manager” that can load public standard MIBs and private MIBs and build a MIB tree.

Korenix provides many standard MIBs for users to configure or monitor the switch’s configuration by SNMP. But, since some commands can’t be found in standard MIB, Korenix provides Private MIB to meet up the need. Compile the private MIB file by your SNMP tool. You can then use it. Private MIB can be found in product CD or downloaded

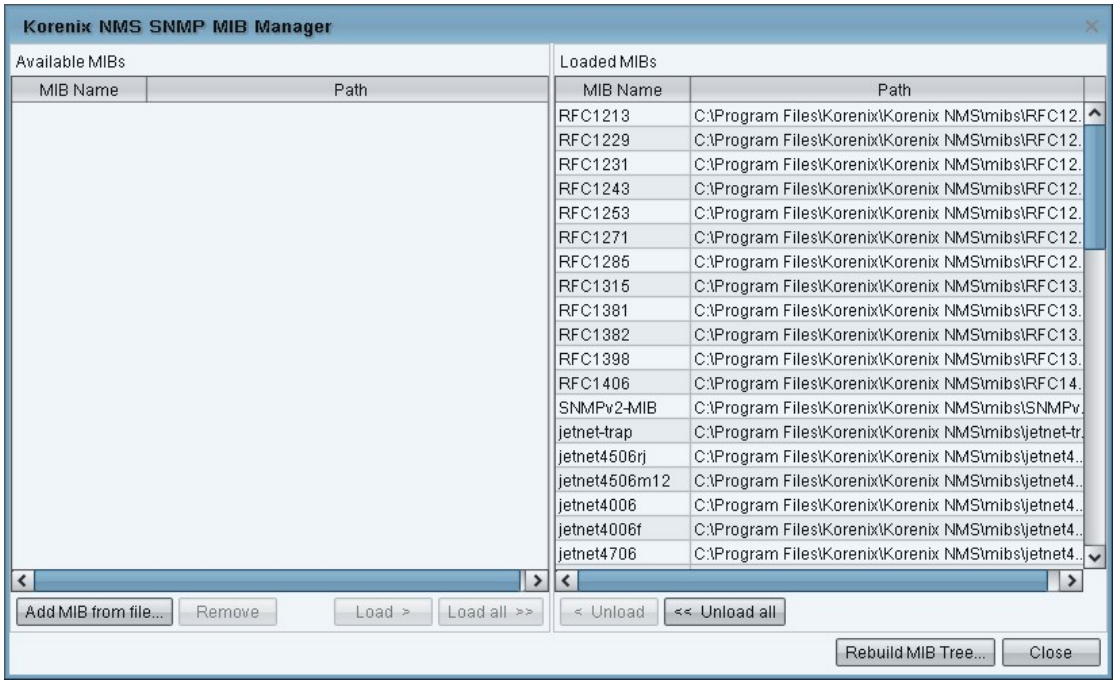
from Korenix Web site.

Private MIB tree is the same as the web tree. This is easier to understand and use. If you are not familiar with standard MIB, you can directly use private MIB to manage /monitor the switch, no need to learn or find where the OIDs of the commands are.

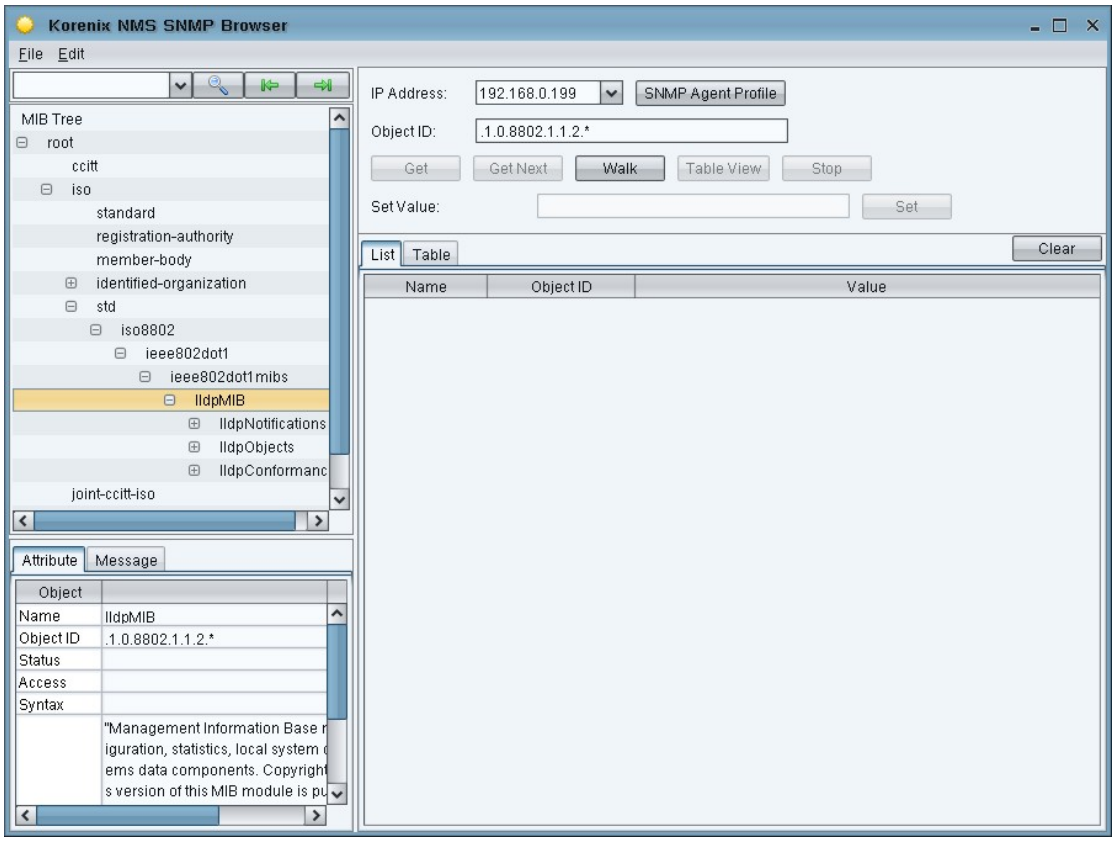
The SNMP Browser tool lets you read and write the MIB of the selected device.



The MIB Compiler assists user in building MIB tree. While MIB files have been changed, user uses the MIB Compiler to rebuild MIB tree. To add new MIB into MIB Tree, go **File** > **MIB Manager…** It will show the following window.



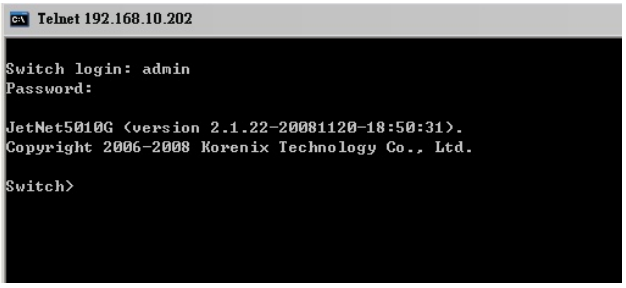
Press **Add MIB from file…** to add new MIB file. Load this new MIB file and then press **Rebuild MIB Tree…** to update **MIB Tree**.



7.5.3 Telnet

Korenix‘s network devices support Telnet console. You can connect to the switch by

Telnet. The command lines are the same as what you see by RS232 console port. You can use CLI command to configure your device.



7.5.4 SSH (Secure Shell)

Korenix's network devices also support SSH console. You can remotely connect to the switch by command line interface. The SSH connection can secure all the configuration commands you sent to the switch.

SSH is a client/server architecture where network devices are considered as the SSH server. When you want to make SSH connection with the switch, you should download the SSH client tool first.

7.5.5 Ping

This ping function can confirm your host access to Korenix's network devices via network. Ping the selected device to verify a normal response time.

7.5.6 Change Device Name

You can give device an alias for a device by **Change Device Name** function.

Device IP Address : 192.168.10.52
Device Name: AnotherName
Device Type : JetNet4510
Description : Industrial Managed Ethernet Switch JetNet4510
System Up Time : 0:59:14.05
System Name: Switch
System Contact:
System Location:

LLDP Status : OK
LLDP Chassis ID: 00:12:77:60:1c:89

Status : SNMP OK

8 Event and Alarm Management

Following topics are covered in this section:

8.1 Event Management

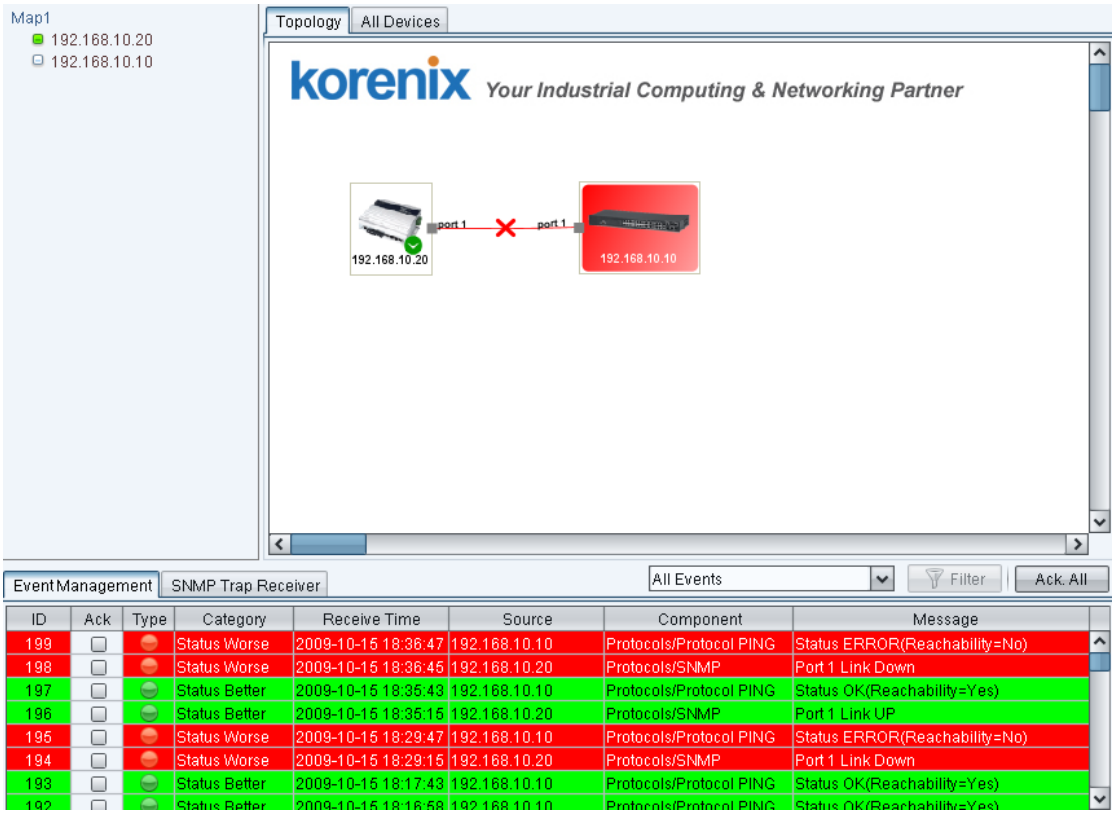
8.2 SNMP Trap

8.3 Alarm and Action

8.1 Event Management

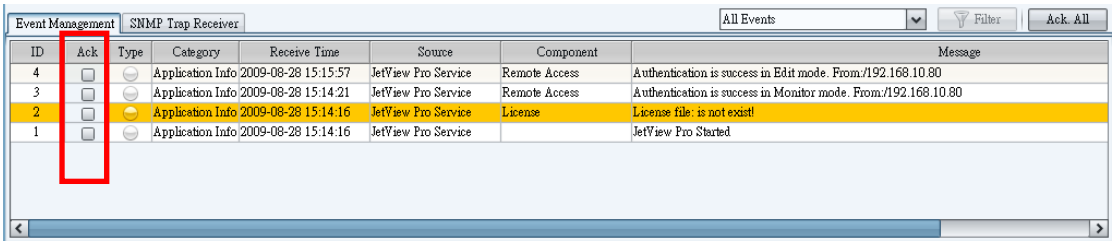
Administers can identify the event threshold (OK, Warning, Error, No Status) by the color. Notifications based on any event (Node up, Node down, Link up, Link down, Remote Access Client mode, etc.) can be generated. Besides, notifications can be sent via email, SNMP trap and this Korenix NMS program. For the event settings refer to section 9.1.

In the case of red background icon on Topology tab, relevant fields in the event line of **Event Management** tab are colored as red (see in the following screen). According to the event message, users can identify what occurs to the devices with red background.

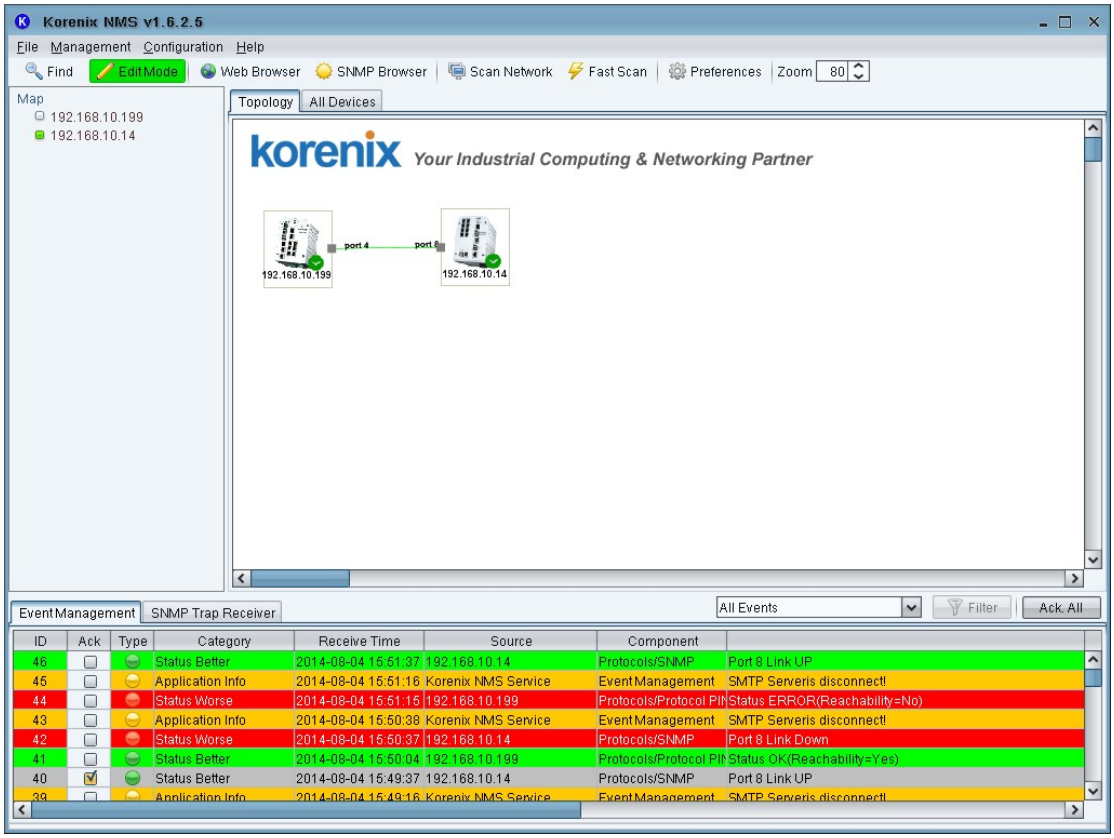


Ack This column is to check the status of each event and confirm these events for network manager. After checking Ack, the corresponding links or device icons in the topology are restored to the normal color. This is also to recognize updated status in the topology.

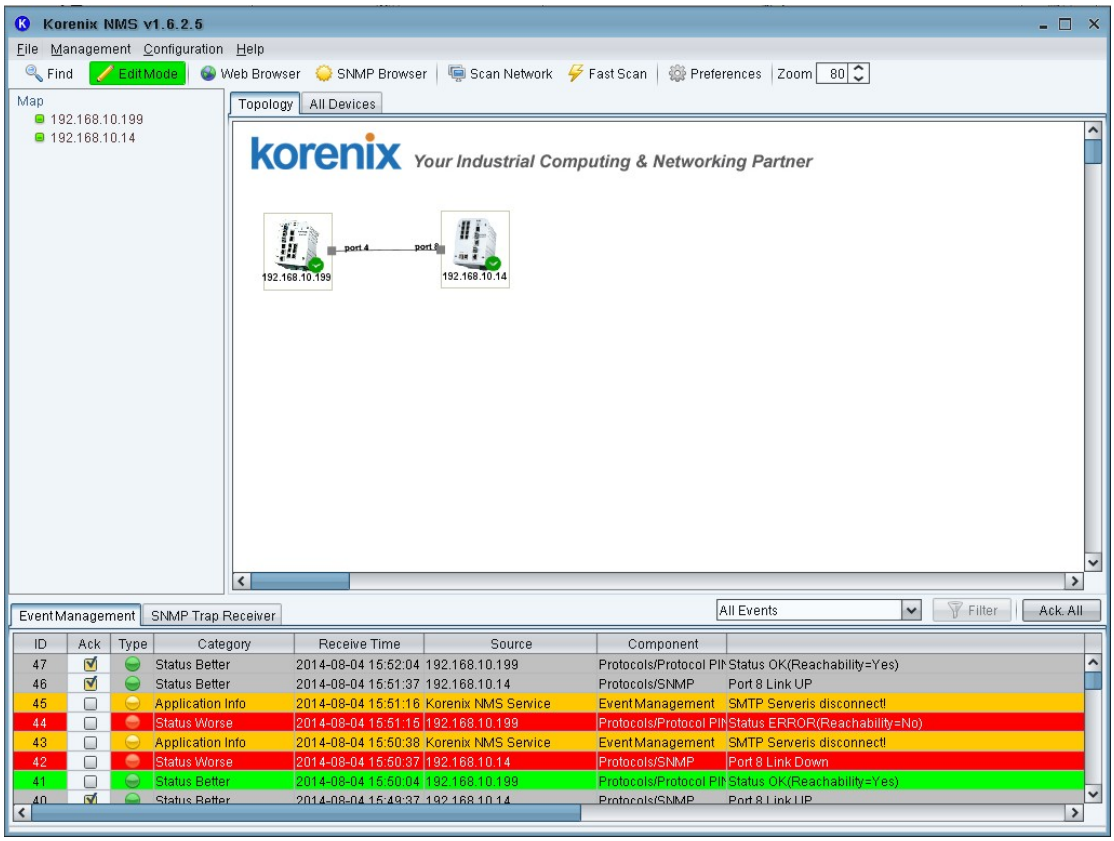
Use mouse to click checkbox to check.



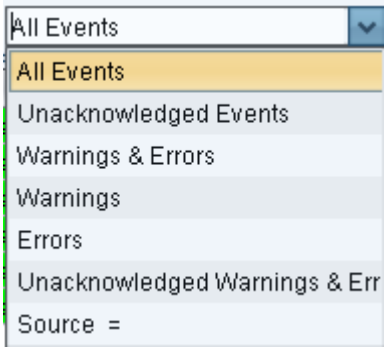
Ack for the green link, for example:



While you check this Ack of ID 46 and 47, the link color will restore from green to gray.



Event Filter You can choose to use All Events, Unacknowledged Events, Warnings & Errors, Warnings, Errors, Unacknowledged Warnings & Errors and Source = ,so that show the event status you want to see. While choosing “Source =”, you must append the IP address (ex, 192.168.10.1) behind the “Source = “ string and press Filter button to filter the events matched by Source column,



8.1.1 Link up/down Events

While the link failure happens, Korenix NMS will issue a **Link Down** event in Event Management tab page and update the Topology Map. (Figure: link down event). This event will show “Port1 Link Down” Message.

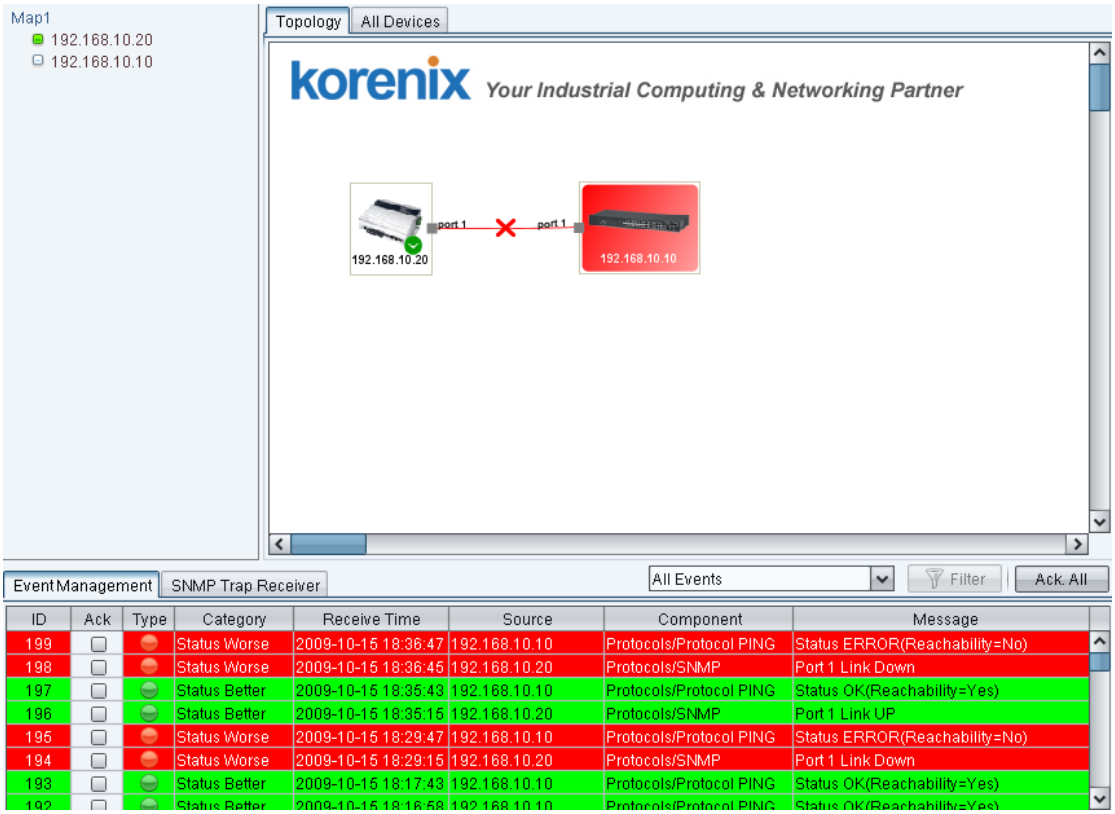


Figure: link down event

While the link restores, Korenix NMS will issue a **Link Up** event in Event Management tab page and update the Topology Map. (Figure: link up event). This event will show “Port1 Link UP” Message.

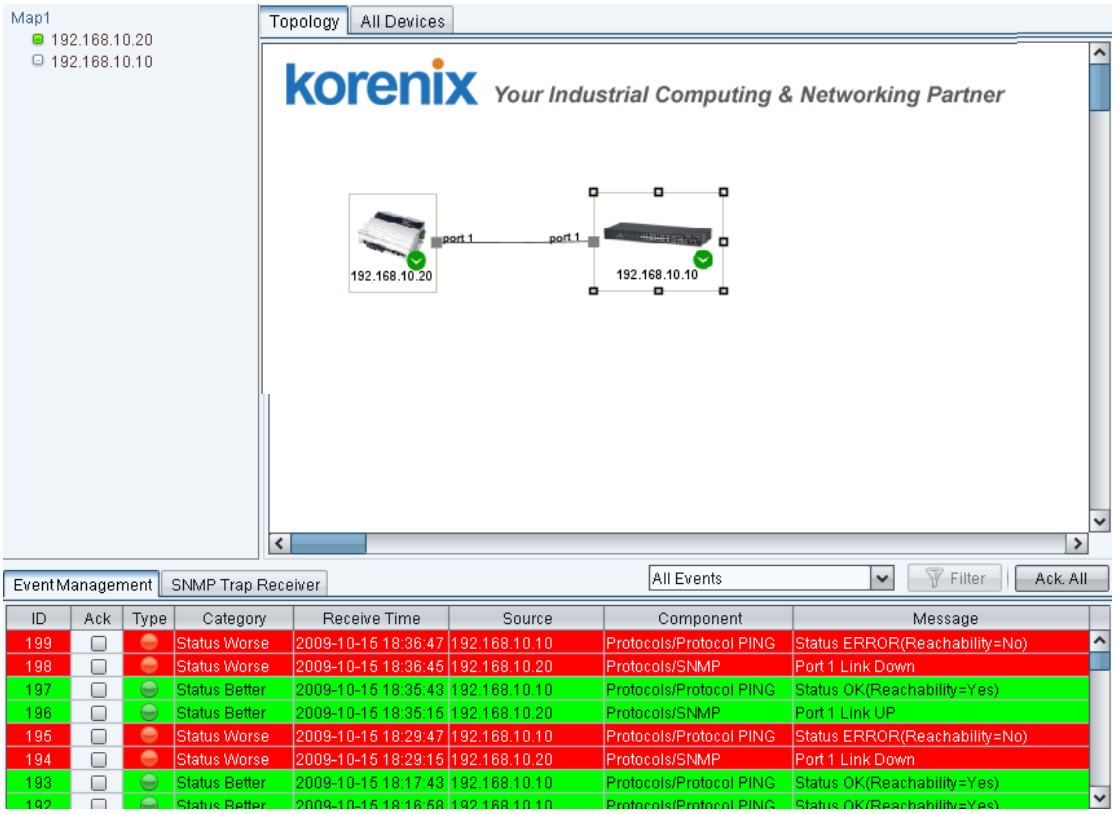


Figure: link up event

8.1.2 Node up/down Events

While the node failure happens, Korenix NMS will issue a **Node down** event in Event Management tab page and update the Topology Map. (Figure: node down event). This event will show “Status ERROR(Reachability=No)” Message.

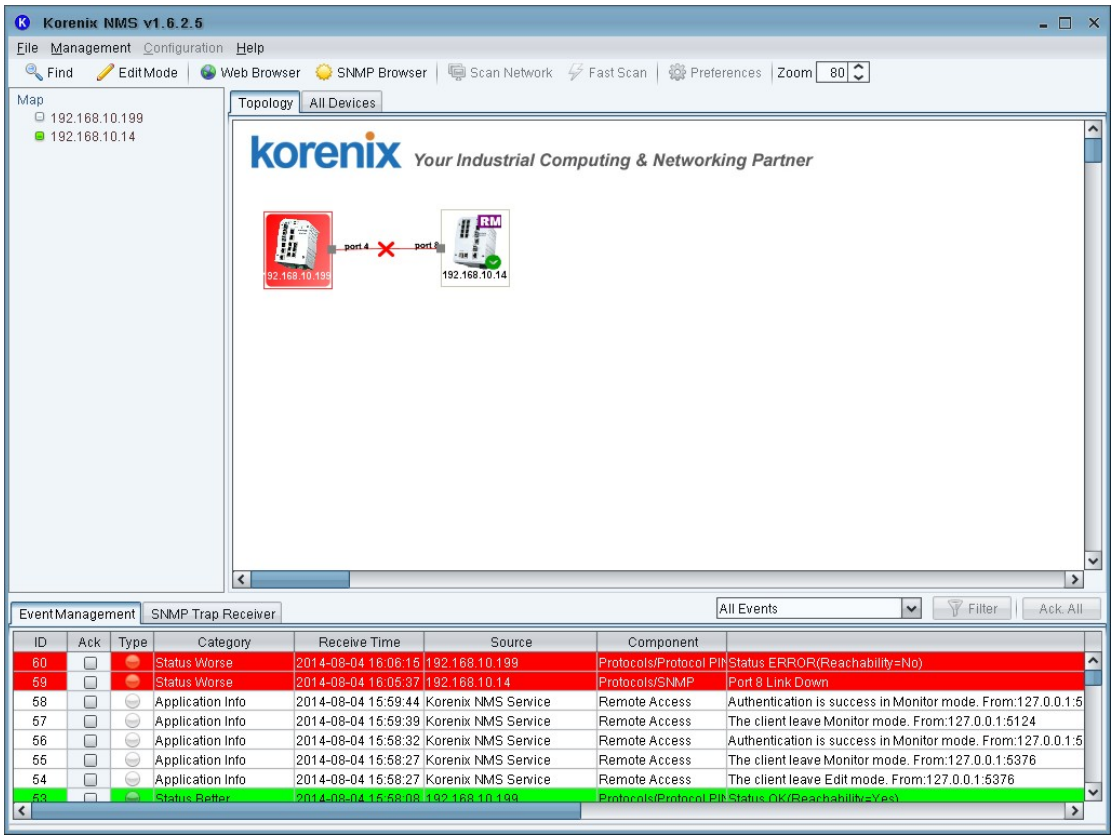


Figure: node down event

While the node restores, Korenix NMS will issue a **Node up** event in Event Management tab page and update the Topology Map. (Figure: node up event). This event will show “Status OK(Reachability=Yes)” Message.

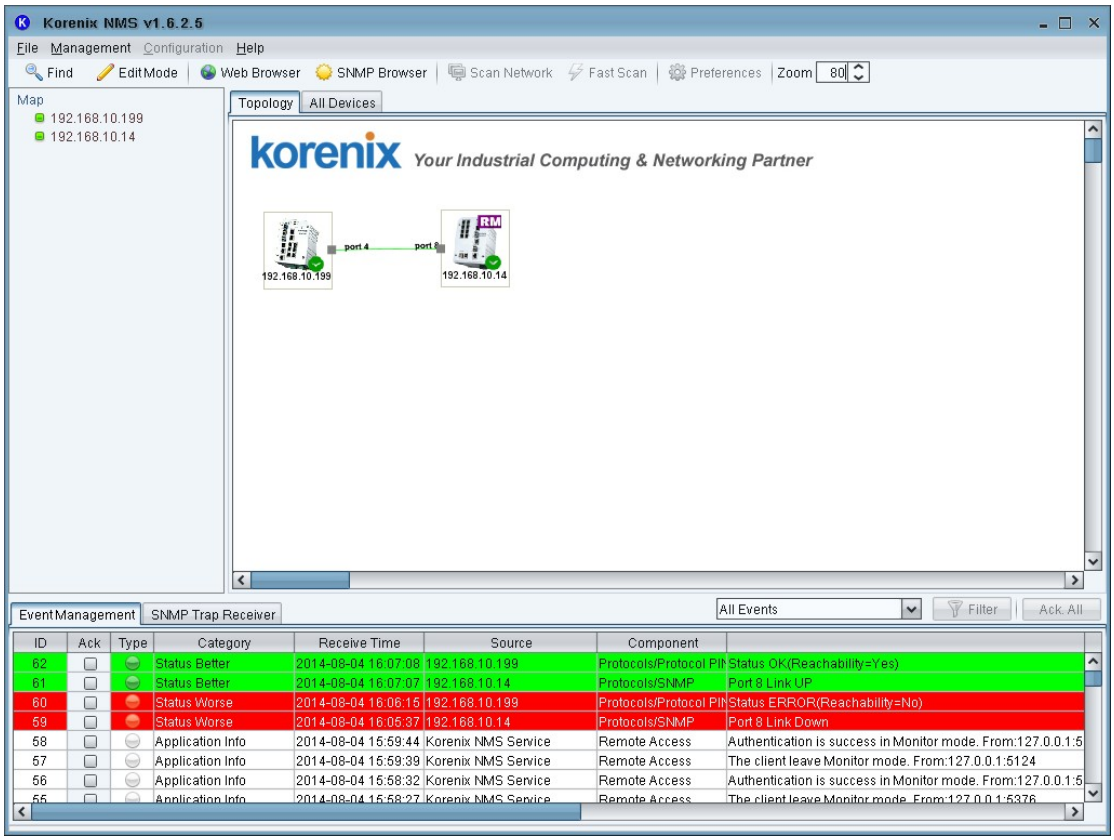


Figure: node up event

8.2 SNMP Trap

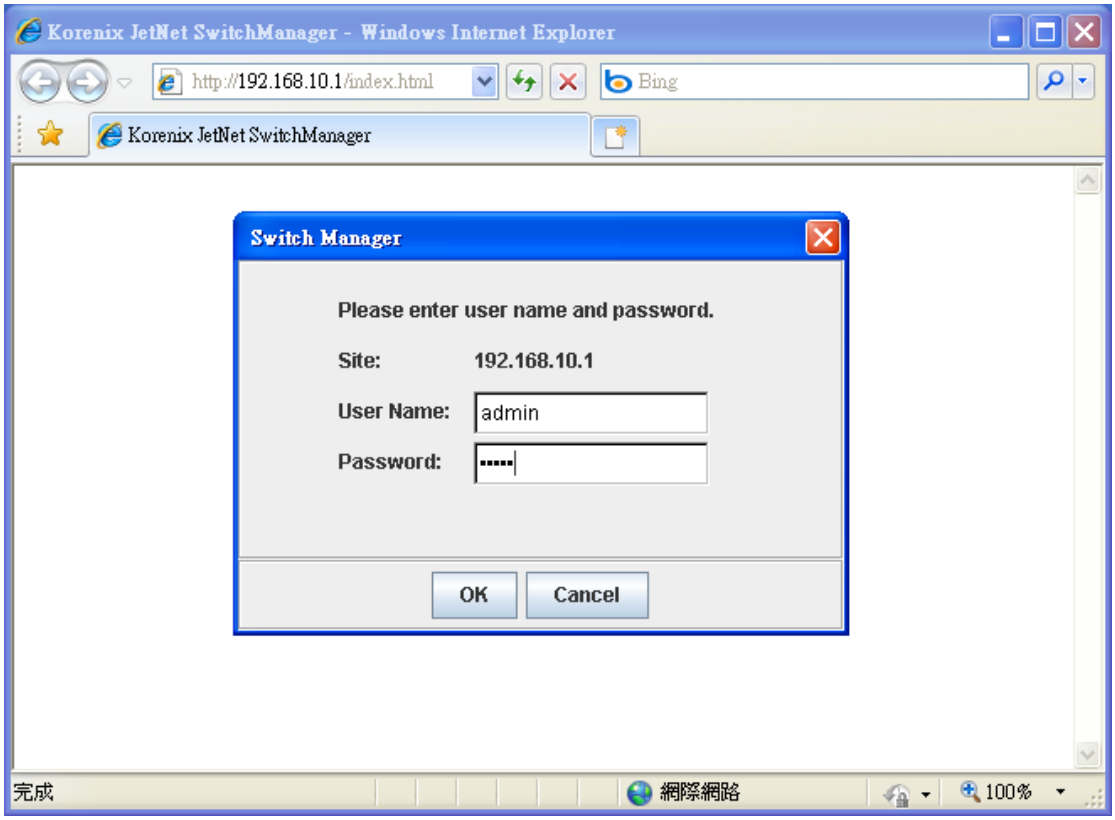
SNMP Trap is the notification feature defined by SNMP protocol. All the SNMP management applications can understand such trap information. So you don't need to install new application to read the notification information. The SNMP Trap Receiver of Korenix NMS supports SNMP v1/v2c traps receiving.

The following sections illustrate SNMP Trap with Link down and up event.

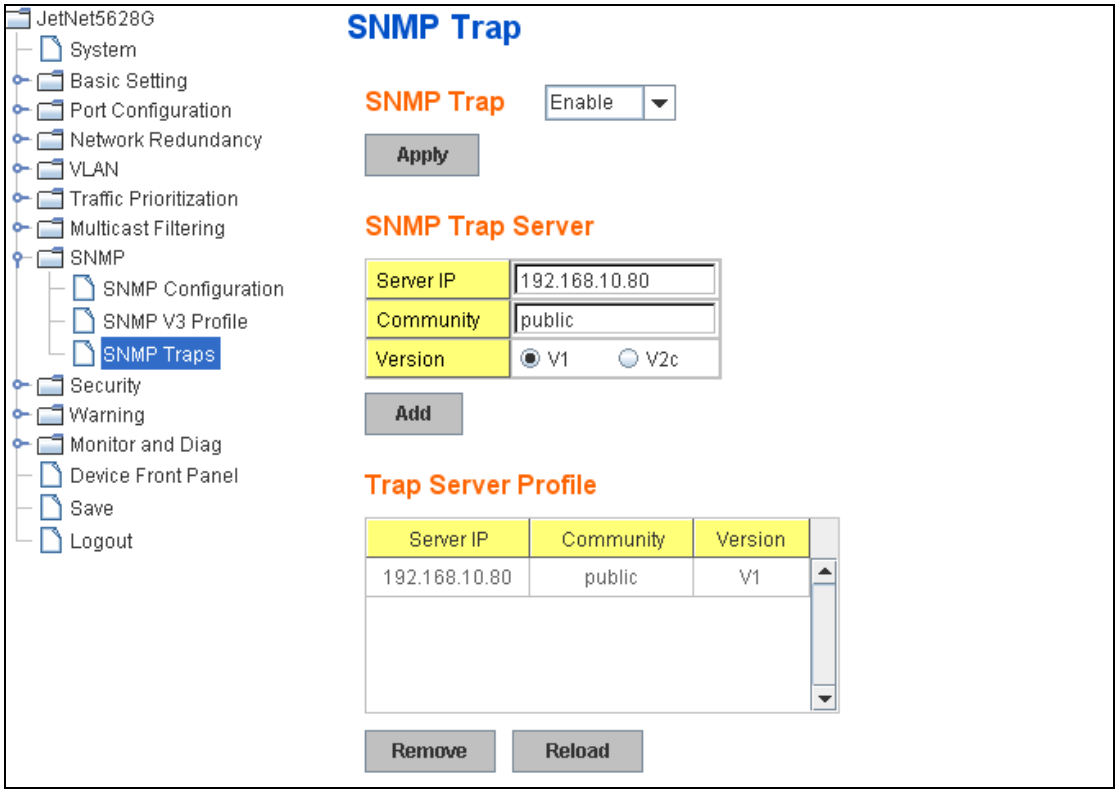
8.2.1 Enable Link-down and Link-up Event

To enable link-down and link-up event, you must enable SNMP Trap Server and Link down and up event. Enter Web screen to configure these settings.

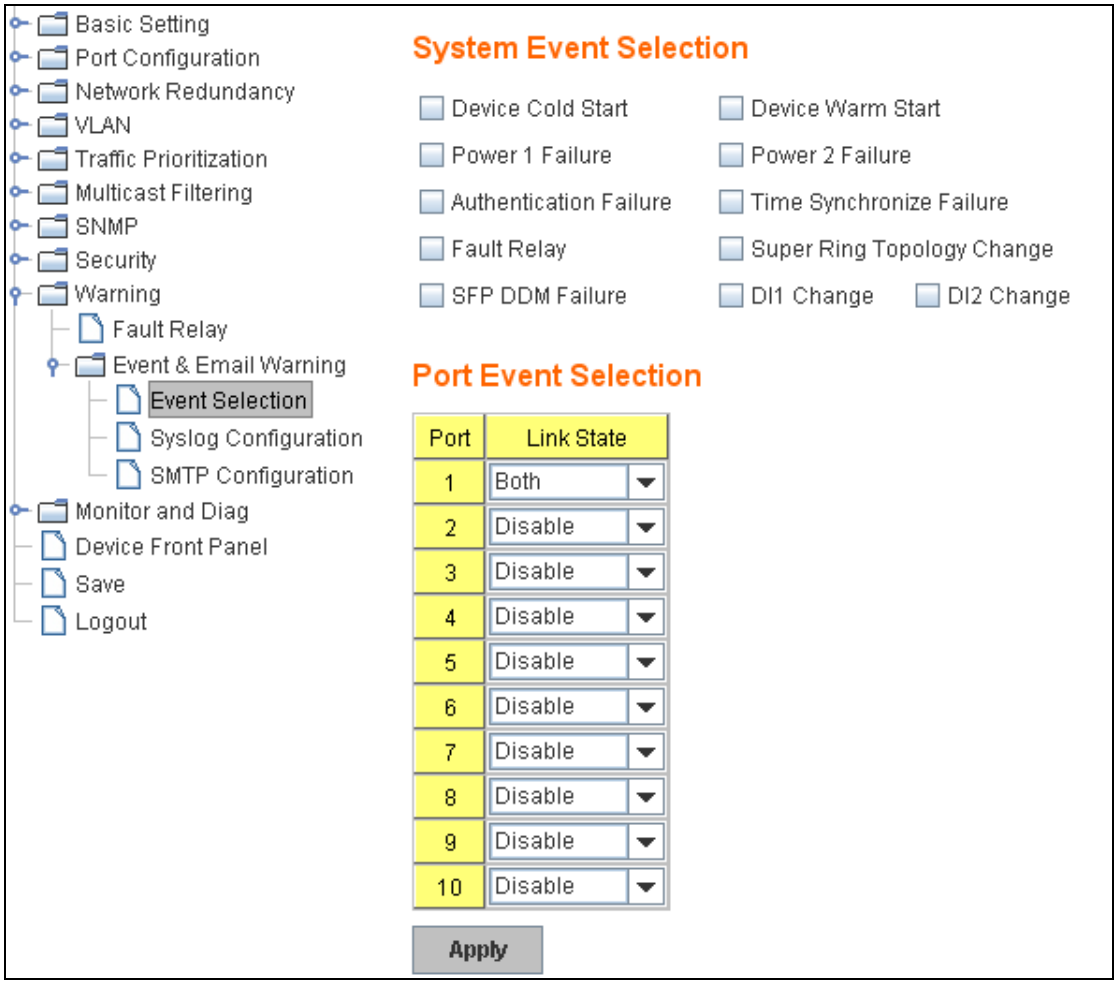
1. Use mouse to select one device on the **Topology** tab which you want to enable link down and up event.
2. Mouse right-click the selected device and click on the Web Browser menu-item of pop-up menu.
3. When the login screen appears, login with the user name and password. The default login User Name and Password: admin/admin



4. Click on the tree node **SNMP Traps**. Enable SNMP Trap, and set SNMP Trap Server IP address on the machine where the Korenix NMS is installed.

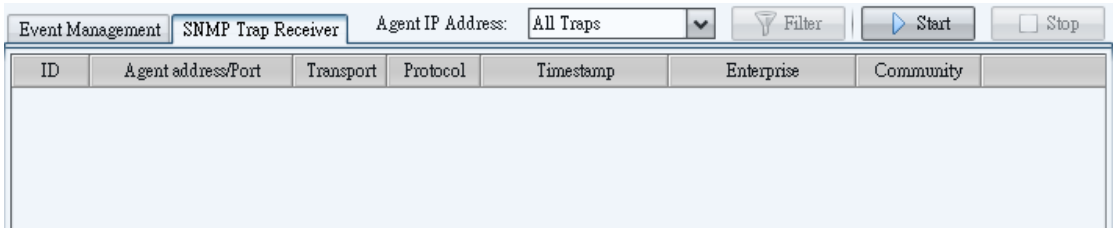


5. Click on the tree node **Event Selection**. Enable the specified port for link-down and link-up event (ex. Set Port 1 as Both).

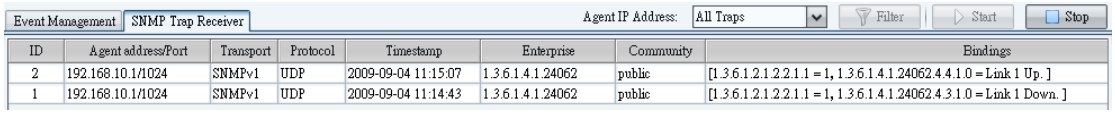


8.2.2 Receive SNMP Trap

1. Click on **Start** on the **SNMP Trap Receiver** tab.



2. While plugging in or out the network line (ex. RJ45) on the port 1 of device (ex.192.168.10.1), it will display as follows:



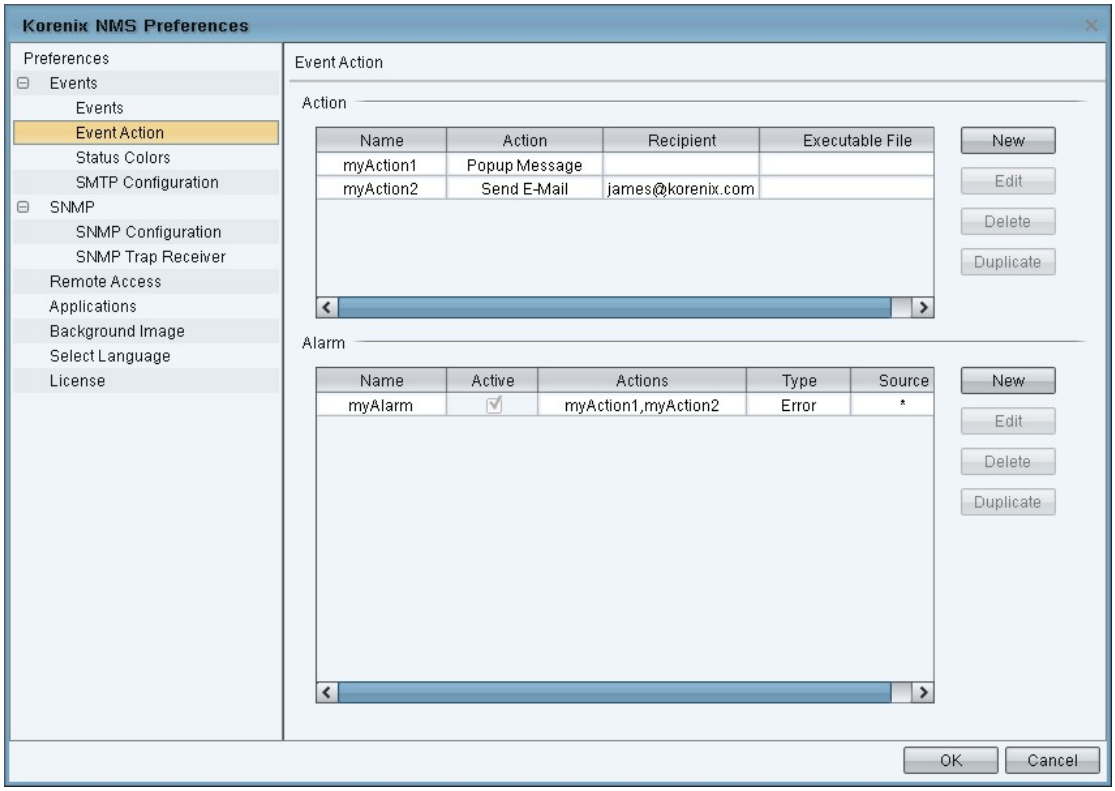
8.3 Alarm and Action

When event or SNMP trap are produced. They in addition to display in event management or SNMP Trap Receiver, and they can trigger some alarms and do some actions. The alarm can be triggered by type or other field of event. The actions of Korenix NMS supported are Popup Message, E-mail and Run Executable File.

The following sections illustrate how to use alarm and action.

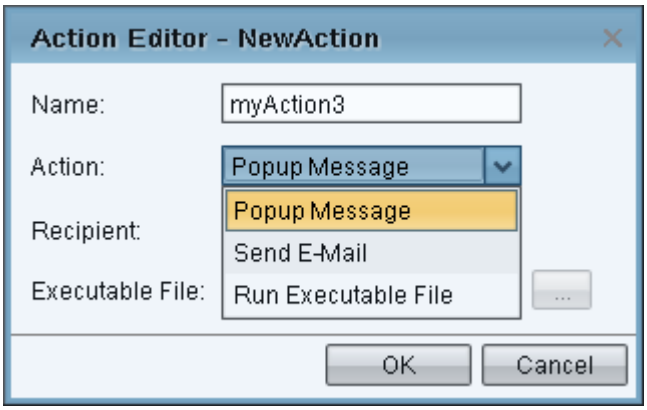
8.3.1 Create an Action

Open Korenix NMS Preference, select Event Action and new an action.



Press New button the Action Editor window will be opened. You need input action name and select an action type (Popup Message, Send E-Mail or Run Executable File) to create a new action.

Or you can manage actions via Edit, Duplicate or Delete functions.

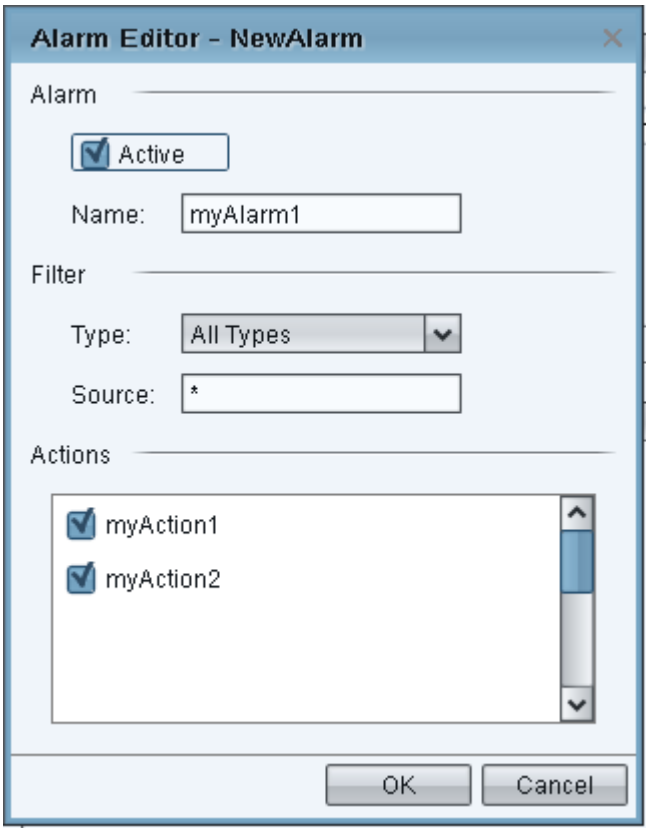


8.3.2 Create an Alarm

Open Korenix NMS Preference, select Event Action and new an alarm.

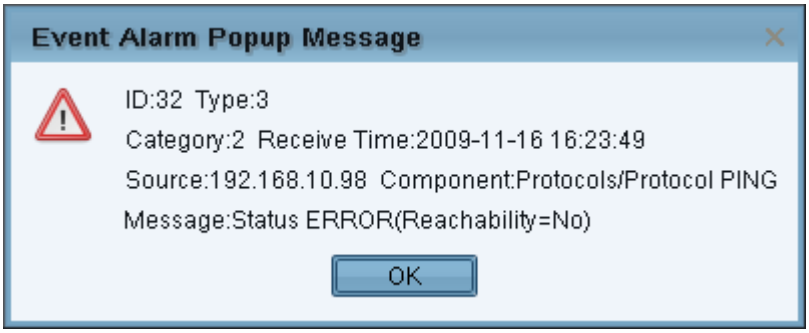
Press New button the Alarm Editor window will be opened. You need input action name and select actions to create a new alarm. Select Active option to active this alarm. Change Filter Type or Source to filter what event that you want to trigger. Select actions to decide what action will be executed when this alarm is trigged.

Or you can manage actions via Edit, Duplicate or Delete functions.



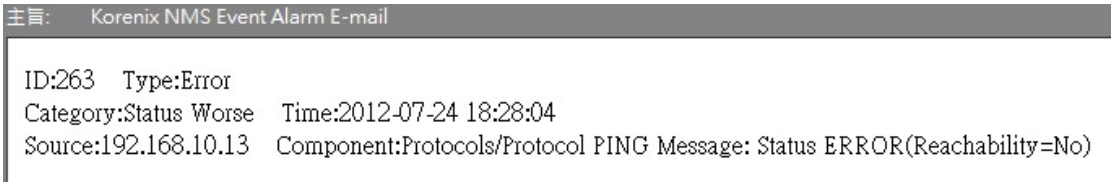
8.3.3 Popup Message Action

When a Popup Message action is executed, all Korenix NMS clients will popup a message as follows:



8.3.4 E-mail Action

When a Send E-mail action is executed, the Korenix NMS will send an alarm e-mail to your e-mail account (configured in Preference->SMTP configuration). The e-mail could show as follows:



8.3.5 Run Executable File Action

When a Run Executable File action is executed, the user specified executable file will be executed.

9 Performance Management

If you want to monitor the traffic of your local network for a period of time, Korenix NMS can give you an indication of the network traffic for the connections in a time context. It is useful as a quick reference for determining the amount of network bandwidth being consumed.

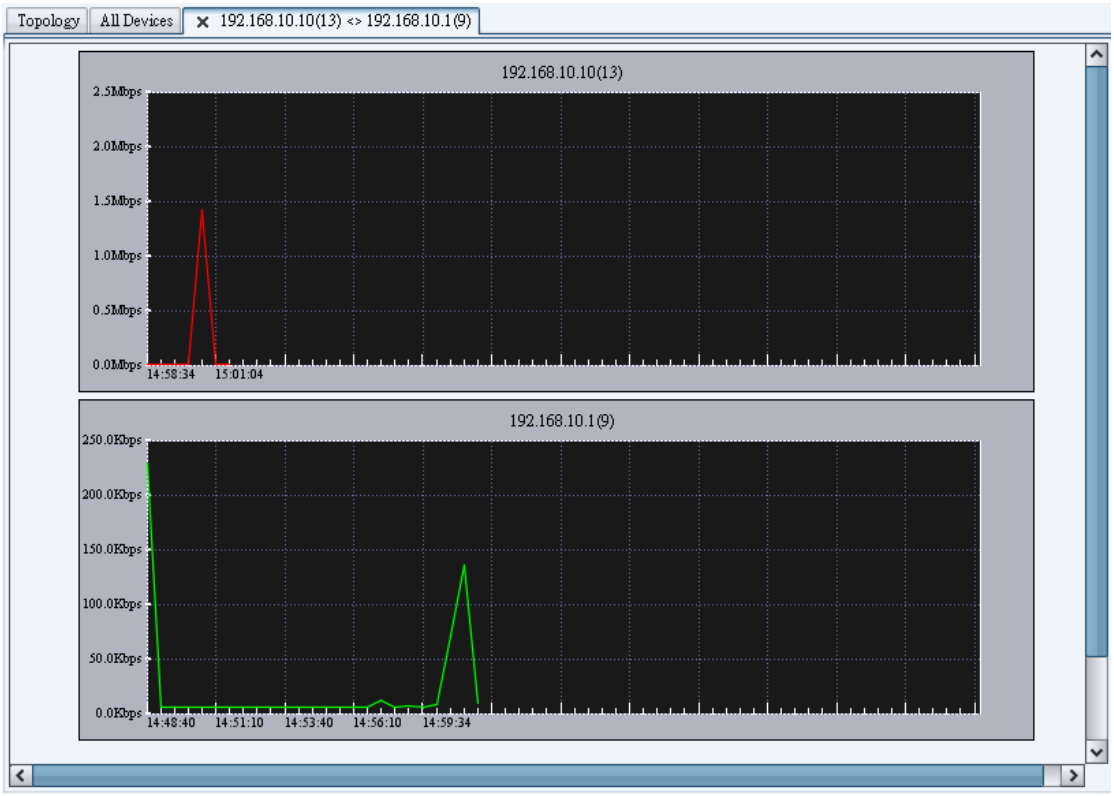
The following topics are covered in this section:

9.1 Traffic Report

9.1 Traffic Report

Korenix NMS monitor and report selected connection statistics. The tab name of the current traffic history shows two connected devices' IP address and port -- Port 13 on the device (192.168.10.10) connects to port 9 on the other device (192.168.10.1). The data was collected by through SNMP's polling. The default sampling rate is set to 30 seconds.[8]

The figure below indicates network load for the specified port. In order to show a visible line on the graph for network traffic on any interface, the view automatically scales to magnify the Y-axle's unit of traffic. The X-axle is time. The Y-axle means the total number of bytes sent on the connection in the polling time interval. The maximum number of entries can be recorded in 30 minutes. When the maximum number of entries is reached, Korenix NMS throws out the oldest entry when a new one is recorded.



[8] **The Korenix NMS can be centrally deployed to reduce network traffic cause by Korenix NMS server gathering devices' SNMP statistics**

To view the traffic report

- Mouse **Double-Click** on the line between the two devices.
- The traffic report only available if the network connection is present.
- The traffic tab provides an indication of the network traffic for the connection.

10 Preferences

Following topics are covered in this section:

10.1 Event

10.2 SNMP

10.3 Remote Access

10.4 Applications

10.5 Background Image

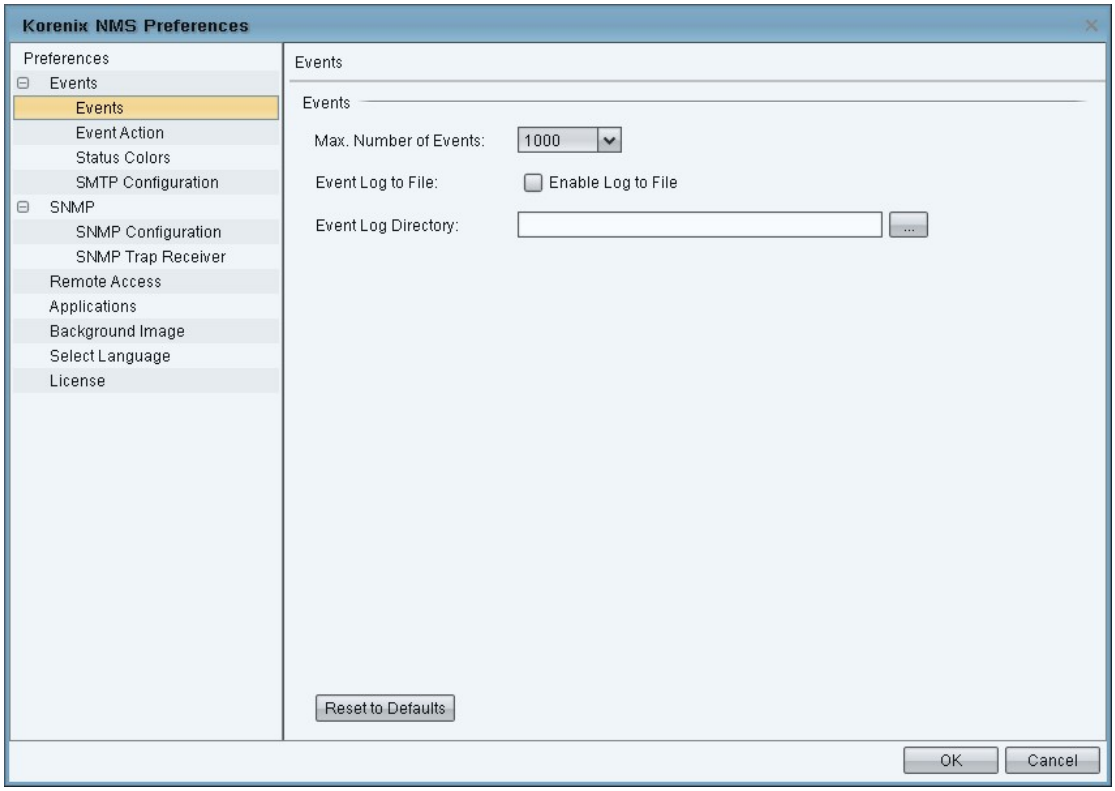
10.6 Select Language

10.7 License

10.1 Event

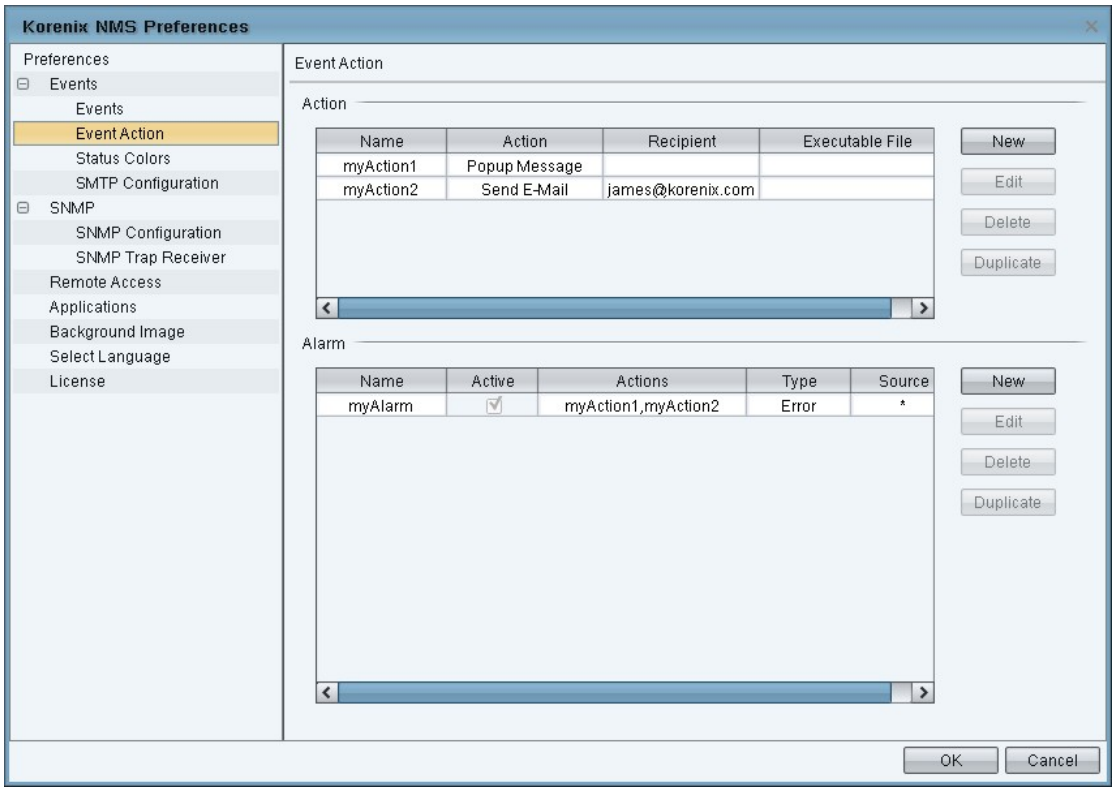
10.1.1 Events

This page allows you to record events into the log file. You can change maximum number of traps, trap log to file and trap log directory.

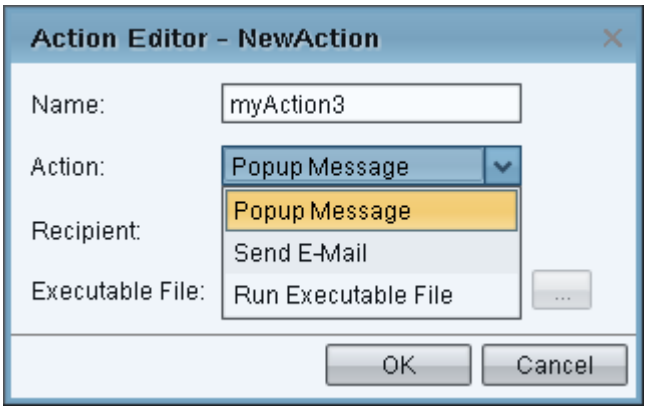


10.1.2 Events Action

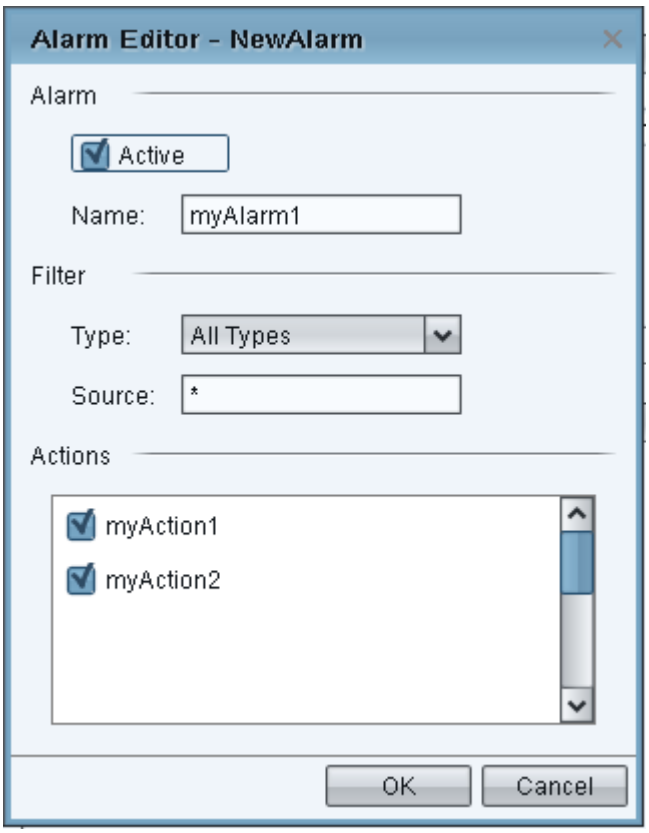
This page allows you to manage Actions and Alarms; the management functions include New, Edit, Delete and Duplicate.



If you press New, Edit, Delete or Duplicate of Action, the Action Editor will popup for Action configuring.

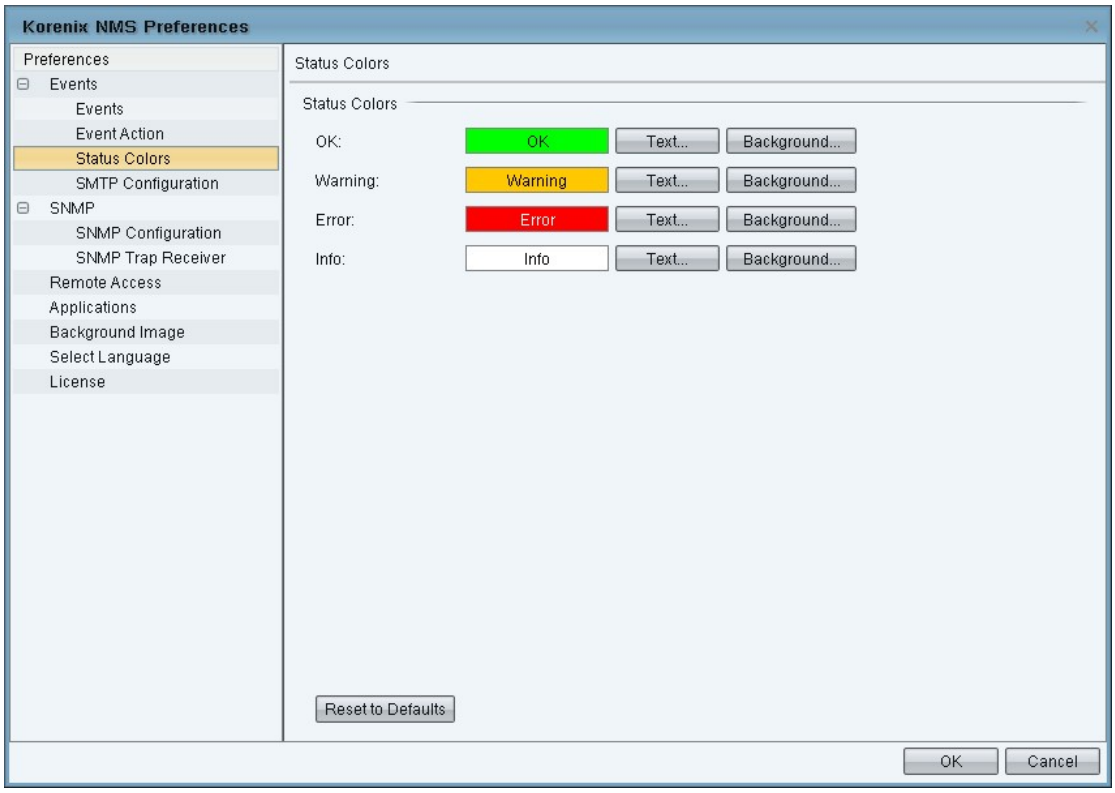


If you press New, Edit, Delete or Duplicate of Alarm, the Alarm Editor will popup for Alarm configuring.



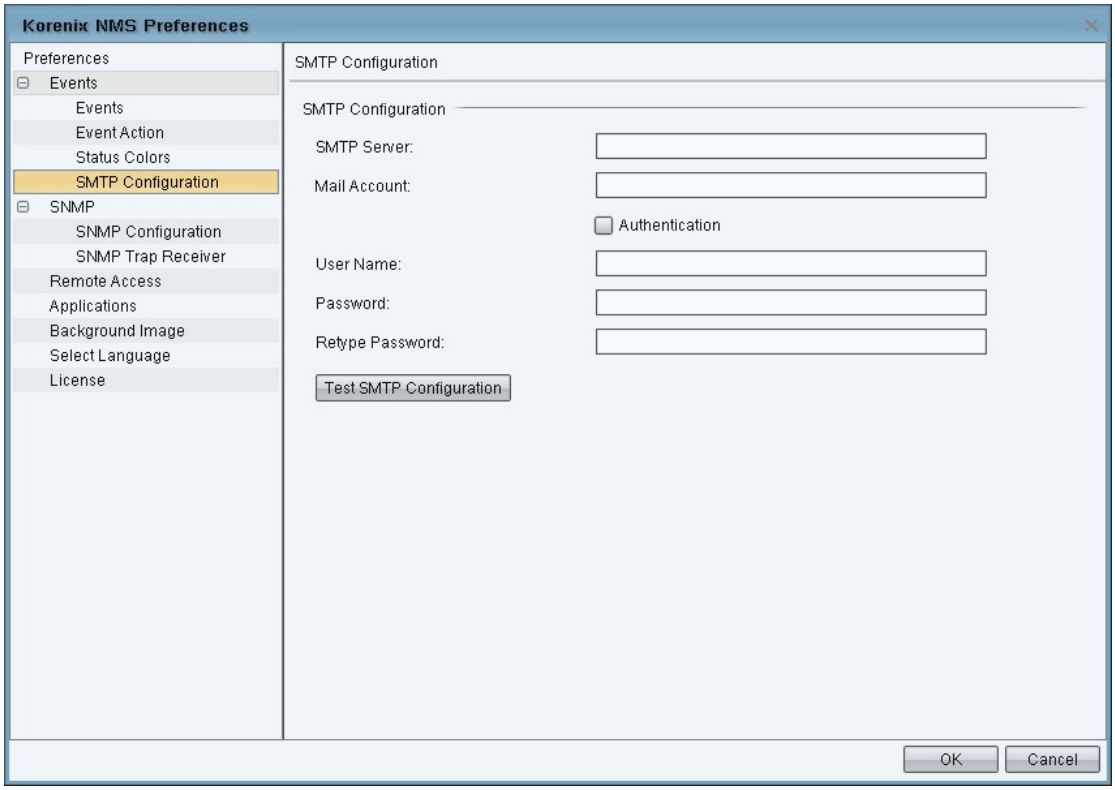
10.1.3 Status Colors

This page allows you to assign a color to each status. You can change text and background color of 4 types status.



10.1.4 SMTP Configuration

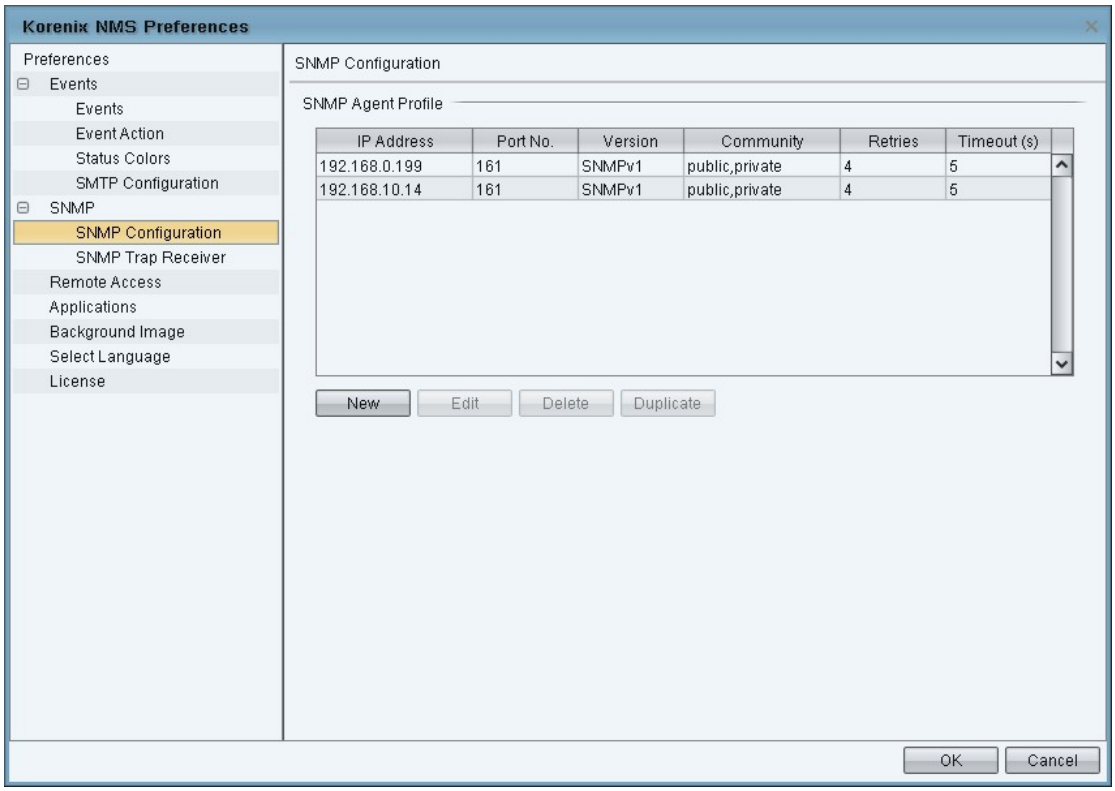
While you use to send Email function for Event Action, you must set SMTP Configuration. If SMTP server requests you to authorize first, you can also set up the username and password in this page. And you can press “Test SMTP configuration” to test your configuration after you finish this configuration.



10.2 SNMP

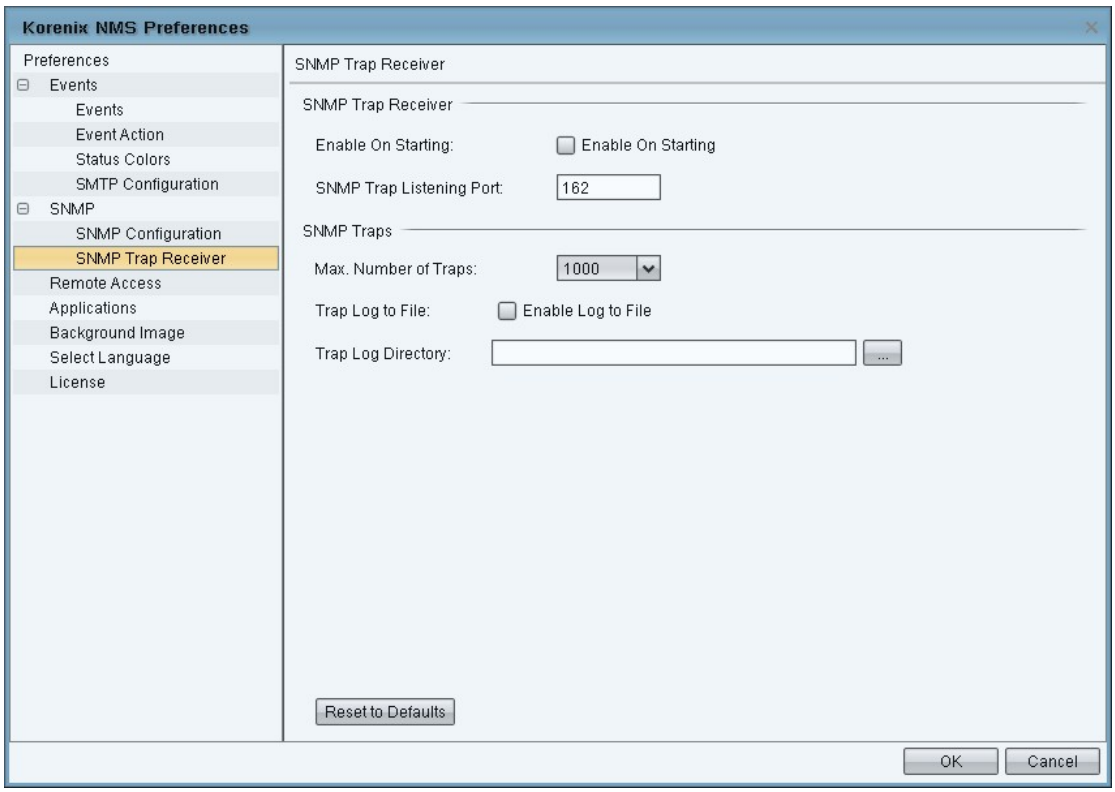
10.2.1 SNMP Configuration

The Korenix NMS will add a default SNMP agent profile for discovered devices. You can use this page to new, edit, delete or duplicate a profile. The configurations of profile include agent listening port (default is 161), SNMP version (support v1/v2c/v3), read/write community, retry numbers and timeout (in second(s)).



10.2.2 SNMP Trap Receiver

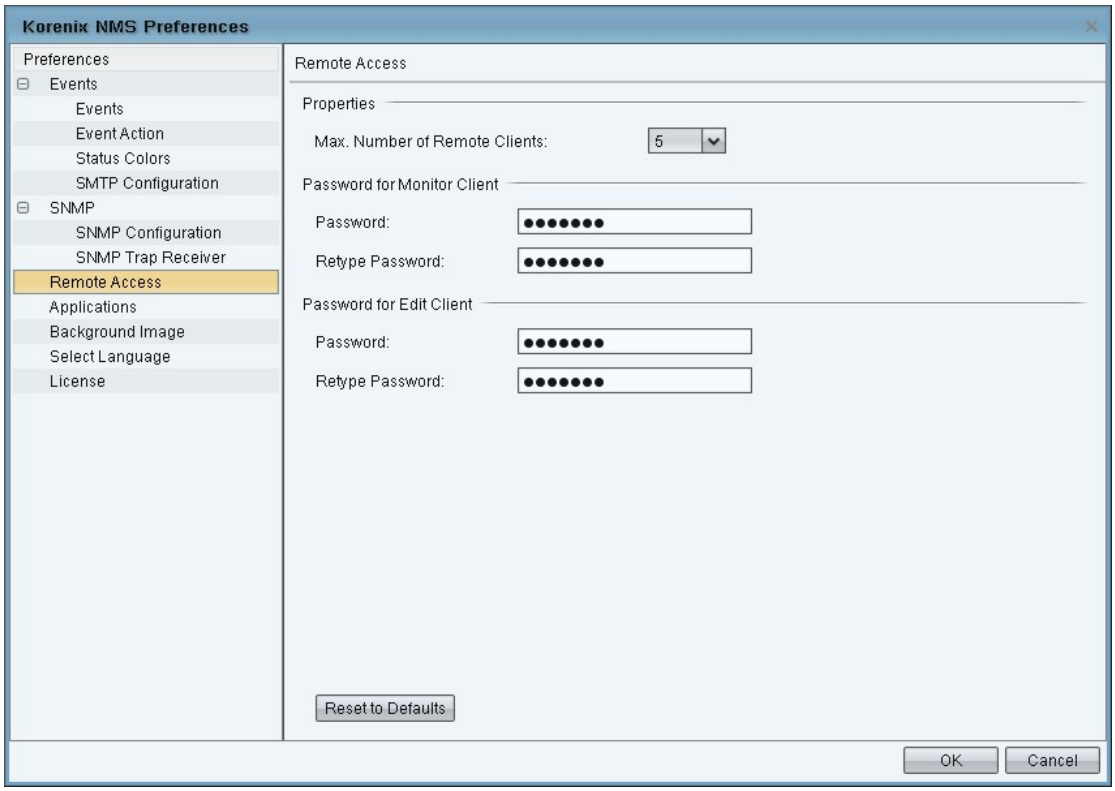
This page allows you to configure SNMP Trap Receiver and record SNMP Trap into the log file. You can enable the SNMP Trap Receiver on system starting, change listening port, change maximum number of traps, trap log to file and trap log directory.



10.3 Remote Access

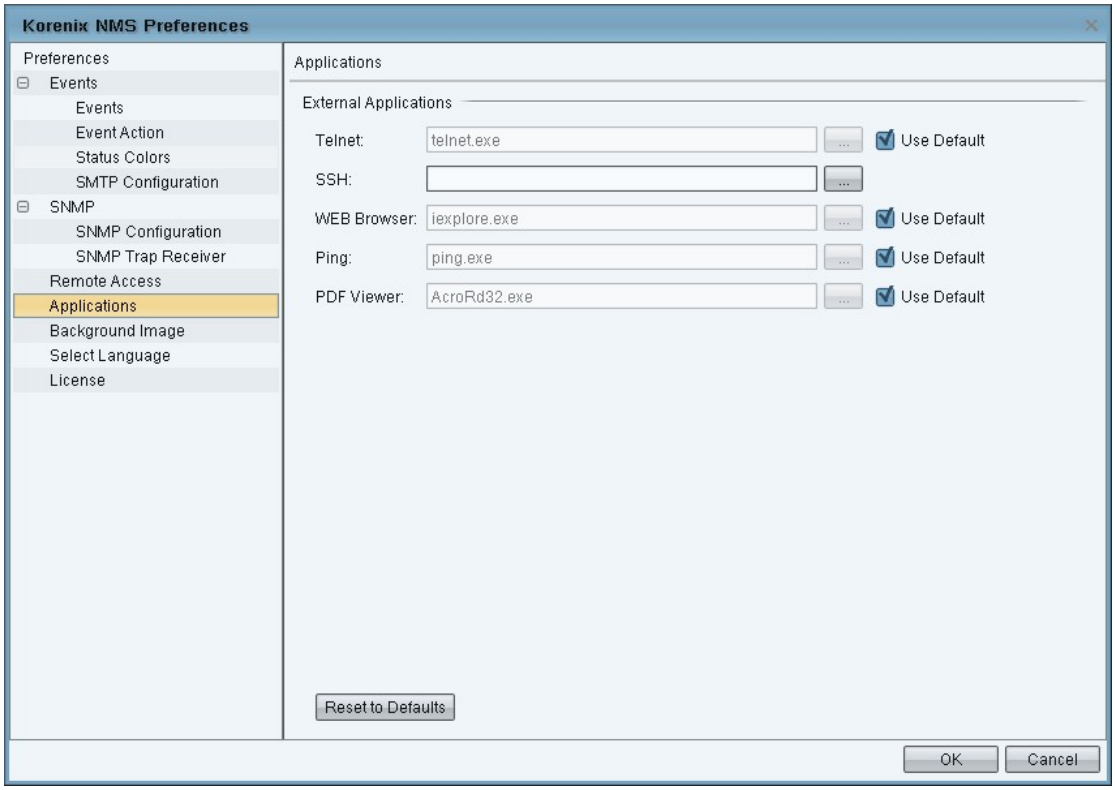
Due to the access synchronization, we only allow one client to enter the **Edit** mode at the same time and the other clients on **Monitor** mode. The allowed default password for entering two modes is “korenix”. The **Monitor** mode can only allow viewer to browse the topology. **Edit**

mode can use all functions. The maximum number of remote client is default 5. You can setup new passwords on **Monitor** and **Edit** mode.



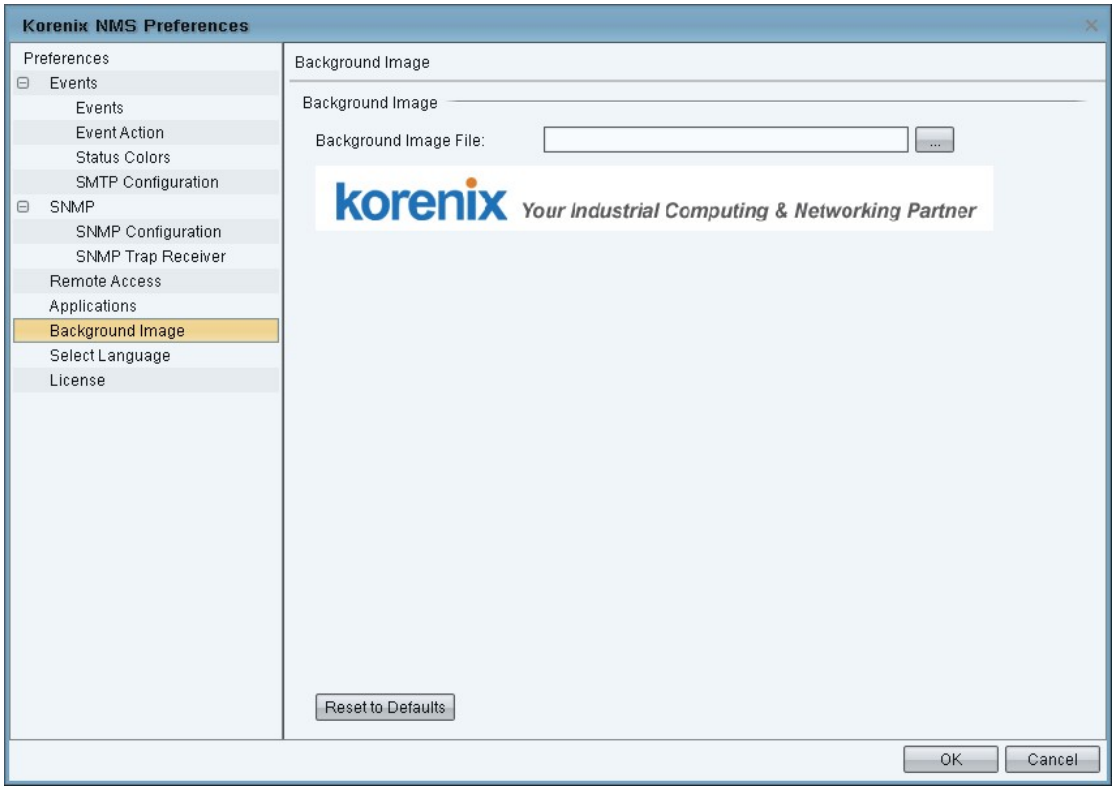
10.4 Applications

Korenix NMS uses external applications for the functions. This page allows you to assign specified programs or use default application to run the functions.



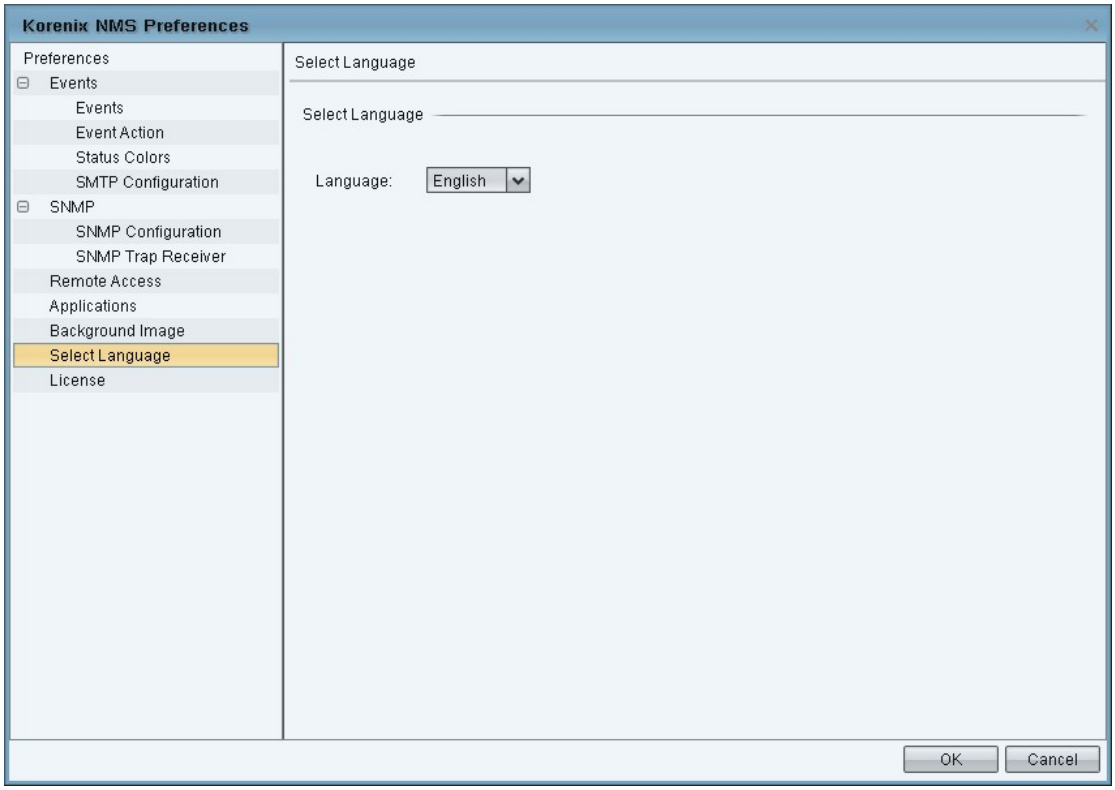
10.5 Background Image

This page allows you to configure background image for topology map. You can select an image file to change the default background image.

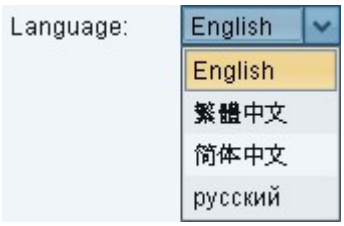


10.6 Select Language

Korenix NMS support 4 language interface.



You can change Korenix NMS display interface by selecting a language option. The Language will apply immediately.

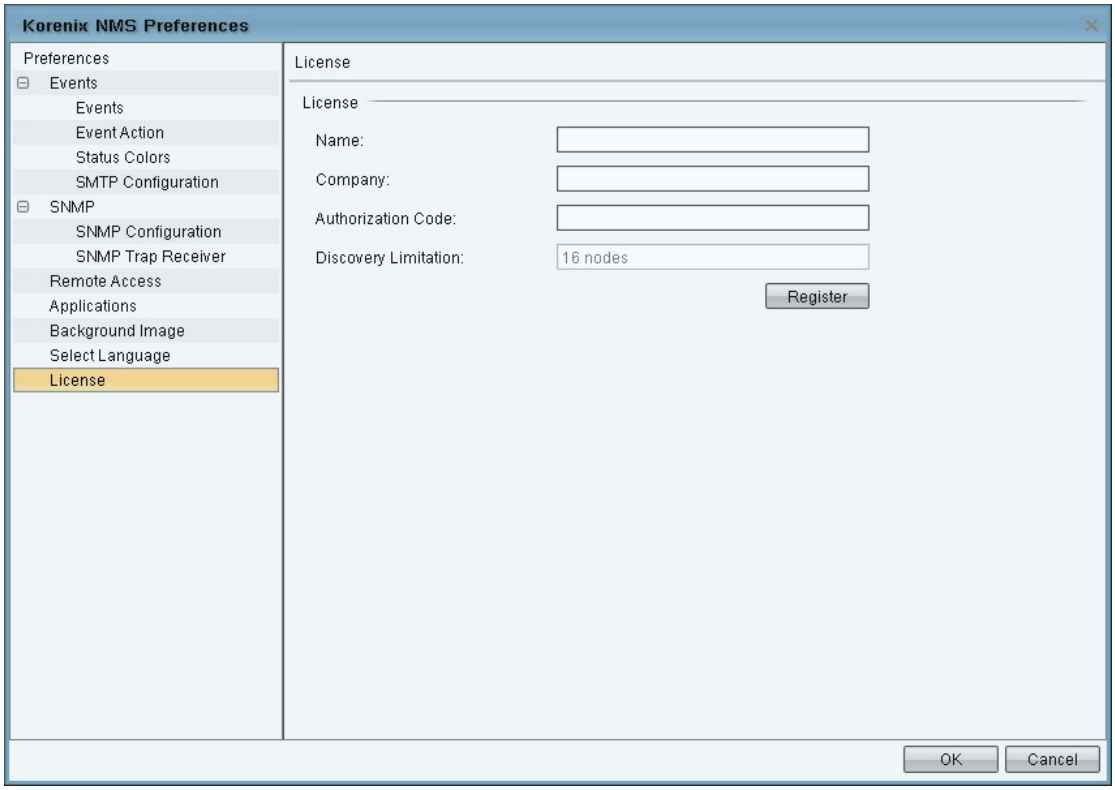


10.7 License

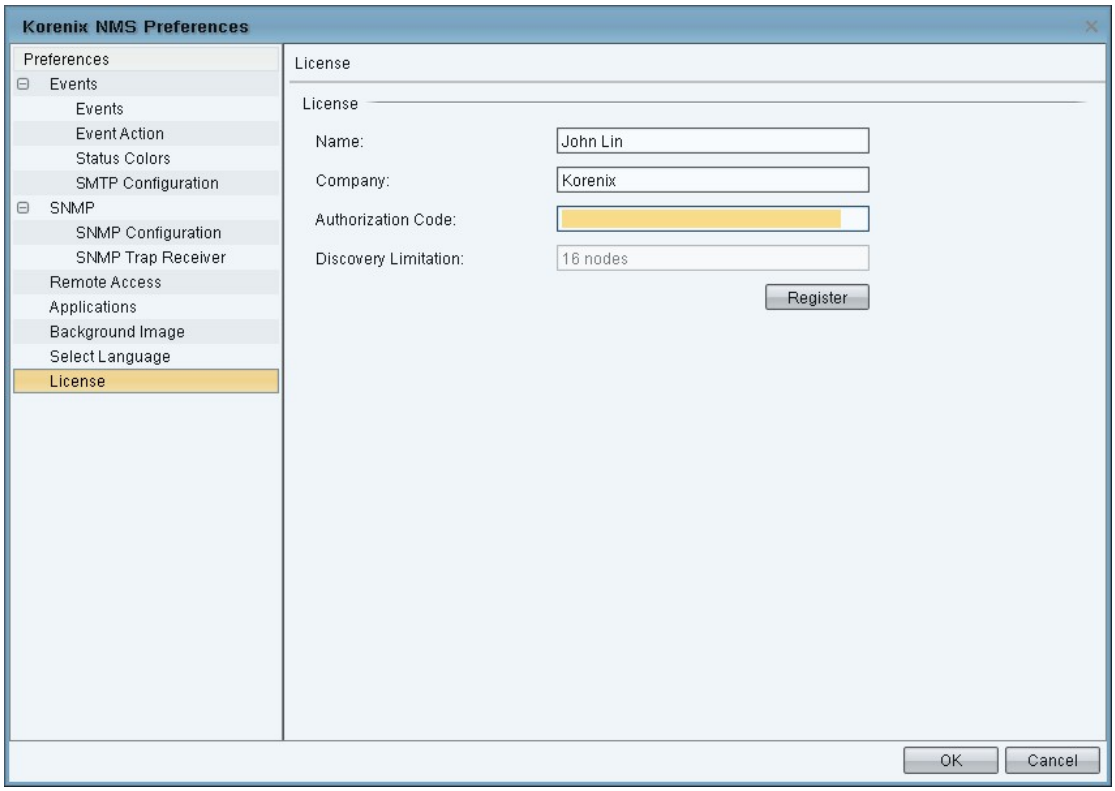
By the steps to use license, follow the instructions.

1. Download and install the latest Korenix NMS from Korenix web site. (http://www.korenix.com/support-jetview-software.htm)

2. After receiving the E-mail letter, go to Korenix NMS> Preference> License.



3. Fill out Name, Company, and Authorization Code base on the content of E-mail letter. And then press Register button.



4. Finally, press OK to apply license.