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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 (i2-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 i²-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 Topology, 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.
  
  
  
  - 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
2.2 Installation
2.3 Uninstallation

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
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 ftfp 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
3.2 Run Korenix NMS server and remote access clients

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
4.2 Menu Function
4.3 Toolbar Function
4.4 Map Tree
4.5 Topology Tab
4.6 All Devices Tab
4.7 Event Management Tab
4.8 SNMP Trap Receiver Tab

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.¹

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

¹ Note that the default password for Edit Mode is “korenix”.
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

<table>
<thead>
<tr>
<th>Open ...</th>
<th>Ctrl+S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Save</td>
<td>Ctrl+S</td>
</tr>
<tr>
<td>Export ...</td>
<td></td>
</tr>
<tr>
<td>Print</td>
<td></td>
</tr>
<tr>
<td>Exit</td>
<td></td>
</tr>
<tr>
<td>Exit and Stop Service</td>
<td></td>
</tr>
</tbody>
</table>

4.2.2 Management Submenu

SNMP Browser: Ctrl+S

Web Browser: Ctrl+W

Telnet

SSH

Please refer to section 7.4 for more information.

4.2.3 Configuration Submenu

Preferences

Please refer to section 9 for more information.

4.2.4 Help Submenu

About

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)

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

![Scan Network](image)

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.
6 Topology Map

Following topics are covered in this section:

6.1 Device Information
6.2 Auto Topology
6.3 Manual Add Connection and Delete
6.4 Save Topology Map

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.

```
Device IP Address: 192.168.10.52
Device Name:               
Device Type: JetNet4510
Description: Industrial Managed Ethernet Switch JetNet4510
System Up Time: 0:36:44.00
System Name: Switch
System Contact:            
System Location:           

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

Status: SNMP OK
```

- The device (IP address: 192.168.10.1) lists in left tree panel with a status icon 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.

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:

![Image showing device delete options]

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.

![Image showing device management options]

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.

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:

<table>
<thead>
<tr>
<th>Yes/No</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Does every device enable SNMP?</td>
</tr>
<tr>
<td></td>
<td>Does any device not using default SNMP community? (public, private)</td>
</tr>
<tr>
<td></td>
<td>Does every devices’ icon show green?</td>
</tr>
<tr>
<td></td>
<td>Does every device enable LLDP?</td>
</tr>
<tr>
<td></td>
<td>If the device show red (not reachable), after you fix the problem, did you refresh the device?</td>
</tr>
</tbody>
</table>

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.
<table>
<thead>
<tr>
<th><strong>Device IP Address</strong></th>
<th>192.168.10.52</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Device Name</strong></td>
<td>AnotherName</td>
</tr>
<tr>
<td><strong>Device Type</strong></td>
<td>JetNet4510</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Industrial Managed Ethernet Switch JetNet4510</td>
</tr>
<tr>
<td><strong>System Up Time</strong></td>
<td>0:53:14.05</td>
</tr>
<tr>
<td><strong>System Name</strong></td>
<td>Switch</td>
</tr>
<tr>
<td><strong>System Contact</strong></td>
<td></td>
</tr>
<tr>
<td><strong>System Location</strong></td>
<td></td>
</tr>
</tbody>
</table>

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.
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.
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.

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.
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:

![Event Alarm Popup Message](image)

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:

![Korenix NMS Event Alarm E-mail](image)

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.

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.

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* 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.