

MXview 用户手册

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MXview 用户手册

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Moxa MXview 网络管理软件可以为您的以太网提供一个便捷的图形可视化平台，帮助您对 Moxa 网络设备进行配置、监控和故障诊断。MXview 提供的是一个面向 Moxa 网络设备的集成管理平台，这些网络设备包括以太网交换机、无线节点 AP，以及子网网络上安装的 SNMP 和 ICMP 设备。无论何时何地，通过 MXview 找到定位的网络组件都可以通过 web 浏览器从本地或远程进行管理。

本章节涉及的内容如下：

- ❑ 基于 Web 运行
- ❑ 自动搜索与拓扑结构可视化
- ❑ 事件管理
- ❑ 配置与固件管理
- ❑ 流量监控

基于 Web 运行

MXview 采用客户端-服务器模式，您需要在台连网的 Windows 计算机上安装 MXview 服务器，该计算机所连网络即为需要进行管理的目标网络。安装完成后，您可以直接通过 IE 和 Firefox 管理网络，无需安装其他软件。

自动搜索与拓扑结构可视化

在扫描范围内，MXview 通过激活 SNMP 或 ICMP 服务搜索定位网络设备，从具有 LLDP 功能的设备中收集拓扑信息，并绘出网络拓扑结构图，从而直观地显示整个网络的物理连接。

事件管理

为了实现网络故障诊断，MXview 对符合预设条件的事件进行记录，譬如 Link Up/Down，设备不可访问或网络流量过载等。最近发生的事件都将显示在主界面上，而触发该事件的设备和链结都将以不同颜色进行高亮显示。当某一事件发生后，用户可以通过 SMS 短信，电子邮件，自动弹出窗口，声音提醒或者外部程序得到及时的通知。

配置与固件管理

MXview 从中央位置提供 Moxa 网络设备的集中管理接口，远程用户可以对配置文件进行备份、更新，也可以更新固件。

流量监控

MXview 可以记录所有现有网络设备的流量情况。

系统需求与所支持设备

本章节涉及的内容如下：

- 系统需求
- 所支持设备

系统需求

MXview 对计算机硬件有如下系统需求：

	客户端要求	服务器端要求
CPU	Core i3 3.0G 或更高	Intel i5 2.5 GHz 或更高
RAM	2 G 或更高	4 G 或更高
硬盘空间	500 G 或更高	1 TB, 7200 RPM, SATA-3Gb/s 或更高
操作系统	Windows XP, Windows 7(32/64-bit), Windows Server 2008(32/64-bit)	Windows XP Professional, Windows 7(32/64-bit), Windows Server 2008(32/64-bit)
浏览器	IE6/8/9	---

所支持设备

- 下面“所需固件版本”列表中的 Moxa 网络设备都适用于 MXview，并假定该设备上均运行表格所列的固件版本。这些 Moxa 网络设备支持 MXview 的全部功能，诸如网络状态、流量日志、配置/固件文件管理(见后面的“支持功能”列表)。
- 对于其他的 SNMP 设备，MXview 支持标准管理功能，诸如 Link Up、Link Down、SNMP MIBII 信息。
- MXview 只能监控支持 ICMP 的设备连接。

支持功能表

	Moxa 设备*	第三方 SNMP 设备	第三方 IP 设备
自动拓扑	O	部分支持(需支持 LLDP)	部分支持 (需与 MXview 服务器为相同子网络)
可用性检查与事件通知	O	O (通过轮询和 trap)	O (通过轮询)
流量报告	O	O (需支持 MIB II)	X
配置/固件管理	O	X	X

*关于所需固件版本，请参看下表

所需固件版本表

型号名称	所需固件版本	型号名称	所需固件版本
EDS-405A/408A	2.6 或更高	PT-7710	1.2 或更高
EDS-505A/508A/516A	2.6 或更高	PT-7728	2.6 或更高
EDS-510A	2.6 或更高	PT-7828	2.6 或更高
EDS-518A	2.6 或更高	PT-G7509	1.1 或更高
EDS-608/611/616/619	1.1 或更高	TN-5508/5510	1.1 或更高
EDS-728	2.6 或更高	TN-5516/5518	1.2 或更高
EDS-828	2.6 或更高	TN-5508-4PoE	2.6 或更高
EDS-G509	2.6 或更高	TN-5510-4PoE	2.6 或更高
EDS-P510	2.6 或更高	TN-5516-8PoE	2.6 或更高
EDS-P506A-4PoE	2.6 或更高	TN-5518-8PoE	2.6 或更高
IKS-6726-8PoE	2.6 或更高	AWK-3121	1.6 或更高
IKS-6726	2.6 或更高	AWK-4121	1.6 或更高
IKS-6524/6526	2.6 或更高	NPort-S8000	1.3 或更高
IKS-G6524	1.0 或更高		

本章节涉及的内容如下：

- ☐ 安装步骤
- ☐ 卸载步骤
- ☐ 系统移植
- ☐ 版本更新

安装步骤

1. 执行安装程序或插入自动运行 CD 光盘。
2. 安装过程中，您可以自行选择 MXview 的安装路径或者按照系统默认路径进行安装。
3. 商业版本的 MXview 会要求您输入软件授权许可号；请输入印在安装光盘封面的字符串。
4. 安装完成之后，启动 MXview 服务器的快捷方式将同时创建在计算机桌面和开始菜单里面。

卸载步骤

1. 选择开始 → 控制面板，然后选择添加或删除程序。
2. 选择 MXview
3. 选择卸载

您也可以通过下述方式进行软件卸载

开始 → 所有程序 → Moxa → MXview → 卸载 MXview。

系统移植

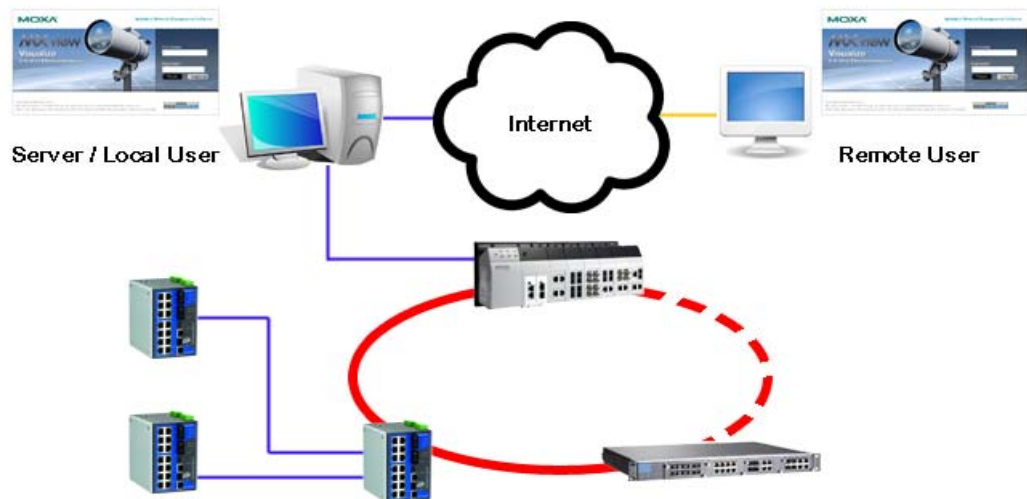
要将该软件从一台计算机移植到另一台计算机上，首选请使用项目 → 导出，将系统现有设备列表和网络拓扑保存为一个文件，然后使用项目 → 导入，将系统移植到另一台计算机上。

版本更新

如果从 V2.0 或以上版本进行系统升级，只需要运行安装文件。该程序将本分现有的配置文件，并自动将 MXview 升级到新的版本。

如果从 V1.1 或以下版本进行系统升级，请首先使用 项目 → 导出，将系统现有设备列表和网络拓扑保存为一个文件。然后安装新版本系统，最后使用 项目 → 导入，将系统升级到新的版本。

MXview 以 web 服务器方式运行，并通过单一入口实现远程管理功能。下图为 MXview 的运行模式。



MXview 服务器端运行于一台 Windows 计算机上，通过 SNMP Plus 与网络设备进行通信，SNMP Plus 是 Moxa 公司提供的一种专用协议，该协议定时轮询特定的 MIB 数据，以及向本地数据库存储数据。

MXview 客户端使用 web 浏览器，通过统一的 web 接口，网络操作员可以在 intranet 或 Internet 上进行访问和操作。

本章节涉及的内容如下：

- ❑ MXview 服务器启动
- ❑ 登录
- ❑ 账号
- ❑ 运行环境自动安装 (Java 运行环境)

MXview 服务器启动

启动 MXview 服务器,需要首先双击 MXview 桌面快捷方式图标。在 MXview 窗口 (如下图)弹出之后,请配置服务器侦听端口 (或者保留该项默认值 80) 并检查运行时间信息。配置完成点击 **Start** 即可启动 MXview 服务器。

点击 **Launch Client** 将在本地计算机上打开一个 MXview 客户端。如需了解如何远程使用 MXview 客户端, 请参看下面的**登录**部分内容。



登录

如需启动 MXview 客户端, 请打开一个 web 浏览器, 在网址栏输入 MXview 服务器 IP 地址或域名。请注意, 服务器侦听端口如有变化, 您需要输入如下 IP 地址: <http://192.168.1.250:8080>。如果您正在使用服务器计算机作为客户端, 也可以点击控制面板上的 **Launch Client**。默认账号名为 **admin**, 无登录密码。



注意 最多同时允许 3 个用户登录系统。

账号

系统有两个账号: `admin` 和 `guest`。`Admin` 账号拥有修改 `MXview` 配置的权限, 例如拓扑和扫描范围。`Guest` 账号是一个只读权限账号。两个账号的密码默认值均为空, 在首选项中可以更改密码。

运行环境自动安装 (Java 运行环境)

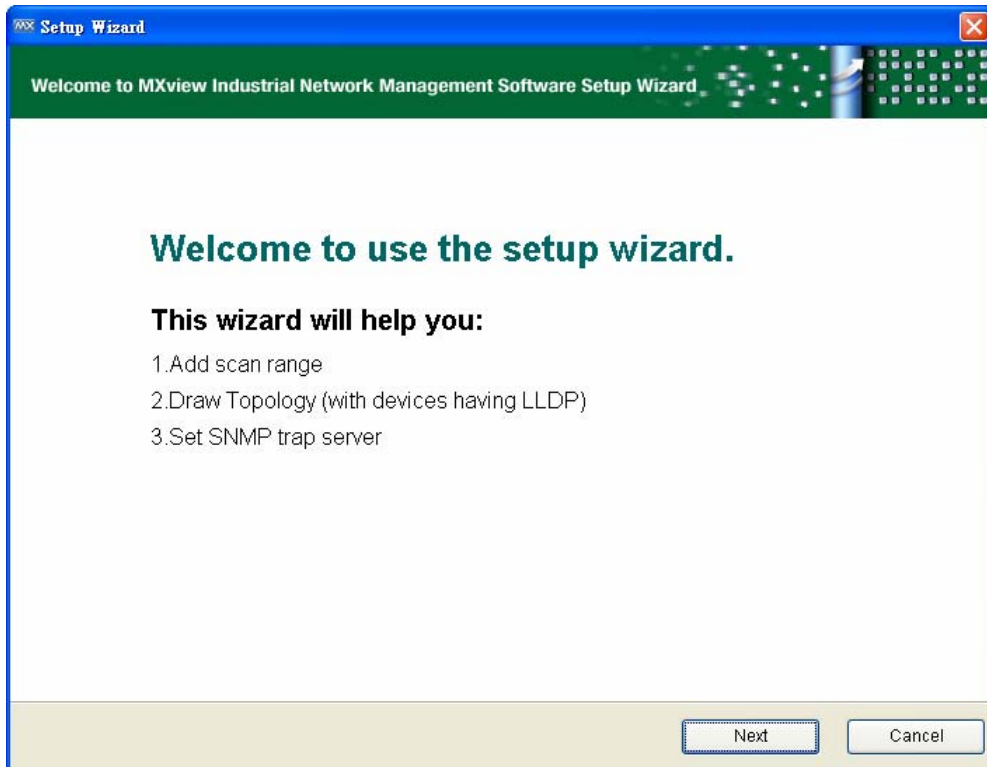
`MXview` 客户端必须运行在 `JRE 6` 环境下。如果当前 `IE` 用户没有合适的 `JRE` 版本, 安装更新将自动启动。

如果您正在使用 `IE` 之外的浏览器, 您将需要从 `Java` 官方网站

(<http://java.sun.com/javase/downloads/index.jsp>) 下载 `JRE 6` 并安装到计算机上。

使用安装向导快速启动

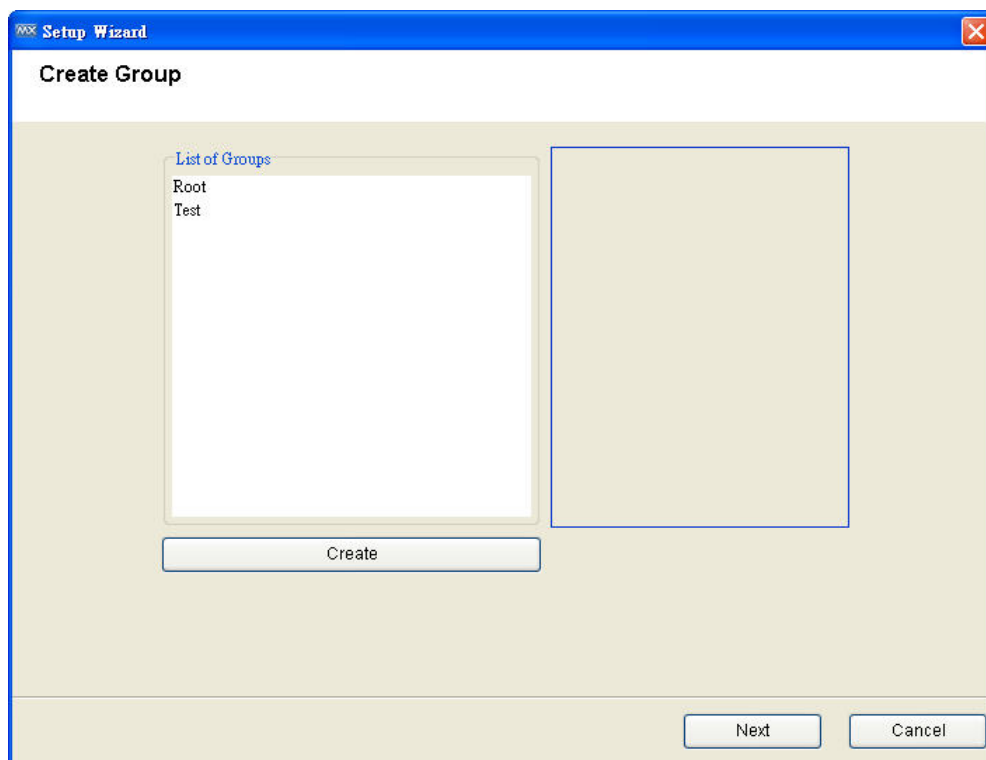
MXview 提供安装向导以快速确定网络拓扑并处理基本配置任务。当该软件还没有包含任何节点时，安装向导将自动启动。如需手工启动安装向导，请选择 **项目 → 引导**，您可以看到如下窗口画面：



该向导将帮助您完成如下的 5 个基本配置步骤。

步骤 1: 创建群组

MXview 所扫描的设备可以构成一个多层树结构。在发现设备之前，需要先创建群组。Root 唯一的默认组，其他所创建的组都将位于 Root 组的下一级。

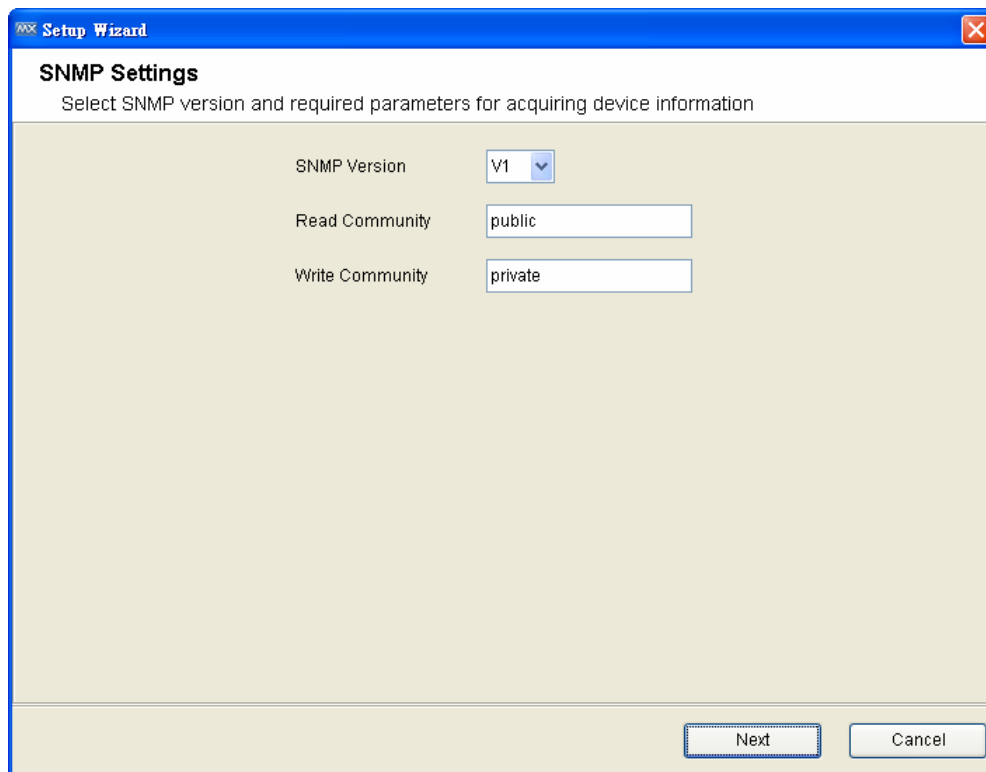


步骤 2: 配置 SNMP 共同体字符串

MXview 使用 SNMP 采集设备信息，默认 SNMP 配置如下：

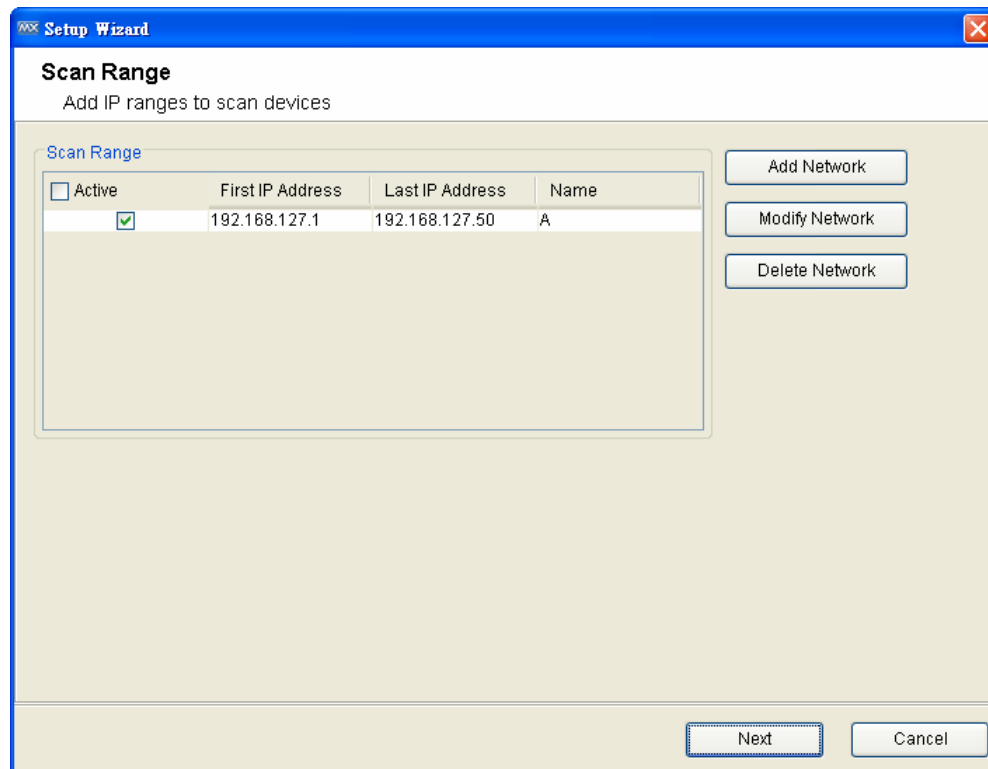
- 版本: v1
- Read 共同体字符串: public
- Write 共同体字符串: private

如需更改，可以在这一步更新这些信息：



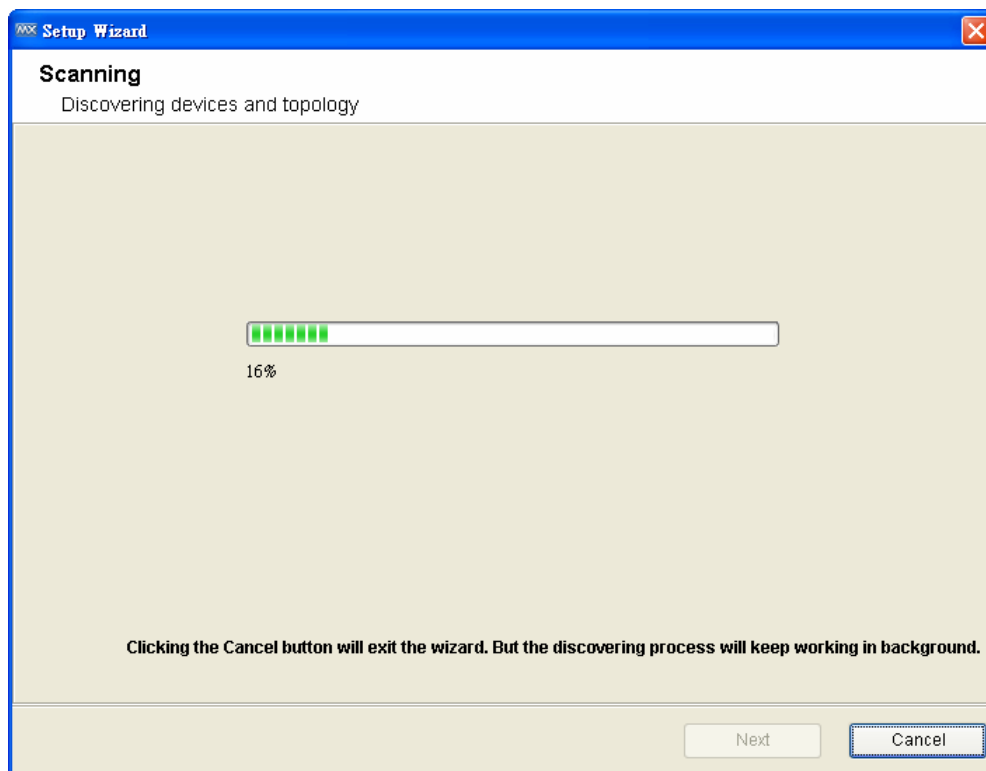
步骤 3：添加目标扫描网络

MXview 的运行是基于 IP (Internet 协议)，扫描范围内的其他设备只要是基于 IP 运行的，均可以被定位和监控。



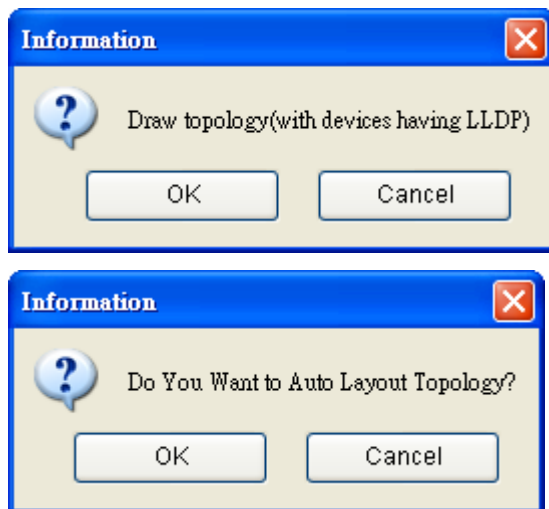
注意 一个设备的 IP 地址必须先进行正确设置才能由 MXview 管理。

此时，MXview 将进入设备搜索阶段。完成这一阶段的时间取决于扫描范围的大小。点击 **取消** 可以在这一步退出向导；与此同时，之前输入的配置信息将保存并且搜索过程将继续在后台运行。

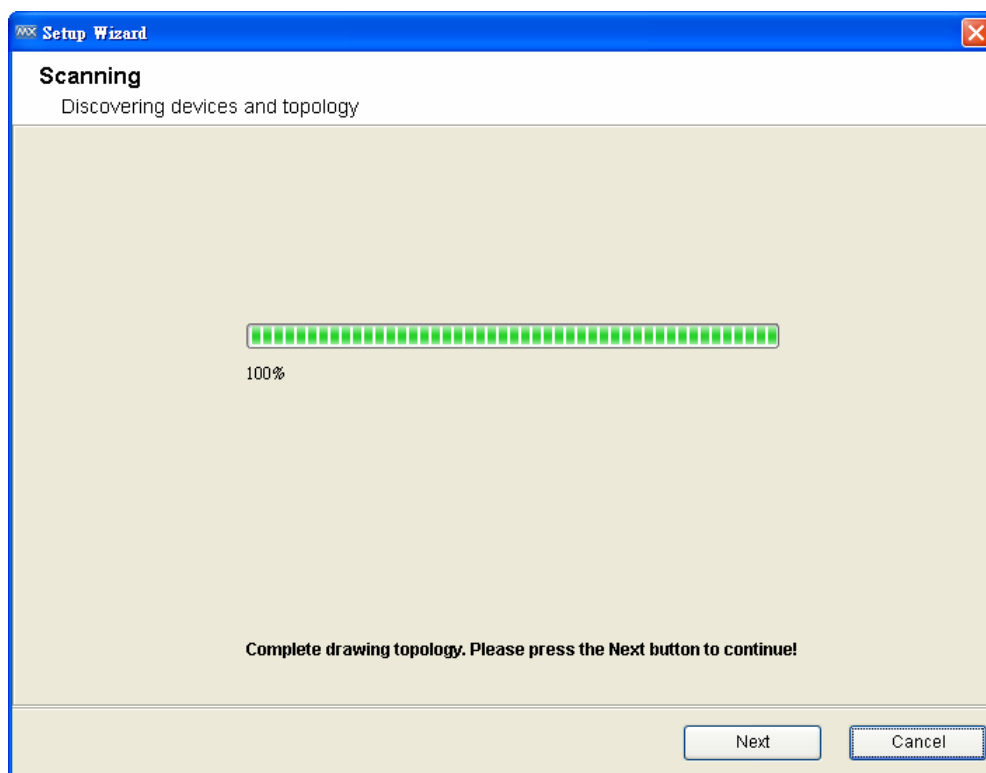


步骤 4: 绘出网络拓扑

所有设备定位完成之后，MXview 将绘出所有 LLDP 设备的拓扑。

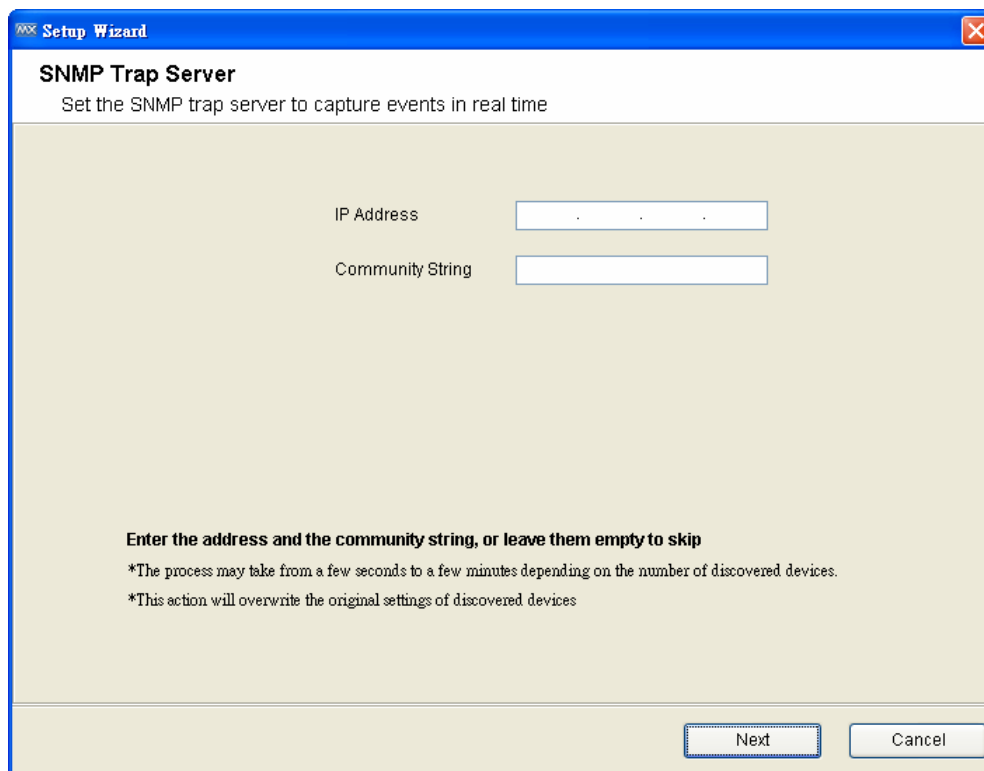


对于不具备 LLDP 功能的设备，绘制拓扑只能在安装向导结束之后手工完成。
当所有设备被搜索定位并创建拓扑之后，点击**下一步**继续下一步。



步骤 5: 设定 SNMP Trap 服务器获取实时事件信息

为了激活实时事件生成功能，MXview 服务器 IP 地址需要配置成为一个 trap 服务器。如果跳过此步骤，设备仍然可以通过定时轮询监控，只不过会出现等待时间。



The image shows a Windows-style dialog box titled "Setup Wizard" with a close button in the top right corner. The main title is "SNMP Trap Server" and the subtitle is "Set the SNMP trap server to capture events in real time". Below the subtitle, there are two input fields: "IP Address" and "Community String". At the bottom right, there are two buttons: "Next" and "Cancel".

SNMP Trap Server
Set the SNMP trap server to capture events in real time

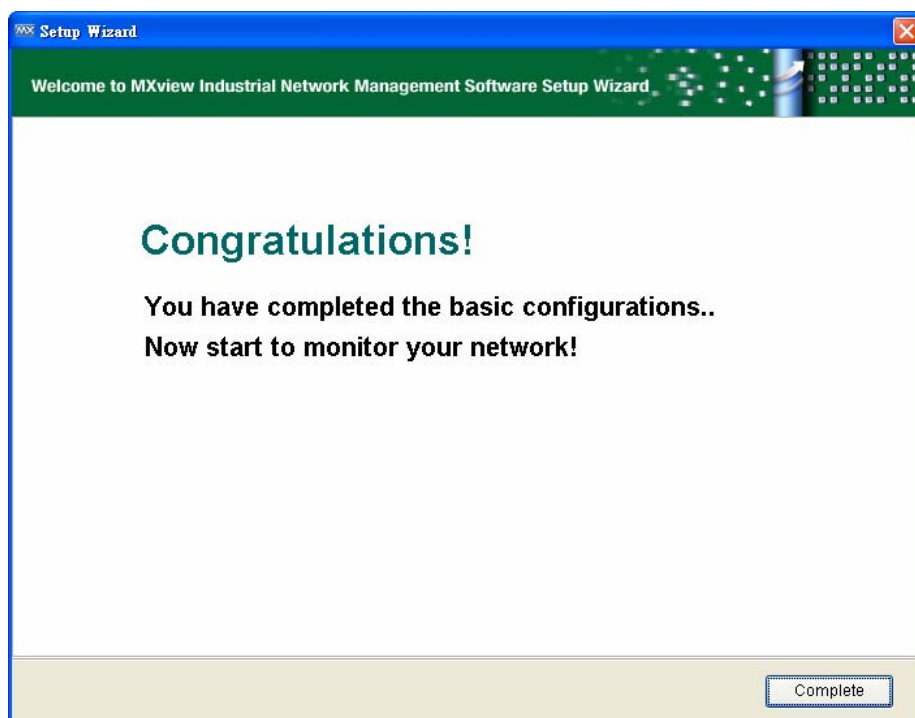
IP Address

Community String

Enter the address and the community string, or leave them empty to skip
*The process may take from a few seconds to a few minutes depending on the number of discovered devices.
*This action will overwrite the original settings of discovered devices

Next Cancel

完成这一步，MXview 的安装过程即完全结束。



The image shows a Windows-style dialog box titled "Setup Wizard" with a close button in the top right corner. The main title is "Welcome to MXview Industrial Network Management Software Setup Wizard". Below the title, there is a large green banner with the text "Congratulations!" in white. Below the banner, there is text that says "You have completed the basic configurations.. Now start to monitor your network!". At the bottom right, there is a button labeled "Complete".

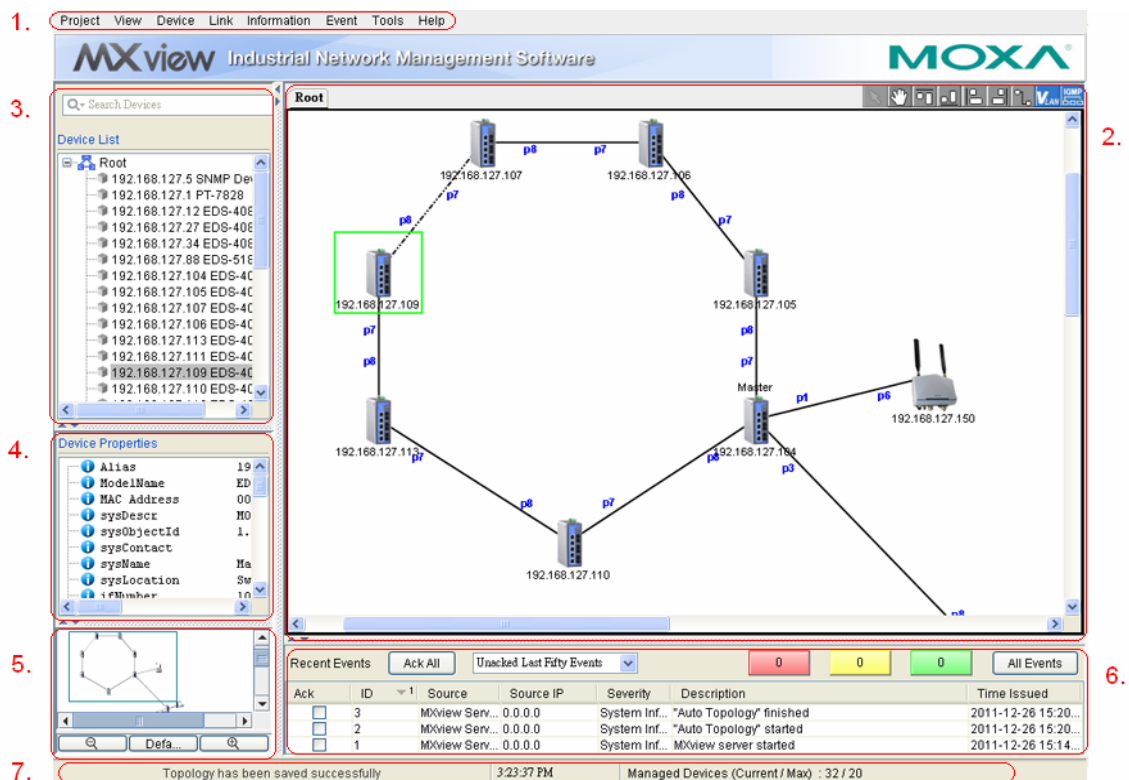
Welcome to MXview Industrial Network Management Software Setup Wizard

Congratulations!

**You have completed the basic configurations..
Now start to monitor your network!**

Complete

当您登录 MXview 即会出现系统主界面。在 MXview 使用过程中，您大部分工作时间都会与主界面相关，该界面分为如下几个部分。



本章节涉及的内容如下：

- ☐ 菜单栏
- ☐ 网络拓扑图
- ☐ 设备列表
- ☐ 设备属性列表
- ☐ 近来事件列表

菜单栏

所有系统操作都可以在下面的菜单项中找到:

项目

项目 菜单包括将所监控网络的配置和数据导出为一个本地文件, 导入项目文件并即时创建监控网络。

视图

视图 菜单用于改变拓扑图外观。例如, 您可以调整拓扑图解析度或创建一个拓扑图。

设备

设备 菜单可以配置或查看目标设备属性。

链结

链结 菜单用于删除一个链结或获得网络流量报告。

网络

网络 菜单可以查看整个网络属性。

事件

事件 菜单可以查看事件。

工具

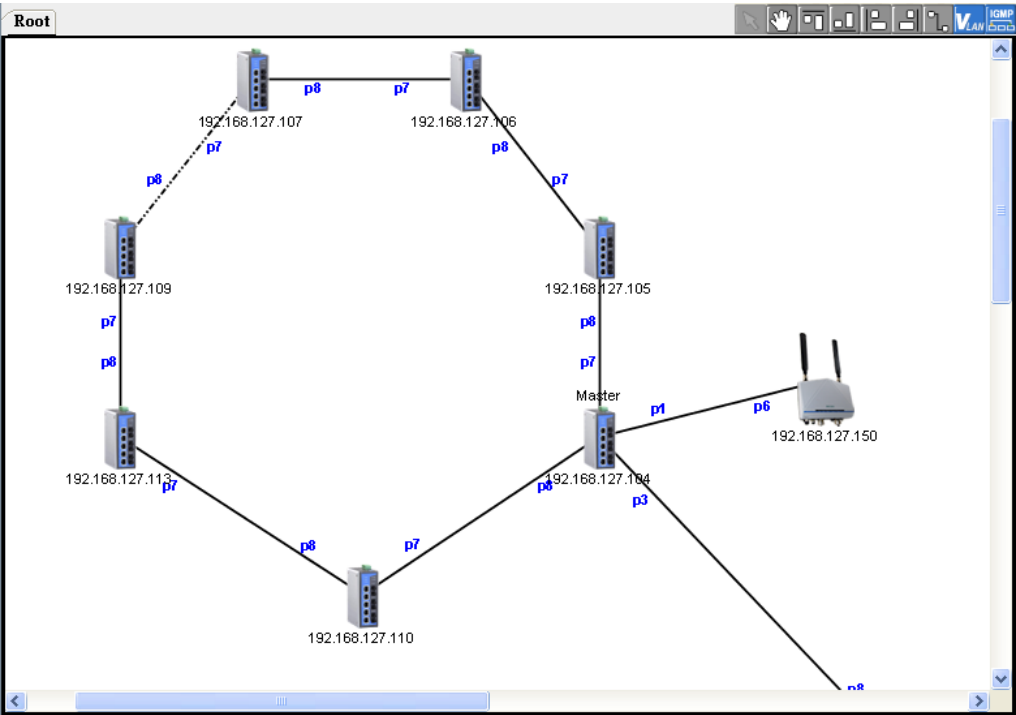
工具 菜单可以启动其他服务或程序, 例如 Moxa IP 配置器。

帮助

帮助 菜单可以查看授权许可信息和 MXview 的系统信息。

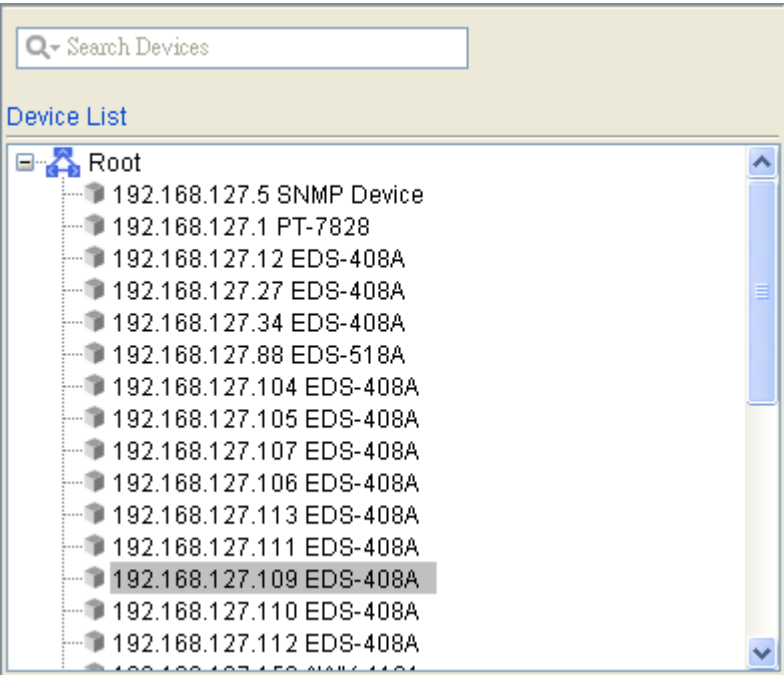
网络拓扑图

网络拓扑图显示了所有监控网络设备的连接关系。只要网络设备具备 LLDP 功能，这种连接关系就可以自动绘制生成。至于其他非 LLDP 设备，可以通过手工进行绘制。



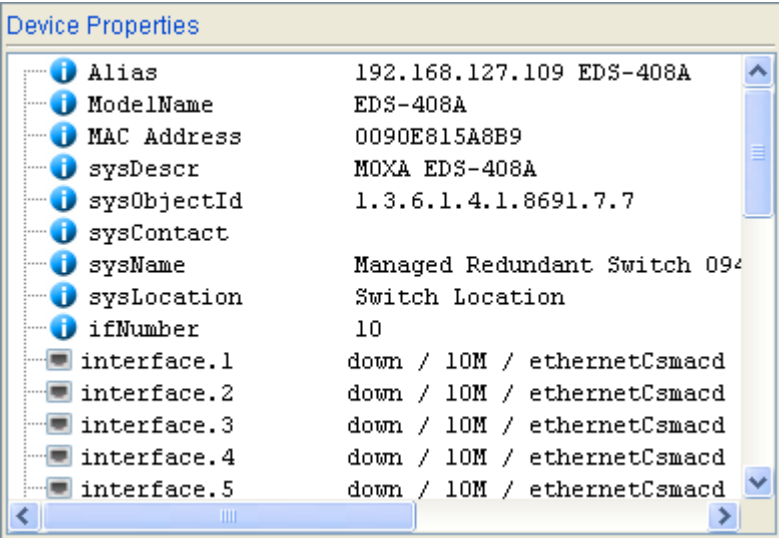
设备列表

设备列表（Device List）则以树形列表方式显示拓扑图。请注意，这种方式没有显示出设备间的连接信息。您可以在“搜索设备”框中输入某一设备的全称或部分名称字母，列表将只显示名称中包含了上述所输入关键词的设备（例如，输入“EDS”可显示网络中所有 EDS 设备，或输入“EDS-G509”可显示网络中所有 EDS-G509 交换机）。



设备属性列表

设备属性（Device Properties）列表显示当前所选设备的属性。



近来事件列表

该列表显示最近发生的所有事件。

事件数目 列出不同类型事件的总数，不同事件种类分别由不同颜色的矩形色块示意(例如，下面截屏图中的红色、黄色和绿色色块)。

所有事件 是菜单项 **事件** → **所有** 的快捷按钮。当您点击 **所有事件**，系统就会弹出一个窗口显示出所有的事件。

Recent Events							
		Ack All		Unacked Last Fifty Events			
				31		2	
				31		All Events	
Ack	ID	Source	Source IP	Severity	Description	Time Issued	
☐	40	MXview Server	192.168.127.182	Information	Device ICMP reachable	2011-12-26 15:26:16	
☐	39	MXview Server	192.168.127.236	Information	Device ICMP reachable	2011-12-26 15:26:16	
☐	38	MXview Server	192.168.127.254	Information	Device ICMP reachable	2011-12-26 15:26:16	
☐	37	MXview Server	192.168.127.252	Warning	Device SNMP unreachable	2011-12-26 15:26:16	
☐	36	MXview Server	192.168.127.253	Critical	Device ICMP unreachable	2011-12-26 15:26:15	
☐	35	MXview Server	192.168.127.250	Critical	Device ICMP unreachable	2011-12-26 15:26:15	
☐	34	MXview Server	192.168.127.225	Critical	Device ICMP unreachable	2011-12-26 15:26:15	

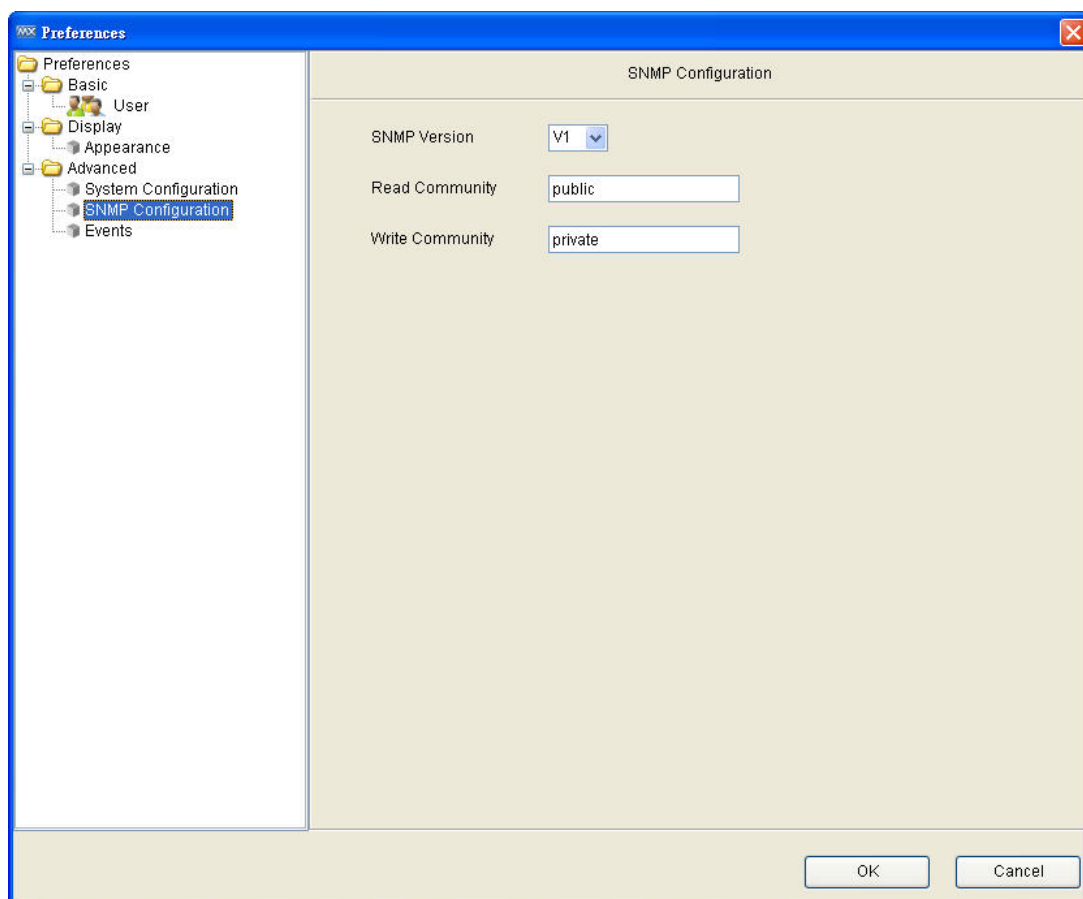
指定扫描范围的设备可以通过 **SNMP** 和 **ICMP** 被搜索到。当搜索到一个设备后，MXview 将通过 **SNMP** 和 **ICMP** 对该设备进行定时轮询。正确配置此项功能需要知道下列信息：

1. 网络设备的 IP 地址。
2. 被指定的网络设备 **Read** 共同体名称。

更改 **Read** 共同体字符串

进行设备搜索的 **Read** 共同体字符串默认值为 **public**。通过下述步骤改变该值：

1. 选择 **项目** → **参数** → **SNMP 配置**。
2. 输入新的 **Read** 共同体字符串。

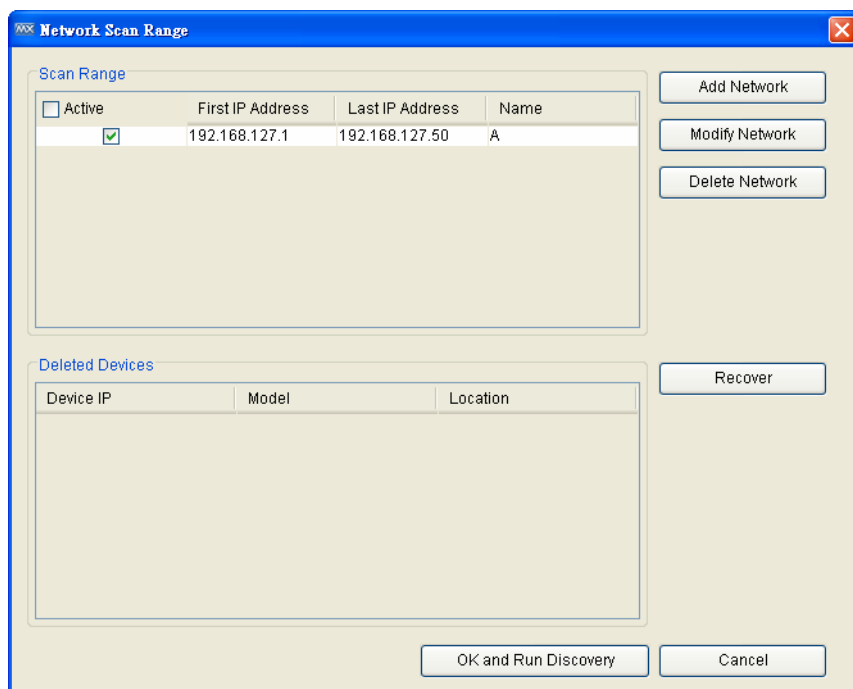


扫描范围

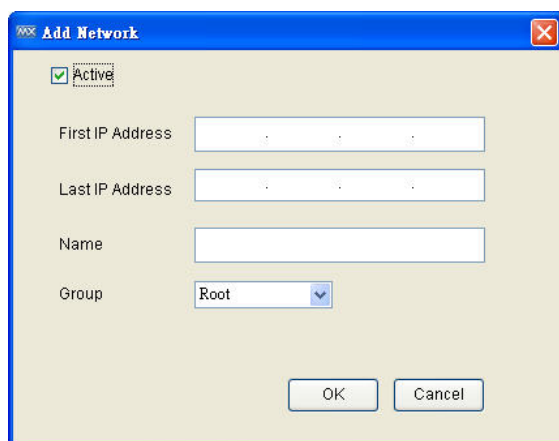
您可以指定多个待扫描网络，每个网络由起始 IP 地址和结束 IP 地址范围进行定义。MXview 将搜索属于该扫描网络范围的所有运行设备。

通过如下步骤可添加扫描网络:

1. 选择 **项目** → **扫描范围**.



2. 点击 **增加网络**.



3. 输入该网络范围的起始 IP 地址和结束 IP 地址，并点击**确认**。
4. 点击 **确认并运行发现程序** 开始设备搜索。

注意 网络规模越大，设备搜索所需时间越长。因此，您应该尽可能地避免定义大规模的网络范围。

删除某一扫描网络将移除所有属于该网络的监控设备。通过如下步骤删除一个扫描网络：

选择 **项目** → **扫描范围**

在 **扫描范围** 中选择某一行

点击 **删除网络**

点击 **确认** 使此次更改生效

修改某一扫描网络将移除不属于新网络的那些设备，并同时搜索位于新网络中的新设备。通过如下步骤来修改一个扫描网络：

1. 选择 **项目** → **扫描范围**

2. 在 **扫描范围** 中选择某一行

3. 点击 **修改网络**

4. 修改网络的起始 IP 地址和结束 IP 地址范围，然后点击 **确认**

5. 点击 **确认** 使此次更改生效

取消选择某一扫描网络的 **有效** 复选框将停止该网络的设备搜索。前面搜索到的设备将继续进入被监控状态，并在拓扑图中显示这些设备的当前状态。

设备搜索

MXview 将通过 SNMP 和 ICMP 搜索扫描范围内的网络设备。当找到某一个 Moxa 设备后，MXview 将用该设备的实物图片进行显示，如下图所示，并标明该设备的网络位置。



MXview 还将列出该设备的所有详细属性和配置参数，这些参数包括：

- MAC 地址
- 设备型号名称
- IP 地址
- 网络掩码
- 网关
- Trap 服务器地址
- 自动 IP 配置
- 冗余协议类型
- 冗余协议角色
- 端口状态和属性
- 供电状态
- SNMP 协议状态和版本信息

MXview 将采用下列图标来标注设备：

- 具备 SNMP 的 Moxa 设备



- 具备 SNMP 的第三方设备



- 具备 ICMP 的第三方设备



所搜索设备的 IP 地址和位置名称将出现在设备图标下方。通过下述步骤更改设备位置名称：

1. 选择该设备
2. 选择 **设备** → **维护** → **配置 IP & SNMP**
3. 选择 **基本** 标签并输入新的位置名称

MXview 将定期在扫描网络中进行设备搜索。您可以通过下述步骤来手工进行设备搜索过程：

1. 选择 **项目** → **扫描范围**
2. 点击 **确认并运行发现程序**

所搜索设备将由 ICMP 和 SNMP 进行定时轮询，这样做的主要目的是：

1. 监控设备是否可用。
2. 更新设备的属性和配置参数。
3. 更新流量信息，例如网络使用率。

拓扑图是 **MXview** 的核心，可以用于完成大部分操作。拓扑图通过图形显示您的网络设备布局，并可用于如下任务：

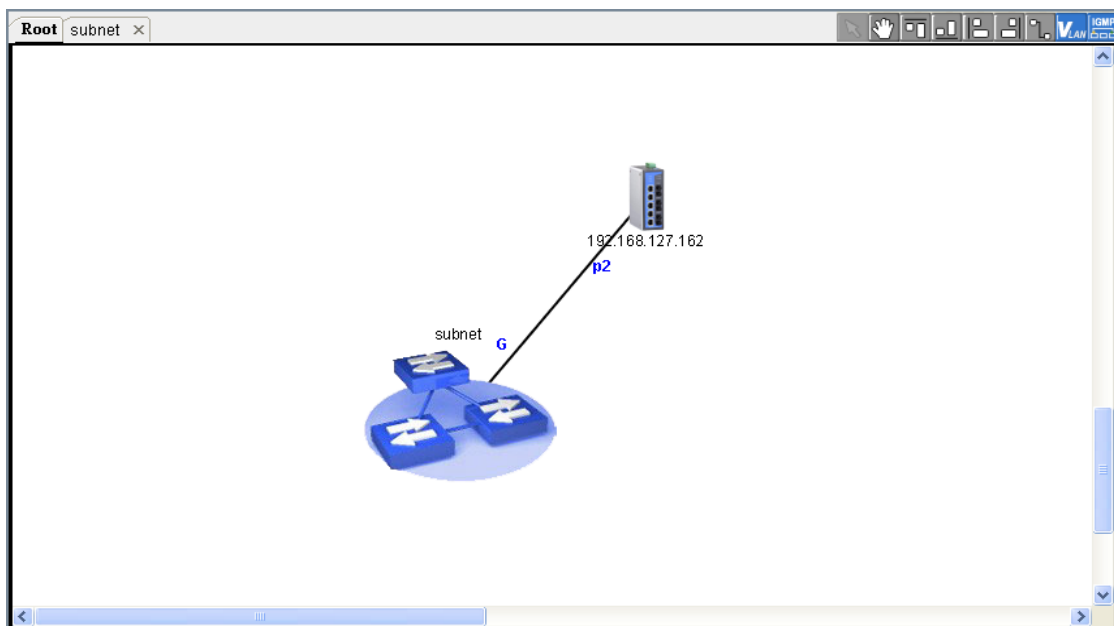
- 通过直观图形显示真实网络。
- 显示设备间的连接关系。
- 标注设备和网络连接的状态。

多层树结构

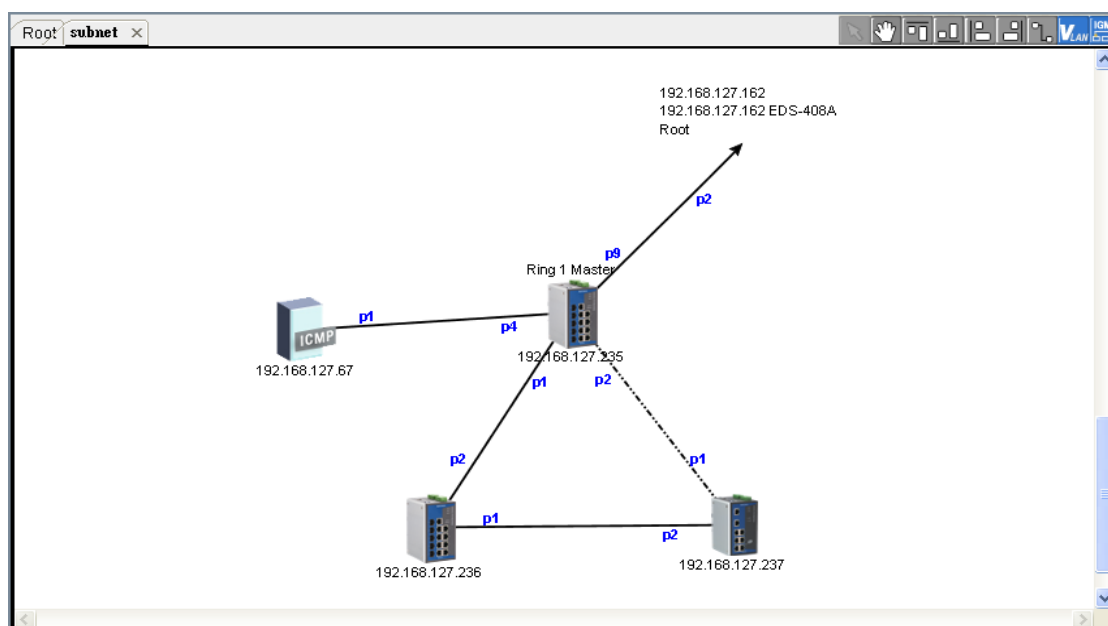
拓扑图为一个最多 **5** 层的多级树结构组织。这种结构可以帮助用户管理计算机屏幕上数目庞大的节点。例如，用户可以方便地将相同子网段或位置的节点移到同一个组里面。**Root** 组作为唯一的第一级组，是默认存在的并且无法删除。用户创建的组均位于 **Root** 下面的层级，设备可以在不同组之间进行移动。**MXview** 采用下面特定图标来标识用户定义的组：



第一级显示如下图：



第二级显示如下图：



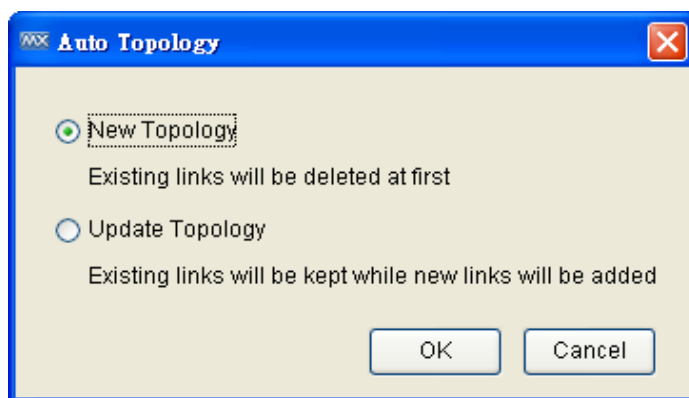
拓扑图是一个带标签的窗口布局，每个标签代表一个组。双击 **Root** 中的组图标就可以打开相应的标签。

自动创建拓扑与自动拓扑布局

对于具备 LLDP 功能的网络设备，MXview 可以绘制出物理拓扑图，直到设备的端口层。MXview 可以自动完成如下两项任务：(1) 创建一个新的拓扑，以及 (2) 更新现有拓扑。

创建一个新的拓扑将删除所有链结，获取设备 LLDP 信息，同时根据这些信息绘制拓扑图。

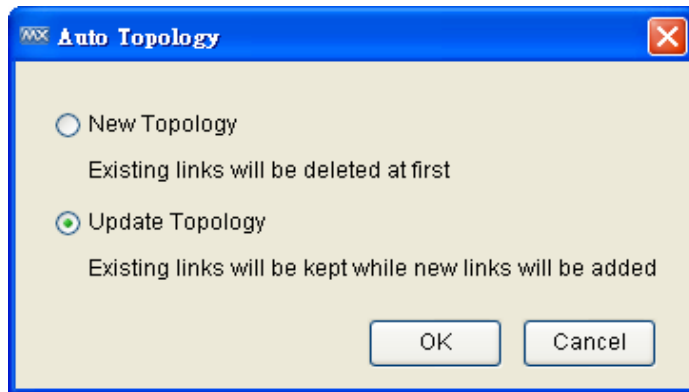
1. 选择 **视图 → 自动拓扑**
2. 选择 **创建全新拓扑**
3. 点击 **确认**



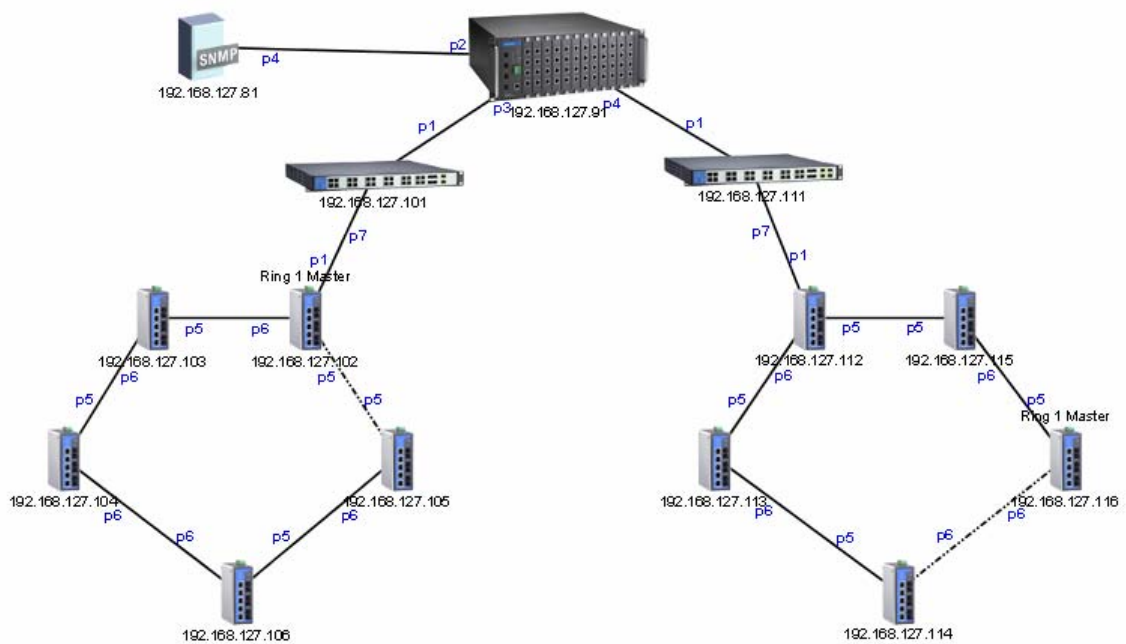
注意 上述操作同时也将删除手工绘制的链结。

更新现有拓扑将添加新的链结和更新现有链结，但不会更改那些已断开的链结或手工绘制链结的连接状态。

1. 选择 **视图 → 自动拓扑**
2. 选择 **更新现有拓扑**
3. 点击 **确认**

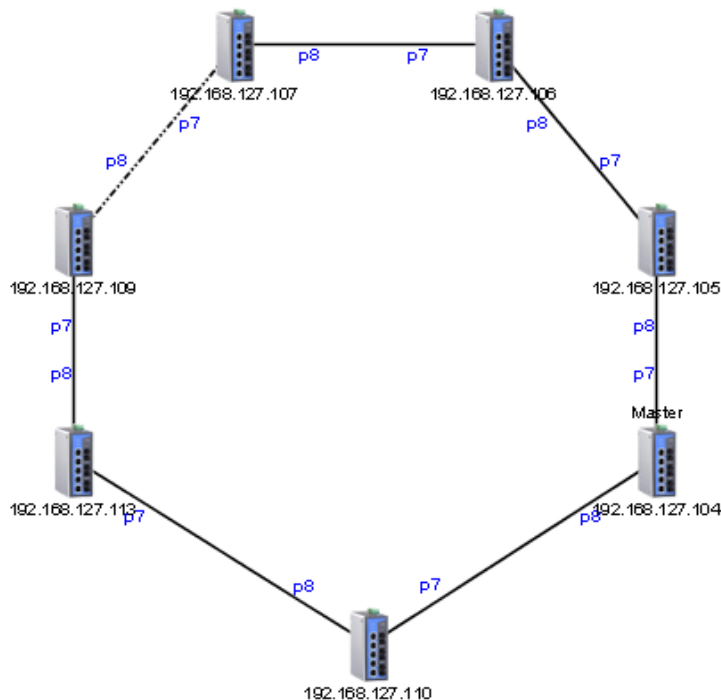


下图为一个拓扑图的例子：



冗余拓扑

冗余拓扑至少有一个备份链结，通过虚线表示：



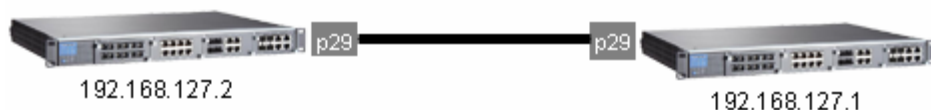
对于拓扑中的特定用途设备，MXview 在设备图标上方作上用途标记，备份链结将通过虚线表示。

- RSTP 有一个 **Root**
- Turbo Ring 有一个 **Master**
- Turbo Chain 有一个 **Head** 和一个 **Tail**

注意 只有自动拓扑方式才能绘出冗余链结的虚线。手工绘制的冗余链结将以实线表示。

链路聚合

Port trunking 也称之为链路聚合，即将成组链接捆绑成为一个链路聚合组。Trunking 链接将通过下面的粗实线表示。



注意 只有自动拓扑方式才能绘出 trunking 链接的加粗线，手工绘制的 trunking 链接将只以实线表示。

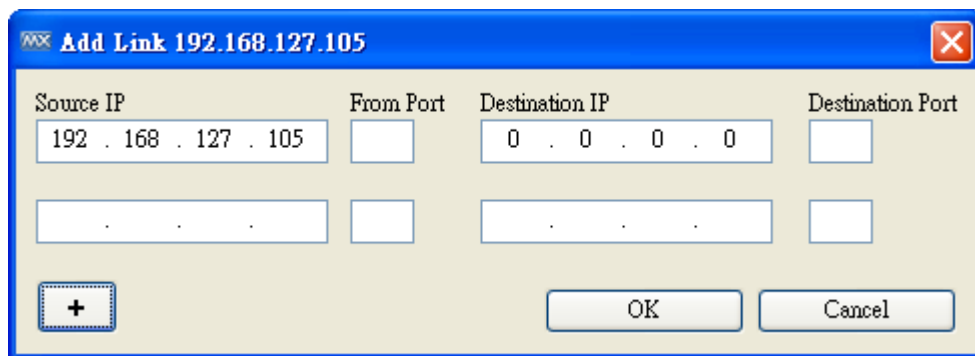
注意 对于聚合链接，可以通过查看 “Device Properties” 获得该链路聚合组对应的端口号。

Port 29 Trunk Group 1 : Port 25 (Link up) / Port 26 (Link up)

添加一个链结

使用下面两个选项中的任意一种，即可在拓扑图中连接两个设备：

1. 右键点击一个设备并选择 **增加链接**。
2. 点选一个设备，并点击菜单栏中的 **链结** → **增加链接**。
3. 输入连接对应的端口号和 IP 地址。使用左下角的加号图标可以一次进行多个输入。



注意 手工添加的聚合链路和冗余链结将以实线表示。

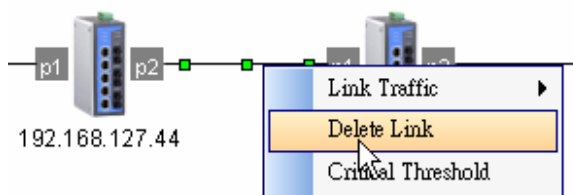
注意 端口号必须是数字，并需要正确输入才能收集流量信息。

注意 对于模块化交换机，端口号则根据该端口所属机架 Chassis 决定，与插入模块数量没有关系。对于 PT-7828 这类交换机，第一个模块端口号是从 1 到 8，第二个模块端口号是从 9 到 16，以此类推。端口号只取决于模块所在的插槽，换句话说，无论其他插槽是否为空该端口号都是一样的。

删除一个链结

通过下述步骤可以删除拓扑中的一个链结：

1. 选择待删除的链结
2. 右键点击该链结并选择 **删除链结**，或者选择 **链结** → **删除链结**。



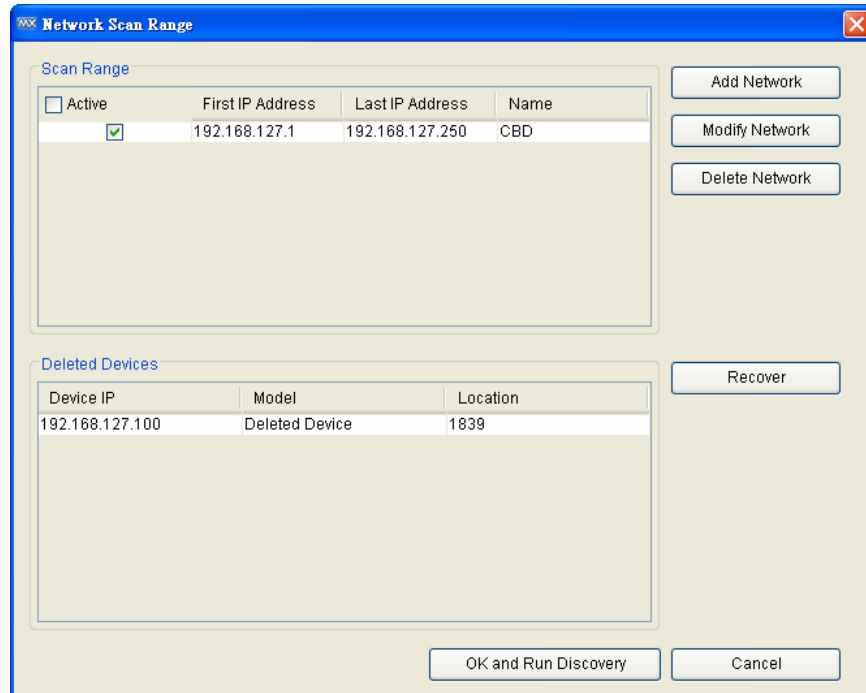
注意 删除一个链结将从拓扑图中删除它，但并不影响实际的网络配置。

删除一个设备

您可以从拓扑图中删除设备。当一个设备被删除后，该设备将从拓扑图和扫描范围中移除，并且不再被轮询和由设备搜索定位。通过以下步骤删除一个设备：

1. 选择某一设备
2. 右键点击该设备
3. 选择 **删除设备**

所删除设备将被记录在 **项目 → 扫描范围** 里面。

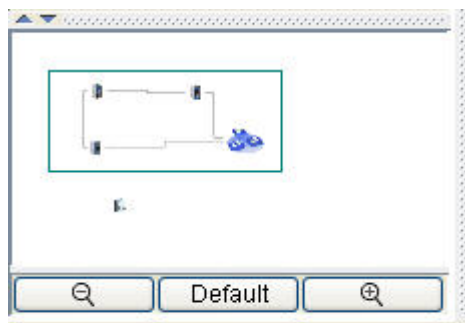


您可以恢复被删除的设备。一旦被恢复，设备将被轮询，也能通过设备搜索进行定位。通过如下步骤恢复被删除的设备：

1. 选择 **项目 → 扫描范围**
2. 在 **已删除的设备** 中选择被删除设备行
3. 点击 **反删除**，然后点击 **确认**

导航式浏览

Mini 导航图是一个带滑动控件的图框，可以用于调整图分辨率大小。该项功能帮助用户放大查看设备或者缩小视图以查看更多的设备。



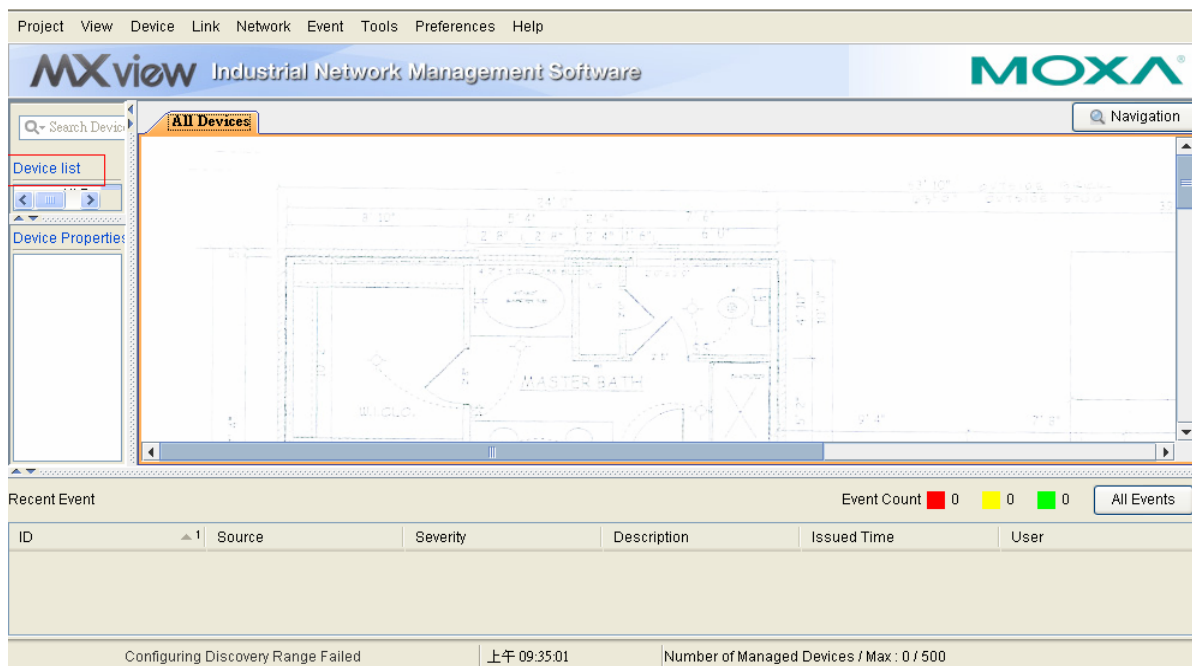
背景图

您也可以给拓扑图插入一个背景图片，以提供其他参考信息，譬如一个地理信息或配置布局图片。
通过如下步骤插入或者更改一张背景图片：

1. 选择 **视图** → **设置背景**
2. 从本地文件系统中选择一个图片

通过如下步骤删除拓扑的背景图片：

选择 **视图** → **删除背景**



导出拓扑

拓扑图可以导出为一个 JPEG 图片。通过如下步骤导出拓扑图：

1. 选择 **视图** → **导出**
2. 选择导出图片存储的位置

生成 OPC 标签

MXview 能够为设备和链结属性生成 OPC 2.0 兼容标签。这样，诸如 SCADA 系统之类的 OPC 客户端就能访问并使用这些标签。

1. 选择 **工具** → **OPC 服务器**
2. 点击 **开始**。

目前，MXview 能够提供 OPC 标签的信息包括：设备 IP 地址、MAC 地址、描述、位置和状态，这些信息标签都是以 D_打头的，连接对应的 IP 地址和端口信息标签都是以 L_打头的。

监控方法

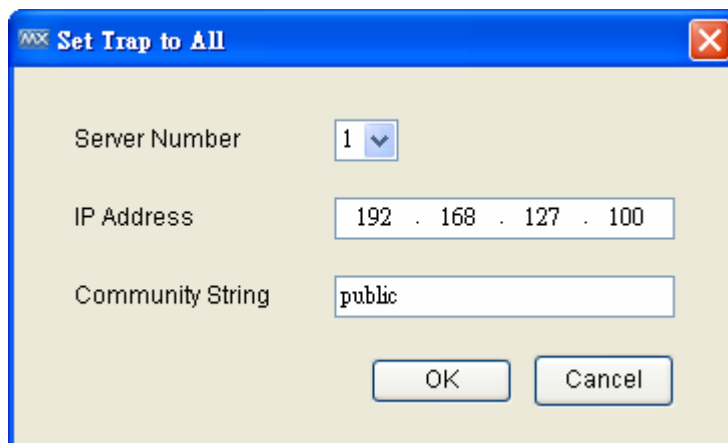
可以通过 SNMP trap 信息进行设备监控、定时轮询或者是带色符号标识，这些功能在下面的各子部分都有描述。

通过 SNMP Trap 消息进行监控

当使用 MXview 服务器作为一个设备的 trap 目的地之后，设备相关事件就会实时送达该服务器，并能通过远程客户端进行查看。

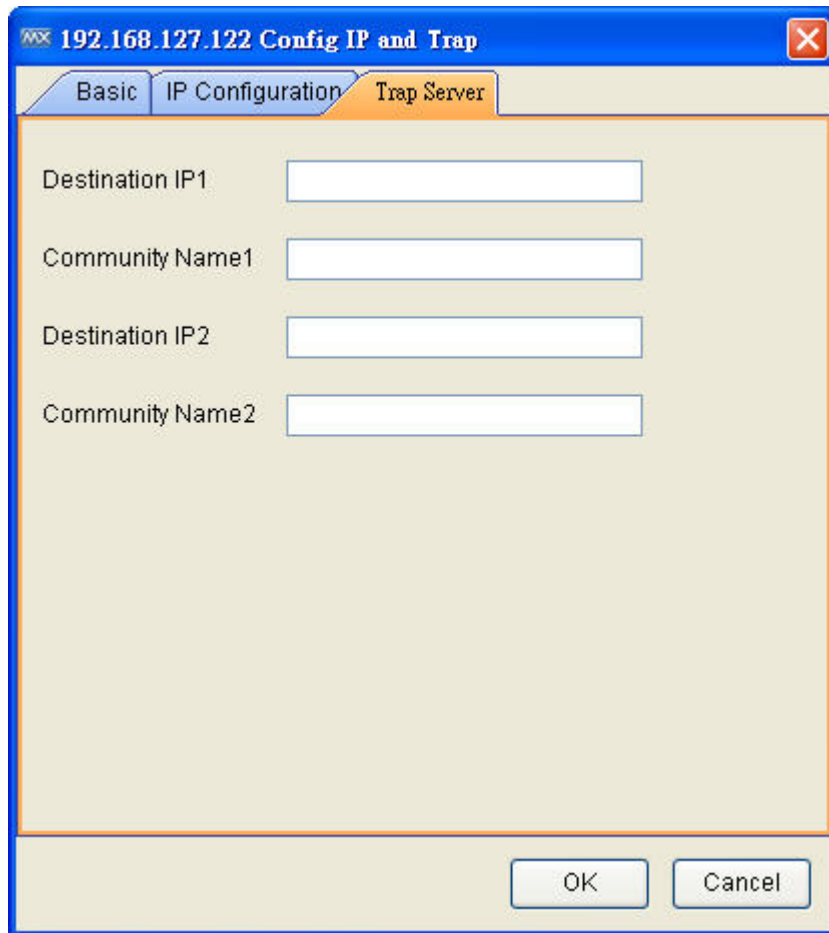
通过如下步骤来设置所有设备的 trap 目的地：

1. 选择 **工具** → **设置所有设备 Trap**。
2. 输入 MXview 服务器 IP 地址和共同体字符串



通过如下步骤设置某一个设备的 trap 目的地:

1. 选择 **设备**→ **维护**→ **配置 IP & Trap**
2. 选择 **Trap 服务器** 标签
3. 输入 MXview 服务器 IP 地址和共同体字符串



事件类型包括：端口链结 up/down，供电 on/off，拓扑更改和配置更改。
每个被搜索到的设备一旦正确配置了其 trap 目的地之后，都可以进行自动监控。

通过定时轮询进行监控

当搜索到某一设备之后，MXview 就会定时对该设备的活动端口状态进行轮询。需要注意的是，由于 trap 信息是通过 UDP 协议传送，所以不能完全保证信息的接收。定时轮询的作用就是提供更可靠的设备监控过程。

通过定时轮询，MXview 能够主动地监控设备 SNMP 服务的可用性、带宽利用率、误包率和碰撞率。可以针对带宽利用率、误包率和碰撞率各自设定限值，一旦任何一个限值被超出，设备就会发出一个事件发生提示。

通过带色符号提示发现问题

当某一链结发出报警或某一关键事件发生（例如链结断线），此时相应网络连接线的颜色就会发生变化：



当某一设备发出报警或某一关键事件发生(例如设备故障)，该故障设备就会以红色边框的方块加以突出显示。



另外，所发生的事件将添加到近来事件列表中。

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

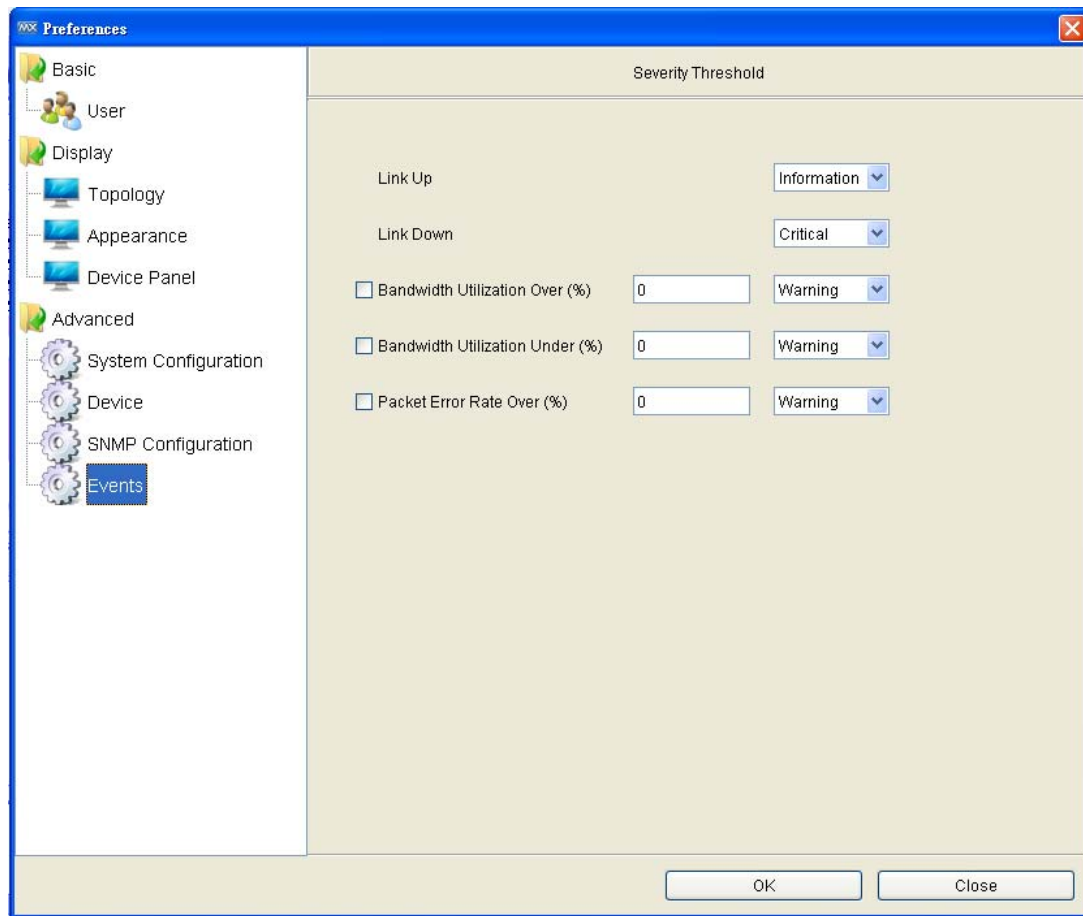
事件恢复

当造成某一事件的原因条件被解除之后，该事件将自动恢复。

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

严重性

事件可以被设置成 3 类安全度等级:关键、警告或通知。提升至特定严重性的条件可以由用户进行配置。如需配置严重性, 请选择 **项目 → 参数 → 事件**, 并修改里面的设置。



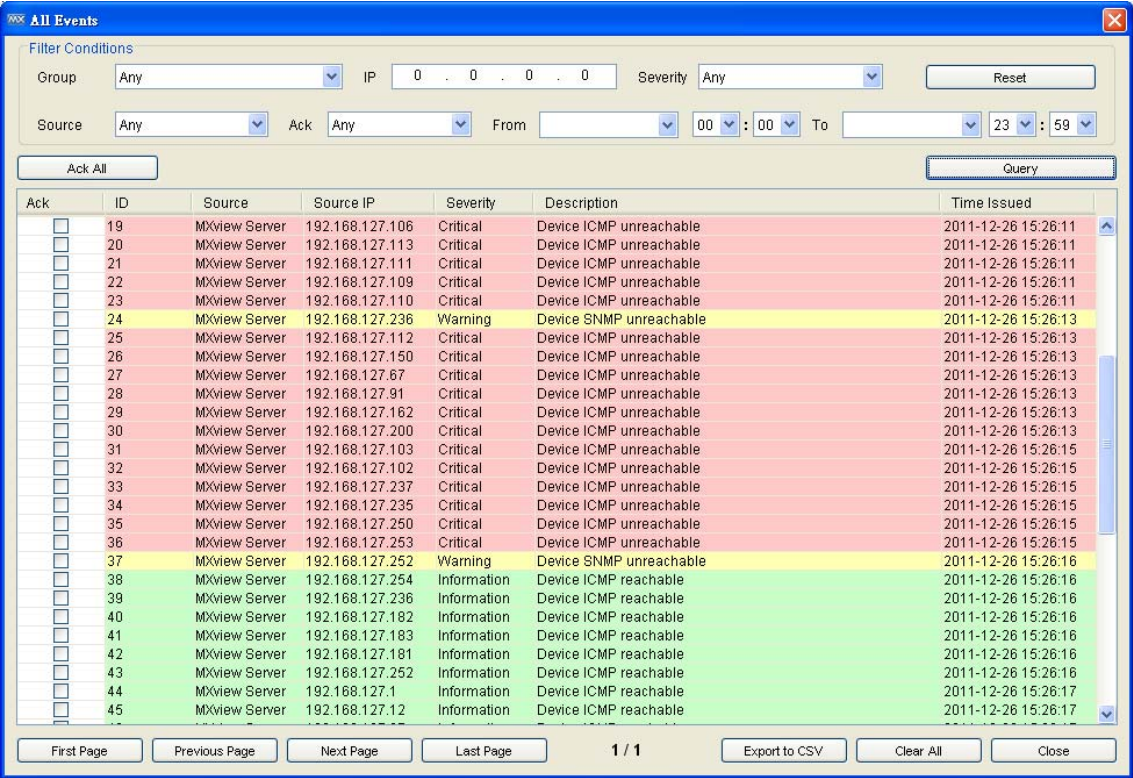
近来事件

MXview 在主面板底部显示出所有最近事件。

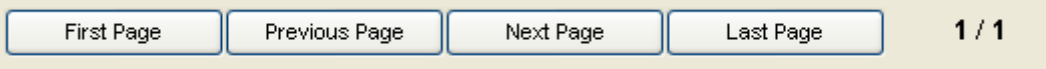
事件历史

为了显示所有设备的事件历史，请在菜单栏中选择 **事件 → 所有**。

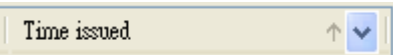
为了显示某一单个设备的事件历史，请先点选某一设备，然后在菜单栏中选择 **设备 → 事件**。



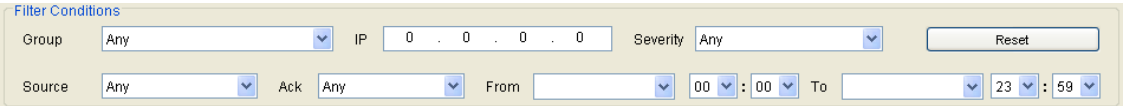
事件历史列表每页显示 40 个事件项。使用底部的页面控制按钮在不同页之间进行浏览。



您可以通过点击表头单元格来对表格归类。



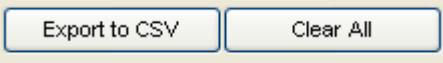
要筛选表格，请使用表头单元的选择框并选择筛选值。



注意

归类 and 筛选功能只能影响当前屏幕显示的表格项，不能重新生成完整表格，即便当前显示表格项少于 40 条的时候也是如此。

您可以导出所有事件生成一个 CSV 文件，或者从数据库中删除所有事件。



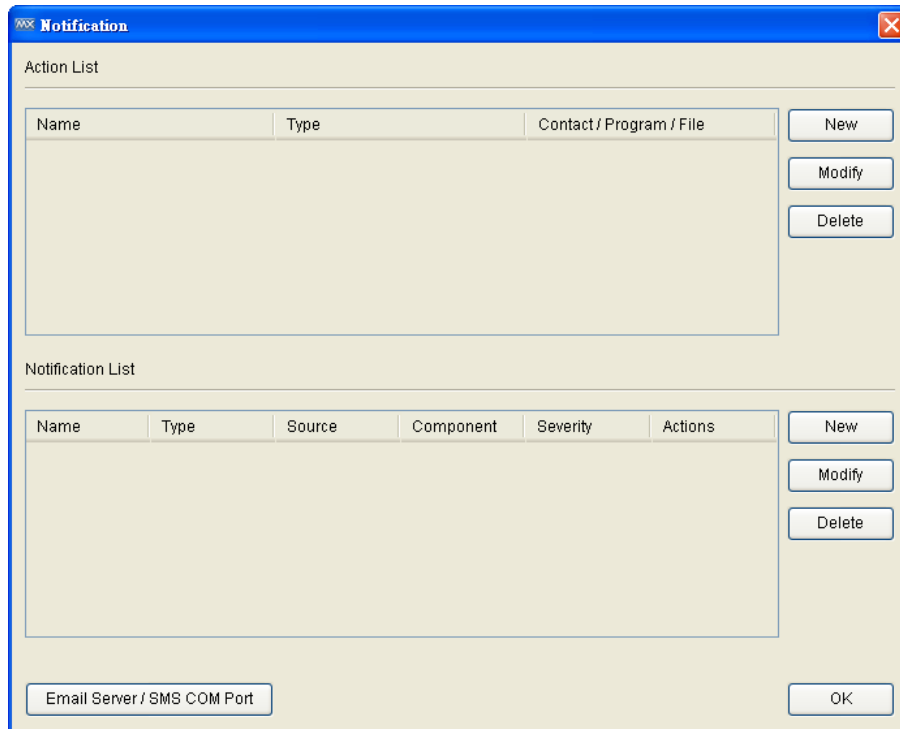
通知

您可以将某一事件类型、某一 **Source IP** 地址和某一严重性的组合信息与一个行动关联起来，例如发送一条文本信息、发送一封电子邮件，制造一种声音或是运行某一外部程序。

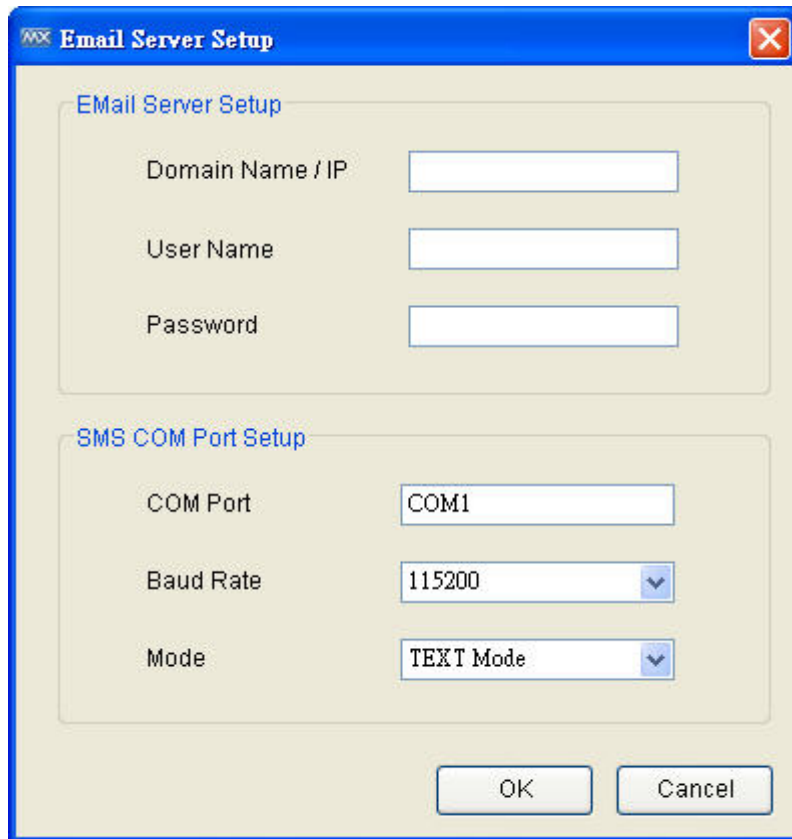
添加一个短信行动

要发送一条短信通知，请首先连接短信调制解调器，如 Moxa OnCell 到 MXview 服务器的 COM 埠。通过下述步骤配置短信 通知：

1. 选择 **事件 → 通知**

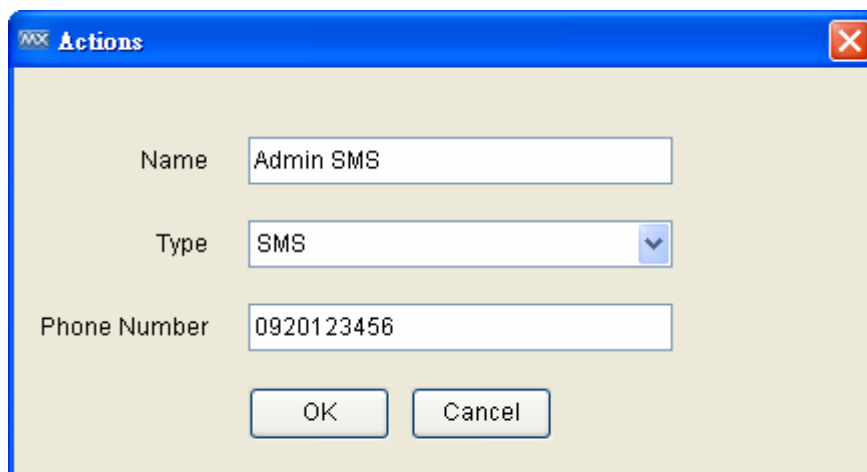


2. 点击 **Email 服务器 / SMS COM 口**



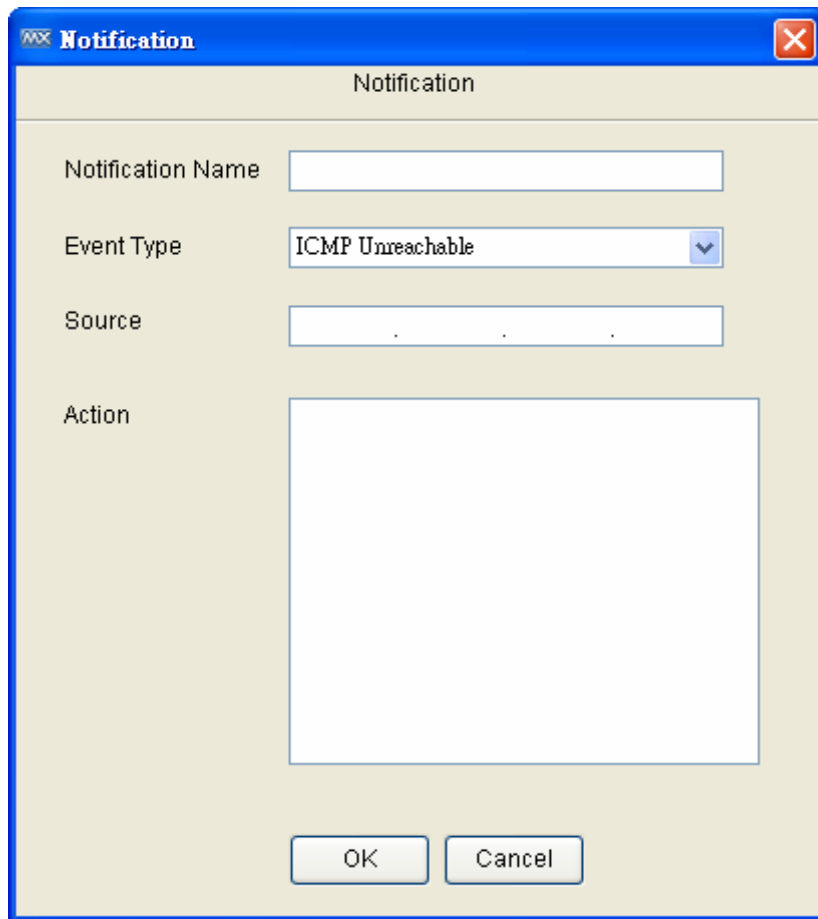
The **Email Server Setup** dialog box is shown. It has a title bar with a close button. The dialog is divided into two sections: **Email Server Setup** and **SMS COM Port Setup**. The **Email Server Setup** section contains three text input fields: **Domain Name / IP**, **User Name**, and **Password**. The **SMS COM Port Setup** section contains three controls: a text input field for **COM Port** (set to COM1), a dropdown menu for **Baud Rate** (set to 115200), and a dropdown menu for **Mode** (set to TEXT Mode). At the bottom right are **OK** and **Cancel** buttons.

3. 选择调制解调器所连接的 COM 端口并点击 **确认**
4. 在行动列表中点击 **新增**
5. 类型选择 **短信**，输入电话号码，为该行动命名，完成后点击 **确认**



The **Actions** dialog box is shown. It has a title bar with a close button. The dialog contains three controls: a text input field for **Name** (set to Admin SMS), a dropdown menu for **Type** (set to SMS), and a text input field for **Phone Number** (set to 0920123456). At the bottom are **OK** and **Cancel** buttons.

6. 在通知列表中点击 **新增**
7. 选择刚刚添加的行动，以及相应的事件类型，source IP



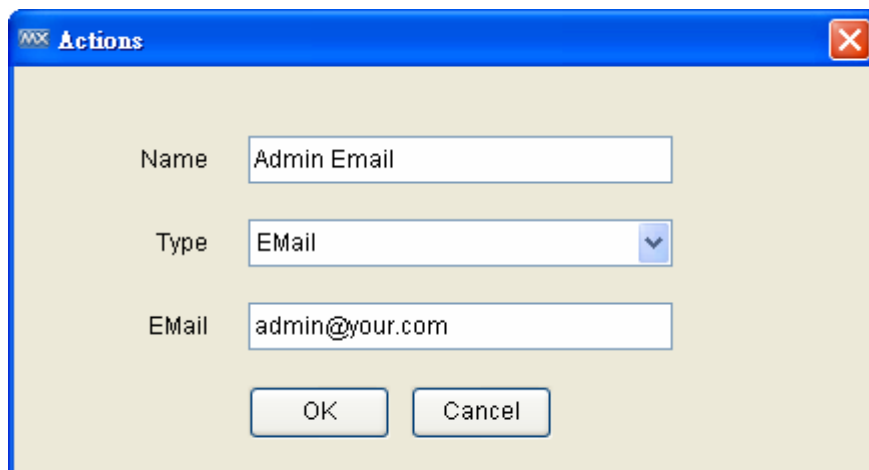
The image shows a 'Notification' dialog box with a blue title bar and a close button. The dialog has a light beige background. It contains four labeled fields: 'Notification Name' (a text input), 'Event Type' (a dropdown menu showing 'ICMP Unreachable'), 'Source' (a text input), and 'Action' (a large empty text area). At the bottom are 'OK' and 'Cancel' buttons.

8. 点击 **确认**.

添加一个 **Email** 行动

通过下述步骤配置用来发送 Email 通知的 Email (SMTP) 服务器 n:

1. 选择 **事件** → **通知**
2. 点击 **Email 服务器 / SMS COM 埠**
3. 输入发送 e-mail 的 SMTP 服务器，输入登录该邮件服务器所需用户名和密码，完成后点击 **确认**
4. 在行动列表中点击 **新增**
5. 类型选择 **电子邮件**，填写 email 地址，给出行动名称，完成后点击 **确认**



The image shows an 'Actions' dialog box with a blue title bar and a close button. The dialog has a light beige background. It contains three labeled fields: 'Name' (a text input with 'Admin Email'), 'Type' (a dropdown menu showing 'Email'), and 'Email' (a text input with 'admin@your.com'). At the bottom are 'OK' and 'Cancel' buttons.

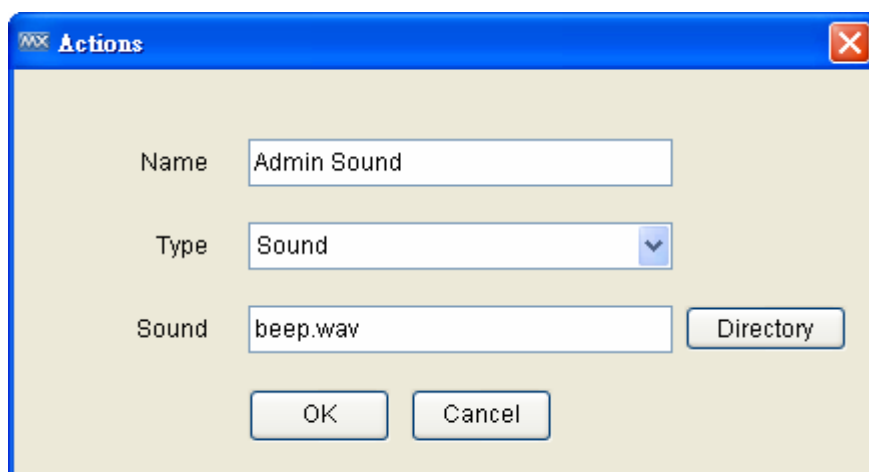
6. 在通知列表中点击 **新增**

7. 选择刚刚添加的行动，以及相应的事件类型，source IP
8. 点击 **确认**

添加一个声音

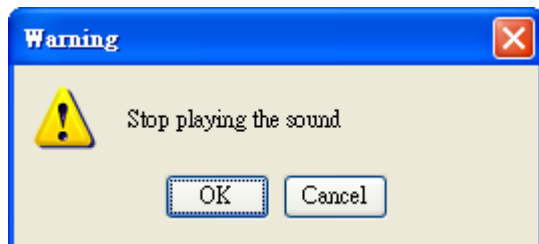
当一个声音通知行动被触发之后，MXview 服务器将播放相关声音文件。该声音将重复播放知道有人手工停止播放。通过如下步骤添加一个声音：

1. 选择 **事件** → **通知**
2. 在行动列表中点击 **新增**
3. 类型选择 **声音**，从本地计算机中选择一个文件，给出行动名称，完成后点击 **确认**。该声音文件将上传到 MXview 服务器



4. 在通知列表中点击 **新增**
5. 选择刚刚添加的行动，以及相应的事件类型，source IP
6. 点击 **确认**

当某一关联事件发生时，就会播放该声音文件并跳出如下窗口：



该声音将重复播放，直到有人手工点击**确认**。

注意 当不止一个事件发生时，对应于第一个事件的声音文件将首先播放，后续事件对应的声音将依次进行播放。第一个声音停止后，接下来的声音才能开始播放。

注意 只支持 wav 格式的声音文件

添加一个外部程序

当触发一个程序通知后，MXview 服务器将执行相关的程序。通过下述步骤添加一个外部程序：

1. 选择 **事件** → **通知**
2. 在行动列表中点击 **新增**
3. 类型选择 **程序**，从本地计算机中选择一个程序文件，给出行动名称，完成后点击 **确认**。该程序文件将上传到 MXview 服务器
4. 在通知列表中点击 **新增**
5. 选择刚刚添加的行动，以及相应的事件类型，**source IP**
6. 点击**确认**。

当关联事件发生时，该程序文件将被执行。

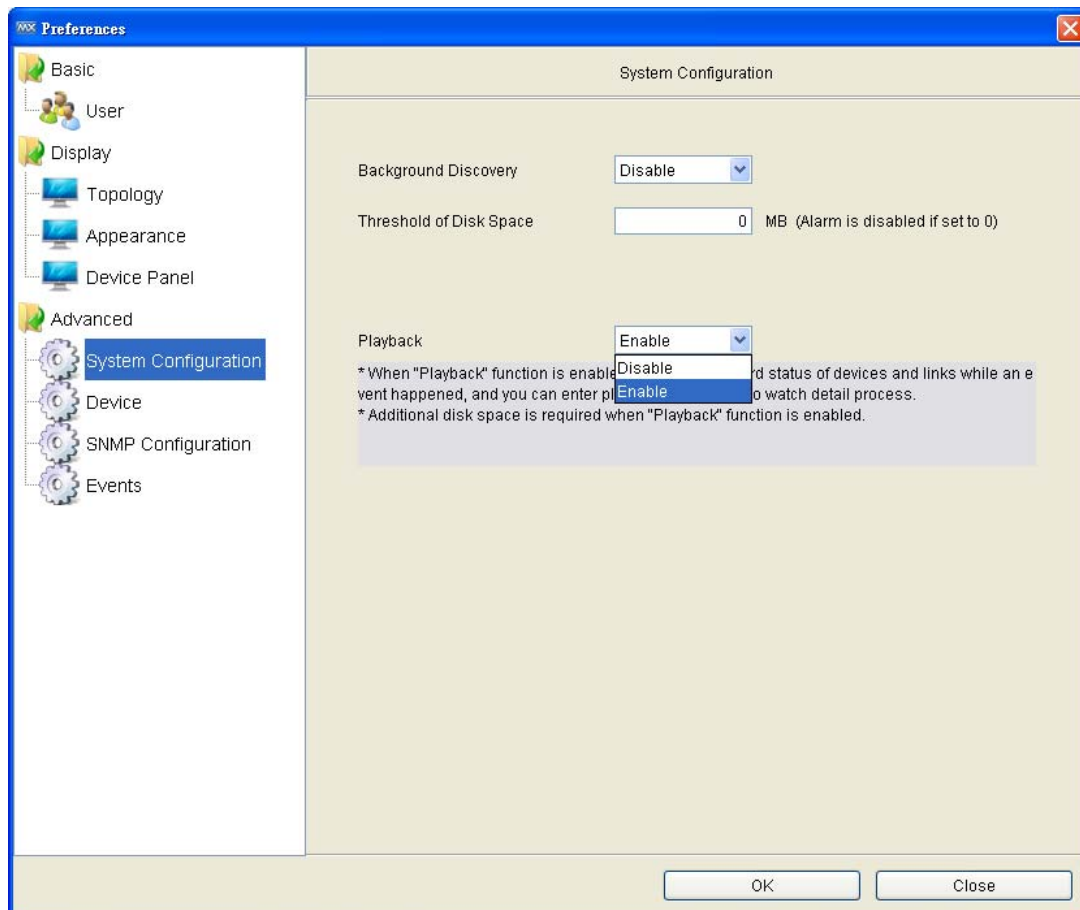
网络事件回放

任何时候，MXview 一旦发现所管理网络设备发生了一个事件，诸如断线，MXview 都将在拓扑图中更新该设备状态。此外，MXview 将在数据库中保留最多 30 天的状态变更记录，并为用户提供一个系统接口以便回看网络状态，这样用户就可以非常方便地查看 30 天内任何时候发生的状态改变。

激活回放模式

回放模式默认为关闭，要激活该功能，需进行如下操作：

1. 选择 **项目** → **参数**
2. 点击 **系统配置**，在 Playback 项中选择 **启用**



进入回放模式

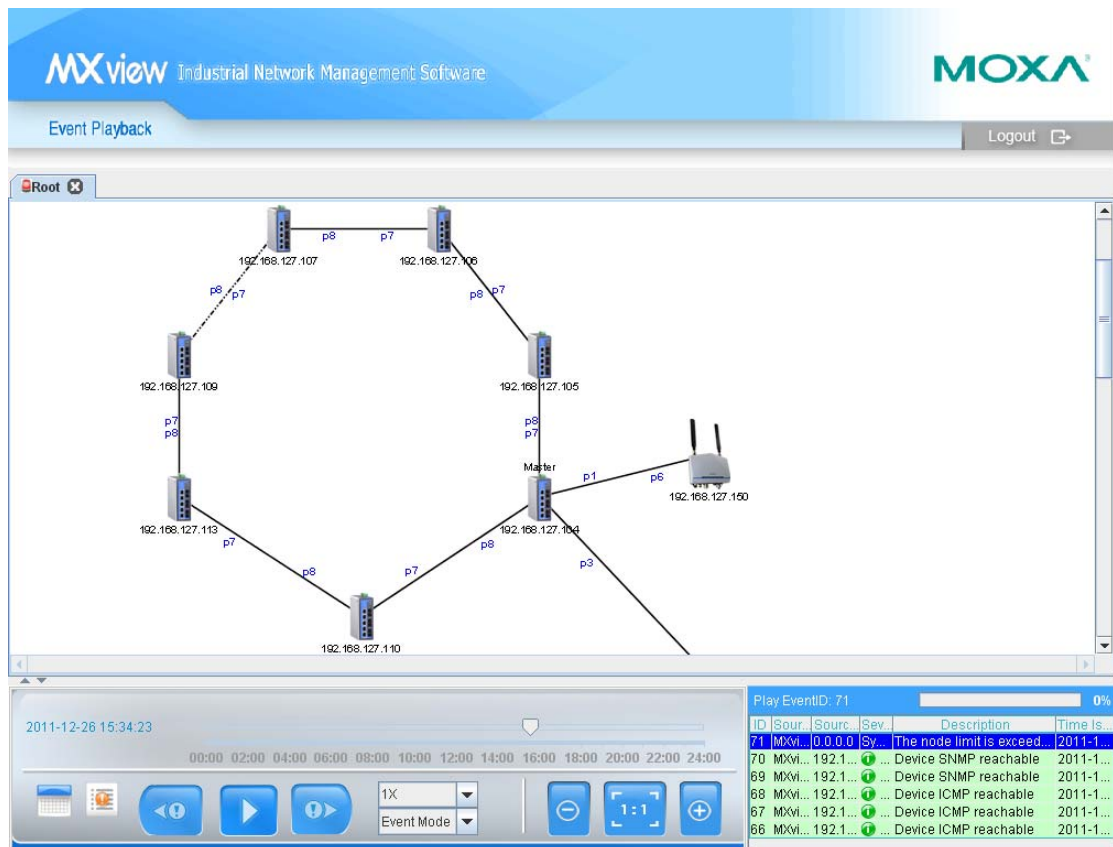
要进入回放模式，请在下面的索引页面操作模式一项选择 **Playback**。



时间模式和事件模式

有两种事件回放模式。在时间模式下，MXview 将按时间秒数回放拓扑图中的事件。在事件模式下，MXview 将按事件一个一个进行回放。用户可以选择回放速度从 1X 到 16X。

回放用户界面一览



- **拓扑图**

拓扑图显示时间进度指示器当前时间下的网络状态。

- **事件列表和所有事件按钮**

当前所显示事件周围的事件在这个窗口中列出，而最近的事件都将高亮显示。点击 **所有事件** 可打开一个所有事件的搜索框，也可以进行事件筛选。在筛选结果中，您可以直接点击筛选出来的某一事件直接进行该事件的回放。

- **控制板**

控制板包括一个时间进度指示器、时间滑动条和日历，该控制板对应于网络拓扑图所显示的当前网络。

用户可以滑动到自己希望查看的时间点。时间滑动条涵盖当前所选择日期下全部 24 小时。要改变日期，用户可以在日历上点击选择不同的日期。

MXview 可以采集网络运行设备的流量统计数据。该统计值可用于创建流量报告，从而帮助了解网络利用率和设备接口性能。MXview 主要采集以下统计数据项：

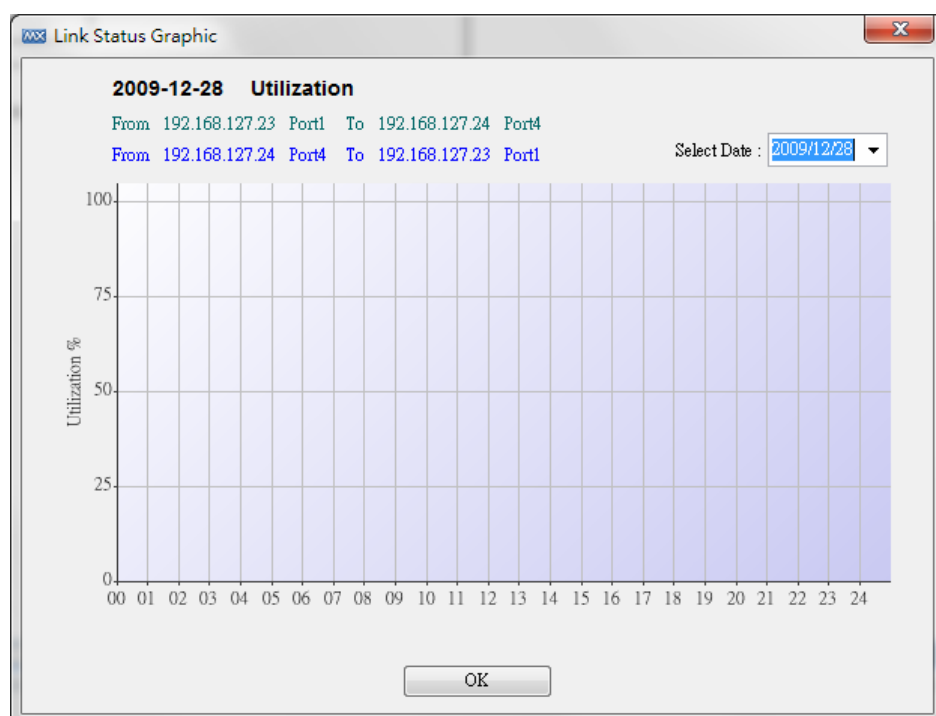
- 流量利用率(%)
- 误包率 (%)

当上述项之一超过或低于相应阈值，就会产生相应的事件。

查看趋势图表

为了让 MXview 能够收集两个设备间的流量统计数据，必须先创建一个网络链结(关于如何添加一个网络链结，请参看第 8 章“添加一个链结”部分的内容)。

趋势图表显示的是某一天的数据。其中，x 轴的数据单位是小时。如需查看不同日期的图表，可选择 **Select Date**。



阈值与事件通知

下列流量条件均能触发事件发生:

1. 带宽利用率高于阈值
2. 带宽利用率低于阈值
3. 误包率高于阈值

由于网络链结是双向的，只要一个方向的链结满足上述任一事件触发条件，就可触发该事件。

欲了解如何更改阈值，请参看第 9 章中的 [通过带色符号提示发现问题](#)

欲了解如何配置通知，请参看第 9 章中的 [通过带色符号提示发现问题](#)

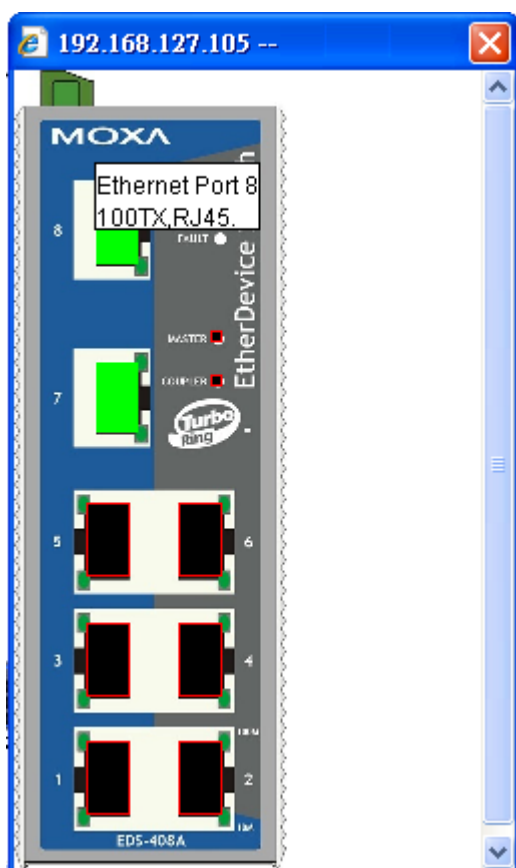
属性

您可以在设备属性选项选择一个设备并查看其属性。所列的属性包括型号名称、MAC 地址、IP 地址、网络掩码、网关、端口类型和状态、供电状态、冗余协议、SNM，以及 ICMP 可用性。

设备虚拟面板

MXview 可以显示 Moxa 交换机的前置面板，以及端口活动状态与 LED 指示灯状态：

右键点击一个设备并选择 **装置面板**



更改设备属性

通过下述步骤更改一个设备的位置、名称、联系人信息、IP、网络掩码、网关、trap 服务器和 SNMP 配置：

1. 选择一个设备

2. 选择 **设备** → **维护** → **配置 IP & Trap**.

点击 **基本** 标签来更改一个设备的名称、位置和联系人信息。这些新的值会写进该设备的固件中。

点击 **IP 配置** 标签来更改一个设备的 IP 地址、网络掩码、网关、DNS 服务器和 IP 获取方法。

点击 **Trap 服务器** 标签来更改 trap 服务器的 IP 地址和共同体字符串。Moxa 交换机可以发送 trap 信息到最多 2 个 trap 服务器。

点击 **SNMP 配置** 标签来选择 SNMP 版本并输入相应的参数。



192.168.127.122 Config IP and Trap

Basic IP Configuration Trap Server

IP Address 192 . 168 . 127 . 122

Netmask 255 . 255 . 255 . 0

Gateway 0 . 0 . 0 . 0

DNS1 IP 0 . 0 . 0 . 0

DNS2 IP 0 . 0 . 0 . 0

Auto IP Disabled ▼

OK Cancel

Web 控制台登录

欲登录到一个设备的 web 控制台，请选择 **设备 → 网页控制台**。

注意：针对 IE6，MXview 将在 MXview 客户端窗口打开控制台。

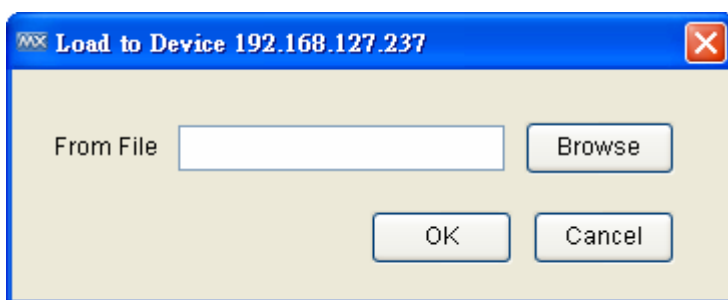
配置备份与恢复(仅限 Moxa 的设备)

通过下述步骤来备份一个设备的配置文件到一台本地计算机上：

1. 选择 **设备 → 维护 → 配置 → 导出**
2. 选择文件的目标存储位置

通过下述步骤来恢复一个设备的配置文件：

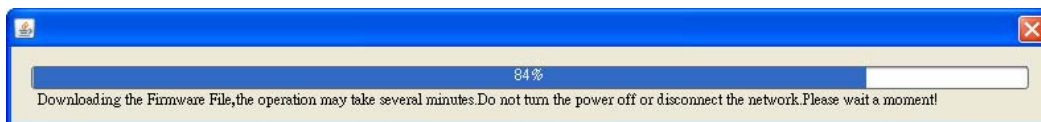
1. 选择 **设备 → 配置 → 导入**。



2. 选择文件并点击 **确认**。

固件升级

欲更新升级一个设备的固件，请选择 **设备 → 维护 → 固件升级**。固件将上传并安装到设备中。



注意 当固件成功安装后，该设备将进行重启。这一过程可能需要几秒钟时间。

刷新状态

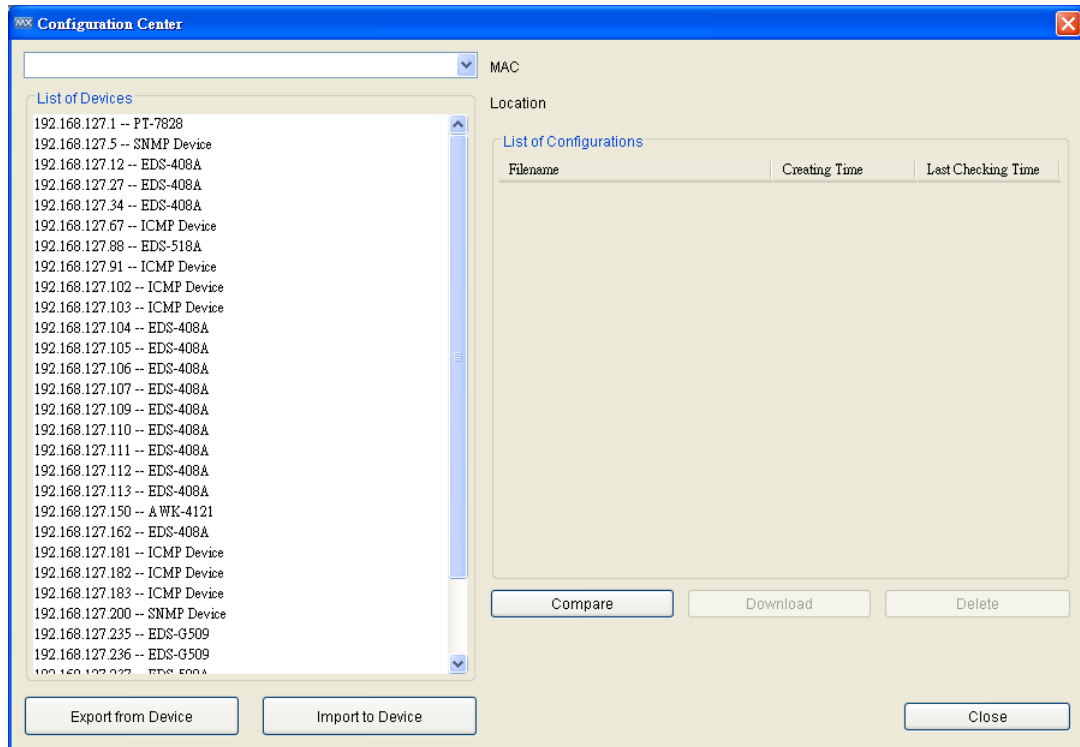
由于一些设备数据通过轮询获得，因此这些数据可能会有时间延迟。欲刷新某一设备并获得该设备最新状态信息，请选择 **设备 → 刷新**。

批量运行配置导入/导出与固件升级

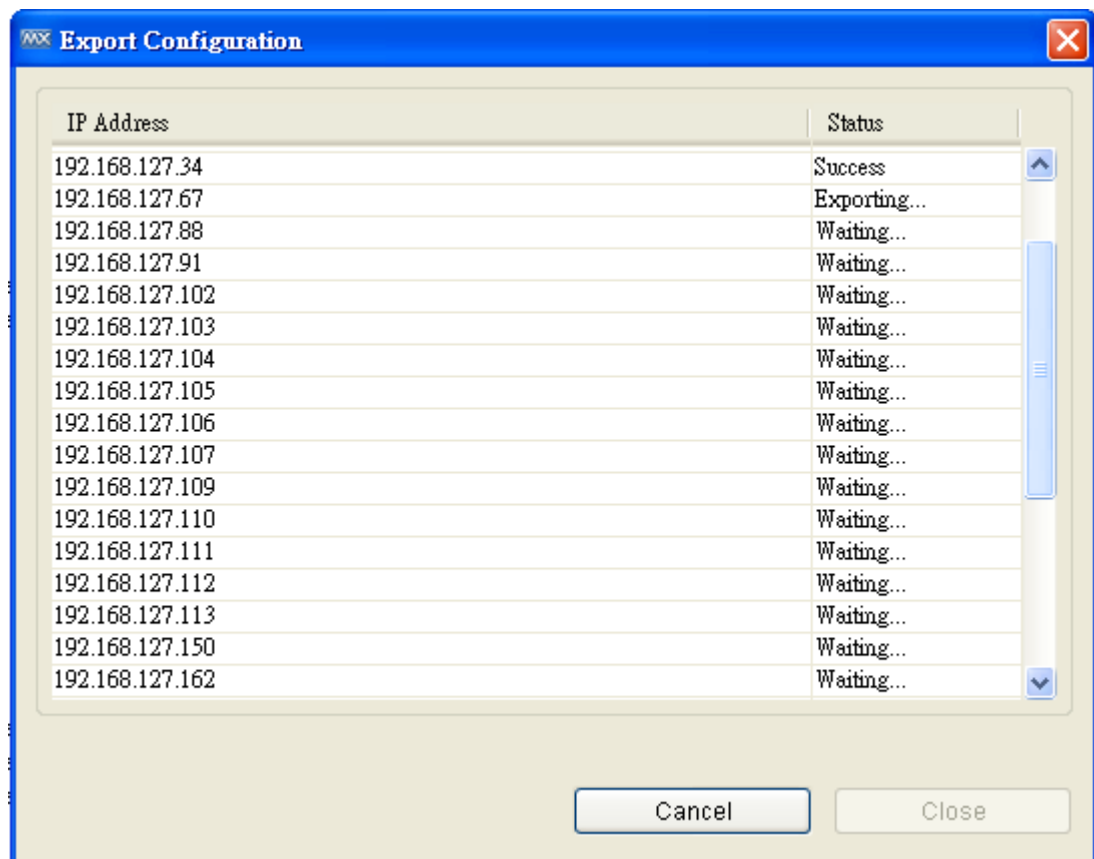
MXview 允许用户在为一组设备进行部署时，成批地导入/导出配置和升级固件。

导出多个设备配置

1. 选择 工具 → 设备配置中心



2. 点击 导出配置
3. 选择一个存储批量配置文件的文件夹
4. 选择需要导出配置文件的那些设备，添加到导出列表，点击 导出



几秒钟之后，配置文件将导出到指定文件夹，文件名将包含设备 IP 地址和时间戳信息。

将一个配置导入多个设备

Moxa 交换机能够导入一个配置文件的一个片段，并可根据该片段所描述参数更改设备配置。MXview 帮助用户一个配置文件的一个片段到多个设备中。

1. 选择 **工具** → **设备配置中心**
 2. 点击 **导入配置**
 3. 选择一个配置文件片段
 4. 选择需要导入配置文件的那些设备，添加到设备列表，点击 **导入**
- 几秒钟之后，配置文件片段将导入到这些设备并生效。

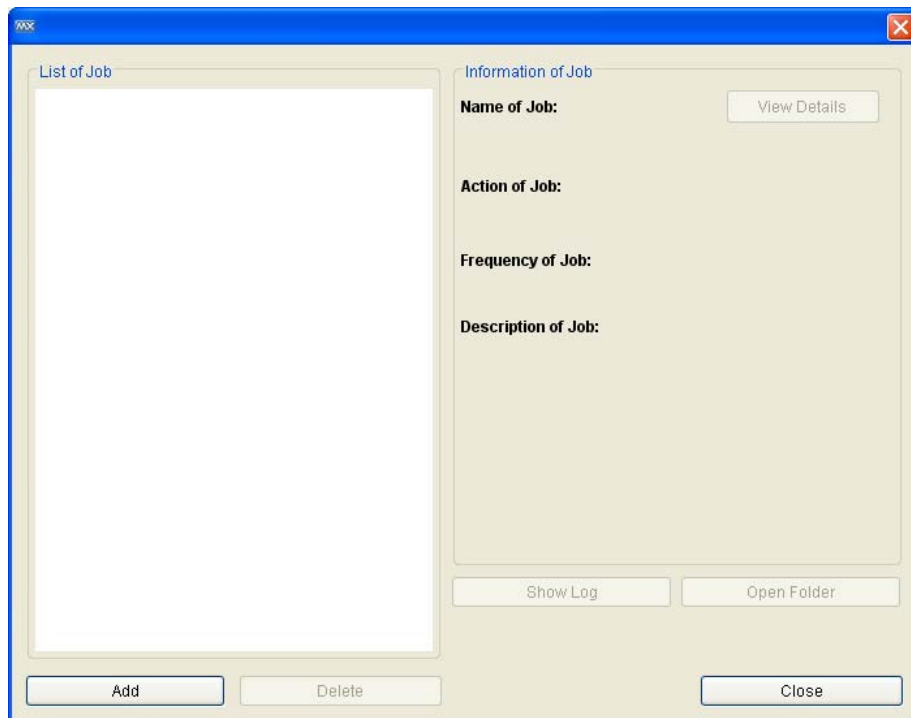
升级多个设备固件

1. 选择 **网络** → **固件版本**
2. 点击 **升级**
3. 选择一个固件文件
4. 选择需升级固件的那些设备，添加到设备列表，并点击 **升级**

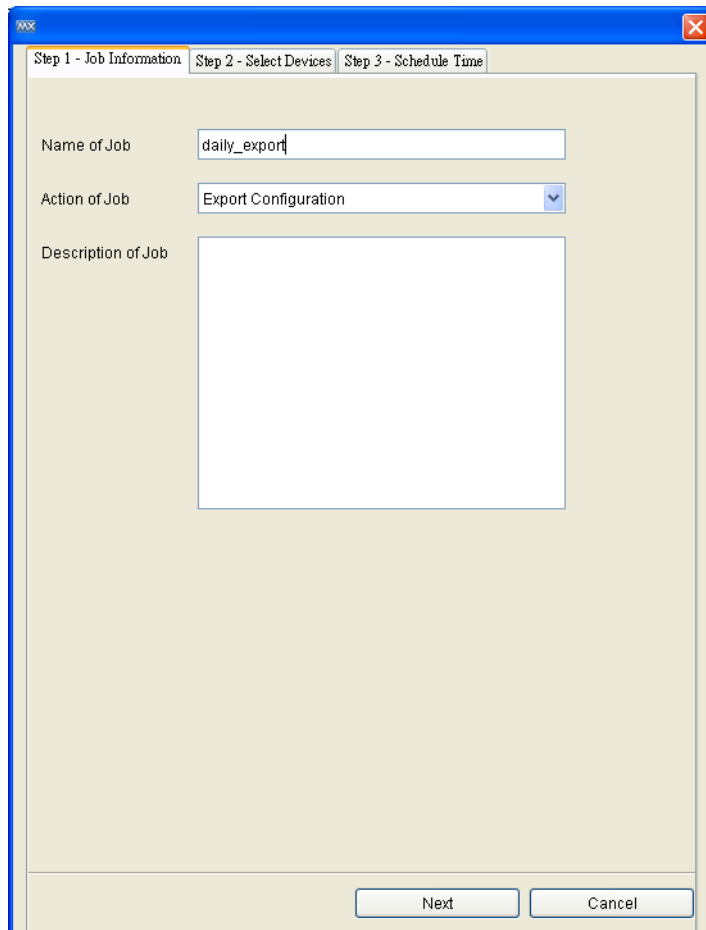
这些设备将逐一进行固件升级。在升级列表中的下一个设备之前，MXview 将等待 30 秒，以便升级设备有足够时间来完成升级过程。

按计划进行配置导入/导出

1. 选择 工具 → 作业调度



2. 点击 新增
3. 输入工作任务名称，在下列选项框中选择 导入配置 或 导出配置



4. 选择对象设备，添加到设备列表，并点击 **下一步**
5. 选择执行例程

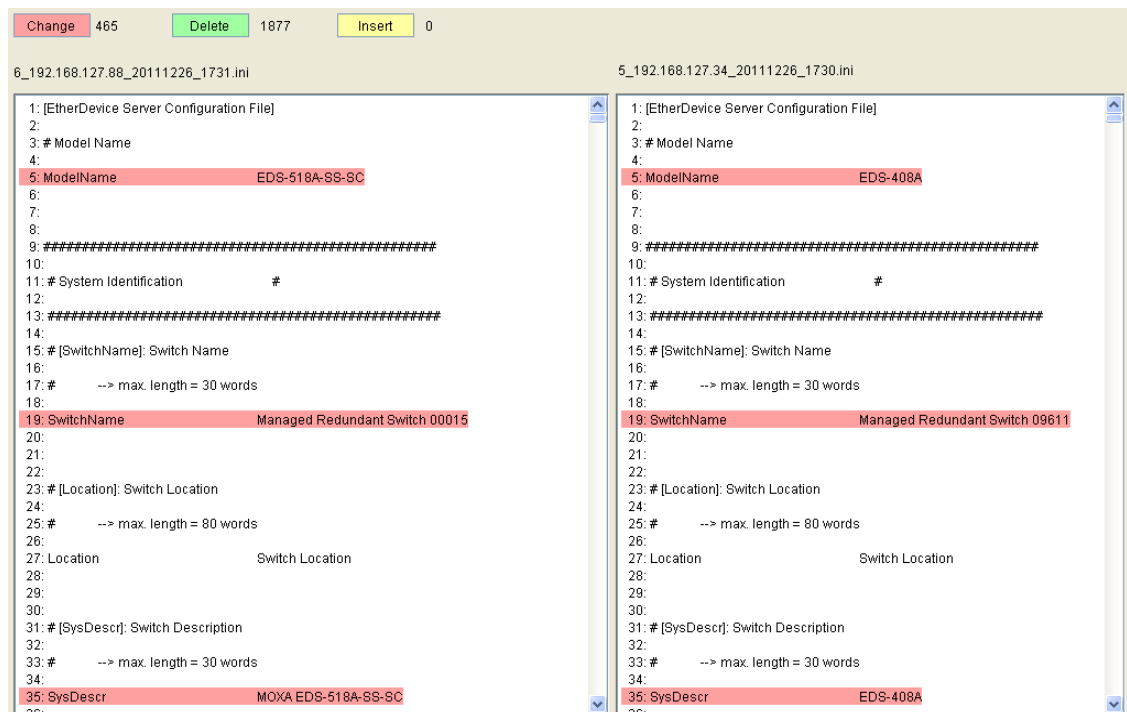
配置变更历史与对比

当 MXview 从设备中导出配置之后，不管通过手工导出还是按计划例程导出，MXview 都会将此次导出配置与上次导出并存储在 MXview 服务器中的配置进行比较。如果有不同之处，MXview 将会把配置存储到 MXview 服务器中。随后用户就能够查看配置文件的变更历史：

1. 选择工具 → **设备配置中心**
2. 查看 **配置列表**

用户还可以对存储在 MXview 服务器中的任意两个配置进行对比：

1. 选择 **工具** → **设备配置中心**
2. 点击 **比较**
3. 选择 2 个 IP 地址和它们的配置



配置中有插入、删除和修改过的行都将高亮显示出来。

VLAN 可视化

Moxa 交换机支持 802.1Q tagged 虚拟局域网（VLAN）。MXview 采集每个设备的虚拟局域网配置，将所采集信息集中起来进行可视化，通过带色按钮以查看整个网络。

1. 点击拓扑工具栏的 VLAN 图标。



2. 选定某一虚拟局域网 ID 后，与该 ID 相关的设备、端口和链结将带色显示。

欲通过表格格式查看虚拟局域网信息，请选择 **网络 → VLAN**

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

IGMP Snooping 可视化

Moxa 交换机支持 IGMP snooping。MXview 将采集每台设备的 IGMP snooping 配置，将所采集信息集中起来进行可视化，通过带色按钮以查看整个网络。

1. 点击拓扑工具栏的 IGMP 图标



2. 选定某一虚拟局域网 ID 和多播地址后，与该网络数据流相关的设备、端口和链结将带色显示。

MXview 有多种不同版本，支持不同的节点数量规模应用。例如，如果您的 MXview 版本支持 250 个节点，那么在设备搜索过程中，MXview 将只能最多识别 250 个节点。MXview 搜索数量一旦达到 250 个节点上限，将会停止这一设备搜索过程。

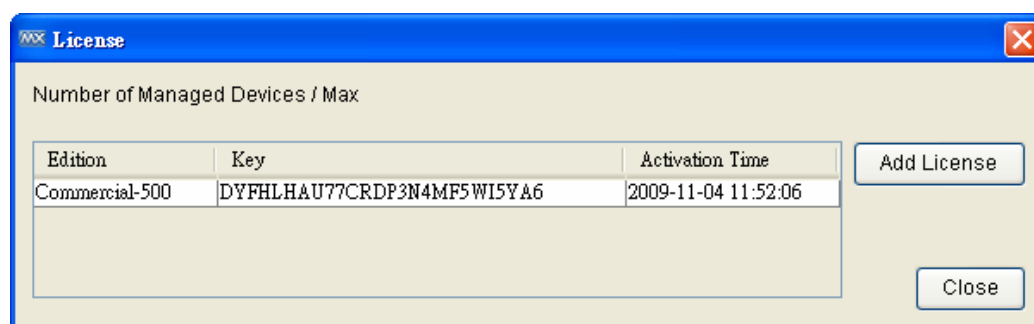
您所购买的 MXview 授权许可指定了当前版本的节点数目阈值。如要增加节点数量，您可以购买授权许可升级并导入到 MXview 系统中。

查看授权许可

当前所管理的节点数目和节点数限值显示在主界面状态条中。

The Number of Managed Devices / Max : 24 / 50

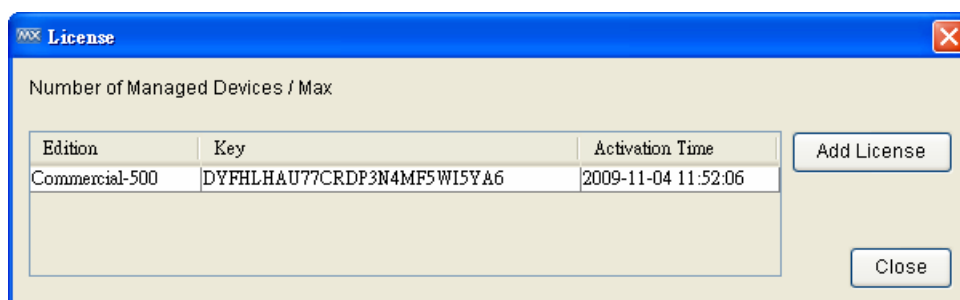
查看详细信息，请选择 **帮助** → **软件许可证**。



授权许可升级

欲提升您的 MXview 节点数量限制，您需要升级授权许可。

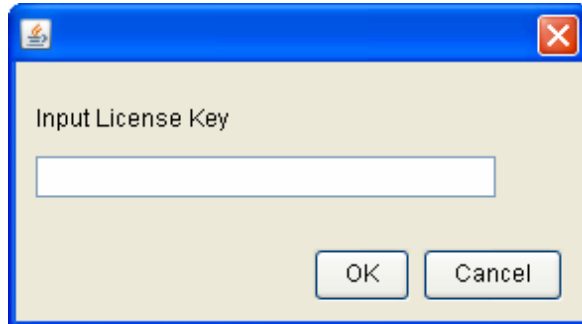
1. 选择 **帮助** → **软件许可证**。
2. 点击 **增加许可证**。



3. 找到软件外包装上面的授权许可标签，如下所示:

MXview Upgrade-50
Key: XXXXXXXXXXXXXXXXXXXXXXXXXXXX

4. 输入新授权的密钥，点击 **确认**。



5. 重启 MXview 客户端。

为何事件显示延迟？

请确保您已经正确配置交换机的 SNMP trap 服务器为 MXview 服务器 IP 地址，这样才能实时地响应事件。否则，MXview 将定期采集信息。

我为何不能找到我网络上的所有设备？

请进行如下检查：

1. 确保您的授权支持足够的节点数量。
2. 确保您的扫描范围包括网络上的所有设备 IP 地址。
3. 确保您的交换机没有处于保护模式，因为交换机可能将 MXview 数据包当做广播风暴的一部分。

为何一个设备具有多个图标？

MXview 通过 IP 地址来识别设备。因此，如果同一扫描范围内某一设备拥有多个 IP 地址，该设备就会被当作多个设备进行图标显示。

删除 MXview 中的一个链结会造成真实网络的断开吗？

不会。拓扑图显示真实网络的状态，但不能用于配置真实网络。

当一个环状网络链结被断开，为何冗余链结需要几秒钟的时间才能在拓扑图上变成实线显示？

MXview 采用轮询来决定冗余链结是否变成非冗余。因此，拓扑图要直到所有网络设备被轮询才会刷新。此外，由于需要一定的时间来传输网络状态到 MXview 服务器，所以至少需要比传输时间更长的时间才能更新拓扑图。

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License (zlib)

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

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