

# **Moxa Device Manager 2.3 User's Manual**

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# Moxa Device Manager 2.3 User's Manual

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# 1

## Introduction

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Moxa Device Manager (referred to in this manual as MDM) is an easy-to-use remote management tool for managing Moxa's ready-to-run embedded computers over the Internet. Moxa's embedded computers make excellent front-end computers for onsite data acquisition and industrial control applications, but they are often located at a remote site. MDM was designed to make it easy for system administrators to manage their remote embedded computers.

The following topics are covered in this chapter:

- **Overview**
- **Differences between MDM 2.3 and MDM 2.1**

## Overview

Moxa Device Manager (MDM for short) is an easy-to-use remote management tool for managing Moxa's ready-to-run embedded computers over the Internet. Moxa's embedded computers make excellent front-end computers at remote sites for on-site data collection and industrial control applications. MDM is designed to make it easy for system administrators to manage their remote embedded computers. One of the key benefits of MDM is that management tasks, such as configuring the network, managing and/or transmitting text and binary files, and monitoring and controlling processes, can be handled easily using a Windows-based user interface. In addition, MDM can be used to manage different models of embedded computer, and embedded computers that use different operating systems, all from one centrally located computer. As long as the individual embedded computers are preinstalled with an MDM agent, they can be recognized and managed by the unified MDM tool from your PC. These features help ensure that MDM gives system integrators an efficient tool for handling all remote devices from one computer.

## Differences between MDM 2.3 and MDM 2.1

1. MDM 2.3 combines the MDM Agent and MDM Gateway as one program. Users do not need to install MDM Agent and MDM Gateway separately.
2. MDM 2.3 allows users to customize the MDM Tool features based on dynamic loading for different categories. By modularizing the different DLL files, users can easily and conveniently add or remove the features on the tool bar.

**NOTE** In this manual, Moxa's embedded computers are referred to as "computer," "embedded computer," or simply as "device."

# 2

## Installation

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The following topics are covered in this chapter:

- ❑ **Installation**
- ❑ **MDM Architectures**
- ❑ **Installing MDM Agent and Gateway**
  - Installing MDM Agent and Gateway on Linux Models
  - Installing MDM Agent and Gateway on Windows XPE Models
  - Installing MDM Agent and Gateway on Windows CE Models
- ❑ **Uninstalling MDM Agent and Gateway**
  - Uninstalling MDM Agent and Gateway on Linux Models
  - Uninstalling MDM Agent and Gateway on Windows XPE Models
  - Uninstalling MDM Agent and Gateway on Windows CE Models
- ❑ **Installing MDM Tool**
- ❑ **Uninstalling MDM Tool**

# Installation

To use MDM to remotely monitor and manage Moxa’s embedded computers, you need to install the following software applications in different locations:

**MDM Agent:** This program must be installed on embedded computers at remote sites so that they can be easily monitored and managed remotely.

**MDM Gateway:** This program must be installed on the computer(s) used as the MDM Gateway. It serves as a portal between two programs, allowing them to share information by communicating between protocols on the same computer or between computers. MDM Gateway can be used to connect to many embedded computers at remote sites, so that a centralized management architecture can be established.

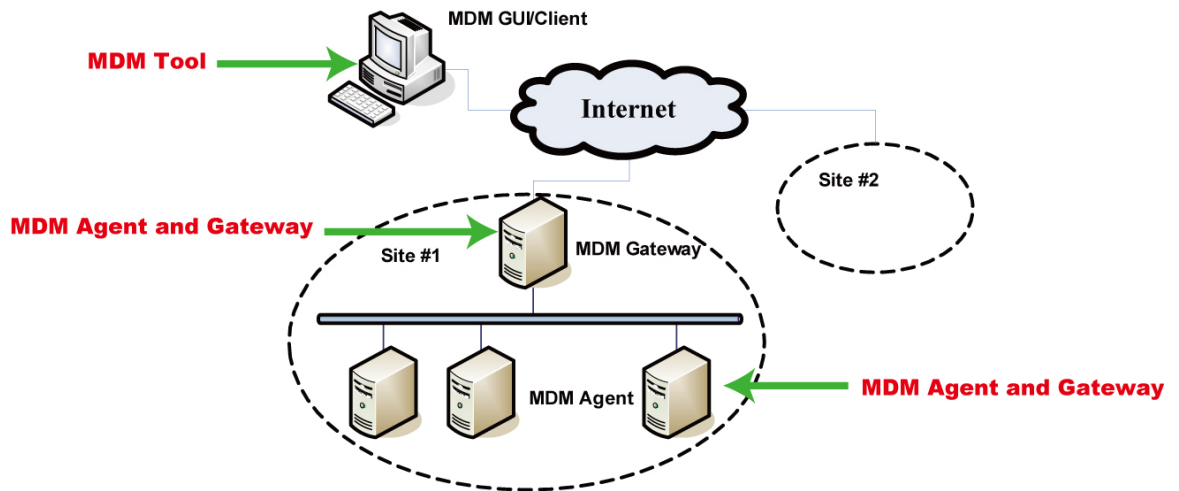
However, please note that both MDM Agent and MDM Gateway programs have been combined as MDM Agent and Gateway. Users only need to install one program on the computers that are used as MDM Agent or MDM Gateway.

**MDM Tool:** This program is installed on the computer (usually a PC or a laptop) in the control center. It allows users to connect to the MDM Gateway to monitor and manage the remote embedded computers.

## MDM Architectures

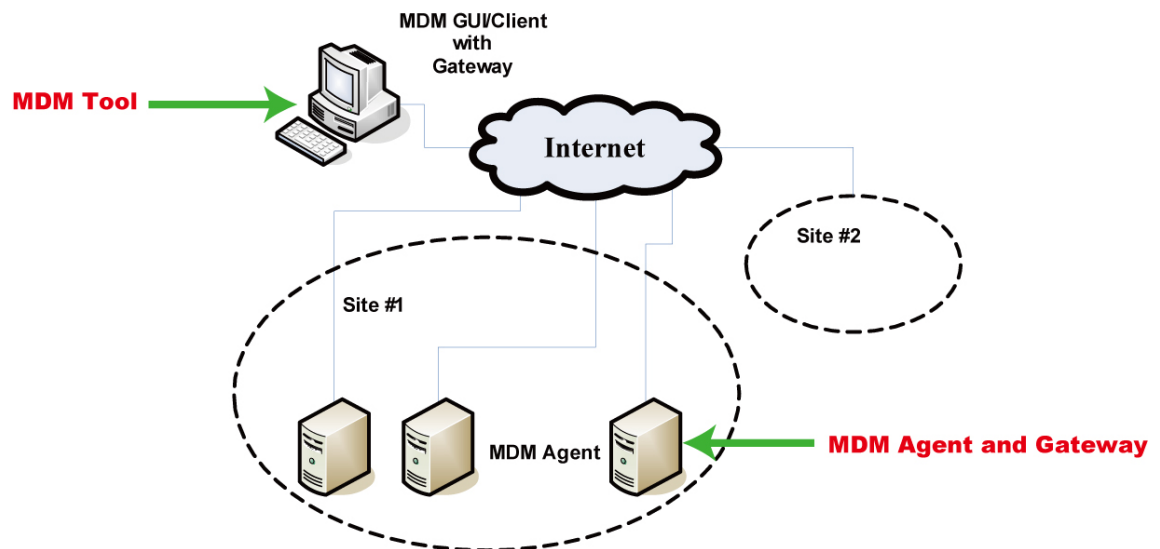
Users can establish the network structure in different ways.

1. **Both the MDM Gateway and devices are located at the remote site.** In this case, you may set up a remote computer as the MDM Gateway. This computer needs to install the MDM Agent and Gateway, but only the MDM Gateway function needs to be activated. In addition, the MDM Agent and Gateway need to be installed on the remote devices, and the MDM Agent function needs to be activated.



With this structure, you may also assign a remote device to be the MDM Gateway. Install the MDM Agent and Gateway on this device, and activate the Gateway and Agent functions. Because of this, the remote computer working as the MDM Gateway can be omitted.

2. **The local computer is used as the MDM Gateway and the computer used to control the remote devices.** In this case, you only need to install MDM Tool on this computer. When the MDM Tool program is launched, both MDM Tool and MDM Gateway will be activated. You will need to install the MDM Agent and Gateway on the remote devices and activate the MDM Agent functions.



However, this architecture requires specific network configurations to allow MDM Tool to monitor the remote devices.

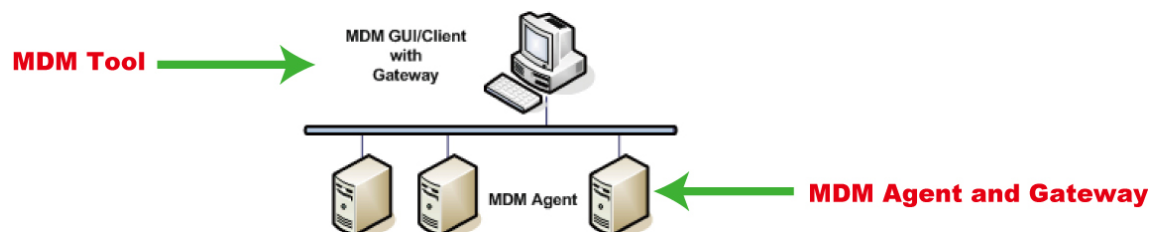
Create a file named **config** on each remote device and provide the IP address of the Gateway.

**gateway-hosts = tcp: IP Address: 16888**

For examples, the parameter could be:

**gateway-hosts = tcp: 201.63.45.2: 16888**

3. **The third architecture is constructed within the Intranet network.** You need to install the MDM Tool on the local computer, and both the MDM Tool program and MDM Gateway function will be activated once you launch the MDM Tool. You also need to install MDM Agent and Gateway on the local devices and the MDM Agent function must be activated.



## Installing MDM Agent and Gateway

MDM Agent and Gateway should be installed on the local or remote computers or devices that you would like to monitor and manage. Separate instructions are given below for different operating systems.

### Installing MDM Agent and Gateway on Linux Models

1. Download the MDM Agent and Gateway for the model of embedded computer you are using from Moxa's website.
2. Use FTP to upload the files to the embedded computer's **/tmp** directory.
3. Log in to the remote embedded computer as root.
4. Next, type the following commands:

```
cd /home
```

```
tar xvzf /tmp/MDM-DA66X-LX.tar.gz
```

**Note: The filename of the MDM Agent and Gateway installation file includes the product model name.**



5. View the file list for directory `/home/mdm`. The files you should see are described below:

File Name	Description
mdm-main	MDM Agent and Gateway executable
libmdm.so	MDM Library
mdm_start.sh	MDM Agent and Gateway start script
mdm_stop.sh	MDM Agent and Gateway stop script

6. How to start MDM Agent and Gateway:

- a. Type the following command to start MDM Agent or Gateway manually:

**/home/mdm/mdm\_start.sh [options]**

**Options:** **-a:** Start MDM Agent (default)

**-g:** Start MDM Gateway

**-g -a:** Start MDM Agent and Gateway

Note that "default gateway" should not be empty, and if you want to start gateway on Linux, remember to add or modify the IP of the Moxa domain:

192.168.30.127 Moxa

- b. You can also set up your embedded computer to launch MDM Agent automatically with the MDM Tool's AutoLaunch function. Alternatively, you can add the command `/home/mdm/mdm_start.sh` manually to the file `rc.local`.
7. How to stop MDM Agent and Gateway:
- a. Type the following command to stop MDM Agent and Gateway manually:

**/home/mdm/mdm\_stop.sh**

- b. You may also shut down or power off the computer to stop MDM Agent and Gateway.

## Installing MDM Agent and Gateway on Windows XPE Models

- Download MDM Agent and Gateway from Moxa's website for the model of embedded computer you are using.
- Unzip the archive first, and then use FTP to upload the file to the embedded computer.
- Log in to the embedded computer as Administrator.
- Unzip **MDM-XPe.zip** to the folder of your choice (e.g., **C:\**)
  - Open a Command window
  - Type: **cd C:\MDM**
  - Execute **Autolaunch.exe install** to install **AutoLaunch service**.
  - Start AutoLaunch, which is in the following location:  
**Start menu → Control Panel → Administrative Tools → Services → Auto Launch → Start Service**
- View the file list in folder **C:\MDM**. The files you should see are described below:

File	Description
AutoLaunch.exe	Auto-launch service
mdm-main.exe	MDM Agent and Gateway executable
mdm.dll	MDM Library

6. How to start MDM Agent and Gateway:

- a. Open a Command window

- b. Type **cd c:/mdm**

- c. Execute **mdm-main.exe [options]**

**Options:** **-a:** Start MDM Agent (default)

**-g:** Start MDM Gateway

**-g -a:** Start MDM Agent and Gateway

- d. You can also set up your embedded computer to launch MDM Agent and/or Gateway automatically with the MDM Tool's AutoLaunch function.

7. How to stop MDM Agent and Gateway:

- a. Use Task Manager to stop `mdm-main.exe` manually.

- b. You may also shut down or power off the computer to stop MDM Agent and/or Gateway.

## Installing MDM Agent and Gateway on Windows CE Models

1. Download the MDM Agent for the model of embedded computer you are using from Moxa's website.
2. Unzip the archive first, and then use FTP to upload the file to the embedded computer.
3. Log in to the embedded computer as Administrator.
4. Unzip **MDM-DA66X-CE.zip** to the **\NORFlash** directory.
5. View the file list in the **\NORFlash\mdm** directory and verify that the file **mdm-main.exe** is present.
6. How to start MDM Agent and Gateway
  - a. Open a Command window.
  - b. Type **cd \NORFlash\mdm**
  - c. Execute **mdm-main.exe [options]**  
Options:
    - a: Start MDM Agent (default)
    - g: Start MDM Gateway
    - g -a: Start MDM Agent and Gateway
  - d. You can also set up your embedded computer to launch MDM Agent automatically with the MDM Tool's **AutoLaunch** function.
7. How to stop MDM Agent and Gateway
  - a. Use Web Manager to stop **mdm-main.exe** manually.
  - b. You may also shut down or power off the computer to stop MDM Agent and/or Gateway

## Uninstalling MDM Agent and Gateway

### Uninstalling MDM Agent and Gateway on Linux Models

1. Log in to the remote embedded computer as root.
2. Stop MDM Agent and Gateway
3. Issue the following command: **rm -r /home/mdm.**

### Uninstalling MDM Agent and Gateway on Windows XPE Models

1. Stop **mdm-main.exe**.
2. Stop AutoLaunch.exe service by clicking:  
**Start menu → Control Panel → Administrative Tools → Services → Auto Launch → stop**
3. Execute the command **C:\MDM\AutoLaunch.exe uninstall** to uninstall the Auto Launch service.
4. Remove MDM Agent and Gateway from the folder **C:\MDM**.

### Uninstalling MDM Agent and Gateway on Windows CE Models

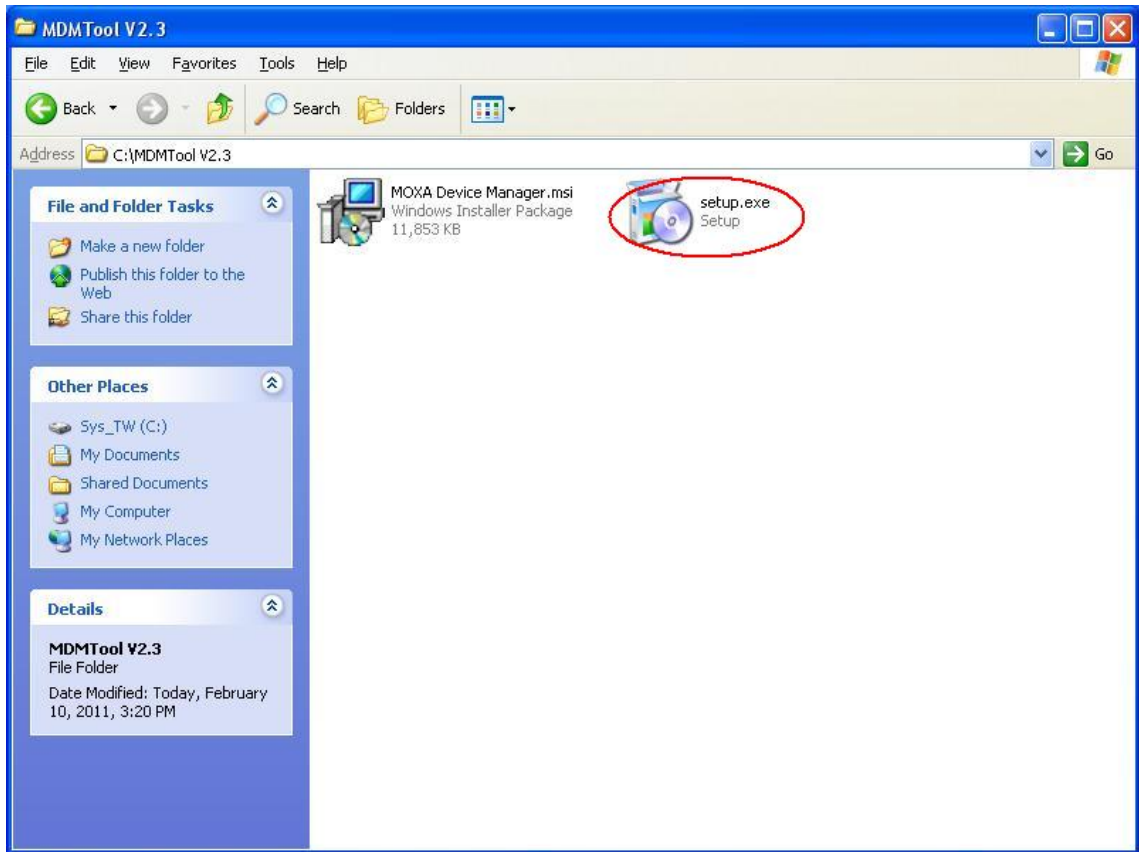
1. Stop **mdm-main.exe**.
2. Remove MDM Agent and Gateway from the folder **\NORFlash\mdm**.

## Installing MDM Tool

MDM Tool should be installed on the computers at the control center. Once installed, the computers at the local site can be used to connect the embedded computers at the remote site over the Internet. MDM Tool can be downloaded from Moxa's website.

The files will be packaged in zip format. Unzip the files and then run **setup.exe** or **Moxa Device Manager.msi** if your computer has been pre-installed with Microsoft Installer.

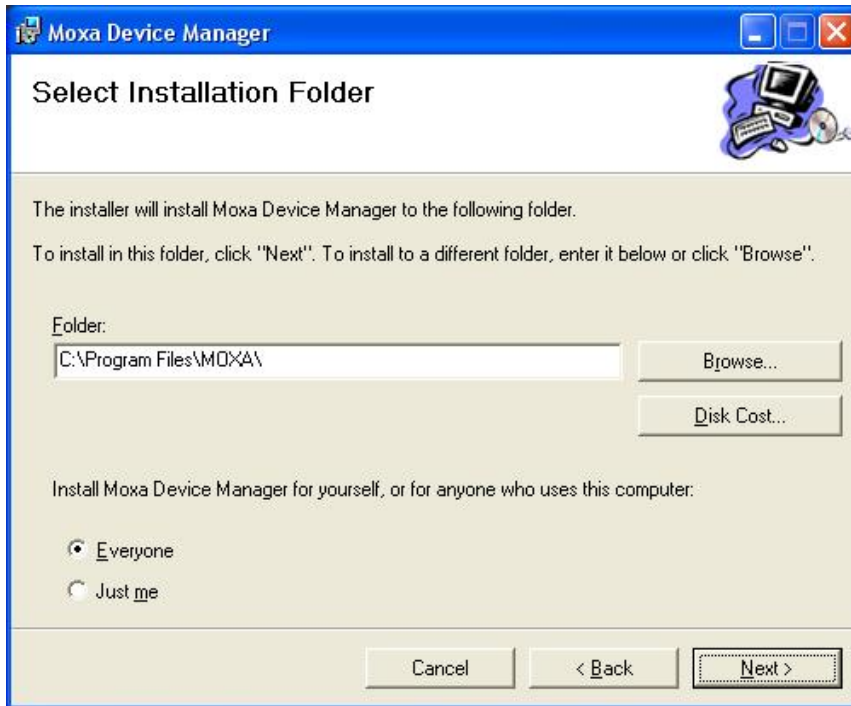
1. Double click **setup.exe** to start the installation procedure.



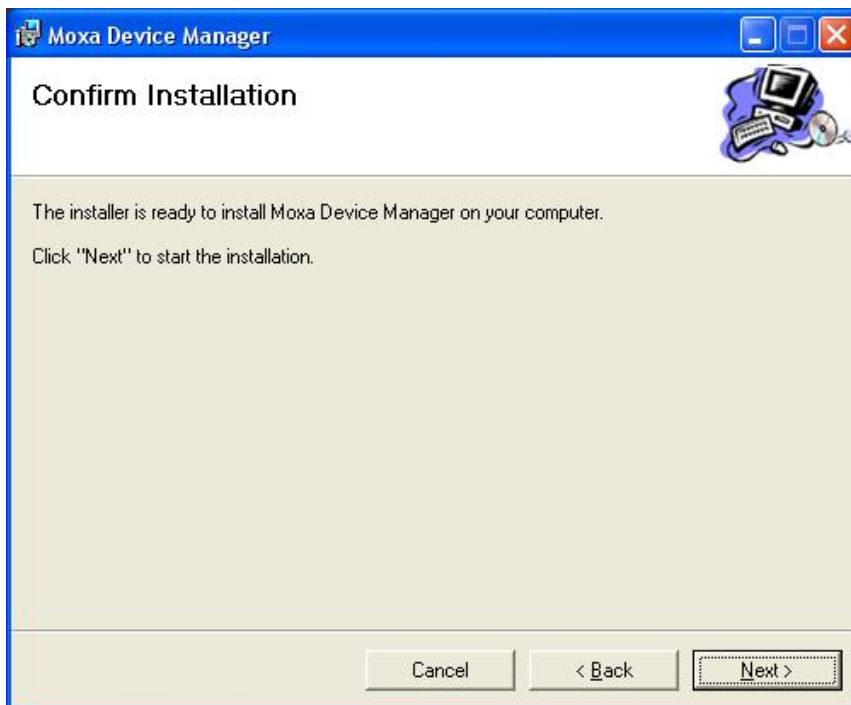
2. Click **Next** to continue.



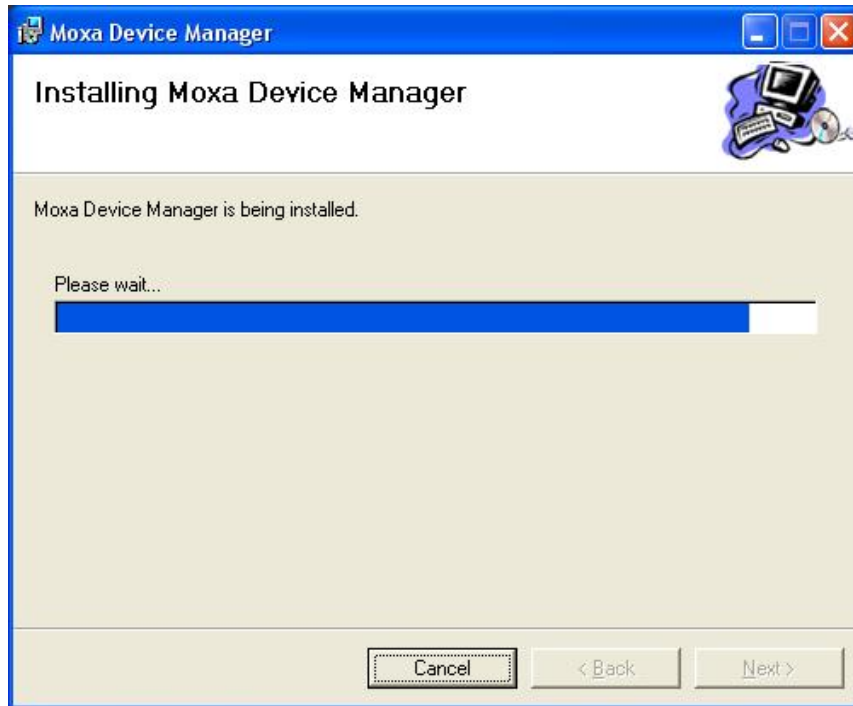
- Next, select **Browse** if you would like MDM to be installed in the different folder. Click **Next** to continue.



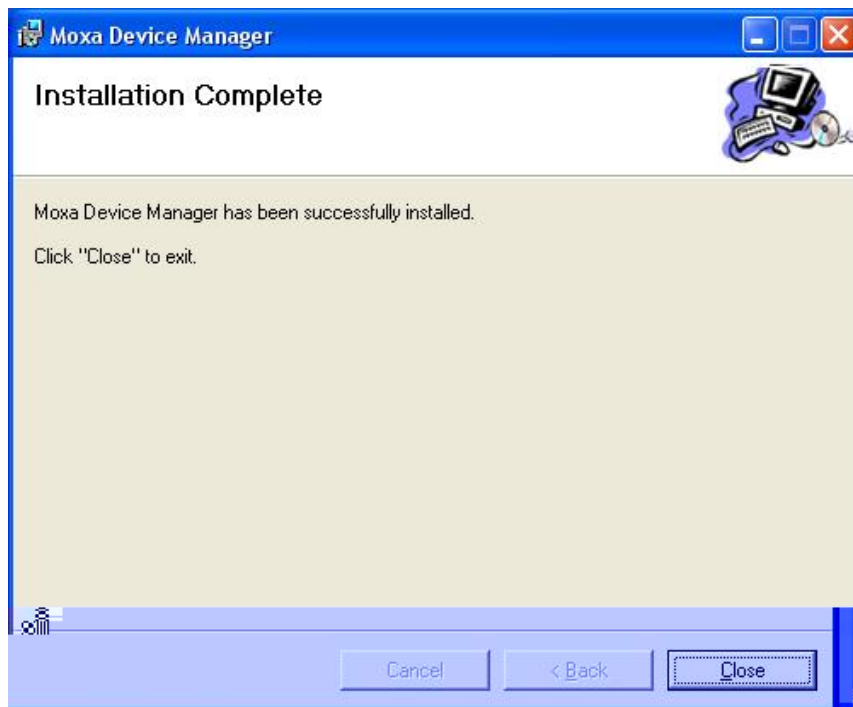
- Click **Next** to confirm the installation.



5. Wait until the installation has finished.



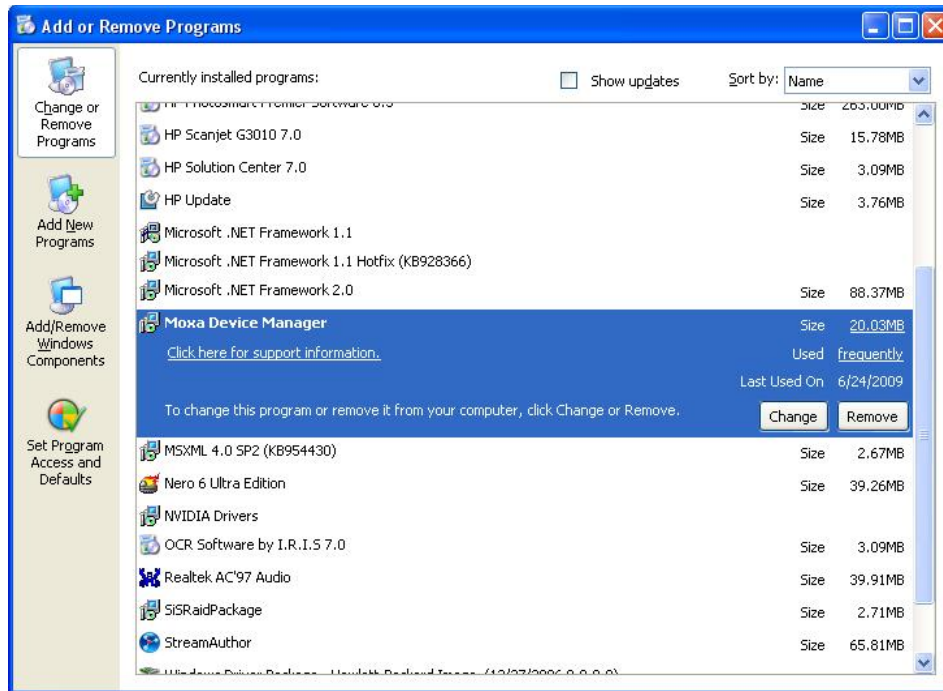
6. Click **Close** to complete the installation procedure.



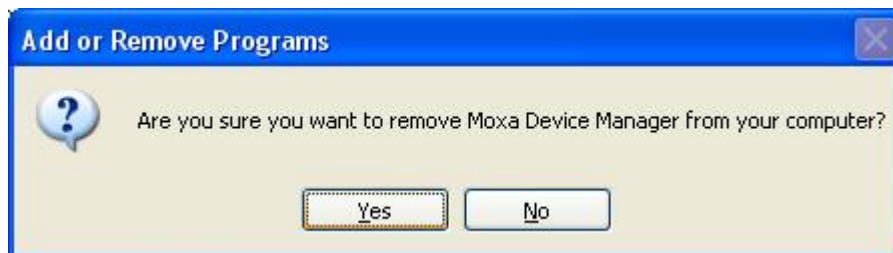
# Uninstalling MDM Tool

Follow these instructions to uninstall MDM Tool.

1. Select **Add or Remove Programs** from **Start** → **Settings** → **Control Panel**.
2. Select **Moxa Device Manager** from the program list, and then click **Remove** to continue.



3. Click **Yes** to start removing MDM Tool from your computer.



## MDM Operation

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This chapter describes how to use MDM Tool to monitor and manage Moxa's embedded computers at the remote sites over the Internet.

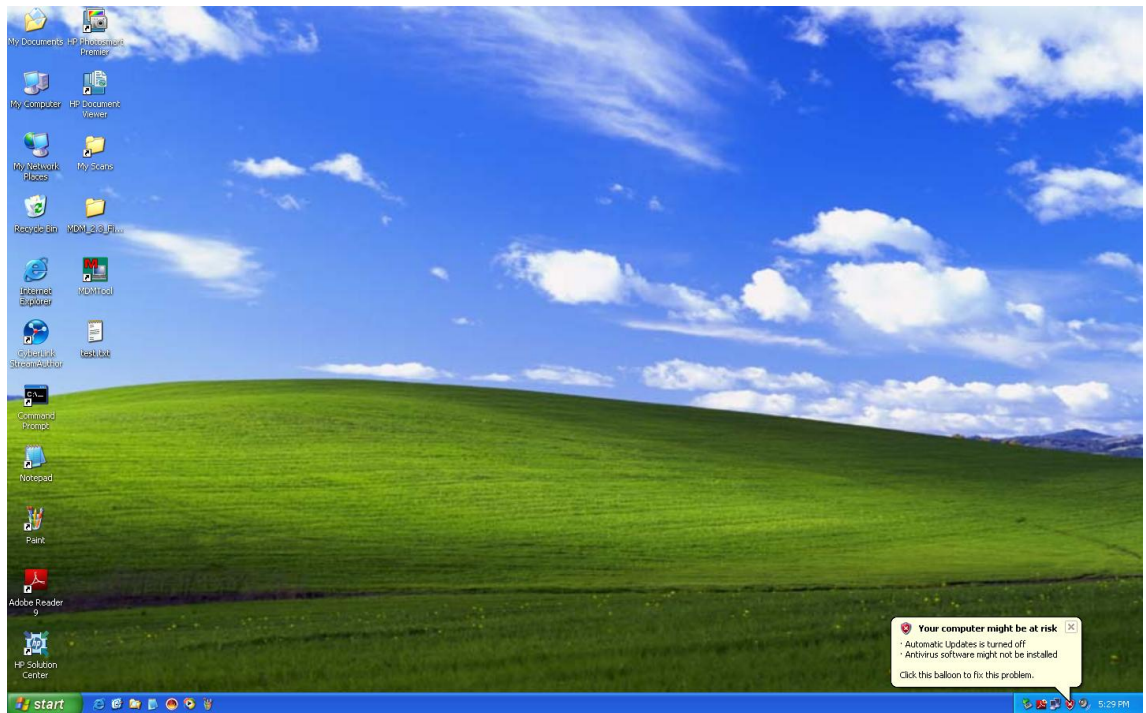
The following topics are covered in this chapter:

- ❑ **Launching MDM Tool**
- ❑ **Connecting to MDM Gateway**

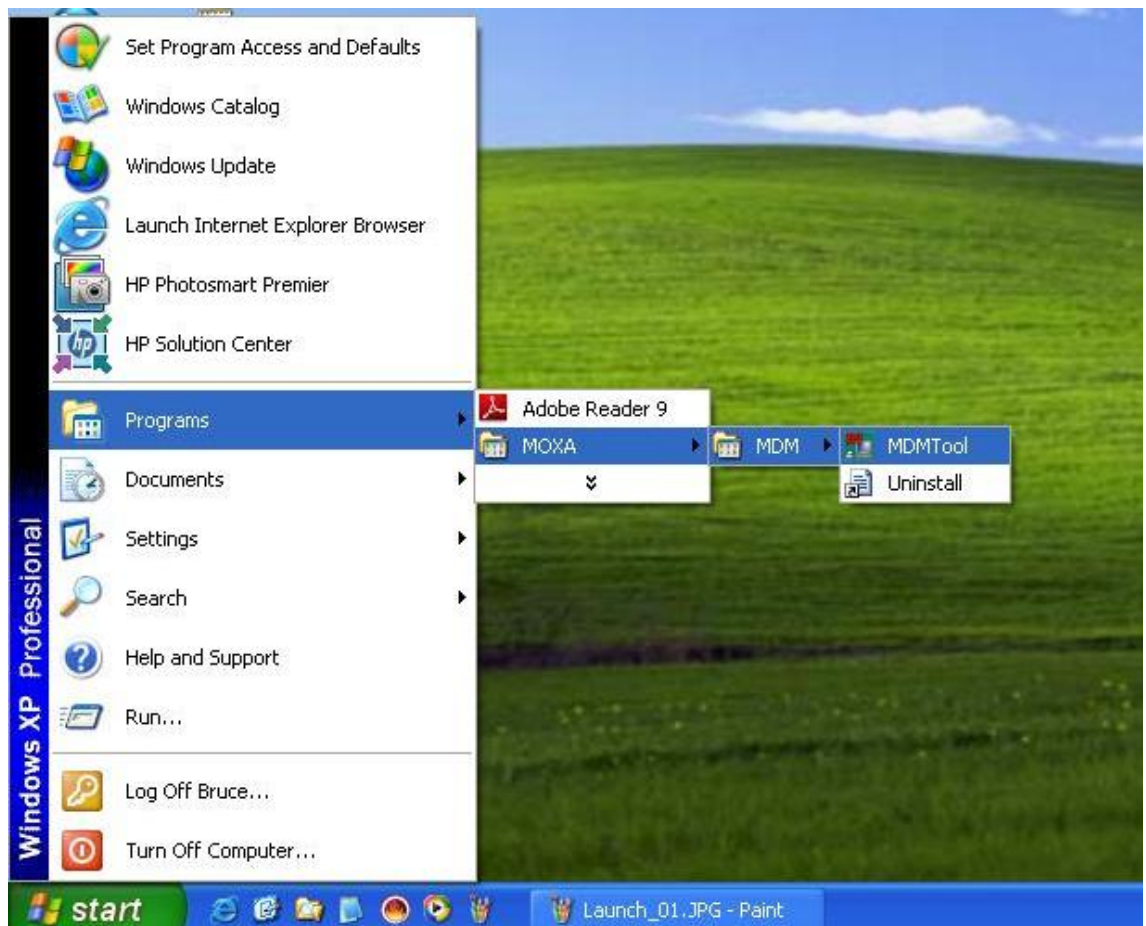
# Launching MDM Tool

There are two ways to launch MDM Tool.

1. Double-click the MDM Tool icon on your desktop.

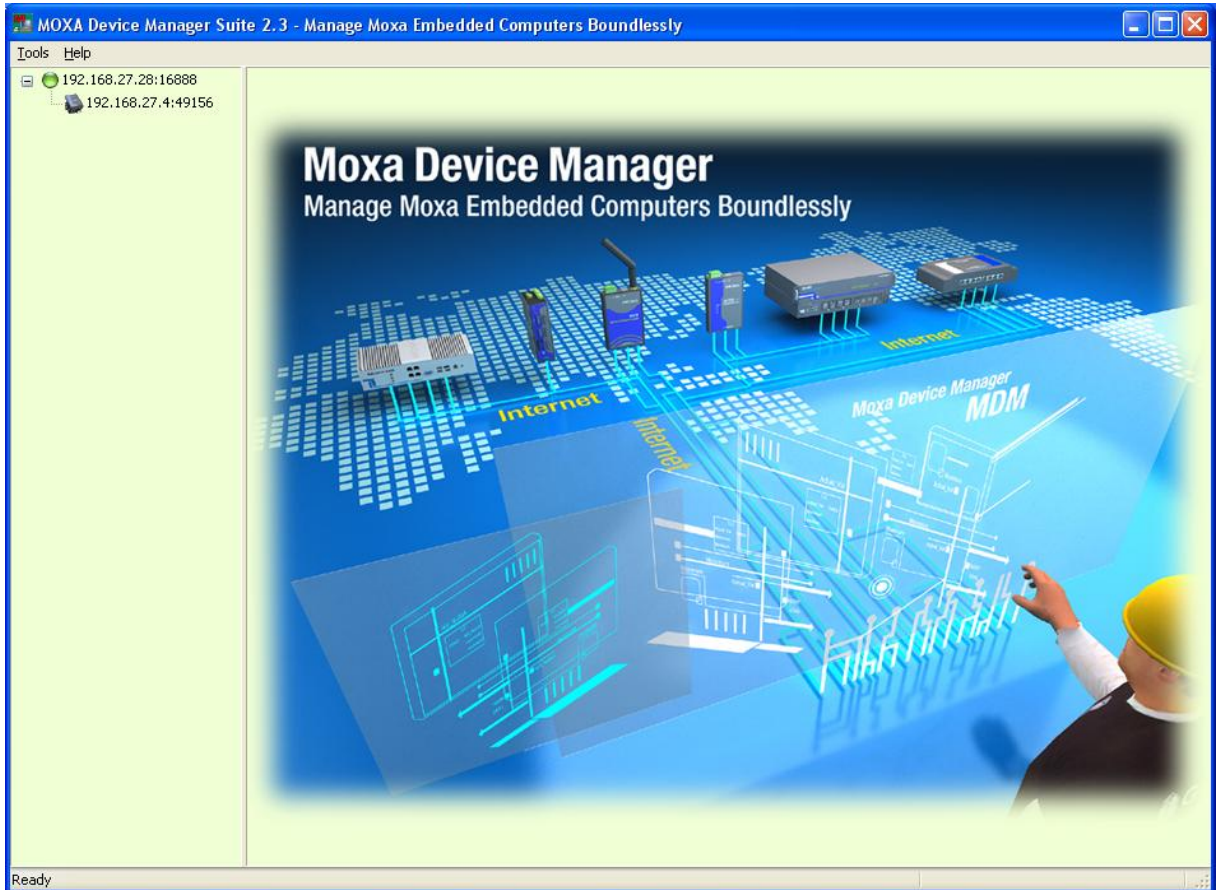


2. Click **MDM Tool** from **Start** → **All Programs** → **MOXA Device Manager**.



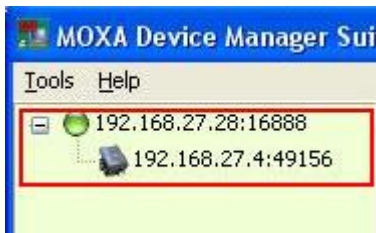


In either case, once launched, the MDM Tool interface will appear.



## Connecting to MDM Gateway

When you launch the MDM Tool on your computer, it will try to connect to the MDM Gateway automatically. Wait until you find the MDM Gateway on the MDM Tool.



# Introduction to the MDM Tool Interface

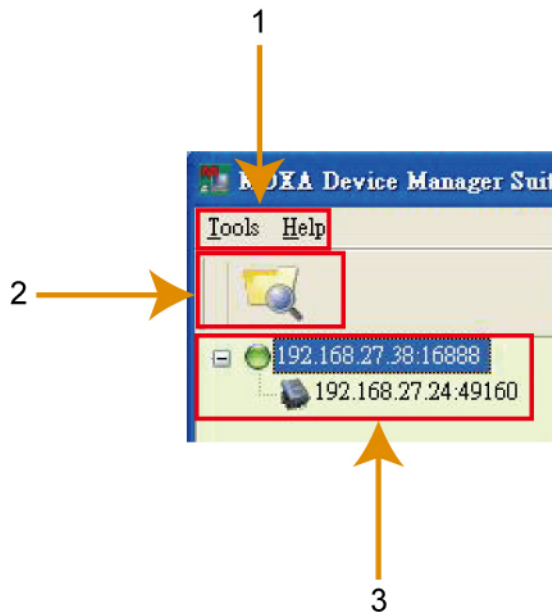
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The following topics are covered in this chapter:

- ❑ **MDM Gateway**
- ❑ **For the Device**
- ❑ **Menu Bar Introduction**
  - Tools
  - Help
- ❑ **Toolbar Functions**
  - File Manager
  - Process Control
  - Network Setup
  - Autolaunch
  - Time Setup
  - Reboot

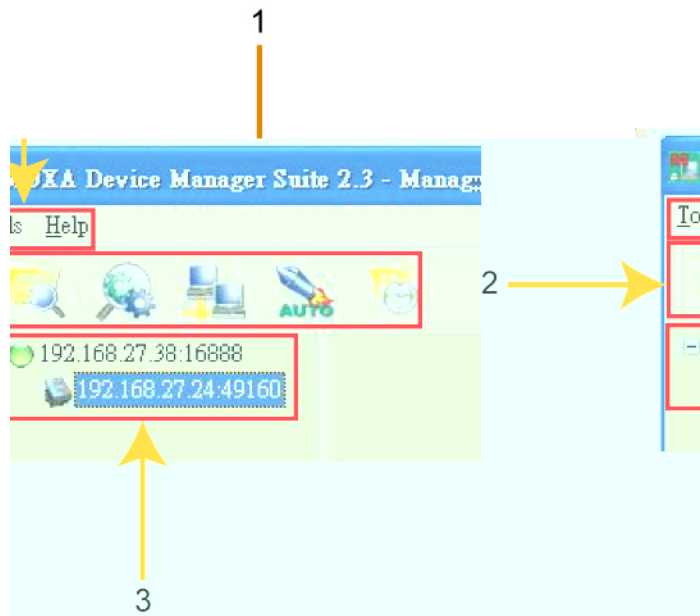
# MDM Gateway

When you successfully connect to MDM Gateway, click the Gateway to start the MDM Gateway interface.



1. **Menu Bar:** Includes the **Tools** and **Help** menus.
2. **Toolbar:** The icon shown is **File Manager**. You may also right-click the Gateway and then select File Manager.
3. **Gateway and Device Tree:** In this area, you can view the Gateway Server and the currently active computers under this Gateway. Both gateway and IP address can be shown here.

# For the Device



1. **Menu Bar:** Includes the **Tools** and **Help** menus.
2. **Toolbar:** The icons shown, listed from left to right, are **File Manager, Process Control, Network Setup, Autolaunch and Time Setup**. Note that if right-click a device, a list of function options will appear. Each function will be introduced in the following sections.
3. **Gateway and Device Tree:** In this area, you can view the Gateway Server and the currently active computers under this Gateway. Both gateway and IP address can be shown here.

# Menu Bar Introduction

This section briefly introduces the options under the **Tools** and **Help** menus.

## Tools



**Gateway Manager:** Enables users to manage the gateway information and/or connect to the MDM Gateway Server.

Although MDM Gateway will connect automatically, you can use **Gateway Manager** to manually connect to other Gateway Servers. With MDM2.3, once the MDM Tool has been installed, your PC will automatically connect to the gateway. However, users can still connect to other gateways manually.

1. **Gateway Manager:** Right-click the Gateway, and then select **Gateway Manager**.



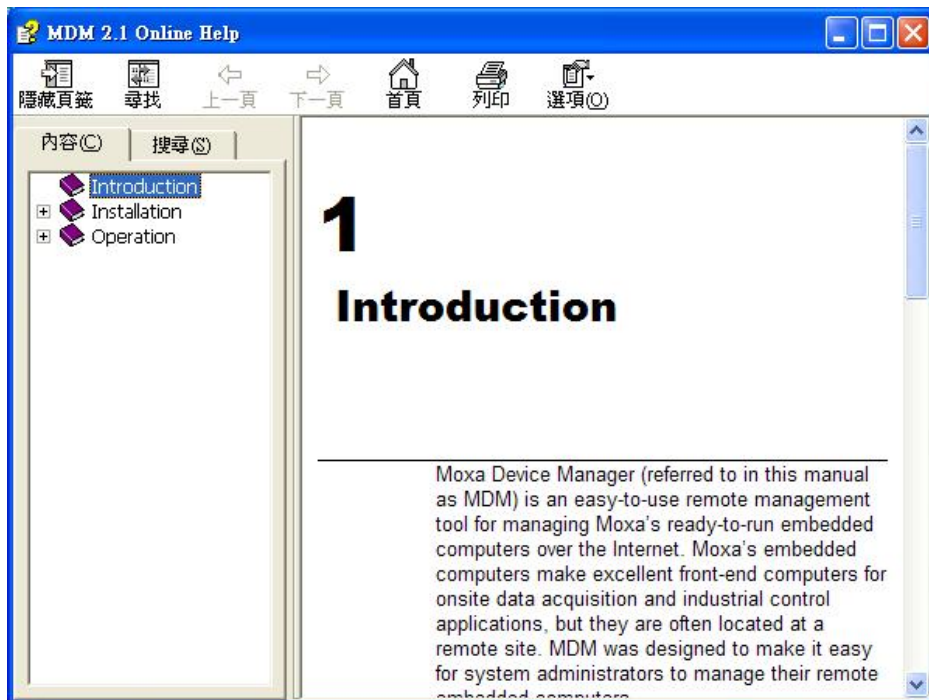
2. Type in the IP address, port number (the default is 16888), and the name of the Gateway Server. Click **Save** to continue; click **OK** to connect.

**Exit:** Enables users to terminate the MDM program

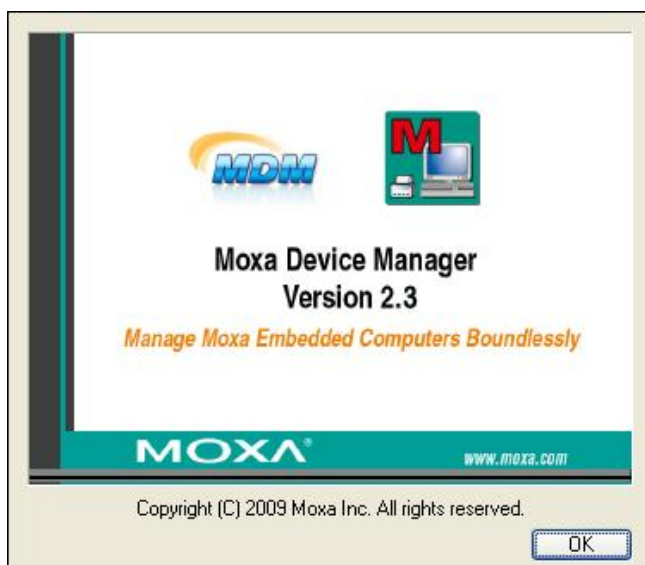
# Help



**Online Guide:** Use the Online Guide to view detailed information about using MDM Tool. You may either expand the table of contents in the left pain, or click the Search tab to search for information about a particular term or topic.



**About MDM Tool:** The MDM Tool version number will appear in the MDM window.

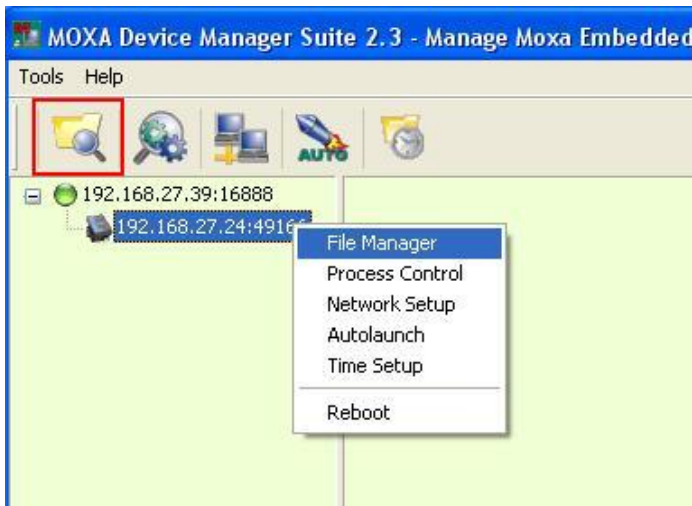


# Toolbar Functions

The icons that appear on the toolbar, listed from left to right, are **File Manager, Process Control, Network Setup, Autolaunch and Time Setup**. See the following sections for detailed descriptions.

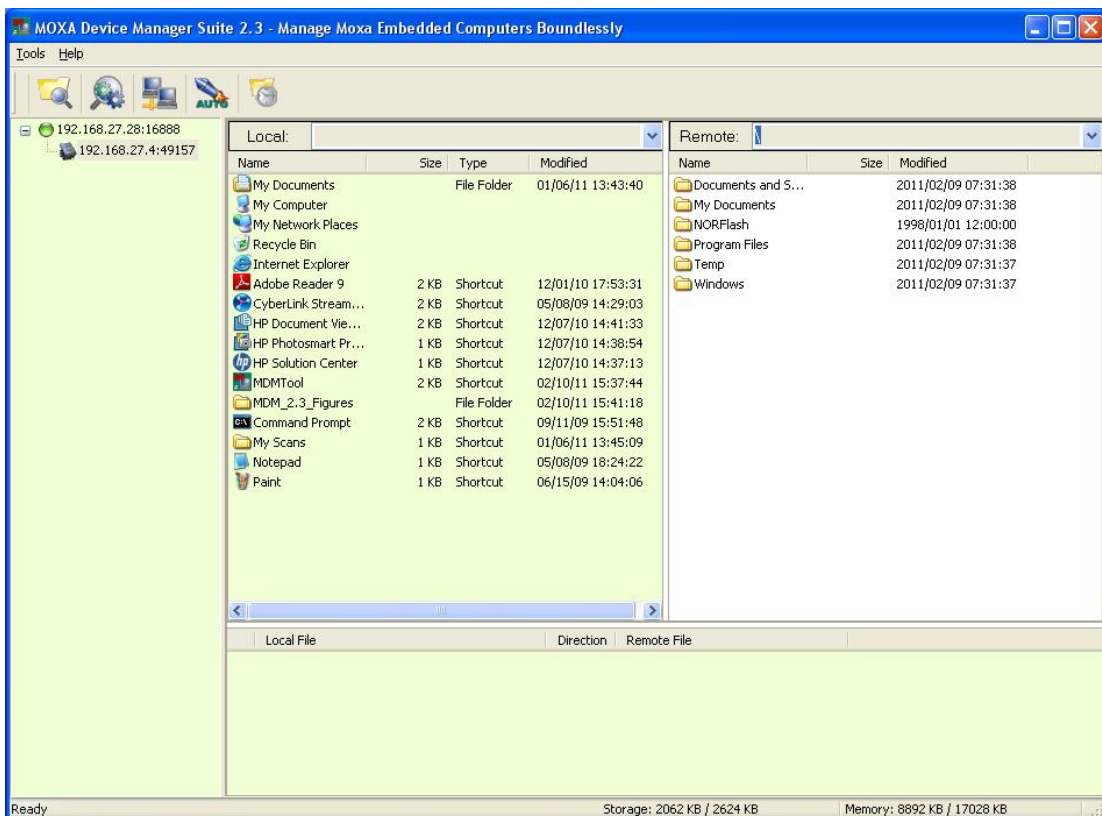
## File Manager

This function allows users to perform file management for the device and the gateway. Right-click the device or gateway and select File Manager, or click the icon on the tool bar to continue.



You may perform file management on both the device/gateway or computer. The left frame is the file list for the local computer, while the right one is for the remote device or gateway.

Note that the file manager on gateway is supported by default. This means that your file system will be shared to any client or agent. To disable file manager on your local gateway, remove the dll file in C:\Program Files\MOXA\MDM\V2\dll\fmngr.dll.



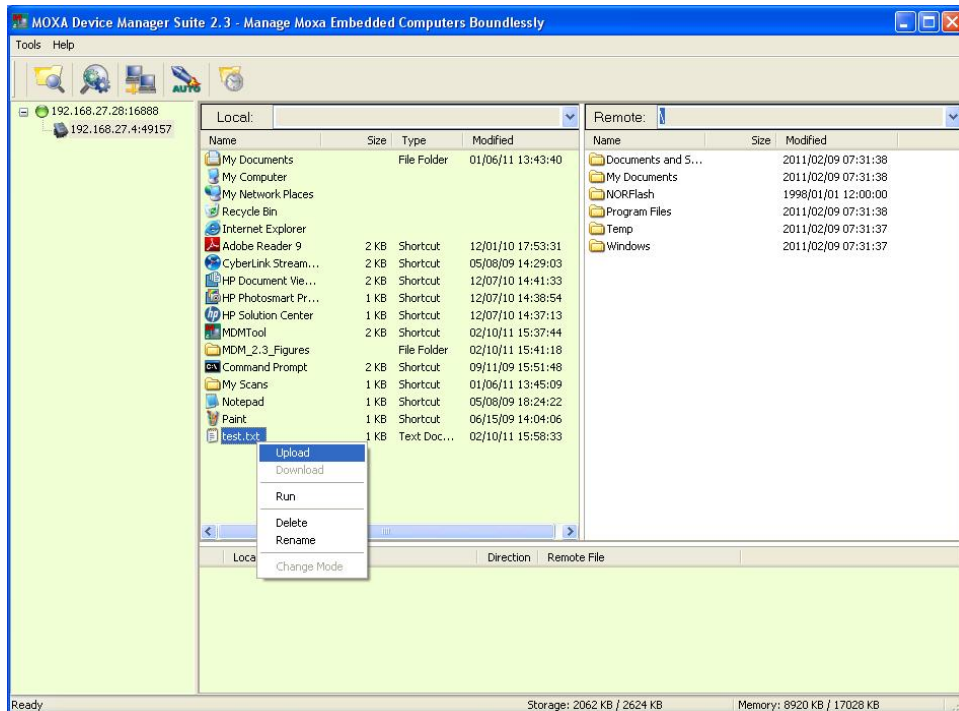
Select and right-click the file on the local computer; you may perform the following functions:

**Upload:** Upload the selected file to the remote device or gateway.

**Run:** Perform the program on the local computer (for executable files only).

**Delete:** Delete the selected file from the local computer.

**Rename:** Rename the selected file on the local computer.



Select and right-click the file on the remote device; you may perform the following functions:

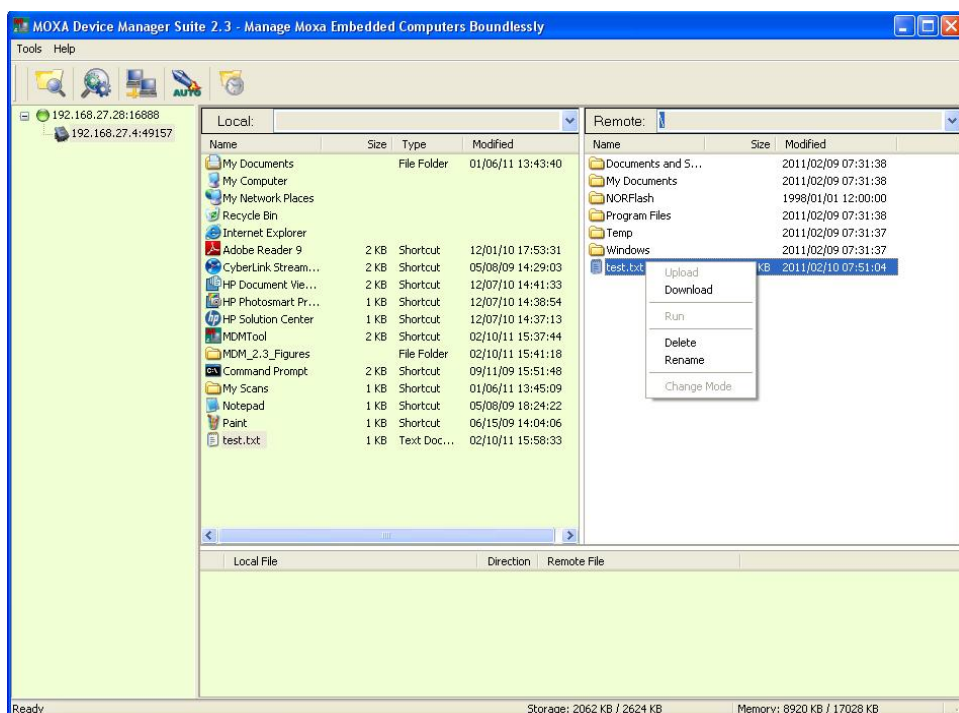
**Download:** Download the selected file to the local computer.

**Run:** Perform the program on the remote device or gateway (for executable files only).

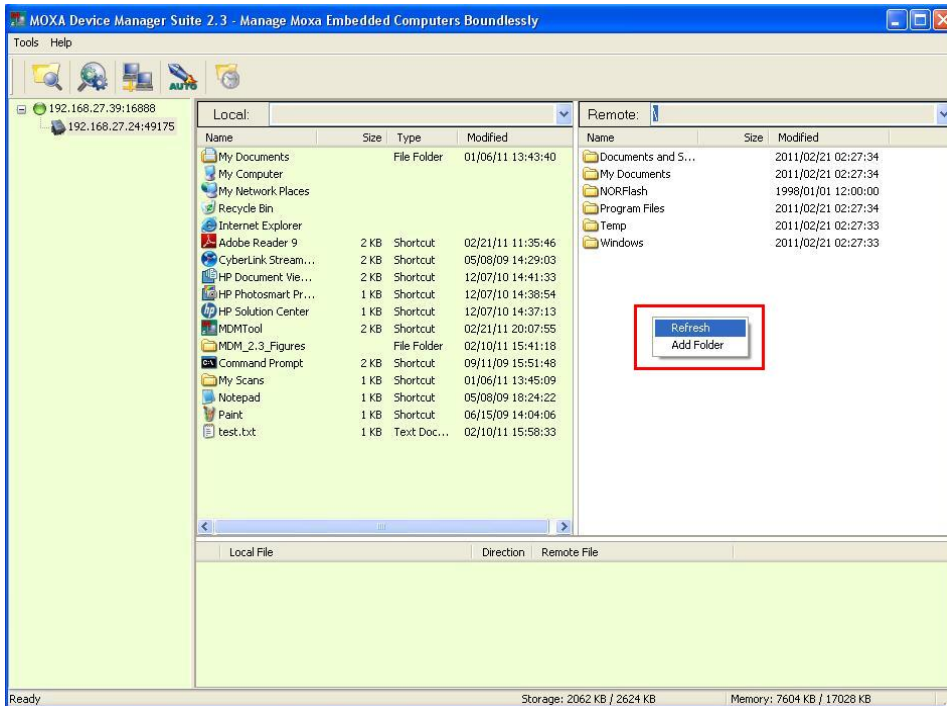
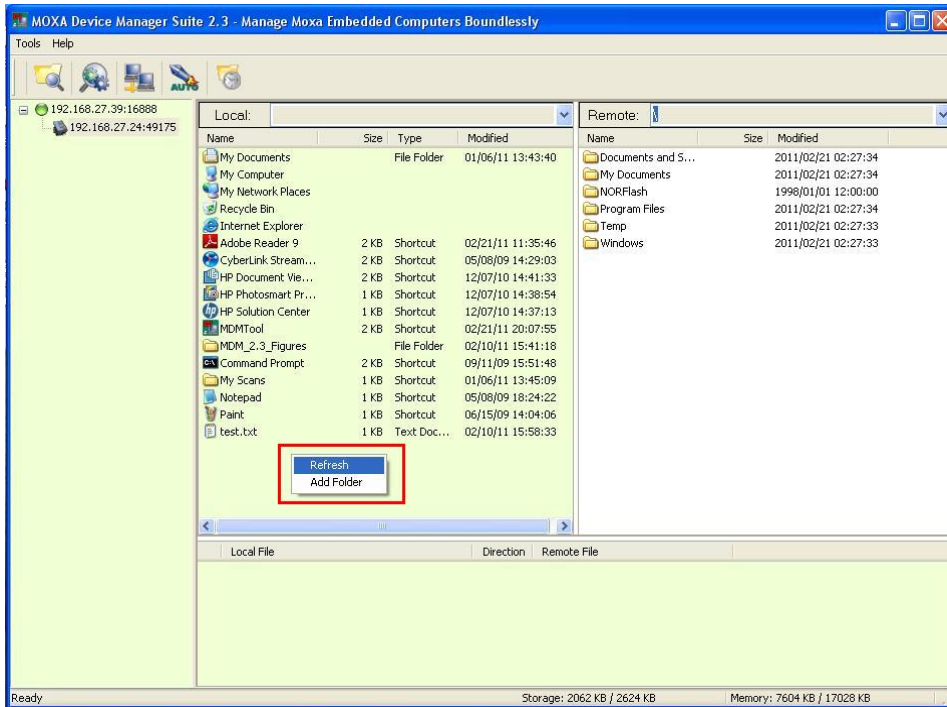
**Delete:** Delete the selected file on the remote device or gateway.

**Rename:** Rename the selected file on remote device or gateway.

**Change Mode:** Change the permission of the selected file on the remote device (for Linux models only).



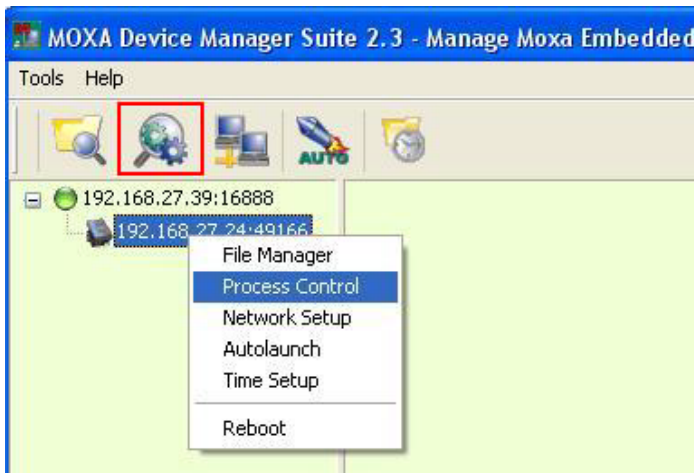
You may also refresh or add new folders on both the local computer and the remote device or gateway. Right-click any place in the left or right frame, and then select **Refresh** to refresh the folder, or **Add Folder** to add an additional folder on the local computer or the remote device or gateway.



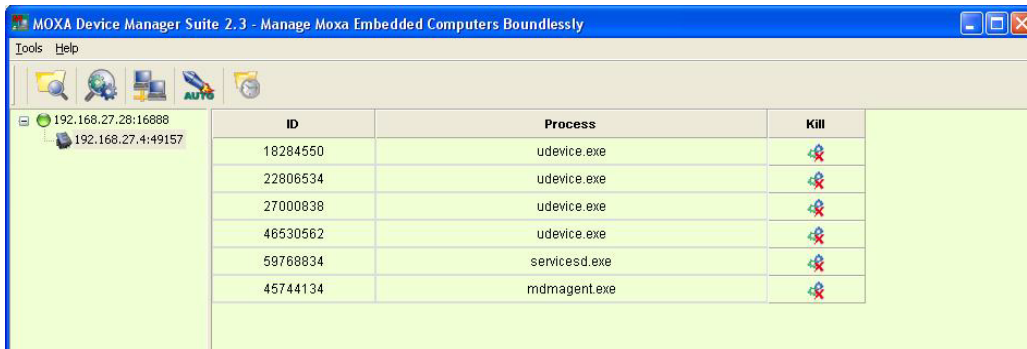


## Process Control

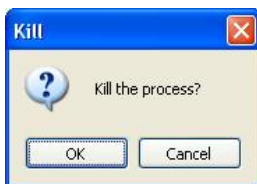
This function allows users to control the process that runs on the remote device. Right-click the device and select **Process Control**, or click the icon on the tool bar to continue.



You may view all of the programs that are running on the remote device.



To kill a program, click the **Kill** button in the last column of the list.



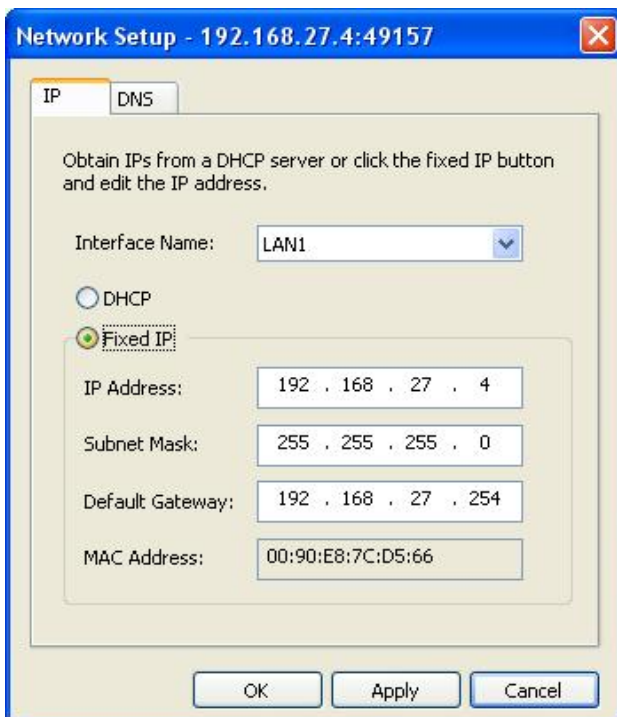
Click **OK** to kill the program.

## Network Setup

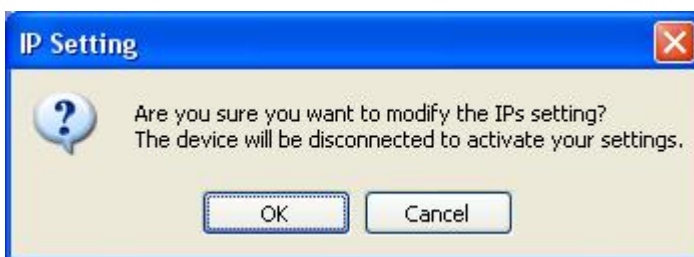
This function allows users to configure the network setup of the remote computer. Right-click the device and select **Network Setup**, or click the icon on the toolbar to continue.



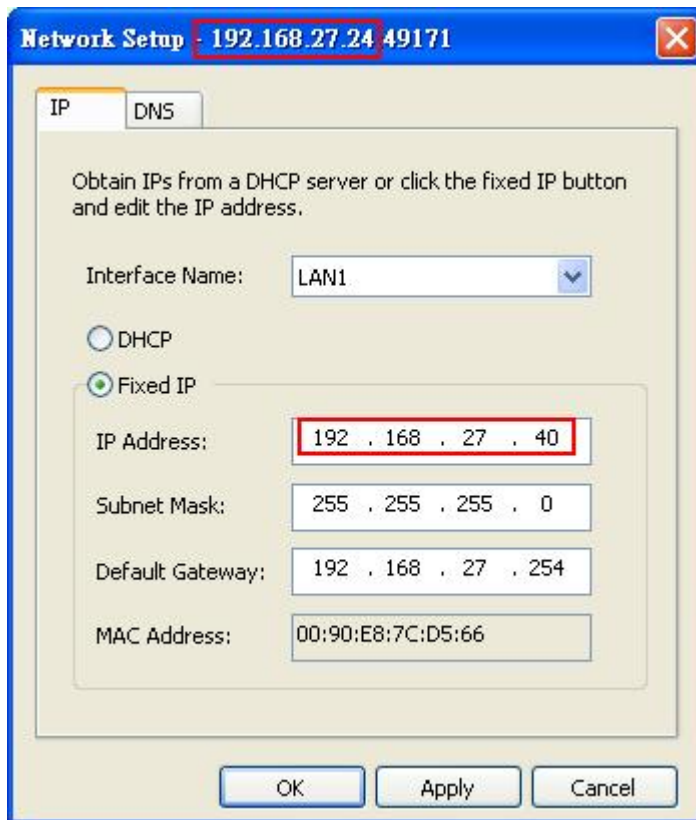
This function configures the IP address and the DNS settings of the computers. Click the **IP** tab, select the interface, and then enter related IP information, including the interface name, DHCP or Fixed IP, IP address, subnet mask, and default gateway. If the computer has more than one network interface, select from the **Interface Name** section to continue.



Click **OK** or **Apply** to finish the process. In the following window, click **OK**. Note that the network connection will be immediately disconnected. It takes about 5 to 10 seconds to activate your new network settings.

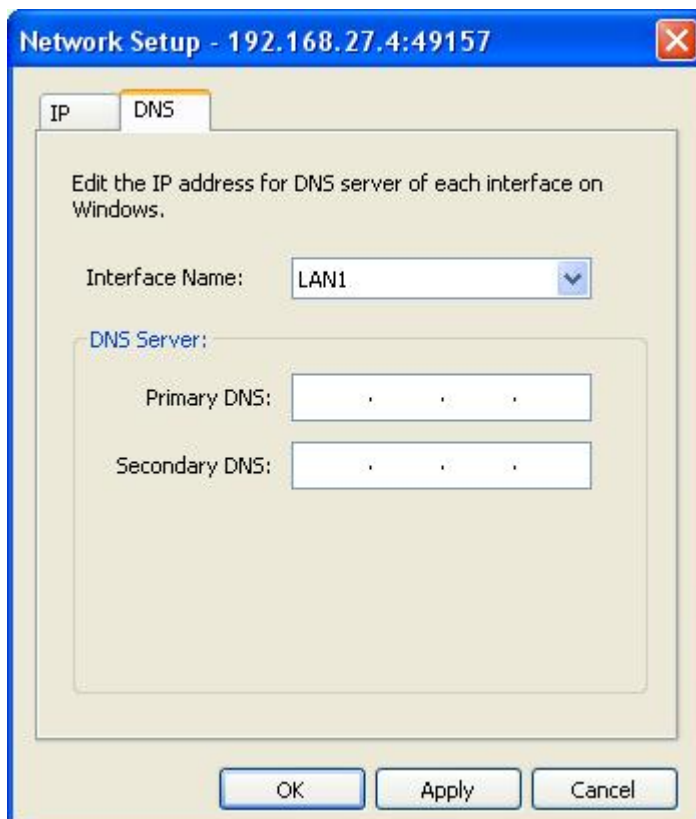


For Linux models, note that if you have used the **ifconfig** command instead of the network configuration file for network settings, the IP address on the title bar may not be the same as the one shown in the IP Address column.



Enter the IP address to configure the new network settings.

Next click **Network Setup** and the **DNS** tab for DNS configuration. Select the interface name you would like to configure and enter the relevant information for the DNS server, including primary DNS and secondary DNS.

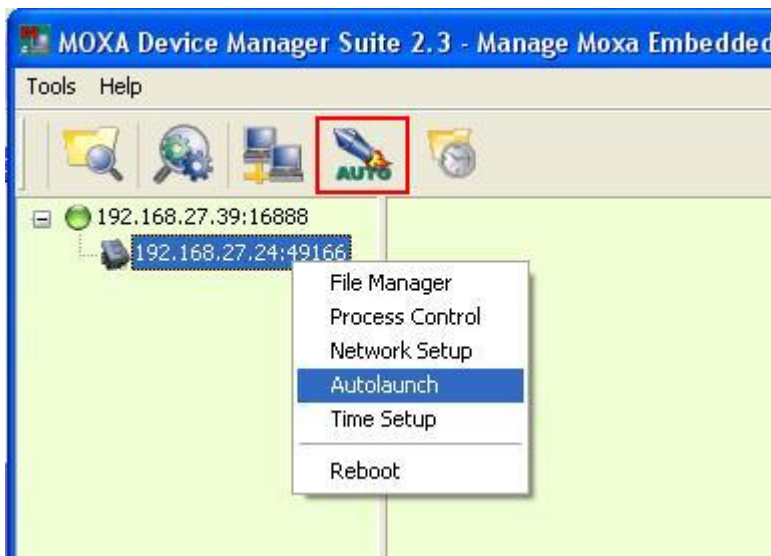


Click **OK** to finish the network settings.

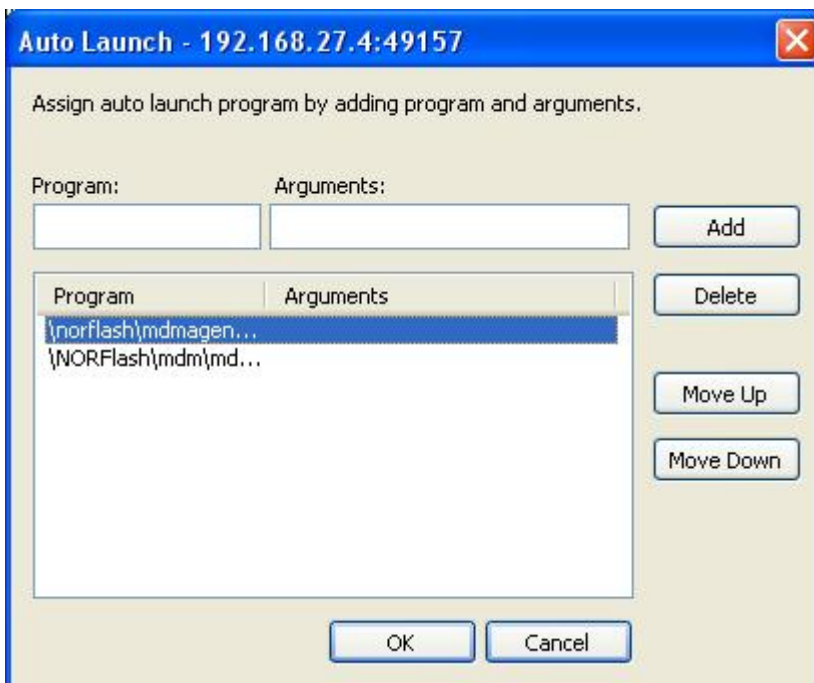
For Windows XP Embedded models, note that the settings will not be updated immediately. We strongly recommend that you wait at least 30 seconds to make sure that all new networking settings have been completely updated.

## Autolaunch

This function allows users to configure the auto launch list of the remote computer. Right-click the device and select **Autolaunch**, or click the icon on the toolbar to continue.



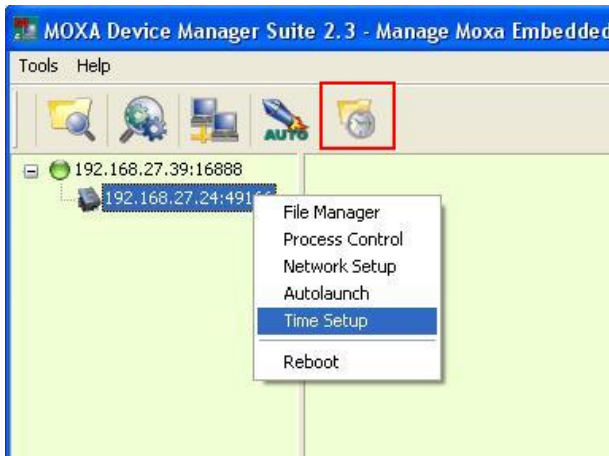
Type the program in the field and then click **Add**. You must type the full path and the full file name of the program, including the file extension.



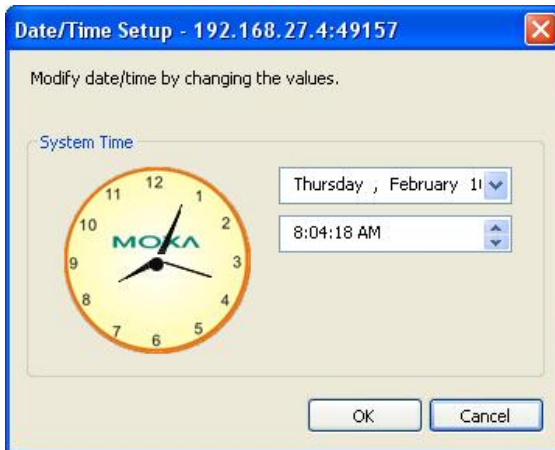
The program will be added into the autolaunch list. You may use **Move Up** or **Move Down** to determine the sequence of the autolaunch programs. Click **OK** to finish. The program will be automatically launched when the system restarts.

## Time Setup

This function allows users to configure the time settings for the remote computer. Right-click the device and select **Time Setup**, or click the icon on the tool bar to continue.

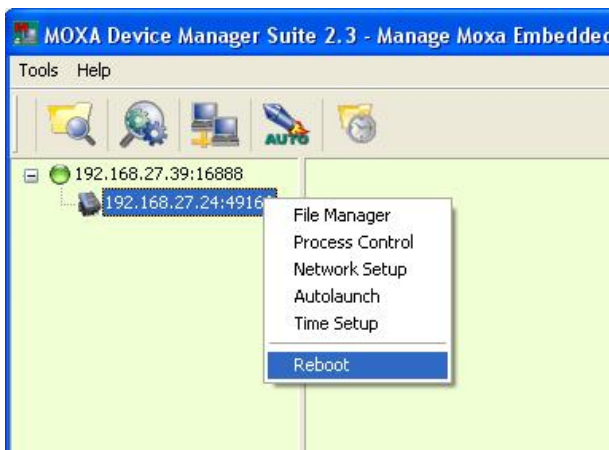


You may configure the time and the date of the remote device, and then click OK to finish. Both the system time and RTC time will be updated.



## Reboot

This function allows users to reboot the remote computer. Right-click the device and select **Reboot**.



The remote device will reboot and then connect to the Gateway automatically if the command to launch mdm agent has been added into the auto launch list.