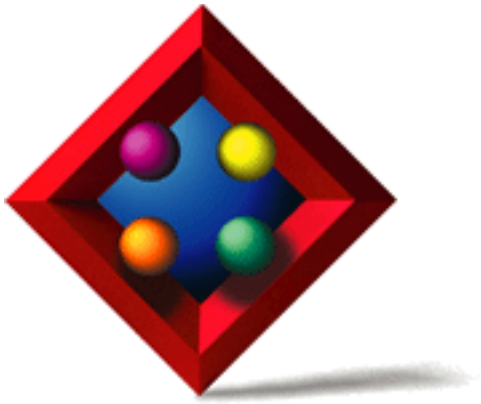
LEXMARK™

MarkVision Professional

User's Guide 10.0



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1 Introduction to MarkVision Professional

Introduction

MarkVision™ Professional is an easy-to-use printer management utility designed for IT staff.

MarkVision helps to:

- Quickly troubleshoot printing issues on the network and fix them before they become critical and disruptive.
- Remotely perform printer and print server maintenance and routine updates.

With MarkVision Professional, you can:

- Diagnose and fix printing problems using Quick Find to locate a specific device on the network.
- Use extensive Filters to find and group devices based on one or more characteristics (such as color capability, input capacity, and speed) or conditions (such as cover open, low toner, low paper, and paper jam).
- Configure settings on multiple devices simultaneously.
- Use Folders to display devices that meet predefined criteria (such as Toner Low) so you can fix the problem before it affects user productivity. When the problem is fixed, the device is no longer displayed in the folder.
- Display specific device information, so you see only the information of interest to you.
- Schedule time-intensive activities such as company-wide device discovery, gathering printer inventory data, or updating print server firmware when network use is at a minimum.
- Prevent unauthorized access to devices on the network.
- Download plug-ins for additional device support at runtime.

MarkVision Messenger works with MarkVision Professional to provide technicians with e-mail notification or command line execution when a network printer triggers a pre-defined event (such as Paper Tray Missing, Toner Low, and many more).

MarkVision Web Client delivers virtually the same features as MarkVision Professional through a Web browser on a client.

This book is written for administrators. To complete these tasks successfully, you should have a working knowledge of your network hardware and software.

Terms used in this document

In this document, the term:

MarkVision Professional (also referred to as MarkVision) refers to the components that make up MarkVision Professional: the MarkVision Server, the MarkVision Web Client, and the Web site files that enable remote installation of MarkVision Professional.

MarkVision Web Client refers to MarkVision Professional running through a browser.

MarkVision Server refers to a server that collects data from network-attached printers and provides information to MarkVision clients.

Note: Within this document, printers and print servers are collectively called "devices."

System Requirements

The following are minimum requirements for installing and running MarkVision Professional on your network. These requirements are for both the server and the client and should be in place before you install MarkVision.

Client system:

- Windows 95/98/Me, Windows NT, Windows 2000, Windows XP, or a supported UNIX client system
- 30MB available hard disk space
- Dial-up or 10Mbps TCP/IP connection
- Windows Internet Explorer 4.0 or later or Netscape Navigator 3.0 or later

Server system:

- Windows NT (Service Pack 4.0 or later), Windows 2000, Windows XP, or a supported UNIX server system
- 70MB available hard disk space
- Dial-up or 10Mbps TCP/IP connection

Number of printers	Total RAM on computer (MB)	Processor Speed of computer (MHz)
1-250	128	350
250-500	192	500
500-1000	256	500
1000-2500	512	500

Note: Managing more than 2500 printers requires additional servers.

Installing MarkVision Professional

Before you install

Before you install the MarkVision Server:

1. Make sure you have 70MB of hard disk space available for a complete installation.
2. Decide where to install the MarkVision Server.

You must install one MarkVision Server on the network.

Note: You may install any of the other packages on the same workstation running the MarkVision Server, although this is not necessary.

Types of installation

There are two ways to install MarkVision Professional on your system:

- **CD installation**

  Insert the CD into your CD-ROM drive and follow the instructions on the screen.

- **Web site installation**

  If you choose the Web Deployment Package installation option, the MarkVision Professional Web Deployment Package is downloaded to your Web server. Supported platforms include Windows and UNIX.

For a successful Web site installation:

- The operating system must be supported by MarkVision Professional.
- The browser must be Java-enabled.

Where to install MarkVision components

If your devices are distributed across a local area network (LAN) or wide area network (WAN), network traffic increases as users try to access them. With MarkVision, you can choose where to install components, letting you reduce network traffic.

To minimize network traffic and improve performance, install the MarkVision Server on a host that offers relatively high-speed access to users and to the devices you want to monitor.

Installable Components

MarkVision supplies several installable components:

- MarkVision Application - Installs the MarkVision Printer Management Utility. This application requires a MarkVision Server to be available on the network.
- MarkVision Server - Installs all the files to make MarkVision Professional available through the Web server.
- MarkVision Messenger - Installs the MarkVision Messenger Web-based utility. This utility runs programs when printer events occur.
- MarkVision Web Client - Installs a Web browser-based version of the MarkVision Printer Management Utility. This accesses the MarkVision Professional utility from a remote location using a browser.
- Web Deployment Package - Installs a package to the MarkVision Server that installs the MarkVision application from a Web browser. These files include:
  - Windows Web package
  - UNIX Web package (Java runtime environment is required)

Installation Notes

In order to run the web client, you must first enable your web browser to support Sun's Java Runtime Environment (JRE) by installing the Java Plug-in. In Windows environments, the plug-in is provided and the user will be automatically prompted to install it the first time they run the MarkVision Web Client.

Note: The MarkVIsion Client Application does not require the installation of the browser plug-in.

The MarkVision Web Server is automatically installed along with the MarkVision Server.

MarkVision Professional relies on technology that is specific to the web server that it provides, so it is not possible to use other web servers to make MarkVision available. During installation, you are given the choice to make the MarkVision web server the default server on the machine. This allows the browser-based application to access the server from the standard port (80), which requires no additional numbering in the URL. When this option is rejected, the MarkVision Web Server listens for HTTP requests on a non-standard port (9180) that should not interfere with any other existing web servers.

If an administrator already has a department or corporate web server on which they would like to publish the URL to access MarkVision Professional or Messenger, it is recommended that they create a URL on their current web server that automatically forwards the user's browser to the URL used by either tool.

2 Using MarkVision Professional

Getting started

When you open MarkVision Professional for the first time, select the server you want to use. Type in the name of the server or click **Browse** to locate it, and then click **Connect**.

After the setup window appears, use the steps outlined in the setup window to:

- Initally discover devices on your network
- Schedule device discoveries
- Configure advanced device discovery features

Note: To prevent MarkVision Professional from opening the setup screen at startup, check the Do not show me this setup window again box.

If you are new to MarkVision Professional, you can follow these steps to quickly begin managing your printers and print servers. Depending on your needs, some steps may not be necessary.

To configure MarkVision Professional

1. **Using the Device Discovery task**. Use the Device Discovery task to find printers and print servers on your network. You can also perform device discoveries from the MarkVision Setup window.
2. **Adding or removing an account**. Use the User Accounts task to grant or restrict access to tasks and devices.
3. **Creating or removing an account group**. Use the User Groups task to assign user accounts to groups. This allows you to uniformly configure many user accounts.
4. **Creating folders**. Use the Folder Configuration task to organize your devices into folders based on criteria you choose.
5. **Using filters**. Use the Filters task to create criteria filters that can be saved and applied to folders.

To manage your devices with MarkVision Professional

- **Creating custom views**. Use the Custom Views task to create multiple views that let you view only the printer attributes you want to see.

- **Creating custom tables**. Use the Custom Tables task to create a table of specific device information. A custom table can be exported as a comma separated variable (.csv) file, which can be opened by spreadsheet or word processing software.
- **Using device policies**. Use the Device Policy tasks to uniformly configure many devices at once.
- **Scheduling tasks**. Use the Scheduling task to schedule certain tasks.
- **Collecting information about print jobs**. Use the Job Accounting task to gather and store information about each print job sent to a specific printer.
- **Gathering information about printers**. Use the Printer Inventory task to gather and store information about the devices in your organization.
- **Managing plug-ins**. Use the Software Update task to install and remove plug-ins for additional device support.

The All Tasks list

There are many more device management tasks available in MarkVision Professional than those listed above. For a complete listing, see the **All Tasks list**

Basics

Home screen

When you **log in to MarkVision Professional**, the Home screen appears, which lists things you can do with MarkVision Professional. These lists contain some of the most used functions available in MarkVision Professional. You can customize these lists by selecting Customize next to the list's category name.

The MarkVision Professional toolbar is directly below the menus. The icons in this toolbar represent frequent tasks. To add or remove tasks from the toolbar, select MarkVision Personal Settings from the menus. With the Personal Settings task, you can also configure the level of message detail and other miscellaneous options.

Note: Frequent tasks are also available when you right-click a device.

Layout

The left pane of the MarkVision Professional window is typically used to select one or more devices. You can find the devices you want by using the Quick Find feature or Folders. (See **Creating folders** for help setting up and populating folders.)

Task information for the selected device(s) appears in the right pane.

Multi-select capability

When you are presented with a list of items, such as printers, you can multi-select them using the Control or Shift key. This lets you edit an attribute for all the selected devices at one time. For example, if the contact name for a group of printers has changed, you can multi-select those particular printers and change the contact name for those printers only, without having to change each one individually.

MarkVision tasks

There are a variety of tasks you can perform using MarkVision Professional, and a variety of ways to access them:

- The All Tasks list on the MarkVision Professional Home screen
- The menus (for example: Actions ▸ Personal Settings)
- The MarkVision Professional toolbar (also available by right-clicking a device)
- The MarkVision Professional (MVP) Home screen

All Tasks list

The following table briefly describes the tasks available from the All Tasks list.

Task	Function
About	View the version information of MarkVision.
Administrative Settings	Change settings regarding how MarkVision Professional obtains information from the server.
Apple Talk	View or modify the Apple Talk network settings.
Application Links	Configure external applications to launch from MarkVision.
Contact Name and Location	View or modify the contact name or location for a specified device.
Custom Media - Custom Paper Name	View or modify custom paper names.
Custom Media - Custom Paper Type	View or modify custom paper type settings.
Custom Media - Paper Loading	View or modify custom paper loading settings.
Custom Media - Paper Texture	View or modify custom paper texture settings.
Custom Media - Paper Type Bin	View or modify custom paper bin settings.
Custom Media - Paper Weight	View or modify custom paper weight settings.
Custom Tables - Create/ Manage	Configure and export tables of device information.
Custom Views - Create/ Manage	Create custom views with multiple pieces of information.
Device Discovery	Search attached networks and add discovered devices to MarkVision Professional.
Device Policies - Apply	Apply created policies to selected devices to enforce settings.
Device Policies - Create/ Manage	Manage list of device policies to quickly set or change device settings (such as print quality) or enforce those settings.
Drivers and Utilities (On the Web)	Open the Lexmark™ driver and utilities Web page.
Emulators	View emulator (printer language interpreters) settings for selected printers.
Fax (Printer)	View or modify a printer's fax settings.
Fax Settings	View or modify the fax settings for a specified device.
Feature Overview (Printers)	View printer data, such as identification information, capabilities, code levels, and page count information.

Task	Function
Feature Overview (Print Servers)	View print server data, such as identification information, protocol, and fax settings.
Filters	View or edit the list of saved filters, which can be used to limit the number of devices displayed.
Finishing	View or modify a printer's finishing settings, such as copies, collate, and resolution.
Firmware (On the Web)	Open a Web page to obtain print server upgrades for supported print servers.
Firmware Download (Print Server)	Upgrade your print server firmware.
Folder Configuration	- Organize devices using folders. - Filter folder contents using printer attributes.
Font Cartridges	View information about any installed font cartridges.
General	View or modify printer settings, such as job timeout, emulation, and power saver.
Home	Return to the Home screen.
Home Page (On the Web)	Open the Lexmark home page on the Web.
HTTP Settings	View or modify a device's HTTP settings.
Inputs	View settings for paper trays and other printer inputs.
Job Accounting	Gather and store information about your print jobs.
Job Timeout	View or modify a device's job timeouts.
LexLink	View or modify the LexLink network settings.
Software Update (Manage Plug-Ins)	Install and remove new MarkVision Professional plug-ins for additional device support.
Map	Place device icons on a graphical representation of your organization to illustrate the distribution of your printers.
MarkVision Messenger Launch	Open the MarkVision Messenger application.
MFP - Backup Configuration Information	Create a backup copy of all configuration settings on MFP device(s). The backup copy will be used to restore the settings during disk recovery or code update operations.
MFP - Default Copy Settings	View or modify Copy Settings for an MFP device.
MFP - Default Scan to E-mail Settings	View or modify Scan to E-mail Settings for an MFP device.
MFP - Default Scan to Network Settings	View or modify Scan to Network Settings for an MFP device.
MFP - Features	View feature information for multifunction devices.
MFP - General Settings	View or modify General Settings for an MFP device.

Task	Function
MFP - LDAP Settings	View or modify LDAP Settings for an MFP device.
MFP - Manage Function Access	View or modify Function Access for an MFP device.
MFP - OptraImage Job Accounting	View or modify OptraImageTM job accounting settings for an MFP device.
MFP - Specify External Destination File	View or modify OptraImage external destination settings for an MFP device.
MFP - Status	View the current status conditions of multifunction devices.
Names of Devices	View or modify a device's name.
NetWare	View or modify the NetWare network settings.
Network Time Protocol	Synchronize a print server's internal clock with the MarkVision Server.
Operator Panel	Display a functional operator panel for a specified printer.
Operator Panel LCD	Display the LCD display from the operator panel for a specified printer.
Operator Panel Lock/ Unlock	Remotely lock and unlock a printer operator panel.
Outputs	View settings for paper output bins and other printer outputs.
Output Bin Names	View or modify a printer's custom bin names.
Page Counts	View a printer's current page count information.
Paper Settings	View or modify a printer's paper settings.
PCL	View or modify a printer's PCL settings.
Personal Settings	Personalize MarkVision to fit the way you work.
Picture of Printer	Display a picture of a selected printer.
Ports	View or modify a device's ports.
PostScript	View or modify a printer's PostScript settings.
PPDS	View or modify a printer's PPDS settings.
Printer Inventory	Gather and store information about your printers.
Printer Statistics	Display statistical data for selected printers in a table format.
Property Tag	View or modify a property tag (user identification) for a printer.
Publications (On the Web)	Open the Lexmark publications Web page.
Refresh	Refresh a specified device.
Registration (On the Web)	Open the Lexmark printer registration Web page.

Task	Function
Reset	Reset a specified printer or print server.
Scheduling	Specify times to automatically initiate certain tasks.
SLP	Enable or disable the Service Location Protocol (SLP) function on a print server.
SNMP Traps	View or modify a device's SNMP Trap Destination.
Status of Printer	View the current status conditions of selected printers.
Status Overview	View the LCD panel, picture of printer, and status of printer for selected devices.
Storage Devices	View information about a printer's storage devices, such as hard disks and flash memory.
Supplies (On the Web)	Open a Web page where printer supplies can be ordered.
TCP/IP	View or modify the TCP/IP network settings.
Technical Support (On the Web)	Open a Web page where technical support for Lexmark products can be obtained.
Toner/Ink Levels	Monitor toner or ink levels for a specified printer.
User's Guide	Open the *MarkVision Professional User's Guide*.
User Accounts	Create or edit individual accounts for each user.
User Groups	Create or edit account groups and restrict access to certain tasks.
Web Page (Print Server)	Open a Web page displaying settings for a selected device.

Because of its customizable user environment, your version of MarkVision may contain a different set of tasks than those listed above.

Adding or removing an account

MarkVision Professional is shipped without any pre-existing accounts. You do not have to add accounts to use MarkVision, but it is recommended that you at least create an administrator account to ensure the security of your devices.

Only administrators or designated users can add or delete accounts. As people join or leave your staff, you may need to create or update MarkVision user accounts. If you do not want a specific account to have full administrative rights, you can either specify the appropriate **privileges** when the account is created or **assign the account to a group** that contains rights to only the tasks you allow.

To create an administrator account

1. Select **User Accounts** from the All Tasks menu.
2. Click **New**.
3. Enter the administrator account name and password.
4. Click **OK**.

Notes:

- Before you create user accounts, you must create an administrator account.
- To edit the administrator account, click the Administrator Login button. This button is only available if you are already logged in as an administrator.
- The administrator account does not appear in the User Accounts list because it has no privileges to configure. By definition, it has all privileges.

To create a new user account

1. Select **User Accounts** from the All Tasks menu.
2. Click **New**.
3. Enter the account information.
4. Click **Apply**.

To edit an existing user account

1. Select **User Accounts** from the All Tasks list menu.
2. From the User Accounts list, select the account you want to change.
3. Click **Edit**.
4. Edit the account information, and then click **Apply**.

To remove a user account

1. Select **User Accounts** from the All Tasks menu.
2. From the User Accounts list, select the account you want to remove.
3. Click **Remove**.

Creating or removing an account group

By putting user accounts into groups, you can ensure that your user accounts are configured uniformly. If, for example, you wanted a group of users to only have access to certain tasks on certain devices, you could create an account group to:

- Specify the user accounts to be included in the group
- Specify the tasks to be available to the group
- Specify the devices to be available to the group

Note: If you assign task priviliges for your users with the User Accounts task, and then add the user accounts to a group, your users will have access to tasks granted by both the account and the group. For example, if a user account is given access to the Device Discovery task, and that user account is a member of an account group that does not grant access to the Device Discovery task, that user account will still have access to Device Discovery.

Creating an account group

1. Select **User Groups** from the All Tasks menu.
2. Click **New**.
3. Give your new group a descriptive name.
4. In the User Accounts window, assign accounts to the group.
5. In the Tasks window, select tasks that the group can perform.
6. In the Folder Access window, select folders that the group can access.
7. Click **Apply**.

Removing an account group

1. Select **User Groups** from the All Tasks menu.
2. Highlight the group you want to remove.
3. Click **Remove**.

Note: Removing groups may affect a user's access rights. You cannot recover a group once it has been removed.

Assigning user privileges

MarkVision administrators can restrict the access of other MarkVision users so they can only perform certain tasks on certain devices. To control user privileges, create accounts and account groups (**User Accounts** and **User Groups tasks**). When you set up a group, determine what tasks the group can perform, or assign them individually when creating an account. You can also determine which devices the users can view.

Administrator privileges

If you decide to create accounts in MarkVision, you are required to create an administrator account. This administrator account is authorized to perform all MarkVision tasks on all devices.

Note: If no accounts (administrator or otherwise) are created, all MarkVision users have authorization to perform all tasks.

Designated user privileges

For non-administrator accounts, user privileges and accessible devices are either defined by the parameters specificed when the user account was created, or the group assigned to the user.

Creating folders

Folders are a way of grouping devices by particular conditions, such as low toner, or by particular options, such as duplexing. By grouping devices in this manner, it is much easier to find the devices you want.

MarkVision Professional is shipped with a pre-existing master folder, All Devices, which cannot be deleted. All additional folders you create are listed below this master folder. However, you do not have to create additional folders to use MarkVision.

To create folders:

1. Select **Folder Configuration** from the All Tasks menu or click **MarkVision** ▸ **Folders**.
2. Select the parent folder.
3. Click **New** from the Folder window.
4. Enter a name for the new folder.
5. Add devices manually or through the use of filters.

   To add devices manually, select the Manual Selection tab, and then select the devices you want.

   To add devices through the use of filters, select the Filter tab, and configure your filter.
6. Click **Apply**.

Note: You can also create folders by right-clicking a parent folder, and then clicking **New**.

For more information on creating filters, see: **Using filters**.

Using filters

Filters limit the number of devices visible in a list or folder to only those exhibiting the characteristics you specify. Filters can have multiple criteria, allowing for increasingly narrow device selection. When you create a folder, you have the option to create a filter for that particular folder, or load a previously saved filter and apply it to the folder. A folder with no filter contains all the devices of its parent folder. There are two types of filters:

- **Basic**: Choose one or more common device characteristics as filter criteria.
- **Advanced**: Create multiple filter criteria, some of which require characteristics to be typed into the Value list box. For example, if you have a brand XYZ printer model (that is not in the list of available printer models) with Job Timeout set at 90 seconds, you could specify both:

Parameter	Operation	Value
Model:	Equal To	XYZ

Parameter	Operation	Value
Job Timeout:	Equal To	90

In the above example, both the "90" and "XYZ" would be manually typed in to the Value list box.

Click the **New** button to add additional filter criteria; click the red **X** to remove filter criteria.

When multiple conditions are selected

- Clicking the "all conditions must be met" radio button means that every device must meet every criterion to be displayed by the filter.
- Clicking the "At least one condition must be met" radio button means that devices must meet only one condition to be displayed by the filter.

Device Type

- You can choose to have your filter include printers, print servers, or both. Specify this in the Device Type list box.

Example 1: Basic filter

John is in charge of keeping the printers in his company up and running. He would like to know which ones presently need human intervention or will need attention very soon. To accomplish this, he creates a **Basic filter**.

1. Since John is only interested in printers, he selects **Printer** from the Device Type list box.
2. From the Select Filter Type list, he selects **Status**.
3. He then selects **All Errors** and **All Warnings**.
4. He then clicks **Apply**, and the filter is created.
5. To save the filter, he clicks the **Save Filter As...** button.

Once John applies the filter to a folder, that folder will only contain printers displaying an error or warning state.

Example 2: Advanced filter

Mary would like to create and save a filter that that will only display monochrome printers with firmware code level 1.10.17. To accomplish this, she creates an **Advanced filter**.

1. Since Mary is only interested in printers, she selects **Printer** from the Device Type list box.
2. She then selects the following:

Parameter	Operation	Value
Color	Equal To	Monochrome

3. She clicks New to create another filter criterion, and then selects the following from the Parameter and Operation list boxes. She must manually type in the firmware code (1.10.17).

Parameter	Operation	Value
Printer Firmware Code	Equal To	1.10.17

4. Since Mary's printers need to meet both conditions, she clicks the **All conditions must be met** radio button.
5. To save the filter, Mary clicks the **Save Filter As...** button.

Once Mary applies the filter to a folder, that folder will only contain monochrome printers with a firmware code equal to 1.10.17.

Using the Device Discovery task

Search your network for printers and print servers with the Device Discovery task. Once devices are "discovered," they are stored in MarkVision's memory, and, by default, populate the All Devices folder. You can also schedule and configure discoveries to suit your needs.

To access the Device Discovery task, select it from the All Tasks list, or click Actions ▸ Device Discovery.

Specify one or more of the following:

- **TCP/IP address, subnet, or hostname**

  IP addresses should be in the dot notation form of X.X.X.X, for example, 192.168.12.34. To perform a network discovery (search a subnet), use a 0 (zero) or asterisk (*) as a wildcard. For example, 192.168.0.0 would search the entire Class B network, finding all devices whose address begins with 192.168.

  You can also search for a device using its hostname. After you enter the address information, click Include to add the addresses or hostname to the Devices to Include on the Server box.

- **TCP/IP address range**

  Enter the TCP/IP address range beginning with the From: box and ending with the To: box, and then click Include.

- **IPX network**

  This is the network number on which your print server resides. It is an eight digit hexadecimal number; for example, 000C2194. If the print server resides on the same network as your MarkVision server, enter "00000000" (zeros) for the network number. If you do not know the network number of your print server, you can find it on the print server setup page, under the NetWare settings. After you enter the address information, click Include to add the addresses to the Devices to Include on the Server box.

To discover all devices in the Devices to Include on the Server box, click **Full Discovery**. To stop a discovery at any time, click **Stop Discovery**.

Excluding devices

To specify addresses that you do not want MarkVision to manage, click the Exclude Devices from the Server button, then enter the address or address range and click Exclude. MarkVision does not attempt to establish contact with these devices.

Examples:

- If you are the network administrator and know the addresses of routers and computers on your network and do not want to have extraneous traffic created by the discovery, add the addresses of your routers and computers to the exclude list.
- If you want to manage all printers on the 70 subnet except for the secretary's printer, add the 70 subnet in your include list and add your secretary's printer address in your exclude list.

SNMP community names

To change the read-or write-access privileges from the default value ("public"), enter the new community names in the appropriate field. The community names are case-sensitive.

Note: This changes the MarkVision community name, not the print server community name. To change the print server name, see your print server documentation.

Load / Save buttons

You can use the Load and Save buttons to import or export a list of network addresses for discovery. The Save button saves the information in the Devices to include on the Server and Devices to Exclude from the Server fields as a text file, which can later be retrieved using the Load button.

Scheduling

To schedule discoveries, click **Schedule** from the Device Discovery main window.

You can schedule device discoveries to occur on a daily, weekly, or monthly basis. This ensures that the list of devices MarkVision Professional manages is always current. If your device discoveries are network intensive, you can schedule them to occur at off hours, when network traffic is at a minimum. Choose the initial day from the Start time: box and select the time at which the discovery is to occur, then choose to have the discovery occur once, daily, weekly, or monthly, and click OK.

Advanced features

To configure advanced features of device discovery, click the **Advanced** tab from the Device Discovery main window.

- **Query each address:** MarkVision Professional sends an individual query to each address specified in the device discovery.
- **SLP Multicast:** MarkVision Professional sends a single SLP request over the network. An SLP Multicast only generates a brief spike in network traffic, and discovers only Lexmark devices.
- **Always listen for SLP announcements from devices:** MarkVision Professional listens for SLP announcements from new devices on the network. Network traffic only occurs when a Lexmark print server is placed on the network.
- **Also search for other vendors' devices:** MarkVision Professional discovers non-Lexmark devices on the network.
- **Maximum number of seconds to wait for a device to respond:** This specifies the maximum amount of time to wait for a device response during device discovery. Adjust this value if devices are not responding or network traffic is heavy.
- **Maximum number of seconds to wait for responses to an SLP Multicast:** This specifies the maximum amount of time to wait for a print server response during an SLP Multicast. Adjust this value if print servers are not responding or network traffic is heavy. Only supported print servers are discovered during an SLP Multicast.

- **Number of retries to perform when a device does not respond:** This specifies the number of attempted retries before an address is ignored. Setting this value beyond 1 does not normally provide greater accuracy. Setting this value to zero (0) disables retries, which may substantially increase speed with little impact on accuracy.

Creating custom views

With the Custom Views task, you can create multiple views that let you view only the printer attributes you would like to see.

To create a custom view

1. Select **Custom Views - Create/Manage** from the All Tasks menu.
2. Click **New**.
3. Give the custom view a name.
4. Choose the printer attributes you would like to add to this view by clicking the **New Component** icon (next to the Name field).
5. As you select the attributes, blocks indicating the size of the data appears in the window below. Arrange the blocks so that each one can be easily viewed.
6. Click **Apply**.

Once created, custom views are available from the All Tasks list. A custom view is listed by the name you gave it in the steps above. You can also select your custom view by clicking View ▸ Custom Views ▸ <custom view name> from the menu bar.

To edit a custom view

1. Select **Custom Views - Create/Manage** from the All Tasks menu.
2. Select the custom view to change.
3. Change the custom view as appropriate.
4. Click **Apply**.

Creating custom tables

Custom Tables provide an easy interface with which to view device information. After it has been configured, a custom table can be exported as a comma separated variable (.csv) file, which can be opened by spreadsheet or word processing software.

Creating a custom table

1. Select **Custom Tables - Create/Manage** from the All Tasks menu.
2. Click **New**. (To edit an existing custom table, click the table's name.)
3. Give your table a descriptive name.
4. From the Available Columns box, select the items to be included in the table. You can use the Ctrl or Shift keys to select multiple items.
5. Click the arrow to move the selected items into the Columns In Use box. You can then arrange the columns by using the up and down arrows. For example, if you wanted **Duplex Option** to be the first column of the table, you would move it to the first position in the Columns In Use box.
6. Choose how to sort the rows of your table. For example, if you choose **Color** from the Sort Custom Table By list, and then click **Ascending**, your table will list color printers first.
7. If you would like your Custom Table to be a Frequent Task, click the Frequent Task box in the upper right corner. Your custom table will then be available from the MarkVision Professional Toolbar or when you right-click a device.
8. Click **Apply**.

Your Custom Table will also be available by selecting View ▸ Custom Tables ▸ <your custom table>.

Viewing a custom table

1. Select the devices you want to appear in the table.
2. Select your custom table from the All Tasks menu, or select **View** ▸ **Custom Tables** ▸ **<your custom table>**. Your custom table appears.
3. To print your custom table: Click **Print**.To export your custom table, click **Export**.
4. To edit a custom table while viewing it:
   - Reorganize columns by dragging them.
   - Click a column heading to sort by that column.
   - Right-click the table to save your changes or reset to the default column and sort order.

Note: These changes do not change the table settings as defined in the Custom Tables task; they are unique to each user account. To change the default column and sort order, you must use the Custom Tables task.

Using device policies

A device policy contains saved printer or print server settings. When a policy is created, it can then be applied to one or more devices. The device's settings are then reconfigured to match the settings listed in the policy. Any setting that is not applicable to the device is not applied.

Creating a device policy is useful for the following reasons:

- To enforce a standard configuration across a set of devices. For example, Power Saver should be set to Off for all printers and Printer Timeout set to 20.
- To use multiple configurations for a device. For example, one policy could set Toner Saver on and low resolution for draft printing, while another policy could set Toner Saver off and high resolution for final document printing.

The following tasks are associated with device policies:

- **Device Policies - Create/Manage**. Create, edit, or remove a policy.
- **Device Policies - Apply**. Apply a policy to one or more specified devices.
- **Scheduling**. Specify days and times to automatically apply a policy.

Create a device policy

Let's say you want to duplicate the printer settings you have configured for one printer to several new printers.

1. Select the **Device Policies - Create/Manage** task.
2. Click **New** and select the **based on a specific device** option.
3. Select the device whose settings you want to copy and click **OK**.
4. Give the new policy a meaningful name, such as "Company Printer Settings."
5. Click **Apply**.

Apply the device policy

Select the **Device Policies - Apply task**.

Select the printers you want to update with the new policy from the device list. If the printers you want to update do not show up in the list, you can search for them. (**See Finding the devices you want** for help.)

Select the device policy you created ("Company Printer Settings") from the Device Policies list and click **Apply Policy**.

Scheduling device policies

You can set up a schedule telling MarkVision when to apply specific policies on one or more devices. This might be useful for resetting defaults for your devices each day or checking a device's conformance to a policy. For scheduling information, see **Scheduling tasks**.

Note: Device policies can only be used with Lexmark printers.

Scheduling tasks

The Scheduling feature lets you perform a task such as Printer Inventory or Job Accounting on a specific day at a specific time. Each task can have multiple schedules.

You can schedule the following tasks using MarkVision:

- Printer Inventory
- Billable Job Accounting
- Device Policies: Apply Policies
- Firmware Download

To schedule a task:

1. Select **Scheduling** from the All Tasks menu or click **Actions** ▸ **Scheduling**.
2. Click **Add**.
3. Select the task you want to schedule.
4. Select the time you want the task to take place. You can schedule a task to occur on a daily, weekly, or monthly basis. If your scheduled task is to occur on a weekly or monthly basis, select the days on which you want it to occur.
5. Configure the task.
6. Click **OK**.

A schedule of events for the server appears in the calendar window.

Note: To schedule a device discovery, use the **Device Discovery task**.

Collecting information about print jobs

You can use MarkVision Professional to gather and store information about each print job sent to a specific printer (a process called *job accounting*). You can then view the collected information using a database tool or an application specifically designed to interpret and display the information, such as MarkTrack™*.

Enabling job accounting tells MarkVision Professional to collect information about each print job sent to a specific printer. This includes information such as job size, job duration, output bins used, and so on.

You can use the information gathered by the job accounting process to answer questions such as:

- Which printers are getting the most use?
- Which departments are using the printer(s) the most?
- How long does it take to print a job?
- What is the toner level in the printer(s)?

Enable job accounting

1. Select **Job Accounting** (Trend Analysis) from the All Tasks menu.
2. Select the database you want to use.
3. Enter the username, password, and connection path (URL**) for the database you plan to use.
4. Select the type of job accounting to use and whether or not status alerts should be documented.
5. Select the property to use to locate the printer.
6. Add the printer(s) for which you want to enable job accounting to the Selected Printers box. You can select printers from folders or perform a quick find to find the printers you need. Select multiple printers by using the Ctrl or Shift key.
7. Click **Apply**.

Note: To enable Billable Job Accounting, use **Scheduling tasks**.

* If you are using a MarkTrack database, MarkTrack version 2.0 or later is required.

** The URL is the path to the database used to monitor this server. MarkVision currently supports the following databases: Access, Oracle, and SQL Server, as well as CSV format (Comma Separated Variables). The following table shows the path styles used for each type of database.

Oracle	The default is the path to the MarkVision server. If the database is installed on a different server, change the URL field appropriately, using the path style below: **<database driver>@<database server's IP address>:<database port>:<database instance (memory area)>** *For example:* **jdbc:oracle:thin:@117.124.46.113:1521:orcl**
Access, **SQL Server**	**<database driver>:<DSN>** *For example:* **jdbc:odbc:yourdsn** DSN is a Data Source Name, which must be created prior to using Job Accounting or Printer Inventory. Use your ODBC configuration in Windows' Control Panel to create a DSN. **Note:** Exporting this information through an ODBC interface is only supported in a Windows environment.
CSV	CSV format provides you the option to export your printer data into a text file formated to accommodate database fields. Enter the directory address where you want the text file to be created on your network or computer. *For example:* **C:\temp\printerinventory\home**

Note: Database insertion (including CSV file manipulation) is handled by a separate thread to reduce the impact of such insertions on the rest of the system. This thread, by default, has a 2 minute time-out, so database insertions and CSV file manipulation will not occur immediately after task completion. Please reference the appropriate MarkVision Server documentation for detailed information.

Gathering information about printers

You can use MarkVision Professional to gather and store information about the devices in your organization. You can then view the collected information (printer inventory) using a database tool or an application, such as MarkTrack*, specifically designed to interpret and display the information.

Use the information gathered by the printer inventory process to answer questions such as:

- How many printers do we have on our network?
- What types of printers do we have?
- What options are installed on our printers?
- What is the lifetime page count of our printers?
- What are the print job statistics for our printers?

Enable printer inventory

1. Select **Printer Inventory** from the All Tasks menu.
2. Select the database you want to use.
3. Enter the username, password, and connection path (URL**) for the database you plan to use.
4. Add the printer(s) from which you would like to collect printer inventory to the Selected Printers box. You can select printers from folders or perform a quick find to locate the printers you need. (*Select multiple printers by using the **Ctrl** or **Shift key**.*)
5. Click **Apply**.

If you would like printer inventory to run at a specific time, select **Scheduling** from the All Tasks menu.

*If you are using a MarkTrack database, MarkTrack version 2.0 or later is required.

** The URL is the path to the database used to monitor this server. MarkVision currently supports the following databases: Access, Oracle, and SQL Server, as well as CSV format (Comma Separated Variables).

The following table shows the path styles used for each type of database.

Oracle	The default is the path to the MarkVision server. If the database is installed on a different server, change the URL field appropriately, using the path style below: **<database driver>@<database server's IP address>:<database port>:<database instance (memory area)>** *For example:* **jdbc:oracle:thin:@117.124.46.113:1521:orcl**
Access, **SQL Server**	**<database driver>:<DSN>** *For example:* **jdbc:odbc:yourdsn** DSN is a Data Source Name, which must be created prior to using Job Accounting or Printer Inventory. Use your ODBC configuration in Windows' Control Panel to create a DSN. **Note:** Exporting this information through an ODBC interface is only supported in a Windows environment.
CSV	CSV format provides you the option to export your printer data into a text file formated to accommodate database fields. Enter the directory address where you want the text file to be created on your network or computer. *For example:* **C:\temp\printerinventory\home**

Database insertion (including CSV file manipulation) is handled by a separate thread to reduce the impact of such insertions on the rest of the system. This thread, by default, has a 2 minute time-out, so database insertions and CSV file manipulation will not occur immediately after task completion. Please reference the appropriate MarkVision Server documentation for detailed information.

Managing plug-ins

To access the Software Update (Manage Plug-Ins) task, select MarkVision ▸ Software Update (Manage Plug-Ins) on the MVP home screen.

The Manage Plug-Ins screen lists all of the plug-ins that are currently installed. If there are no plug-ins listed, you can download the current updates from the Lexmark Web site at this address: **www.markvisionprofessional.com**.

The manage plug-ins screen then provides two management options: Remove and Install New.

- **Remove**

  The Remove option lets you uninstall a selected plug-in. First select the plug-in(s) that you want to uninstall from the list. You can select multiple list entries by holding down either the shift or control keys while clicking on the desired plug-ins. Click Remove. This removes the selected plug-in(s) from the server and the client. The uninstall script on both the server and the client then determines if a restart is needed.

- **Install New**

  When you click Install New, a dialog box appears that lets you select a plug-in from the directory to be installed on the server. Once a plug-in file has been selected, a confirmation screen appears containing more specific information about the plug-in(s) that you have selected and provides you with the option to proceed with installation. The successful installation of a plug-in is then announced to all clients connected to the server through the MVP message window located at the bottom of the MVP home screen.

After a plug-in has been installed on the server, the MVP client receives information on the plug-in versions that have been installed and details on which plug-ins contain downloadable client components. If new client components are available, the client determines if the server and itself are compatible and then automatically downloads the client component of any plug-ins that it does not already have.

Note: If the client and server are not compatible because the client contains a component that the server does not have, a warning message will be issued and any incompatible client components will be removed.

Changing printer settings

The easiest method of changing printer settings is by selecting the item you want to change from the Settings menu or the All Tasks list. Select one or more printers and change the settings appropriately.

You can create a device policy to coordinate multiple settings and save them as a unit. A policy can then be applied to one or more devices at a time. See Using device policies for more information.

Printer statistics

The printer statistics task displays statistical data for selected printers in an easy to read table format.

Viewing printer statistics

The printer statistics task displays statistical data for selected printers in an easy to read table format.

View printer statistics

1. Select **Printer Statistics** under the View menu on the MarkVision Professional home screen.
2. Select the printers or folders from which you want to view statistical data.

A separate table for each type of statistical data is displayed with a list of the selcted printers and their related values.

You then have the option to print each table or export the data to another location.

Checking printer status

To check printer status, select one of the options from the View menu.

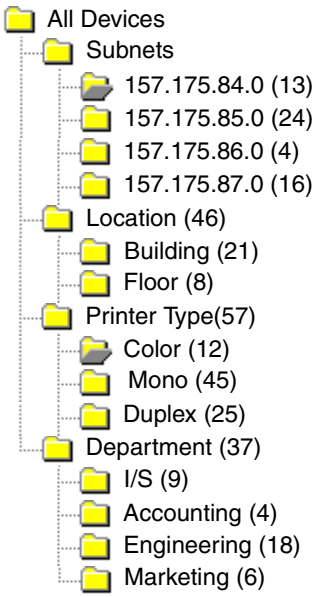
These items are available from the View menu:

- Status of Printer
- Toner / Ink Levels
- MFP Status
- Picture of Printer
- Page Counts
- Operator Panel LCD
- Map
- Custom Tables
- Custom Views

Organizing devices

MarkVision lets you organize your devices using folders. When you create or edit folders, you can specify certain criteria to limit which devices are in a folder. This works like a filter so that only the devices you want to appear are in the folder.

For example, if you are responsible for maintaining toner cartridges for printers on the third floor of your building, you might create a folder for your printers named "3rd floor." Create a subfolder named "Low Toner," specifying that a filter should be placed in it. Click Advanced, then specify the filter criteria by selecting Status: Message, Equal To, Toner Low. This causes the "Low Toner" folder to display only those printers in need of service due to low toner cartridges.



In this example, one folder groups printers by subnet. Other folders group printers by their location, printer type, or department. Using the built-in filtering feature, the folders show you only the printers matching the criteria you specify.

- The same printer could appear in multiple folders, depending on your needs.
- The devices in a subfolder are dependent on the members of the parent folder. In other words, if you create a subfolder called Main under the Building folder, the subfolder can only contain the devices that are also in the Building folder.
- The numbers in parentheses indicate the number of devices in that particular folder.

Using filters to automatically populate folders

1. Select **Folder Configuration** from the All Tasks menu.
2. Click **New** to create a new folder, or select a specific folder to edit an existing one.
3. Enter the name of the new folder.
4. Select the properties to use in adding filters or devices to the folder.
5. You can specify a device name or names to further narrow down which devices to show in the folder.

6 Click **Apply** to apply the specified criteria to the current folder.

For more information about finding specific printers within a folder, see **Finding the devices you want.**

For more information about filters, see **Using filters.**

Viewing a print server's embedded web page

1. Select **Web Page (Print Server)** from the All Tasks menu, or click Actions ▸ Web Page (Print Server) from the menus.
2. Select the appropriate print server, and then click **Launch**.
3. Your browser opens with an information page for that print server. You see a real-time view of the selected printer status.

Note: Not all print servers have Web pages.

Viewing all printers

MarkVision gives you several ways to see all the printers available to you at a glance.

Create folders and filters

Use the Folder Configuration task to create custom folders to organize your printers. If your printers are on a small network, you may only need one folder. However, if your printers are distributed across a large network, you can create multiple folders to organize them.

For example, if your printers are concentrated on a small network within a single building, you could create folders for each floor or type of printer. For larger printer networks, you could create a folder hierarchy that includes subfolders identifying printers listed by geographical location or by subnet.

Apply filter criteria to your folders to automatically populate folder contents or to find a specific printer. For example, create a folder named "Color," and then select the appropriate filter criteria to show only color printers. MarkVision applies the filter and adds only color printers to that folder. The same printer can appear in more than one folder depending on the filters you set. For example, a color printer with a duplex unit would appear in both the "Color" folder and the "Duplex" folder. For more information on creating folders and using filters, see **Organizing devices** and **Finding the devices you want**.

Create a map view

You can use the Map task to create a graphical representation that illustrates the distribution of your printers by placing a printer icon on a map background relative to your organization. The printer status determines the border color of the icon that is displayed. A printer icon with a yellow border is in a warning state; a printer icon with a red border is in an error state. For more information on using the map feature, see **Creating maps**.

Creating maps

With MarkVision's Map task, you can create a graphical representation that illustrates the distribution of your devices.

Creating a map

The type of map you create depends on the structure of your organization. If your organization has one location with just a few printers, your map could be a simple line drawing or a scanned plan of your building with icons marking the printer locations. If, however, you are responsible for many printers in various geographies, you might create maps that correspond with the hierarchy of your printer folders. For example, you could create a folder for the state where a group of printers are located. Within that folder, you might create a subfolder for the city. Additional subfolders could contain printers grouped by the building or floor number. Create a corresponding map for each folder.

Create maps using any graphics application that saves in JPEG or GIF format. You can start from scratch or develop your graphic using a scanned image like an area map or building plan. Save the image in JPEG or GIF format. You can then select the graphic from the Map task in MarkVision.

Using a map

1. Select **Map** from the All Tasks menu, or select a folder and click **View** ▸ **Map**.
2. Select a folder.
3. Click the map icon in the lower part of the window. Select the map you want to use, or click **Browse** to find the graphic you want to use.
4. Arrange the device icons on the map image to represent its location in your organization, and then click **Apply**.

Note: A yellow border around a device icon indicates that the device is in a warning state; a red border indicates an error state.

Monitoring printer supplies

There are several methods you can use to monitor printer supplies.

If you are responsible for monitoring multiple printers:

- Select **Folder Configuration** from the All Tasks menu and create a folder with a filter based on the status criteria you are interested in. For example, you could create a folder named All Status Errors and Warnings, and configure the filter to display only those devices containing status errors or warnings. This folder's contents will dynamically change as devices meet or fail to meet the filter criteria.
- You can also perform a **Quick Find** to monitor printer supplies. Click the Quick Find tab, and under the Select a field to search box, select **Other**. Click the **Find Parameters...** button to configure the parameters of your search. Click **Find**. The results of your search are displayed.
- To see at a glance which printers are low on toner, select **Status of Printer** from the All Tasks menu, open a folder, and select the printers you are interested in.

If you are responsible for monitoring only one printer:

- Select **Status of Printer** from the All Tasks list. Choose the appropriate printer from either the **Quick Find** or **Folders tab**.

Note: MarkVision's Map task displays an icon for each device. These icons give you an indication of a device's status. A yellow border around a device icon indicates that the device is in a warning state; a red border indicates an error state.

Moving the MarkVision Server

As newer hardware becomes available, it may become necessary to move the MarkVision Professional Server to another machine. Since MarkVision Professional is extremely customizable, you may not want to repeat the process of creating folders, filters, and rediscovering devices. The following steps describe a method of creating a backup of MarkVision Professional's customized data, and integrating that data onto a new machine.

5. Stop the MarkVision Server.
6. Back up the directory in which the customized data files are stored.
   - In Windows, the default directory is: **C:\Program Files\Lexmark\MarkVision Server\granite\data**
   - In UNIX, the default directory is: **/var/spool/markvision/data**
7. Install the MarkVision Server on the new machine.
8. Stop the MarkVision Server.
9. Replace the data files saved in step 2 into the same locations on the new machine.
10. Restart the MarkVision Server.

Note: The files listed above do not contain settings for window and frame sizes or positional information.

Finding the devices you want

There are numerous ways to find devices using MarkVision. You can search for one device using specific criteria or multiple devices using a variety of methods.

Note: MarkVision only recognizes devices that have been discovered using the Device Discovery task (see **Using the Device Discovery task** or Quick Find by Address. Once MarkVision recognizes a device using one of those methods, that device can later be found by its other attributes, such as its serial number or a property tag.

Here are some suggested methods for finding one or more printers in MarkVision:

- If you know a specific setting for a printer, you can use this attribute to find it. For example, you can find a printer using its IP address, name, serial number, or a property tag. First, select a task to perform. Using the Quick Find tab, pick the attribute you want to use in your search from the Select a field to search list. Type the attribute information in the appropriate box, and select Find.

  You can substitute the asterisk (*) character as a wildcard for unknown information in your search. It acts as a placeholder for any number of characters. For example, you could enter 192.168.12.* as your search criteria.

- If you monitor only 10 printers in MarkVision, the easiest way to find the one you want is to scan the tabs in the Feature Overview task for the feature you want. Select Feature Overview (Printers) from the All Tasks list. Choose the Folders tab, and view the folder that contains the printers you want to choose from. You can then scan the various features columns. Click any column heading to sort the printers according to the criteria you want. With only a few printers, you should easily find the printer you are looking for.

- Let's say, however, that you have 800 printers distributed over a large network, and you need to find all the color printers with duplex units. First, scan your folders to see if you already have one for color or duplex printers. Otherwise:

  1. Choose the Quick Find tab, and then select **Other** from the Select a field to search list.
  2. Click **Find Parameters....**
  3. Configure the filter to find only color printers with duplex units.

     For more information on configuring filters, see Using Filters.
  4. Click **OK**, and then click **Find**. A list of any color duplex printers on your MarkVision Server is displayed.

You can also create a folder that automatically populates itself with color printers that have duplex units. For help creating such a folder, see **Organizing devices**.

Flashing print servers

Periodically, you may need to rewrite the flash memory inside one or more of your print servers. For example, let's say Customer Support recommends you upgrade to a newer or different version of firmware to solve a network printer problem.

You can also flash your print servers to take advantage of new functions available in the latest version of firmware. Use MarkVision Professional to flash multiple print servers simultaneously.

All supported firmware (flash) files are available free of charge from Lexmark's Web site. You can access the Web site by selecting Firmware (On the Web) from the All Tasks List, or by visiting **www.lexmark.com**.

To flash Lexmark print servers

11 ▸ Download the latest flash files from **Lexmark's Web site**. Store these files in a safe place (C:\temp, for example).

12 From MarkVision, select the **Firmware Download (Print Server)** task from the All Tasks list or click **Actions** ▸ **Firmware Download (Print Server)** from the menus.

13 Select the print servers you want to update.

14 Click **New File** to find the downloaded files (C:\temp, for example).

15 Click **Start**.

Warning: If the print server is turned off or reset during flashing, it may be damaged. For this reason, try to perform flash operations at night, on holidays, or other times when printer traffic is very light. Accomplish this using the **Scheduling** task.

3 Troubleshooting

Error reading account

When you log in, MarkVision validates your account by requiring a user name and password.

At login, if you see:

A message that indicates there was an error reading accounts

Possible causes

- You have logged in to the wrong MarkVision Server.
- The MarkVision Server is not running.
- The file containing your account information is corrupt.

User actions

Contact your administrator.

Administrator actions

From the Services control panel, verify that the MarkVision Server is running on the Web server.

If the service is not running:

1. Stop and restart the service.
2. Ask the user to attempt to log in again.

If the service is running:

1. Log in to MarkVision using the default administrator username and password.
2. Reconfigure or add the user's account (User Accounts task).
3. Ask the user to attempt to log in again.

Error reading password

When you log in, MarkVision validates your account by requiring a user name and password.

At login, if you see:

A message that indicates there was an error reading the password.

Possible causes

- The MarkVision Server is not running on the Web server.
- The file containing your password is corrupt.
- You have incorrectly typed in your password. Passwords are case sensitive.

User actions

Ask your administrator to reset your password.

Administrator actions

From the Service control panel, verify that the MarkVision Server is running on the Web server. If it is not running, stop and restart the service.

If the service is running, reset the user's password:

1. Click **User Accounts** from the All Tasks menu.
2. Select the appropriate account, and then click **Edit**.
3. Change the password information as necessary.
4. Ask the user to log in again.

Forgotten password

When you log in, MarkVision validates your account by requiring a user name and password.

If you have forgotten your password

User actions

Ask your administrator to reset your password.

Administrator actions

Reset the user's password.

1. Click **User Accounts** from the All Tasks menu.
2. Select the appropriate account.
3. Change the password information as necessary.
4. Ask the user to log in again.

Printer information appears incorrect

Occasionally, the printer may lose contact with MarkVision because something happens to the printer. For example, if the printer is turned off, the information in MarkVision is not updated until the printer is turned back on.

If MarkVision displays printer information that appears to be incorrect, refresh the printer.

MarkVision is unable to find a network device

1. Make sure the printer is turned on and is ready.
2. Make sure the LAN cable is plugged into both the print server and into the LAN, and is working properly.
3. If you are using an INA:
   - Make sure the print server is properly installed and enabled. Print a setup page for the printer. See your print server documentation for instructions. The print server should appear in the list of attachments on the setup page.
   - Make sure TCP/IP on the print server is activated. The protocol must be active for the print server and MarkVision to work. You can do this from the printer operator panel.
4. If you are using an ENA:
   - Check the print server lights. Refer to your print server documentation for instructions.
   - Print a setup page from the print server. Refer to your print server documentation for instructions.
5. Make sure the SNMP community name you supplied to MarkVision is the same as the one set in the print server.
6. PING the print server.
   - If PING works, check the IP address, netmask, and gateway to make sure they are correct. Turn the printer off, and then PING again to check for duplicate IP addresses.
   - If PING does not work, check the setup page you printed to be sure IP is enabled.
   - If TCP/IP is enabled, check the IP address, netmask, and gateway to be sure they are correct.
   - Make sure bridges and routers are functioning correctly.
   - Make sure all the physical connections among the print server, the printer, and the network are working.
7. Turn the printer and the print server off, and then on again. Turn the printer on first so when you turn on the print server, it can determine whether the printer is enabled for NPA.

“Device not responding” message appears

1. Make sure the printer is turned on and is ready.
2. Make sure the LAN cable is plugged into both the print server and into the LAN and is working properly.
3. If you are using an INA:
   - Make sure the print server is properly installed and enabled. Print a setup page for the printer. See your print server documentation for instructions. The print server should appear in the list of attachments on the setup page.
   - Make sure TCP/IP is activated on the print server. The protocol must be active for the print server and MarkVision to work. You can do this from the printer operator panel. Refer to your print server documentation for instructions.
4. If you are using an ENA:
   - Check the print server lights. Refer to your print server documentation for instructions.
   - Print a setup page from the print server. Refer to your print server documentation for instructions.
5. PING the print server.
   - If PING works, check the IP address, netmask, and gateway to make sure they are correct. Turn the printer off, and then PING again to check for duplicate IP addresses.
   - If PING does not work, check the setup page you printed to be sure IP is enabled.
   - If TCP/IP is enabled, check the IP address, netmask, and gateway to be sure they are correct.
   - Make sure bridges and routers are functioning correctly.
   - Make sure all the physical connections among the print server, the printer, and the network are working.
6. Use MarkVision to see if the server can contact the printer.
7. Compare the IP address of the print server to the address stored for the network printer in the name server or /hosts file. If the addresses do not match, edit the /hosts file or update the name server to correct the address.
8. Print a setup page from the print server. If the page prints, the connection between the print server and the printer is working correctly. If the page does not print, check all physical connections.

No folder(s)

If MarkVision does not display your folders, and during login you see:

A message that indicates there was an error reading folders.

Possible causes

- The MarkVision Server is not running on the Web server.
- The file that stores your folders has been corrupted.

User actions

- Contact your administrator.

Administrator actions

- From the Services control panel, verify that the MarkVision Server is running on the Web server. If it is not running, stop and restart service. If the service is running, ask the user to recreate their folders (Folder Configuration task Add).

All folders are missing (no login error messages).

Possible causes

- The file that stores your folders has been corrupted.

User actions

- Recreate the folders (Folder Configuration task Add).

Out of available memory

If the MarkVision Professional Web Client performs poorly, crashes, or gives you a memory error, you may need to change your system Java plug-in settings. The Java Plug-in uses 16MB of RAM regardless of how much physical or virtual memory is available. You can improve performance by increasing the memory available to MarkVision.

User actions

- To change the Java plug-in settings:
  1. In Windows, Access the Java plug-in settings from the Control Panel.
  2. In the Java Runtime Parameters box, type:

     -ms16m -mx64m

Note: The entry "-ms16m" reserves 16MB memory when the application starts. The entry "-mx64m" reserves a maximum of 64MB available RAM. If your system has more memory, you can specify a larger amount.

For additional Java troubleshooting, see the MarkVision README file.

No printer icon(s) appear

When you log in to MarkVision and see:

A message that indicates there was an error reading printers.

Possible causes

- The MarkVision Server is not running on the Web server.
- The file that stores your printers has been corrupted.

User actions

Contact your administrator.

Administrator actions

From the Services control panel, verify that the MarkVision Server is running on the Web server. If it is not running, stop and restart service. If the service is running, ask the user to repopulate the folder with printers. Select the printer, and then click Edit. Use filters or manually select printers.

Printers are missing from folders (no login error messages).

Possible causes

- The file that stores your printers has been deleted from the Web server.

User actions

Repopulate your folder with printers. Select the printer, and then click Edit user filters or manually select printers.

Java plug-in(s) become unstable

It is a known problem that the Netscape JDK 1.1 patch to Netscape Navigator 4.04 or 4.05 pre-release causes these Netscape versions to become unstable even without using the Java Plug-in. For a workaround, check the README file, the Netscape developer Web site at **www.developer.netscape.com**, or the Java Web site at **www.java.sun.com**.

4 Frequently Asked Questions

How do I get to the server after installing?

Accessing the MarkVision Professional Server with the MarkVision Application

In application form, the client is installed locally so it can be launched just like any other program installed on the machine. For instance, in Windows environments, you can double-click the MarkVision Professional icon on the desktop. This version of the client does not use a Web broswer.

After starting the application:

- Enter the hostname or IP address of the machine running the MarkVision Server, and then click **Connect**. You can also click **Browse** to locate your server.
- If user accounts are enabled, you are prompted to enter the name of a user account and its password.
- Click **Login**.

Accessing the MarkVision Professional Server with the MarkVision Web Client

Since the MarkVision Web Client is browser based, you need to open your browser and point it to the MarkVision URL. If MarkVision Professional is your default Web server, the URL is:

http://<*your server*>/markvision

where <*your server*> is the IP address or hostname of the machine that is running the MarkVision Server.

If MarkVision Professional is not your default Web server, the URL is:

http://<*your server*>:9180/markvision

Note that because this URL uses a non-standard port number, in most browsers, you need to type the "http://" in the begnning of the URL.

Note: The "markvision" part of the URL is case-sensitive; it must be entered in all lowercase letters.

The MarkVision Web Client launches a browser window from which MarkVision Professional will run as a Java applet. If you have not already enabled your browser to support Sun's Java Runtime Environment (JRE), you must do so at this time. In order to run the Web client, you must first enable your Web browser to support JRE by installing the Java plug-in. In Windows environments, the plug-in is provided and you are automatically prompted to install it the first time you run the MarkVision Web Client.

How do I discover printers?

The Device Discovery task

The Device Discovery task can be selected from either the All Tasks list or by clicking Actions ▸ Device Discovery from the menus.

1. Select to search by:
   - TCP/IP Address, Subnet or Hostname
   - TCP/IP Address Range
   - IPX Address
2. Enter the address information.
3. Click **Include** to add it to your search list.
4. Click **Full Discovery**.

You can use a "0" (zero) or asterisk (*) as a wildcard character to perform a device discovery based on a network subnet. To stop a device discovery once it has started, click **Stop Discovery**.

For a more in depth look at discovering devices, see Using the Device Discovery task.

The Quick Find task

The Quick Find task is capable of initially discovering devices and filtering a device search for previously discovered devices.

While searching by TCP/IP address, multiple devices can be discovered using a wildcard variable when typing in the criteria for the TCP/IP address. You can use a zero (0) or asterisk (*) as a wildcard character when performing a Quick Find based on a network subnet. For example, in order to find all the printers on the 122 subnet, the user would type in the address value 138.188.122.0. This would find devices with IP addresses of 138.188.122.**2**, 138.188.122.**3**, 138.188.122.**4**, and so on.

Note: If you enter a TCP/IP address, MarkVision Professional first checks the list of devices already discovered. If the address is not in the list, MarkVision Professional initiates a device discovery to find it.

Note: IPX discoveries can only be performed using the Device Discovery task.

Is IPX supported?

IPX management support

IPX management support is only available for a MarkVision Server running on a Windows NT, Windows 2000, or Windows XP workstation. UNIX clients can connect to a Windows-based MarkVision Server to manage printers with the IPX protocol.

IPX protocol support must be installed on the Windows NT, Windows 2000, or Windows XP workstation. If IPX protocol support is not installed, the IPX option is disabled. The NetWare protocol for the supported print server must be active to be discovered.

IPX printer installation support

The easiest way to configure the print server for NetWare jobs in non-NDPS and non-NEPS environments is to use the Network Printer Utility for NetWare (Interwin). The Network Printer Utility (Interwin) automatically creates all the necessary NetWare objects (print queue objects, print server objects, and printer objects).

Is there any way to speed up device discoveries?

The time MarkVision Professional takes to discover devices varies, depending on the scope of the discovery. A device discovery spanning multiple subnets (133.122.0.0) requires more time than a device discovery spanning a single subnet (133.122.123.0).

From the Device Discovery task, (Actions ▸ Device Discovery) the MarkVision Server can be set to perform network discoveries once, daily, weekly, or monthly. Device discoveries can be scheduled to occur at off times, when network traffic is less busy, and routinely scheduled device discoveries will ensure that the list of devices MarkVision Professional manages is current.

For a more in depth look at Device Discovery, see **Using the Device Discovery task**.

How do I set up Printer Inventory?

You can use the MarkVision Server to gather and store information about the devices in your organization. You can then view the collected information (printer inventory) using a database tool or an application, such as MarkTrack*, specifically designed to interpret and display the information.

Use the information gathered by the printer inventory process to answer questions such as:

- How many printers do we have on our server(s) / network?
- What types of printers do we have?
- What options are installed on our printers?
- What is the lifetime page count of our printers?

Enable printer inventory

1. Select **Printer Inventory** from the All Tasks menu.
2. Select the database you want to use.
3. Enter the username, password, and connection path (URL**) for the database you plan to use.
4. Add the printer(s) from which you would like to collect printer inventory to the Selected Printers box. You can select printers from folders or perform a quick find to locate the printers you need. (*Select multiple printers by using the **Ctrl** or **Shift key**.*)
5. Click **Apply**.

If you would like printer inventory to run at a specific time, select Scheduling from the All Tasks menu.

*If you are using a MarkTrack database, MarkTrack version 2.0 or later is required.

** The URL is the path to the database used to monitor this server. MarkVision currently supports the following databases: Access, Oracle, and SQL Server, as well as CSV format (Comma Separated Variables).

The following table shows the path styles used for each type of database.

Oracle	The default is the path to the MarkVision server. If the database is installed on a different server, change the URL field appropriately, using the path style below: **<database driver>@<database server's IP address>:<database port>:<database instance (memory area)>** *For example:* **jdbc:oracle:thin:@117.124.46.113:1521:orcl**
Access, **SQL Server**	**<database driver>:<DSN>** *For example:* **jdbc:odbc:yourdsn** DSN is a Data Source Name, which must be created prior to using Job Accounting or Printer Inventory. Use your ODBC configuration in Windows' Control Panel to create a DSN. **Note:** Exporting this information through an ODBC interface is only supported in a Windows environment.
CSV	CSV format provides you the option to export your printer data into a text file formated to accommodate database fields. Enter the directory address where you want the text file to be created on your network or computer. *For example:* **C:\temp\printerinventory\home**

Database insertion (including CSV file manipulation) is handled by a separate thread to reduce the impact of such insertions on the rest of the system. This thread, by default, has a 2 minute time-out, so database insertions and CSV file manipulation will not occur immediately after task completion. Please reference the appropriate MarkVision Server documentation for detailed information.

How do I set up Job Accounting?

You can use MarkVision Professional to gather and store information about each print job sent to a specific printer (a process called *job accounting*). You can then view the collected information using a database tool or an application specifically designed to interpret and display the information, such as MarkTrack™*.

Enabling job accounting tells MarkVision Professional to collect information about each print job sent to a specific printer. This includes information such as job size, job duration, output bins used, and so on.

You can use the information gathered by the job accounting process to answer questions such as:

- Which printers are getting the most use?
- Which departments are using the printer(s) the most?
- How long does it take to print a job?
- What is the toner level in the printer(s)?

Enable job accounting

1. Select **Job Accounting** (Trend Analysis) from the All Tasks menu.
2. Select the database you want to use.
3. Enter the username, password, and connection path (URL**) for the database you plan to use.
4. Select the type of job accounting to use and whether or not status alerts should be documented.
5. Select the property to use to locate the printer.
6. Add the printer(s) for which you want to enable job accounting to the Selected Printers box. You can select printers from folders or perform a quick find to find the printers you need. Select multiple printers by using the Ctrl or Shift key.
7. Click **Apply**.

Note: To enable Billable Job Accounting, use the Scheduling task.

* If you are using a MarkTrack database, MarkTrack version 2.0 or later is required.

** The URL is the path to the database used to monitor this server. MarkVision currently supports the following databases: Access, Oracle, and SQL Server, as well as CSV format (Comma Separated Variables). The following table shows the path styles used for each type of database.

Oracle	The default is the path to the MarkVision server. If the database is installed on a different server, change the URL field appropriately, using the path style below: **<database driver>@<database server's IP address>:<database port>:<database instance (memory area)>** *For example:* **jdbc:oracle:thin:@117.124.46.113:1521:orcl**
Access, **SQL Server**	**<database driver>:<DSN>** *For example:* **jdbc:odbc:yourdsn** DSN is a Data Source Name, which must be created prior to using Job Accounting or Printer Inventory. Use your ODBC configuration in Windows' Control Panel to create a DSN. **Note:** Exporting this information through an ODBC interface is only supported in a Windows environment.
CSV	CSV format provides you the option to export your printer data into a text file formated to accommodate database fields. Enter the directory address where you want the text file to be created on your network or computer. *For example:* **C:\temp\printerinventory\home**

Note: Database insertion (including CSV file manipulation) is handled by a separate thread to reduce the impact of such insertions on the rest of the system. This thread, by default, has a 2 minute time-out, so database insertions and CSV file manipulation will not occur immediately after task completion. Please reference the appropriate MarkVision Server documentation for detailed information.

What are the differences between the Application and the Web Client?

Differences between the MarkVision Application and the MarkVision Web Client

The MarkVision Application and Web Client are essentially the same program. All folders, filters, devices, and so on that are managed by the MarkVision Server are available to users of either the application or the client, provided that the user has been granted access.

The Web Client requires the installation of the Java browser plug-in. Since the Web Client runs through a Web browser, you can use it to access the MarkVision Server from any computer on your network.

What do the lines through some devices mean?

Because the nature of MarkVision Professional is such that all tasks are available all of the time, it is possible to choose devices that do not support a given task. For example, not all printers can report their toner/ink levels. When this occurs, the name of the device incapable of the selected task has a line through it. It looks similar to the following:

dhcp-193.prt.print.printing.com

If a device that does not support the current task is selected, MarkVision Professional responds in the following way:

- For a single device selection, the message Device Incapable of Task is displayed.
- When multiple devices are selected, and one or more of them do not support the current task, either of the following occurs:
  - For read-only tasks (such as status and toner levels), MarkVision Professional displays the Device Incapable of Task message in place of the task information for that device. All supported devices will have their appropriate information displayed.
  - For multi-device configuration tasks, MarkVision Professional warns you that some of the devices will not be affected by the task because they do not support the function or feature that is being configured.

How do I create a filter and apply it to a folder?

Filters provide an easy way to view devices of a certain type or status.

Create a filter

1. From the menu bar, select **MarkVision** ▸ **Filters**. The Filter Creation window appears.
2. Click **New**.
3. Give your filter a meaningful name.
4. Under the Name dialog box, select either **Basic** or **Advanced**.

   - **If you select Basic**

     Select the filter conditions. If you select more than one condition, you can specify whether a device must meet any or all conditions in order to be included in the folder. If All is selected, a device must meet all conditions. If Any is selected, a device must meet at least one condition to be included in the folder.

   - **If you select Advanced**

     You can create conditions by first selecting a parameter, then selecting a logical operation, and then selecting or typing in a value.

     For example, if you wanted to "filter out" all color printers, you would:

     1. From the parameter box, select **Color**.
     2. From the operation box, select **Equal To**.
     3. From the value box, select **Monochrome**.

     Likewise, if you wanted to "filter in" all printers with Job Timeouts greater than or equal to 90 seconds, you would:

     1. From the parameter box, select **Job Timeout**.
     2. From the operation box, select **Greater Than Or Equal To**.
     3. From the value box, type in **90**.

Note: Some values (such as the 90 seconds in the previous example) must be manually typed.

As in the Basic filter configuration, if **All** is selected, a device must meet all conditions. If **Any** is selected, a device must meet at least one condition to be included in the folder. If only one condition is specified, the **Any** and **All** radio buttons will be grayed out.

For a more in depth look at filters, see **Using filters**.

Apply a filter to a folder

1. From the menu bar, click MarkVision ▸ Folders. The folder configuration window appears.
2. Select the folder you want to configure. If you have already applied a filter to this folder, the filter settings appear.
3. If you want to apply a previously created filter, click **Load Filter...**, and then choose the filter.

Note: Manual selection overrides filters. For example, if you apply the filter **Color Equal To Monochrome**, and you have already manually selected various color printers, those manually selected printers remain in the folder.

What is MarkVision Messenger?

MarkVision Messenger is a browser based tool that helps to automate responses to printer problems or events. MarkVision Messenger lets you create Actions to automate many printer administration tasks. Using its intuitive wizard based interface, you can configure Actions to:

- E-mail someone when a specific device condition occurs.
- Order supplies for a specific device when messages, such as Toner Low, occur.
- Keep a log of paper jams.

To use MarkVision Messenger, click Actions ▸ MarkVision Messenger Launch... or, from a Web browser enter the URL:

http://<*your server*>/messenger

where <*your server*> is the IP address or hostname of the machine that is running the MarkVision Server.

Note: If MarkVision Professional is not your default Web server, the MarkVision Messenger address is:

http://<*your server*>:9180/messenger

The "messenger" part of the URL is case-sensitive; it must be entered in all lowercase letters.

How do you create actions?

The following steps are an example of how to create an Action in MarkVision Messenger. This sample Action will send an e-mail message to a fictional address, paper@jam.com whenever a printer monitored by the MarkVision Server enters a Paper Jam state. More detailed instructions on configuring Actions are in the MarkVision Messenger User's Guide, which you can access from MarkVision Messenger by clicking **Help**.

1. After logging in to MarkVision Messenger, click **Create New**.
   - Type in the name of the Action (required).
   - Type in a description of the Action (optional).
   - Type in notes about your Action (optional).
2. Click the **Next** arrow icon.
3. Choose whether to make your Action **private** (the Action is only available to you) or **public** (the Action is available to all users), and click the **Next** arrow icon.
4. Choose the event that will trigger the Action. For this example, select **Paper Jam** from the Events list, and then click the blue arrow icon to add **Paper Jam** to the Selected Events box.
5. Click the **Next** arrow icon.
6. Select your method of device selection. You can choose to:
   - Monitor All Devices on the MarkVision Server
   - Monitor Devices in a Specified Folder
   - Monitor Selected Devices
7. For this example, click **Monitor All Devices on the MarkVision Server**, and then click the **Next** arrow icon.
8. Select the type of command your Action will execute. For our example, click **Send SMTP E-mail**, and then click the **Next** arrow icon.
9. In the SMTP Mail Server box, enter your SMTP Mail Server (mailserver.mycompany.com, for example). In the **From:** box, enter your e-mail address. Click the **Next** arrow icon.
10. Compose your e-mail message.
    - In the **To:** box, type the fictional paper@jam.com.
    - If you want to carbon copy (Cc) someone, type the appropriate address in the **Cc:** box.
    - For this example, type "Paper Jam" in the **Subject:** box.
    - In the **Body:** box, type: "There is a paper jam at: **source.ipAddress**, model: **source.model**, and then click the **Next** arrow icon.

Note: Both **source.ipAddress** and **source.model** are Keywords. Select them from the Keywords list and move them to the **Body:** box by clicking the blue arrow icon. The **source.ipAddress** keyword contains the TCP/IP network address (if applicable) of the print server to which the printer is attached. The **source.model** keyword contains the model name of the printer. Many keywords are available in MarkVision Messenger, and a description of each is in the Keyword Detail box, directly under the Keywords list.

11 Select the type of filter for your action:

- **Trigger on Active** sends an e-mail whenever a printer enters a Paper Jam state.
- **Trigger on Either Active or Clear** sends an e-mail whenever a printer enters or exits a Paper Jam state.
- **Custom** lets to create your own filter script.

For this example, click **Trigger on Active**, and then click the **Next** arrow icon.

12 You will now see a summary of your action. Click **Yes** to enable the Action.

Results of this example

If a printer monitored by MarkVision Professional enters a Paper Jam state, an e-mail will be sent to the fictional paper@jam.com. The subject will be "Paper Jam," and the body will be similar to:

> There is a paper jam at: 123.123.123.123, model: generic printer.

In this example, 123.123.123.123 is the TCP/IP network address of the print server to which the printer is attached and generic printer is the model name of the printer.

Where is the README file?

If MarkVision Professional was installed in the default location, the README text file can be found in:

For Windows users:

- Click Start ▸ Programs ▸ MarkVision Professional ▸ MarkVision Professional ReadMe

For UNIX users:

- /usr/markvision/docs/readme

For both Windows and UNIX users:

- You can link to the README file at:

  http:/<*your server*>/markvision

  where <*your server*> is the IP address or hostname of the machine that is running the MarkVision Server.

Note: If MarkVision Professional is not your default Web server, you need to change the URL to:
http://<*your server*>:9180/markvision

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