

Com Port Redirector User Guide

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Contacts

Lantronix Corporate Headquarters

15353 Barranca Parkway
Irvine, CA 92618, USA
Phone: 949-453-3990
Fax: 949-453-3995

Technical Support

Phone: 800-422-7044 or 949-453-7198
Fax: 949-450-7226
Online: www.lantronix.com/support
E-mail: support@lantronix.com

Sales Offices

For a current list of our domestic and international sales offices, go to the Lantronix web site at <http://www.lantronix.com/about/contact/index.html>

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11/03	A	

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1: Using this Guide

Purpose and Audience

This guide describes the installation and configuration of the Com Port Redirector™ software. It is written for users who will be installing, configuring, and using Com Port Redirector.

Chapter Summary

The remaining chapters in this guide include:

- | | |
|---|--|
| 2: Introducing Com Port Redirector | Provides an overview of Com Port Redirector™ and a Quick Start for getting the application up and running. |
| 3: Installing Com Port Redirector | Provides instructions for installing Com Port Redirector. |
| 4: Configuration | Describes how to configure Com Port Redirector and the serial devices with which it communicates. |

Additional Com Port Redirector Documentation

In addition to this User Guide, the Com Port Redirector provides an online help facility that contains information about using the software.

2: Introducing Com Port Redirector

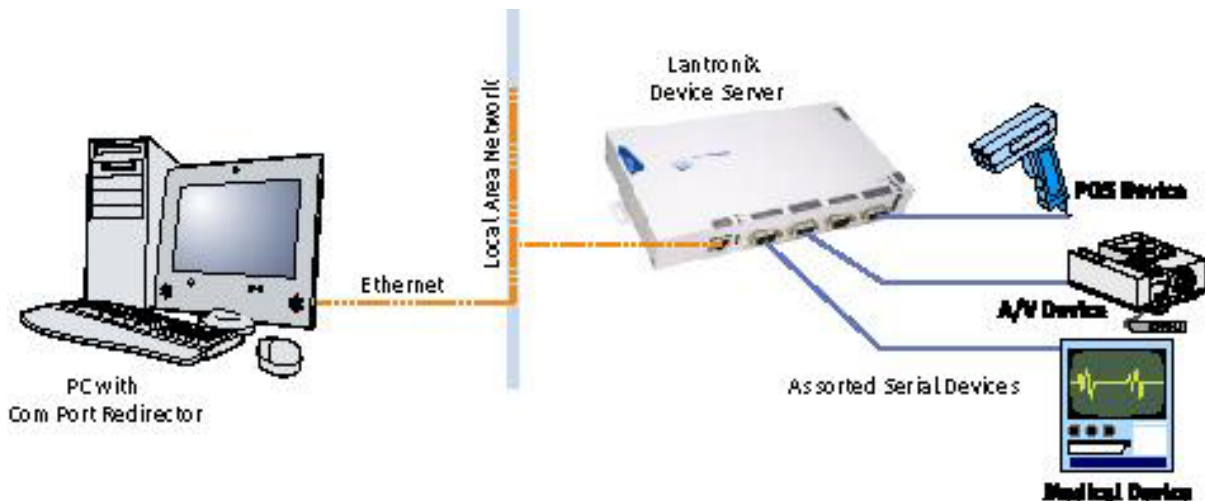
This chapter includes the following topics:

Topic	Page
Overview	1-1
Quick Start	2-3

Overview

Com Port Redirector is a software utility for network-enabling legacy software applications that do not have network support. Com Port Redirector installs virtual Windows® communication ports. These virtual communication (or com) ports are redirected over a network to the serial port of a Lantronix device server (see Figure 2-1).

Figure 2-1. Example of How Com Port Redirector Works



In most cases, legacy software that uses the virtual com ports created with Com Port Redirector encounters no problems and acts as if it were communicating with a physical com port. Not all software applications, however, are suited for use with Com Port Redirector.

Serial port software applications are designed for direct communication with the serial device being managed. However, when device servers are used across a network, latency can occur with the connection from the software to the managed serial device. Some software applications have timing constraints for data transmitted and received on com ports. In some cases, a software application will not wait long enough to receive a response from the serial device being managed. As a result, the software assumes the serial device is not responding and times out.

Should increased latency become an issue for a software application, implement a TCP socket connection in the software. If this is not possible, increase the timeout settings in the software to compensate for the additional latency.

Non-Redirected Connections vs. Redirected Connections

Most software applications that need to use the Com Port Redirector have been designed to connect directly to the serial device being managed. This connection is achieved using a direct cable connection from a com port on the personal computer (PC) running the software utility to the serial port of the serial device being managed. With this configuration, the PC and the managed serial device reside on an isolated serial network. The traffic passed on the physical media between them is intended for either the PC or the serial device. Latency is not an issue in this scenario.

When the same software applications are used with the Com Port Redirector, the applications are no longer directly attached to the serial device being managed. Instead, all traffic between the software application and the serial device is routed as follows:

1. From a virtual com port, the data is stripped out of a serial packet and placed into an IP packet.
2. The serial packet is sent from the virtual com port to a network interface on the PC.
3. Data is transmitted over the network, through switches or routers, to the network interface on a device server.
4. From the network interface on the device server, the data converts from an IP packet back to a serial packet.
5. Once in a serial packet, data is transmitted down the physical media to the serial device.

This process introduces latency. The amount of latency associated with this type of connection is determined by the amount of network latency. The more traffic on the network, the greater the latency between the PC running the software application and the device server.

To address latency, Com Port Redirector provides a **No Net Close** option in the Port Settings dialog box (click **Port Settings** from the COM Port Redirector Configuration window). This option keeps the TCP/IP connection open when the com port is closed, reducing latency.

Quick Start

The following procedure summarizes the steps for using Com Port Redirector.

1. Install Com Port Redirector on each PC that will communicate with the device server. See [Installation Instructions](#) on page 3-1.
2. Review the general usage guidelines for the device server (page 4-1) and Com Port Redirector (page 4-2).
3. Configure the device server and Com Port Redirector. See [Chapter 4](#).
4. Verify the connectivity between Com Port Redirector and the device server. See [Verifying Connectivity with the Device](#) on page 4-13.

3: Installing Com Port Redirector

This chapter describes how to install COM Port Redirector.

This chapter includes the following topic:

Topic	Page
Installation Instructions	3-1

Installation Instructions

To install Com Port Redirector, use the following procedure.

1. Perform the appropriate step to start the installation:
 - ◆ If Com Port Redirector is on a CD-ROM, insert the CD-ROM into the computer's CD-ROM drive.
 - ◆ If you downloaded Com Port Redirector, double-click the downloaded file.

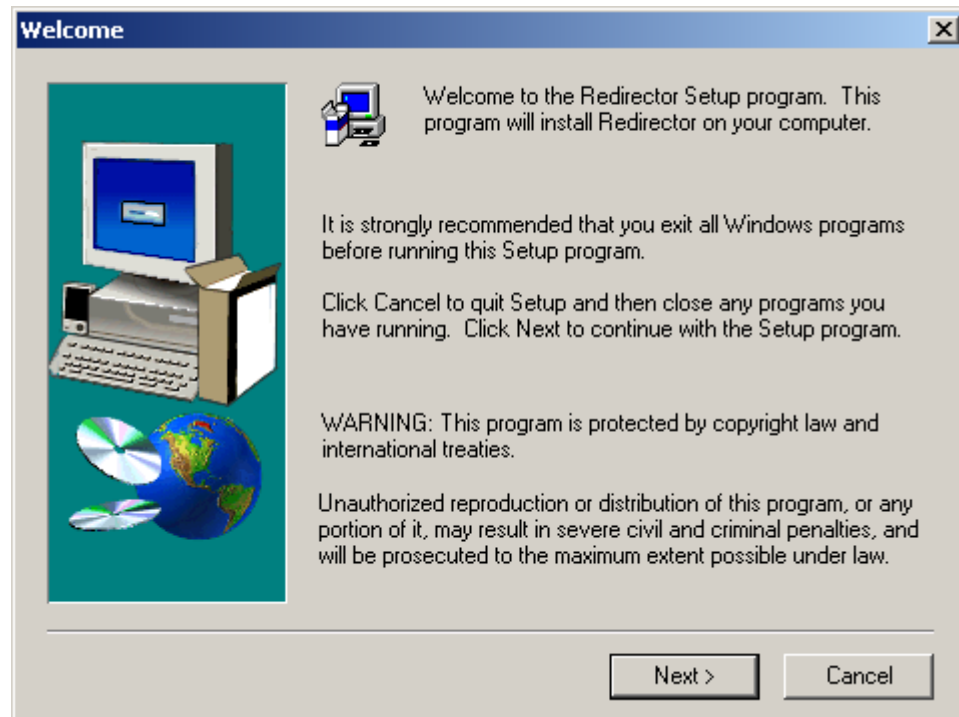
Either step displays the Redirector – Welcome screen in Figure 3-1.

Figure 3-1. Redirector – Welcome Screen



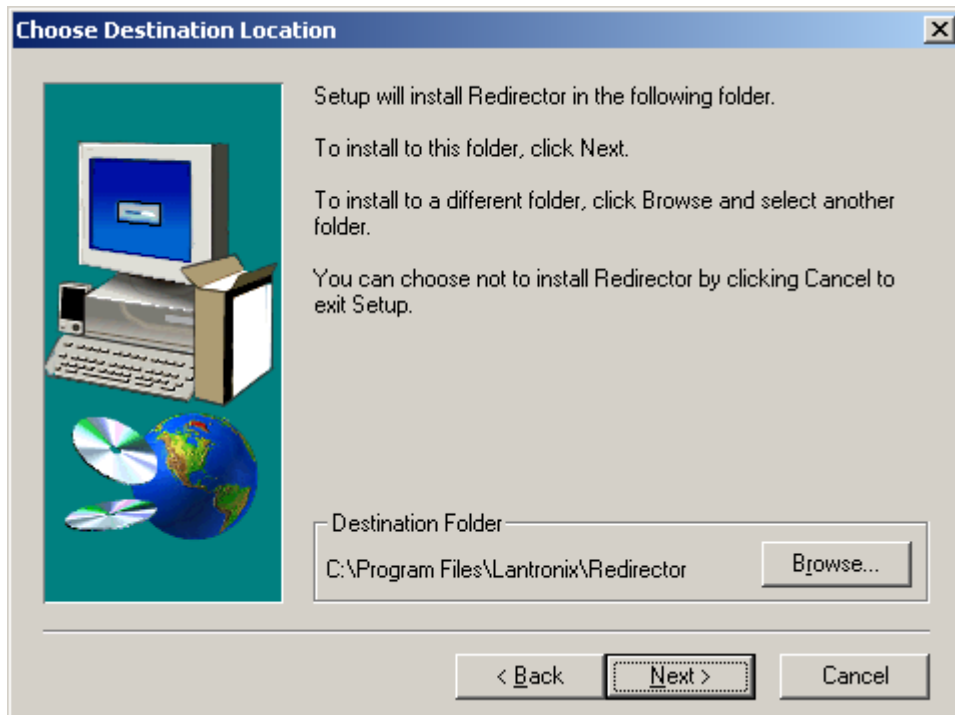
2. Click the **Continue** button. The contents of the file are unpacked and the Welcome screen in Figure 3-2 appears.

Figure 3-2. Welcome Screen



3. Click the **Next** button. The Choose Destination Location dialog box appears (see Figure 3-3).

Figure 3-3. Choose Destination Location Dialog Box

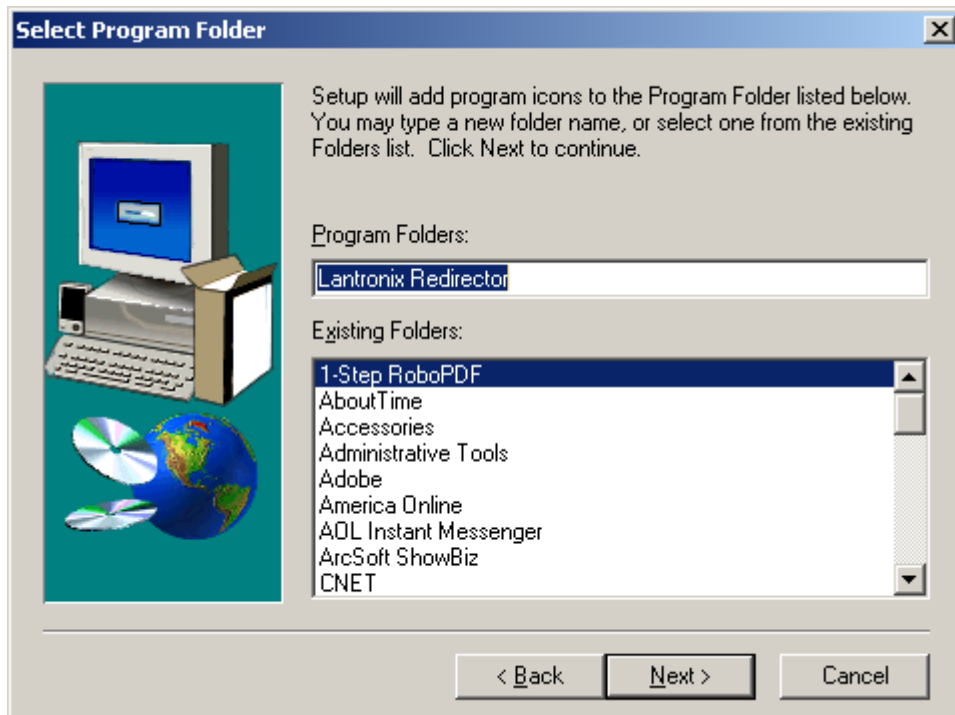


4. The path under **Destination Folder** shows where the Com Port Redirector software will be installed. We recommend the default location. To change this location, click the **Browse** button and select a different location.

Note: The Choose Destination Location dialog box and the one that follows it have a **Back** button you can click to return to a previous screen.

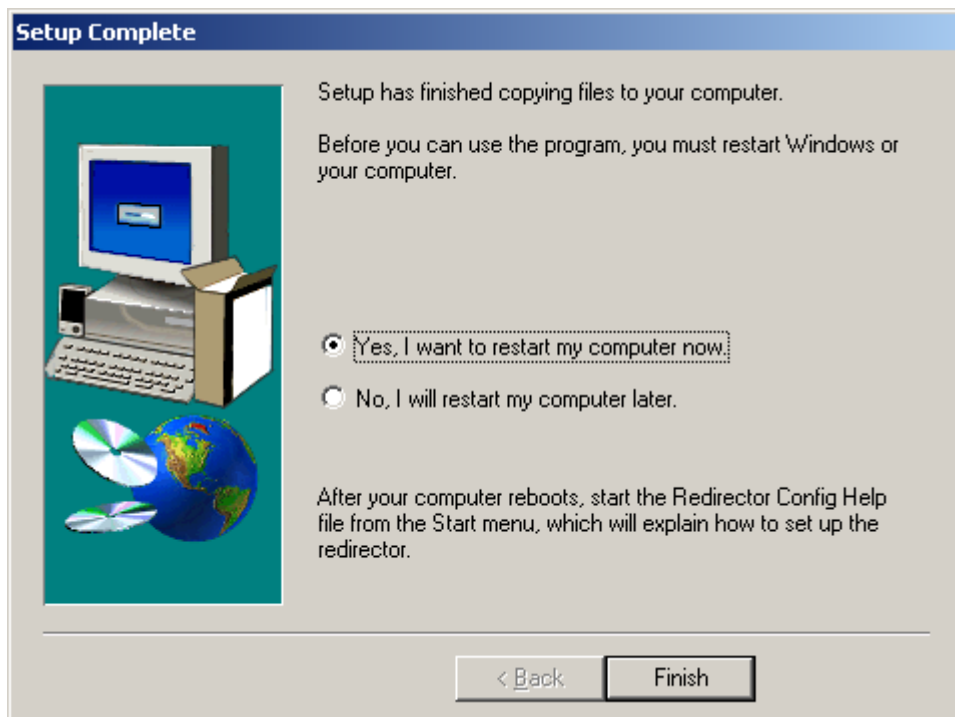
5. Click **Next**. The Select Program Folder dialog box appears (see Figure 3-4).

Figure 3-4. Select Program Folder Dialog Box



6. The name of the folder that will contain the Com Port Redirector software appears below **Program Folders**. We recommend the default folder name. To change this name, type a new name in the **Program Folders** field.
7. Click **Next**. The program is installed. After the installation, the Setup Complete dialog box appears (see Figure 3-5).

Figure 3-5. Setup Complete Dialog Box

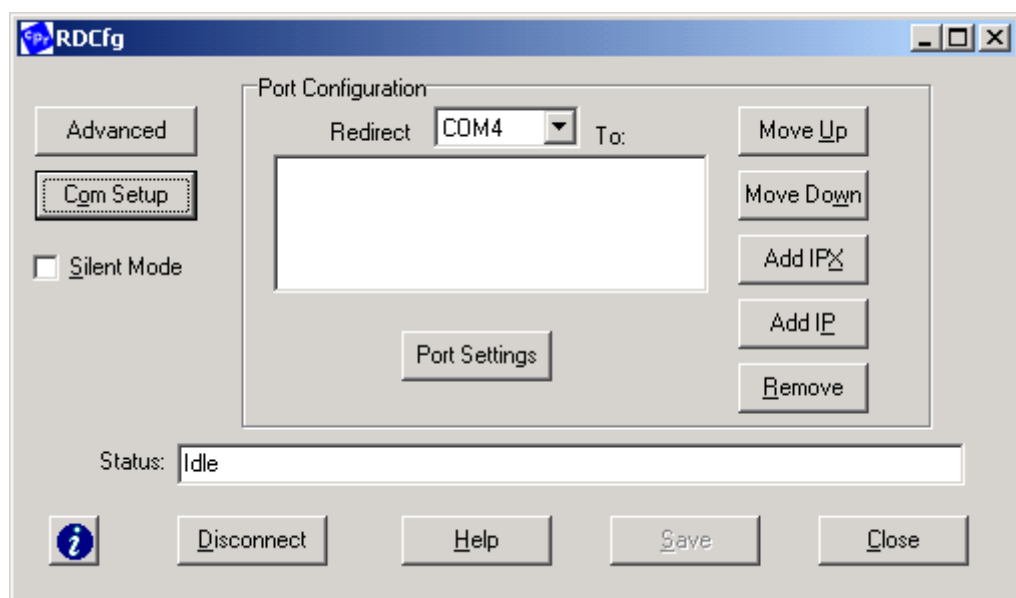


8. Click **Finish** to complete the installation and reboot your computer.

Note: After you complete the installation, we recommend you read the Read Me file to obtain the latest information about Com Port Redirector .

9. Click the **Start** button in the Windows Taskbar, point to **Programs**, point to **Lantronix Redirector**, and click **Configuration**. The Com Port Redirector Configuration window appears (see Figure 3-6).

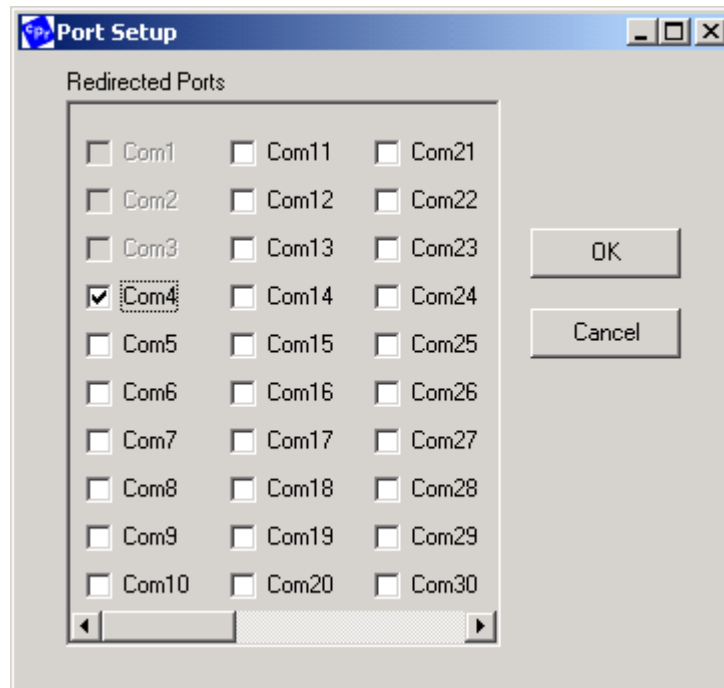
Figure 3-6. Com Port Redirector Configuration Window



10. Click the **Com Setup** button. A Port Setup dialog box similar to the one in Figure 3-7 appears, with the first logical communications port checked.

The physical communication ports on the computer where Com Port Redirector is installed are displayed as gray and unavailable. In Figure 3-7, these are Com1 through Com3. Your unavailable communication ports may vary from those in Figure 3-7.

Figure 3-7. Port Setup Dialog Box



11. Click all the logical ports to which the PC will be redirected. A checkmark appears next to each logical port selected. Each port selected will be available from the **Redirect To** drop-down list in the Com Port Redirector Configuration window (this procedure is described in the next chapter).
12. To deselect a port, click it again to remove the checkmark next to it. Removing the checkmark indicates the port will not be available from the **Redirect To** drop-down list.
13. When finished, click **OK**.

Note: After you use the Port Setup dialog box to add or remove com ports, reboot your computer.

4: Configuration

This chapter provides general guidelines for using the device server and Com Port Redirector. It also describes how to set up Com Port Redirector and the device server you will be using with it, and how to verify connectivity between the two.

This chapter includes the following topics:

Topic	Page
General Device Server Configuration Guidelines	4-1
General Com Port Redirector Usage Guidelines	4-2
Configuring a UDS, CoBox, XPort, or XPress Device	4-2
Configuring an MSS100 or MSS485-T Device Server	4-5
Configuring an MSS4 or MSS-VIA Device	4-7
Configuring an ETS Terminal Server or SCS Console	4-9
Configuring Port Settings	4-10
Verifying Connectivity with the Device	4-13

General Device Server Configuration Guidelines

Observe the following general guidelines when preparing the device server for use with Com Port Redirector:

- ◆ The device server to which Com Port Redirector will connect must have an IP address.
- ◆ The PC running Com Port Redirector must have a good network connection to the device server.
- ◆ If redirecting over a Wide Area Network (WAN), both the PC and the device server must have a correct gateway address configured in their TCP/IP settings.
- ◆ All serial settings on the device server must match the settings of the serial device. Serial settings include:
 - Baud rate
 - Parity
 - Stop bits
 - Flow control
 - Interface mode (RS-232 or RS-422/485)
- ◆ Connect/Disconnect and Access Modes: The way the device server accepts a connection must be configured appropriately to accept a network connection from Com Port Redirector.
 - CoBox, UDS, XPort, and XPress products: set the connect mode to C0 and the disconnect mode to 00.

- MSS, ETS, and SCS products: set the access mode to remote on the serial port receiving the connection from the Com Port Redirector.
- ◆ Serial cabling between the serial device being managed and the device server must be correct. Consult your documentation for the pinouts of your Lantronix device server.

Consult your device server documentation for information about configuring these settings for your device server.

General Com Port Redirector Usage Guidelines

Observe the following general guidelines when using Com Port Redirector:

- ◆ Do not run Com Port Redirector with other software that installs a virtual com port.
- ◆ Do not run Com Port Redirector with other Comport Redirection software on the same PC.

Configuring a UDS, CoBox, XPort, or XPress Device Server

This section describes how to configure Com Port Redirector for use with a UDS, CoBox, XPort, or XPress device server.

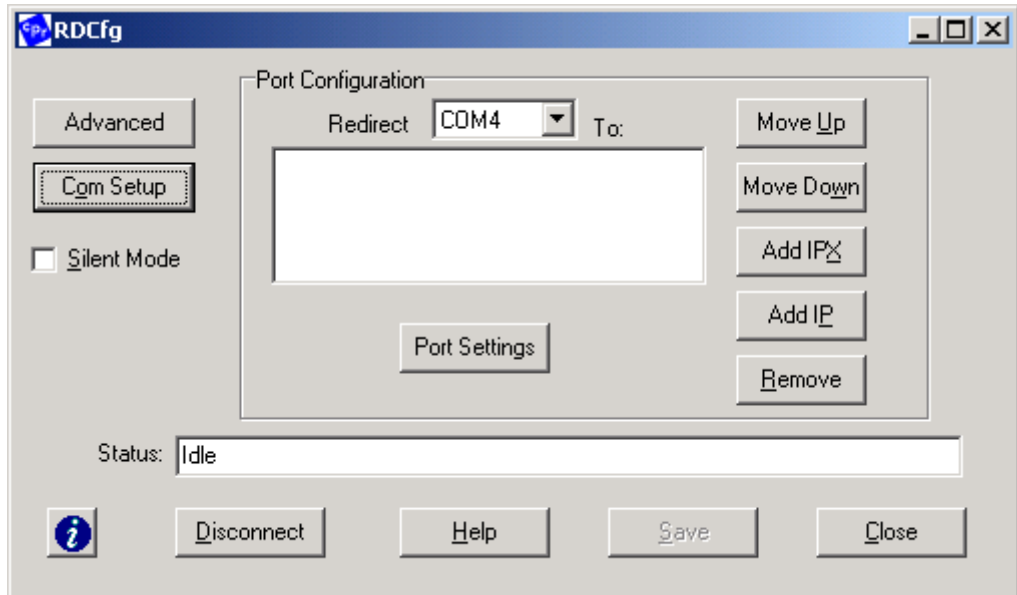
Device Server Configuration

1. Assign an IP address to the device server before using Com Port Redirector.
2. Telnet into the configuration port **9999** on the device server.
3. When prompted, press the Enter key.
4. Select the channel (serial port) to which the Com Port Redirector will connect.
5. Set the serial settings (baud rate, parity, flow control, data bits) to those of the serial device attached to the Lantronix device server.
6. Set the port number to **10001** if using channel 1. Set the port number to **10002** if using channel 2.
7. Set the connect mode for the channel to **C0**.
8. Leave all other settings at the default settings.

Redirector Configuration

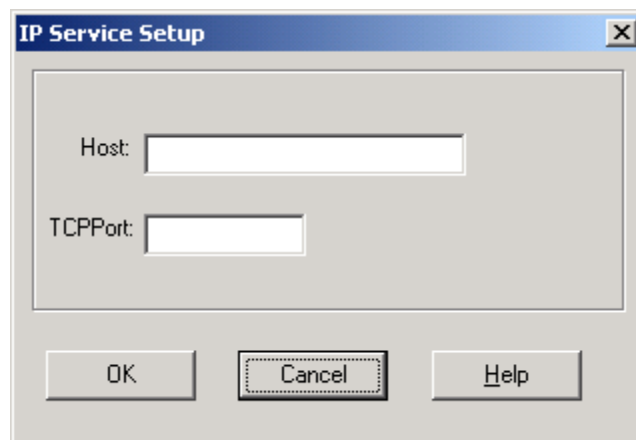
1. Click the **Start** button in the Windows Taskbar, point to **Programs**, point to **Lantronix Redirector**, and click **Configuration**. The Com Port Redirector Configuration window appears (see Figure 4-1).

Figure 4-1. Com Port Redirector Configuration Window



2. Using the **Redirect To** drop-down list at the top of the Com Port Redirector Configuration window, click a redirected com port.
3. Click the **Add IP** button. The IP Service Setup dialog box appears (see Figure 4-2).

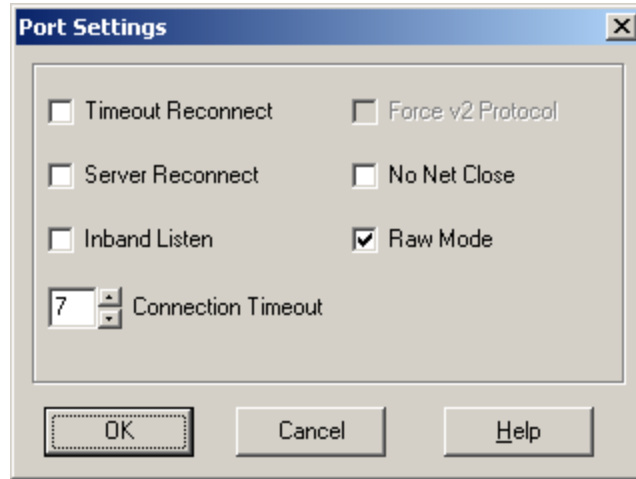
Figure 4-2. IP Service Setup Dialog Box



4. In the **Host** field, enter the IP address of the Lantronix device server.
5. In the **TCP Port** field, type **10001** if using channel 1 or **10002** if using channel 2.

6. Click the **OK** button.
7. Click the **Port Settings** button. The Port Settings dialog box appears.
8. Check **Raw Mode** (see Figure 4-3). For more information about Raw Mode, refer to Table 4-1 on page 4-12.

Figure 4-3. Port Settings Dialog Box with Raw Mode Enabled



9. Click **OK**.
10. Click the **Save** button.
11. Click the **Close** button.
12. Proceed to [Verifying Connectivity with the Device](#) on page 4-13.

Configuring an MSS100 or MSS485-T Device Server

This section describes how to configure Com Port Redirector for use with an MSS100 or MSS485-T device server.

Device Server Configuration

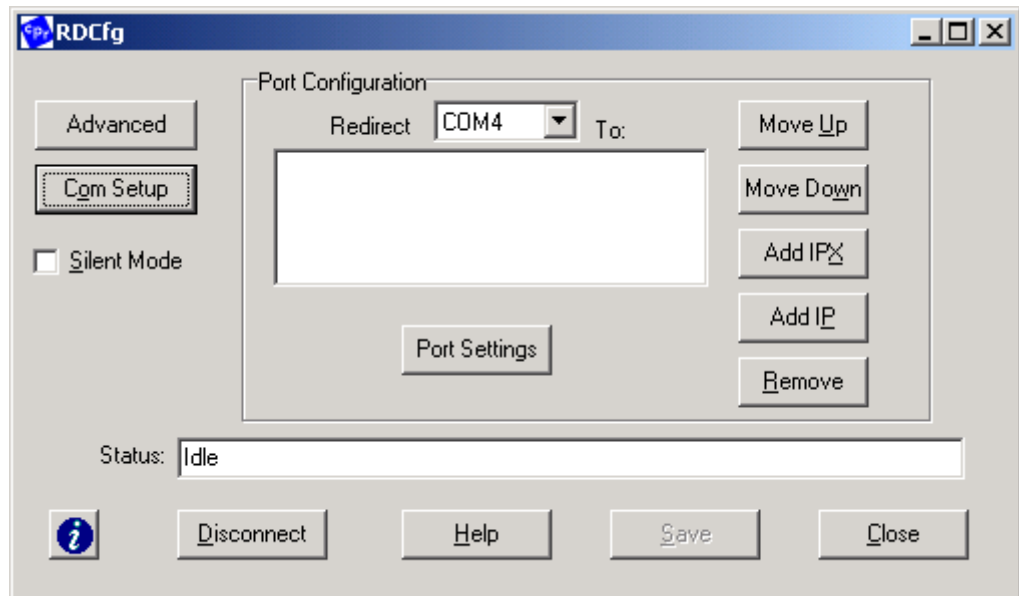
1. Assign an IP address to the device server before using Com Port Redirector.
2. Telnet into the device server and log in as the privileged user.
 - ◆ The command to login as the privileged user is **set priv**.
 - ◆ The default password is **system**.
3. Set the serial settings (baud rate, parity, flow control, data bits) to those of the serial device attached to the Lantronix device server.
4. Issue the following commands at the **Local_>>** prompt. Press the Enter key (shown as <CR>) after typing each command. The last command reboots the unit.

```
change autostart disable <CR>
change access remote <CR>
init delay 0 <CR>
```

Redirector Configuration

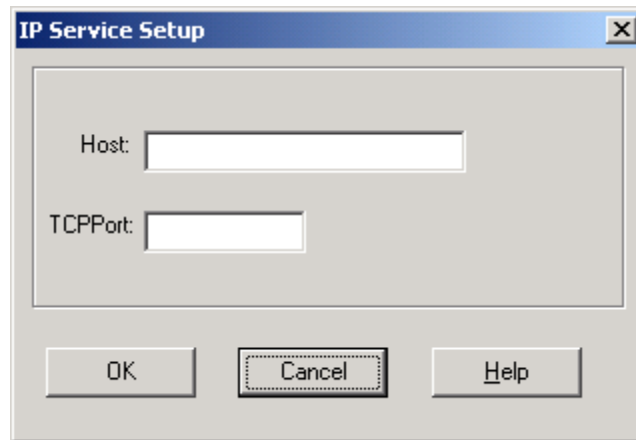
1. Click the **Start** button in the Windows Taskbar, point to **Programs**, point to **Lantronix Redirector**, and click **Configuration**. The Com Port Redirector Configuration window appears (see Figure 4-4).

Figure 4-4. Com Port Redirector Configuration Window



2. Using the **Redirect To** drop-down list at the top of the Com Port Redirector Configuration window, click a redirected com port.
3. Click the **Add IP** button. The IP Service Setup dialog box appears (see Figure 4-5).

Figure 4-5. IP Service Setup Dialog Box



4. In the **Host** field, enter the IP address of the Lantronix device server.
5. In the **TCPPort** field, type **3001**.
6. Click the **OK** button.
7. Click the **Save** button.
8. Click the **Close** button.
9. Proceed to [Verifying Connectivity with the Device](#) on page 4-13.

Configuring an MSS4 or MSS-VIA Device Server

This section describes how to configure Com Port Redirector for use with an MSS4 or MSS-VIA device server.

Device Server Configuration

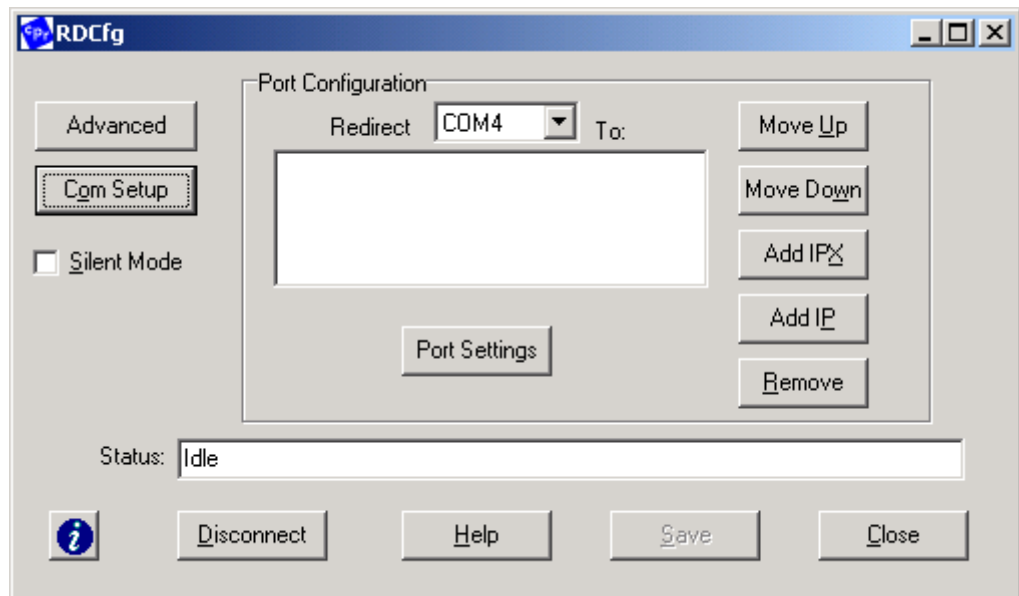
1. Assign an IP address to the device server before using Com Port Redirector.
2. Telnet into the device server and log in as the privileged user.
 - ◆ The command to login as the privileged user is **set priv**.
 - ◆ The default password is **system**.
3. Set the serial settings (baud rate, parity, flow control, data bits) to those of the serial device attached to the Lantronix device server.
4. Issue the following commands at the **Local_>>** prompt. Replace the *n* with the port number to which Com Port Redirector will connect. Press the Enter key (shown as <CR>) after typing each command. The last command reboots the unit.

```
change port n autostart disable <CR>
change port n access remote <CR>
init delay 0 <CR>
```

Redirector Configuration

1. Click the **Start** button in the Windows Taskbar, point to **Programs**, point to **Lantronix Redirector**, and click **Configuration**. The Com Port Redirector Configuration window appears (see Figure 4-6).

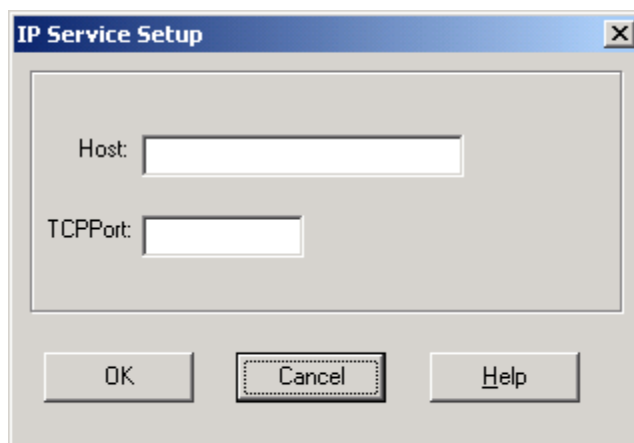
Figure 4-6. Com Port Redirector Configuration Window



2. Using the **Redirect To** drop-down list at the top of the Com Port Redirector Configuration window, click a redirected com port.

3. Click the **Add IP** button. The IP Service Setup dialog box appears (see Figure 4-7).

Figure 4-7. IP Service Setup Dialog Box



4. In the **Host** field, enter the IP address of the Lantronix device server.
5. In the **TCPPort** field, type **3001** for port 1, **3002** for port 2, and so on.
6. Click the **OK** button.
7. Click the **Save** button.
8. Click the **Close** button.
9. Proceed to [Verifying Connectivity with the Device](#) on page 4-13.

Configuring an ETS Terminal Server or SCS Console Server

This section describes how to configure Com Port Redirector for use with an ETS terminal server or SCS console server.

Terminal or Console Server Configuration

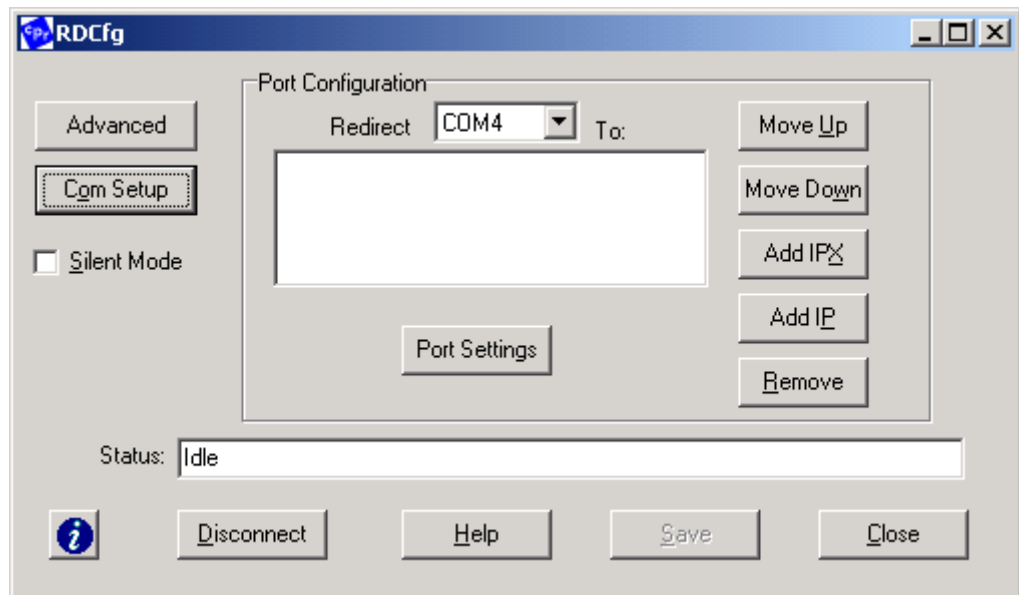
1. Assign an IP address to the terminal or console server before using Com Port Redirector.
2. Telnet into the terminal or console server and log in as the privileged user.
 - ◆ The command to login as the privileged user is **set priv**.
 - ◆ The default password is **system**.
3. Issue the following commands at the **Local_>>** prompt. Replace the *n* with the port number to which Com Port Redirector will connect. Press the Enter key (shown as <CR>) after typing each command. The last command reboots the unit.

```
define port n autostart disable <CR>
define port n access remote <CR>
init delay 0 <CR>
```
4. Set the serial settings (baud rate, parity, flow control, data bits) to those of the serial device attached to the Lantronix device server.

Redirector Configuration

1. Click the **Start** button in the Windows Taskbar, point to **Programs**, point to **Lantronix Redirector**, and click **Configuration**. The Com Port Redirector Configuration window appears (see Figure 4-8).

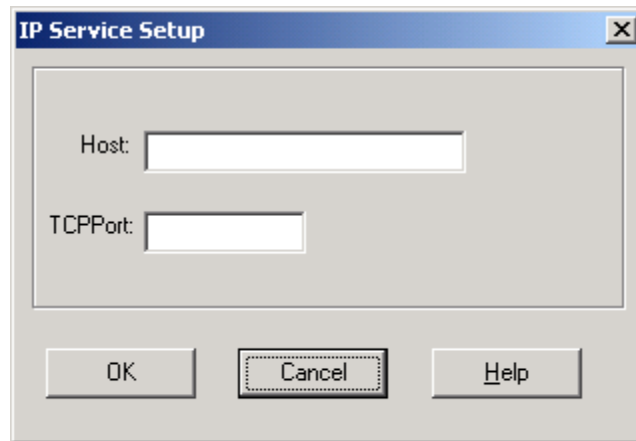
Figure 4-8. Com Port Redirector Configuration Window



2. Using the **Redirect To** drop-down list at the top of the Com Port Redirector Configuration window, click a redirected com port.

3. Click the **Add IP** button. The IP Service Setup dialog box appears (see Figure 4-9).

Figure 4-9. IP Service Setup Dialog Box



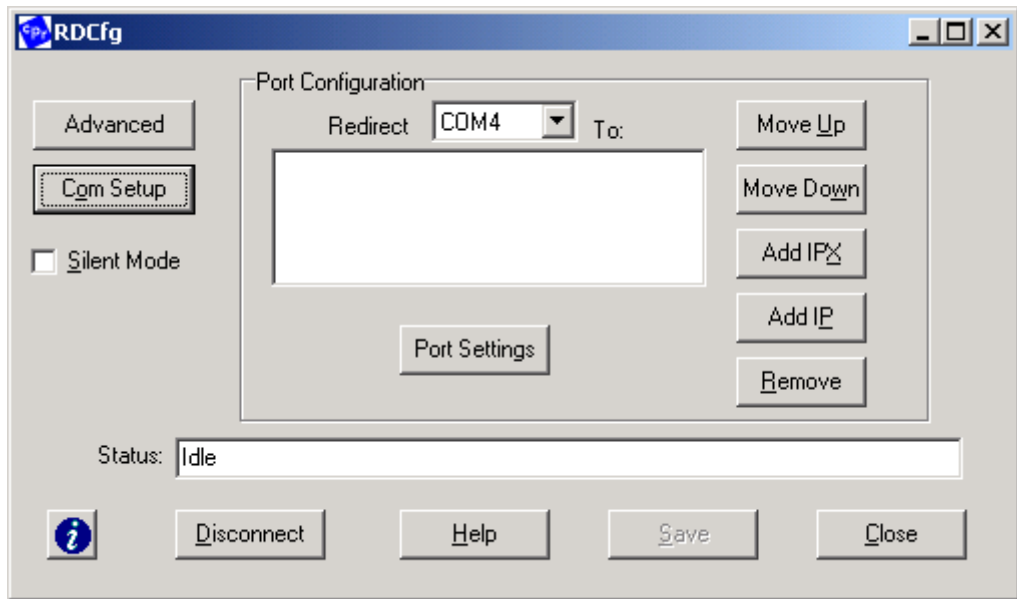
4. In the **Host** field, enter the IP address of the Lantronix device server.
5. In the **TCPPort** field, type **3001** for port 1, **3002** for port 2, and so on.
6. Click the **OK** button.
7. Click the **Save** button.
8. Click the **Close** button.
9. Proceed to [Verifying Connectivity with the Device](#) on page 4-13.

Configuring Port Settings

The Port Settings dialog box lets you define various settings for redirected com ports. The settings selected from the Port Settings dialog box are on a per-port basis. Therefore, to apply port settings to all redirected com ports, repeat the following procedure for each redirected com port.

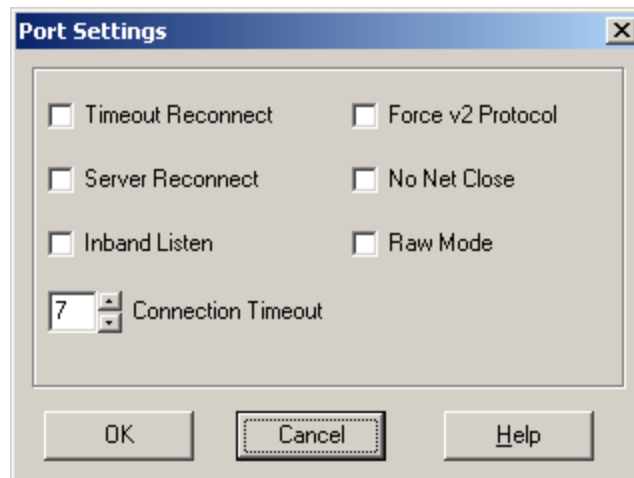
1. Click the **Start** button in the Windows Taskbar, point to **Programs**, point to **Lantronix Redirector**, and click **Configuration**. The Com Port Redirector Configuration window appears (see Figure 4-10).

Figure 4-10. Com Port Redirector Configuration Window



2. Using the **Redirect To** drop-down list at the top of the Com Port Redirector Configuration window, click a redirected com port.
3. Click the **Port Settings** button. The Port Settings dialog box appears (see Figure 4-11).

Figure 4-11. Port Settings Dialog Box



4. Select the appropriate port setting settings (see Table 4-1).

Table 4-1. Port Settings Settings

Setting	Description
Timeout Reconnect	If checked, Com Port Redirector re-establishes the connection if the connection times out (see the TCP Keepalive information in your device server user's guide). When auto-reconnecting, Com Port Redirector tries to reconnect until the connection succeeds or you click the Cancel button in the pop-up connection dialog box. If the port was closed by the communications application or by clicking Disconnect , Com Port Redirector does not try to auto-reconnect.
Server Reconnect	If checked, Com Port Redirector re-establishes the connection if the server closes it. When auto-reconnecting, Com Port Redirector tries to reconnect until the connection succeeds or you click the Cancel button in the pop-up connection dialog box. If the port was closed by the communications application or by clicking Disconnect , Com Port Redirector does not try to auto-reconnect.
Inband Listen	<p>If checked, Com Port Redirector uses the inband redirector protocol on inbound connections from a Lantronix server. This protocol allows settings like modem signals, baud rate and parity to be exchanged between Com Port Redirector and the server.</p> <p>To use this setting with MTS and ETS products, the server must run firmware V3.6/3 or higher and the word OR must be specified at the end of the server's connection (Define Port) string. See your product reference manual for more information.</p> <p>To use this setting with SCSxx00 products, the server must run firmware V2.0/1 or higher and the word OR must be specified at the end of the server's connection (Define Port) string. See your product reference manual for more information.</p>
Connection Timeout	Specifies the maximum number of seconds that the Com Port Redirector waits for a connection to be made before giving up on this attempt. If Timeout Reconnect is enabled, each connection attempt lasts this long. If Timeout Reconnect is disabled, the connection attempt fails after this interval and no more attempts are made.
Force v2 Protocol	If checked, Com Port Redirector always uses the version 2 protocol. This protocol has a quicker connect time than version 3, but lacks the version 3 feature set. Version 3 lets the communication application set the Data Terminal Ready (DTR) and Request To Send (RTS) states, byte size, stop bits, parity, and the read the state of Clear To Send (CTS), Data Set Ready (DSR), and Carrier Detect (CD). CoBox, UDS, XPort, and XPress products do not support version 2 or 3 Com Port Redirector protocols. Therefore, use Raw Mode with CoBox, UDS, XPort, and XPress products.
No Net Close	If checked, prevents the network connection from being dropped when the communications application is closed. To drop the connection, click the Disconnect button in the Com Port Redirector Configuration window. This allows applications to close and reopen ports, without waiting for the network connection to be re-established and negotiated.
Raw Mode	If checked, forms a raw TCP connection to the server's serial port, accelerating the connection between the communications application and the server, without sending configuration or status information from the PC to the server. Raw Mode is designed for CoBox, UDS, XPort, and XPress products. When using Raw Mode, configure Com Port Redirector and your Lantronix server to use the same port number.

5. After selecting the port settings, click **OK**.

Verifying Connectivity with the Device Server

After configuring the Com Port Redirector and the device server, use a terminal-emulation program such as HyperTerminal to verify connectivity from the Com Port Redirector to the device server. To verify connectivity between Com Port Redirector and the device server using HyperTerminal:

1. Click the **Start** button in the Windows Taskbar, point to **Programs**, point to **Accessories**, point to **Communications**, and click **HyperTerminal**.
2. Open a new session to the virtual com port configured to connect to the device server.
3. When the HyperTerminal window opens, a pop-up window displays, *Attempting to connect to service*. If this message is replaced by:
 - ◆ *Successfully redirected to service*, the connection from the Com Port Redirector to the device server was successful.
 - ◆ *Failed to connect to any service*, the connection failed. Ensure your settings are correct (refer to the appropriate configuration section in this chapter for setup procedures for your device server).
4. To hide the pop-up window, check **Silent Mode** on the Com Port Redirector Configuration window.

Figure 4-12. Enabling Silent Mode

