



UBox USB Device Server User Guide

Model UBX4100



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1: Using This Guide

Purpose and Audience

The Lantronix UBox USB Device Server makes it possible to share USB devices such as printers, scanners, and storage drives over a Local Area Network. This guide provides the information needed to configure, use, and update the UBox.

Summary of Chapters

The remaining chapters in this guide include:

Chapter	Description
2: Introduction	Describes the main features, the required hardware and software, and a list of items included with the unit.
3: Installing the UBox	Provides instructions on installing the UBox hardware and software.
4: Using USB Devices on the Network	Provides instructions for connecting to, using, and disconnecting from a USB device.
5: Changing the UBox's Settings	Describes how to change the UBox's settings to meet your specific needs.
6: Changing Local Software Settings	Describes how to change local settings such as the access password and TCP port.
7: Troubleshooting	Explains how to interpret the status lights and to diagnose problems with UDP ports, your network, and USB devices. Includes Lantronix Technical Support contact information.
A: Status Light Behavior	Describes the LED status lights and what they indicate.
B: Configuring the Windows XP Firewall	Provides instructions on how to configure Windows XP's built-in firewall for use with the Lantronix UBox device server.
C: Compliance	Lists FCC, CE, and VCCI information.
D: Lantronix Software License Agreement	
E: Lantronix Warranty	

2: Introduction

The Lantronix UBox makes it possible to share, access, and control USB devices over a LAN. This User Guide deals with the UBX4100, which supports 10/100 Ethernet connectivity to four USB 2.0 devices at a full 12 Mbps speed per port.

Model and Part Numbers

Lantronix offers the following part numbers for Model UBX4100, which differ only in the power supply used.

Figure 2-1. Model UBX4100 Part Numbers

Part Number	Description
UB4100001-01	4-Port USB Device Server, US Domestic Power
UB4100002-01	4-Port USB Device Server, European Power
UB4100003-01	4-Port USB Device Server, UK Power

Compatible USB Devices

This release of UBox software supports USB printers, USB multi-function printers, USB scanners, USB HID devices, and USB hard drives and other mass storage devices. While other USB devices may work, this release does not officially support them. USB audio and video products are not compatible with this release. See the Lantronix web site for further compatibility details.

Connectivity to USB Devices

The UBox USB Device Server provides the following connections to USB Devices:

- ◆ 4 USB full-speed ports (12 Mbps)
- ◆ Full 500 mA power per port provided to each USB device

Connectivity to Network

The UBox USB Device Server provides the following connections to your network:

- ◆ 10/100 auto sensing RJ45 Ethernet connector
- ◆ Half and full duplex support
- ◆ IP addressing: Static/DHCP/Zeroconfig

Requirements

- ◆ Windows: Windows 2000/XP or later

What's Inside the Package

The Lantronix UBox package includes:

- ◆ Lantronix UBox USB Device Server
- ◆ Power Supply
- ◆ Quick Start Guide
- ◆ CD with software and User Guide

3: Installing the UBox

The UBox package has two components: the UBox hardware and the UBox software. Both have their own settings and configuration options.

This chapter includes the following topics:

- ◆ Installing the UBox Hardware
- ◆ Installing the UBox Software
- ◆ Uninstalling the UBox Device Server Software

Installing the UBox Hardware

Warning: Do not connect a USB device to the UBox until you have finished installing the software and hardware. Chapter 4: [Using USB Devices on the Network](#) walks you through the process of using your USB devices.

Step 1- Connect the UBox to Your Network

1. Connect an Ethernet cable to the Ethernet port of the UBox.

Figure 3-1. Ethernet Connection



2. Connect the other end of the cable to your network.

If you do not have a network, you can connect the UBox directly to the Ethernet port on your computer using an Ethernet crossover cable.

Step 2 - Connect the UBox's Power Supply and Read the LEDs

1. Connect the power supply (included in the box) to the UBox's power connector.

Figure 3-2. UBox Power Supply



Figure 3-3. UBox Connections



2. Once the UBox has power, notice the following:
 - ◆ The UBox's status lights turn on and off. After a few seconds, the lights stop blinking.
 - ◆ If the UBox is responding properly, the four green USB lights turn on and stay solid.
 - ◆ The first green SYSTEM light blinks on and off every few seconds. Ignore any other status lights for now.

Figure 3-4. SYSTEM LEDs



Note: The LEDs on the UBox can also indicate other statuses, such as IP configuration type and UBox status. For a detailed description of what the LED lights indicate, see [A: Status Light Behavior](#).

Troubleshooting

- ◆ You may see red lights on the UBox at this point in the installation. This is normal until you install the UBox software on at least one computer.
- ◆ If you do not see the USB lights turn on or do not have a blinking green SYSTEM light, please proceed to [Troubleshooting: Status Lights](#) on page 49.

The UBox hardware installation is now complete. Please proceed to the UBox software installation instructions.

Installing the UBox Software

The following instructions are for installing the UBox software for Windows operating systems.

To install the UBox Software:

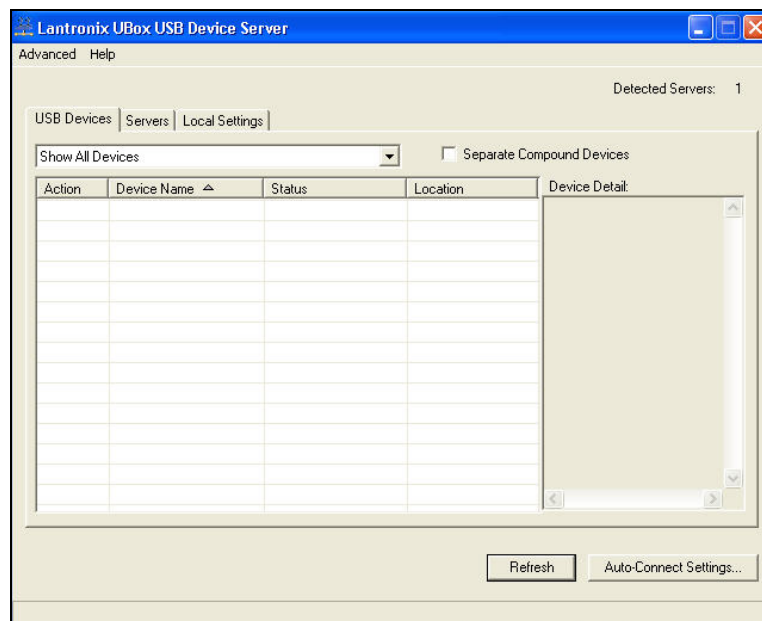
1. Insert the product CD into your CD drive. The CD should start automatically.
If the CD does not auto start, open **My Computer**, locate and then double-click **Launch.exe**.
2. Click the UBox Software **Installation** button to install the application.
3. Follow the on-screen instructions.

Note: During or after the software installation, the Windows New Hardware Wizard may ask you to install software several times. Select **Install the software automatically**. If you see an additional prompt regarding logo testing, click **Continue Anyway** to proceed.

Once the Lantronix UBox Installer completes the installation, it automatically launches the Lantronix UBox application. The Lantronix UBox USB Device Server window opens with the **USB Devices** tab open. You will use this application to configure the UBox.

Note: The first time you launch the UBox software, you may be asked to update your UBox's firmware. If you get this message, please update your firmware using the on-screen instructions or see [Updating the UBox's Firmware](#) on page 40.

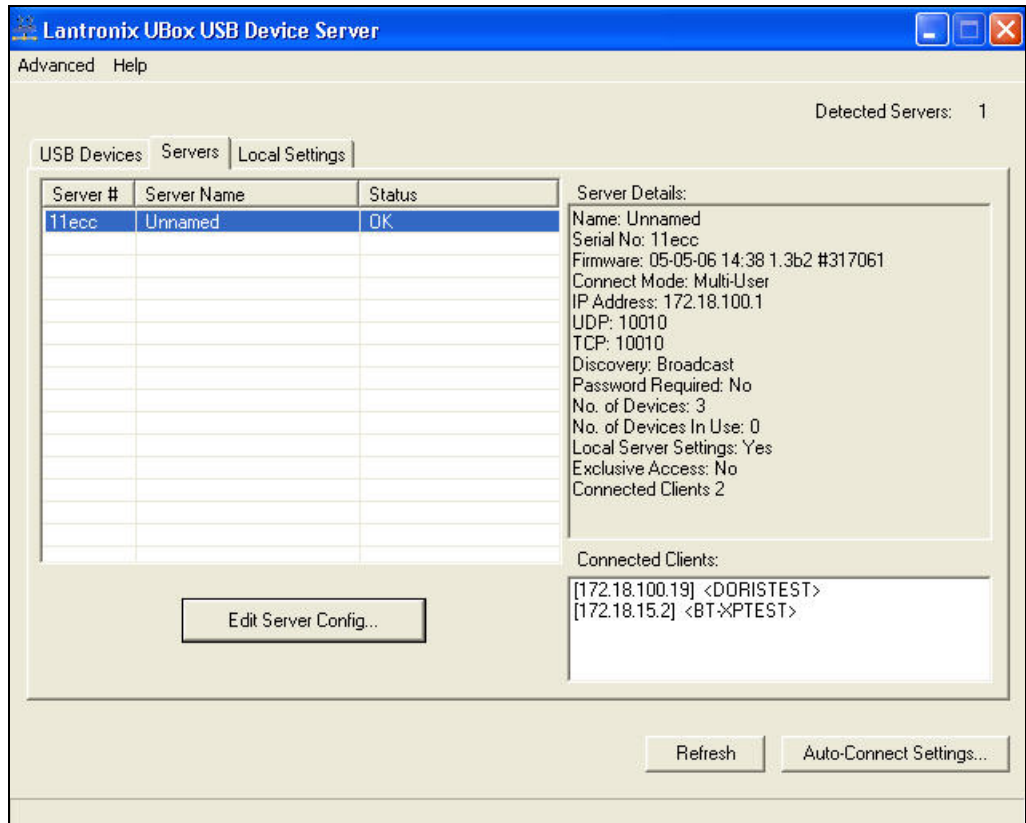
Figure 3-5. USB Devices Tab



- To verify that the application sees the UBox Device Server, click the **Servers** tab.

Note: Initially, the UBox displays as **Unnamed**. During configuration, you can assign a name to it. (See [Editing Server Settings: Access Tab](#) on page 31.)

Figure 3-6. Servers Tab Displaying a UBox



Note: If the UBox does not display, and you have it in a static network, you can use the **Override Server Network Settings** option on the **Advanced** menu to configure the UBox. (See [Overriding Server Network Settings](#) on page 42.)

Uninstalling the Lantronix UBox Software

To uninstall the Lantronix UBox software:

- Click **Start→Settings→Control Panel)→Add or Remove Programs**.
- Select **Lantronix UBox USB Device Server** and click the **Change/Remove** button.
- Follow the instructions on the screen to complete the uninstall process.

4: Using USB Devices on the Network

Overview

This chapter includes the following topics:

- ◆ Connecting your USB device to the UBox's USB port.
- ◆ Connecting to your networked USB device using the Lantronix UBox software:
 - Using the **Connect** and **Disconnect** icons
 - Using the Auto Connect feature for printers
- ◆ Use your USB device by means of the Lantronix UBox.

Note: These instructions help you connect a USB device (e.g., a printer or scanner) to the UBox for the **first time**. **We recommend that you only connect one USB device at a time.** To connect additional devices, repeat these instructions for each device.

Connecting Your USB Device

Step 1 - Connect a USB Device to the UBox

1. Connect your USB device to any USB port on the Lantronix UBox.

Figure 4-1. Connecting a USB Device to the UBox



Each USB port has a green status LED light. These lights indicate whether your USB device is supported in the current software/firmware.

- ◆ A solid green light indicates that your device is supported.
- ◆ A slowly blinking light indicates that your USB device is not currently supported. Please contact Lantronix if a light is blinking slowly.

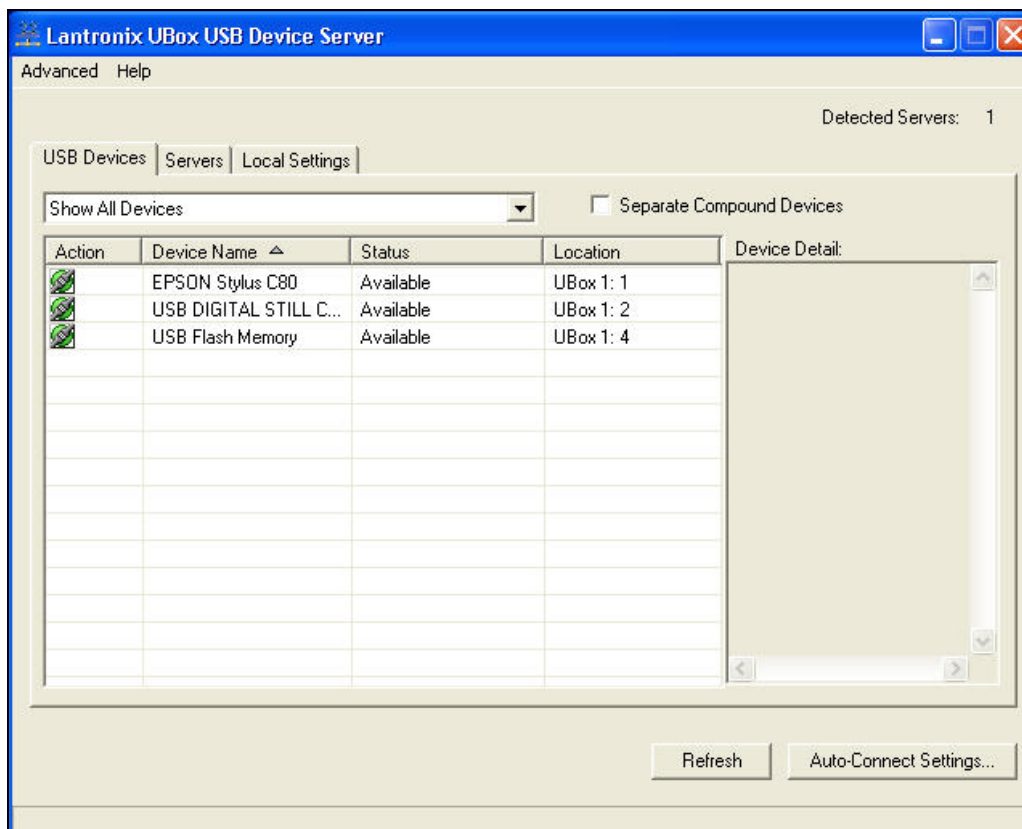
2. On the **Start** menu, click **Programs→Lantronix UBox USB Device Server→UBox USB Device Server**.

The Lantronix UBox USB Device Server window opens. The **USB Devices** tab displays a list of USB devices currently connected to each UBox on the network, the status of the software connection, and the location (UBox name and port) on the UBox to which it is attached.


In the example below, UBox 1: 4 means the device is attached to the fourth port of UBox 1. Initially, your UBox location (name) displays as **Unnamed**. (For instructions on naming your UBox, see [Editing Server Settings: Access Tab](#) on page 31.)

Note: If you do not see your USB device, please proceed to [Troubleshooting: USB Devices](#) on page 56.

Figure 4-2. USB Devices Tab Showing Attached Devices



3. Review the following information on the **USB Devices** tab.

Action	The Connect/Disconnect icon  connects and disconnects the USB device. The icon is green for Connect and red for Disconnect .
Device Name	Name programmed into your USB device by its manufacturer. This name may differ from the actual name and model number of your device. For example, if you have an HP Deskjet 882 printer, it may appear as HP Deskjet 880 or HP Printer. Some USB devices do not have names programmed into them. For unnamed USB devices, the USB device's programmed Vendor ID (VID) and Product ID (PID) display. If desired, you can rename your USB devices. (See 6: Changing Local Software Settings .)
Status	Current status of the USB device. The status changes as you start to use USB devices through the UBox. At the start, you see only the Available status (which means that the USB device is ready to be used by means of the UBox). (See USB Device Status Details on page 27.)
Location	This column shows the UBox's name and the UBox's USB port number that your USB device is connected to. For example, the location UBox 1 4 means that the USB device is connected to USB port number 4 on the UBox called UBox 1.

Step 2 –Connect a Networked USB Device


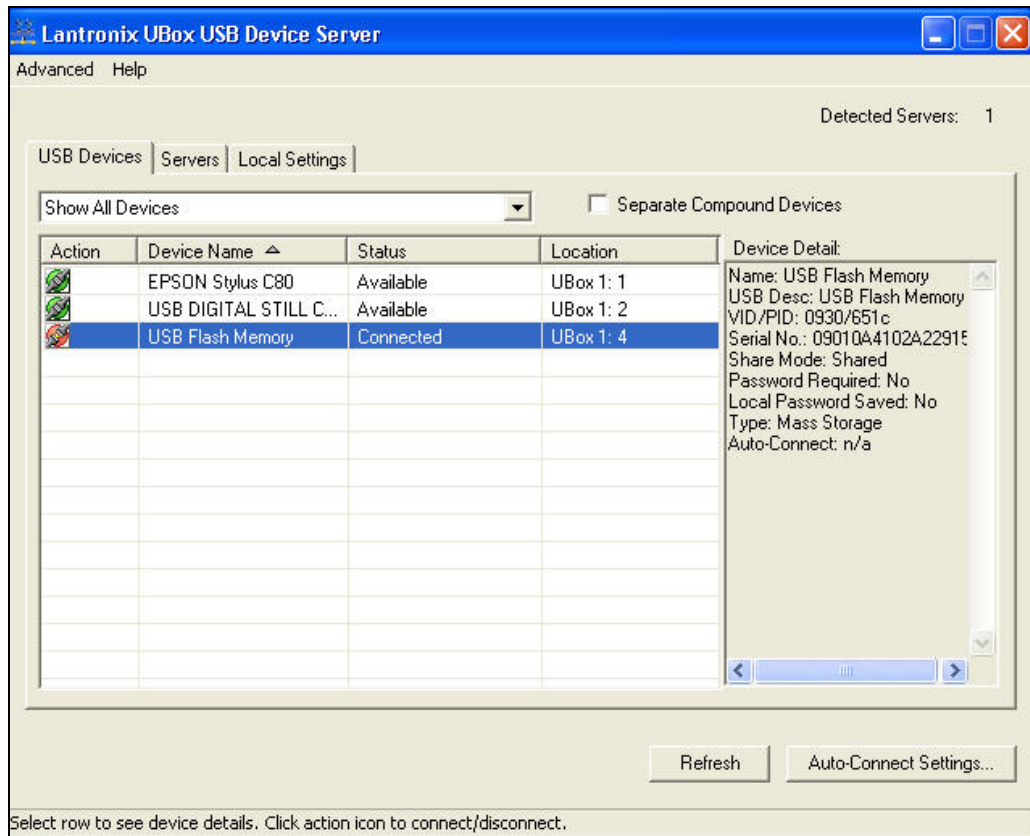
1. Select the USB device under **Device Name**, and click the **Connect**  icon in the **Action** column to the left of the device name. The status is now **Connected**. At this point, you can use it as if it were connected directly to your computer.

Figure 4-3. Selected Device Displaying Device Details



Note: By default, the UBox is configured for **Multi-User Connect Mode**. In this mode, all USB devices are shared in a one-at-a-time mode. If a device is in use by another user, that USB device's status displays as **In Use By [ComputerName]**.

Before you can use the device, you must connect to it to gain exclusive access. When you are finished using the device, you must disconnect from it before others can use it.

When you select a USB device, information displays in the **Device Details** section of the window. Typically, this information includes:


Name	Name for the USB device programmed into the device by the vendor. If you rename the device (see Editing Server Settings: USB Device Configuration Tab on page 36), the custom name displays as Name .
USB Desc	Description of the device programmed into the device by the vendor. Cannot be changed.
VID/PID	Vendor ID (VID) and Product ID (PID) programmed into the device by the vendor.
Serial No.	Serial number of the device programmed into the device by the vendor.

Share Mode	<p>Indicates type of connection to the specific USB device:</p> <p>Shared: Allows multiple computers to connect to and disconnect from the USB device. Default.</p> <p>Dedicated: Dedicates the USB device to a specific computer.</p>
Password Required	If Yes , the user must enter a password to view and update this USB device.
Local Password Saved	<p>If Yes, the user must enter a password to access the USB device.</p> <p><i>Note: If the user chooses Remember Password when connecting to a password-protected USB device, the password is saved in the Local Settings tab. (See Viewing or Removing Device Passwords on page 47.)</i></p>
Type	Type of device programmed into the device by the vendor.
Auto-Connect	If Yes , automatically connects to your computer when you have a print job queued and disconnects when the job is finished.

1. Repeat the procedure above for every USB device you want to use.

Step 3 - Disconnect Your USB Device(s)

When you have finished using your USB device, you must virtually disconnect it from your computer before it is available to everyone else on the network.

1. Open the Lantronix UBox application.
2. Select the USB device and click the **Disconnect** icon . The status changes to **Available**.

***Note:** Some USB devices require additional action before you disconnect your USB device. For example, some USB devices require you to stop the USB device's software. If your USB device requires such action when the device is directly connected to your computer, please perform them before clicking the **Disconnect** icon in the Lantronix UBox software.*

If you forget to disconnect a USB device, the USB device automatically disconnects if your computer goes to "sleep" or "hibernates," your computer is turned off, or you disconnect from your network.

In the worst case, where a USB device has been left in use and you cannot get the other computer to disconnect it, you can "forcibly disconnect" the device. While this action is not recommended, you can learn more about it in [Using Forced Device Disconnect](#) on page 25.

Using Multiple UBoxes and USB Devices

Compound Devices

You can connect up to eight USB devices to one Lantronix UBox. While the UBox only has four USB ports, it supports eight devices because of how *compound* USB devices work. Compound USB devices are devices that have multiple components connected to an embedded USB hub inside one USB device.

For example, some compound devices have two components: a scanner and a printer. Other compound devices have three components: a printer, a card reader, and an HID device for buttons on the printer.

One UBox with Multiple Users

The UBox allows up to 10 users to connect to a single or to a set of UBoxes using the same UDP port. You can support more users by setting up additional UBoxes with different UDP port numbers.

Multiple UBoxes and USB Devices

You can view up to eight UBoxes in the Lantronix UBox software.

If you are using all of the USB ports on your eight UBoxes, you can view a total of 32 USB devices in the UBox software; however, you can only have 12 USB devices simultaneously connected to your computer.

To use a 13th USB device, disconnect one of your 12 USB devices using the Lantronix UBox software to free a location for the next USB device.

To have more than eight UBoxes, configure your next eight UBoxes to use a different UDP port (see 5: [Changing the UBox's Settings](#)). Once you have done this, use the Local Settings tab to switch between your first eight UBoxes and your next eight UBoxes (see 6: [Changing Local Software Settings](#)).

Other Ways to Connect and Disconnect USB Devices

Using the **USB Devices** tab is only one method of connecting and disconnecting USB devices. You can use the following methods instead:

UBox System Tray: Use the UBox System Tray feature without opening the UBox software.

Auto Connect: For improved printer sharing, use the Auto Connect feature to automatically connect and disconnect printers.

Forced Device Disconnect: Forcibly disconnect a device that another user has left in use.

Single-User Device Connect: Use this mode to dedicate and automatically connect USB devices to only one computer.

Using the UBox System Tray

The UBox System Tray on the Windows taskbar contains icons that enable you to access the following functions quickly and easily:

- ◆ Access the UBox settings.
- ◆ Configure Auto Connect.
- ◆ Connect to and disconnect from USB devices on your UBox.

To use the system tray:

1. Find the Lantronix UBox **System Tray** icon . The System Tray is in the lower right corner of your screen (next to the time).

Figure 4-4. System Tray




2. Right-click the UBox application icon . A menu displays.

Figure 4-5. System Tray Menu



3. Select the desired function:

About Lantronix UBox	Opens a window that displays the currently installed software version.
UBox Settings	Opens the Lantronix UBox application.
Auto Connect Settings	Opens the Auto Connect window to configure your printers for Auto Connect mode.
Connect to devices	Allows you to connect to available USB devices. To connect, select your device from the list. USB devices connected to your computer have a check mark next to them. USB Devices connected to other computers do not show.
Exit	Quits the Lantronix UBox System Tray and disables the Auto Connect feature.

Auto Connecting Printers

This feature automatically connects and disconnects printers whenever you have a print job queued. This gives you a printing experience that is similar to using a print server.

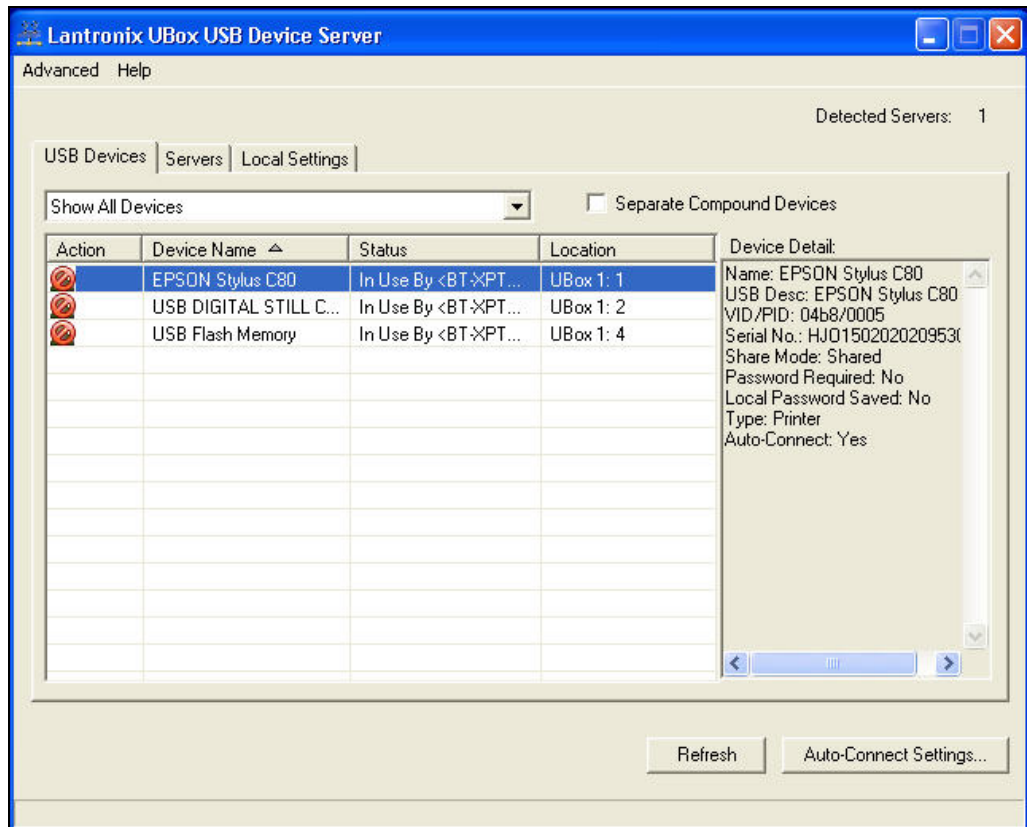
The Auto Connect feature for printers actually connects just the printer component of a compound device regardless of what the separate compound devices is set to. This cuts down on the amount of connections needed before printing. (See [Compound Devices](#) on page 20.)

Auto Connect is only enabled in the Multi-User Connect Mode.

Before You Begin

Before you begin, please make sure that you have installed and connected your printer using the Lantronix UBox's **USB Devices** tab (see [Connecting Your USB Device](#) on page 15).

Figure 4-6. Epson Printer Connected

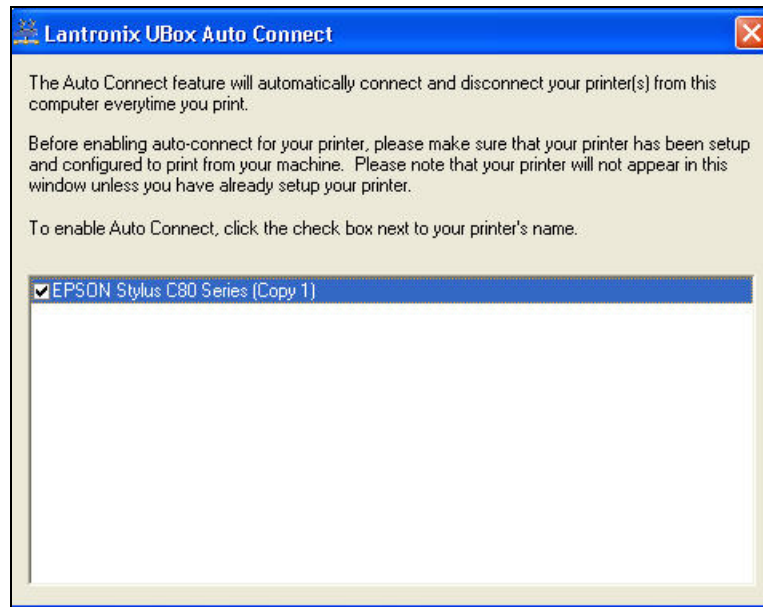


To use the auto connect feature:

1. Select the printer on the USB Devices tab and do one of the following:
 - ◆ Right-click the UBox icon in the system tray and select **Auto Connect Settings**.
 - ◆ Click the **Auto Connect Settings** button in the lower right corner.

The Lantronix UBox Auto Connect window opens.

Figure 4-7. Auto Connect Enabled



You may see your printer listed multiple times if you or your printer's software created multiple printers in Windows's Printers and Faxes window. You can either delete the extra printers in the Printers and Faxes window or enable Auto Connect for all of the printers.

1. Select the checkbox next to your printer's name. The following window opens:

Figure 4-8. Disconnect Printer for Auto Connect



2. Do one of the following:
 - ◆ To share the printer using Auto Connect, click **Yes**.
 - ◆ If print jobs are in the queue for this printer, click **No** and disconnect once the print jobs are processed.

Using Your Printer with Auto Connect

Now that you have set up your printer by means of Auto Connect, you are ready to print. Just print your documents as you would normally. Depending on your printer, you may get a warning stating that your printer is disconnected. **Ignore these**, as the Auto Connect feature will connect the printer for you. Once the printer auto connects, your print job is sent to the printer (this may take a few seconds).

When the printer has finished printing, Auto Connect disconnects your printer and makes it available to other users.

Multiple Print Jobs from Multiple Users

If you have two users printing to the same printer, Auto Connect connects whichever computer reaches the UBox first. The second user's print job stays in the queue until the first user finishes printing. Once the first user's print job is finished, the first user is disconnected, the second user connects to the printer, and his print job automatically starts.

Note: *Auto Connect is enabled per computer. If you have multiple computers, enable Auto Connect on each computer.*

Using Forced Device Disconnect

The **Forced Device Disconnect** option enables you to disconnect a USB device left in use (connected) by another user.

Warning: *Do not disconnect a USB device while that device is in use (e.g., do not disconnect a scanner while it is scanning). If the device is still in use, you may damage your drive, lose data, cause a fire, or create a host of other problems.*

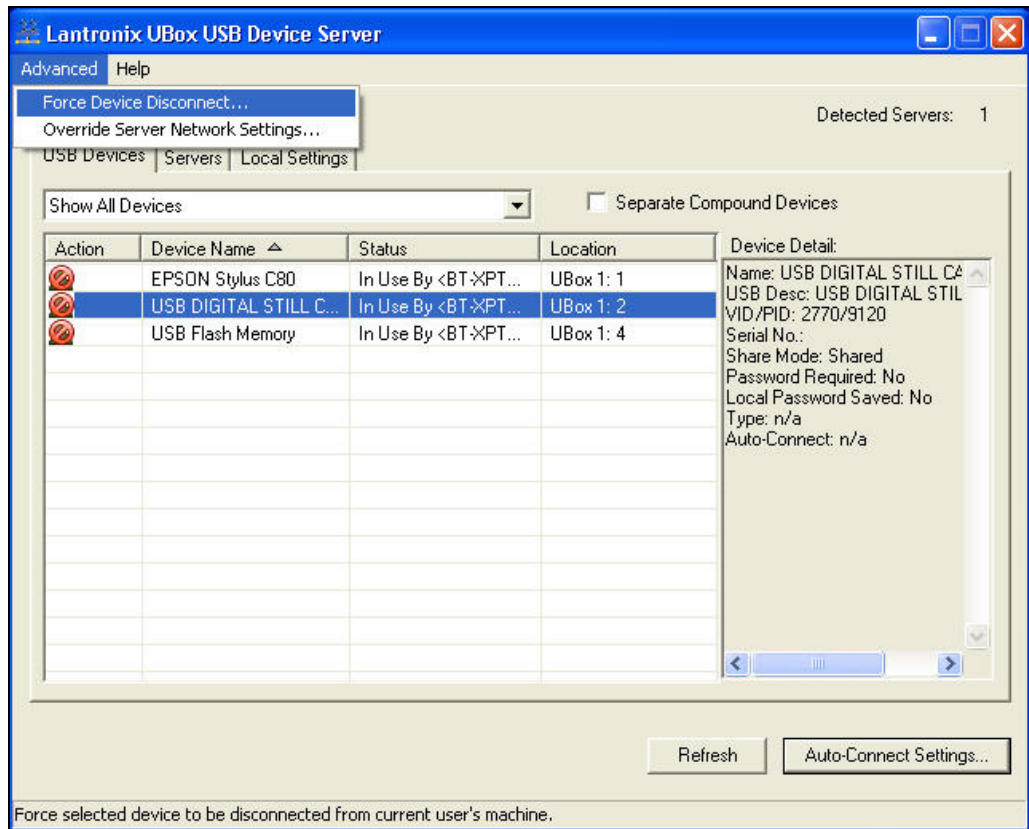
Only use **Forced Device Disconnect** if you are sure that the USB device is not in use. Please note that if a computer automatically “sleeps” (hibernates, power saves), USB devices connected to the sleeping computer are released and made available to other users. Turning off the connected computer also releases USB devices left in use.

To use Forced Device Disconnect:

Note: *If your UBox has an administrator password enabled, you must enter that password before you can disconnect the selected USB device.*

1. On the **USB Devices** tab, select the UBox to be disconnected.
2. From the **Advanced** menu, select **Force Device Disconnect**.

Figure 4-9. Forced Device Disconnect on the Advanced Menu



A message displays cautioning you to make sure the device is not being used.

- If you are sure that you want to continue, click the **Yes** button. The device status is now **Available**.

Using Multi-and Single-User Connect Modes

The UBox has two **Device Connect Modes: Multi-User** and **Single-User**.

Multi-User Mode: By default, the UBox is set to use the Multi-User mode. In this mode, users may share a USB device, but only one user at a time can use it. This allows multiple computers to use one USB device. Again, you must connect to the USB device before you can use it, thus preventing other users from using your USB device at the same time. In Multi-User mode, you can also dedicate USB devices to a certain computer, set up passwords for a certain USB device, and set up Auto-Connect for printers.

Single-User Mode: This mode automatically connects USB devices to your computer without you having to connect or disconnect. When your UBox is set to Single-User mode, it connects all of the USB devices connected to the UBox to the first computer with UBox software it detects. Use this mode if you only have one computer, or you have multiple computers but only one computer has access to the UBox.

Please note that you can also configure a single USB device to be dedicated to particular computer and still share other USB devices with other computers.

You can select the desired mode on the **Servers** tab. For details, please see [5: Changing the UBox's Settings](#).

Device Status

The **USB Devices** tab shows the connection status of USB devices connected to the UBox. The following is a table of status descriptions.

Table 4-1. USB Device Status

Status	Description
Available	The USB device is available for use by any computer. To use this device, click the green Connect icon in the Action column. Once you connect to the device, the status message changes to Connected .
Connected	The USB device is connected to your computer, and you have exclusive access to that USB device. Other users on the network will see the In Use By [x] status. To make this device available for use by any computer, click the red Disconnect icon
In Use By [x]	The USB device is in use by another computer. You cannot use this device until the other computer finishes and disconnects from that device. The text in brackets shows the name of the client using that device. <i>Note: This client name is obtained from the computer's name (as specified when that computer was set up). You can change this name in the UBox's Local Settings tab. (See 6: Changing Local Software Settings).</i>
Auto-Connected	The USB device (either a printer or a multifunction printer) has been set up for Auto Connect. You cannot connect to an Auto-Connected printer as the UBox software does this for you automatically. (See Auto Connecting Printers on page 22.)
Password Required	The USB device requires a password before you can connect to it. You can password-protect individual USB devices by editing your UBox's settings on the Servers tab (see 5: Changing the UBox's Settings) and then setting a password on the Edit Server Configuration Device window (see Editing Server Settings: USB Device Configuration Tab on page 36).
Reserved/Dedicated	The USB device is reserved/dedicated to your computer. Other computers show the device as Dedicated To [x] . You can dedicate a single USB device to specific computer by editing your UBox's settings in the Servers tab (see 5: Changing the UBox's Settings) and then setting a password on the Edit Server Configuration Device window (see Editing Server Settings: USB Device Configuration Tab on page 36).

Separating Compound Devices

Types of USB Devices

USB devices fall into one of the following categories:

- ◆ **Single USB device:** A USB device that contains only one component (for example, a single button mouse).
- ◆ **Composite USB device:** A device that provides multiple functions but appears as one device (for example, a multifunction printer).
- ◆ **Compound USB device:** A device that provides multiple functions that are tied together by an embedded USB hub inside the USB device itself (for example, a printer with a card reader and a keyboard with a port to connect a mouse).

Compound USB devices work the same way as when they are connected to a PC. However, you can configure the UBox to connect to only certain components of a compound device instead of connecting to every component.

Separating Compound Devices

The **Separate Compound Devices** option (disabled by default) changes how compound USB devices appear in the UBox software. If this option is enabled, the components inside a compound USB device appear as separate USB devices.

This allows you to connect to only one component of a USB device without having to connect the other components of that device. For example, if you have a multifunction printer, you may only want to connect the printer component of that device and not the other components (e.g., the scanner, fax, or card reader).

When you connect to a “separated” component of a compound USB device, all of the other components become unavailable to the other users of the UBox. This prevents a USB device from getting confused by accepting commands from two different computers.

To separate compound devices:

1. On the **USB Devices** tab, select the device.
2. Select the **Separate Compound Devices** checkbox. The components of the compound device display separately.

5: Changing the UBox's Settings

Overview

The Lantronix UBox comes pre-configured for use with most networks. However, you may want to change some of the settings for your specific network or USB device-sharing needs. This chapter describes how to change the UBox's settings and what the settings affect.

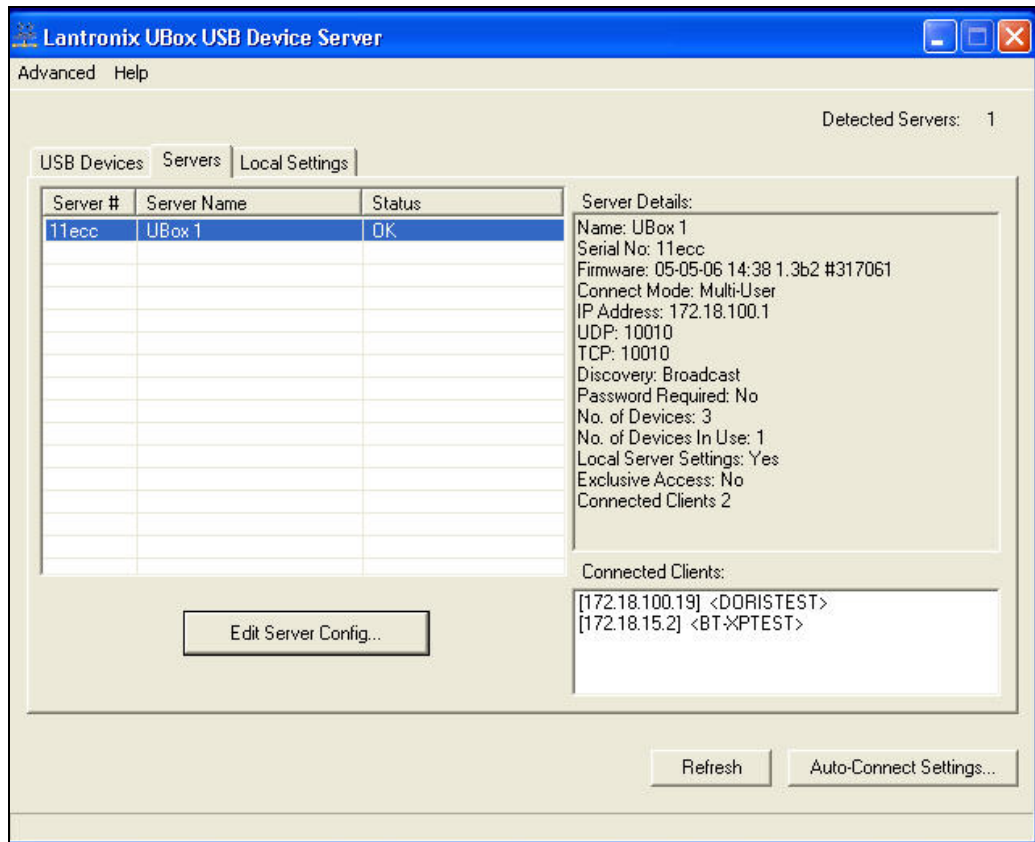
Note: To modify settings for the UBox software, use the **Local Settings** tab. These settings are kept on your computer. See [6: Changing Local Software Settings](#).

Viewing UBox Settings

To view current settings:

1. From the **Start** menu, click **Programs-->Lantronix UBox**. The **USB Devices** tab displays.
2. Click the **Servers** tab. The tab displays all of the UBoxes the software finds.

Figure 5-1. Servers Tab



3. Select a UBox. Detailed information about the UBox displays under **Server Details** on the right side of the window.
4. Review the following information:

Server #	Your UBox's MAC/Network address, found on the label on the bottom of the unit.
Server Name	Name of your UBox. You can modify this name by selecting the server and clicking the Edit Server Config button.
Status	<p>Current state of your UBox's hardware and software. This column shows whether the UBox software has successfully communicated with your UBox hardware. The codes include:</p> <p>OK: The UBox software has successfully found the UBox hardware. You can now communicate with the selected UBox.</p> <p>Note: The UBox may have a Client Access Password or a Configuration Password that prevents users from accessing that specific server or changing the selected server's configuration. (See Editing Server Settings: Access Tab on page 31.)</p> <p>Old Firmware: The UBox hardware contains old firmware. This happens when your computer has newer software than the firmware on the UBox hardware. If you see this</p>

	<p>message, you must upgrade your UBox's firmware. Select your UBox in the Servers tab and click the Edit Server Config button. (See Updating the UBox's Firmware on page 40.)</p> <p>Temp. Defaults: The UBox hardware is in Temporary Default Settings Mode. This mode allows you to return the UBox to its factory settings temporarily for diagnostics. You can edit your previous settings while you are in this mode. (See Resetting the UBox Hardware on page 55.)</p> <p>Login Failed: Your computer could not connect to the selected UBox because the UBox has a password. Either your computer does not have a password set in the Server Access Settings field in the Local Settings tab or you entered an incorrect password. (See Editing Server Settings: Access Tab on page 31.)</p> <p>Attempting Discovery: The UBox software is attempting to locate UBox hardware on your network. This message temporarily displays when you first start your computer or when you reboot the UBox. If this message does not go away, see 7: Troubleshooting.</p> <p>Attempting to Connect: The UBox hardware is sending broadcast messages to your computer, but your computer cannot connect to the UBox hardware. If you have modified your UBox's settings, set the UBox to the Temporary Default Settings Mode and change your settings. If this message does not go away, see 7: Troubleshooting.</p>
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Editing Server Settings: Access Tab

The **Access** tab contains settings that pertain to accessing the UBox hardware and how the UBox shares USB devices at the server level. These changes affect the selected UBox.

To edit the UBox's Settings on the Access Tab:

1. To edit a specific UBox's setting, select the UBox from the list and click the **Edit Server Config** button. The **Access** tab on the Edit Server Configuration window opens.

Figure 5-2. Edit Server Configuration – Access Tab

The screenshot shows the 'Edit Server Configuration' window with the 'Access' tab selected. The 'Server Serial Number' is 11ecc. The 'Server Name' is 'UBox 1' and the 'Connect Mode' is 'Multi-User'. There are checkboxes for 'Requires Configuration Password' and 'Requires Client Access Password', both of which are unchecked. Below these are fields for 'Configuration Password', 'Re-enter Configuration Password', 'Client Access Password', and 'Re-enter Client Access Password'. At the bottom of the window are four buttons: 'Restore Defaults', 'Check Firmware', 'Apply', and 'Cancel'.

Notes:**Firmware Upgrade:**

After clicking the **Edit Configuration** button, a message may display informing you about new firmware. You can only update your UBox's settings after you have upgraded your firmware. While updating your UBox, its icon disappears while the new firmware is being loaded. The UBox icon reappears after your UBox has loaded the new firmware. See [Updating the UBox's Firmware](#) on page 40.

Multiple Users: While multiple users can view the **Server Configuration** tab at any time, only one user at a time can change the UBox settings on the **Edit Server Configuration** window. If you are editing the UBox, other users receive a message stating that you are editing the UBox. Once you finish making changes and disconnect, other users can make changes on a one-user-at-a-time basis.

2. Update the following settings as desired:

Server Name	Name of the selected UBox. This name appears to anyone using the UBox application.
Connect Mode	<p>From the drop-down menu, select how USB devices get connected to your client PCs:</p> <p>Multi-User (default): Allows multiple users to share a UBox, although they may only use a device on a one-at-a-time basis.</p> <p>Use this mode if you have more than one client computer</p>

	<p>connected to the UBox. Before using a USB device (e.g., a printer or scanner), you must click the Connect icon on the USB Devices tab.</p> <p>Single-User: Only one user can connect to the UBox at one time.</p> <p>Use this mode if there is only one client computer, or if only one client computer will be powered on at a time and connected to the UBox. In this mode all devices on the UBox are automatically connected to the client computer.</p> <p>Warning: <i>Using this mode with multiple computers will cause unexpected results, as all of the computers will attempt to get exclusive access to the UBox.</i></p>
Requires Configuration Password	<p>Selecting this checkbox forces a user to enter a password to configure the UBox.</p> <p>Once you set a password, users can see the UBox on the Devices and Server tabs; however they cannot edit any UBox settings without supplying the correct password.</p>
Configuration Password and Reenter Password	<p>Enter and then reenter the password a user must use to configure the UBox. The password is case sensitive.</p>
Requires Client Access Password	<p>Selecting this checkbox forces a user to enter a password to access the specific UBox. The password is case sensitive.</p>
Client Access Password and Reenter Password	<p>If you selected the checkbox above, enter and then reenter the password a user must use to view the UBox. The password is case sensitive.</p> <p>To add the password to the local PC automatically, click Yes on the pop-up window that displays when you enter the password.</p>

- Click the **Apply** button to submit the changes. The UBox reboots automatically to apply the changes.

Editing Server Settings: Network Tab

The **Network** tab contains network settings determining how the UBox communicates on your network. You can configure how the UBox obtains its IP address, what TCP/UDP port it uses to communicate (useful when dealing with firewalls), and the method that the UBox uses to “announce” its presence on your network (This method is known as the *discovery mode*.)

1. On the Edit Server Configuration window, click the **Network** tab.

Figure 5-3. Network Tab

The screenshot shows the 'Edit Server Configuration' window with the 'Network' tab selected. The 'Server Serial Number' is 11ecc. The 'IP Address Assignment' is set to 'Using Defaults'. The 'IP Address', 'Subnet Mask', and 'Gateway' fields are empty. The 'UDP Port' is 10010 and the 'TCP Port' is 10010. The 'Discovery Mode' is set to 'Broadcast'. The 'Multicast Address' is 239.255.176.42. At the bottom, there are buttons for 'Restore Defaults', 'Check Firmware', 'Apply', and 'Cancel'.

2. Update the following settings as desired:

IP Address Assignment

<p>From the drop-down list, select one of the following methods of assigning an IP address:</p>

<p>Using Defaults: The UBox tries to get an IP address via DHCP first. If it fails to obtain an IP address within 10 seconds, it assigns itself an IP address using Zeroconfig. This is the recommended setting for most users.</p>
--

<p>Use DHCP: The UBox automatically obtains an address using DHCP server. Select this setting if you only want to use an IP address obtained using a DHCP server.</p>

<p>Use Zeroconfig: In this mode, the UBox assigns itself an IP address using the Zeroconfig protocol. Zeroconfig is an alternative to DHCP that allows hosts to obtain an IP address automatically in smaller networks that may not have a DHCP server. Zeroconfig IP addresses are in the range 169.254.0.1 to 169.254.255.1. Use this setting if the UBox is in a network that only uses Zeroconfig IP addresses.</p>
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	<p>Note: You can get more information about Zeroconfig (also called Zeroconf) at http://www.zeroconf.org/</p> <p>Use Static IP: Use this mode if you want your UBox always to use the same network settings. You must enter the IP Address, Subnet Mask, and Gateway for the UBox to communicate with the network.</p>
IP Address	<p>The UBox must have a unique IP address on the network. Enter the IP address as xxx.xxx.xxx.xxx. Example: 192.168.20.1</p> <p>Note: The system administrator provides the IP address, subnet mask, and gateway.</p>
Subnet Mask	<p>A subnet mask defines the number of bits taken from the IP address that are assigned for the host part. Enter the subnet mask as xxx.xxx.xxx.xxx. Example: 255.255.255.0</p>
Gateway	<p>The gateway address, or router, allows communication to other LAN segments. The gateway address should be the IP address of the router connected to the same LAN segment as the unit. The gateway address must be within the local network. Enter the gateway as xxx.xxx.xxx.xxx. Example: 192.168.20.100.</p> <p>Note: If there is no gateway on the network, use the same IP address as the UBox or the IP address of your PC.</p>
UDP Port and TCP Port	<p>These fields allow you to specify which port numbers on which the UBox communicates. This communication happens between the UBox hardware and software. By default, these ports are set to 10010.</p> <p>UDP Port: Change this setting to change the UDP port number on which the UBox broadcasts. Other computers configured to use this UDP port number will be able to see this UBox. This setting is useful if you wish to limit the number of people connecting to a particular UBox or if you want to hide a UBox from other users on your network.</p> <p>If you change the UBox's UDP port number, you must tell the UBox software to "listen" to the new port. To do this, change the local UDP port number. (See Updating Server Access Settings on page 46.)</p> <p>TCP Port: Change this setting to change the TCP port that the UBox uses to transmit and receive USB data.</p> <p>If you change the UBox's TCP port number, you must tell the UBox software to "listen" to the new port. To do this, change the local TCP port number. (See Updating Server Access Settings on page 46.)</p> <p>Note: Most users will not need to change the UBox's UDP and TCP ports. However, certain firewalls may block traffic to the default UDP and TCP ports. In these instances, you can either change the port numbers or configure your firewall to allow connections using UBox's configured UDP and TCP ports.</p>

Discovery Mode	<p>Select the method the UBox should use to send its UDP data.</p> <p>Broadcast: By default, the UBox uses this method to send discover messages to UBox clients. Broadcast sends UDP messages to every Ethernet-connected device on your network. This is the best setting to use on small networks, home networks, and networks where you have computers with multiple network interfaces (for example, a computer with both wireless and wired connections).</p> <p>Multicast: Sends UDP messages using Multicast UDP. This method only sends discover messages to computers that listen to the same multicast address that the UBox uses.</p> <p>Multicast & Broadcast Uses both methods at the same time.</p> <p><i>Note: If you change the UBox's multicast address, you must tell the UBox software to listen to the new address. You only need to change the multicast address if you are using Multicast or Multicast & Broadcast as your discovery method. (See Changing Local Software Settings on page 44.)</i></p>
Multicast Address	<p>The address on which the UBox will send discover messages. You can enter any multicast address as long as it is in the range of 224.0.0.0 to 239.255.255.255. Default is 239.255.176.42.</p> <p><i>Note: You would only change this if the default changes, for example, if you have a router that needs a different multicast address to properly route traffic across a LAN/WAN.</i></p>

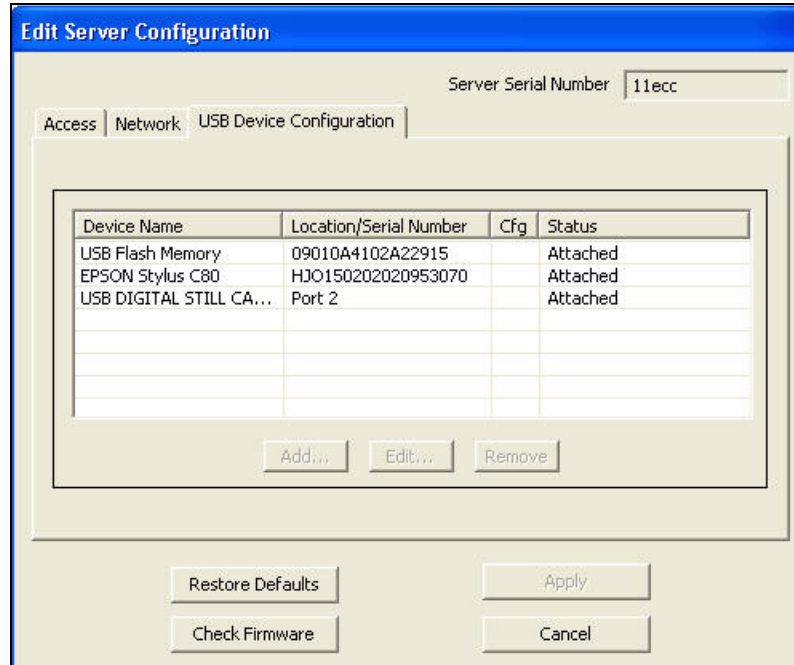
Editing Server Settings: USB Device Configuration Tab

The **USB Device Configuration** tab on the Edit Server Configuration window shows USB devices that are connected to the UBox and configuration records for each device. On this tab, you make changes to USB devices connected to your UBox. You can configure:

- ◆ A USB device to require a password before you can access the device.
- ◆ A USB device to be dedicated to a certain computer so that the USB device is always connected to that computer.
- ◆ The name displayed for a particular USB device (useful if you have multiple USB devices that do not register a name, or if you have multiple identical USB devices).

1. On the Edit Server Configuration window, click the **USB Device Configuration** tab.

Figure 5-4. Edit Server Configuration – USB Device Configuration Tab



2. Update the following settings as desired:

Server Serial No.	(View-only) Corresponds to the UBox's MAC/Network address (printed on the bottom of your UBox hardware).
Device Name	Name that is programmed into your USB device by its manufacturer. This name may differ from the actual name and model number of your device. For example, if you have an HP Deskjet 882 printer, it may appear as HP Deskjet 880 or HP Printer. Some USB devices do not have names programmed into them. For unnamed USB devices, the USB device's programmed Vendor ID (VID) and Product ID (PID) display.
Location/Serial Number	The serial number of the USB device if it has one. If it does not have a serial number, the port (1-4) on the UBox to which the USB device is connected.
Cfg	Displays an asterisk if the device was configured using the USB Device Configuration window.
Status	Indicates whether the selected USB device is Attached , Detached , or has an Invalid Password (the password in this and the password saved on the Local Settings tab are different). (See 6: Changing Local Software Settings .)

3. To add or change information about a device, select the device and click the **Add** or **Edit** button (The **Edit** button is active if you have already added information.) The Device Configuration window opens.

Figure 5-5. Device Configuration Window

The screenshot shows a 'Device Configuration' window with a blue title bar. Inside, the following information is displayed:

- USB Product Name: USB Flash Memory
- Vendor ID (VID): 0930
- Product ID (PID): 651c
- USB Serial Number: 09010A4102A22915

Below this information are several input fields and controls:

- An 'Alternate Name' text input field.
- A checkbox labeled 'Requires Password To Connect' which is currently unchecked.
- 'Connection Password' and 'Re-enter Password' text input fields.
- A 'Share Mode' dropdown menu currently set to 'Shared'.
- A 'Client Name' text input field.
- 'OK' and 'Cancel' buttons at the bottom.

The following information displays at the top:

USB Product Name	Name programmed into the USB device by the manufacturer.
Vendor ID (VID)	Vendor ID programmed into the USB device by the manufacturer.
Product ID (PID)	Product ID programmed into the USB device by the manufacturer.
USB Serial Number:	Serial number, if any, programmed into the USB device by the manufacturer.

4. Update the following settings as desired:

Alternate Name	<p>A name for the USB device other than the name programmed into it by the manufacturer.</p> <p>The alternate name applies to a specific UBox.</p> <ul style="list-style-type: none"> ◆ If you move a USB device to another UBox, reset the alternate name on the new UBox. ◆ If your USB Device does not have a serial number, and you move the USB device to a different port, re-enter the alternate name.
Requires Password To Connect	<p>Select the checkbox to share the specified USB device only with users who have the password to that USB device. When you first attempt to connect to a password-protected USB device, you are prompted to enter a password. You can then opt to store passwords locally in the Local Settings tab so that you do not need to reenter the password every time you want to use that USB device.</p> <p>Because passwords apply to a specific UBox.</p> <ul style="list-style-type: none"> ◆ If you move a USB device to another UBox, reset that USB device's password on the new UBox. ◆ If your USB Device does not have a serial number,

	and you move the USB device to a different port, select the Requires Password to Connect checkbox again.
Connection Password and Reenter Password	If you selected the checkbox above, enter and then reenter a password a user must use to view the USB device.
Share Mode	<p>Select one of the following types of connection:</p> <p>Shared: Allows multiple computers to connect to and disconnect from the USB device. Default.</p> <p>Dedicated: Dedicates the USB device to a specific computer.</p> <p>Share modes apply to a specific UBox:</p> <ul style="list-style-type: none"> ◆ If you move a USB device to another UBox, reset that USB device's share mode on the new UBox. ◆ If your USB Device does not have a serial number, and you move the USB device to a different port, reset the share mode. This is only necessary if the share mode is Dedicated.
Client Name	If you selected the Requires Password To Connect checkbox and the Share Mode of Dedicated , enter the name of the computer. (See the Local Settings tab for the name.)

5. Click the **OK** button. The updated information displays. An asterisk displays in the **Cfg** column to indicate that the device has been configured.
6. To edit the configuration:
 - a) Select the device and click the **Edit** button.
 - b) Repeat steps 4-5.

Applying, Canceling, or Removing Server Settings

1. Do one of the following:
 - ◆ To save your changes, click the **Apply** button. The UBox hardware disconnects any users connected to it and restarts itself. Your UBox disappears temporarily from the UBox application while it restarts.
*Note: The **Apply** button is not available unless you make a change.*
 - ◆ To cancel the changes you made, click the **Cancel** button. The UBox does not restart.
 - ◆ To delete the configuration, click the **Remove** button. The original information displays.

Restoring Default Settings

Note: Restoring the UBox's default settings closes all device connections, possibly adversely affecting users connected to them. **Please be sure that all devices attached to the UBox are not in use before continuing.**

To restore the UBox to factory settings:

1. On any of the Edit Server Configuration tabs (**Access**, **Network**, or **USB Device Configuration**), click the **Restore Defaults** button.

Restoring to default settings also sets the UBox's UDP port to 10010 and the multicast address to 239.255.176.42. If you previously changed your UDP port or multicast address, remember to change the Lantronix UBox application's Local UDP Port to 10010 and multicast address to 239.255.176.42.

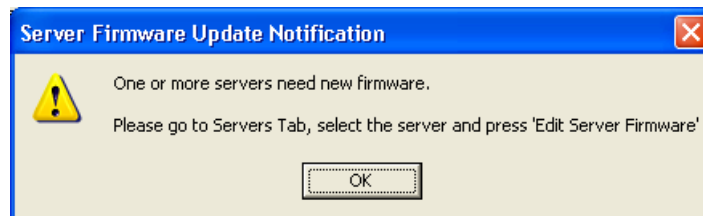
You may not be able to see your UBox if you fail to do this.

Firewall Users: If you have configured your firewall to allow access to the UBox, remember to check your firewall's setting. The UBox's IP address may have changed after restoring to default settings.

Updating the UBox's Firmware

The UBox alerts you if the software and firmware do not match.

Figure 5-6. Firmware Update Notification Window

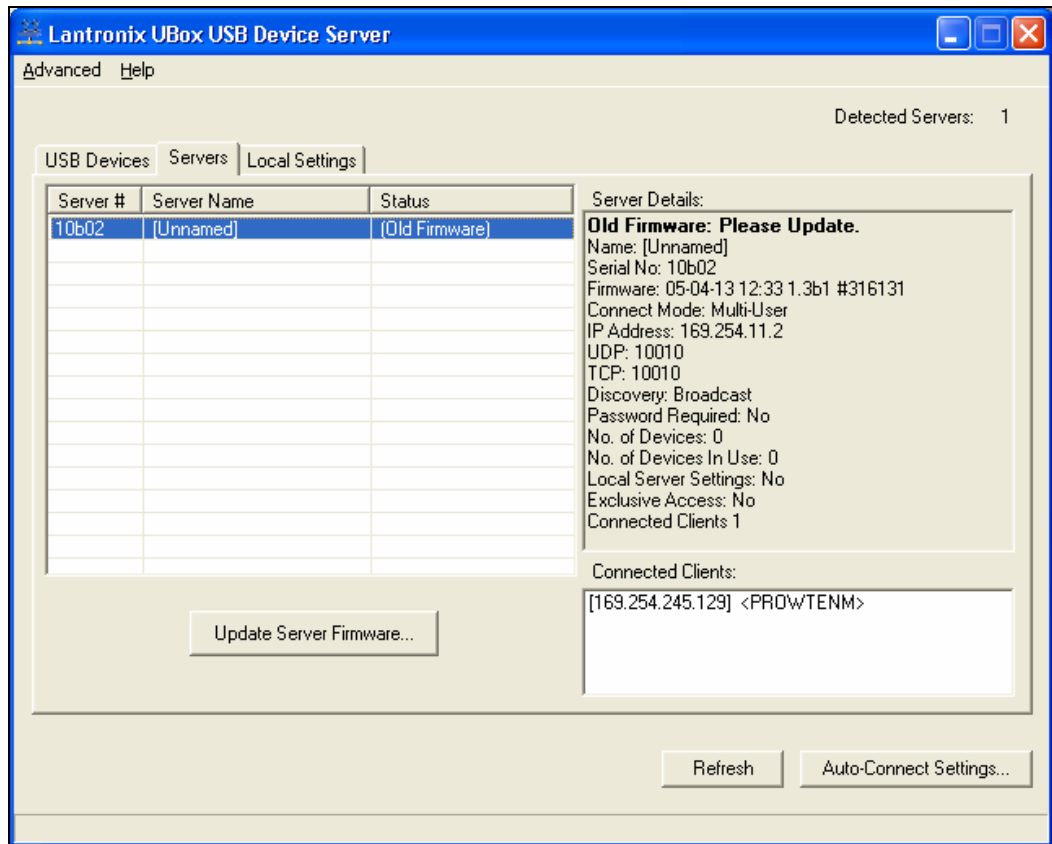


You can update the firmware at any time using the Lantronix UBox application.

To update the firmware:

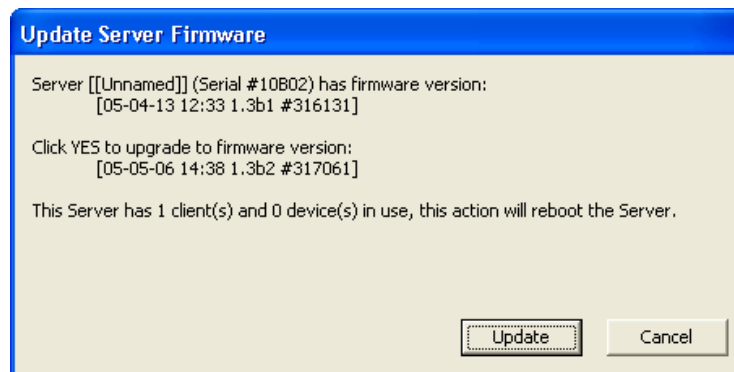
1. On the **Servers** tab, select the UBox you want to update.

Figure 5-7. Servers Tab



2. Click the **Update Server Firmware** button. An update confirmation window displays.

Figure 5-8. Update Server Firmware



3. Click the **Update** button to start the upgrade.

Note: Always have the latest firmware installed on your UBox. We do not recommend using older firmware on your UBox with newer UBox software on your computer (or vice versa). Certain features, such as Auto Connect, may not work if your firmware is not compatible with the version of software that you have on your computer(s).

Overriding Server Network Settings

You can override server network settings to configure a UBox that has been placed in a static IP-based network. This makes it so that you do not have to change your local TCP settings, connect to the UBox using a direct Ethernet connection, or set up a DHCP address.

Note: By default, the UBox gets a DHCP or Zeroconfig IP address. In some cases, this address is on a different subnet from the subnet your computer is on. If this is the case, the computer cannot see the UBox.

To override network settings:

1. Select the UBox on the **USB Devices**, **Servers**, or **Local Settings** tab.
2. From the **Advanced** menu, select **Override Server Network Settings**. The Override Server Network Settings window opens.

Figure 5-9. Override Server Network Settings Window

3. Enter the following information:

Server I.D.	UBox's serial number.
IP Assignment Method	<p>Select one of the following methods of assigning an IP address to the UBox:</p> <p>Automatic (default): The UBox tries to get an IP address using DHCP first. If it fails to obtain an IP address within 10 seconds, it assigns itself an IP address using Zeroconfig. This is the recommended setting for most users.</p> <p>Use DHCP: The UBox automatically obtains an address using DHCP server. Use this setting if you only want to use an IP address obtained via a DHCP server.</p> <p>Use Zeroconfig: In this mode, the UBox assigns itself an IP address using the Zeroconfig protocol. Zeroconfig IP</p>

	<p>addresses are in the range 169.254.0.1 to 169.254.255.1. Use this setting if the UBox is in a network that only uses Zeroconfig IP addresses.</p> <p>Note: Zeroconfig (also called Zeroconf) is a networking protocol that allows computers to find each other automatically without the need for you to enter IP addresses, configure DNS servers, or set up DHCP. Computers using Zeroconfig can only communicate with each other when they are on the same Ethernet segment (all Zeroconfig computers are connected to same Ethernet hub).</p> <p>You can get more information about ZeroConf at http://www.zeroconf.org/</p> <p>Use Static IP: Use this mode if you want your UBox always to use the same network settings. The UBox shows its current network configuration in the IP Address, Subnet Mask, and Gateway fields. You can only enter data in these fields if you select Use Static IP.</p>
IP Address	<p>The UBox must have a unique IP address on the network. Enter the IP address as xxx.xxx.xxx.xxx. Example: 192.168.20.1</p> <p>Note: The system administrator provides the IP address, subnet mask, and gateway.</p>
Subnet Mask	<p>A subnet mask defines the number of bits taken from the IP address that are assigned for the host part. Enter the subnet mask as xxx.xxx.xxx.xxx. Example: 255.255.255.0</p>
Gateway	<p>The gateway address, or router, allows communication to other LAN segments. The gateway address should be the IP address of the router connected to the same LAN segment as the unit. The gateway address must be within the local network. Enter the gateway as xxx.xxx.xxx.xxx. Example: 192.168.20.100.</p> <p>Note: If there is no gateway on the network, use the same IP address as the UBox or the IP address of your PC.</p>

Refreshing Data

You can refresh the USB Devices, Servers, and Local Settings tabs. This forces the UBox software to obtain the most recent status of the UBox hardware.

To refresh the displayed information:

1. On the **USB Devices**, **Servers**, or **Local Settings** tab, click the **Refresh** button.

The most current hardware information displays on each of the tabs.

6: Changing Local Software Settings

To modify the settings for the UBox software, you use the **Local Settings** tab. These settings are kept on your computer.

Note: The **Servers** tab is for modifying the settings for the UBox. These settings are stored on the UBox hardware. See [5: Changing the UBox's Settings](#).

The **Local Settings** tab allows you to:

- ◆ Change your client name (used to identify your computer to the UBox hardware and to other UBox users).
- ◆ Change your UDP port number and multicast address (used to access the UBox).
- ◆ Create and manage server access settings, allowing you to encode your communication with the UBox, connect to UBoxes outside of your subnet (active discovery), and enter server access passwords.
- ◆ View and delete saved passwords for password-protected USB devices.

Updating Personal Communication Settings

To update your computer's settings:

1. Click the **Local Settings** tab. The tab displays information about your computer, the UBoxes on your network, and the devices attached to each UBox.

Figure 6-1. Local Settings Tab

The screenshot shows the 'Lantronix UBox USB Device Server' window with the 'Local Settings' tab selected. The 'Detected Servers' count is 1. The 'Personal Communications Settings' section includes text boxes for 'Client Name' (DORISTEST), 'UDP Port' (10010), and 'Multicast Address' (239.255.176.42), along with 'Apply', 'Cancel', and 'Restore Defaults' buttons. The 'Server Access Settings' section contains a table with columns: Server #, Server Name, Status, Password, Active Discovery, and buttons for 'Add...', 'Edit...', and 'Remove'. The 'USB Device Passwords' section has a table with columns: Device Name, Status, Server #, Location, Device Serial #, and a 'Remove' button. At the bottom right are 'Refresh' and 'Auto-Connect Settings...' buttons.

2. In the **Personal Communications Settings** area, update the following information as needed:

Client Name	Name of your computer that is broadcast to the UBox and to other users on the network. The default name is the computer name specified when your computer was first set up. You can enter a different name in this field.
UDP Port	This is the UDP port number that the UBox software uses to discover UBox hardware on your network. The default value is 10010 . If your UBox hardware is set to broadcast on a different port number, you must change the UDP port number here to the same value.
Multicast Address	This is the multicast address that the UBox software uses to discover UBox hardware on your network. The default value is 239.255.176.42 . If the UBox hardware is set to broadcast on a different address, you must change the address here to the same value.

2. Do one of the following:
 - ◆ To cancel the changes you made, click the **Cancel Changes** button.
 - ◆ To restore default values, click the **Restore Defaults** button.
 - ◆ To save your changes, click the **Apply Changes** button.

Updating Server Access Settings

The **Server Access Settings** area in the **Local Settings** tab is for connecting to a UBox that is either password protected or uses active discovery. For most users, **Server Access Settings** are blank.

To update server access settings:

1. In the **Server Access Settings** area of the **Local Settings** tab, click the **Add** button. The Edit Local Server Access window opens.

Figure 6-2. Edit Local Server Access Window

2. Update the following information as needed:

Server Serial Number	Serial number of the UBox to which you want to connect. This is the Network (MAC) address on the bottom of the unit.
Access Password (if required)	Enter the UBox's password. The password may have up to 31 characters (including spaces) and is case sensitive.
Encoded Session	<p>Selecting this checkbox encodes your communication between the UBox hardware and your computer. You only need to enable this option in this window.</p> <p>Warning: <i>Encoding the communication with your UBox affects overall performance of the UBox and the USB devices connected to it.</i></p>
Active Discovery	If your UBox is outside of your network, for example, in another office, or if you need to access your UBox across a WAN, enable Active Discovery . Active discovery searches for UBoxes outside of your local network. It requires that you know the IP address, TCP port, and password (if one has been set up) of the UBox that you want to access.
TCP Port	If you selected Active Discovery , the TCP Port field becomes available. Enter the TCP port number. The default setting is 10010 .
IP Address	If you selected Active Discovery , the IP Address field becomes available. Enter the UBox's IP address.

3. Click **OK**. The window closes and the following information displays in the **Server Access Settings** area:

Server #	Serial number of the UBox to which you want to connect.
Server Name	Name of the UBox to which you want to connect.
Status	Status of the UBox to which you want to connect. Online displays if you have successfully connected to the UBox. Offline displays if the UBox is not detected.
Password	Displays Yes or No depending on whether a password was specified on the Edit Local Server Access window.
Active Discovery.	Displays Yes or No depending on whether Active Discovery was enabled on the Edit Local Server Access window.

- To edit the settings, select the UBox and click the **Edit** button. The Edit Local Server Access window opens. Repeat step 3.
- To remove the UBox from the list, select it and click the **Remove** button (to the right of the **Server Access Settings** area).

Viewing or Removing Device Passwords

When you connect to a USB device that is password protected, you are asked if you want to save your password. If you save a password for a USB device, it displays in the **Device Passwords** area of the **Local Settings** tab.

To view or remove USB device passwords:

- In the **Device Passwords** area, verify the following (if you have saved a password previously):

Device Name	Name that is programmed into your USB device by its manufacturer. This name may differ from the actual name and model number of your device. For example, if you have an HP Deskjet 882 printer, it may appear as HP Deskjet 880 or HP Printer. Some USB devices do not have any names programmed into them. For unnamed USB devices, the USB device's programmed Vendor ID (VID) and Product ID (PID) display.
Status	Status of the USB device: Attached or Detached to indicate whether the device is connected to or disconnected from the UBox.
Server #	Serial number on the label on the bottom of the UBox to which the USB device is connected.
Location	Port number on the UBox to which the USB device is connected.
Device Serial #	Serial number of the USB device, if programmed into it by the vendor.

- To remove a locally saved password, select the USB device and click the **Remove** button to the right of the **Device Passwords** area.

Switching Between Sets of UBoxes

The UBox software on your computer can only “see” eight UBoxes at a time. This is true even with Active Discovery, which can see UBoxes with different UDP port numbers.

To use a ninth UBox, you have two options:

- ◆ Change both the local UDP port and the UBox UDP port to the same new port number so your computer can see the UBox. This forces the UBox software to see only the UBoxes on the new UDP port; it will not see UBoxes with a different UDP port.
- ◆ Remove UBoxes with **Yes** in the **Active Discovery** column in the **Server Access Settings** area of the **Local Settings** tab. This removes or prevents UBoxes that are on another network from showing up on this computer.

7: Troubleshooting

Before You Begin

Please make sure that you already have:

- ◆ Installed the latest version of the Lantronix UBox software.
- ◆ Connected your UBox hardware to your network.
- ◆ Connected your computer to the same network as the UBox hardware.
- ◆ Turned on the UBox (by connecting its power supply to an outlet).
- ◆ Turned on your computer.
- ◆ Connected a USB device (for example, a scanner) to the UBox hardware.
- ◆ Installed your USB device's software on your computer.
- ◆ Had the UBox turned on for at least 15 seconds.

If you have not done any of the above, please do so now and return to this chapter when you have finished.

Note: You can find the latest version of the Lantronix UBox software at <http://www.lantronix.com/>.

Please follow the instructions in this chapter in order as each section builds on the previous one. If you cannot proceed past a certain section, please contact Lantronix Technical Support.

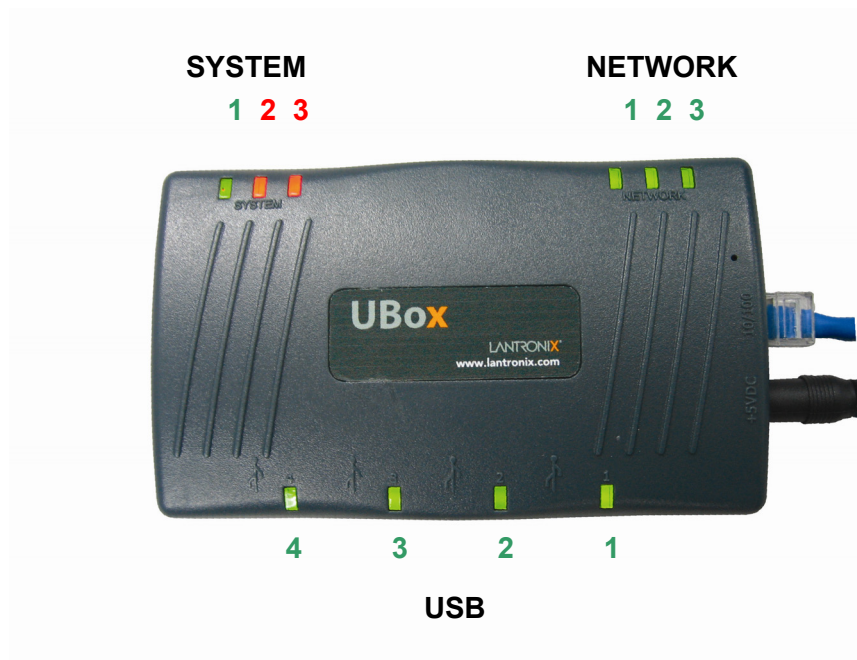
Troubleshooting: Status Lights

Look at the status lights on your Lantronix UBox hardware. These status lights will be in one of the following states:

- ◆ **Off**
- ◆ **On** (doesn't blink)
- ◆ **Blinking Steadily** (blinks on/off every second)
- ◆ **Blinking Rapidly** (blinks on/off rapidly)
- ◆ **Blinking Slowly** (stays on for 3 seconds, and then blinks off/on and repeats)

There are three groups of status lights: SYSTEM, NETWORK, and USB device.

Figure 7-1. Status Lights



Note: For a detailed description of every light and its status, please read [A: Status Light Behavior](#).

While the UBox is booting up, different status lights turn on and off. Once the UBox is running, the status lights have new meanings that help troubleshoot the UBox.

Boot-Up

The following table explains what the SYSTEM status lights mean during the boot-up process.

SYSTEM Status Light 1

Look at the SYSTEM status light 1 (the green leftmost light under SYSTEM).

Status	Condition	Suggestions
Off	The UBox does not have power.	Check the UBox's power supply and its connection to an outlet.
On	If this light does not blink on/off within 6 seconds, the UBox has failed to boot up.	Please follow the instructions in Resetting the UBox Hardware on page 55.
Blinking Slowly	This is normal and indicates the UBox hardware is working.	Proceed to the next light.
Alternating On/Off with SYSTEM Lights 2 and 3	If the SYSTEM 1 (green) light alternates on/off with either SYSTEM 2 or 3 (red), so that when SYSTEM 1 turns off, SYSTEM 2 or 3 turns on and vice versa, the UBox has encountered an error while loading its firmware.	Contact Technical Support.

SYSTEM Status Lights 2 and 3

Look at the USB status lights 2 and 3 (two red lights under SYSTEM). Status 2 is the red light in the middle, and Status 3 is the rightmost red light). Note the status of each.

Status	Condition	Suggestions
SYSTEM 2 is On / SYSTEM 3 is On	The UBox has obtained an IP address using <i>DHCP</i> and does not show any users connected to it.	Verify the following: <ul style="list-style-type: none"> ◆ The computer trying to communicate with the UBox is on the same DHCP Ethernet subnet or also received an IP address via DHCP. ◆ The computer has the current UBox software installed. ◆ The UBox software has the UDP port set correctly (default 10010). ◆ The computer does not have a personal firewall activated.
SYSTEM 2 is On / SYSTEM 3 is Off	The UBox is configured to use a <i>static IP</i> and does not show any users connected to it.	Verify the following: <ul style="list-style-type: none"> ◆ The computer trying to communicate with the UBox is on the same static IP Ethernet subnet. ◆ The computer has the current UBox software installed. ◆ The UBox software has the UDP port set correctly (default 10010). ◆ The computer does not have a personal firewall activated.
SYSTEM 2 is Off / SYSTEM 3 is On	The UBox obtained an IP address using Zeroconfig and does not show any users connected to the UBox.	Verify the following: <ul style="list-style-type: none"> ◆ The computer trying to communicate with the UBox is also on the Zeroconfig subnet. ◆ The computer has the current UBox software installed. ◆ The UBox software has the UDP port set correctly (default 10010). ◆ The computer does not have a personal firewall activated.
Status 2 is Off / Status 3 is Off	This is normal and indicates that the UBox hardware is working. It has obtained an IP address and has detected users (client computers) connected to it.	

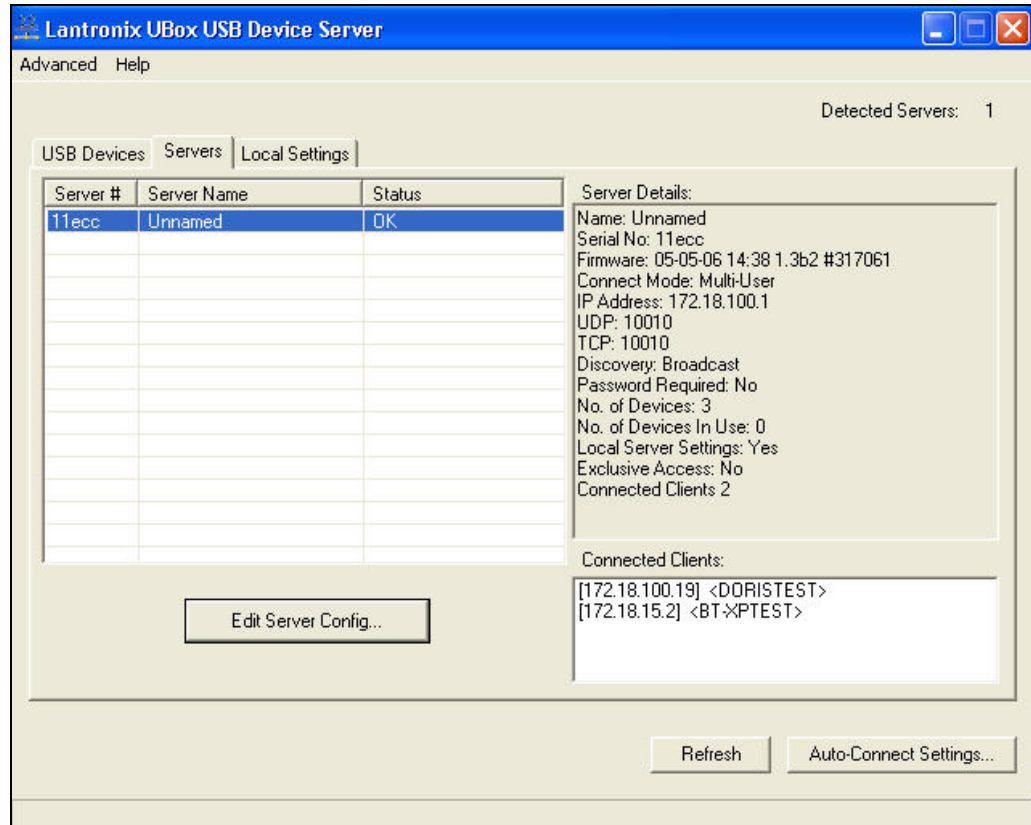
USB Status Lights 1-4

Locate the green light under USB that corresponds to the USB port to which your USB device (e.g., printer or scanner) is connected.

Status	Condition	Suggestions
Off	The UBox does not have power.	Check the UBox's power supply and its connection to an outlet.
Blinking	Blinking may indicate the UBox hardware does not support your USB device or is having problems communicating with the device.	<p>Currently, the UBox does not support isochronous USB devices (e.g., webcams and USB speakers).</p> <p>If you have a USB device that is not isochronous, please check the Lantronix web site or contact Lantronix Technical Support.</p> <p>Note: While most USB devices work with the UBox, future software updates from Lantronix will support certain incompatible USB device. Please go to the Lantronix web site or contact Lantronix Technical Support for more information about compatible devices.</p>
	Blinking may indicate you have exceeded the number of USB devices per UBox.	<p>One UBox supports up to eight USB devices. While many USB devices appear as one USB device, components of compound USB devices (a device with an embedded hub or a device that has multiple components tied together by an internal USB hub) count as one device each.</p> <p>For example, the Lexmark X1150 is a compound device that has two components (one for the scanner, one for the printer). The Canon i475D is a compound device that has three components (the printer, the card reader, and an HID device for buttons on the printer).</p> <p>If you connect four X1150 devices, you are still under the eight-device limit, and the USB lights do not blink. If you have three Canon i475Ds, you have nine USB devices and are over the limit. Therefore, the light blinks.</p>
On	This is normal and indicates the UBox supports your USB device.	Proceed to the next light.

Troubleshooting: UDP Ports

Make sure that your UBox software and hardware are communicating on the same UDP port. To verify this, open the Lantronix UBox application. Your UBox should display.



In the Lantronix UBox application, is your UBox listed?

Status	Condition	Suggestions
Is Not Listed	The UBox software cannot find the UBox hardware.	<ol style="list-style-type: none"> 1. Verify that the UBox software's local UDP port is set to match the UDP port used by the UBox hardware. The default is 10010. (See Updating Server Access Settings on page 46. 2. If you do not know the UDP port that your UBox software is using, set the Local UDP Port to 10010. 3. If this does not work, reset your UBox hardware (see page 55). 4. If you still cannot see your UBox, proceed to Troubleshooting: Network Issues below.
Is Listed	This is normal and indicates that the UBox hardware is working.	

Troubleshooting: Network Issues

Communication Between your PC and the UBox

If you have determined via the status LEDs that the UBox is communicating with a specific network, but network communication between the computer and the UBox is not established, you can ping the UBox from the PC trying to communicate with the UBox:

To ping the UBox:

1. From the Windows **Start** menu, select **Run**, type **cmd**, and click **OK**.
A command window opens.
2. At the prompt, type **ping xxx.xxx.xxx.xxx** (where xxx.xxx.xxx.xxx is the IP address of the UBox). If the UBox replies, the physical and logical (IP subnet) network communications are good. Proceed to step 4.
3. If you do not receive a reply from the ping, the problem is network related. Make sure:
 - ◆ IP addresses of the PC and UBox are on different subnets
 - ◆ Physical network connections of the PC and UBox are established:
 - Check network cable connections.
 - Verify that switches/hubs are powered up.
 - Verify that you have a network link light on the PC and UBox.

Note: Some Ethernet hubs/switches may not properly route UDP and TCP traffic when connected to other hubs and switches. This is especially true when your UBox is using Zeroconfig to obtain an IP address. To avoid these issues, connect your UBox and your computer to the same Ethernet hub/switch.
4. If you can ping the UBox, but the UBox software cannot establish a connection, the UDP/TCP port is not correct or is blocked by a firewall. Temporarily disable the firewall and see if communication to the UBox is established.
 - ◆ If so, configure the firewall to allow the UBox UDP/TCP ports to pass through. See [Firewalls](#) below.
 - ◆ If not, the UDP/TCP ports between the UBox and UBox application on the PC do not match. See [Troubleshooting: UDP Ports](#) on page 53.

Firewalls

A firewall helps keep your network safe by preventing hackers from getting inside your network and preventing you from sending private data to outside networks (e.g., the Internet).

Firewalls are either hardware (a physical item on your network such as your DSL router) or software (resides on your computer, e.g., Windows XP's built-in firewall software). In most cases, these firewalls are configured to allow only basic Internet traffic (e.g., web, email, ftp) to come in and out of your network. Since the UBox is a new product, these firewalls usually do not know about Lantronix UBox network data and may prevent you from communicating with your UBox.

If you are using a firewall, configure the firewall software to allow UDP traffic on port 10010 and to allow TCP/IP traffic on port 10010. The UBox uses both UDP and TCP/IP to communicate.

Note: For step-by-step instructions on configuring the software firewall that is built into Windows XP, see [B: Configuring the Windows XP Firewall](#).

Final Step

If still have problems with your UBox, try resetting the UBox hardware and then repeating the troubleshooting process. For instructions on how to reset your UBox hardware, please proceed to [Resetting the UBox Hardware](#) below

Resetting the UBox Hardware

Power-Cycling or Using the Reset Button

You can reset the UBox hardware at any time by two methods: by power cycling it or by using its reset button.

To reset by power cycling:

1. Disconnect the UBox's power supply and wait 5 seconds.
2. Reconnect the power supply. The UBox resets.

To reset using the reset button

1. Make sure that you have a straightened or unfolded paper clip (or a similar object without a sharp tip) and that your UBox is turned on.
2. Locate the reset hole on the top of your UBox.

Figure 7-2. Resetting the UBox



3. Using the paper clip, quickly press the reset button inside the hole. The UBox resets.

Rebooting the UBox into Safe Mode Using the Reset Button

If you have made an unwanted change to the UBox settings and can no longer access the UBox, you can boot it into a “safe mode.” In this mode, the UBox reboots using default settings (e.g., multi-user connect mode or default IP mode) and allows you to view and edit the settings.

To boot into safe mode:

1. Press and hold the reset button until the lights turn off (this takes 3 or more seconds). It takes approximately 15 seconds to complete the reset.
2. In the Lantronix UBox application, make sure that your Local UDP Port is set to **10010**.
3. Once you have verified the port, check the Lantronix UBox application to see whether your UBox displays.
4. If it does not display, check the SYSTEM status LEDs to determine the UBox’s network condition.

Troubleshooting: USB Devices

To troubleshoot problems with USB Devices:

1. Open the Lantronix UBox application. You should see your USB device listed. Make sure **Show All Devices** displays in the list box below the tabs.
2. If your USB device does not display:
 - a) Check the USB LED status.
 - b) Connect the device directly to the PC to verify that the device is functioning.

To troubleshoot issues with multiple users of a USB device:

If ...	Suggestions
You are sure that no one else is using your USB device, and the device still shows up as In Use	Contact Lantronix Technical Support.
Your USB device displays and is Connected .	<p>You should be able to use the USB device as you would normally.</p> <ul style="list-style-type: none"> ◆ If your USB device is a printer, you should be able to print by going to your File menu and selecting Print. ◆ If your USB device is a scanner, you should be able to open the scanner software and use your scanner.
You are not able to use your device	<p>Refer to your USB device’s troubleshooting instructions for what to do next.</p> <p>If you are still not able to use your USB device, please contact Lantronix Technical Support.</p>

Technical Support

If you are experiencing an error that is not described in this chapter, or if you are unable to fix the error, contact us as follows:

Technical Support US

Check our online knowledge base or send a question to Technical Support at <http://www.lantronix.com/support>.

Technical Support Europe, Middle East, Africa

Phone: +49 (0) 89 31787 817

Email: mailto:eu_techsupp@lantronix.com or mailto:eu_support@lantronix.com

Firmware downloads, FAQs, and the most up-to-date documentation are available at: <http://www.lantronix.com/support>

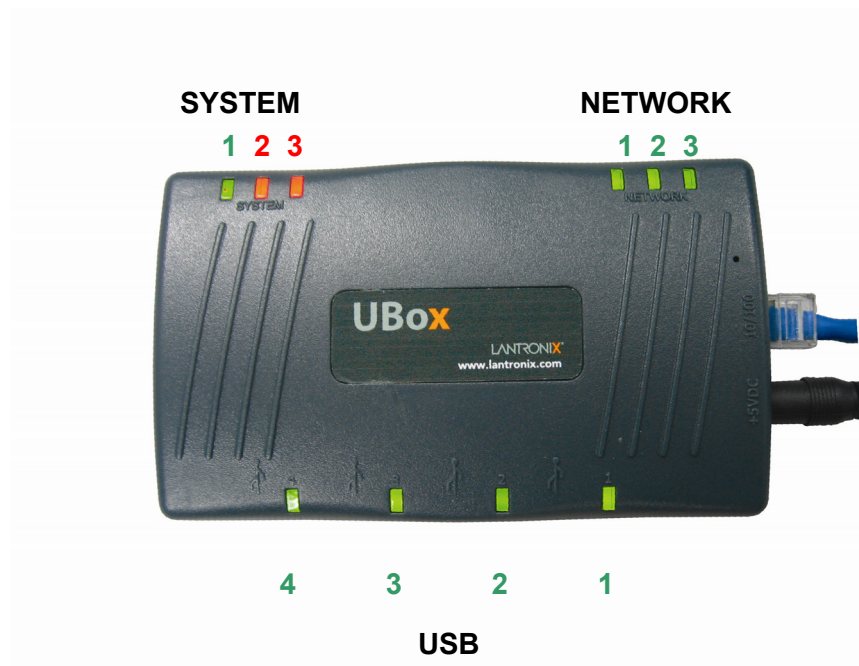
When you report a problem, please provide the following information:

- ◆ Your name, and your company name, address, and phone number
- ◆ Lantronix model number
- ◆ Software version
- ◆ Description of the problem
- ◆ Status of the unit when the problem occurred (please try to include information on user and network activity at the time of the problem)

A: Status Light Behavior

The Lantronix UBox comes equipped with ten LED lights that report the status of the Lantronix hardware.

Figure 7-3. Position of Status Lights on the UBox



The meaning of these lights changes depending on whether the UBox is booting up (you have just turned on the UBox), or if it is running.

The two tables on the following pages show all of the possible states of these LED lights and what they mean.

Note: If you are having problems with your UBox, please use this information in conjunction with the information in [7: Troubleshooting](#) to diagnose the problem.

Table 7-1. UBox Status Lights—UBox is Booting UP

Stage	Status	Troubleshooting
STAGE 1 UBox Is Booting Up	When the USB UBox is first powered on, the (red) SYSTEM 3 light is ON while the UBox is booting.	<p>If this light never goes off or the 4 (green) USB lights never come on, you may have a hardware failure. Please contact Lantronix Tech Support.</p> <p>If SYSTEM 1 (green) and SYSTEM 2 (red) blink alternately, the UBox firmware has failed to update or load. Please contact Lantronix Tech Support.</p>
STAGE 2 Firmware Loading	The (green) USB 1-4 lights are turned ON as the firmware starts running.	If SYSTEM 2 and 3 never stop blinking, the UBox is not finding a valid Ethernet connection, or you have configured the UBox to use an invalid IP address. Please contact Lantronix Tech Support for further details.
STAGE 3 Checking Ethernet Connection	SYSTEM 2 and SYSTEM 3 (both red) start blinking while the UBox looks for an Ethernet signal (a physical Ethernet connection) and continue to blink until the UBox finds this signal.	
STAGE 4 Finding IP Address	<p>SYSTEM 2 and SYSTEM 3 (both red) blink while the UBox tries to obtain an IP address. Once the UBox obtains its IP address, the UBox has finished booting and is now running. The status lights now have a new meaning. Please refer to Table 7-2. UBox Status Lights -- UBox is Running.</p> <p>Notes:</p> <ul style="list-style-type: none"> ◆ If the UBox is configured to use a Static IP address, Stage 4 is completed immediately. ◆ For DHCP only, it waits for the DHCP UBox. ◆ For Zeroconfig only, it takes 1-2 seconds while it negotiates. ◆ For Default, it waits for DHCP for 10 seconds before taking a Zeroconfig address (1-2 seconds). 	If SYSTEM 2 and 3 never stop blinking, the UBox is not finding a valid Ethernet connection, or you have configured the UBox to use an invalid IP address.

Table 7-2. UBox Status Lights -- UBox is Running

Light	Color	Status
SYSTEM 1	Green	<p>Slowing Blinking (on for 3 seconds then off/on): UBox is working.</p> <p>OFF or ON (does not blink): If the light is off, the UBox is not receiving power. If the light is on, the UBox has crashed and needs to be reset (see Resetting the UBox Hardware on page 55).</p>
SYSTEM 2 - 3	Red	<p>SYSTEM 2= OFF and SYSTEM 3= OFF: UBox is currently working as it detects users connecting to the UBox.</p> <p>SYSTEM 2= ON and SYSTEM 3= OFF: UBox is configured to use a static IP and does not detect any users connected to the UBox.</p> <p>SYSTEM 2= ON and SYSTEM 3= ON: UBox has obtained an IP address using DHCP and does not detect any users connected to the UBox.</p> <p>SYSTEM 2=OFF and SYSTEM 3= ON: UBox obtained an IP address using Zeroconfig and does not detect any users connected to the UBox.</p>
NETWORK 1	Green	<p>ON/OFF: If the light is on, the UBox has detected a link speed of 100 Mbits. If the light is off and NETWORK 3 is on, the link speed is 10 Mbits.</p>
NETWORK 2	Green	<p>ON/OFF: If the light is on, the UBox's Ethernet port is in full-duplex mode. If the light is off and NETWORK 3 is on, the Ethernet port is in half-duplex mode.</p> <p>Blinking: Packet collision has occurred. This is a normal and self-recovering occurrence with Ethernet.</p>
NETWORK 3	Green	<p>ON or Blinking: UBox has detected an Ethernet connection. This light blinks during data transmission. If the light is off, no Ethernet connection was detected.</p>
USB 1 - 4		<p>ON (does not blink): UBox is working. If a USB device is connected to the USB port, this light indicates that the USB UBox supports your USB device.</p> <p>Blinking (only appears when a USB device is connected): UBox hardware does not support your USB device, you have connected more than 8 USB devices (by using multiple compound USB devices), or the UBox is having problems communicating with the device. Please check the UBox's USB device compatibility on the Lantronix web site or contact Lantronix Tech Support.</p>

B: Configuring the Windows XP Firewall

The following instructions detail how to configure Window XP's built-in firewall for use with the Lantronix UBox. While these instructions are specific for this software, you can apply the basic idea of these instructions to configuring other firewalls.

These instructions show you how to:

- ◆ Determine which version of Windows XP is installed on your computer.
- ◆ Access your firewall software.
- ◆ Add settings to your firewall to allow communication with your Lantronix UBox.

If you have multiple computers, please repeat these steps for every computer that will access the UBox.

Step 1 - Determine Which Version of Windows XP is Installed on Your Computer

To determine Windows XP version:

1. On the **Start** menu, click **Run**.
2. In the **Open** field, type **winver.exe** and click **OK**. The About Windows window displays the version.
3. Do one of the following:
 - ◆ If you have Windows XP with Service Pack 1 or Windows XP without any Service Packs installed, perform **Step 2 and Step 3a**.
 - ◆ If you have Windows XP with Service Pack 2, perform **Step 3b**.

Step 2 – Access Your Firewall Software (Windows XP and XP Service Pack 1 Only)

You need to know your UBox's UDP/TCP port numbers and IP address before configuring your firewall. If you already know this information, skip ahead to [Step 3a - Add Settings to the Firewall to Allow Communication with the UBox](#) on page 64.

To obtain your UDP and TCP port numbers:

The Lantronix UBox defaults to using UDP port **10010** and TCP/IP port **10010**.

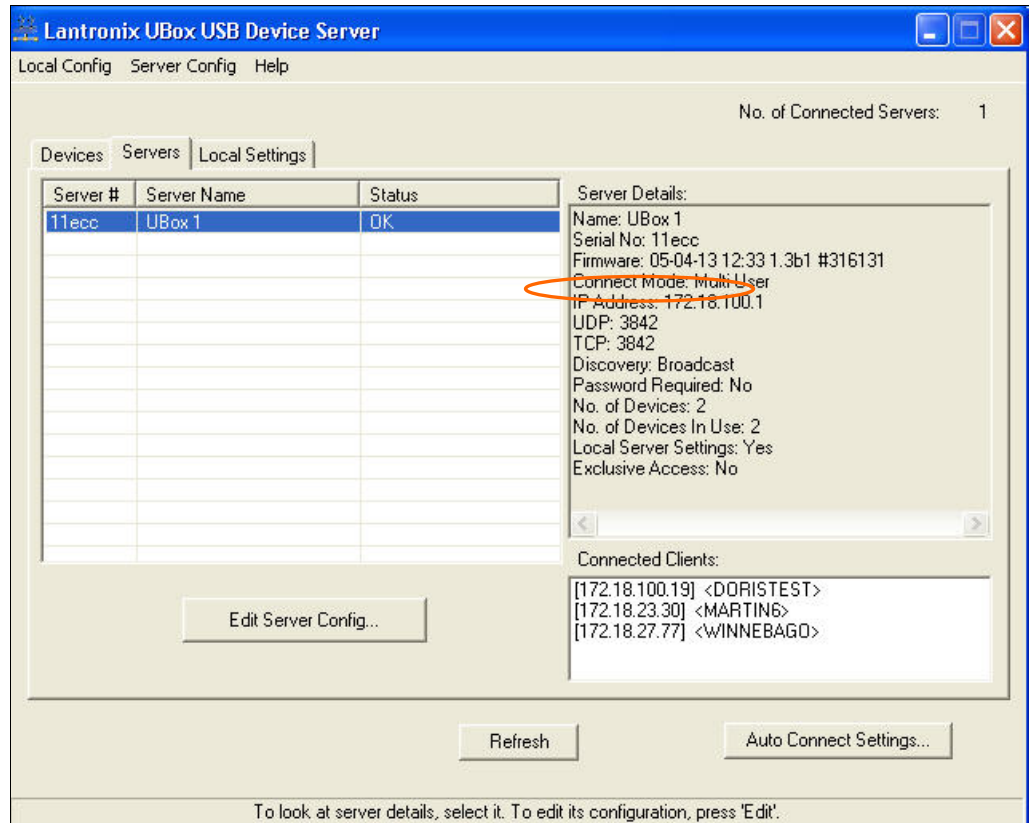
If you have not changed these settings, we will use these port numbers when we configure your firewall. If you have changed the UBox's UDP and/or TCP port numbers, use that number instead of **10010**.

To obtain your IP address:

To obtain your IP address:

1. Open the Lantronix UBox application.
2. Click the **Servers** tab and locate your UBox.
3. Select your UBox. Its **IP Address** displays in the **Server Details** area.

Figure 7-4. IP Address on Servers Tab

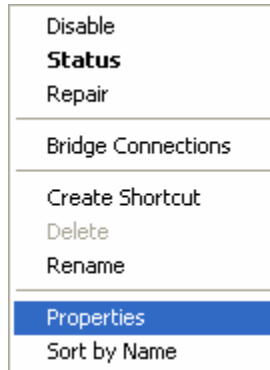


Note: If the **Edit Server Configuration Network** tab is set to **Automatic**, **DHCP** or **Zeroconfig**, the UBox is obtaining an IP address dynamically.

Dynamic addresses can change at any moment, making it harder for firewalls to keep track of. If you need to use a firewall, we suggest that you configure your UBox to use a static IP address. Also, if your firewall is currently turned on, you will not be able to see the UBox. Turn off the firewall to allow your computer to communicate temporarily with the UBox.

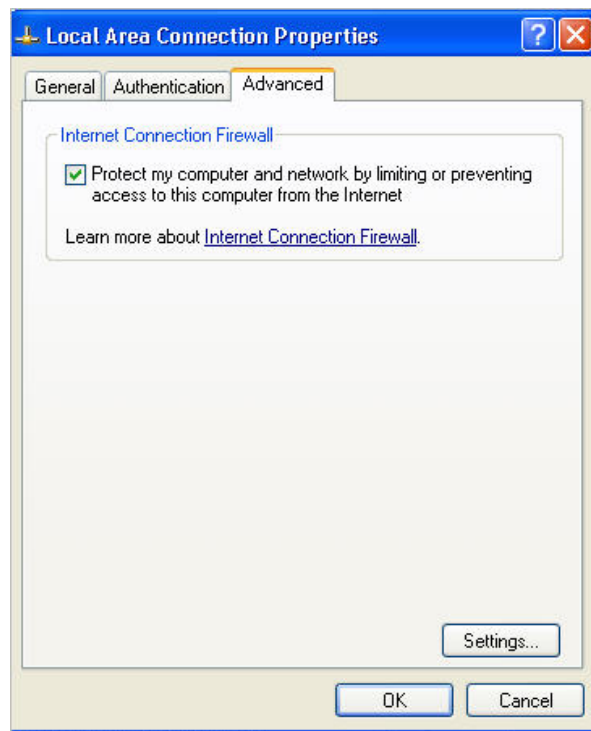
To obtain the Advanced Settings window:

1. On the **Start** menu, click **Settings→Network Settings**. An icon for your network connection displays. (It is usually called Local Area Connection).
2. Right-click the icon. A submenu opens.



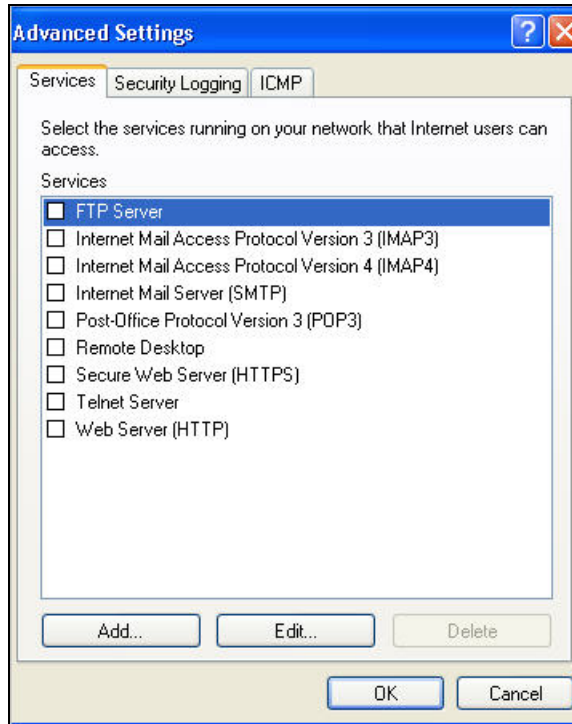
3. In the submenu, select **Properties**. The Local Area Connection Properties window opens.

Figure 7-5. Local Area Connection Properties – Advanced Tab



- Click the **Advanced** tab, and then click the **Settings** button. The **Advanced Settings** window opens

Figure 7-6. Advanced Settings Window

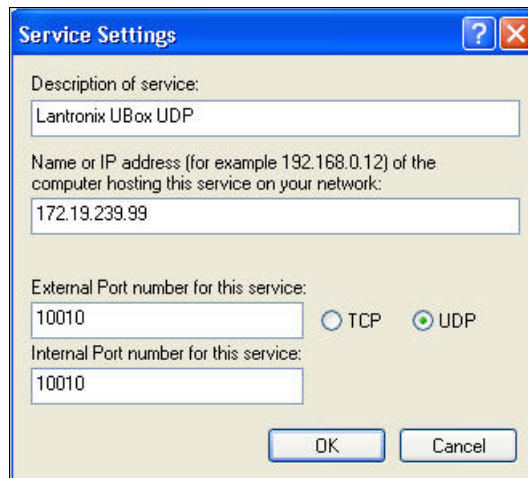


Step 3a - Add Settings to the Firewall to Allow Communication with the UBox

To add your UDP Port to the firewall:

- In the **Advanced Settings** window, click the **Add** button. The **Service Settings** window opens.

Figure 7-7. Service Settings –Adding a UDP

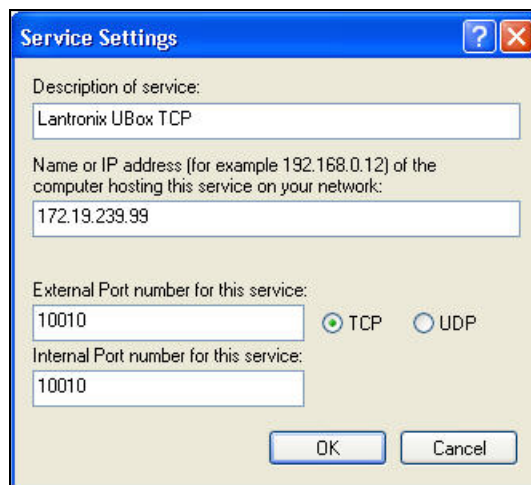


2. In the **Description of Service** field, enter something descriptive like “Lantronix UBox UDP.”
3. In the IP address field, enter the IP address.
4. In both the External Port and Internal Port fields, enter the UDP port number.
5. Select **UDP**.
6. To save your changes, click **OK**.

You have added support for the UBox's UDP port. Now add a setting for TCP.

To add your TCP port to the firewall:

Figure 7-8. Service Settings – Adding a TCP



1. Click the **Advanced** tab to return to the **Advanced Settings** window.
2. Click the **Add** button to create a new **Service Settings** window.
3. In the **Description of Service** field, enter something descriptive like “Lantronix USB TCP.”
4. In the **IP address** field, enter the IP address.
5. In both the **External Port** and **Internal Port** fields, enter the TCP port number.
6. Select **TCP**.
7. To save your changes, click **OK**.

To close the remaining windows:

1. Click the **OK** buttons on the remaining windows to finish up.

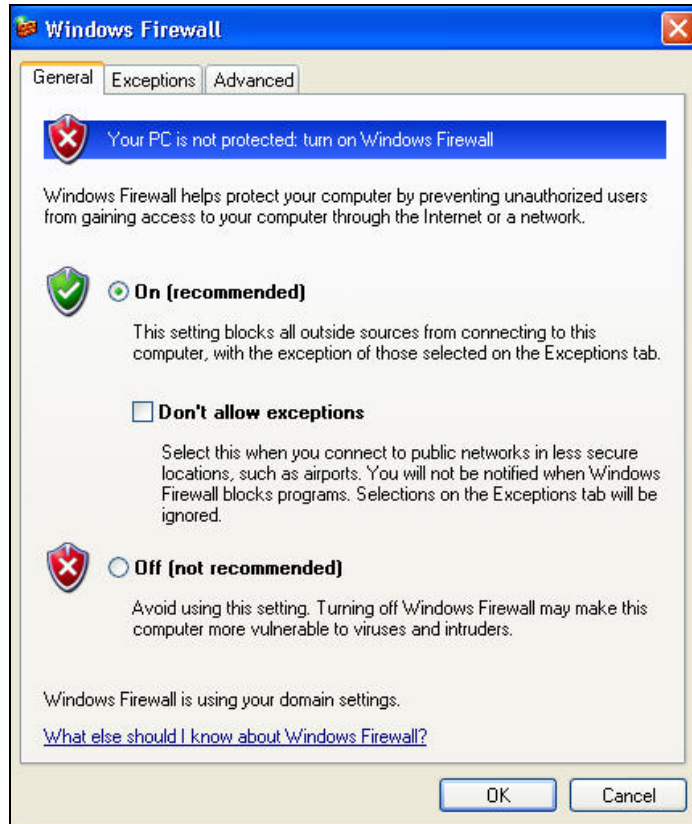
Your firewall is now configured to allow access to the Lantronix UBox. If you have multiple computers, please repeat these steps for every computer that will access the UBox.

Step 3b - Access and Configure Your Firewall Software (Windows XP Service Pack 2 Only)

To access your firewall software:

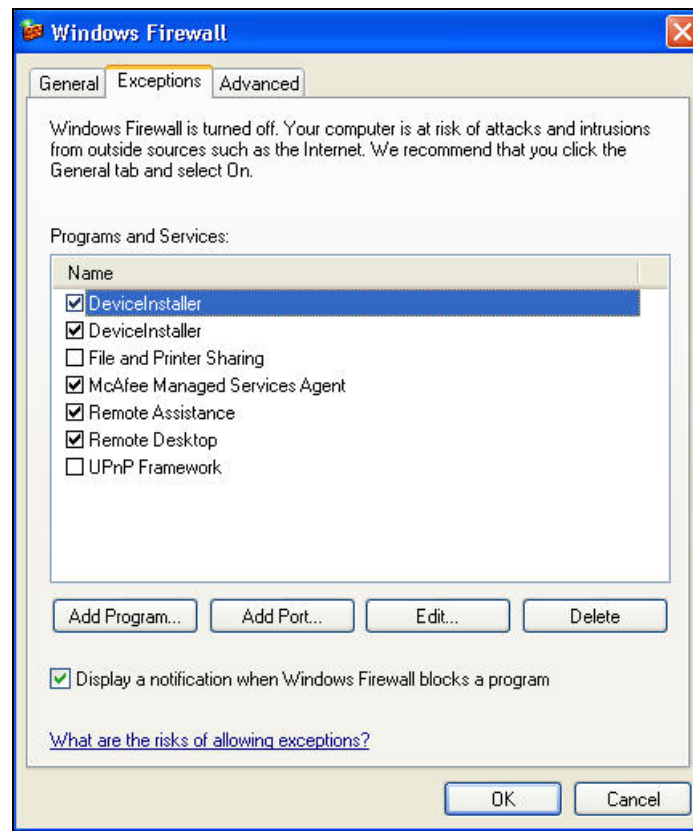
1. From the **Start** menu, click **Control Panel**. The Control Panel window opens.
2. Double-click **Windows Firewall**. The Windows Firewall window opens. (If you do not see **Windows Firewall**, click **Switch to Classic View** on the side panel.)

Figure 7-9. Windows Firewall Window



3. Select **On**.
4. Click the **Exceptions** tab.

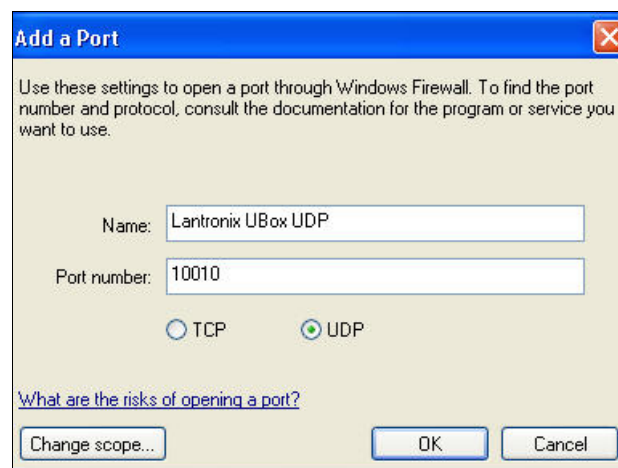
Figure 7-10. Exceptions Tab



To add your UDP port to the firewall:

1. On the **Exceptions** tab, click the **Add Port** button. The Add a Port window displays.

Figure 7-11. Add a Port Window - UDP



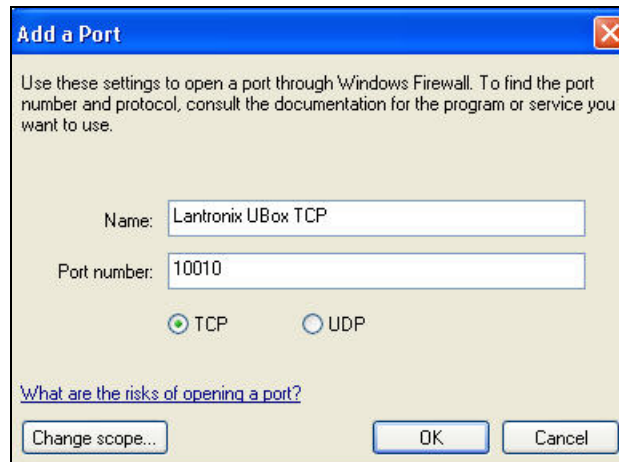
2. In the **Name** field, enter something descriptive like “Lantronix UBox UDP.”
3. In the Port number field, type **10010**.

4. Select **UDP**.
5. Click **OK**.

To add your TCP port to the firewall:

1. On the **Exceptions** tab, click the **Add Port** button. The Add a Port window displays.

Figure 7-12. Add a Port Window - TCP



2. In the **Name** field, enter something descriptive like "Lantronix UBox TCP."
3. In the Port number field, type **10010**.
4. Select **TCP**.
5. Click **OK**.

To close the remaining windows:

1. Click the **OK** buttons on the remaining windows.

Your firewall is now configured to allow access to the Lantronix UBox. If you have multiple computers, please repeat these steps for every computer that will access the UBox.

C: Compliance

FCC

United States FCC
DECLARATION OF CONFORMITY

We, Lantronix, at

15353 Barranca Parkway
Irvine, CA 92618 USA
(949) 353-3990

declare under our sole responsibility that the

Lantronix UBox USB Server, Model UBX4100

complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

Caution: Changes or modifications to the UBox USB DeviceServer not expressly approved by Lantronix could void the user's authority to operate this equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ◆ Reorient or relocate the receiving antenna.
- ◆ Increase the separation between the equipment and receiver.
- ◆ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ◆ Consult Lantronix or an experienced radio/TV technician for help.

CE Mark Declaration of Conformity

(According to EN 45014)

Manufacturer's Name and Address

Lantronix
15353 Barranca Parkway
Irvine, CA 92618 USA
(949) 353-3990

Declares that the product:

Product Name: **UBox USB Device Server**

Model Number: **UBX4100**

Conforms to the following Product Specifications:

EN 55022: 1998 Class B

EN 55024: 1998

following the provisions of the Electromagnetic Compatibility Directive.

Director of Quality Assurance, Lantronix
15353 Barranca Parkway, Irvine, CA 92618 USA
Tel: 949-453-3990
Fax: 949-453-3995

Canada Digital Apparatus EMI Standard

This Class B digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

VCCI

Voluntary Control Council for Interference from Information Technology Equipment

Class B ITE

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

Translation:

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

Australia/New Zealand

This device complies with AS/NZS 3548 Class B limits for the operation of Information Technology Equipment.

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Lantronix warrants each Lantronix product to be free from defects in material and workmanship for a period of **TWO YEARS** after the date of shipment. During this period, if a customer is unable to resolve a product problem with Lantronix Technical Support, a Return Material Authorization (RMA) will be issued. Following receipt of an RMA number, the customer shall return the product to Lantronix, freight prepaid. Upon verification of warranty, Lantronix will -- at its option -- repair or replace the product and return it to the customer freight prepaid. If the product is not under warranty, the customer may have Lantronix repair the unit on a fee basis or return it. No services are handled at the customer's site under this warranty. This warranty is voided if the customer uses the product in an unauthorized or improper way, or in an environment for which it was not designed.

Lantronix warrants the media containing its software product to be free from defects and warrants that the software will operate substantially according to Lantronix specifications for a period of **60 DAYS** after the date of shipment. The customer will ship defective media to Lantronix. Lantronix will ship the replacement media to the customer.

* * * *

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