



## **Studio 5.0 User's Guide**

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# Chapter 1: Introduction

The Wavelink Studio 5.0 User's Guide is a complete guide to the features and components of Studio. This document presents:

- An introduction to the Studio environment and conceptual information about the Studio structure.
- Detailed information about each server component and how to configure those components effectively.

This chapter presents the following information:

- About This Document
- Network Configurations
- Studio Features
- Additional Sources

## About This Document

The Studio 5.0 User's Guide focuses on the installation of Studio and how to use its features to ensure that mobile device users have reliable connections to Wavelink applications.

---

**NOTE** This document does not discuss how to develop applications with the Studio development libraries.

---

This section provides information about the assumptions and conventions of this user's guide.

### Document Assumptions

This document makes the following assumptions:

- You have a general understanding of the different hardware and software components that comprise your network

- You understand basic hardware configuration, such as installing a network adapter
- You have administrative access to your network

## Document Conventions

This document uses the following typographical conventions:

`Courier New`

Any time you interact with an option, such as a button, or type specific information into a field, such as a file pathname, that option appears in the `Courier New` text style. This text style is also used for any keyboard commands that you might need to press.

Examples:

Click `Next` to continue.

Press `CTRL+ALT+DELETE`.

**Bold**

Any time this document refers to an option, such as descriptions of elements in a dialog box, that option appears in the **Bold** text style.

Examples:

Click `Open` from the **File** menu.

Type a name for the Application Server in the **Server Name** text box.

*Italics*

Any time this document refers to another section within the document, that section appears in *Italic* text style. This style is also used to refer to the titles of dialog boxes.

Examples:

See the *Installation* section for more information.

The *Choose Install Folder* dialog box appears.



## Network Configurations

Studio supports multiple network configurations. The two most common types of configurations are for distributed application deployment and centralized application deployment.

The distributed application architecture provides for redundancy of applications and services at local sites. This redundancy is critical for enterprises that work with public networks or any other environments where connections to a central server fall outside an organization's control. In the distributed application model, redundancy at the site level ensures that mobile device users can access the applications they need even if a connection to a central server is unavailable. This model has the advantage of increasing redundancy of critical components and improving the overall robustness of the network.

The centralized application architecture is the configuration of choice for organizations with a highly-reliable network infrastructure. In this model, network reliability renders site-level application redundancy unnecessary. As a result, all mobile devices across all locations access a central application distribution manager, with redundancy addressed through multiple instances of the applications and servers at the central location. This model has the advantage of increasing administrative efficiency and reducing the number of required server components at a site.

These two configuration methods—distributed and centralized—can also be combined. For example, if most of the sites on your network have reliable connections to a central server but a few sites do not, you can use the centralized method for the majority of your network and use the distributed method on an as-needed basis.

## Studio Features

Wavelink Studio's revolutionary approach to wireless application management allows you to extend application management, while retaining the ease-of-use required of any network management tool. This section presents features and fundamental concepts of the Studio product to help you optimize it for your enterprise. The features covered in this section include:

- Port Monitors
- Application Servers

- Discovery Manager
- License Manager
- Service Manager
- Administrator
- Java Development Library
- Load-Balancing
- AutoDiscovery

## **Port Monitors**

A port monitor is responsible for accepting connections from mobile devices. There are two types of port monitors, one for the Windows development environment and one for the Java development environment.

As the name implies, each port monitor is assigned to a specific port on its host system. You can connect to a port monitor directly or use Wavelink's AutoDiscovery feature, where a Discovery Manager provides port monitor information to a mobile device requesting a connection.

Unlike other components in Studio, port monitors are automatically created and removed by an Application Server.

## **Application Servers**

An Application Server answers the need for effectively managing multiple port monitors. As mentioned in the port monitor section, you can have as many port monitors as your mobile device users require. However, if you have several hundred port monitors on your network, managing each one individually becomes inefficient.

Consequently, Studio employs Application Servers to manage port monitors. Each Application Server adds and deletes port monitors when you add or delete applications on your network. These Application Servers also handle communications sent from port monitors to other Studio server components.

## Discovery Manager

A Discovery Manager is a point of contact for a mobile device that wants to connect to the wireless network. The Discovery Manager is necessary if you want to support Wavelink's AutoDiscovery feature. See *AutoDiscovery* on page 10 for more information.

A Discovery Manager has two main functions:

- Maintain a list of all available port monitors
- Respond to connection requests from mobile devices with the appropriate port monitor information

When a mobile device attempts to connect to an application, it broadcasts a connection request. A local Discovery Manager acquires this request and compares its parameters to a list of available port monitors. After comparing the connection request to a port monitor list, the Discovery Manager responds with the appropriate port monitor information.

## License Manager

One of the core elements of Studio is the License Manager. The License Manager maintains and distributes all available Wavelink licenses for an enterprise-wide network.

When an Application Server is activated on a specific subnet, the License Manager immediately allocates a number of licenses to it. As mobile devices connect to an Application Server, they are assigned licenses from that allocated amount. If the number of connection requests exceeds the number of allocated licenses, the server requests additional licenses from the License Manager. If licenses are available, the License Manager allocates more licenses to the server.

Wavelink licenses are leased to an Application Server for a set period of time. When a lease for a license ends, the License Manager returns those licenses to its pool of available licenses, ready to re-distribute them on request.

See *Chapter 7: Licenses View* on page 63 for more information on how to efficiently manage and distribute Wavelink licenses.

## Service Manager

The Service Manager tracks the location and status of all other Studio components. Each time a server component starts, it locates and registers with the Service Manager to become available to the other servers on the network.

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**NOTE** Application Servers are never assigned a backup status, allowing you to create as many Application Servers as you need for each subnet.

---

You can have only one Service Manager active on your network at any given time.

## Administrator

The Administrator provides a functional user interface that allows you to manage the different Studio components efficiently. For a full description of the Administrator and its functions, see *Overview of the Administrator* on page 23.

## Java Development Library

The Java Development Library is a set of classes that you reference from your Java application. The library provides 36 classes and hundreds of methods designed specifically for wireless-application development. These methods and objects range from basic input and output functions over a wireless network to playing custom tone files on a mobile device.

## Load-Balancing

Studio handles load-balancing for your wireless applications automatically. When multiple servers contain the same application, Studio tracks the connection capacity for each Application Server. As new application requests are received, Studio routes the connection to the Application Server that has the most percentage capacity. This method prevents one Application Server from reaching its maximum capacity while another remains unused.

## AutoDiscovery

A key feature to Studio is its AutoDiscovery technology. AutoDiscovery is a feature that allows mobile devices to locate to and connect with applications

on your network without requiring you to configure those devices with specific host IP addresses and port numbers.

## **Additional Sources**

The following references also provide additional information on Studio or the Wavelink product line:

- *Studio Java Development Library*
- *Studio COM Development Library*
- Wavelink Corporation Web site: [www.wavelink.com](http://www.wavelink.com)
- Wavelink Studio Client user's guides



## Chapter 2: Installation

This chapter presents the following installation information:

- Requirements
- Determining the Level of Redundancy
- Installing Studio
- Starting Studio
- Creating Firewall Exceptions
- Uninstalling Studio

### Requirements

This section lists the hardware and software requirements of Studio. For Studio to operate properly, the minimum requirements are:

- Solaris 9 or 10, Windows Server 2003, Windows 2000 or XP
- 256 MB physical RAM
- 64 MB free disk space (plus additional space for applications)
- Pentium 300 MHz or faster
- If using Solaris, a Java Virtual Machine 1.4 or compatible

### Determining the Level of Redundancy

One of the first decisions you must make before you install Studio is the level of redundancy your network requires. This level depends on several factors, such as the reliability of network connections, the role of public networks within daily business activities, and the location of different sites within the enterprise. After you determine the level of redundancy, you can install Studio using a distributed, a centralized configuration, or a combination of both.

If you want Studio operational on sites regardless of whether they can connect to your headquarters, it is recommend you install Studio using its distributed configuration. This configuration first involves a standard installation of Studio components on a central server. After this installation is complete, you install specific components at each site within your enterprise. This configuration method ensures that your users can continue to access wireless applications even if a site's connection to your headquarters is unavailable.

If you want to control all aspects of wireless management from a central location, it is recommended that you install Studio using its centralized configuration. With this configuration, you install Studio only on a central server. Users within your enterprise must connect to this server to access a wireless application.

---

**NOTE** If you select a centralized configuration for Studio, sites on your network cannot access applications if their connection to the central server is unavailable.

---

See *Network Configurations* on page 7 for more information on configuration.

## Installing Studio

This section covers the installation process of all Studio components. This section also applies if you are installing components of Studio to one or more sites. The installation process will be slightly different depending on which OS you are using:

- Solaris Installation
- Windows Installation

---

**NOTE** If you stop the installation process at any time, you must use the uninstall utility to remove any partially-installed components before you attempt to re-install.

---



## Solaris Installation

### To install Studio on a Solaris OS:

- 1 Download Wavelink Studio 5.0 (`Studio.bin`) from the Wavelink Web site, [www.wavelink.com](http://www.wavelink.com).
- 2 From a terminal, navigate to the directory where Studio is saved, type `./Studio.bin` and press `Enter`.

The Installer starts and the *Introduction* dialog box appears.

- 3 Click `Next`.

The *License Agreement* dialog box appears. Please read this agreement carefully.

- 4 To accept the License Agreement, enable the **I accept the terms of the License Agreement** option and click `Next`.

The *Choose Install Folder* dialog box appears.

- 5 To accept the default installation folder click `Next`.

To navigate to a different installation folder, click `Choose`. If you click `Choose` and decide that you prefer the default directory, click `Restore Default Folder`. Once you select a folder, click `Next`.

The *Choose Java Virtual Machine* dialog box appears.

- 6 A list of available Java VMs becomes active in the dialog box. Select a Java VM from the list.

---

**NOTE** The Java VM must reside on the same path as Studio. You must use a Java VM that complies with the Java 2 Runtime Environment, Standard Edition, version 1.4 or compatible.

---

- 7 Click `Next`.

The *Choose Link Folder* dialog box appears.

- 8 Select where you want the product icons for Studio components to reside and click `Next`.

The *Choose Product Features* dialog box appears.

- 9 If you want to install all components of Studio, select the **Full Install** option. Select this option if this installation is for a primary installation of Studio components.

If you want to install site-only components, select the **Site Install** option. Select this option if this installation is for a specific site within your enterprise.

If you want to install only the Administrator user interface, select the **Administrator Install** option.

- 10 Click `Next`.

The *Pre-Installation Summary* dialog box appears.

- 11 If the installation information is correct, click `Install`.

- If you are performing a full or site installation, the *Specify Server Name* dialog box appears. Proceed to Step 12.
- If you are performing an Administrator installation, the *Install Complete* dialog box appears. Click `Done` to complete the installation.

- 12 Type a name for the Application Server in the **Server Name** text box.

- 13 Type a password for the Application Server in the **Server Password** text box.

- 14 If you are performing a site installation, type the IP address of the headquarters server in the **HQ Server IP** text box.

- 15 Click `Next`.

The *Install Complete* dialog box appears.

- 16 Click `Done`.

## Windows Installation

### To install Studio:

- 1 Download Wavelink Studio 5.0 from the Wavelink Web site, [www.wavelink.com](http://www.wavelink.com).

- 2 Open the InstallAnywhere Self Extractor to start the installation process.

The *Introduction* dialog box appears.

- 3 Click `Next`.

The *License Agreement* dialog box appears. Please read this agreement carefully.

- 4 To accept the License Agreement, enable the **I accept the terms of the License Agreement** option and click `Next`.

The *Choose Install Folder* dialog box appears.

- 5 To accept the default installation folder, `C:\Program Files\Wavelink`, click `Next`.

To navigate to a different installation folder, click `Choose`. If you click `Choose` and decide that you prefer the default directory, click `Restore Default Folder`. Once you select a folder, click `Next`.

The *Choose Java Virtual Machine* dialog box appears.

- 6 If you want to install the Java VM included with Studio, enable the **Install a Java VM specifically for this application** option.

If you want to use a previously installed Java VM, enable the **Choose a Java VM already installed on this system** option. If you enable this option, a list of available Java VMs becomes active in the dialog box. Select a Java VM from the list. If the preferred Java VM does not appear in this list, click `Search For Others` to have the installation program search for additional Java VMs or click `Choose Another` to manually navigate to a different Java VM.

---

**NOTE** You must use a Java VM that complies with the Java 2 Runtime Environment, Standard Edition, version 1.4 or compatible.

---

- 7 Click `Next`.

The *Choose Shortcut Folder* dialog box appears.

- 8 Select where you want the product icons for Studio components to reside and click `Next`.

The *Choose Product Features* dialog box appears.

- 9** If you want to install all components of Studio, select the **Full Install** option. Select this option if this installation is for a primary installation of Studio components.

If you want to install site-only components, select the **Site Install** option. Select this option if this installation is for a specific site within your enterprise.

If you want to install only the Administrator user interface, select the **Administrator Install** option.

- 10** Click *Next*.

The *Pre-Installation Summary* dialog box appears.

- 11** If the installation information is correct, click *Install*.

- If you are performing a full or site installation, the *Specify Server Name* dialog box appears. Proceed to Step 12.
- If you are performing an Administrator installation, the *Windows Service* dialog box appears. Skip to Step 16.

- 12** Type a name for the Application Server in the **Server Name** text box.

- 13** Type a password for the Application Server in the **Server Password** text box.

- 14** If you are performing a site installation, type the IP address of the headquarters server in the **HQ Server IP** text box.

- 15** Click *Next*.

The *Windows Service* dialog box appears.

- 16** If you want the Application Server to operate as a Windows service, enable the **Install Studio as Windows Service** checkbox.

- 17** Click *Next*.

If you are installing Studio as a Windows service, the *Service Startup* dialog box appears. This dialog box allows you to enable Studio to startup automatically or manually. Once you select how Studio starts, click *Next*.

---

**NOTE** If you choose not to start up Studio automatically, you will need to manually start the Application Server each time.

---

The *Install Complete* dialog box appears.

18 Click Done.

## Starting Studio

This section includes instructions for:

- Starting the Server
- Opening the Administrator

### Starting the Server

If Studio is installed as an automatic Windows service, the server will automatically start each time the computer is started. If Studio is not a Windows service or is a manual Windows service, the server must be started manually each time your computer is started.

---

**NOTE** Closing the Administrator does not stop the Studio server.

---

#### To start the server in Solaris:

- From a terminal, navigate to the Studio installation directory, type `Start_Server` and press `Enter`.

#### To start the server in Windows as an application:

- From the Windows **Start** menu, select `All Programs > Wavelink 5.0 > Studio Server`.

The server starts and you may now open the Administrator.

#### To start the server in Windows when Studio is a manual Windows service:

- 1 From the Windows **Start** menu, select `Control Panel > Administrative Tools > Services`.

- 2 In the list of services, find `Wavelink Studio` and right-click on it.
- 3 Select `Start`.

The server starts and you may now open the Administrator.

## Opening the Administrator

The Administrator allows you to access and modify servers, applications, and mobile devices on your network.

### To open the Administrator in Solaris:

- From a terminal, navigate to the Studio installation directory, type `Studio_Administrator` and press `Enter`.

### To open the Administrator in Windows:

- From the Windows **Start** menu, select `All Programs > Wavelink 5.0 > Studio Administrator`.

The Administrator opens and you can access your servers, applications, and mobile devices.

## Creating Firewall Exceptions

In order to administer applications with Studio, you must create exceptions in the firewall. There are three types of exceptions that must be made for Studio to be fully operational:

- Application Exceptions
- AutoDiscovery Exception
- Remote Administration Exception

### Application Exceptions

When you add an application to the server, you have the option of specifying the port or port range that application will use. Set the port number and then create an exception in the firewall for that port.

---

**NOTE** If you use **Find Available** when selecting a port for the application, the port number may change each time you run the application.

---

### **AutoDiscovery Exception**

To make sure that the firewall allows AutoDiscovery to function properly, you must make an exception in the firewall for UDP port 905. For the Windows Client, you must make an exception for UDP port 903.

### **Remote Administration Exception**

If you will be administering Studio remotely, you may also need to create an exception in the firewall for the Java RMI. This is done by creating an exception for the server.

#### **To create an exception in the Windows firewall for the Studio Server:**

- 1 From the *Windows Control Panel*, double-click on `Windows Firewall`.
- 2 Select the Exceptions tab.
- 3 Click on the **Add Program** button.
- 4 Select `Studio Server` from the Programs list and click `OK`.

The server will now be allowed to connect to other sites.

- 5 Make sure that `Studio Server` is included in the Programs and Services list.

You may now manage applications at the site from a remote Administrator.

## **Uninstalling Studio**

This section provides instructions for uninstalling Studio.

#### **To uninstall Studio in Solaris:**

- From a terminal, navigate to the Studio installation directory, type `Uninstall_Studio` and press `Enter`.

**To uninstall Studio in Windows:**

- From the Windows **Start** menu, select All Programs > Wavelink Studio 5.0 > Uninstall Studio 5.0.

All Studio installation files will be uninstalled from your computer.



## Chapter 3: Studio Tutorial

This chapter provides an introduction to the Studio environment through step-by-step instructions for basic tasks. The sections in this chapter include:

- Overview of the Administrator
- Adding a License to the License Manager
- Adding an Application
- Creating a Firewall Exception
- Connecting to an Application with the Windows Client
- Viewing Connections to Applications

---

**NOTE** Before beginning the tutorial, you must complete a full installation of Studio.

---

### Overview of the Administrator

You control all aspects of application distribution and management through the Administrator. With the Administrator, you can display one of several views. Each view contains information about your wireless applications and provides you with a collection of options you can use to configure how Studio manages those applications. The views contained in the Administrator are as follows:

<b>Server Monitor</b>	This view allows you to manage the servers, add wireless applications, and view users connected to your Studio installation.
<b>Applications</b>	This view allows you to add, modify, and delete applications in Studio.

<b>Licenses</b>	This view allows you to add, modify, delete, and reclaim licenses distributed to your servers.
<b>Servers</b>	This view allows you to add, modify, and delete remote servers. It also allows you to give authorization for sites to access wireless applications and licenses.

## Adding a License to the License Manager

The License Manager distributes licenses to your Application Servers. You must have one or more valid licenses assigned to a server before you can add an application to it. This section describes how to add a license to the License Manager.

### To add a new license:

- 1 From the Administrator, click `Licenses`.
- 2 Click `Add`.

The *Add New Wavelink License* dialog box appears.



The screenshot shows a dialog box titled "Add New Wavelink License". It contains the following fields and values:

- Licensee: Frank Lewis
- Platform Version: Wavelink Studio 5.0
- Serial Number: 123456
- User Limit: 20
- Authorization: (empty)
- Expiration: 2500, January, 1

Buttons: OK, Cancel

**Figure 3-1.** *Add New Wavelink License Dialog Box*

---

**NOTE** All fields in the *Add New Wavelink License* dialog box are case sensitive.

---

- 3 Type the name to whom the new licenses are assigned in the **Licensee** text box.

- 4 Type the platform version for the licenses in the **Platform Version** text box.
- 5 Type the serial number for the licenses in the **Serial Number** text box.
- 6 Type the number of users allowed to access these licenses in the **User Limit** text box.
- 7 Type the authorization code for the licenses in the **Authorization** text box.
- 8 Type the expiration date for the licenses in the **Expiration Date** text box.
- 9 Click `Accept` to add the new licenses to the License Manager.

## Adding an Application

Once you have added licenses to the License Manager, you can begin to add applications. Adding an application to Studio consists of two steps:

- Adding an Application to the Administrator
- Adding an Application to a Server

The sample application used in this tutorial is a Java application called “Hello World.” Some information in this tutorial is specific to Hello World. For more information about adding applications, see *Chapter 6: Applications View* on page 45.

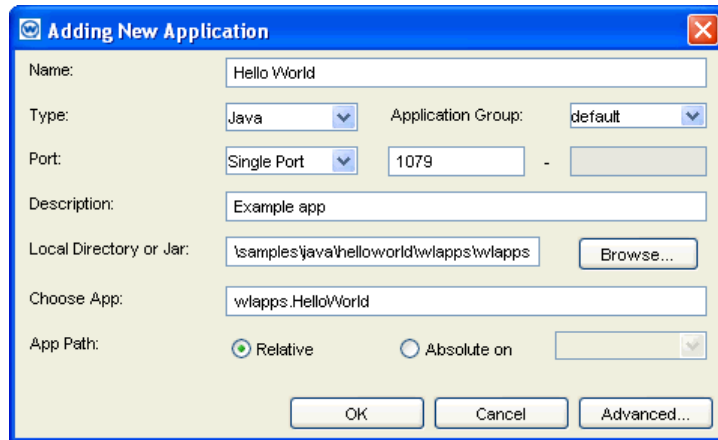
### Adding an Application to the Administrator

You must add applications to the Administrator before they are available to your servers and devices.

#### To add an application to the Administrator:

- 1 From the Administrator, click `Applications`.
- 2 Click `Add`.

The *Adding New Application* dialog box appears.



**Figure 3-2.** Adding New Application Dialog Box

**3** Type `Example` in the **Name** text box.

**4** Select `Java` from the **Type** list.

Currently, Studio supports two application types: Java and Win32. Because the Hello World application is in Java, you must select `Java` from the **Type** list.

**5** Select `default` from the **Application Group** list.

**6** Select `Single Port` from the **Port** list. Specify a port number for the application to use in the activated text box.

This option instructs Studio to use a single specified port for the application. You can also restrict the port numbers used to a specific range or allow Studio to assign the application to any available port.

**7** Type `Example` of adding an application in the **Description** text box.

The description appears in the **Description** column of the Application Distribution Manager table.

**8** Type the path to the directory that contains the application in the **Local Directory or Jar** text box.

The Hello World application is located in the following directory:

```
C:\Program Files\Wavelink\Studio 5.0\samples\java\helloworld
```

- 9 Type `wlapps.HelloWorld` in the **Choose App** text box.
- 10 Select the **Absolute on** option, and then select the system on which the application resides.

With this option, Studio accesses the application only from the system on which the application was initially installed, using the exact path specified in the **Local Path** text box. This option is recommended if you do not want an application distributed to multiple systems.

- 11 Click `Accept` to add the application to the Application Distribution Manager.

---

**NOTE** You can configure advanced options for your wireless applications. See *Editing Application Properties* on page 51 for more information.

---

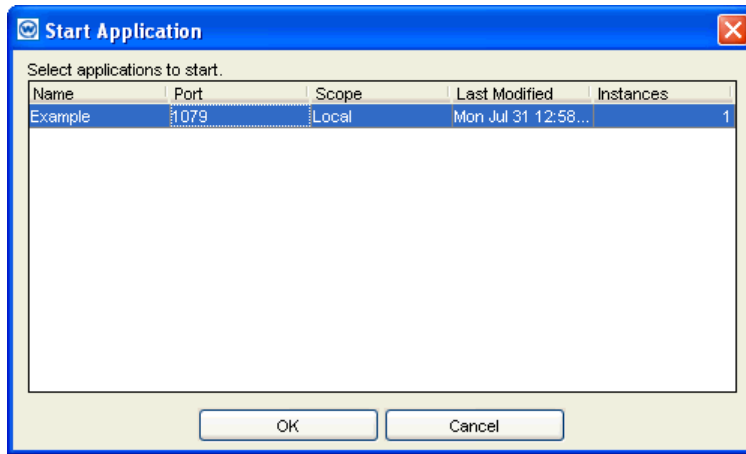
## Adding an Application to a Server

Once you have added the Hello World application to the Administrator, you can add it to a specific Application Server on your network.

### To add an application to a server:

- 1 From the Administrator, click `Server Monitor`.
- 2 Select a server from the Site List.
- 3 Click `Start Application`, located in the bottom-left corner.

The *Start Application* dialog box appears.



**Figure 3-3.** *Start Application Dialog Box*

- 4 Select the Example application.
- 5 Click **OK**.

The *Starting Applications* dialog box appears.

- 6 Click **Yes**.

The Hello World application is now available to mobile devices through the server you selected. Notice that the application now appears in the Applications list in the Server Monitor view, along with its assigned port number and the number of mobile devices currently connected to it.

---

**NOTE** You must also use this port number in the following sections to create a connection to the application.

---

## Creating a Firewall Exception

Before you can access Hello World from a mobile device, you must create an application exception in the firewall for the port you specified in step 6 of *Adding an Application to the Administrator*.

**To make an application exception in the Windows firewall:**

- 1 From the *Windows Control Panel*, double-click on `Windows Firewall`.
- 2 Select the *Exceptions* tab.
- 3 Click the **Add Port** button.

The *Add a Port* dialog box appears.

- 4 Enter a name for the exception in the **Name** text box.
- 5 Type the port for the application in the **Port Number** text box. (This is the port specified in step 6 of *Adding an Application to the Administrator*.)
- 6 Ensure that the **TCP** option is selected and click **OK**.

The exception is created and you can access the application from a mobile device.

## Connecting to an Application with the Windows Client

Once you have added the application to a server, you can use the Windows Client (included in the Windows full installation) to simulate a mobile device connecting to an Application Server.

The Windows Client is a client that is designed to run on your desktop. This Client is a useful tool for verifying application performance and connections.

**To create a Windows Client connection:**

- 1 From the Windows **Start** menu, select `All Programs > Wavelink 5.0 > Windows Client`.

The Windows Client opens.

- 1 From the Client main screen, click on the `Add New` icon.

The *Edit Profile* dialog box appears.

- 2 In the **Host Name** text box, type `Hello World` as the name for the profile.

This name appears beneath the host icon in the Client main screen.

- 3 In the **Host Address** text box, type `127.0.0.1`.
- 4 In the **Port** text box, type the port number to which you want the device to connect.
- 5 Click `Update` to confirm the settings.

The Studio Client creates the new host profile. Hello World appears beneath the corresponding icon in the Client main screen.

- 6 Double-click on the Hello World icon in the Client main screen.

The Windows Client will connect to the Hello World application.

## Viewing Connections to Applications

You can use the Administrator to view details about the mobile devices connected to an application.

### To view application connections:

- 1 From the Administrator, click `Server Monitor` to open the Server Monitor view.
- 2 Select the server that contains the Hello World application from the Site List.

In the Applications list, an entry appears that contains the name of the application, its assigned port number, and how many devices are connected to it. Because you connected to this application through the Windows Client, the number of connections should now read `1`.

- 3 Select the `Hello World` entry from the Applications list.

In the Application Users list, an entry provides information on the type of device connected to the application, the IP address of the device, and its session ID number. Because you connected to the application through the Windows Client, this entry should read `Windows Device, 127.0.0.1`, and a session ID number. If you had multiple devices connected to this application, additional entries would appear in the Application Users list—one for each mobile device.



## Chapter 4: Administrator Settings

This chapter provides information about managing connections and settings for the Administrator. It includes:

- Managing Server Connections
- Configuring Studio Settings
- Shutting Down the Headquarters Server

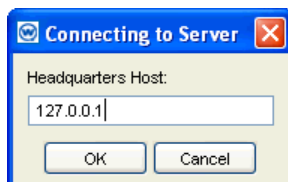
### Managing Server Connections

A typical network setup for Studio consists of a full installation (which contains all Studio components, including the headquarters server) and one or more site installations (which contain only a server and the Administrator). Although the Administrator can be opened from any Studio installation, it must be connected to the system containing the headquarters server to operate.

**To connect the Administrator to the headquarters server:**

- 1 From the Administrator, select **Connect** from the **File** menu.

The *Connecting to Server* dialog box appears.



**Figure 4-1.** *Connecting to Server* Dialog Box

- 2 Type the IP address of the system containing the headquarters server in the **Headquarters Host** text box.
- 3 Click **OK**.

The Administrator will connect to the specified IP address. Once connected, you can manage Studio applications, licenses, and servers from the Administrator.

**To disconnect the Administrator:**

- 1 From the Administrator, select `Disconnect` from the **File** menu.

The *Disconnecting From Server* dialog box appears.

- 2 Click `Yes`.

The Administrator disconnects from the headquarters server.

---

**NOTE** Closing the Administrator does not stop the Studio service.

---

## Configuring Studio Settings

This section presents information on how to configure settings in Studio. It includes:

- Configuring Preferences
- Configuring Security

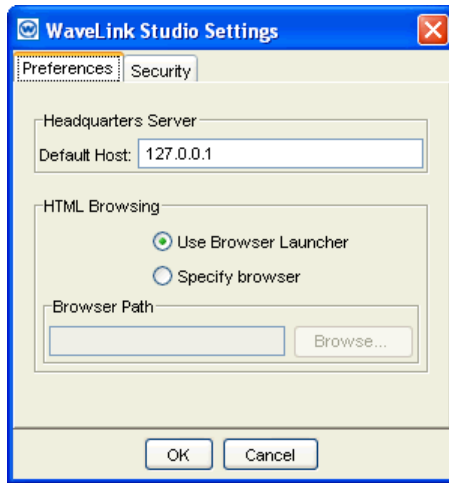
### Configuring Preferences

You can configure some Studio preferences directly from the Administrator. These preferences fall into two categories: the connection to the headquarters server and the browser used to display the online help.

**To modify the default connection to the headquarters server:**

- 1 From the Administrator, select `Settings` from the **Tools** menu.

The *Wavelink Studio Settings* dialog box appears.



**Figure 4-2.** Preferences Tab

- 2 Type the IP address of the system hosting the headquarters server in the **Default Host** text box.
- 3 Click **OK**.

**To configure how Studio's online help is displayed:**

- 1 From the Administrator, select **Settings** from the **Tools** menu.

The *Wavelink Studio Settings* dialog box appears.

- 2 If you want Studio to automatically use the default browser for your system to display the online help, select the **Use Browser Launcher** option.
- 3 If you want to specify the browser that displays the online help, select the **Specify browser** option and type the path to the browser in the **Browser Path** text box.

If you do not know the exact path to the browser, you can click **Browse** to navigate to it.

- 4 Click **OK**.

## Configuring Security

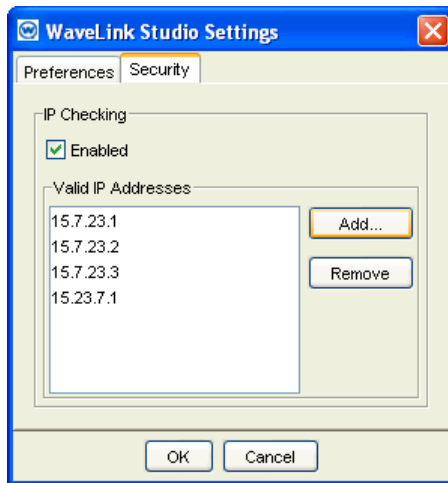
To prevent unauthorized use of the Administrator, you can enable Studio's security feature. This feature allows you to create a list of IP addresses that are authorized to access the headquarters server.

### To configure Studio Security:

- 1 From the Administrator, select *Preferences* from the **Tools** menu.

The *Wavelink Studio Settings* dialog box appears.

- 2 Click the Security tab.



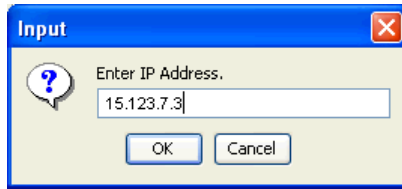
**Figure 4-3.** *Security Tab*

- 3 Enable the **Enabled** checkbox to activate Studio security.

You can now add IP addresses that are allowed access to the headquarters server.

- 4 Click *Add*.

An *Input* dialog box appears.



**Figure 4-4.** *The Input Dialog Box*

- 5 Type an IP address in the **Enter IP Address** text box.
- 6 Click **OK** to return to the *Wavelink Studio Settings* dialog box.
- 7 Click **OK** to accept the list of IP addresses.

If you decide that an IP address is no longer allowed access to the headquarters server, you can remove it.

**To remove an IP address:**

- 1 From the Administrator, select *Preferences* from the **Tools** menu.  
The *Wavelink Studio Settings* dialog box appears.
- 2 Click the Security tab.
- 3 Select the IP address from the **Valid IP Addresses** list.
- 4 Click *Remove*.  
The IP address is cleared from the list.
- 5 Click **OK**.

## Shutting Down the Headquarters Server

If you need to shut down the headquarters server, you can do so directly from the Administrator application.

---

**NOTE** Although you can remotely shut down the headquarters server, you cannot remotely restart it. You can only restart it locally.

---

**To shut down the headquarters of Studio:**

- 1** From the Administrator, select Shut down Headquarters from the **Tools** menu.

A dialog box appears, asking you to confirm that you want to shut down the headquarters server.

- 2** Click Yes.

## Chapter 5: Server Monitor View

The Server Monitor view is your primary means of managing your application servers. With the Server Monitor view, you can gather information on which servers are in operation, what applications are running on each server, and how many devices are connected to each application.

**Site List**

Type name, or select from the list:  Server Group:

Name	IP Address	Host OS	Running Since	Connections	Server Group
West Coast HQ	15.7.23.10	Windows 2000	Tue Aug 27 13:10:...	0	default
System1	15.7.23.11	Windows 2000	Tue Aug 27 13:10:...	0	default
System2	15.7.23.12	Windows 2000	Tue Aug 27 13:10:...	0	default
System3	15.7.23.13	Windows 2000	Tue Aug 27 13:10:...	0	default

**Site Applications & Users -**

Applications		
Application	Port	Connections
Example	1394	1
Receiving App1	1873	4
Shipping App1	2002	7
Sales App1	1973	16

Application Users		
Device	IP Address	Session ID
Windows Device	127.0.0.1	2
CE Device	15.7.23.50	9
CE Device	15.7.23.53	11

Start Application...

Connected to Headquarters@127.0.0.1/127.0.0.1

**Figure 5-1.** Server Monitor View

This chapter presents the Server Monitor view and goes over the information available and the tasks performed from this view. Sections include:

- The Site List
- Site Applications & Users Region
- Adding Applications to Servers
- Terminating Applications

## The Site List

At the top of the view is the Site List. This list provides general information about each server. The information in this list is as follows:

<b>Name</b>	The name of the server. It is recommended that you assign names to your servers that make them easy to differentiate (for example, their physical locations).
<b>IP Address</b>	The IP address of the server.
<b>Host OS</b>	The operating system of the computer running the server.
<b>Running Since</b>	The time and date when the server started.
<b>Connections</b>	The number of connections on the server.
<b>Server Group</b>	The name of the group the server belongs to.

You can control how many servers appear in the Site List by selecting a group from the Server Group list. When you select a group from this list, only the servers that belong to that group appear in the Site List. For more information about server groups, see *Managing Server Groups* on page 74.

If you double-click on an entry in the Site List of the Server Monitor view, a dialog box provides additional data for that server:

<b>Name</b>	The name of the server. It is recommended that you assign names to your servers that reflect their role within your organization (for example, their physical locations).
<b>IP Address</b>	The IP address of the server.
<b>Host OS</b>	The operating system of the computer running the server.
<b>Connections</b>	The number of connections on the server.
<b>Startup Licenses</b>	The number of licenses available to the server when it first starts.
<b>Incremental Licenses</b>	The number of licenses that are provided to this server when its supply of licenses is depleted.



For information about editing server properties, see *Editing Server Properties* on page 72.

## Site Applications & Users Region

Below the Site List in the Server Monitor view is the Site Applications & Users region. This region is divided into two tables:

### Site Applications & Users - server1

Applications			Application Users	
Application	Port	Connections	Device	IP Address
Example	1079	1	IRT	192.168.55.101
ScanApp	1365	0		
beta4	1371	0		

**Figure 5-2.** Site Applications and Users Region

- Applications Table
- Application Users Table

### Applications Table

The table on the left side of the Site Applications & Users region is the Applications table. When you select a server from the Site List, the Applications table displays information on each application available on that server. The information in the Applications table is as follows:

<b>Application</b>	The title of the application.
<b>Port</b>	The port number used to connect an application to a mobile device.
<b>Connections</b>	The number of mobile devices connected to the application.

If you double-click on an entry in the Applications table in the Server Monitor view, a dialog box provides additional data for each application:

<b>Name</b>	The name of the application.
<b>Type</b>	The type of application (Java or Win32).
<b>Running From</b>	The directory from which the application is running.
<b>Path</b>	The class name for the application.
<b>Last Modified</b>	The date on which the application was last modified.
<b>Connection Limit</b>	The maximum number of connections to the application.
<b>Session Timeout</b>	The maximum amount of time that can pass before the Administrator times out the connection.
<b>Inactivity Timeout</b>	The amount of time that can pass with no activity before the Administrator disconnects the user.
<b>Log Priority</b>	The priority level for any log entries associated with the application.
<b>Restart Attempts</b>	The number of times Studio attempts to start the application if the first attempt fails.
<b>Restart Pause</b>	The length of time that Studio waits between restart attempts.
<b>Run at Startup</b>	A checkbox that, if enabled, indicates that the Application Server must launch the application when it first starts.

For information about editing application properties, see *Editing Application Properties* on page 51 or *Configuring Advanced Application Settings* on page 52.

## Application Users Table

The table on the right side of the Site Applications & Users region is the Application Users table. When you select an application from the Applications table, the Application Users table displays information on any

users connected to that application. The information in the Application Users table is as follows:

<b>Device</b>	The type of device connected to the application.
<b>IP Address</b>	The IP address of the device.
<b>Session ID</b>	The ID number that identifies the current connection session between the device and the application.

## Adding Applications to Servers

The Server Monitor view is used to add applications to servers. Once an application has been added to the Administrator, you can assign it to a server to allow mobile device users access to it.

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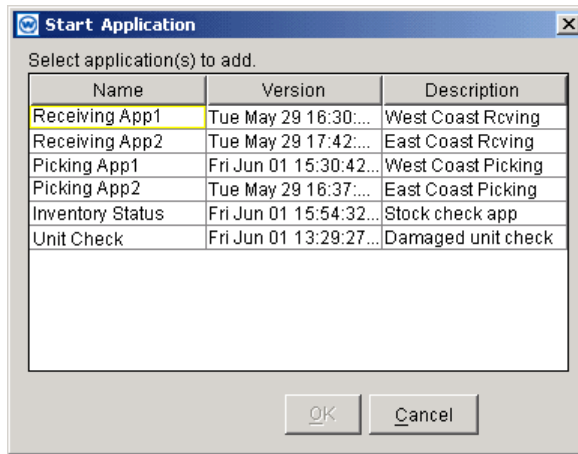
**NOTE** See *Adding Applications to the Administrator* on page 46 for more information on how to add applications to the Administrator.

---

### To add an application to a server:

- 1 From the Administrator, click `Server Monitor`.
- 2 Select a server from the Site List.
- 3 Click `Start Application`, located in the bottom-left corner.

The *Start Application* dialog box appears.



**Figure 5-3.** Start Application Dialog Box

- 4 Select the application you want to add to the Application Server.
- 5 Click **OK**.

## Terminating Applications

You can terminate an application from a server directly from the Server Monitor view. A terminated application is no longer associated with the selected server; however, the application still remains available to Studio.

---

**NOTE** Terminating an application immediately removes any users connected to that application from the network.

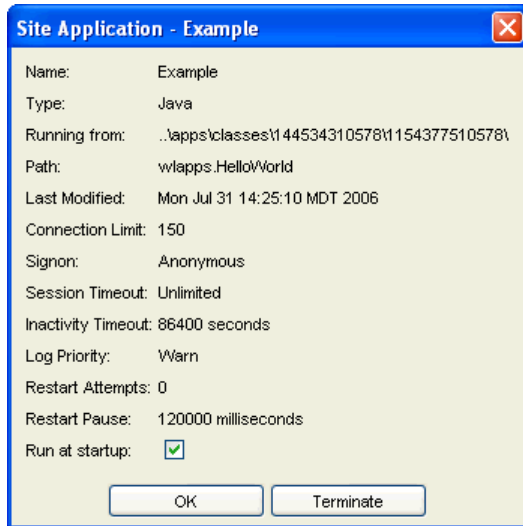
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See *Deleting Applications* on page 61 for information on how to permanently remove an application from your network.

### To terminate an application:

- 1 From the Administrator, click **Server Monitor**.
- 2 Select a server from the Site List.
- 3 Double-click the application from the Applications table.

The *Site Application* dialog box appears.



**Figure 5-4.** Site Application Dialog Box

- 4 Click `Terminate`.

A dialog box asks you to confirm termination the application.

- 5 Click `Yes`.

The application disappears from the Applications table.

-Or-

- 1 From the Administrator, click `Server Monitor`.
- 2 Select a server from the Site List.
- 3 Right-click on the application and select `Terminate`.



## Chapter 6: Applications View

You can manage applications for your mobile devices by using the Administrator's Applications view. The Applications view allows you to add, modify, group, and delete applications for your Application Distribution Manager table.

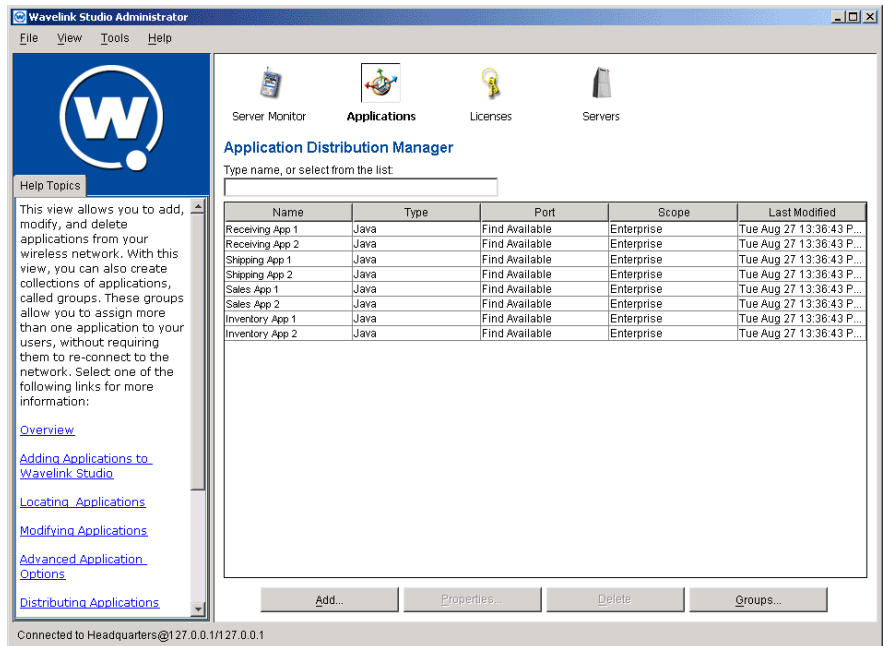


Figure 6-1. Applications View

This chapter explains the Applications view and the tasks accomplished from the Applications view. Sections in this chapter include:

- The Application Distribution Manager Table
- Adding Applications to the Administrator
- Locating Applications
- Managing Application Groups
- Editing Application Properties

- Configuring Advanced Application Settings
- Deleting Applications

## The Application Distribution Manager Table

The primary component in the Applications view is the Application Distribution Manager table. This table contains the following information on each application available to Studio:

<b>Name</b>	The name of the application.
<b>Type</b>	The type of application. There are two types available: Win32 and Java.
<b>Port</b>	The assigned port number or method for determining a port.
<b>Scope</b>	The way Studio determines the path to the application. There are two values available for the scope: relative and absolute.
<b>Last Modified</b>	The date on which the application was last modified.

## Adding Applications to the Administrator

The first step in adding an application to your wireless network is to add it to Studio using the Applications view. This step makes the new application available to your network so it can be assigned to one or more servers.

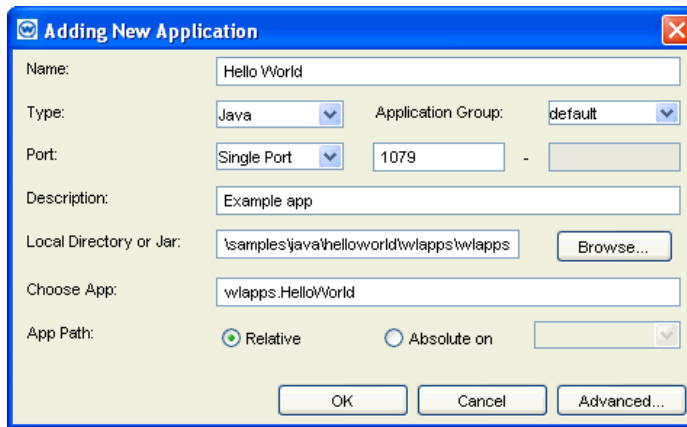
After you add an application into the Applications view, you must assign it to a server to make it available to your users. See *Adding Applications to Servers* on page 41 for more information.

### To add an application to the Administrator:

- 1 From the Administrator, click `Applications`.
- 2 Click `Add`.

The *Adding New Application* dialog box appears.





**Figure 6-2.** Adding New Application Dialog Box

- 3 Type the name of the application in the **Name** text box.
- 4 Select the application type from the **Type** list.

Currently, Studio supports two application types: Java and Win32.

---

**NOTE** If you are using a Solaris OS, you will not be able to run Win32 applications.

---

- 5 Select the application group from the **Application Group** list.
- 6 Select a method for determining which port the application will use from the **Port** list.
  - If you want the application accessible from any available port, select **Find Available**.
  - If you want the application accessible only from a specific port, select **Single Port**. A text box becomes enabled, which you can use to type the port number you want the application to use.
  - If you want the application accessible from a range of ports, select **Port Range**. Two text boxes become enabled, which you can use to type the start and end port numbers for the desired range. With this option

selected, mobile devices can connect to the application through any port number that falls within the specified range.

---

**NOTE** If you use **Find Available** when selecting a port for the application, the port number may change each time you run the application. This may make it difficult to create a firewall exception for the application.

---

**7** Type a description of the application in the **Description** text box.

This description appears in the **Description** column of the Application Distribution Manager table.

**8** Type the path to the directory that contains the application in the **Local Path** text box.

You can also click `Browse` to navigate to this directory.

**9** Type the full application name in the **Choose App** text box.

---

**NOTE** When using a Win32 application, you must include the file extension.

---

**10** If you want multiple servers to have direct access to the application, select the **Relative** option.

This option instructs Studio to install the application on multiple servers, using a path that is relative to the Studio directory.

---

**NOTE** The location of the relative directory is automatically determined by Studio.

---

-Or-

If you want mobile device users to access this application from its original install directory, select the **Absolute on** option, and then select the system on which the application resides.

With this option, Studio accesses the application only from the system on which the application was initially installed, using the exact path specified

in the **Local Path** text box. This option is recommended if you do not want an application distributed to multiple systems.

- 11 Click **OK** to add the application to the Application Distribution Manager table.

You can also configure advanced settings for your wireless applications by clicking **Advanced**. For more information about advanced application settings, see *Configuring Advanced Application Settings* on page 52.

## Locating Applications

If you have a large number of applications available to mobile devices, the Application Distribution Manager table can refresh to display a specific application.

### To locate a specific application:

- 1 From the Administrator, click **Applications**.
- 2 Type the name of the desired application in the text box located above the Application Distribution Manager table.

The Application Distribution Manager table refreshes to display the desired application.

## Managing Application Groups

With the Administrator, you can organize your applications into groups for easier management.

These groups can be defined to best fit your organization. For example, a group can consist of applications that are used for related purposes or at specific sites. This section describes:

- Creating an Application Group
- Deleting an Application Group

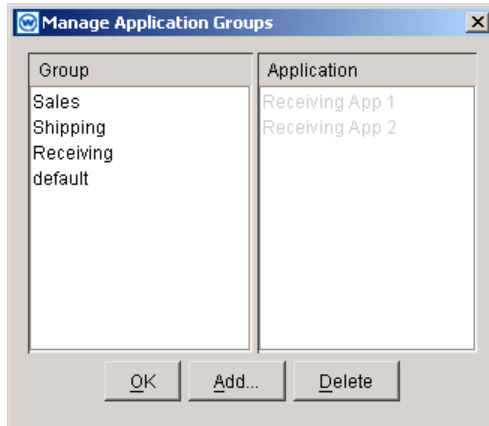
### Creating an Application Group

Application groups make it easier to access specific types of applications.

**To create a group:**

- 1 From the Administrator, click **Applications**.
- 2 Click **Groups**.

The *Manage Application Groups* dialog box appears.



**Figure 6-3.** *Manage Application Groups Dialog Box*

- 3 Click **Add**.

The *Adding Group* dialog box appears.



**Figure 6-4.** *Adding Group Dialog Box*

- 4 Type a name for the group in the **Enter new group name** text box.
- 5 Click **OK** to close the *Adding a Group* dialog box.
- 6 Click **OK**.

You can now add applications to the new group. See *Editing Application Properties* on page 51 for more information on how to add applications to groups.

## Deleting an Application Group

If you decide not to use an application group after it has been added, you can delete it. Any applications in the group when it is deleted will continue to function, although they will no longer be assigned to a group.

### To delete a group:

- 1 From the Administrator, click `Applications`.
- 2 Click `Groups`.

The *Manage Application Groups* dialog box appears.

- 3 Select a group.
- 4 Click `Delete`.

The application group is deleted.

## Editing Application Properties

Studio makes it easy to edit your application's properties, such as the name, port used, and group. You make these modifications using the `Properties` button in the Applications view. For information about more advanced options, see *Configuring Advanced Application Settings* on page 52.

---

**NOTE** If mobile device users are currently accessing an application, changes to that application's properties do not take effect for those users until they exit and re-load the application.

---

### To edit application properties:

- 1 From the Administrator, click `Applications`.
- 2 Select an application in the Application Distribution Manager table.
- 3 Click `Properties`.

The Application Properties dialog box appears, containing the same information described in *Adding Applications to the Administrator* on page 46.

- 4 Modify the information about the application as necessary.
- 5 Click `OK`.

The new properties will be saved.

## Configuring Advanced Application Settings

When you add an application to Studio, you can also configure settings such as application arguments, log priorities, and session timeouts. You configure these settings from the Advanced Application Settings dialog box.

Studio divides advanced application settings into several tabs within the Advanced Application Settings dialog box:

- Application Arguments
- JVM Options
- Class Path Options
- Log Options
- Session Options
- Recovery Options

### Application Arguments

Advanced application options involve adding one or more application arguments. These arguments allow you to further customize how the application runs on your network.

**To configure advanced application options:**

- 1 From the Applications view, select an application from the Application Distribution Manager table.
- 2 Click `Properties`.

The *Application Properties* dialog box appears.

- 3 Click **Advanced**.

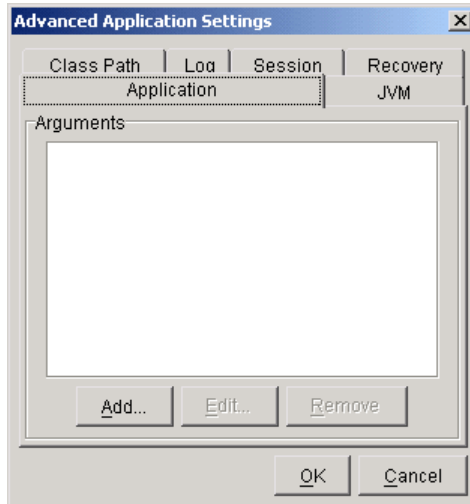
The *Advanced Application Settings* dialog box appears.

---

**NOTE** You can also access this dialog box by clicking **Advanced** from the *Add New Application* dialog box when you add new applications to the Administrator.

---

- 4 Click the **Application** tab.



**Figure 6-5.** *Advanced Application Settings Application Tab*

- 5 Click **Add**.

A dialog box appears.

- 6 Type an application argument in the **Add Item** text box.

- 7 Click **OK**.

The application argument appears in the Arguments list.

---

**NOTE** To add multiple application arguments, repeat steps 4 through 7 as necessary. To edit or remove an application argument, select that argument from the list and click `Edit` or `Remove`.

---

**8** Configure additional advanced options or click `OK` to save your changes.

## **JVM Options**

You can add JVM options to control how the Java Virtual Machine operates for an application.

### **To configure JVM options:**

- 1** From the Applications view, select an application from the Application Distribution Manager table.
- 2** Click `Properties`.

The *Application Properties* dialog box appears.

- 3** Click `Advanced`.

The *Advanced Application Settings* dialog box appears.

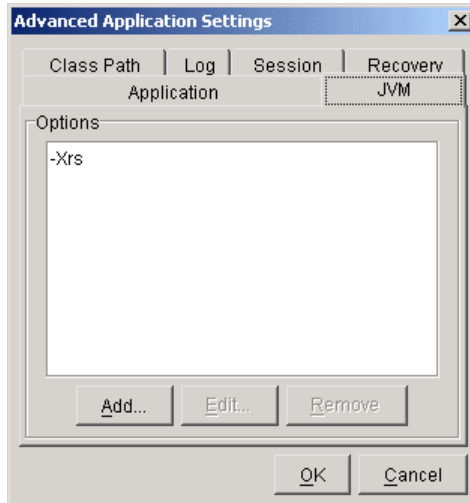
---

**NOTE** You can also access this dialog box by clicking `Advanced` from the *Add New Application* dialog box when you add new applications to the Administrator.

---

- 4** Click the JVM tab.





**Figure 6-6.** *Advanced Application Settings JVM Tab*

- 5 Click **Add**.

A dialog box appears, allowing you to type in a JVM option.

- 6 Type a JVM option in the **Add Item** text box.
- 7 Click **OK**.

The JVM option appears in the Options list.

---

**NOTE** To add multiple JVM options, repeat steps 4 through 7 as necessary. To edit or remove a JVM option, select that argument from the list and click **Edit** or **Remove**.

---

- 8 Configure additional advanced options or click **OK** to save your changes.

## **Class Path Options**

You can use the *Advanced Application Settings* dialog box to configure class path options for Java applications.

---

**NOTE** These options apply only to Java applications.

---

**To configure class path options:**

- 1 From the Applications view, select an application from the Application Distribution Manager table.
- 2 Click `Properties`.

The *Application Properties* dialog box appears.

- 3 Click `Advanced`.

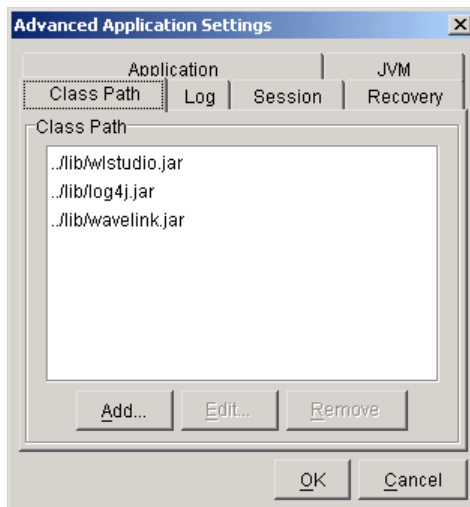
The *Advanced Application Settings* dialog box appears.

---

**NOTE** You can also access this dialog box by clicking `Advanced` from the *Add New Application* dialog box when you add new applications to the Administrator.

---

- 4 Click the `Class Path` tab.



**Figure 6-7.** *Advanced Application Settings Class Path Tab*

- 5 Click `Add`.

A dialog box appears, allowing you to type in a class path.

- 6 Type a class path in the **Add Item** text box.
- 7 Click **OK**.

The class path appears in the Class Path list.

---

**NOTE** To add multiple class paths, repeat steps 4 through 7 as necessary. To edit or remove a class path, select that argument from the list and click **Edit** or **Remove**.

---

- 8 Configure additional advanced options or click **OK** to save your changes.

## Log Options

You can use the *Advanced Application Settings* dialog box to configure the logging properties for an application.

### To configure logging options:

- 1 From the Applications view, select an application from the Application Distribution Manager table.
- 2 Click **Properties**.

The *Application Properties* dialog box appears.

- 3 Click **Advanced**.

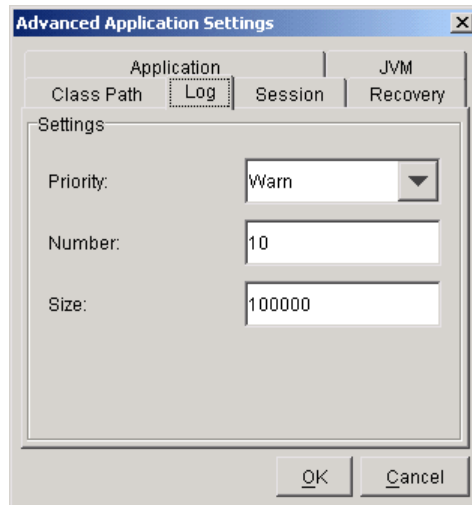
The *Advanced Application Settings* dialog box appears.

---

**NOTE** You can also access this dialog box by clicking **Advanced** from the *Add New Application* dialog box when you add new applications to the Administrator.

---

- 4 Click the **Log** tab.



**Figure 6-8.** *Advanced Application Settings Log Tab*

You can configure the following logging properties for each application.

- |                     |   |
|---------------------|---|
| <b>Log Priority</b> | Sets the value of any event logged as a result of this application. There are three options available: <code>Info</code> , <code>Warn</code> , and <code>Error</code> . |
| <b>Number</b>       | Sets the number of log events that can occur for this application.  |
| <b>Size</b>         | Sets the maximum file size for the log.   |

5 Configure additional advanced options or click `OK` to save your changes.

### **Session Options**

You can configure how the application behaves on a per-session basis by using the `Session` tab of the *Advanced Application Settings* dialog box.

#### **To configure session options:**

- 1 From the Applications view, select an application from the Application Distribution Manager table.
- 2 Click `Properties`.

The *Application Properties* dialog box appears.

- 3 Click `Advanced`.

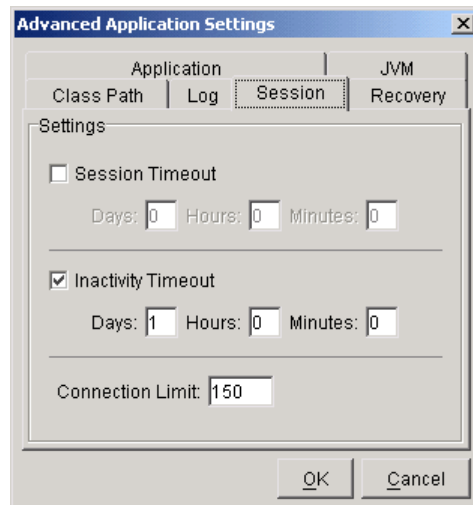
The *Advanced Application Settings* dialog box appears.

---

**NOTE** You can also access this dialog box by clicking `Advanced` from the *Add New Application* dialog box when you add new applications to the Administrator.

---

- 4 Click the `Session` tab.



**Figure 6-9.** *Advanced Application Settings Session Tab*

- 5 If you want the application to stop running after a specified period of time, enable the **Session Timeout** checkbox.

Once you enable this checkbox, type the desired amount of time the user can access the application in the **Days**, **Hours**, and **Minutes** text boxes. If you do not type any values into these text boxes, Studio treats the **Session Timeout** checkbox as disabled.

- 6 If you want the application to timeout after a period of inactivity, enable the **Inactivity Timeout** checkbox.

Once you enable this checkbox, type the maximum length of inactivity in the **Days**, **Hours**, and **Minutes** text boxes. If you do not type any values into these text boxes, Studio treats the **Inactivity Timeout** checkbox as disabled.

- 7 Type the maximum number of connections allowed for this application in the **Connection Limit** text box.
- 8 Configure additional advanced options or click **OK** to save your changes.

## Recovery Options

The Recovery Tab in the *Advanced Applications Settings* dialog box allows you to control what Studio does if a port monitor for an application is lost. These options include how many attempts Studio makes to restart the port monitor and how long Studio waits between restart attempts.

### To configure recovery options:

- 1 From the Applications view, select an application from the Application Distribution Manager table.
- 2 Click *Properties*.

The *Application Properties* dialog box appears.

- 3 Click *Advanced*.

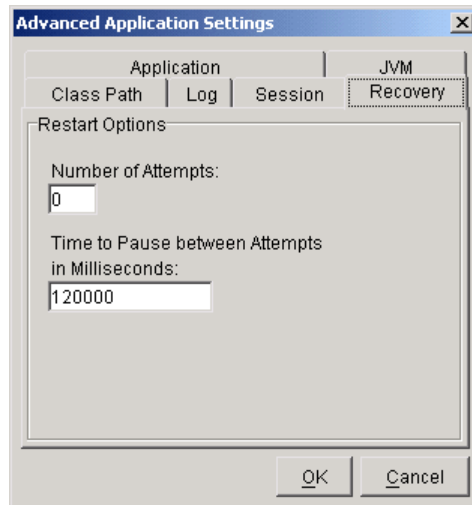
The *Advanced Application Settings* dialog box appears.

---

**NOTE** You can also access this dialog box by clicking *Advanced* from the *Add New Application* dialog box when you add new applications to the Administrator.

---

- 4 Click the Recovery tab.



**Figure 6-10.** *Advanced Application Settings Recovery Tab*

- 5 Type the number of times Studio will attempt to reconnect to the application in the **Number of Attempts** text box.
- 6 Type the amount of time, in milliseconds, that Studio will wait between restart attempts in the **Time to Pause Between Attempts in Milliseconds** text box.
- 7 Configure additional advanced options or click `OK` to save your changes.

## Deleting Applications

If an application is no longer necessary, you can delete it from the Application Distribution Manager table.

---

**NOTE** Deleting an application from the Application Distribution Manager table removes it from all servers that previously downloaded it.

---

### To delete an application:

- 1 From the Administrator, click `Applications`.
- 2 Select an application in the Application Distribution Manager table.

- 3** Click `Delete`.

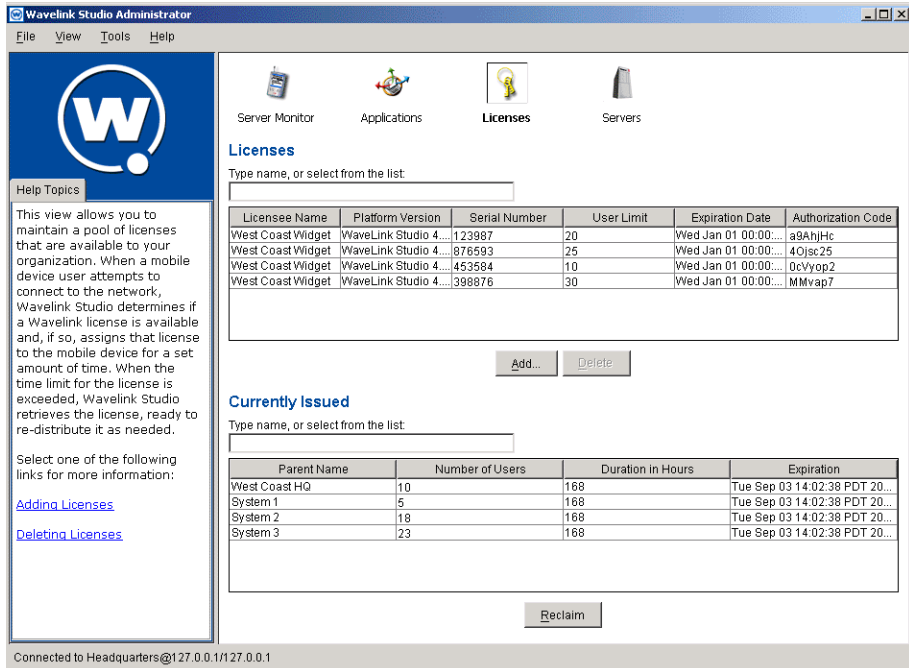
A dialog box appears, displaying the information about the selected application in a read-only format.

- 4** Click `Accept` to delete the application from the Application Distribution Manager table.



## Chapter 7: Licenses View

Studio uses a License Manager to maintain a pool of Wavelink licenses available to your organization. When a mobile device attempts to connect to the network, Studio uses the License Manager to determine if a license is available and, if so, to assign that license to the connection. The License Manager is accessible from the Licenses View.



**Figure 7-1.** Licenses View

For more information about the Licenses View, select one of the following:

- The License Manager
- The Licenses List
- The Currently Issued List
- Adding New Licenses
- Deleting Licenses

- Reclaiming Licenses

## The License Manager

The License Manager maintains a pool of available Studio licenses. Licenses are leased to a server for a one-week period. After one week, the licenses are reclaimed and the License Manager can re-assign them. This system of leasing licenses offers two advantages. First, you can easily move licenses from one server to another as usage demands. Second, if you used a distributed configuration for Studio, your users can continue to access applications even if a connection to a central server is unavailable.

You can allocate licenses from your license pool to a specific Application Server. When you allocate these licenses, you determine the number of startup licenses (licenses available to the server on startup) and the number of incremental licenses (the number of licenses allocated to the server each time it reaches its limit of available licenses). For example, you can configure an Application Server to have 20 licenses on startup and get an additional 10 licenses each time the number of licenses available to that server is exceeded. The startup and incremental licenses are set from the Servers View. For instructions on modifying the number of startup and incremental licenses, see *Editing Server Properties* on page 72.

---

**NOTE** Under normal operating circumstances, a server requests new licenses from the License Manager well before its current licenses are reclaimed, ensuring that your users always have access to the applications they need.

---

There are two types of licenses available for Studio: base licenses and maintenance licenses. A base license provides authorization for the version of Studio that you purchased. Base licenses do not expire, but they do not allow you to upgrade to a newer version of Studio. A maintenance license allows you to use a base license with a newer version of Studio. For example, a maintenance license allows you to upgrade from Studio 4.x to Studio 5.x. Maintenance licenses are valid only through a specific date.

## The Licenses List

The Licenses view consists of two components. The first component is the Licenses list. This list contains the overall information on the licenses

available to your Studio installation. The specific information contained in the Licenses list is as follows:

<b>Licensee Name</b>	The name to which the license is assigned. Typically, this is the name of your organization.
<b>Platform Version</b>	The platform version for this license.
<b>Serial Number</b>	The serial number for this license.
<b>User Limit</b>	The number of users authorized for this license.
<b>Expiration Date</b>	The date when this license expires.
<b>Authorization Code</b>	The authorization code for this license.

## The Currently Issued List

The Currently Issued list is the second component of the Licenses view. This list displays data regarding where Studio licenses are distributed. The specific information contained in the Currently Issued list is as follows:

<b>Parent Name</b>	The name of the site to which Studio issued licenses.
<b>Number of Users</b>	The number of users who currently have a license at the site.
<b>Duration</b>	The duration that these licenses are available to the site before Studio returns them to the pool of available licenses.
<b>Expiration</b>	The date and time when licenses will be reclaimed by the License Manager.

## Adding New Licenses

You can add new licenses to your available license pool at any time. Each time you add new licenses, they appear in the Licenses table.

### To add new licenses:

- 1 From the Administrator, click `Licenses`.

- 2 Click `Add`.

The *Add New Wavelink License* dialog box appears.



The screenshot shows a dialog box titled "Add New Wavelink License". It has a blue title bar with a close button (X) in the top right corner. The dialog box contains the following fields and values:

- Licensee: Frank Lewis
- Platform Version: Wavelink Studio 5.0
- Serial Number: 123456
- User Limit: 20
- Authorization: (empty)
- Expiration: 2500, January, 1

At the bottom of the dialog box, there are two buttons: "OK" and "Cancel".

**Figure 7-2.** *Add New Wavelink License Dialog Box*

- 3 Type the name to which the new licenses are assigned in the **Licensee** text box.
- 4 Type the platform version for the licenses in the **Platform Version** text box.
- 5 Type the serial number for the licenses in the **Serial Number** text box.
- 6 Type the number of users allowed to access these licenses in the **User Limit** text box.
- 7 Type the authorization code for the licenses in the **Authorization** text box.
- 8 Type the expiration date for the licenses in the **Expiration Date** text box.
- 9 Click `Accept` to add the new licenses to Studio.

## Deleting Licenses

When a given set of licenses reaches its expiration date, Studio automatically prevents those licenses from being available to mobile device users. You can remove licenses before their expiration date by using the `Delete` button found in the Licenses view.

---

**NOTE** After you delete a license, it is permanently removed from your license pool. It is recommended that you delete licenses only when absolutely necessary.

---

**To delete licenses:**

- 1 From the Administrator, click `Licenses`.
- 2 Select the row that contains the licenses you want to delete from the Licenses table.
- 3 Click `Delete`.

A dialog box appears, asking you to confirm that you want to delete these licenses.

- 4 Click `OK` to delete the licenses from Studio.

---

**NOTE** Deleted licenses already assigned to a server remain active at that server until the one week period ends or they are reclaimed.

---

## Reclaiming Licenses

As mobile devices access applications at different times, the number of licenses that each server requires increases and decreases. This can result in servers having more licenses assigned to them than they currently need.

Typically, unused licenses are removed from a server after one week. However, if you want to remove these licenses before that time, you can do so by using the Reclaim feature on the Licenses view. This feature removes all unused licenses from each server within your network.

**To reclaim unused licenses:**

- 1 From the Administrator, click `Licenses`.
- 2 Click `Reclaim`.

A dialog box asks you to confirm that you want to reclaim unused licenses.

- 3 Click `Yes`.

The License Manager reclaims all unused licenses and makes them available for distribution to all servers.

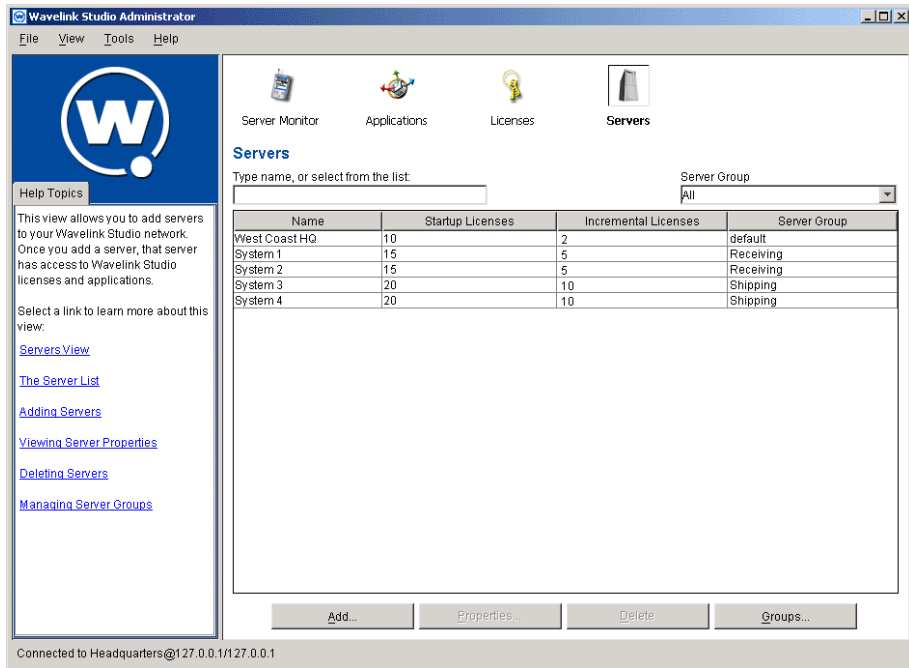
---

**NOTE** If all licenses assigned to a server are unused, using the Reclaim feature leaves that server with a number of licenses equal to the amount established Startup Licenses setting. To change the startup licenses setting, see *Editing Server Properties* on page 72.

---

## Chapter 8: Servers View

The Servers view provides you with the ability to add, modify, and delete servers that are part of your installation. You can also use the Servers view to organize your servers into groups in order to manage your servers more efficiently.



**Figure 8-1.** Servers View

This chapter explains the Applications view and the tasks accomplished from the Applications view. Sections in this chapter include:

- The Servers List
- Adding Servers
- Editing Server Properties
- Deleting Servers
- Managing Server Groups

## The Servers List

The primary component of the Servers view is the Servers list. This list displays the following information on each active server:

<b>Name</b>	The name of the server.
<b>Startup Licenses</b>	The number of licenses available to the server when it first starts.
<b>Incremental Licenses</b>	The number of licenses that are provided to this server when its supply of licenses is depleted.
<b>Server Group</b>	The name of the group to which the server belongs.

You can control how many servers appear in the Server list by selecting a group from the Server Group list. When you select a group from this list, only the servers that belong to that group appear in the Server list.

## Adding Servers

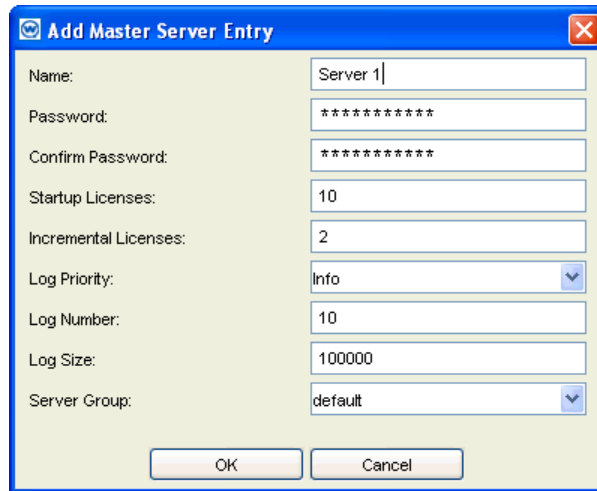
When you install a server, that server does not have immediate access to the headquarters server. Consequently, that server does not have access to wireless applications or licenses. To allow a server full access to wireless applications, you must add it to the network through the Servers view.

### To add a server:

- 1 From the Administrator, click `Servers`.
- 2 Click `Add`.

The *Add Master Server Entry* dialog box appears.





The screenshot shows a dialog box titled "Add Master Server Entry". It contains the following fields and values:

Field	Value
Name	Server 1
Password	*****
Confirm Password	*****
Startup Licenses	10
Incremental Licenses	2
Log Priority	Info
Log Number	10
Log Size	100000
Server Group	default

Buttons: OK, Cancel

**Figure 8-2.** Add Master Server Entry Dialog Box

**3** Type the name for the server in the **Name** text box.

**4** Type a password for the server in the **Password** text box.

When the server starts, it sends its password to the headquarters server. If the password is valid, the server is allowed access to wireless applications and licenses.

**5** Confirm the password by typing it in the **Confirm Password** text box.

**6** Type the number of startup licenses for the server in the **Startup Licenses** text box.

This text box determines the number of licenses available to the server when it first starts.

**7** Type the number of incremental licenses for the server in the **Incremental Licenses** text box.

This text box determines the number of licenses that are provided to this server when its supply of licenses is depleted.

**8** Select a log priority level for the server from the **Log Priority** list.

The log priority level determines when Studio generates an alert for that server. There are three levels available: info, warning, and error.

- 9 Type how many log files you want Studio to generate in the **Log Number** text box.

When Studio has created the maximum number of log files allowed, it overwrites the oldest log file in the its directory.

- 10 Type the maximum file size (in kilobytes) for each log file in the **Log Size** text box.
- 11 Type the port number that this server uses for AutoDiscovery in the **Discovery Port** text box.
- 12 Select a group to which the new server will belong from the Server Group list.
- 13 Click **OK**.

The server is now allowed access to licenses and applications.

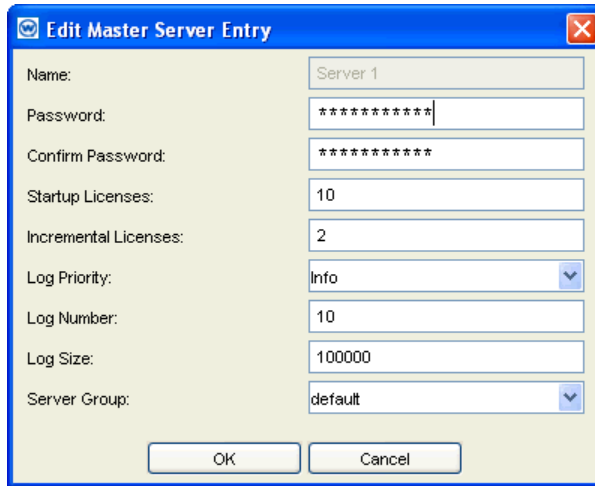
## Editing Server Properties

The Administrator provides you with the ability to edit information on each active server within your network.

### To edit server properties:

- 1 From the Administrator, click **Servers**.
- 2 Select a server from the Servers list.
- 3 Click **Properties**.

The *Edit Master Server Entry* dialog box appears.



The screenshot shows a dialog box titled "Edit Master Server Entry". It contains the following fields and values:

Field	Value
Name:	Server 1
Password:	*****
Confirm Password:	*****
Startup Licenses:	10
Incremental Licenses:	2
Log Priority:	Info
Log Number:	10
Log Size:	100000
Server Group:	default

Buttons: OK, Cancel

**Figure 8-3.** *Edit Master Server Entry Dialog Box*

- 4 Edit the properties of the server as needed.
- 5 Click **OK**.

The properties are saved.

## Deleting Servers

If you uninstall a server, you can delete its entry from the Administrator.

### To delete a server:

- 1 From the Administrator, click **Servers**.
- 2 Select a server from the Servers list.
- 3 Click **Delete**.

A dialog box appears, asking you to confirm that you want to delete the server.

- 4 Click **Yes**.

The server is deleted from the Administrator.

## Managing Server Groups

With the Administrator, you can organize your servers into groups. As you manage server configurations and activities through the Server Monitor or Servers view, you can instruct the Administrator to display only those servers that belong to a specific group by selecting that group from the Server Group list.

You can define groups to best fit your organization. For example, a group can consist of servers that are located in the same geographic region, or that manage similar applications such as inventory or sales applications. This section describes:

- Creating a Server Group
- Deleting a Server Group

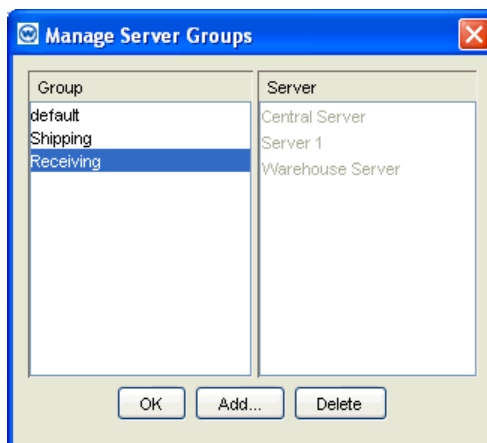
### Creating a Server Group

Server groups make it easier to access specific types of servers.

**To create a group:**

- 1 From the Administrator, click Servers.
- 2 Click Groups.

The *Manage Server Groups* dialog box appears.



**Figure 8-4.** *Manage Server Groups* Dialog Box

- 3 Click `Add`.

The *Adding a Group* dialog box appears.



**Figure 8-5.** *Adding Group Dialog Box*

- 4 Type a name for the group in the **Enter new group name** text box.
- 5 Click `OK` to close the *Adding a Group* dialog box.
- 6 Click `OK`.

You can now add servers to the new group. See *Adding Servers* on page 70 for more information on how to add servers to groups.

## Deleting a Server Group

If you decide not to use a server group after it has been added, you can delete it. Any servers in the group when it is deleted will continue to function, but will no longer be assigned to a group.

### To delete a group:

- 1 From the Administrator, click `Servers`.
- 2 Click `Groups`.

The *Manage Server Groups* dialog box appears.

- 3 Select a group.
- 4 Click `Delete`.

The server group is deleted from the Administrator.



## Appendix A: Wavelink Studio Application Alerts

During normal operations, mobile device users access applications without any knowledge of Wavelink Studio servers or components. However, if a problem occurs during a mobile device connection, the Wavelink Studio displays an error message on the mobile device. These error messages can assist you in locating and resolving the cause of the problem.

The errors that Wavelink Studio currently displays on a mobile device are as follows:

<b>General App Error</b>	This error occurs when the server attempts to run a Java application and gets an exception. Because a wide variety of issues might cause this error, you should consult your server log files for additional information.
<b>Unable to create application</b>	This error occurs when the server attempts to run a Win32 application and is unable to execute the process. Because a wide variety of issues might cause this error, you should consult your server log files for additional information.
<b>User Limit Reached!</b>	This error occurs when the server has run out of licenses and cannot accept another connection.
<b>Connection Refused by Host!</b>	This error occurs when the server refuses the new connection (usually because it is out of licenses).





---

## **Appendix B: Wavelink Contact Information**

If you have comments or questions regarding this product, please contact Wavelink Customer Service via e-mail or telephone.

**E-mail:** [customerservice@wavelink.com](mailto:customerservice@wavelink.com)

**Phone:** 425-823-0111



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