Avalanche

Wavelink Avalanche Site Edition
Java Console User Guide

Version 5.3

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Chapter 1: Introduction

Avalanche is a mobile device management system. From a central console, you can locate and manage devices, including monitoring and distributing software. Network security features allow you to manage wireless settings (including encryption and authentication), and apply those settings on demand throughout the network. Avalanche also provides tools for managing maps, alerts, and reports.

This guide is an introduction to the functions and components of Wavelink Avalanche. It presents:

- An introduction to the Avalanche Java Console and conceptual information about Avalanche.
- Detailed information on the components of Avalanche.
- Tasks for creating and managing an effective and secure wireless network.

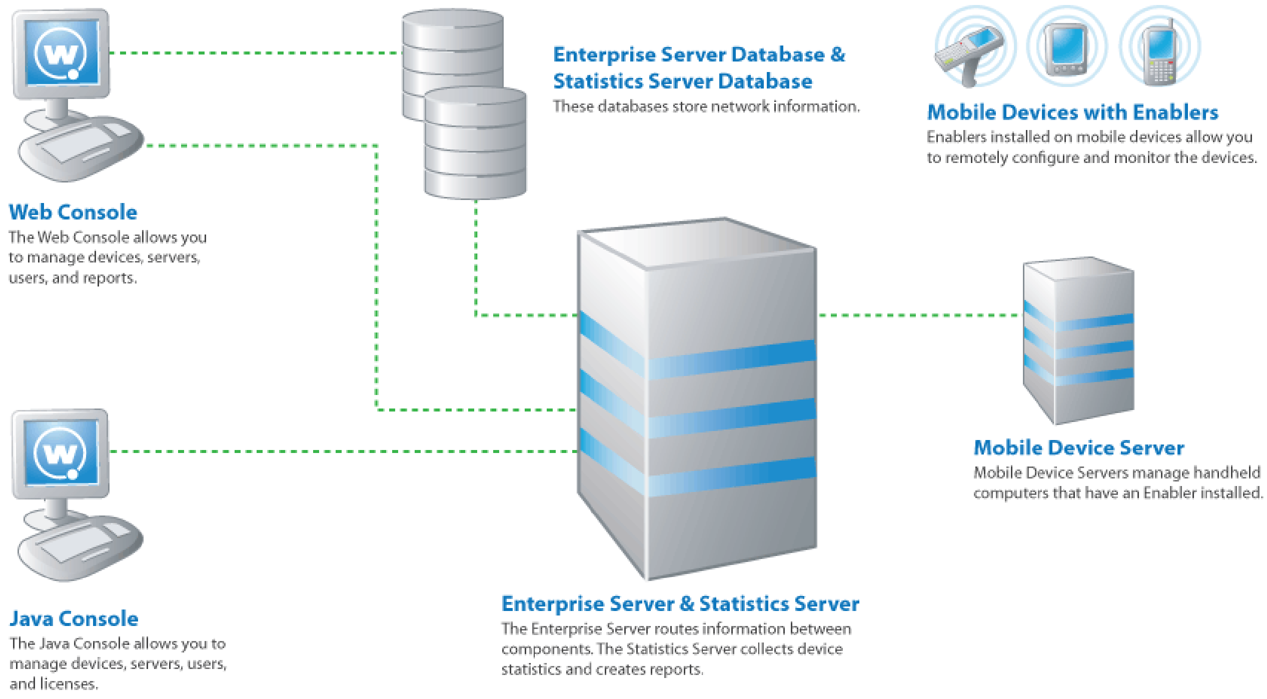
NOTE: The instructions contained in this guide pertain to the Avalanche Java Console. For details about performing tasks from the Web Console, see the Web Console User Guide.

This section provides the following introductory information:

- Components of Avalanche
- Getting Started
- About This Guide

Components of Avalanche

Avalanche is an integrated system of several components, which together allow you to manage your wireless network quickly and efficiently. The following diagram provides a general overview of components and how they interact:


Enterprise Server Database & Statistics Server Database
These databases store network information.
Mobile Devices with Enablers
Enablers installed on mobile devices allow you to remotely configure and monitor the devices.
Web Console
The Web Console allows you to manage devices, servers, users, and reports.
Mobile Device Server
Mobile Device Servers manage handheld computers that have an Enabler installed.
Java Console
The Java Console allows you to manage devices, servers, users, and licenses.
Enterprise Server & Statistics Server
The Enterprise Server routes information between components. The Statistics Server collects device statistics and creates reports.

The primary components of Avalanche include:

- **Avalanche Java Console**. The Avalanche Java Console gives you control over your wireless network components. With the Avalanche Console, you can manage and maintain everything from infrastructure device settings to mobile device software. The Java Console must be accessed from a computer where it has been installed.
- **Avalanche Web Console**. The Avalanche Web Console allows you to manage network components from any computer using an Internet connection and a web browser. It does not need to be installed.

NOTE: To manage reports or use the floorplan setup, you must use the Web Console. These options are not available through the Java Console.

- **Enterprise Server**. The Enterprise Server manages information and facilitates all communication between the Console, the mobile device server, and the Enterprise Server database.
- **Statistics Server**. The Statistics Server collects statistical information from your devices and device servers for reporting purposes and stores information in the Statistics Server database.

- **Databases**. Avalanche databases store information about your network and devices. There are two databases for Avalanche. The Enterprise Server database handles information such as managing device configuration. The Statistics Server database manages statistical information regarding the state of devices on your network.

NOTE: Avalanche-supported databases use Windows-1252 character encoding. If you try to use double-byte characters or other characters that are not listed on this code page (for example, as the name of a location or profile), errors will occur and Avalanche will not save the information.

- **Mobile Device Server**. The mobile device server is responsible for communication between the Avalanche Console and mobile devices. It distributes licenses and profiles and reports device statistics.
- **Enablers**. Mobile devices must have an Avalanche Enabler installed in order to be managed by Avalanche. An Enabler relays information between the mobile device and the Mobile Device Server. With the Enabler installed, the mobile device can receive configuration instructions that you create in the Avalanche Console.

In Avalanche SE, the servers and databases are all installed on the same system. The Web Console and Java Console can be used local or remote from the enterprise server, but the Java Console must be installed at each location where it will be used.

Avalanche SE installs one mobile device server (at My Location). You can subdivide My Location into group locations, which are groups of mobile devices. When a configuration is applied at a location (either My Location or group locations), the devices included in that location will receive that profile.

Getting Started

For best results in managing your Avalanche installation and configuration, Wavelink recommends performing the following steps in order:

1. **Install Avalanche.** For more information, see the *Installing Avalanche* paper on the Wavelink Web site.
2. **Activate Mobile Device licenses for Avalanche.** You should activate the number of licenses based on the number of devices you want to manage. For more information, see Licensing on page 6.
3. **Create group locations.** Group locations are user-defined groups of devices that connect to the. For more information, see Managing Group Locations on page 47.
4. **Configure profiles.** A profile allows you to manage configurations and settings centrally and then deploy those configurations to as many locations as necessary. In this way, you

can update or modify multiple devices instead of manually changing settings for each one. Profiles must be enabled before being applied.

The following list provides information about each type of profile:

Mobile Device profile A mobile device profile manages settings on your mobile devices, as well as adding, changing, and removing custom properties and registry keys.

Mobile Device Server profile The Mobile Device Server profile configures how the mobile device server interacts with devices and the Enterprise Server.

Alert profile An alert profile allows you to track events on your network and send notifications by e-mail or proxy server.

Network profile A network profile provides gateway addresses, subnet masks, WWAN settings, and encryption and authentication information to devices on your network.

Software profile A software profile allows you control over where and when software and files are distributed to mobile devices.

Scan to Config profile Scan to Config profiles allow you to print network settings as barcodes, and then the settings are applied on the device when they are scanned.

5. **Assign profiles to locations.** You can assign configured profiles to locations from the Console. When you assign a profile to a location and perform a synchronization, the settings from the profiles are applied to the location and any associated devices. For more information, see Applying Profiles to Locations on page 48.
6. **Configure Enablers.** Ensure that your mobile devices have Enablers installed, and configure the Enablers to connect to a mobile device server.

Once you assign and deploy a profile, the server and/or devices retain their configuration values until you change the profile or assign a new profile with a higher priority. Even if you alter device configuration values without using Avalanche, when the server queries the device, it restores the configuration values from the assigned profile.

About This Guide

This guide provides assistance to anyone managing an enterprise-wide wireless network with Avalanche.

This help makes the following assumptions:

- You have a general understanding of the basic operational characteristics of your network operating systems.
- You have a general understanding of basic hardware configuration, such as how to install a network adapter.
- You have a working knowledge of your wireless networking hardware, such as infrastructure devices and mobile devices.
- You have administrative access to your network.

This help uses the following typographical conventions:

`Courier New` Any time you are instructed to type information, that information appears in the `Courier New` text style. This text style is also used for file names, file paths, or keyboard commands.

Examples:

The default location is `C:\Program Files\Wavelink\Avalanche.`

Press `CTRL+ALT+DELETE`.

Bold Any time this guide refers to an option, such as descriptions of different options in a dialog box, that option appears in the **Bold** text style. This is also used for tab names and menu items.

Example:

Click **File > Open**.

Italics Any time this guide refers to the titles of dialog boxes, the text appears in the *Italics* text style.

Example:

The *Infrastructure Profiles* dialog box appears.

Chapter 2: Licensing

Avalanche requires licenses for full functionality. You can access and use the Avalanche Console without licenses, but it will have limited functionality. You will not be able to manage mobile devices.

This section provides information about the licensing options for Avalanche, and includes the following topics:

- Overview of Wavelink Licensing
- Activating Licenses
- Releasing Licenses
- Running the License Server
- Importing an Enterprise License

Overview of Wavelink Licensing

Avalanche requires one license for each mobile device it manages. When a server detects a new device, a license request is sent to the License Server. The License Server then sends a license to the server to be distributed. The license file is unique to the server and cannot be transferred to another server. Once the device receives the license, Avalanche can manage that device. If a license expires or is released, the license returns to the pool of licenses at the License Server until it is requested by another server.

For users' convenience, some licenses may come with a license start date. You can activate these licenses and they will appear in the *Licensing* dialog box, but the License Server will not be able to distribute them until the date specified.

NOTE: To obtain Avalanche licenses, please contact Wavelink customer service or a sales representative.

Avalanche has two licensing options: base and maintenance.

- Base licenses support Enablers that are the same version, any version older than the license, or one minor revision newer. For example, with a 5.0 base license, you can manage a 4.06 Enabler, a 5.0 Enabler, or a 5.1 Enabler.
- Maintenance licenses support any version of Enabler. You must have one base license for each maintenance license distributed.

The license version number must match the server version number. Licensing only takes into account the major and minor release numbers. For example, a 5.2.1 server uses 5.2 licenses.

When you run Avalanche without licenses, the unlicensed mobile device appears in the Mobile Device Inventory list, but you will not be able to manage the mobile device. You cannot deploy software packages or network profiles to the mobile device.

Activating Licenses

When you activate Avalanche licenses, your licenses are verified and the License Server can then distribute them to the wireless devices on your network.

For other Wavelink products used in conjunction with Avalanche 5.3, use the same activation method (from the Avalanche Console) that you use for Avalanche 5.3. You can activate these product licenses automatically, or if you have a `wavelink.lic` file from an older installation, contact Wavelink Support to exchange the license before you can import it into Avalanche 5.x.

This section provides information on the following processes:

- Activating Automatically
- Activating Manually
- Importing a License
- Activating Demo Licenses

Activating Automatically

If Avalanche resides on a system that has Internet access, you can use automatic license activation. Avalanche connects with a secure Wavelink Web Server to verify your license.

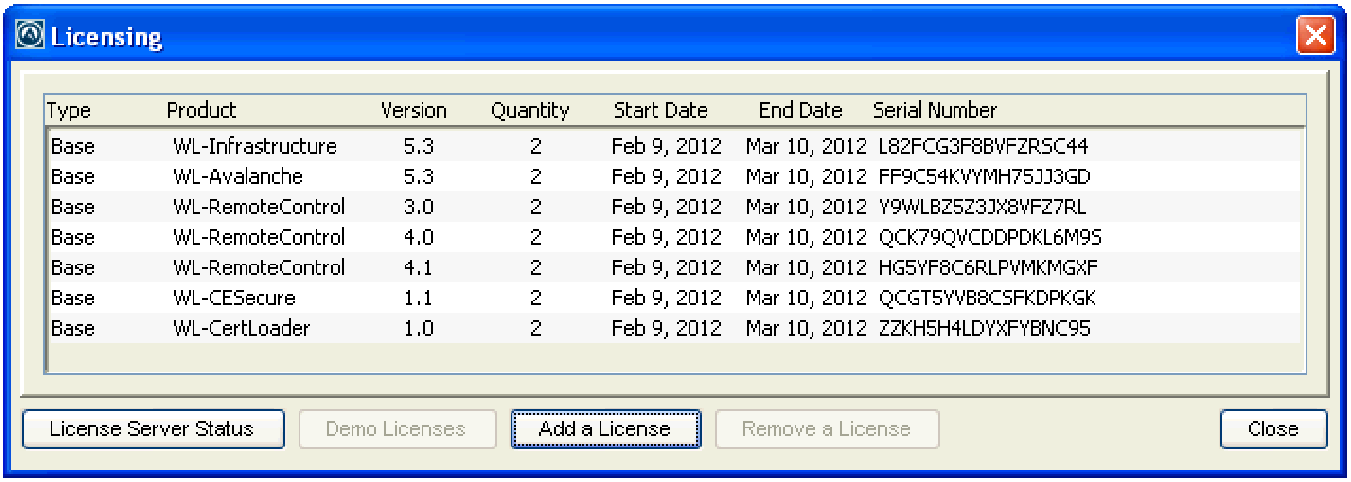
NOTE: If your Internet access is restricted through a proxy server, you will need to configure HTTP Proxy settings before you can activate licenses automatically. For information on configuring proxy settings, see Configuring HTTP Proxy Settings on page 27.

To activate Avalanche:

1 Obtain the Avalanche product licensing code from Wavelink. You receive this information in an e-mail from Wavelink upon purchasing Avalanche.

2 From the Avalanche Console, click **Tools > Manage Licensing**.

The *Licensing* dialog box appears. This dialog box displays all entered licenses.



Type	Product	Version	Quantity	Start Date	End Date	Serial Number
Base	WL-Infrastructure	5.3	2	Feb 9, 2012	Mar 10, 2012	L82FCG3F8BVFZRSC44
Base	WL-Avalanche	5.3	2	Feb 9, 2012	Mar 10, 2012	FF9C54KVYMH75JJ3GD
Base	WL-RemoteControl	3.0	2	Feb 9, 2012	Mar 10, 2012	Y9WLBZ5Z3JX8VFZ7RL
Base	WL-RemoteControl	4.0	2	Feb 9, 2012	Mar 10, 2012	QCK79QVCDDPDKL6M9S
Base	WL-RemoteControl	4.1	2	Feb 9, 2012	Mar 10, 2012	HG5YF8C6RLPVMKMGXF
Base	WL-CESecure	1.1	2	Feb 9, 2012	Mar 10, 2012	QCGT5YVB8CSFKDPKGK
Base	WL-CertLoader	1.0	2	Feb 9, 2012	Mar 10, 2012	ZZKH5H4LDYXFYBNC95

Licensing dialog box

3 Click **Add a License**.

4 The *Add a License* dialog box appears. Click **Activate a License**.

5 The *Activate a License* dialog box appears. Type the Product License in the text box and click **Activate**.

Avalanche connects with a secure Wavelink Web site and your license is verified. The details of the new license appear in the *Add a License* dialog box.

6 Verify that the license information is correct and click **Use License**.

The licenses appear in the *Licensing* dialog box.

Activating Manually

If the server is not connected to the Internet or if you have problems with the automatic activation, activate your license manually.

To activate your license manually you will need the following information:

- Node lock for the system. To find the node lock, launch the Java Console and click **Help > About Avalanche**. The nodelock is listed in the dialog box as **Wavelink Enterprise Service NodeLock**.

- Product license code. This information comes from the e-mail you receive from Wavelink when you purchase Avalanche.

To manually activate a license:

1 Open a Web browser and navigate to `http://www.wavelink.com/activation`.

2 Enter the **Hardware Node Lock** and the **License Key** in the text boxes.

3 Click **Activate** button to activate license.

The Wavelink activation server verifies the information that you entered and provides you a link to download a `wavelink.lic` file if your node lock and license key are valid.

4 Click on the link and change **Save As** type to **All Files**.

5 Download the file to desired location.

6 Move the `wavelink.lic` file to the system with Avalanche installed.

7 Follow the steps in the section Importing a License on page 9 to import the license.

Activating Demo Licenses

If you are installing Avalanche for demonstration purposes, you can run Avalanche with demo licenses. Demo mode authorizes 2 base licenses for 30 days for the following products:

- Avalanche 5.3 (2 mobile device licenses and 2 infrastructure device licenses)
- Remote Control 4.0
- CE Secure 1.1
- Certificate Manager 1.0

To activate demo mode:

1 Click **Tools > Manage Licensing**.

2 The *Licensing* dialog box appears. Click **Demo Licenses**.

Avalanche will run in demo mode. Once demo licenses have been activated on one Console, no other Console connecting to the Enterprise Server will be able to activate demo licenses.

Importing a License

If you have received a `wavelink.lic` file using the manual activation method, you can activate the file by importing it.

NOTE: If you have a `wavelink.lic` file from an older installation, you must contact Wavelink Support to reissue the license before you can import it into Avalanche 5.x.

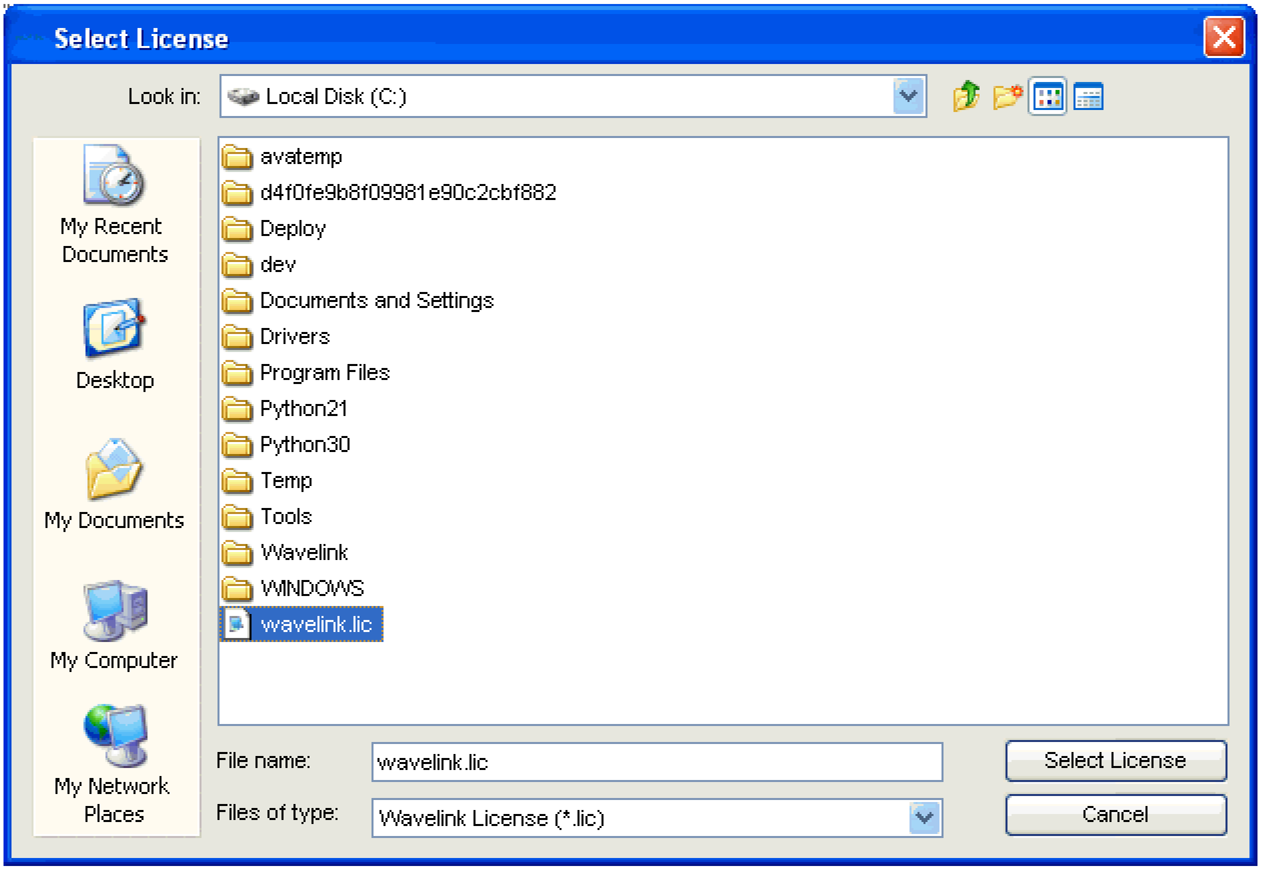
To import a license:

1 From the Avalanche Console, click **Tools > Manage Licensing**.

2 The *Licensing* dialog box appears. Click **Add a License**.

3 The *Add a License* dialog box appears.Click **Import a License**.

The *Select License* dialog box appears.



Look in: Local Disk (C:)

File name: wavelink.lic

Files of type: Wavelink License (*.lic)

Select License dialog box

4 Navigate to the location of the `wavelink.lic` file, select it and click **Select License**.

5 The details of the new license appear in the *Add a License* dialog box. Verify that the license information is correct and click **Use License**.

The licenses are imported and will appear in the list in the *Licensing* dialog box.

Releasing Licenses

Frequent license redistribution provides flexibility in managing devices. To encourage redistribution, you can configure the Mobile Device Server to release licenses from mobile devices that have not connected to any server within a specific number of days. You can also release licenses by deleting devices from the Mobile Device Inventory.

For information about configuring the Mobile Device Server to release licenses, see Mobile Device Server Profile General Configuration on page 68. For information about deleting devices from the Mobile Device Inventory, see Mobile Device Inventory Tab on page 88.

Running the License Server

The License Server is a Wavelink service that runs on a host system as part of Avalanche. The License Server is responsible for supplying licenses to Avalanche mobile devices and infrastructure devices. It listens on TCP port 7221. For the License Server to function properly, this port must be open and not blocked by a firewall.

The License Server is a service that starts automatically. If for some reason the License Server is not running, the Mobile Device and Infrastructure Servers will not be able to receive licenses. For the name and default installation location of the License Server, see Avalanche Services on page 197.

Importing an Enterprise License

Enterprise Licenses grant unlimited licenses for your devices. Importing an Enterprise License will apply the license to the Enterprise Server and brand the Console with an image of your choosing. Once you import the license, any time the Console connects to the branded Enterprise Server, the image will appear in the bottom left corner of the Java Console.

For information about creating an image and obtaining an Enterprise License, contact Wavelink Customer Service.

To import the Enterprise License:

1 From the Avalanche Java Console, click **File > Import > Enterprise License**.

A search dialog box appears.

2 Navigate to and select the Wavelink License File (`.wlf` extension).

3 Click **Open**.

The Enterprise license will be applied to the Enterprise Server and the Console will retrieve the enterprise image. You cannot remove the enterprise image once it has been imported.

Chapter 3: Avalanche Java Console

The Avalanche Console allows you to control global characteristics of your wireless network. These characteristics include creating profiles, assigning IP addresses, and monitoring network performance.

The Avalanche Console is traditionally accessed from a computer where the Console has been installed. This installed Console is the Java Console. It is installed by default when Avalanche is installed or it can be installed separately on different computers. However, you also can access a version of the console from a computer where it has not been installed by using a web browser. This version of the console is called the Web Console. The Web Console allows you to create and view reports and floorplans, view inventory, and manage profiles and alerts for your enterprise.

NOTE: This version of Avalanche help is specific to the Java Console. For more information on using the Avalanche Web Console, please see the *Avalanche MC Web Console User Guide* or launch the Web Console and click the **Help** button.

This section contains the following topics for the Java Console:

- Launching the Avalanche Console
- Understanding the Avalanche Console
- Changing Console Preferences
- Managing the Enterprise Server
- Checking for Available Updates
- Viewing the Inforail Status
- Using the Support Generator
- Using the Enabler Installation Tool

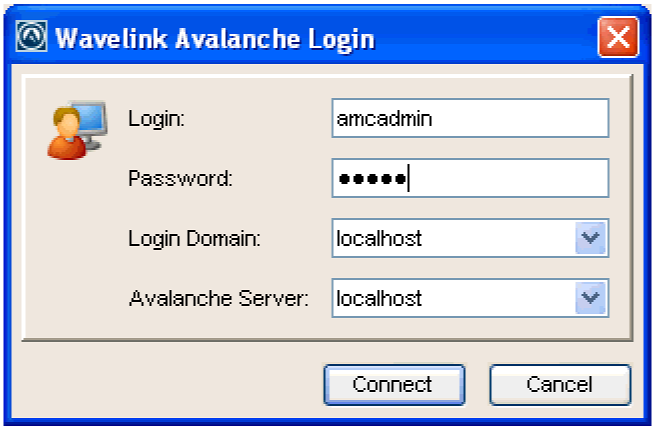
Launching the Avalanche Console

Configure and manage your wireless network on an enterprise-wide basis from the Avalanche Console. You can open the Avalanche Console from the **Programs** menu or from a shortcut.

To launch the Avalanche Console:

1 From the **Start** menu, select **Programs > Wavelink Avalanche MC > Avalanche MC Console**.

The *Wavelink Avalanche Login* dialog box appears.



Login: amcadmin

Password: ●●●●●

Login Domain: localhost

Avalanche Server: localhost

Wavelink Avalanche Login

2 Enter your **Login** and **Password**.

Avalanche is installed with a default user login of *amcadmin* and password of *admin*. Wavelink recommends you create a new password for this account once you log in. For information about changing passwords, see Managing User Accounts on page 35.

3 From the **Login Domain** drop-down list, select or type the login domain if you have configured Avalanche to use LDAP or Active Directory.

4 From the **Avalanche Server** drop-down list, select or type the IP address or DNS name of the enterprise server.

5 Click **Connect**.

The *Avalanche Server Login* dialog box appears. This dialog box indicates the progress of the Console as it attempts to contact the Enterprise Server.

If your Console can contact the Enterprise Server and your credentials are valid, the Avalanche Console appears.

If there are updates available, a dialog box will appear asking if you want to download automatically. You can download the updates or save the updates for the next time you launch the Console.

NOTE: To launch the Web Console after you have launched the Java Console, click **View > Launch Web Console**. For more information about the Web Console, click the Web Console **Help** button.

Understanding the Avalanche Console

The Avalanche Console consists of a Tool Bar, a Navigation Window, and Management Tabs that allow you to manage your wireless network and provide information about wireless network configuration and activity.

- The buttons on the Tool Bar provide quick access to common tools.
- The Navigation Window provides a tree view of the locations within your wireless network.
- The Management Tabs provide access to inventories, alerts, and other properties of your enterprise. The tabs available depend on what is selected in the Navigation Window.

Many of the options on the Management Tabs require you to enter Edit Mode before you can change them. Edit Mode helps prevent accidental changes and permits only one user to edit an item at a time.

This section gives details about the following areas:

- Tool Bar
- Navigation Window
- Quick Start Tab
- Profiles Tab
- Managing Device Inventory Displays
- Understanding Edit Mode

For information on the Alerts tab, Device Server Status tab, or Device Groups tab, go to the following sections:

- Managing Alert Profiles
- Managing a Mobile Device Server
- Managing Mobile Device Groups

Tool Bar

The following table provides information about the Tool Bar buttons.

🌐	Click to log out of the Avalanche Console and log in as a different user.
🌐	Click to log out of the Avalanche Console. You will not be prompted to log in as another user.

Click to open the Task Scheduler and schedule synchronization tasks.

Click to open the *User Management* dialog box. You can edit your list of users and permissions in this dialog box.

Click to access Console preferences such as audit logging and backup location settings.

Click to access the Avalanche Help.

The other three buttons on the Tool Bar are for using Edit Mode. For more information about Edit Mode, see Understanding Edit Mode on page 21.

Navigation Window

The Navigation Window, located on the left side of the Java Console, displays your enterprise in a tree view. Move through the locations by either expanding nodes or using the Search function. The **Search** function finds locations regardless of whether the tree is expanded or collapsed.

To use the Search function:

1. Type the name of the location in the text box just above the tree view.
2. Click **Search**.

   The highlight will move to the first location whose name begins with the text that you entered. The search is not case sensitive.

   If there are multiple matches, click **Search** until you reach the correct location.

Quick Start Tab

When you first launch the Console, the **Quick Start** tab displays. This tab provides links for quickly getting your enterprise configured and includes required and optional tasks. Each task has a brief description which you can view by clicking the plus [+] button. The sections in the **Quick Start** tab may vary depending on the location selected in the Navigation Tree.

If you do not want to display the **Quick Start** you can disable the tab by selecting **View > Quick Start**. You can also disable the **Show Quick Start on Startup** check box located on the **Quick Start** tab.

The **Quick Start** tab is divided into the following sections:

Profiles Configuration

The tasks in this section are optional and can be done in any order. These tasks include:

- Creating a Network Profile. For details, see Managing Network Profiles on page 51.
- Add Device Software. For details, see Managing Software Profiles on page 77.
- Create a Scan to Config Profile. For details, see Managing Scan to Configure Profiles on page 61.

Tools

This section allows you to install an Avalanche Enabler onto a mobile device or check for Avalanche updates.

Help and Support

This section provides links to the Avalanche Help, Wavelink Support, and launches the Support Generator. For details about using the Support Generator, see Using the Support Generator on page 32.

Profiles Tab

From the **Profiles** tab you can manage your profiles. A profile allows you to apply the same set of configurations to multiple servers or devices. There are six types of profiles in Avalanche SE:

- **Alert profile**. An alert profile allows you to configure what events generate an alert and who is notified when an alert is generated. For information on alert profiles, see Managing Alert Profiles on page 155.
- **Mobile Device Server profile**. A Mobile Device Server profile allows you to configure administrative, security, and connection settings for your Mobile Device Server. For information on Mobile Device Server profiles, see Managing a Mobile Device Server on page 67.
- **Mobile device profile**. A mobile device profile allows you to change settings on your mobile devices, as well as add, change, and remove custom properties and registry keys. For information on mobile device profiles, see Managing Mobile Device Profiles on page 141.
- **Network profile**. A network profile allows you to configure network information (such as IP addresses, encryption, and authentication) for infrastructure and mobile devices. For information on network profiles, see Managing Network Profiles on page 51.
- **Scan to Config profile**. A Scan to Config profile allows you to print network or device configuration information in a barcode. When the barcode is scanned with a device running an Enabler, the Enabler applies the settings on the device. For information on Scan to Config profiles, see Managing Scan to Configure Profiles on page 61.

- **Software profile**. A software profile allows you to organize and configure software packages for deployment to multiple devices. For information on software profiles, see Managing Software Profiles on page 77.

On the **Profiles** tab, the Profile List displays all existing profiles, along with their type, name, status, details, and any associated selection criteria. The columns in this list can be sorted in alphabetical order or reverse alphabetical order by clicking the column header.

You also have the option of filtering the profiles displayed. When you activate a filter, only the profiles matching the filter will be displayed in the Profile List. You can apply filters on multiple columns at the same time.

To filter the Profile List:

1 In the Profile List, right-click the header for the column you want to filter by.

2 Click **Set Filter** in the context menu.

The *Set Column Filter* dialog box appears.

3 If you are sorting by **Profile Type**, **Default?**, or **Status**, you see a list of available categories. Enable the checkboxes next to the categories you want to include in the filter and click **OK**.

-Or-

If you are sorting by **Name** or **Selection Criteria**, you are prompted to type a term you want to sort by. The filter includes all profiles with the term in the field you are sorting by. Click **OK**.

The filter is applied to the Profile List. To remove a filter after it has been applied, right-click the column header and select **Clear Filter**.

Managing Device Inventory Displays

Device lists are available on the **Mobile Device Inventory** and **Mobile Device Group** tabs. These lists display the devices associated with the currently selected location or mobile device group.

Device lists can be customized to display specific information. You can sort the lists, filter the lists using custom filters, or modify the columns displayed. You can sort each column by right-clicking the column header and selecting **Sort Ascending** or **Sort Descending**. This section contains the following information on customizing inventory displays:

- Inventory Paging
- Managing Device Filters
- Modifying Columns for the Mobile Device Inventory
- Adding Custom Columns for Mobile Device Lists

- Reorganizing Columns for Mobile Device Lists
- Displaying Custom Mobile Device Icons

Inventory Paging

Device lists allows you to select how many devices appear in the inventory list at a time. The list displays the devices in the order Avalanche pulls the information from the database. You may need to page through the list to view more devices.

To configure inventory paging:

1. From the **Number of Devices Per Page** drop-down list, select the number of devices you want to display.
2. Use the arrow keys to move forward and backward through the pages.
3. Use the refresh button to refresh the list of mobile devices.

Managing Device Filters

You can filter which devices are displayed in a device list by creating and applying device filters. When a filter is applied, only the devices meeting the criteria associated with that filter are displayed. Filters are available for the lists in the Mobile Device Inventory and mobile device groups.

To create a filter for a device inventory:

1. Click **Edit Filters**.

   The *Modify Device Filters* dialog box appears.

2. Enter a name for the new filter in the **Filter Name** text box.
3. Click the **Selection Criteria** button (in the upper right of the box).

   The *Selection Criteria Builder* dialog box appears, allowing you to create a filter based on device characteristics. See Building Selection Criteria on page 163 for more information on using selection criteria.

4. After you choose selection criteria for the filter, click **OK** to return to the *Modify Device Filters* dialog box.

   The selection criteria appear in the **Filter Expression** text box.

5. Click **Add Filter**.

   The filter is added to the **Existing Filters** list and is available to use.

6. Click **OK**.

To apply a filter to a device inventory:

1 Select the filter from the **Current Infra Device Filter** or **Current Mobile Device Filter** drop-down list.

2 Click **Apply Filter**.

To delete a filter from a device inventory:

1 Click **Edit Filters**.

The *Modifying Device Filters* dialog box appears.

2 In the **Existing Filters** list, select the filter you want to delete.

3 Click **Delete**.

Modifying Columns for the Mobile Device Inventory

The Avalanche Console allows you to control which columns appear in the Mobile Device Inventory and the manner in which they display.

To modify a column:

1 Right-click on the column header and select **Modify Columns**.

The *Modify Mobile Device Columns* dialog box appears. Column headers listed in the **Available Columns** list are headers that do not currently display in the tab. Column headers listed in the **Selected Columns** list are those that currently display in the tab.

2 From the **Available Columns** list, select which column you want to display and click **Add Column(s)**.

The column name moves to the **Selected Columns** list.

3 To remove a column from the **Selected Columns** list, select the column you want to remove and click **Remove Column(s)**.

The column name returns to the **Available Columns** list.

4 Use the **Move Up** and **Move Down** to modify the order in which the columns appear in the **Mobile Device Inventory** tab.

5 When you are finished, click **OK**.

The columns are rearranged to reflect your modifications.

Adding Custom Columns for Mobile Device Lists

If you have created custom properties for your mobile devices, you can display them in a column in a mobile device list. For details about creating custom properties, see Creating Custom Properties on page 93.

To display columns for custom properties:

1 Right-click the column header and select **Modify Columns**.

The *Modify Mobile Device Columns* dialog box appears.

2 Click **Add Custom**.

The *Custom Property Column* dialog box appears.

3 From the **Property Key** drop-down list, select the custom property you want to add as a column.

4 In the **Column Title** text box, type the name of the column as you want it to display in the **Mobile Device Inventory** tab.

5 From the **Data Type** drop-down list, select what type of data this column displays.

6 Configure the remaining options according to preference.

7 Click **OK** to return to the *Modify Mobile Device Columns* dialog box.

The column name for the property appears in the **Available Columns** list.

8 Select the column name and click **Add Column** to move the property to the **Selected Columns** list.

9 Click **OK** to return to the Console.

The column now displays in the tab and can be sorted like any other column.

Reorganizing Columns for Mobile Device Lists

You can remove, reset, and align columns for a mobile device list, as well as sorting the devices by column.

To reorganize columns:

- To remove columns, right-click the column and select **Remove Column**. The column is removed from the list view. You can restore this column using the *Modify Mobile Device Columns* dialog box.
- To reset the columns, right-click the column header and select **Reset Columns**.
- To sort by column, right-click the column and select **Sort Ascending** or **Sort Descending**.
- To align the information in the columns, right-click the column and select **Align Column - Left**, **Align Column - Right**, or **Align Column - Center** according to the way you want the information to appear.

Displaying Custom Mobile Device Icons

The Console supports custom mobile device icons that can be uploaded from the mobile device. Two device images are displayed on the Console: a small icon appears in the Mobile Device Inventory tab next to the name of the mobile device and a larger icon appears in the *Mobile Device Details* window.

For more information about custom device icons, see the *Using Custom Device Icons in Avalanche* paper, located on the Wavelink web site.

Understanding Edit Mode

In order to edit a profile, device group, or location properties, you must enter Edit Mode. While you are using Edit Mode, the item you are editing is locked. While an item is locked, no other user will be able to attempt to edit the configuration. Edit Lock has an automatic timeout, at which point you will be prompted in order to continue editing. If you do not respond to the prompt within the time configured, then your edit will be canceled and you will not be able to save your changes.

From the Java Console, you can configure the timeout and the length of time after the prompt appears before the user's lock is terminated. The timeout for Edit Lock has a default setting of 15 minutes, and the prompt timeout has a default setting of 1 minute. For instructions on configuring these timeouts, see Edit Lock Control on page 23.

To use Edit Mode, you employ the following icons located in the toolbar:

Click **Edit** to enter Edit Mode so you can make configuration changes. This button is active when you are on the **Device Groups**, **Profiles**, **Region Properties**, or **Server Location Properties** tabs.

Click **Cancel** to erase any changes you made in edit mode. When you click **Cancel**, you will exit edit mode.

Click **Save** to save configuration changes.

Consider the following when using Edit Mode:

- When you enter Edit Mode, you will not be able to navigate away from the current tab (for example, **Device Groups**, **Profiles**, **Region Properties**, or **Server Location Properties**) until you exit Edit Mode. The Navigation Window will not be available while you are in Edit Mode.
- If you create a new profile, you will need to click **Edit** before you can continue configuration.

- You cannot remove a profile while you are in Edit Mode. You must either save or cancel. You can then select the profile and click **Remove Profile**.
- When working in software profiles, you do not need to be in Edit Mode to install or configure software packages. However, you must enter Edit Mode to configure any other software package options.
- You do not need to enter Edit Mode to view where profiles are applied.

Changing Console Preferences

You can customize features of the Avalanche Console from the *Preferences* dialog box. This section provides information about the following Console preferences tasks:

- Customizing General Console Settings
- Edit Lock Control
- Specifying the Backup Location
- Configuring Audit Logging
- Viewing the Audit Log
- Configuring E-mail Settings
- Configuring HTTP Proxy Settings

Customizing General Console Settings

Avalanche gives you the option to automatically check online for software updates each time you launch the Java Console. You also can configure Avalanche to send usage data to Wavelink to improve service and usability. The Avalanche Console appearance can be modified, including display size, position and default page view from the *Preferences* dialog box. You can also configure how the Alert Browser manages alerts.

To customize the general Console settings:

1 Click **Tools > Settings**.

The *Settings* dialog box appears.

2 Select the **General** tab.

3 In the Auto Update Settings area, configure whether Avalanche should check for updates or upload usage information to Wavelink.

4 In the Console Display Settings area, configure the width, height, and the frame positions for the Avalanche Console.

5 In the Alert Browser Settings area, use the text boxes to configure how many days an alert remains in the Alert Browser, the maximum number of alerts that can appear in the Alert Browser, and the maximum number of alerts to store.

NOTE: Avalanche stores alerts in the enterprise database.

6 Click **Apply** to save your changes.

7 Click **OK** to close the *Settings* dialog box.

The Avalanche Console updates to reflect your changes.

Edit Lock Control

You can configure two options for Edit Lock: how long before the Edit Lock times out and prompts the user, and how quickly after the prompt appears the Edit Lock is canceled.

If a use is editing an item (such as a profile), he has a limited amount of time to make and save his changes before the Edit Lock times out. When the Edit Lock times out, a prompt will appear asking if he wants to extend the Edit Lock. If he does not respond to the prompt, the Edit Lock will be canceled, changes will not be saved, and other users will be able to edit the item. The Edit Lock Timeout is the amount of time he has before the prompt appears, and the Timeout Warning Tolerance is the amount of time between when the prompt appears and when the Edit Lock is canceled.

To configure Edit Lock control:

1 Click **Tools > Settings**.

The *Settings* dialog box appears.

2 Select the **Enterprise Server** tab.

3 In the Edit Lock Control area, select **Enable Edit Lock Control** and set the **Edit Lock Timeout** and **Timeout Warning Tolerance**.

4 Click **Apply** to save the changes.

5 Click **OK** to close the *Settings* dialog box.

Specifying the Backup Location

You can specify where you want to store any backups of Avalanche. The location must be a qualified path for the Enterprise Server. If you do not specify a path, the backups will be stored in the default location, `C:\Program Files\Wavelink\AvalancheSE\backup`.

For information about backing up Avalanche, see Backing Up the System on page 176.

To specify a location:

1 Click **Tools > Settings**.

The *Settings* dialog box appears.

2 Select the **Enterprise Server** tab.

3 In the **Backup File Location** text box, type the path where you want to save system backups.

4 Click **Apply**.

5 Click **OK** to close the *Settings* dialog box.

Configuring Audit Logging

The audit log in Avalanche collects information about actions performed from the Avalanche Console. As part of the data collection, the audit log includes the IP address of each Console that generated a logged event. Configuring audit logging preferences, viewing, and clearing the log can only be performed by an Administrator.

NOTE: For information on viewing actions in the audit log, see Viewing the Audit Log on page 26.

The audit log will store up to 200,000 actions in the database. When 200,000 actions have been stored, Avalanche will move the oldest records to a `.csv` file in the backup directory and delete them from the database.

You can also archive the audit log at a specific time every day. When the information is archived, it is copied to a `.csv` file. The `.csv` file is stored in the same directory where backup files are stored. For information on configuring the backup file location, see Specifying the Backup Location on page 23.

The following events can be configured for logging:

Deployment Package modifications	When a deployment package is modified.
Profile modification	When a profile is modified.
Device Commands	When one of the tools in the Device Details Tools panel is used.
Device Group modifications	When a device group is modified.
Group Location modifications	When a group location is modified.
Region Location modifications	When a region is modified.
Server Location modifications	When a server location is modified.

Profile Application modifications	When a profile is applied, excluded, or removed from a location.
Scheduled Event, Apply/Deploy Profiles	When an Apply/Deploy Profiles event has occurred.
Scheduled Event, Deploy/Update Servers	When a Deploy/Update Servers event has occurred.
Scheduled Event, System Backup	When a System Backup event has occurred.
Scheduled Event, System Restore	When a System Restore event has occurred.
Scheduled Event, Uninstall Server	When an Uninstall Server event has occurred.
Scheduled Event, Universal Deployment	When a scheduled Universal Deployment event has occurred.
Scheduled Event, Update Firmware	When an Update Firmware event has occurred.
User Logon/Logoff	When a user logs on or logs off the Avalanche Console.
User modifications	When a user account is modified.
VLACL modifications	When the VLACL is modified.
Console to Device Server Events	When servers are managed from the Console.

To enable audit logging:

1 Click **Tools > Settings**.

The *Settings* dialog box appears.

2 Select the **Audit Logging** tab.

3 Enable the **Enable Audit Logging** check box.

4 If you want the audit log archived, enable **Enable Audit Log Archiving** and select the time of day (using a 24-hour clock) you want the log to be archived.

5 From the list, enable the events you want to record.

6 Click **Apply**.

7 Click **OK** to close the *Settings* dialog box.

Viewing the Audit Log

The audit log collects information about actions performed from the Avalanche Console. As part of the data collection, the audit log tracks the username and IP address for each logged event, the date and time of the Console activity, and a description of the changes that occurred. Only an administrator user can configure and view the audit log.

NOTE: For information about enabling and configuring the audit log, see Configuring Audit Logging on page 24.

If desired, select criteria to filter the logged events so you can view the entire log or just a specific type of entry.

To view the audit log:

1 Click **View > Audit Log**.

The *Audit Log* dialog box appears.

2 Select the filter or filters you want to use:

- To show the most recent events, enabled **Most Recent** and select the number of entries to show.
- To filter events by date, enable **Date Range** and use the calendar buttons to select the beginning and end dates.
- To filter events by IP address, enable **IP Range** and enter the range of addresses you want to view.
- To filter events by username, enable **User Name** and type the name of the user in the text box. You may only filter by one username at a time.
- To filter events by type, enable **Activity Type** and select the check boxes for the activities you want to view.

3 Click the **Refresh Screen** icon in the bottom left corner to update the list according to the filters.

All events matching the filters appear in the list.

4 If you wish to delete all entries in the audit log, click **Clear Log**. This will remove all entries from the database and archive the information in a `.csv` file in the backup directory.

Configuring E-mail Settings

If you plan to use an SMTP server to forward alerts to an e-mail address, you must configure the name or IP address of the server, a username and password, and a reply-to e-mail address.

To configure e-mail settings:

1. Click **Tools > Settings**.

   The *Settings* dialog box appears.

2. Select the **E-Mail & HTTP** tab.
3. Type the address of the e-mail server you want Avalanche to use in the **E-Mail Server** text box.
4. Select the port Avalanche should use when contacting the e-mail server.
5. Type the **Username** and **Password** in the text boxes.
6. Type the address the e-mails will appear from in the **From Email** text box.
7. Type the address a reply should be sent to if an alert e-mail is replied to in the **Reply-to Email** text box.
8. To send a test e-mail to the reply-to address, click **Send A Test Email**.
9. Click **Apply**.
10. Click **OK** to return to the Avalanche Console.

Configuring HTTP Proxy Settings

If you are using an HTTP proxy for external Web site connections, you can configure HTTP proxy settings to ensure Avalanche can connect.

To configure HTTP proxy settings:

1. Click **Tools > Settings**.

   The *Settings* dialog box appears.

2. Select the **E-Mail & HTTP** tab.
3. Enable the **Use HTTP Proxy Server** checkbox.
4. In the **Host** text box, type either the IP address or name of the proxy.
5. Type a port number in the **Port** text box. If this is left blank, it will default to port 80.
6. If you are using Basic Authentication for the HTTP proxy, type the **User Name** and **Password** in the appropriate text boxes. Otherwise, leave these options blank.
7. Click **OK** to save your changes.

   The next time you create a server deployment package, the proxy server settings configured in this dialog box will be used.

8 To disable the use of a proxy, disable the **Use a Proxy Server** checkbox in the *Settings* dialog box.

When you disable the proxy server and save the change, all proxy settings are removed from the database.

Managing the Enterprise Server

The Enterprise Server and Enterprise Server database handle scheduling, synchronizations, profiles, users, and locations. You may review and optimize Enterprise Server performance using the following tasks:

- Viewing the Enterprise Server Status
- Purging Server Statistics
- Performing a Dump Heap

Viewing the Enterprise Server Status

You can view the status of the enterprise server in the *eServer Console* dialog box. The eServer Status area lists the status (parameters and values) of the enterprise server. Click **Refresh Status** to receive the latest information from the server.

The following list describes some of the parameters and values displayed in the eServer Status area:

Parameter	Value
Version	The version of the enterprise server.
Build Number	The build number of the enterprise server.
Uptime	The length of time the enterprise server has been running.
Start Time	The last time the enterprise server was started.
Current Time	The current time.
Messages Received	The total number of messages the server has received.
Messages Sent	The total number of messages the server has sent.
Spillover Enabled	Whether the memory spillover function is enabled (YES or NO).
Spillover Threshold	The memory level before spillover takes effect.

Parameter	Value
Spillover Release	The number of seconds before the spillover is released.
Blackout Mode	If blackout mode is enabled and which servers are included in the blackout. • **Off** indicates that blackout mode is not currently in use. • **All Servers** indicates that all servers are in blackout mode. • **Mobile Device Servers** indicates that only the Mobile Device Servers are in blackout mode. • **Infrastructure Servers** indicates that only the Infrastructure Servers are in blackout mode.
Priority C0 - C2 Backlog	The number of messages coming from Consoles, with C0 being the highest priority and C2 being the lowest priority.
Priority A0 - A2 Backlog	The number of messages coming from the device servers, with A0 being the highest priority and A2 being the lowest priority.

Purging Server Statistics

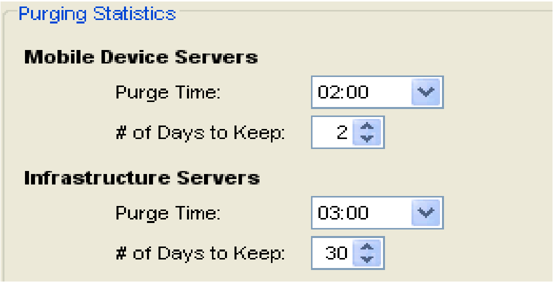
To prevent database inflation, you can configure Avalanche to purge logged statistics. You can configure the following for Mobile Device alerts and statistics:

- **Purge Time**. Set the time of day you when you want to remove the statistics.
- **Number of Days to Keep**. Set the number of days you want to keep the statistics before removing them. Wavelink recommends setting this number low, because the purging process could take a long time if there are too many statistics. The maximum number of days you can set is 30.

To configure purge settings:

1 Click **View > Enterprise Server Status**.

The *eServer Status* dialog box appears.



Purging Statistics

Mobile Device Servers

Purge Time: 02:00

# of Days to Keep: 2

Infrastructure Servers

Purge Time: 03:00

# of Days to Keep: 30

Purging Statistics in the eServer Status dialog box

2 In the **Purging Statistics** section, configure the days you want to keep the statistics and the time you want the statistics to be removed for each type of server.

3 Click **OK** to save your settings.

Performing a Dump Heap

If the memory level starts to affect the performance of your enterprise server, you can perform a dump heap for the enterprise server database. This will dump all the live objects and classes into a file located in the default installation location.

Before you perform the dump, you can also check the thread information, which can help you decide if the dump is necessary.

To perform a dump heap:

1 Click **View > Enterprise Server Status**.

The *eServer Status* dialog box appears.

2 In the eServer Diagnostics area, click **Thread Info**.

A dialog box appears containing the thread information. You can print this information or close the dialog box.

3 Once you have determined you want to perform the dump heap, click **Dump Heap**.

A message appears in the eServer diagnostics area indicating the name and the size of the dump file.

Checking for Available Updates

Avalanche tracks the Wavelink software you have installed on your devices and displays when there are updates for the software available. For example, it tracks the versions of the Enablers you have installed and provides a link when Wavelink releases a newer Enabler.

In order for Avalanche to check for new updates, it sends basic system and device information to Wavelink.

To check for available software updates:

1 Click **Help > Check For Updates**.

The *Avalanche Update* dialog box appears if you have not already agreed to submit update information to Avalanche. Enable the **Accept** option and click **OK** to allow Avalanche to send system and device information to Wavelink.

2 If there are no new updates available, the message **No Updates** will appear in the lower right corner of the Console. If there are new updates available, the message **Updates**

Available will appear in the lower right corner of the Console. Click on the message to view the available updates.

3 The *Available Updates* dialog box appears. Click on a link to download an update.

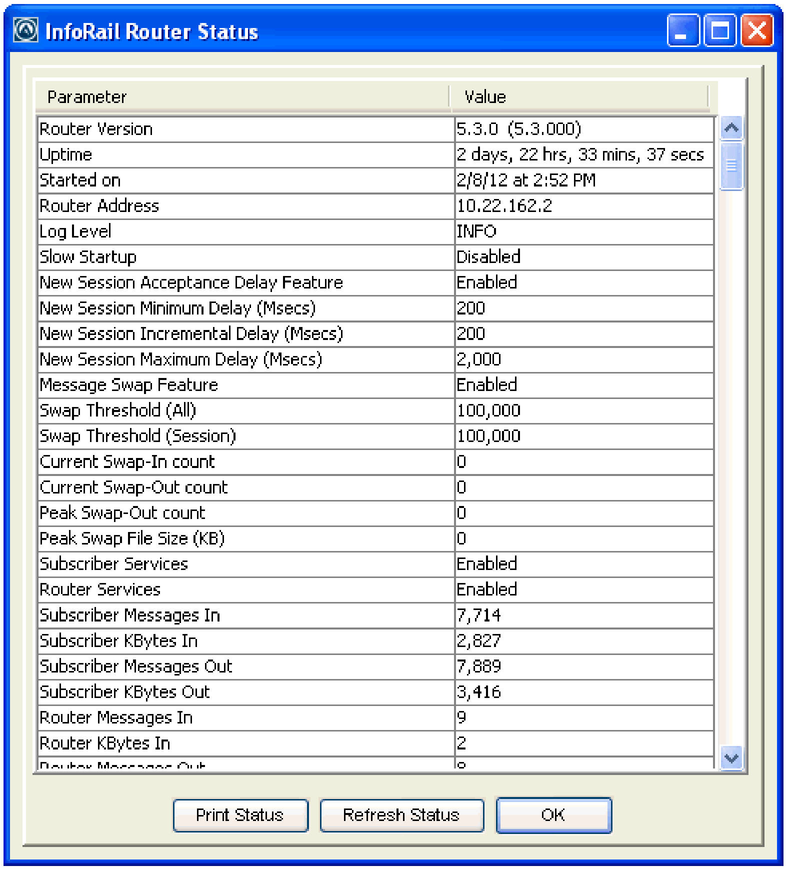
Viewing the Inforail Status

The InfoRail Router coordinates communication between Avalanche processes. The InfoRail Router Status dialog box provides information such as the version of the router, how long it has been running, and the IP address. From this dialog box you can print or refresh the status. You cannot change any of the parameters listed.

To view the InfoRail status:

1 Click **View > InfoRail Router Status**.

The dialog box appears.



Parameter	Value
Router Version	5.3.0 (5.3.000)
Uptime	2 days, 22 hrs, 33 mins, 37 secs
Started on	2/8/12 at 2:52 PM
Router Address	10.22.162.2
Log Level	INFO
Slow Startup	Disabled
New Session Acceptance Delay Feature	Enabled
New Session Minimum Delay (Msecs)	200
New Session Incremental Delay (Msecs)	200
New Session Maximum Delay (Msecs)	2,000
Message Swap Feature	Enabled
Swap Threshold (All)	100,000
Swap Threshold (Session)	100,000
Current Swap-In count	0
Current Swap-Out count	0
Peak Swap-Out count	0
Peak Swap File Size (KB)	0
Subscriber Services	Enabled
Router Services	Enabled
Subscriber Messages In	7,714
Subscriber KBytes In	2,827
Subscriber Messages Out	7,889
Subscriber KBytes Out	3,416
Router Messages In	9
Router KBytes In	2
Router Messages Out	8

InfoRail Router Status

2 To print the status page, click **Print Status**.

3 To refresh the statistics, click **Refresh Status**.

4 Click **OK** to close the dialog box.

Using the Support Generator

The Support Generator creates a `.zip` file that contains Avalanche log files and additional information that you provide when you run the Support Generator. The log files compiled in the `.zip` file include:

`AvalancheServer.log`

`EConsole.log`

`InfoRail.log`

`eConsoleNetstat.log`

Once you create a `.zip` file, you can send the file to Wavelink Customer Service. Customer Service uses the file to quickly diagnose the problem and provide a solution.

To use the Support Generator:

1 From the **Quick Start** tab, click **Support Generator**.

The *Avalanche Support Generator* dialog box appears.

2 From the drop-down list, select the area of Avalanche where the problem is occurring.

3 In the **Processor** text box, enter your processor type.

4 In the **Installed RAM** text box, enter the amount of RAM you have installed.

NOTE: You cannot change the **Operating System** or **Free HDD Space** text boxes. These are populated automatically by the Support Generator.

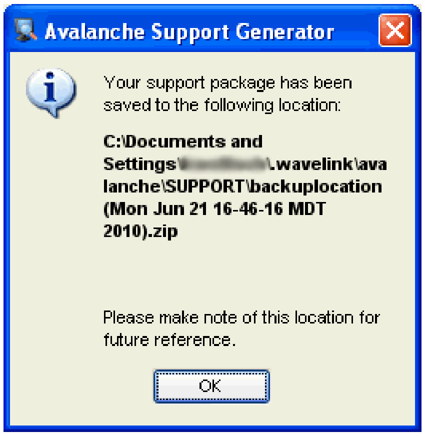
5 In the text box provided, enter detailed information about the problem. The more detailed your description, the more thoroughly Customer Service will be able to understand the problem.

6 In the **Save as filename** text box, enter a name for this file.

NOTE: This is the name of the `.zip` file that you will e-mail to Wavelink Customer Service. It is not the path where the file will be saved.

7 Click **Save**.

The log files are compiled into a `.zip` file and a dialog box appears displaying the location where the file is saved.


Avalanche Support Generator

Your support package has been saved to the following location:

C:\Documents and Settings\[redacted]\.wavelink\avalanche\SUPPORT\backuplocation (Mon Jun 21 16-46-16 MDT 2010).zip

Please make note of this location for future reference.

Avalanche Support Generator Location

8 Make a note of the location and click **OK**.

9 Attach the `.zip` file to an e-mail and send the e-mail to `customerservice@wavelink.com`.

Using the Enabler Installation Tool

The Enabler Installation Tool allows you to configure and deploy Enablers to mobile devices directly from the Avalanche Console using Microsoft ActiveSync.

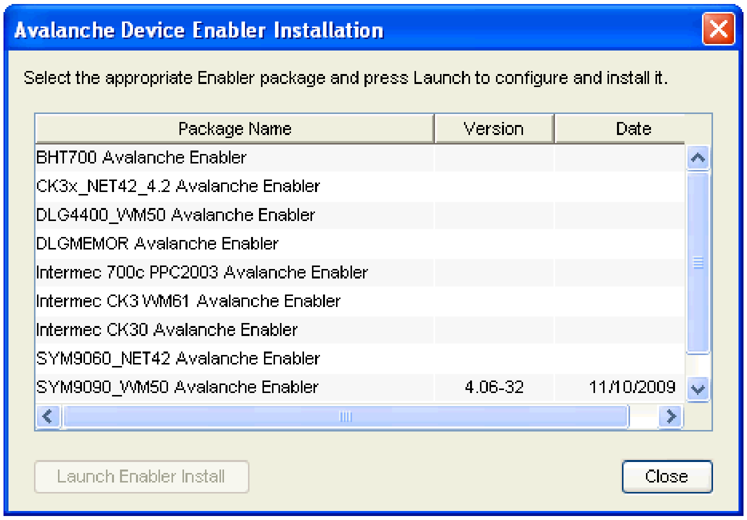
To use the Enabler Installation Tool, you must have the following:

- Enabler installation files on the machine where you are running the Console.
- Mobile devices connected to the machine through ActiveSync.

To install an Enabler:

1 From the **Quick Start** tab, select **Install Avalanche Enabler**.

The *Avalanche Device Enabler Installation* dialog box appears.



Select the appropriate Enabler package and press Launch to configure and install it.

Package Name	Version	Date
BHT700 Avalanche Enabler		
CK3x_NET42_4.2 Avalanche Enabler		
DLG4400_WM50 Avalanche Enabler		
DLGMEMOR Avalanche Enabler		
Intermec 700c PPC2003 Avalanche Enabler		
Intermec CK3 WM61 Avalanche Enabler		
Intermec CK30 Avalanche Enabler		
SYM9060_NET42 Avalanche Enabler		
SYM9090_WM50 Avalanche Enabler	4.06-32	11/10/2009

Avalanche Device Enabler Installation

2 From the dialog box, select which Enabler package you want to install on the mobile device and click **Launch Enabler Install**.

NOTE: You must have at least one Enabler installation package on your machine or this dialog box will be blank.

The Enabler Configuration Utility appears.

3 Configure the Enabler as desired.

4 Click Install OnlyUse ActiveSync to send the Enabler to your connected mobile device.

For details about all the configuration options of the Enabler and information about using ActiveSync, see the *Avalanche Enabler User Guide*.

Chapter 4: Managing User Accounts

A user account is required to log in to the Avalanche Console. User accounts allow you to define who can access components and perform tasks. Each user is assigned to a home location, which defines the locations the user has authority to manage.

There are two types of accounts: Administrator and Normal. An Administrator account can access and modify all the configurations in Avalanche associated with its home location or any sub-locations. A Normal account is assigned to specific locations or profiles and can only view or make changes in its assigned areas.

NOTE: Avalanche is installed with a default Administrator account named `amcadmin` with the password `admin`. Wavelink recommends you create a new password for this account once you log in.

When a Normal account is created, you can assign permissions to that account. These permissions can apply to all profiles of a type (for example, all alert profiles), to specific tools (for example, Remote Control), or location management and synchronization. If you want to assign permissions on a profile-by-profile basis, you also have the option to authorize the user for individual profiles.

As an alternative to assigning permissions to each Normal account, you can assign permissions to a user group. Each Normal account that is part of the user group will have the permissions which are assigned to the group. If a user is removed from the group, he will no longer have the associated permissions. A Normal account can belong to more than one user group at a time.

If your network uses Active Directory or LDAP for user access, you can set up integrated logon for Avalanche. Avalanche will accept the usernames and passwords accepted on your network. Guest accounts must be disabled on the computer where Avalanche is installed.

This section provides the following information about user accounts:

- Creating User Accounts
- Creating User Groups
- Assigning User Permissions
- Assigning Authorized Users
- Configuring Integrated Logon
- Changing Passwords
- Removing User Accounts

Creating User Accounts

Administrator accounts allow you to create new user accounts. When creating a new account, you assign a user name and password to the account allowing the user to log on to the Avalanche Console. You also assign permission levels to grant the user access to specific functionality.

When a user account is created, it must be assigned a “home.” The user (either Normal or Administrator) will only be allowed to access information for their home location and any associated sub-locations.

NOTE: A user who has read/write permissions for profiles can exclude an inherited profile for a location but will not be able to modify it.

You can configure the following options when creating a user account:

User Type Select if the user is a Normal user or an Administrator. If the user is a Normal user, you will need to assign specific permissions. If the user is an Administrator, he will have access to the entire company.

User Home The portion of your network that the user will be assigned to. The user will only be able to access profiles and information for his assigned location.

Description A description of the user or group.

Login The name the user will use to log in to the Avalanche Console. The login is case sensitive. The following special characters are not allowed:
`~ ! ^ * ( ) + = | ? / < > , [ ] : ; { } \ " &` space

Password The password that will grant access to the Avalanche Console. Passwords are case sensitive. The password has a 32-character limit.

Confirm Password You must confirm the password you assign to the user.

First Name The first name of the user.

Last Name The last name of the user.

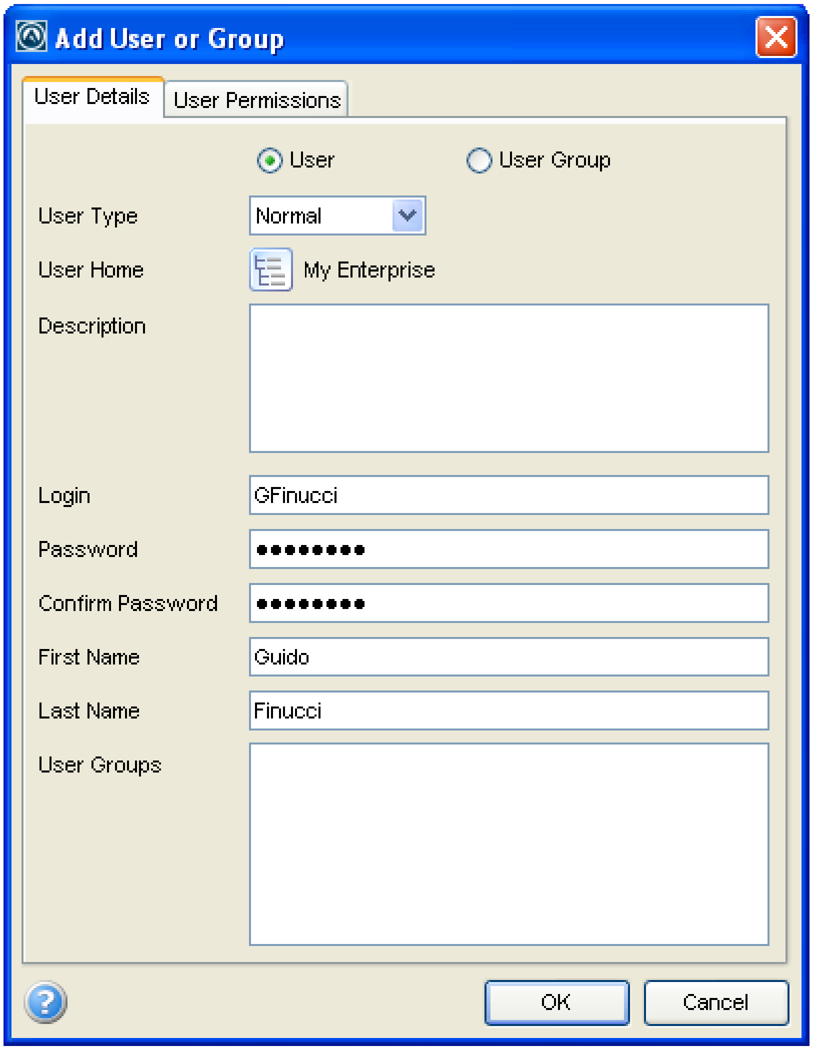
To create a new account:

1 Click **Tools > User Management**.

The *User Management* dialog box appears.

2 Click **Add**.

The *Add User or Group* dialog box appears.



Add User or Group

● User ○ User Group

User Type: Normal

User Home: My Enterprise

Description:

Login: GFinucci

Password: ●●●●●●●●●

Confirm Password: ●●●●●●●●●

First Name: Guido

Last Name: Finucci

User Groups:

Add User or Group dialog box

3 Enter the information in the available text boxes. **User Type**, **User Home**, **Login**, **Password**, and **Confirm Password** are required fields.

4 To assign a user home, click the tree button and select the home location.

5 Assign permissions by clicking on the **User Permissions** tab now, or an Administrator can modify permissions later.

NOTE: To add a user to an existing user group, edit the user group. You cannot change the user groups that a user belongs to from this dialog box.

6 When you are finished, click **OK**.

The new user is added to the list in the *User Management* dialog box.

The new account is available. However, if a new user is set as a Normal user, that user will not have access to any areas of the Console until permissions are assigned to that user. For more information, see Assigning User Permissions on page 39.

Creating User Groups

In addition to individual user accounts, you can create user groups. Users assigned to a user group will have permissions for all areas associated with that user group in addition to the permissions granted for their individual accounts.

For convenience, there are default user groups created, including:

- Software Admin
- Help Desk
- Network Admin

These user groups are set with a series of default permissions. You can edit the permissions for the groups to suit your needs or create a new user group.

To create a new user group:

1 Click **Tools > User Management**.

The *User Management* dialog box appears.

2 Click **Add**.

The *Add User or Group* dialog box appears.

3 Select the **User Group** option.

4 In the **Group Name** text box, enter the name of the group.

5 In the **Users** list, check all users that you want to add to the group.

NOTE: If you have not added any Normal users, the list box will be empty. See Creating User Accounts on page 36 for information about creating users.

6 From the **Type** drop-down list, select if the user group is Normal or Administrator.

7 You can assign regional and profile permissions by clicking on the tabs now, or an Administrator can modify permissions later.

8 When you are finished, click **OK**.

To view the users in a user group:

1 Click **Tools > User Management**.

The *User Management* dialog box appears.

2 Select the user group you want to view details for and click **Edit**.

3 The *Edit User Group* dialog box appears. The users assigned to the group are in the **Users** list. If desired, edit the information and click **OK**.

To view the user groups that a specific user is assigned to:

1 Click **Tools > User Management**.

The *User Management* dialog box appears.

2 Select the user you want to view details for and click **Edit**.

3 The *Edit User* dialog box appears. The groups the user is assigned to are in the **User Groups** list. If desired, edit the information and click **OK**.

Assigning User Permissions

If you have an Administrator account, you have unlimited permissions and can assign and change permissions for Normal user accounts. When a Normal user account is assigned permissions to a functionality, that user has permissions for that specific functionality in his home location and any associated sub-locations. A user must have permissions for a location in order to view or edit the profiles, devices, or groups associated with the location.

Permissions can be assigned when a user is created, or from a specific location, profile, or mobile device group. This section describes the permissions available from the *User Management* dialog box. For information on giving permissions to a user for a specific location, profile, or mobile device group, see Assigning Authorized Users on page 41.

The following table describes permissions that are available for profiles:

Management			Applications	
View Only allows the user to view the settings for a profile.	**View/Edit** allows the user to edit the settings of a profile.	**Print** allows the user to print the barcodes for a Scan to Config profile.	**View/Only** allows the user to view where profiles are applied.	**View/Edit** allows the user to edit where profiles are applied.

NOTE: A user assigned to a location who has read/write permissions for profiles can exclude an inherited profile but will not be able to modify it.

The following table describes permissions that are available for inventory:

Inventory		
Mobile Devices	**View Only** allows the user to view the mobile devices for assigned locations.	**Manage** allows the user to manage the mobile devices for assigned locations or mobile device groups.
Mobile Device Groups	**View Only** allows the user to view the mobile device groups and the devices they contain.	**View/Edit** allows the user to edit group properties for mobile device groups. A user must also have Mobile Devices permissions in order to view/edit the devices in a group.
Mobile Device Properties	**View Only** allows the user to view mobile device properties.	**View/Edit** allows the user to edit properties for mobile devices.
Remote Control	**View Only** allows the user to connect to a mobile device using Remote Control.	**View/Edit** allows the user to connect to a device using Remote Control or configure Remote Control connection profiles.

The following table describes the other permissions that are available:

Other		
Location Management	**View Only** allows the user to view location configurations and settings.	**View/Edit** allows the user to view, manage, and configure locations.
Synchronization	**View Only** allows the user to view recent and scheduled synchronizations.	**View/Edit** allows the user to create and deploy infrastructure or server packages, and initiate server synchronization.

Assigning Authorized Users

Users that are Normal users but not configured to manage profiles can be assigned as authorized users for specific locations, profiles, or device groups.

This section contains the following information:

- Assigning Authorized Users to Locations
- Assigning Authorized Users to Profiles
- Assigning Authorized Users to Mobile Device Groups

Assigning Authorized Users to Locations

Each user is assigned a home location. When you assign a user to a location, that user can access all locations beneath the assigned location. You must be an Administrator in order to assign users to locations.

To assign a user to a location:

1. Select the location.
2. Select the **Location Properties** tab.
3. Select the **Authorized Users** tab.
4. Click **Add User**.

   The *Add Authorized User* dialog box appears.
5. Select the user and click **OK**.

   The user is added to the list of authorized users for that location.

Assigning Authorized Users to Profiles

You can assign administrative privileges to a Normal user for a specific profile. If you want to give a Normal user permissions for all profiles of a specific type, see Assigning User Permissions on page 39.

To add or remove an authorized user:

1. From the **Profiles** tab, click on the name of the profile you want to configure.
2. Click **Edit**.
3. Click **Authorized Users**.

   The *Profile Authorized Users* dialog box appears.

4 Add or remove authorized users as desired.

- To add an authorized user, click **Add**. Click on the name of the user from the list and the permission level from the drop-down list and click **OK**.
- To remove an authorized user, select the name of the user and click **Remove**.

Assigning Authorized Users to Mobile Device Groups

You can assign administrative privileges for a specified mobile device group to a Normal user. Any user assigned as an authorized user to a group will have all administrative rights for that one group.

NOTE: A user must have mobile device permissions in order to view or edit devices in a mobile device group.

To add an authorized user:

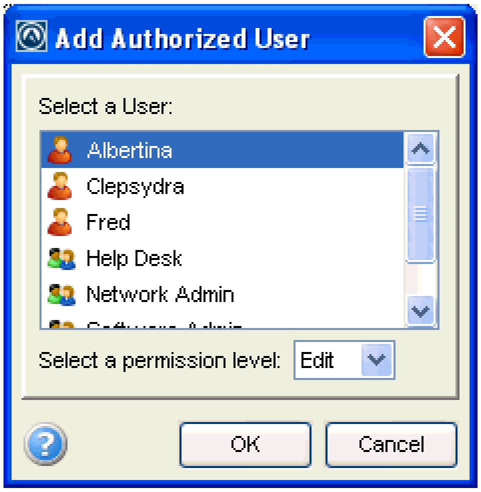
1 From the **Device Groups** tab, select the group you want to assign an authorized user.

2 Click **Edit**.

3 Click the **Authorized Users** button.

4 Click **Add User**.

The *Add Authorized User* dialog box appears.



Add Authorized User

Select a User:

- Albertina
- Clepsydra
- Fred
- Help Desk
- Network Admin

Select a permission level: Edit

Add Authorized User dialog box

5 From the list, select the user.

6 From the drop-down list, select the level of permission.

7 Click **OK**.

The user is added to the list of authorized users.

Configuring Integrated Logon

Avalanche allows Console users to log in to the Avalanche Console using the same information they use to log in to the network.

Integrated logon is disabled by default; however, you can enable authentication through the Secure Plus authentication service or through Windows Active Directory LDAP authentication. When you select to use Windows Active Directory LDAP service, users are authenticated using standard Java LDAP APIs. You must specify the IP address of the server.

When you select either integrated logon option, users with network logins can log on to the Avalanche Console as Normal users. These accounts will not have any permissions assigned to them until an administrator configures permissions for each user.

If you have configured user accounts in the *User Management* dialog box and then enable the integrated logon feature, those users configured in the Console will not be allowed to access the Console. The only users allowed to access the Console will be those that can be authenticated through integrated logon.

NOTE: The default `amcadmin` account will able to login with or without integrated logon enabled.

To enable integrated logon:

1 Click **Tools > User Management**.

The *User Management* dialog box appears.

2 Select from the following options:

- Enable the **Windows Active Directory Authentication through Wavelink Secure Plus Server** option.
- Enable the **Authentication through LDAP Server** option and then enter the address of the LDAP Server.

3 Click **OK**.

4 Log out of the Console.

Avalanche is now configured to recognized authenticated system users.

Changing Passwords

If you have an Administrator account, you can change any user account password. Users with Normal accounts cannot change passwords for any account.

To change a password:

1 Click **Tools > User Management**.

   The *User Management* dialog box appears.

2 Select the user account for which you want to change the password.

3 Click **Change Password**.

   The *Change User Password* dialog box appears.

4 Type the new password in the **New Password** text box.

5 Retype the password to confirm it in the **Confirm New Password** text box.

6 Click **OK**.

7 Click **OK** again to return to the Avalanche Console.

NOTE: You can also change passwords by editing the user account.

Removing User Accounts

If you have an Administrator user account, you can delete user accounts. Once you remove an account, that user will no longer have access to the Avalanche Console using that login information.

To delete a user account:

1 Click **Tools > User Management**.

   The *User Management* dialog box appears.

2 Select a user from the list.

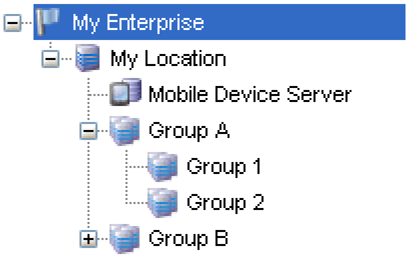
3 Click **Remove**.

4 Confirm you want to remove the user account.

   The deleted account will no longer be able to access the Avalanche Console.

Chapter 5: Location Management

Avalanche uses locations in order to organize devices, users, and settings. Avalanche lets you organize devices in group locations to make them easier to manage. Locations are organized in the Navigation Window:



Locations in the Navigation Window

Avalanche installs a mobile device server during the installation process. The server is automatically placed at My Location. In order to organize devices, users, and settings, you can create sub-locations under My Location. These sub-locations are called group locations.

Avalanche uses selection criteria to determine which devices belong to each group location. For example, if Group 1 has the selection criterion: `ModelName = ITCCK30`, any Intermec CK30 devices automatically appear in the Group 1 inventory as well as the server location inventory. A device can belong to more than one group location concurrently.

Each user and profile has a home location. A user will be able to access items associated with his home location and any sub-locations. A profile will be available at its home location and inherited by any sub-locations. Profiles can be excluded from sub-locations so that they are not applied, however. When a profile is created, the home location is set by default to the location you currently have selected.

This section describes how to manage locations and provides information about the following topics:

- Managing Device Servers
- Managing Group Locations
- Applying Profiles to Locations
- Editing Exclusions

Managing Device Servers

This section provides general information about installing and managing distributed mobile device and infrastructure servers. A device server can be scheduled and deployed from the

Console or installed directly on a computer. For more information specific to either type of server, see Managing a Mobile Device Server on page 67 or Managing Infrastructure Device Servers.

- Building Server Deployment Packages
- Installing a Device Server
- Starting and Stopping a Server
- Viewing Server Properties
- Monitoring Server Status

Starting and Stopping a Server

You can start and stop a device server from the Navigation Window of the Avalanche Console.

To restart a server:

- From the Navigation Window, right-click the server you want to restart and select **Start Device Server**.

To stop a server:

- From the Navigation Window, right-click the server you want to stop and select **Stop Device Server**.

Viewing Server Properties

You can view server properties from the Navigation Window of the Avalanche Console if you have permissions. Server properties include the version of the server, the date the server was started and the status of the server (Running or Stopped) and licensing information.

To view Server properties:

- From the Navigation Window, right-click the server you want view properties for and select the **Mobile Device Server Properties** option.

Monitoring Server Status

When you select a server location in the Navigation Window, you can view server information on the **Device Server Status** tab. You cannot modify any information in this tab.

The following information displays in the columns:

- **Region**. Lists the region to which the server is assigned.
- **Location**. Lists the location (machine name) where the server resides.
- **Address**. Lists the IP address of the server location.
- **Version**. Specifies the version of server deployed to the location.

- **Status**. Indicates the current status of the Server.

🔴 Indicates the Server is currently offline.

🟢 Indicates the Server is currently online and running.

- **Synchronized**. Displays the status of the server synchronization.

➡ Indicates changes have been made but are not yet deployed to the Server.

✓ Indicates changes have been deployed but are not yet applied to the Server.

✅ Indicates the Server is up-to-date with the latest changes.

- **Blackout**. Displays the Server blackout window status.

⬅ Indicates that the Server is not currently in a blackout window.

➡ Indicates the Server is currently in a blackout window and not available.

Managing Group Locations

Group locations are groups of mobile devices that connect to the same server. Group locations allow increased flexibility for assigning different profiles at the same server location. A group location must be created in a server location where there is a mobile device server. Avalanche uses selection criteria to determine which devices belong to each group location.

NOTE: An exception is a group location that has sub-locations. It does not use selection criteria. Instead, these "parent" groups display all of the devices that are included in the sub-locations.

A device can belong to more than one group location concurrently. If a device is included in more than one group location, it will use the profiles from the highest priority location. Locations are assigned priority as they are created, so the first location you create has the highest priority.

When you right-click a group location, you have the option to copy or delete it.

To create a group location:

1 Right-click the location where you want to place the group location and select **Create Group Location**.

The *New Group Location* dialog box appears.

2 Type a name for the group location.

3 If you do not want inherited profiles and device groups to be visible, enable the **Hide inherited profiles and device groups** option.

4 Use the Selection Criteria Builder to configure unique selection criteria for the group location.

5 When you are finished, click **OK**.

A group location appears under the server location. The mobile devices meeting the specified selection criteria will be assigned to the group location. View the mobile devices in the group by selecting the group and then viewing the device inventory.

Applying Profiles to Locations

Once you have established your locations and created profiles, you can apply profiles to your network. A profile applies settings for your devices or server. If you do not assign the profiles you create to locations, the settings in those profiles will not be applied.

When you assign a profile to a location, it is also applied to any sub-locations and their devices. When this happens, the profile is said to be inherited. For information on excluding profiles that have been inherited, see Editing Exclusions on page 49.

Profiles are applied to the devices based on the selection criteria for the profile and the priority in which the profiles are listed in the Avalanche Console. Each profile can have selection criteria that define which devices can use the profile. A profile can be assigned additional selection criteria when it is applied to a location. This may be useful when a single location requires specialized or additional criteria. For information on selection criteria, see Using Selection Criteria on page 163.

For a general description of the types of profiles available, see Getting Started on page 3.

To apply a profile to a location:

1 Select the location where you want to apply the profile from the Navigation Window.

2 Select the **Properties** tab.

3 Click **Apply** on the **Applied Profiles** tab.

4 From the list that appears, select the profile you want to apply and click **OK**.

The Application Selection Criteria dialog box appears.

5 Use the Selection Criteria Builder or type the selection criteria in the dialog box, if desired, and click **OK**.

The profile is added to the location.

6 Save your changes.

The assigned profile will be deployed.

To view where a profile has been applied:

1 From the **Profiles** tab, select the profile you want to view.

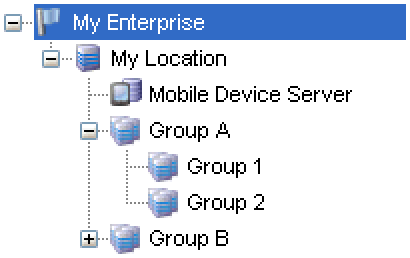
2 Click the **Applied Locations** tab. You cannot change the information from this tab. This tab displays the following information:

- **Parent Path**. Displays the parent location, if there is one.
- **Group**. The name of the location where the profile is applied.
- **Selection Criteria**. Any selection criteria that are applicable at the location where the profile is applied.

Editing Exclusions

When you apply profiles to a location, the Avalanche Console applies the configurations to all nested locations within that location. That profile is considered an inherited profile. However, you can exclude an inherited profile from a location. The profile will still appear in the **Applied Profiles** tab, but will not be applied to any servers or devices. The profile will also be excluded from any associated sub-locations.

For example:



Navigation Window

When a profile is applied at My Enterprise, it is also applied to all sub-locations. However, if it is excluded at Group A, the profile will also be excluded from Group 1 and Group 2.

When a profile has been excluded from a parent location, you can allow a sub-location to apply it. Using the above example, you could reapply a profile to Group 1 that has been excluded at Group A. (It would still be excluded at Group 2.)

To exclude an inherited profile:

1 From the Navigation Window, select the location at which you want to exclude an inherited profile.

2 Select the **Properties** tab.

3 On the **Applied Profiles** tab, click **Edit Exclusions**.

4 Enable the **Excluded** check box for the inherited profile you want to exclude.

5 Click **Save**.

The profile will be excluded, but will still appear in the **Applied Profiles** tab for all sub-locations.

To reapply an inherited profile:

1 From the Navigation Window, select the location at which you want to re-apply an inherited profile.

2 Select the **Properties** tab.

3 On the **Applied Profiles** tab, click **Edit Exclusions**.

4 Disable the **Excluded** check box for the inherited profile you want to reapply.

5 Click **Save**.

The profile will be applied for the selected location. It will also be inherited as an applied profile, rather than as an excluded profile.

Chapter 6: Managing Network Profiles

A network profile is used to configure devices for your network. The profile contains information such as gateway addresses, subnet masks, WWAN settings, and encryption and authentication information. You can also use a network profile to assign IP addresses to your devices. Once the wireless devices are configured with the values from the network profile, you can manage the devices through the Avalanche Console.

You can schedule a specific time for a network profile change to take effect. By default, network settings take effect when the profile is enabled. However, you can configure the date and time for the settings to take effect.

The **Authorized Users** button allows you to assign privileges for a profile to a user that does not have rights for that profile. This allows you to give a user permission for one specific profile, rather than all profiles of a specific type. Users that already have permission for the profile will not appear in the list of available users. For information about creating users and assigning permissions, see Managing User Accounts on page 35.

This section contains the following topics:

- Creating Network Profiles
- Configuring General Settings for Network Profiles
- Configuring Scheduled Settings
- Exporting Profiles for Configuring Enablers

Creating Network Profiles

A network profile allows you to control network settings for mobile devices. The profile must be enabled and applied to a location and then it will be used by all devices meeting the profile's selection criteria. The home location for the profile is the location you have selected when you create the profile.

To create a network profile:

1 From the **Profiles** tab, click **Add Profile**.

The Add Profile Wizard appears.

2 Select the **Network Profile** option and click **Next**.

3 Type a **Name** for the profile and set the status to either **Enabled** or **Disabled**. Click **Next**.

4 Use the Selection Criteria Builder to create selection criteria for the profile. Click **Next**.

5 Confirm that the information is correct and click **Finish**.

The profile is created and can be configured.

Configuring General Settings for Network Profiles

Once you have created a network profile, you can configure the IP address pools, status, and whether the profile overrides the settings on the mobile device.

Network profiles allow you to assign IP addresses to your wireless devices from a list of IP addresses called an IP address pool. You can create IP address pools for mobile devices and/or infrastructure devices.

Selection criteria define which mobile devices are managed by the profile. Dynamic selection criteria are defined by Avalanche and apply to a device’s encryption and authentication support. For detailed information about using selection criteria, see Using Selection Criteria on page 163.

To add addresses to an IP address pool:

1. From the **Profiles** tab, select the profile from the Profile List.
2. Click **Edit**.
3. In the **Network Profile** tab, click **Manage IP Address Pools**.

   The *IP Address Pools* dialog box appears.

   - In the **Start** text box, type the lowest number you wish to include in your pool.

     For example:
     192.168.1.1 (for static addresses)
     0.0.0.1 (for addresses with a Server address mask)

   - In the **End** text box, type the highest number you wish to include in your pool.

     For example:
     192.168.1.50 (for static addresses)
     0.0.0.50 (for addresses with a Server address mask)

   - If you desire the addresses in the range to be masked with the Server address, enable the **Mask With Server Address** checkbox and enter the mask.

     For example:
     0.0.0.255

   - Click **Add** to add the IP addresses to the IP address pool.

     The available addresses and the mask will appear in the table to the right. This list will display all entered addresses, including those already assigned.

   - Click **OK** to return to the **Network Profiles** tab.

4 Save your changes.

To enable a network profile:

1 From the **Profiles** tab, select the profile from the Profile List.

2 Click **Edit**.

3 In the **Network Profile** tab, select **Enabled**.

4 If you want the settings on the network profile to override any manual IP settings on the device, enable the **Override Settings on Mobile Devices** option. If the profile is configured to override, it overrides each time the device connects. This option is only available when the **Manage WLAN IP** option is enabled.

5 Save your changes.

The network profile is now enabled.

Configuring Scheduled Settings

From a network profile, configure WLAN IP settings, WLAN security settings, and WWAN settings. These configurations can be scheduled to start at a specific time, so they are considered scheduled settings.

When you configure WLAN IP, WLAN, and WWAN settings, either make the changes take effect immediately or select the start time for those settings to take effect. Once the settings take effect, if there is more than one network profile enabled and applied at a location, the network profile with the highest priority will be the profile that is applied on your devices.

NOTE: Old Enablers don't store scheduled settings. They will receive the new network settings the first time they connect with the server after the scheduled start time.

This section contains information on the following configuration options:

- Configuring WLAN IP Settings
- Configuring WLAN Settings
- Configuring WWAN Settings

Configuring WLAN IP Settings

With a network profile, you can configure WLAN IP settings for your devices and schedule when those settings will be applied. The options include:

Manage IP Assignment Allows you to manage the IP addresses assigned to your mobile devices. You can choose to use either a DHCP server or IP pool assignment.

Server Address Provides mobile devices with the server address. You can provide the address, DNS name, or use the server location value. If you choose to use the server location value, the mobile devices use the mask/address of the server to which the device connects.

If using a DNS name, click **Validate** to ensure the address can be resolved. If the mobile device profile has provided a server address, that address will override whatever is provided by the network profile.

Gateway Address Provides mobile devices with the address for the node that handles traffic with devices outside the subnet. You can provide the address, DNS name, or use the server location value.

Subnet Mask Provides mobile devices with the subnet mask. You can provide the address, DNS name, or use the server location value.

Domain Name System (DNS) Provides the domain name to the devices.

Primary DNS Provides mobile devices with the IP address for a primary DNS.

Secondary Provides mobile devices with the IP address for a secondary DNS (used if the primary DNS is unavailable).

Tertiary Provides mobile devices with the IP address for a tertiary DNS (used if the primary and secondary DNS are unavailable).

(Infrastructure Device IP Settings) Manage IP Assignment Allows you to manage the IP addresses assigned to your infrastructure devices with a DHCP server.

To configure WLAN IP settings for a network profile:

1 From the **Profiles** tab, select the profile from the Profile List.

2 Click **Edit**.

3 In the **Network Profile** tab, enable the **Manage WLAN IP** option.

4 In the Scheduled Settings area, select the date and time you want the settings to take effect from the drop-down list.

- If you would like to add another start time to the list, click **Add** and select the date and time you want the settings to be applied.
- If you want to add another start time using the settings currently configured, click **Clone**.
- If you want to change the currently selected start time, click **Edit**.

5 Select the **WLAN IP Settings** tab.

6 Configure the WLAN IP settings as desired.

7 Save your changes.

Configuring WLAN Settings

From a network profile, you can configure WLAN settings for your devices. These settings will be deployed with the profile and applied on the device. The options include:

SSID This option provides wireless devices with the SSID. The SSID is a service set identifier that only allows communication between devices sharing the same SSID.

Encryption This option allows you to enable encryption between your devices and the server. You have the following options for encryption:

Use Profile/None. Devices do not encrypt information.

WEP. Wired Equivalent Privacy is an encryption protocol using either a 40- or 128-bit key which is distributed to your devices. When WEP is enabled, a device can only communicate with other devices that share the same WEP key.

Avalanche only tracks the WEP keys that were assigned to devices through the Avalanche Console. Consequently, WEP keys displayed in the Console might not match the keys for a wireless device if you modified them from outside of Avalanche.

WEP Key Rotation. WEP key rotation employs four keys which are automatically rotated at specified intervals. Each time the keys are rotated, one key is replaced by a new, randomly generated key. The keys are also staggered, meaning that the key sent by an infrastructure device is different than the one sent by a mobile device. Because both infrastructure and mobile devices know which keys are authorized, they can communicate securely without using a shared key.

WEP key rotation settings are not recoverable. If the system hosting the Server becomes unavailable (for example, due to a hardware crash), you must re-connect serially to each mobile device to ensure that WEP key settings are correctly synchronized.

WPA (TKIP). WPA, or Wi-Fi Protected Access, uses Temporal Key Integrity Protocol (TKIP) to encrypt information and change the encryption keys as the system is used. WPA uses a larger key and a message integrity check to make the encryption more secure than WEP. In addition, WPA is designed to shut down the network for 60 seconds when an attempt to break the encryption is detected. WPA availability is dependent on some hardware types.

WPA2 (AES). WPA2 is similar to WPA but meets even higher standards for encryption security. In WPA2, encryption, key management, and message integrity are handled by CCMP (Counter Mode with Cipher Block Chaining Message Authentication Code Protocol) instead of TKIP. WPA2 availability is dependent on some hardware types.

WPA2 Mixed Mode. WPA Mixed Mode allows you to use either AES or TKIP encryption, depending on what the device supports.

Custom Properties

This option allows you to add custom properties to the devices that receive this network profile. By clicking **Edit/View**, you can add, edit, and delete properties and their values.

Authentication Settings

The authentication types available depends on the encryption you select and what is supported by your Enabler and hardware. Authentication options include:

EAP. Extensible Authentication Protocol. Avalanche supports five different EAP methods:

PEAP/MS-CHAPv2. (Protected Extensible Authentication Protocol combined with Microsoft Challenge Handshake Authentication Protocol) PEAP/MS-CHAPv2 is available when you are using encryption. It uses a public key certificate to establish a Transport Layer Security tunnel between the client and the authentication server.

PEAP/GTC. (Protected Extensible Authentication Protocol with Generic Token Card) PEAP/GTC is available when you are using encryption. It is similar to PEAP/MS-CHAPv2, but uses an inner authentication protocol instead of MS-CHAP.

EAP_FAST/MS-CHAPv2.(Extensible Authentication Protocol - Flexible Authentication via Secure Tunneling combined with MS-CHAPv2) EAP-FAST uses protected access credentials and optional certificates to establish a Transport Layer Security tunnel.

EAP_FAST/GTC. (Extensible Authentication Protocol - Flexible Authentication via Secure Tunneling with Generic Token Card) EAP-FAST uses protected access credentials and optional certificates to establish a Transport Layer Security tunnel.

TTLS/MS-CHAPv2. (Tunneled Transport Layer Security with MS-CHAPv2) TTLS uses public key infrastructure certificates (only on the server) to establish a Transport Layer Security tunnel.

Pre-Shared Key (PSK). PSK does not require an authentication server. A preset authentication key (either a 8-63 character pass phrase or a 64 character hex key) is shared to the devices on your network and allows them to communicate with each other.

LEAP. (Lightweight Extensible Authentication Protocol) LEAP requires both client and server to authenticate and then creates a dynamic WEP key.

To configure WLAN settings:

1 From the **Profiles** tab, select the profile from the Profile List.

2 Click **Edit**.

3 In the **Network Profile** tab, enable the **Manage WLAN** option.

4 In the Scheduled Settings region, select the date and time you want the settings to take effect from the drop-down list.

- If you would like to add another start time for different settings to the list, click **Add** and select the date and time you want it to begin.

- If you want to add another start time using the settings currently configured, click **Clone**.
- If you want to change the currently selected start time, click **Edit**.

5. Select the **WLAN Settings** tab.
6. Configure the WLAN settings as desired.

- If you select WEP keys, select either **40 Bit** or **128 Bit** key size and create the keys. The keys you enter must be in hex format. A 40-bit key should have 10 characters and a 128-bit key should have 26 characters. To change the value for one of the hex digits in a key, type a new value (using 0-9 and A-F) in the appropriate text box. An example of a 40-bit key would be: 5D43AB290F.
- If you select WEP key rotation, click the **Settings** button to configure the encryption algorithm, starting date and time, rotation interval, and a pass code.
- If you select PEAP or TTLS authentication, enable **Validate Server Certificate** to provide a path to the server certificate.
- If you select EAP_FAST, provide a path and a password to a PAC (Protected Access Credential). This will provision devices with the PAC file.
- If you select an EAP method or LEAP, configure whether the **User Credentials** are **Prompt** (user is prompted when credentials are required) or **Fixed** (credentials are automatically sent when required).

NOTE: The availability of authentication settings is dependent on what encryption method you have selected.

7. Save your changes.

Configuring WWAN Settings

From a network profile, you can configure WWAN settings for your devices with WWAN capabilities. These settings will be deployed with the profile and applied on the device. The options include:

Connection Name A name for the connection.

Connection Type There are two connection types available for your WWAN-enabled devices:

APN (GPRS / EDGE / 3G). Provide a domain (Access Point Name) if you are using this type of connection. An example of an APN would be: wap.cingular

Dial-Up. Type the number to be dialed by the modem. This does not correspond to the number of the device.

Credentials Sets the **Username**, **Password**, and **Domain** credentials for the connection when they are necessary.

Custom Properties This option allows you to add custom properties to the devices that receive this network profile. By clicking **Edit/View**, you can add, edit, and delete properties and their values.

Enable TCP/IP header compression Improves the performance of low-speed connections.

Enable software compression Improves the performance of low-speed connections.

Activate phone as needed Allows the Enabler to activate the device's phone if a WWAN connection is necessary.

Dial broadband connection as needed Allows the Enabler to attempt a WWAN connection if a LAN connection cannot be established.

Public IP address for Avalanche Server Provides the IP address of the enterprise server that is accessible from a WWAN. This is necessary if the device tries to contact the server when connecting from outside of the server's local network.

To configure WWAN settings:

1 From the **Profiles** tab, select the network profile from the Profile List.

2 Click **Edit**.

3 In the **Network Profile** tab, enable the **Manage WWAN** option.

4 In the Scheduled Settings region, select the date and time you want the settings to take effect from the drop-down list.

- If you would like to add another start time for different settings to the list, click **Add** and select the date and time you want it to begin.
- If you want to add another start time using the settings currently configured, click **Clone**.
- If you want to change the currently selected start time, click **Edit**.

5 Select the **WWAN Settings** tab.

6 Configure the WWAN settings as desired.

7 Save your changes.

Exporting Profiles for Configuring Enablers

You can export profiles from the Avalanche Console to use when you are installing Enablers on mobile devices. Avalanche allows you to export a network profile, a mobile device profile, or both. After you have configured the profile, export it and save it to the computer from which you are installing the Enablers. Using an exported profile to configure the Enabler allows you to quickly and easily connect the device to the Mobile Device Server.

To export profiles for Enabler configuration:

1 From the Console, click **File > Export > Profiles for Mobile Device Configuration**.

2 The *Export Profiles For Mobile Devices* dialog box appears. From the lists, select the network profile and/or mobile device profile you want to export.

3 In the **Encryption Password** text box at the top of the dialog box, type a password that will be required in order to import the profiles.

4 Click **OK**.

5 The *Save Export File* dialog box appears. Select the location where you want to save the file and click **Save**.

6 If you are using a different computer to install Enablers, move the export file to the computer you are using for Enabler installation.

7 Follow the instructions in the *Enabler User Guide* to import the profile settings and apply them to the Enabler.

Chapter 7: Managing Scan to Configure Profiles

Avalanche allows you to create Scan to Configure profiles (barcode profiles) that are configured with network settings. You can then print the profiles as barcodes and a mobile device with an Enabler (3.5 or later versions) can scan these barcodes. The information from the scanned barcodes is used to configure the network settings on the device, such as the IP address, subnet mask, and gateway. The length of the barcode is configurable.

This section contains instructions for the following tasks:

- Creating a Scan to Config Profile
- Configuring a Scan to Config Profile
- Printing Barcodes
- Scanning Barcodes

Once you have configured your Scan to Config profile, you can apply that profile to any location in the Console. When you apply a profile to a location, the users who have permissions for that location can make changes as necessary. For more information about assigning Scan to Config profiles to a location, see Applying Profiles to Locations on page 48.

Creating a Scan to Config Profile

A Scan to Config profile is used to configure network settings, device properties, and registry keys on a mobile device. Once you have configured the profile from the Avalanche Console, you can print the barcodes and then use a device to scan the barcodes. The home location for the profile is the location you have selected when you create the profile.

NOTE: WEP key rotation is not supported for Scan to Config profiles.

To create a Scan to Config profile:

1. From the **Profiles** tab, click **Add Profile**.

   The Add Profile Wizard appears.

2. Select the **Scan To Config Profile** option and click **Next**.
3. Type a **Name** for the profile and click **Next**.
4. Confirm that the information is correct and click **Finish**.

   The profile is created and can be configured.

Configuring a Scan to Config Profile

Configuring Scan to Configure profiles allows you to select the network information you want the mobile devices to use. Use information from a network profile or add separate details such as custom properties or registry keys.

The **Authorized Users** button allows you to assign privileges for a profile to a user that does not have rights for that profile. This allows you to give a user permission for one specific profile, rather than all profiles of a specific type. Users that already have permission for the profile will not appear in the list of available users. For information about creating users and assigning permissions, see Managing User Accounts on page 35.

- Configuring Scan to Config Settings
- Adding Custom Properties for Scan to Config Profiles
- Adding a Registry Key to a Scan to Config Profile

Configuring Scan to Config Settings

When you create a Scan to Config profile, you can configure the maximum barcode length and network settings such as the IP address, subnet mask, and gateway. You also have the option of using the network settings contained in a network profile.

You can also configure a passcode for the profile. The passcode is used to encrypt the barcode data. The mobile device user must enter the same passcode when they are using scan to configure so that the Enabler can decrypt the barcode data when it is scanned. If the user does not input the correct passcode at the device, then the barcode data is not decrypted and the scan registers as invalid.

When a mobile device scans the barcodes created from a Scan to Config profile, the mobile device receives the network settings configured within that barcode.

To configure the settings:

1. From the **Profiles** tab, select the Scan to Config profile you want to configure.

   Click **Edit**.

2. To encrypt the barcodes, type a passcode in the **Encryption Passcode** text box and confirm it in the **Confirm Passcode** text box.

3. Set the **Maximum Barcode Length**. This defines how many characters are encoded in each barcode.

4. If you have already configured a network profile and want to use the settings from that profile, enable **Use settings from network profile**. Choose which start time to use by

enabling either **Use currently active Epoch** or **Use selected Epoch** and selecting the start time from the drop-down list.

5 If you want to set a static IP address for the device, enable **Assign static IP address** and type the **IP Address**, **Subnet Mask** and **Gateway** in the appropriate boxes.

6 Click **Save** to save your changes.

The profile is updated with the configured network settings.

Adding Custom Properties for Scan to Config Profiles

Custom properties allow you to define specific properties that you want applied to the mobile device. An example of a custom property is `location = Chicago`. Once a custom property has been applied to a device, you can use it as a selection criterion. You can apply custom properties to mobile devices through a Scan to Config profile.

To add a custom property:

1 From the **Profiles** tab, select the profile you want to configure.

2 Click **Edit**.

3 In the Properties area, click **Add**.

The *Edit Property* dialog box appears.

4 Type the **Name** and **Value** in the text boxes.

5 Select whether the property is a Device or Network property.

NOTE: Most properties will be device properties.

6 Click **OK**.

The task is added to the list in the Properties area. The property will be added when the profile is applied on the mobile device.

7 Save your changes.

Adding a Registry Key to a Scan to Config Profile

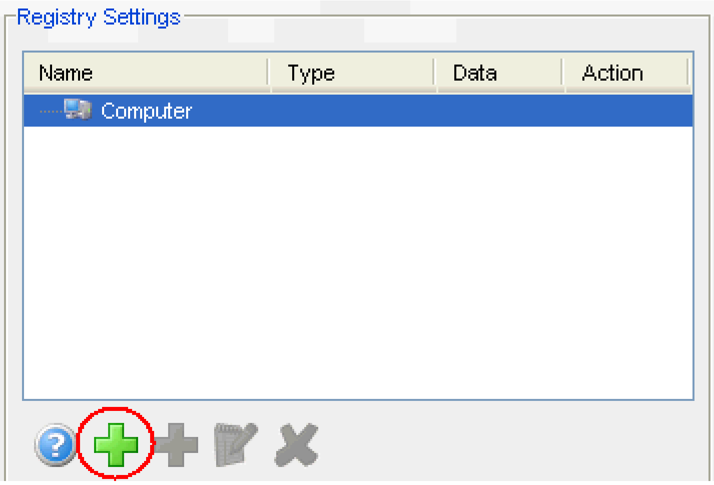
You can add registry keys and values to a profile. These keys will be added to the device registry when the profile is applied.

To add a registry key:

1 From the **Profiles** tab, select the profile you want to configure.

2 Click **Edit**.

3 In the Registry Settings area, select where you want to add the key and click **Add**.

4 

Registry Settings area

NOTE: The **Add a new registry value** button will not be active until something is selected.

The *Add Registry Key* dialog box appears.

5 Select the **Parent Key** from the drop-down list.

6 Type the **Name** of the new key in the text box.

7 Click **OK**.

The key is added to the profile and you can configure its value.

To add a value to a registry key:

1 From the **Profiles** tab, select the profile you want to configure.

2 Click **Edit**.

3 In the Registry Settings area, select the key to which you want to add a value and click **Add a new registry value**.

The *Add Registry Value* dialog box appears.

4 Type the **Name** of the new value in the text box.

5 Select the **Type** from the drop-down list.

6 Type the **Data** in the text box.

7 Click **OK**.

The task is added to the list in the Registry Settings area. The value will be added when the profile is applied on the mobile device.

Printing Barcodes

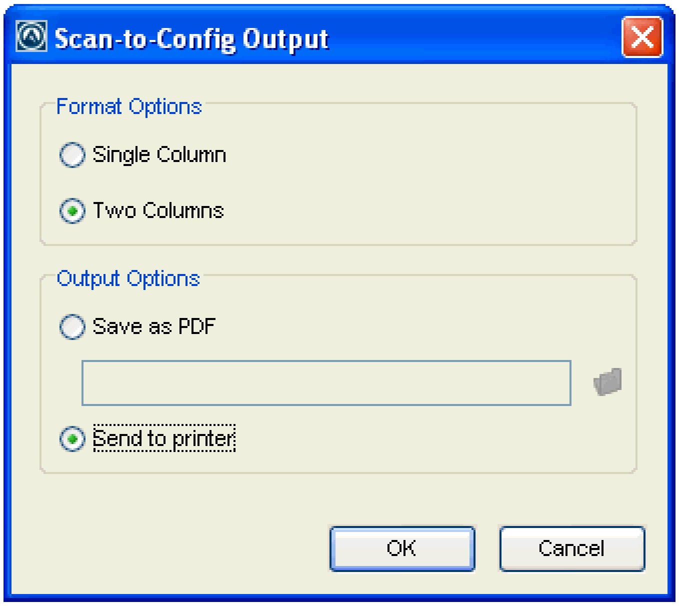
Once you have created and configured a Scan to Config profile, print the set of barcodes for the profile. You can then scan the barcodes with a mobile device to change the network settings on that device. You have the option to print the barcodes to a printer or to a `.pdf` file.

To print a Scan to Config profile as a barcode:

1 From the **Profiles** tab, select the Scan to Config profile you want to print.

2 From the **Scan-to-Config Profile** tab, click **Print Barcodes**.

The *Scan-to-Config Output* dialog box appears.



Scan-to-Config Output

Format Options

○ Single Column

● Two Columns

Output Options

○ Save as PDF

● Send to printer

Scan-to-Config Output dialog box

3 If you want to print the barcodes to a `.pdf` file, select **Save as PDF**, type the name and location for the file in the text box and click **OK**. Or, use the file icon to browse to the location where you want to store the file.

- Or -

If you want to print the barcodes on a printer, select **Send to printer** and click **OK**.

4 If you selected **Save as PDF**, the barcodes are saved in the specified location. If you selected **Send to printer**, the *Print* dialog box appears. Configure the printing options as desired and click **OK** to print the barcodes.

Scanning Barcodes

To scan and apply a Scan to Config profile, open the *Scan Configuration* dialog box on the mobile device. Use the mobile device to scan the barcodes in any order. When all the barcodes are scanned, the Enabler applies the configurations on the device.

The barcodes are numbered and contain data that tell the device how many barcodes are in the set. This allows you to scan the barcodes out of sequence. Settings are applied after all the barcodes are scanned.

To scan the configuration:

1 From the Enabler on the mobile device, select **File > Scan Config**.

The *Scan Configuration* dialog box appears.

2 Enter the passcode (if configured) and begin scanning.

As you scan the barcodes you will be able to view the status, the number of remaining barcodes, and the number of scanned barcodes.

Once you have scanned all available barcodes, the network settings are applied and the *Scan Configuration* dialog box closes.

Chapter 8: Managing a Mobile Device Server

A Mobile Device Server is server software that lets you remotely manage and configure mobile devices.

Through a Mobile Device Server profile, Avalanche allows you to manage the following settings for your mobile device servers and mobile devices:

- **Administrative Settings**. These settings include server resources, licensing, user files, data collection and terminal ID generation.
- **Connection Settings**. You can configure when the servers and devices are allowed connections and how connections should be established.
- **Security Settings**. Avalanche supports encryption and authentication methods to help keep your information secure and prevent unauthorized mobile devices from accessing your network.

This section provides information about managing mobile device servers. It contains the following tasks:

- Configuring a Mobile Device Server Profile
- Viewing Mobile Device Server Licensing Messages
- Reinitializing the Mobile Device Server
- Retrieving Mobile Device Log Files
- Viewing Server Properties
- Starting and Stopping a Server
- Monitoring Server Status

Configuring a Mobile Device Server Profile

A Mobile Device Server profile allows you to configure logging, device connections, secondary server support, updates and other settings for the mobile device server.

See the following sections for information about configuring mobile device server profiles:

- Mobile Device Server Profile General Configuration
- Configuring Blackouts
- Restricting Simultaneous Device Updates
- Scheduling Profile-Specific Device Updates

The **Authorized Users** button allows you to assign privileges for a profile to a user that does not have rights for that profile. This allows you to give a user permission for one specific profile, rather than all profiles of a specific type. Users that already have permission for the profile will not appear in the list of available users. For information about creating users and assigning permissions, see Managing User Accounts on page 35.

Mobile Device Server Profile General Configuration

The general settings for a mobile device server profile include security, terminal IDs, logging, licenses, secondary servers, and settings for how the server handles mobile device information.

Server Security

Avalanche supports encryption and authentication methods to prevent unauthorized mobile devices from accessing your network.

Avalanche offers two options for encryption:

Transport Encryption Matches the level of encryption with the capacity of the mobile device. Communication between the mobile device server and mobile devices will be encrypted to the degree possible.

Strict Transport Encryption Uses AES encryption for information. Only Enablers that support AES encryption (Enabler 5.0 or newer) will be able to connect to the server when strict transport encryption is enabled.

Avalanche offers two options for authentication:

Mobile Device Authentication Requires mobile devices to initially connect to the server through a serial connection (RS232) and receive an authentication key. When you enable this option, the Mobile Device Server will challenge any device attempting to connect to the server for a password. If the mobile device does not have the correct password, the Mobile Device Server will not allow a TCP/IP connection.

If an environment involves mobile devices roaming from one server to another, it is strongly recommended that you do **NOT** activate mobile device authentication.

Server Authentication Forces mobile devices to communicate with a single known server. Mobile devices must first connect to the network through a serial connection (RS232) to receive information about the server with which they are allowed to communicate. When you enable this option, the mobile device will challenge any Mobile Device Server attempting contact for a password. If the Mobile Device Server does not have the correct password, the mobile device will not allow a TCP/IP connection.

Both authentication options require mobile devices to connect to the network through a serial connection to receive authentication information before they will be allowed to connect wirelessly. Authentication passwords are set through a dialog box. This dialog box appears when the options are first enabled, or you can click **Set Password** next to the desired authentication option.

Server Resources

A Mobile Device Server profile allows you to configure the following aspects of server resources:

Reserved Serial Ports Configures a Mobile Device Server to automatically listen for mobile devices using the serial ports on a remote system. Only one application on a host system can maintain ownership of a serial port. If the Mobile Device Server controls the serial ports on the host system, then no other application will be able to use them. Likewise, if another application on the host system (for example, Microsoft ActiveSync) has control of the serial ports, then the Mobile Device Server will not be able to use them. If you list more than one port, separate them with semicolons. For example: `COM1;COM2`

Serial connections are required to implement Mobile Device and Server Authentication methods.

Terminal ID Range The Mobile Device Server assigns each device a terminal ID the first time that the device communicates with the Mobile Device Server. The number the Mobile Device Server selects is the lowest number available in a range of numbers you can configure.

You also have the option to use a C-style format to create a template for the terminal ID range. For example, `Seattle-%d` would generate IDs such as `Seattle-4`, and `Seattle-%05d` would generate IDs such as `Seattle-00004`.

To change a terminal ID that has already been assigned to a device, click **Edit Terminal ID** on the **Properties** tab of the *Mobile Device Details* dialog box.

Logging The current Avalanche log file is saved as `Avalanche.log` to the `<Avalanche Installation Directory>\Service` directory. Once the current log file reaches the maximum size, it is saved as `Avalanche.log.<num>` (where `<num>` is a number between 000 and 999), and a new `Avalanche.log` file is created.

The following logging options are available on a Mobile Device Server:

Critical. Writes the least information to the log file, reporting only critical errors that have caused the Mobile Device Server to crash.

Error. Writes errors that are caused by configuration and/or communication problems as well as and Critical messages to the log file.

Warning. Writes Critical messages, Error messages, and indicates possible operational problems in the log file.

Info. The recommended logging level. This logging level documents the flow of operation and writes enough information to the log file to diagnose most problems.

Debug. Writes large amounts of information to the log file that can be used to diagnose problems.

Max Log Size. Specifies the maximum size (in kB) of the log file before beginning a new file.

Avalanche Licensing

A Mobile Device Server profile has the following licensing options:

Release Device licenses after _ days of inactivity Sets how long the Mobile Device Server will wait before it returns a license for an inactive device to the pool of unused licenses.

Enable Fast-Expiration Allows the server to terminate the license lease after the specified time period without contacting the device. If this option is disabled, the server will attempt to contact any devices that have not communicated with the server in the configured time period. If the device does not respond, the license lease will be terminated.

Secondary Servers

You can configure the following connection settings:

Enable Secondary Server Support Authorizes the mobile device to attempt to connect a secondary Mobile Device Server if the primary server is not available. You can click on the **Secondary Servers** button to configure the list of secondary servers and their addresses/hostnames.

Override Connection Timeout Settings The Mobile Device Server profile settings will override any connection settings configured on the mobile device.

Server Connect Timeout Configures the number of seconds the mobile device will wait between attempts to connect to the current mobile device server.

Server Advance Delay Configures the number of seconds before the device advances to the next server. Ensure the **Server Advance Delay** setting is a multiple of the **Server Connect Timeout** setting. For example, if you have your **Server Connect Timeout** set to 10 seconds and the **Server Advance Delay** set to 60 seconds, the mobile device will attempt to contact the server six times (every 10 seconds for 60 seconds).

Device Settings

You can configure settings from the Mobile Device Server profile that affect how the mobile device interacts with the Mobile Device Server. These settings include:

Device Chat Timeout Sets the time in minutes that both the device and the server will wait before dropping a chat session.

Device Comeback Delay Sets the time in minutes that the mobile device will wait before trying to connect to the Mobile Device Server after a connect rejection (i.e., if the device tried to connect during an exclusion window).

Enable Device Caching Enables mobile devices to download software package files from other mobile devices on the same subnet instead of from the Mobile Device Server. Device caching reduces the demands on the Mobile Device Server during software package synchronization. For information about implementing device caching, call Wavelink Customer Support.

Enable Persistent Connection Causes each device to create a persistent TCP connection with the Mobile Device Server. This ensures communication in an environment where UDP packets cannot reliably be transmitted.

Enable SMS Notification Allows the Mobile Device Server to use SMS notification if a device cannot be reached by UDP packets. This option is only available for devices with a phone, and must also be configured on the device and at the enterprise server. For more information on enabling SMS notification, call Wavelink Customer Service.

Suppress GPS Data Collection Causes the Mobile Device Server to discard GPS data collected from the devices without sending it to the enterprise server.

Suppress Radio Statistics Data Collection Causes the Mobile Device Server to discard radio statistics data collected from the devices without sending it to the enterprise server.

Suppress Realtime Properties Data Collection Causes the Mobile Device Server to discard realtime properties data collected from the devices without sending it to the enterprise server.

Suppress Software Profile Data Collection Causes the Mobile Device Server to discard software profile data collected from the devices without sending it to the enterprise server.

User Files Upload Path When a package's .PPF file specifies that files are to be uploaded to Home, this option provides the path to Home on the machine local to the Mobile Device Server. If no path is specified, Home is defined as the Mobile Device Server installation directory.

User Files Download Path When a package's .PPF file specifies files that are to be downloaded from Home, this option provides the path to Home on the machine local to the Mobile Device Server. If no path is specified, Home is defined as the Mobile Device Server installation directory.

Configuring Blackouts

To allow you more control over bandwidth usage, Avalanche uses blackout windows and update restrictions in the Mobile Device Server profile. During a server-to-server blackout, the Mobile Device Server is not allowed to communicate with the Enterprise Server. During a device-to-server restriction, the Mobile Device Server is not allowed to communicate with mobile devices.

To create a blackout window:

1 From the **Profiles** tab, select the Mobile Device Server profile from the Profile List.

2 Click **Edit**.

3 From the **Blackouts and Updates** tab:

- if you want to create a server-to-server blackout window, click the **Add** button in the Server-to-Server Communication Restrictions area.
- if you want to create a device-to-server restriction window, click the **Add** button in the Device-to-Server Communication Restrictions area.

The *Add Blackout Window* dialog box appears.

4 Select the start and end time of the blackout window, and enable the boxes for the days you want the blackout to apply.

NOTE: Blackout windows are scheduled using a 24-hour clock. If you create a window where the start time is later than the end time, the window will continue to the end time on the following day. For example, if you scheduled a window for 20:00 to 10:00 on Saturday, it would run from Saturday 20:00 until Sunday 10:00.

5 Click **OK**.

6 Save your changes.

Restricting Simultaneous Device Updates

You can restrict how many mobile devices can update simultaneously from each server using a Mobile Device Server profile.

To restrict simultaneous device updates:

1 From the **Profiles** tab, select the profile from the Profile List.

2 Click **Edit**.

3 In the **Blackouts and Updates** tab, find the Device Update Settings area.

4 Enable the **Restrict simultaneous device updates to** option and set the maximum number of devices that can update simultaneously.

5 Click **Save**.

Scheduling Profile-Specific Device Updates

From the Mobile Device Server profile, you can schedule profile-specific updates for your mobile devices. When you configure a Mobile Device Server update, you have the following options:

Event type Select a one-time event, a recurring event, or a post-synchronization event. A post-synchronization event will take place after each synchronization between the Enterprise Server and the Mobile Device Server. This ensures that each time the Server is updated, the devices are as well.

Time Constraints Set the start time and, if desired, the end time for the event.

Allow the mobile device user to override the update Creates a prompt when the update is scheduled to occur that allows the mobile device user to override the update.

Delete orphaned packages during the update Causes packages that have been orphaned to be removed from the device. A package is considered orphaned if it has been deleted from the Avalanche Console, if the software profile it belongs to has been disabled, or if the package has been disabled.

Force package synchronization during the update Causes the Mobile Device Server to verify the existence and state of each file of each package individually rather than consulting the meta-file which would normally provide information on those files.

To schedule a profile-specific device update:

1. From the **Profiles** tab, select the profile from the Profile List.

2. Click **Edit**.

3. From the **Blackouts and Updates** tab, click **Add Event**.

   The *Add Scheduled Update* dialog box appears.

4. Select the event type. If you select **Recurring Event**, the **Recurring Period** lists become active. The first list allows you to determine whether the update occurs on either a daily or weekly basis. If you select **Weekly** from this list, the second list becomes active, allowing you to select the day on which the update occurs.

5. Set the start time by clicking the calendar icon to open the *Select a date and time* dialog box. Choose the start time and click **OK**.

NOTE: If you chose a post-synchronization event, the start and stop time options are disabled.

6 If desired, enable the **Stop if not completed by** option. Set the stop time by clicking the calendar icon to open the *Select a date and time* dialog box. Choose the stop time and click **OK**. Selecting an end time is not required. This allows you to create events that recur indefinitely.

7 Enable the other update options as desired.

8 Click **OK**.

When an event is scheduled, it appears in the Device Update Settings List. Once the event has occurred, it will not automatically be deleted from the list. If you want to remove an event from the list, you must select it and click **Remove Event**.

NOTE: Many mobile devices incorporate a sleep function to preserve battery life. If a device is asleep, you must "wake" it before it can receive a server-initiated update from Avalanche. Wake-up capability is dependent on the type of wireless infrastructure you are using and the mobile device type. Contact your hardware and/or wireless provider for details.

Viewing Mobile Device Server Licensing Messages

The Avalanche Console receives messages about license usage from the mobile device server. You can view these messages from the *Device Server Licensing Messages* dialog box. This dialog box provides information about the location where the server resides and the licensing message.

To view licensing messages:

- Click **View > Device Server License Messages**.

The *Device Server Licensing Messages* dialog box appears.

Reinitializing the Mobile Device Server

Reinitializing the mobile device server allows you to restart the server without stopping and starting the service. The server will sync with the Enterprise Server and load any changes it detects, but the service keeps running so you will not lose contact with any devices that are updating.

To reinitialize the Mobile Device Server:

- From the Navigation Window, right-click the mobile device server and select **Reinitialize Mobile Device Server**.

The server contacts the Enterprise Server and downloads any updates.

Retrieving Mobile Device Log Files

You can retrieve mobile device log files stored on the mobile device server. When you retrieve the mobile device server log files, a zip file is created and saved in a location you specify. The logging level and size of the log are configured in the mobile device server profile.

To retrieve mobile device log files:

1. Right-click the mobile device server in the Navigation Window and select **Retrieve log files** from the context menu.

2. In the dialog box that appears, select the location where you want to save the zip file and click **Save**.

   The file is saved. Unzip the file to view the mobile device log files.

Chapter 9: Managing Software Profiles

Software profiles allow you to organize and configure software for deployment to mobile devices. Add software packages to the profile, configure them, and schedule how and when they are installed. When the profile is enabled and applied to a location, the software packages associated with the profile are installed on devices meeting the selection criteria for the profile and packages.

This section contains the following topics:

- Creating Software Profiles
- Managing Software Packages

Creating Software Profiles

Create software profiles to manage how and when software is distributed or updated on mobile devices. Associate software with a profile so that the software is distributed to the devices on a controlled basis.

Once a software profile has been created, you can edit the name, status, and selection criteria. You can also add software packages to the profile. For information on adding and configuring software packages, see Managing Software Packages on page 78.

Selection criteria determine which mobile devices receive the software profile. Only devices that meet the selection criteria for the software profile will receive the software associated with the profile. For information about creating selection criteria, see Building Selection Criteria on page 163.

The **Authorized Users** button allows you to assign privileges for a profile to a user that does not have rights for that profile. This allows you to give a user permission for one specific profile, rather than all profiles of a specific type. Users that already have permission for the profile will not appear in the list of available users. For information about creating users and assigning permissions, see Managing User Accounts on page 35.

The home location for the profile is the location you have selected when you create the profile.

You can create software profiles from the **Profiles** tab or from the **Quick Start** tab.

To create a software profile from the Profiles tab:

1 From the **Profiles** tab, click **Add Profile**.

The *Add Profile Wizard* appears.

2 Select the **Software Profile** option and click **Next**.

3 Type a **Name** for the profile and set the status to either **Enabled** or **Disabled**. Click **Next**.

4 Use the Selection Criteria Builder to create selection criteria for the profile. Click **Next**.

5 Confirm that the information is correct and click **Finish**.

The profile is created and can be configured.

To add a software profile from the Quick Start tab:

1 From the **Quick Start** tab, select **Add Device Software**.

The *Add Device Software Wizard* launches.

2 In the **Create a New Software Profile** text box, enter a name for the profile and then click **Next**.

3 If desired, enable the profile and choose selection criteria for it. Click **Next**.

4 In the Apply the Software Profile screen, you can choose to apply the profile and designate where you want it to be applied. Click **Next** to continue.

5 In the Select a Software Package to Add screen, you can add, create or copy a package to the profile. For information about all these options see Adding a Software Package on page 80.

6 Click **Next**.

The End User License Agreement appears.

7 Enable **Yes I agree** to agree to the license agreement and click **Next**.

8 The Installing the Software Package screen appears and the software is added to the profile. When the package has been installed successfully, click **Next**.

9 The Configure the Software Package screen appears. If desired, enable the software package and configure it using the available utilities.

10 Click **Finish**.

The software profile is created and can be enabled and configured.

Managing Software Packages

A software package is a collection of application files that reside on a mobile device. This includes any support utilities used to configure or manage the application from the Avalanche Console. Each software package usually has default selection criteria that cannot be changed.

The Software Packagesarea on the**Software Profile** tab allows you to add and configure the software packages associated with that software profile. You can enable the package, configure how the package is activated and distributed, and use the package utilities to configure it.

NOTE: You do not need to be in Edit Mode to install or configure software packages. Software package configuration changes are saved to the actual package. However, you must enter Edit Mode to configure any other software profile options.

You can also view the packages currently associated with your software profile. The following details are displayed in the Software Packages List:

Field	Description
Name	Displays the name of the software package.
Status	Displays the enabled/disabled status of the software package.
Size	Displays the file size of the software package.
Type	Displays the type of the software package. Software packages are divided into the following categories: • **Control**. An internally used package specific to the Avalanche Console. A network profile is an example of a control package. • **Application**. These packages install an application which can be run from the Application Menu screen on the mobile device. An example of an application package is the Telnet Client. • **Support**. These packages deliver files and do not add new items to the Application Menu screen on the mobile device. An example of a support package is a package that updates an existing file. • **Auto Run**. These packages automatically run after download but do not appear in the mobile device’s application list. An Enabler Update Kit is an example of an auto run package.
Version	Displays the version of the software package.
Title	Displays the title of the software package.
Vendor	Displays the vendor associated with the software package.
Installed	Displays the date, time, and user for when the package was added to the software profile.
Configured	Displays the date, time, and user for the most recent package configuration.

This section includes the following information:

- Adding a Software Package
- Building New Software Packages

- Creating CAB or MSI Packages
- Copying Software Packages
- Configuring Software Packages with a Utility
- Configuring Software Packages for Delayed Installation
- Peer-to-Peer Package Distribution

Adding a Software Package

Once you create and apply a software profile, add the software packages to that profile. Through the software profile you can configure the software package settings, enable the package, and then deploy the packages to specific mobile devices.

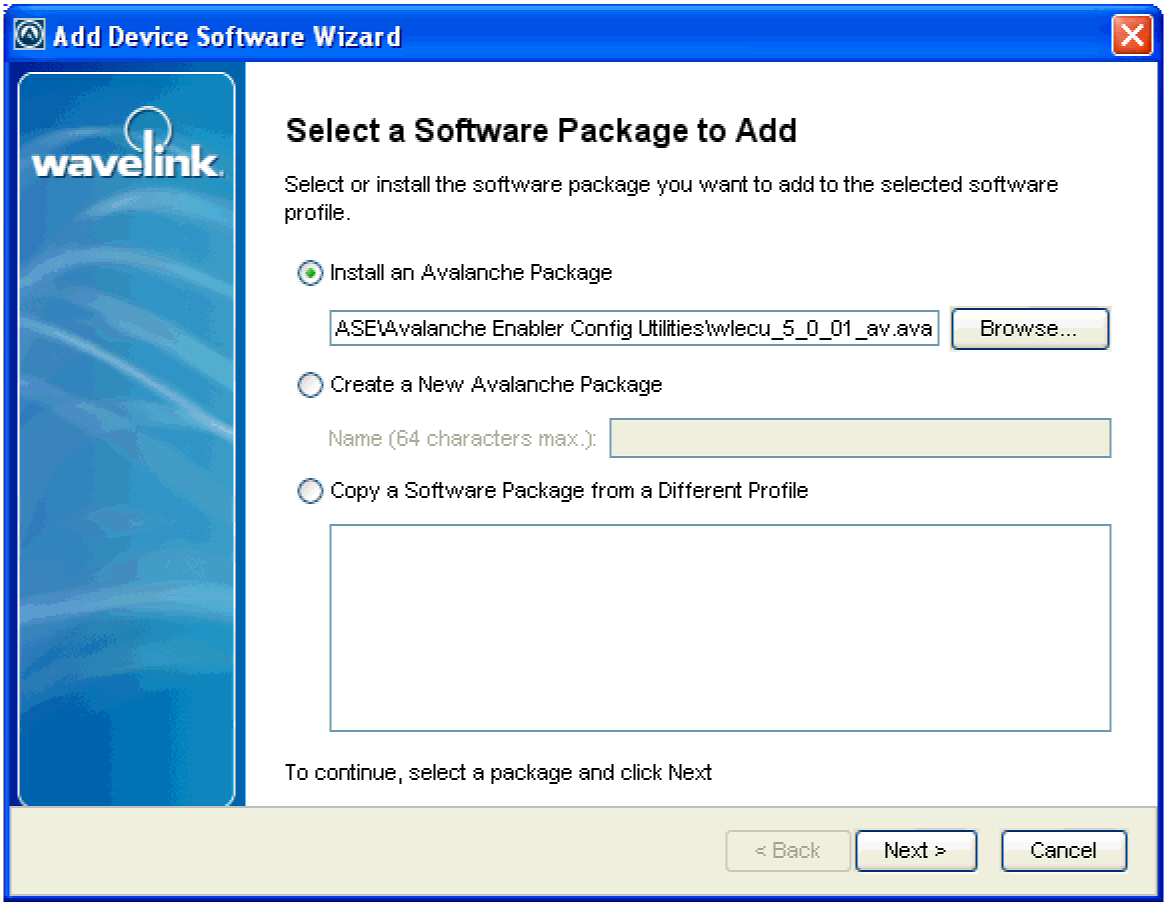
The Add Device Software Wizard allows you to add packages, enable packages, copy packages that have already been added to a different profile, or create custom software packages. Before you create a custom package, ensure you know the location of all the files you want to include and ensure that the files are valid.

The following instructions provide information about adding an Avalanche package to a software profile. For information about building a new package, see Building New Software Packages on page 82.

To add a software package:

1. Select the profile to which the package will belong from the Profiles List.
2. In the **Software Profile** tab, click **Install Package.**

   The *Add Device Software Wizard* appears.



Add Device Software Wizard

Select a Software Package to Add

Select or install the software package you want to add to the selected software profile.

● Install an Avalanche Package

ASE\Avalanche Enabler Config Utilities\wlecu_5_0_01_av.ava

○ Create a New Avalanche Package

Name (64 characters max.):

○ Copy a Software Package from a Different Profile

To continue, select a package and click Next

Select Package

3 Select **Install an Avalanche Package** and browse to the location of the software package.

4 Select the file and click **Next.**

A *License Agreement* dialog box appears.

5 Accept the license agreement and click **Next**.

6 The package files will begin extracting locally. When the extraction is complete, click **Next**.

7 The Configure the Software Package screen appears. If desired, enable the software package and configure it using the available utilities.

8 When you are finished configuring, click **Finish** to complete the installation.

After software packages are configured and enabled, you can deploy the software profile and the packages will be distributed to all devices in the applied location that meet the selection criteria.

Building New Software Packages

Avalanche allows you to compile files to create a new software package. Creating a package bundles files together so they can be installed together. Ensure you know the location of the files you want to include in the package.

In addition to the files, a new software package has the following options:

Title A title for the package.

Vendor The package vendor.

Version The version number of the package.

Install Drive The drive on the mobile device where the package will be installed.

Install Path The exact path where the package will be installed.

Post Install Options Options for if the device will perform a warm boot or a cold boot after installation has completed, or if a program runs once installation is completed. When you select to run a program, the drop-down list will become active and you can select the program from your package to run. Post-install actions are optional.

To build a new package:

1 Select the profile to which the package will belong from the Profiles List.

2 From the **Software Profile** tab, click **Install Package.**

The *Add Device Software Wizard* appears.

3 Select **Create a New Avalanche Package** and type a name for the package in the text box.

4 Click **Next**.

A *Specify the Files in the Ad Hoc Package* screen appears.

5 Click **Add** and browse to the location of the files you want to add to the package.

6 Select the file and click **Open**.

The file path location appears in the text box. Continue adding files as desired.

7 Click **Next**.

The *Ad Hoc Package Options* screen appears.

8 Configure the package options and click **Next**.

The *Add Selection Criteria* screen appears.

9 If you want to configure selection criteria for the package, enable **Add Selection Criteria** and enter the information in the text box. By creating selection criteria for your package, only the devices which meet the selection criteria will receive the package. When you enable **Add Selection Criteria**, the Selection Criteria Builder button to the left of the list is enabled. You can click it and use the Selection Criteria Builder to help you create the criteria, if desired.

10 Click **Next**.

11 The package files are combined into a software package. When the progress is complete, click **Next**.

The *Configure the Software Package* screen appears. This dialog box allows you to enable the package immediately and displays any configuration tools available for the package.

12 Click **Finish** to complete the package.

Creating CAB or MSI Packages

You can use Avalanche to push `.CAB` or `.MSI` files to your mobile devices. When you install a `.CAB` file, the file automatically installs. It can also be configured to uninstall once the program information is retrieved by the mobile device.

To create .CAB or .MSI packages:

1 Select the profile to which the package will belong from the Profiles List.

2 From the **Software Profile** tab, click **Install Package**.

The *Add Device Software Wizard* appears.

3 Create a new profile or enable the **Select to existing software profile** option and select the profile to which you want to install.

4 Click **Next**.

5 Select **Add an Avalanche software package** and browse to the location of the `.CAB` or `.MSI` file.

6 Click **Next**.

The *CAB or MSI File Options* screen appears.

7 Enter the name of the package.

8 If you want the package to be uninstalled once the program information is retrieved by the mobile device, enable **Remove After Install**.

9 Click **Next**.

10 The package files will begin extracting locally. When the extraction is complete, click **Next**.

The *Configure the Software Package* screen appears. This dialog box allows you to enable the package immediately and displays any configuration tools available for the package.

11 Click **Finish** to complete the package creation.

Copying Software Packages

Copying software packages allows you to configure a software package just once and then copy it into all the profiles that require that package.

To copy a software package:

1 From the **Profiles** list, select the profile from which you want to copy the package.

2 In the Software Packages area, right-click the package you want to copy and select **Copy Software Package** from the context menu.

The *Please select the target profile* dialog box appears.

3 Select the profile to which you want to copy the package from the drop-down list.

4 Click **OK**.

The package and its configuration are included in the target software profile.

Configuring Software Packages with a Utility

Some software packages come with configuration utilities that allow you to configure options before the packages are installed on a mobile device. These utilities can be accessed from the Avalanche Console. Configuration options will differ based on the software package. For details about configuring software packages, see the specific user guide for that product.

To configure a software package:

1 From the **Profiles** tab, select the software profile with the software package you want to configure.

2 From the Software Packages area of the **Software Profile** tab, select the package and click **Configure**. (You can also right-click the package name and select **Configure**.)

The *Configure Software Package* dialog box appears.

3 From the available list, double-click the utility you want to use to configure the package.

4 When the options are configured, click **OK**.

The software package is ready for synchronization.

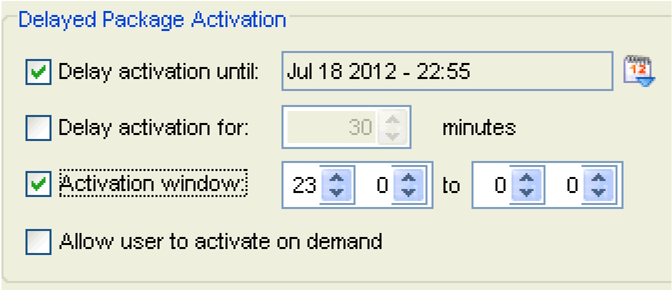
Configuring Software Packages for Delayed Installation

Software packages can be configured to install on a delayed basis. Delayed packages are downloaded to the mobile device just like any other package, but do not get installed on the device until the configured activation time. For applicable devices, the downloaded packages are stored in persistent storage and can survive a cold boot.

To configure a software package for delayed installation:

1. From the **Profiles** tab, select the software profile with the package you want to delay.
2. Select the package from the Software Packages list and click **Edit Package**.

   The *Edit Software Package* dialog box appears.



Delayed Package Activation

☑ Delay activation until: Jul 18 2012 - 22:55

☐ Delay activation for: 30 minutes

☑ Activation window: 23 0 to 0 0

☐ Allow user to activate on demand

Delayed Package Activation area

3. In the Delayed Package Activation area, enable the options as desired:
   - If you want to delay package activation until a specific date and time, enable the **Delay activation until** option and click on the calendar button to select a date and time.
   - To further delay the package installation after it has been activated, configure the **Delay activation for __ minutes** option.
   - If you want the package to be activated on the device during a certain time window, enable the **Activation window** option and configure the hours during which the package will activate.
   - If you want the device user to have the option to override the software package installation at the activation time, enable the **Allow user to activate on demand** checkbox. When this option is selected, the user will be able to install the package as soon as it is downloaded.
4. Click **Save**.

Peer-to-Peer Package Distribution

Peer-to-peer package distribution allows you to control bandwidth usage on your network by allowing a "package store" device to receive an update from the Mobile Device Server and then distribute the update to other mobile devices. If mobile devices cannot download an update from a package store device, they can contact the server directly.

Peer-to-peer package distribution has the following configuration options:

Option	Description
Enabled Cached Peer-to-Peer Package Distribution	Allows a package to be shared across multiple devices via peer-to-peer connections. When deployed to a package store device, the package will be available for other mobile devices from that package store device.
Do not allow non-Package Store Devices to begin updating until	Configures the time at which a non-package store device can contact a package store device to receive an update.
Do not allow server to update non-Package Store Devices until	Configures the time at which a non-package store device can contact the server to update and receive this package. Once the configured time is reached, the mobile devices will first attempt to contact a package store device to receive the update. If a package store device cannot be contacted or the connection times out, the device will then attempt to contact the server.

The following tables provides information about the results that will occur with the different configurations in package distribution.

If...	Then Package Store Devices...	And Non-Package Store Devices...
Do Not Allow Non-Package Store Devices To Begin Updating Until is enabled and the configured time has not been reached (**Do Not Allow Server to Update Non-Package Store Devices Until** is not enabled)	*Can* contact the Server for updates at any time.	Cannot contact any package store devices. Will attempt to contact the Server to receive updates.

If...	Then Package Store Devices...	And Non-Package Store Devices...
Do Not Allow Non-Package Store Devices To Begin Updating Until is enabled and the configured time has been reached (**Do Not Allow Server to Update Non-Package Store Devices Until** is not enabled)	*Can* contact the Server for updates at any time.	*Can* contact package store devices to update and receive the profile. If the device can't contact a package store device, it will attempt to contact the Server.
Do Not Allow Non-Package Store Devices To Begin Updating Until is enabled and **Do Not Allow Server to Update Non-Package Store Devices Until** is enabled and the configured time has not been reached	*Can* contact the Server for updates at any time.	Cannot contact the Server for updates. Cannot contact any package store devices.
Do Not Allow Non-Package Store Devices To Begin Updating Until is enabled and **Do Not Allow Server to Update Non-Package Store Devices Until** is enabled and the configured time has been reached	*Can* contact the Server for updates at any time.	*Can* contact package store devices to receive updates. If the device can't contact a package store device or the connection times out, the device *can* contact the Server to receive updates.
No options are enabled	*Can* contact the Server for updates at any time.	*Can* contact package store devices or Server for updates at any time.

NOTE: For more information on how to configure devices for peer-to-peer package distribution, contact Wavelink Customer Service.

To configure peer-to-peer package distribution:

1 From the **Profiles** tab, select the software profile with the package you want to distribute.

2 Select the package from the Software Packages list and click **Edit Package**.

The *Edit Software Package* dialog box appears.

3 In the Peer-to-Peer Package Distribution area, configure the options as desired.

4 Click **Save**.

Chapter 10: Managing Mobile Devices

This section provides information about the following mobile device topics:

- Mobile Device Inventory Tab
- Viewing Mobile Device Details
- Configuring Mobile Device Properties
- Contacting the Mobile Device
- Software Inventory

Mobile Device Inventory Tab

The **Mobile Device Inventory** tab shows a set of mobile devices based on the currently selected item in the Navigation Window. For example, when you select a location, all mobile devices that are associated with that location appear in the list. The following default information is provided for each mobile device:

Model Name The model name of the mobile device.

Terminal ID The unique ID automatically generated by Avalanche or assigned by a Console user.

MAC Address The Media Access Control address of a mobile device. This address uniquely identifies this mobile device on a network from a physical standpoint.

IP Address The Internet Protocol address assigned to the mobile device.

Sync State The client update status of the mobile device. A check mark indicates that the mobile device is up-to-date, while an X indicates that an update is available but not yet loaded on the device.

Last Contact The date and time of the last contact the mobile device had with Avalanche.

Recent Activity The status of a mobile device with respect to Avalanche. For example, when the mobile device receives new software, the activity status is `Downloading`.

You can customize the columns in the **Mobile Device Inventory** tab to display according to your preference or filter the devices shown. For information on customizing the Mobile Device Inventory, see Managing Device Inventory Displays on page 17.

You can also delete mobile devices from the **Mobile Device Inventory**. This removes the device from the **Mobile Device Inventory** list and releases the license that mobile device was using.

To delete mobile devices:

- In the **Mobile Device Inventory** tab, right-click the device you want to delete and select **Delete Device**.

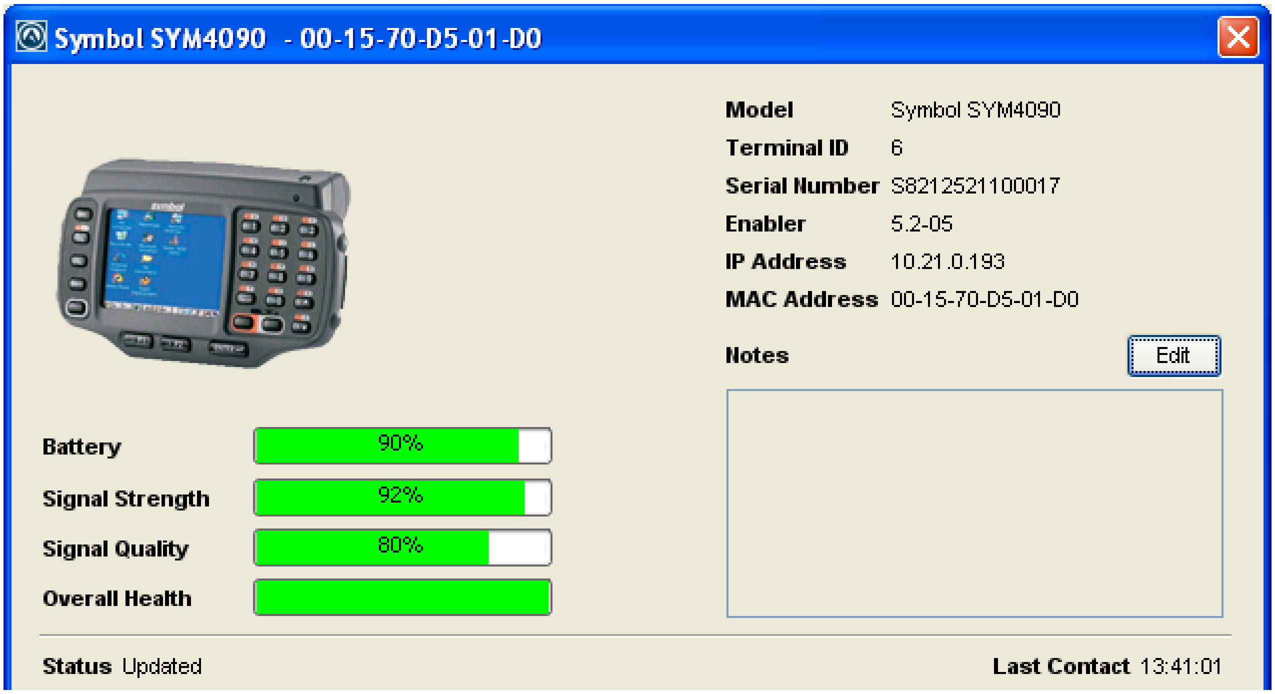
The device is removed. It retains the ability to connect and reassociate itself with the server, however.

Viewing Mobile Device Details

The *Mobile Device Details* dialog box appears when you right-click the mobile device you want to view and select **Mobile Device Details**. It provides information about a specific mobile device and consists of the following areas:

- Summary Information. Provides a quick summary of device, health, signal strength and battery life information. The bars will display red, yellow, or green depending on the status of the battery, signal strength, overall health, and signal quality of the device.

  The overall health of a device is determined by properties reported by the device. If any one of seven properties reports a warning level, the overall health is set to that warning level. The properties are: low flash memory, low RAM memory, low battery charge, critical battery charge, low signal strength, low signal quality, or a package install status as either "pending" or "error".



Symbol SYM4090 - 00-15-70-D5-01-D0

Model Symbol SYM4090
Terminal ID 6
Serial Number S8212521100017
Enabler 5.2-05
IP Address 10.21.0.193
MAC Address 00-15-70-D5-01-D0

Notes

Battery 90%
Signal Strength 92%
Signal Quality 80%
Overall Health

Status Updated
Last Contact 13:41:01

Device Details summary information

- Device Tabs. Provides access to the following tabs:
    - **General**. Provides general network and wireless information about the device.
    - **Installed Software**. Provides information about the software applications installed on the device.
    - **Packages**. Lists all the packages currently available for the device and the status of each package.
    - **Properties**. Lists the properties of the device and their values. This tab also allows you to add properties and values. For details about the tasks you can perform in the **Properties** tab, see Configuring Mobile Device Properties on page 92.
    - **Applied Profiles**. Lists the profiles that are applied.
    - **Device Control**. Provides options for updating the mobile device, sending text messages, pinging the device, using Remote Control, and connecting to the Session Monitor. For details, see the links below or Contacting the Mobile Device on page 95.
    - **Priority of Matching Profiles**. Lists the profiles applied on the device by priority.
    - **History**. Provides a history of Avalanche actions for the mobile device. This may include actions such as changes to packages, edited properties, applying a profile, rebooting the device, or changes to the Enabler configuration by a device user. This information is only available for devices with 5.2 or newer Enablers that are configured

to report the events. (This can be configured on the **Reporting** tab of the Enabler Configuration Utility.)

The following sections provide information on viewing a device's location or location history:

- Locating a Mobile Device
- Locating a Device using Cell Tower Information
- Viewing Location History

Locating a Mobile Device

You can view the most recently reported location of a mobile device with GPS capabilities. The device is displayed as an icon on the map. In order to use this option, you must have a statistics server running, and statistics reporting must be enabled.

To view the location of a mobile device:

- From the **Mobile Device Inventory** tab, right-click the device you want to view and click **Locate** in the context menu.

  The Map View appears with the mobile device icon displaying the most recently reported location of the device.

Locating a Device using Cell Tower Information

When a device has GPRS capabilities, it can report the cell tower it is currently connected to. The Console can use this information to display an approximate location for the device on the map.

NOTE: Avalanche uses `geoservices.wavelink.com` to retrieve information about the location of the cell towers. You must be able to access this Web site in order to use the Locate Cell Tower function.

To locate a device using cell tower information:

1. Navigate to a location containing the device you want to locate.
2. Right-click the name of the device and select **Locate via Cell Tower** from the context menu.

   An icon appears on the map displaying the location of the cell tower the device reported.

Viewing Location History

View the recently reported locations of a mobile device with GPS capabilities. In order to use this option, you must have a statistics server running and statistics reporting must be enabled. The statistics server only retains GPS information for the past 48 hours.

NOTE: You can only view the location history of one device at a time.

To view the location history of a mobile device:

1 From the Mobile Device Inventory, right-click the device you want to view.

2 From the context menu, select **Location History**.

The *Start and End Time* dialog box appears.

3 Use the calendar buttons and time text boxes to specify the window of time for which you want to view location information.

4 Click **OK**.

The device location history is displayed on the map as a series of icons representing the reported locations during the specified time.

Configuring Mobile Device Properties

Mobile device properties can be either pre-defined or custom properties. Pre-defined properties are based on the device information and the version of the Enabler running on the mobile device. Custom properties can be created and associated with individual mobile devices or with mobile device groups. Properties can be used as selection variables in selection criteria to control which devices receive particular profiles.

NOTE: See Building Selection Criteria on page 163 for more information on using properties as selection variables.

You can view the properties for a specific mobile device by right-clicking the device from the **Mobile Device Inventory** and selecting **Mobile Device Details** from the context menu.

The columns that appear in the **Properties** tab are as follows:

Name The name of the property.

Value The value of the property.

Pending Value Indicates whether the property needs to be updated on the mobile device. If it needs to be updated, column will display the pending value in italics.

Icon Indicates whether the value of the property is static, snapshot, or configurable data. Static means the information does not change, snapshot means that the property is updated by the device, and configurable means that a user may change the value.

From the **Properties** tab of the *Mobile Device Details* dialog box, you can also perform the following tasks:

- Creating Custom Properties
- Creating Device-Side Properties
- Editing Properties
- Deleting Properties

Creating Custom Properties

From the Avalanche Console, you can create custom properties on the mobile devices. These properties can then be used to build selection criteria for software profiles or as device filters.

NOTE: Like the pre-defined properties, custom properties appear as selection variables in the Selection Criteria Builder.

You can add custom properties to individual mobile devices or to mobile device groups. When you add a property to a group, it is added to all mobile devices that are members of the group. For instructions on adding a property to a group, see Editing Properties for Mobile Device Groups on page 153.

To create custom properties:

1. From the **Mobile Device Inventory** tab, right-click the device you want to view and click **Mobile Device Details**.
2. Click the **Properties** tab.
3. Click **Add Property.**
4. From the drop-down list, select the type of property you want to add.
5. Type the name and the value of the property in the **Property Name** and **Property Value** text boxes.
6. Click **OK**.

   The property is added to the list in the Properties panel.

Creating Device-Side Properties

Avalanche provides the ability to turn third-party information that is generated at the mobile device into properties that can then be transferred to and displayed in the Avalanche Console. These properties are called device-side properties. You can use the device-side properties feature to obtain either static or dynamic information. For example, a device-side property could report a device's serial number or state changes within a specific application.

NOTE: The Avalanche Enabler sends device-side properties to the Enterprise Server; it does not collect the information. Users must create their own applications and utilities to gather the required information and write it to a plain-text file on the device.

Device-side properties must be written in key-value pairs to a plain-text file with a `.prf` extension and one vendor entry. Avalanche uses the vendor name to organize and display user-defined properties in the **Properties** tab of the *Mobile Device Details* dialog box.

For more information about creating device-side properties, see the *Creating Device-Side Avalanche Properties* white paper on the Wavelink Web site.

Editing Properties

Some of the pre-defined properties (and all of the custom properties) on mobile devices support editing of values. When you change the value of a property, the new value is downloaded to the mobile device the next time it connects to the server.

Custom properties can be edited either for an individual mobile device, for a mobile device group, or using a mobile device profile or a Scan to Config profile. For information on editing properties for a group of devices, see Editing Properties for Mobile Device Groups on page 153. For information on using a profile to edit properties, see the section for that profile type.

To edit a property for a mobile device:

1 From the **Mobile Device Inventory** tab, right-click the device you want to view and click **Mobile Device Details**.

2 Click the **Properties** tab.

3 Select the property that you want to edit.

If the property is editable, the **Edit Property** button becomes active.

4 Click **Edit Property** and type the new value for the property in the dialog box that appears.

5 Click **OK**.

The new value downloads to the mobile device when it connects to the server. If the device has not yet received an updated property value, the pending value appears in italics in the Pending Value column for the property.

Deleting Properties

You can delete a configurable property on a device from the Avalanche Console.

To delete a property:

1 From the **Mobile Device Inventory** tab, right-click the device you want to view and click **Mobile Device Details**.

2 Click the **Properties** tab.

3 Select the property that you want to delete and click **Delete Property**.

4 Click **OK**.

Contacting the Mobile Device

This section provides information about connecting to a mobile device and viewing device location. The following tasks are available from the **Device Control** tab in the *Mobile Device Details* dialog box.

- Pinging Mobile Devices
- Sending a Message to a Device User
- Updating a Mobile Device
- Chatting with a Device User
- Wiping a Mobile Device
- Launching the Session Monitor

NOTE: The Registry Explorer, File Explorer, and Process Manager icons available in this dialog box are only available when the mobile device has a licensed Remote Control client.

Pinging Mobile Devices

You can ping devices that are currently in range and running the Avalanche Enabler. This is not an ICMP-level ping, but rather an application-level status check. This feature indicates whether the mobile device is active or not.

You can also ping all the mobile devices in a group location simultaneously if the devices are in range and running the Avalanche Enabler.

To ping a mobile device:

1 From the **Mobile Device Inventory** tab, right-click the device you want to view and click **Mobile Device Details**.

2 Click the **Device Control** tab.

3 Double-click the **Ping Device** icon.

The **Status** field in the Activity area displays the status of the ping request.

NOTE: You can also ping the device from the **Mobile Device Inventory** tab by right-clicking the mobile device and selecting **Ping Device**.

To ping mobile devices in a group location:

1 Right-click the group location from the Navigation Window.

2 Select **Ping Mobile Devices** from the context menu.

The **Recent Activity** column in the Mobile Device Inventory reports the status of the ping for each device in the group.

Sending a Message to a Device User

Send a text-based message to a device currently in range and running the Avalanche Enabler.

To send a message to a device:

1 From the **Mobile Device Inventory** tab, right-click the device you want to view and click **Mobile Device Details**.

2 Click the **Device Control** tab.

3 Double-click the **Send Text Message** icon.

The *Send Text Message* dialog box appears.

4 Type a message in the **Text Message** field.

5 Enable the **Provide Audible Notification** option if you want a sound to play when the mobile device receives the message.

6 Click **OK**.

The **Status** field in the Activity region displays the status of the text message request.

NOTE: You can also send a text message to the client from the **Mobile Device Inventory** tab by right-clicking the mobile device and selecting **Send Text Message**.

Updating a Mobile Device

You can perform individual updates for mobile devices that are currently in range and running the Avalanche Enabler. This sends any pending profiles or properties to the device.

When you update the device, you have the following options:

Allow User to Override the Update Gives the mobile device user the option to override the update.

Force Package Synchronization	Forces the package to update on the device.
Delete Orphan Packages	Removes orphan packages from the device. Edit the list of orphan packages to remove specific packages from the device.

NOTE: The rules that govern which mobile devices can receive a particular update are determined by the selection criteria. See Building Selection Criteria on page 163 for more information on building selection criteria.

To update a mobile device:

1 From the **Mobile Device Inventory** tab, right-click the device you want to update and click **Mobile Device Details**.

2 Click the **Device Control** tab.

3 Double-click the **Update Now** icon.

The *Update Now* dialog box appears.

4 Enable the options as desired and select the orphan packages you want to remove.

5 Click **OK**.

The **Status** field in the Activity area allows you to monitor the status of the update.

NOTE: You can also update the mobile device from the **Mobile Device Inventory** tab by right-clicking the mobile device and selecting **Update Now**.

NOTE: Many mobile devices incorporate a sleep function to preserve battery life. If a device is asleep, you must “wake” it before it can receive a “pushed” update from Avalanche. Wake-up capability is dependent on the type of wireless infrastructure you are using and the mobile device type. Contact your hardware and/or wireless provider for details.

Chatting with a Device User

A user can initiate a two-way chat session that allows the device user and the Console user to communicate text back and forth. The device user can create an alert to request a chat session, but the session can only be initiated from the Console.

To initiate device chat:

1 In the **Mobile Device Inventory**, right-click the device you want to chat with and click **Device Chat**.

The *Two-way mobile device messaging* dialog box appears.

2 Type the message you want to send in the lower text box. When you press **Send** or **Enter**, the message is sent to the device and appears in the upper text box. The device user's response will appear in the upper text box.

3 When you are finished you can save the message as a `.txt` file by clicking **Save**, or click **Close** to close the dialog box.

Wiping a Mobile Device

When you have applied a mobile device profile that has Device Wipe folders configured, you can perform a remote wipe of the device. A remote wipe will delete the contents of the folders and reboot the device. If files in the folders were unable to be deleted because they were in use, the Enabler will attempt to delete them after the reboot. If the server is unable to contact the device using a TCP/IP connection, it will attempt to send the wipe command using SMS.

If there is more than one mobile device profile applied on the device, all of the Device Wipe folders for all of the applied profiles will be deleted during a device wipe. For information on configuring Device Wipe folders, see Configuring Device Wipe Folders on page 142.

NOTE: Avalanche does not provide a method for restoring any of the information in the deleted folders.

To perform a remote device wipe:

1 From the **Mobile Device Inventory** tab, right-click the device you want to view.

2 From the context menu, select **Wipe Device**.

3 The *Confirm Device Wipe* dialog box appears. Click **Yes** if you are certain you want to wipe the folders specified in the mobile device profile.

The server will send the device a command to delete the folders specified in the mobile device profile.

Launching the Session Monitor

The Session Monitor utility allows you to view the Terminal Emulation (TE) Client on a mobile device from the Avalanche Console. The Session Monitor includes an override feature that allows you to take control of the TE Client on the mobile device. The Session Monitor also includes a logging feature that allows you to create a trace for TE sessions.

To use the Session Monitor with Avalanche, you will need to perform the following tasks:

1 Obtain a TE Client 5.x (or later version) software package.

2 Add the software package to a software profile. See Adding a Software Package on page 80 for more information.

3 Configure the Client software package.

4 Deploy the Client to the mobile device. For more information about synchronization, refer to Performing a Server Synchronization.

5 Launch the Client on the mobile device.

6 Launch the Session Monitor.

This section provides information about launching the Session Monitor from Avalanche. For detailed TE installation and configuration information, refer to the *Wavelink Terminal Emulation Client User Guide*.

You can launch the Session Monitor from the **Mobile Device Inventory** tab or from the *Mobile Device Details* dialog box.

To launch the Session Monitor from the Mobile Device Inventory tab:

1 Ensure you have installed a TE Client on the mobile device.

2 Select the location where the device is from the Navigation Window.

3 Click the **Mobile Device Inventory** tab.

4 Right-click the device for which you want to launch the Session Monitor and select **Session Monitor** from the menu.

The Session Monitor window opens. The yellow-lined box represents what the mobile device user can see on the mobile device screen.

To launch the Session Monitor from the *Mobile Device Details* dialog box:

1 Ensure you have installed a TE Client on the mobile device.

2 Select the location where the device is from the Navigation Window.

3 Click the **Mobile Device Inventory** tab.

4 Right-click the mobile device on which you want to launch session monitor and select **Mobile Device Details**.

5 In the *Mobile Device Details* dialog box, click the **Device Control** tab.

6 Double-click the **Session Monitor** icon.

The Session Monitor window opens. The yellow-lined box represents what the mobile device user can see on the mobile device screen.

Software Inventory

The Console gathers mobile device software inventory every 24 hours and displays the information in the **Installed Software** tab of the *Mobile Device Details* dialog box. The **Installed**

Software tab consists of two parts:

- The **Registered Applications** tab displays the applications on the mobile device that have uninstallers registered with the system. These applications will also be displayed in the Windows settings *Installed Applications* dialog box on the mobile device.
- The **All Applications** tab lists the file name and file path of all executable that can be run on the mobile device.

This is informational data only and cannot be modified from this tab.

Chapter 11: Using Remote Control

This section provides information about using the Remote Control Console, configuring the Remote Control package, and using the Remote Control Viewer after you are connected to a mobile device. The tasks detailed in this section assume you are connected to a mobile device and that you installed the Remote Control server. Before you use Remote Control, perform the following tasks:

1. License Remote Control.
2. Add the Remote Control software package to an Avalanche software profile.
3. Deploy the Remote Control software package to your mobile device.

When Remote Control is installed and licensed, perform the following tasks:

- Using the Remote Control Console
- Configuring the Remote Control Client
- Connecting to Mobile Devices

Using the Remote Control Console

The Remote Control Console allows you to configure options for connecting to Avalanche, configuring the client, downloading and using skins, and viewing system information.

Some Avalanche server information must be configured before you can connect a device or manage package options. When you finish installing Remote Control, the installation process will automatically launch a browser window, or you can navigate to the Remote Control Console using the browser's address bar.

Once you have completed the initial configuration, you can configure the following options from the Remote Control Console:

- Changing the Username and Password
- Synchronizing with the Avalanche License Server
- Configuring Server Options
- Configuring Skin Settings for the Server
- Managing Cell Carriers
- Backing Up and Restoring the Remote Control Database
- Viewing System Information
- Configuring Connection Profiles

To log in to the Remote Control Console:

1. From the computer where the Remote Control server is installed, click **Start > Programs > Remote Control 4.1 > Server Setup**.

   -Or-

   From the Avalanche Console, select the software profile that has the Remote Control package. When you click to configure the package, the *Configure Software Package* dialog box appears. Double-click **Server Configuration** in the list.

2. Log in using the username and password configured during installation.

   The Remote Control Console appears.

NOTE: You can also access the Remote Control Console by opening a web browser and typing the URL in an address bar. If you have not configured SSL, the URL is: `http://<IP address or Domain Name>:1900/app/setup_logon.vm`. If you have configured SSL, use the URL provided in the SSL instructions.

Changing the Username and Password

The Remote Control Administrator user account is required to log in when you first configure the server from a web browser. The default username is *admin* and the default password is *admin*. Wavelink recommends you change at least one of these. You must log in using the account (or an Administrator Avalanche account) in order to change it.

After you have completed the initial configuration of Remote Control and provided the database address and password, use your Avalanche username and password to log in to Remote Control. Avalanche user permissions will be enforced. Only an Avalanche Administrator will be able to view the Setup or System menus.

To change the Remote Control Administrator username and password:

1 From the Remote Control Console, click **Password** in the System Menu.

2 Type the new username and password in the text boxes. When you change the password, you must type it a second time in the **Retype Password** text box to confirm that it is correct.

3 Click **Save**.

Synchronizing with the Avalanche License Server

Connecting to the Avalanche License Server

Remote Control must connect to the Avalanche license server in order to distribute licenses. The port 7221 should be unblocked between the Remote Control server and the Avalanche license server. The Avalanche license server is usually installed at the same location as the enterprise server. Configure the Avalanche server address for Remote Control after the server is installed from the Remote Control Console.

You can check to ensure the Remote Control server can contact the Avalanche license server from the Remote Control Console.

To configure the license server information from a web browser:

1 From the Remote Control Console, click **Licensing** in the System Menu.

2 Type the address of the Avalanche server in the **License Server** text box. The default **Port** for the license server is 7221.

3 Click **Verify** to check if Remote Control can contact the license server.

4 Click **Save**.

Configuring Server Options

The Remote Control web page allows you to configure the schedule that Remote Control uses to sync with Avalanche and the Wavelink skins repository. It also allows you to configure the e-mail gateway for Remote Control, the mail server (either POP3 or SMTP) credentials and log setting, the device timeout settings, and the VNC settings. If you have configured the Remote Control Clients to use encryption, enable encryption for the server on the **Encryption** tab.

The Server Setup page has the following options:

Wavelink Sync tab	
Enable Sync	Enables or disables the Remote Control synchronization with the Wavelink skins repository.
Schedule	Schedules when Remote Control syncs with the Wavelink skins repository. The default value means that Remote Control will sync daily at 1 AM. Use a cron expression format.
Skins Repository	The address for the Wavelink skins repository.
Wide Area tab	
Host	The DNS name of the mail server.
Mail From	The address that will appear in the From field of the e-mail.
POP3 Host	The DNS name of the POP3 host.
User	The user name for the POP3 server.
Password	The password for the POP3 server.
Pop Before SMTP	When this is enabled, Remote Control will try to use the POP3 server before it attempts SMTP.
User	The user name for the SMTP server.
Password	The password for the SMTP server.
Port	The port used by the SMTP server.
Use Auth	Determines if authentication credentials are sent to the outgoing mail server.

Debug Mail Session	Enables or disables a Remote Control log for sending mail.
Timeouts tab	
TCP	How long to wait (in milliseconds) before the TCP connection request times out.
Send UDP Requests	If the server will attempt to use UDP to request the device to connect.
UDP	How long to wait (in milliseconds) before the UDP connection request times out.
SMS	How long to wait (in milliseconds) before the SMS connection request times out.
Web Session	The length of time (in seconds) before the connection to the Remote Control Console will time out.
VNC tab	
Quality	The quality of the Remote Control display. This is on a scale of 1-100, where 100 is the best quality and 1 is the worst quality.
Device Refresh	How often the device screen is refreshed during a Remote Control session.
Viewer Refresh	How often the viewer screen is refreshed during a Remote Control session.
Alt Server tab	
Use Alternate Server	Specifies that the Remote Control Console should be launched using a local server address. This option only needs to be enabled when the server address in the Client Settings is a publicly available IP address. (For example, if the device is using a WWAN address.)
Server Address	The local Remote Control server address to use for launching the Remote Control Console.
Encryption tab	
Use Encryption	Configures the server to use AES encryption.
Passphrase	The passphrase to use for encryption. This can include ASCII characters and be up to 64 characters long.

	NOTE: The Client and Server BOTH must be configured with the same passphrase for encryption to work. For information on configuring the Client with encryption, see Editing the Remote Control Package on page 109.

To configure server options from the Remote Control web page:

1 Launch the Remote Control Console using the username configured during installation.

2 Click **Server Setup** in the System Menu.

3 Configure the settings as needed.

4 Click **Save**.

Configuring Skin Settings for the Server

The Remote Control web page allows you to enable automatic skin synchronization, view available skins, or download skins from the Wavelink server.

To enable automatic skin synchronization:

1 From the Remote Control Console, click **Skins** in the System Menu.

2 Click the **Auto Sync** tab.

3 Select **Yes** from the drop-down menu and click **Update**.

To view the skins available on your computer:

1 From the Remote Control Console, click **Skins** in the System Menu.

2 Click the **Available** tab.

3 Select the brand name to view all skins for that brand, or click **Expand** in the top right corner to view all skins for all brands.

To download skins:

1 From the Remote Control Console, click **Skins** in the System Menu.

2 Click the **Download** tab.

3 Select the brand name to view all skins for that brand, or click **Expand** in the top right corner to view all skins for all brands. When you find the skin you want, click **Download**.

Managing Cell Carriers

If you are using an e-mail gateway for SMS messages, select a default cellular provider for the messages to be sent through. If your carrier is not in the list, you can add it.

NOTE: If you have some devices that use a different carrier, you can configure the carrier on a per-device basis from the Remote Control Client.

To select your cellular provider for SMS messages:

1 From the Remote Control Console, click **Carriers** in the System Menu.

2 Use the **Default** drop-down menu to select your provider.

3 If your carrier is not in the list, click **Add New**.

4 Type the **Name**, **Email Address**, and the **Max Length** of the text message in the text boxes and click **Update**. The carrier will be added to the list.

NOTE: For examples of the e-mail address format, you can view the details of carriers that have already been configured.

Backing Up and Restoring the Remote Control Database

Remote Control maintains its own database of device information separate from the Avalanche databases. The Remote Control web page allows you to back up and restore the Remote Control database. Database backups can be exported to another system for storage or for redundancy.

To back up the Remote Control database:

1 From the Remote Control Console, click **Backup** in the System Menu.

2 Click **Backup**.

3 A backup is created locally.

To restore a Remote Control database backup:

1 From the Remote Control Console, click **Backup** in the System Menu.

2 In the Restore area, select the backup that you want to restore. Click **Restore**.

To export or import a backup file:

1 From the Remote Control Console, click **Backup** in the System Menu.

2 If you want to export a backup file to store it somewhere else, select the backup file from the list and click **Download**. When you are prompted to save or open the file, save it to the desired location.

-Or-

If you want to import a backup file that was stored somewhere else, click **Browse**. Use the dialog box to navigate to and select the file. Click **Upload**. The file will be added to the list of available backups.

Viewing System Information

The System Info section on the Remote Control web page allows you to view the server run time, a list of connected devices, the license server information, and local resources.

To view the system information:

1 From the Remote Control web page, click **System Info** in the System Menu.

2 Select the tabs across the top to view different information.

Configuring Connection Profiles

Connection profiles allow you to define the skin displayed when a user connects to a device using Remote Control. They are configured from the Remote Control Console.

The following options are available when configuring a connection profile:

Name The name of the connection profile.

Use as default When this option is enabled, the current profile is used as the default when you establish a connection.

If you want to establish a connection using a profile other than the default profile, you can set the profile from the viewer while you are connected.

Show skin Displays a skin when you are connected to a device. When this option is enabled, the server is set to **Autodetect** and Remote Control will use device information to display the correct skin.

NOTE: If Remote Control settings are configured in a mobile device profile, the mobile device profile will override these connection profile settings.

To configure the connection settings:

1 From the Remote Control Console, click **Profiles** in the User Menu.

2 Select the connection profile from the Profiles list, or click **Add New** to create a new profile.

3 Configure the options are desired in the Details box.

4 Click **Save**.

Configuring the Remote Control Client

The Remote Control Client is configured from the Avalanche Console. After the package is added to a software profile, use the configuration tools in the package to modify the Remote Control Client or connect to the Remote Control Console. For information on launching the Remote Control Console from the package, see Using the Remote Control Console on page 102.

The package can also be configured so that the Client can be configured from the device after it is installed. If the device user configures the Client, the user at the Avalanche Console still has the option to clear the settings.

Certain Remote Control settings can also be configured from an Avalanche mobile device profile. When you configure Remote Control settings using a mobile device profile, the profile settings will override other Remote Control settings.

This section provides information on the following topics:

- Editing the Remote Control Package
- Configuring Client Settings from the Mobile Device
- Clearing Client Settings

Editing the Remote Control Package

Once the Remote Control server is installed and the package added to a software profile, you can configure the Remote Control Client with the server address, connection method, the logging level, and other client options.

The following options are available when configuring the Remote Control package:

Connection Type Select to use either TCP/IP or ActiveSync to connect to mobile devices.

Server ID The ID for the server. This only needs to be modified if there are multiple Remote Control Servers.

Server Address The DNS name or IP address of the Remote Control Server.

Server Port The port the Remote Control Server listens on.

Connection Policy

Select how Remote Control notifies the mobile device user that Remote Control is establishing a connection.

- **Silent** indicates that the user will not be notified.
- **Notify** indicates that the user will see a text window on his device letting him know that a connection has been established.
- **Prompt-Allow** will provide the user with a prompt to allow or deny the connection. If the user does not respond, the connection will be allowed.
- **Prompt-Deny** will provide the user with a prompt to allow or deny the connection. If the user does not respond, the connection will be denied.

Policy Time

Select how long the notification or prompt will be displayed. If you selected **Prompt-Allow** or **Prompt-Deny**, this is the number of seconds Remote Control will wait before establishing or denying the connection.

Password

A password to require Remote Control users to provide a password before connecting to a mobile device.

Log Level

This is for the client log stored on the device. Logging levels include:

- **Critical**. Indicates errors that cause Remote Control to fail to start.
- **Error**. Indicates errors that are caused by configuration and/or communication problems.
- **Informational**. Documents the flow of operation.
- **Warning**. Indicates possible operational problems.
- **Debug**. Used to diagnose program malfunctions or communication problems.

Maximum Size

Configure the maximum size that the log file can reach before creating a new log file. New log files do not override previous log files.

Use Encryption

Configures the client to use AES encryption.

Passphrase The passphrase to use for encryption. This can include ASCII characters and be up to 64 characters long.

> **NOTE:** The Client and Server BOTH must be configured with the same passphrase for encryption to work. For information on configuring the Server for encryption, see Configuring Server Options on page 104

Client Sleep While Connected Allows the mobile device to enter sleep mode while connected to Remote Control. If you do not enable this option, Remote Control will not allow the mobile device to enter sleep mode while connected.

Allow Client Configuration Grants client configuration control to the mobile device user. This allows the user to configure the Remote Control client from the mobile device. When the mobile device user has configuration control, any changes you make in the Client Settings tab from the Remote Control Console will not deploy to the device. To regain Client Configuration setting control from the Remote Control Console, you must disable this option and redeploy the settings to the mobile device.

Disable Client Exit When this option is enabled, the mobile device user cannot exit the Remote Control application.

Client Pre-connect to Server Configures the device to always pre-connect to the Remote Control Server.

Client Connect on ActiveSync When this option is enabled, the device will attempt to connect to the server when it is cradled.

Corporate Connection This determines if VPN or port forwarding will be used by the mobile device connecting to your server.

- If this option is enabled, the mobile device uses a VPN connection to connect to the server.
- If this option is disabled, the mobile device uses an Internet connection to connect to the server.

To edit the Remote Control package from the Java Console:

1 From the **Profiles** tab, select the software profile that has the Remote Control package.

2 In the Software Packages list, select the Remote Control package and click **Configure**.

The *Configure Software Package* dialog box appears.

3 Select **Client Configuration** from the list and click **Launch**.

The *Remote Control Client Configuration* dialog box appears.

4 Configure the options as desired.

5 Click **OK** to save your changes and return to the Java Console.

To edit the Remote Control package from the Web Console:

1 From the **Profiles** tab, click on the name of the software profile that has the Remote Control package.

The Software Profile Details page appears.

2 From the Software Package panel, click **Configure** for the Remote Control package.

NOTE: If you do not have Java installed locally, click **Install Java** in the Configure column. After installing Java, the **Configure** option will be available.

3 Depending on your browser and security settings, you may be prompted to trust the Wavelink certificate. If you are prompted to select the program to use for opening the file, choose **Java Web Start Launcher** from the list and click **OK**.

4 The *Configure Software Package* dialog box appears. Click **Next**.

5 Select **Client Configuration** from the list and click **Launch Config**.

The *Remote Control Client Configuration* dialog box appears.

6 Configure the options as desired.

7 Click **OK** to return to the *Configure Software Package* dialog box.

8 Click **Next** to save your changes.

9 Click **Finish** to return to the Web Console.

Configuring Client Settings from the Mobile Device

Before you can configure client settings from the mobile device, you must enable the **Allow Client Configuration** option from the Remote Control Console (in the **Client** tab of the Client Setup page). This allows the mobile device user to configure the connection type, policy notification, password, and whether the device is allowed to sleep while connected. If you disable the **Allow Client Configuration** option, the mobile device user will not be allowed to access the client information on the mobile device.

For more information about enabling the **Allow Client Configuration** option and the configurations available, see Editing the Remote Control Package on page 109.

NOTE: Once you have configured the options from the device, the client will no longer accept configuration changes from Avalanche. In order to push settings to the device from Avalanche again, you should disable the **Allow Client Configuration** option or use the Clearing Client Settings on page 114 option.

The following settings are configurable from the device:

Connection Type Select to use either TCP/IP or ActiveSync to connect to mobile devices.

Policy Select how Remote Control notifies the mobile device user that Remote Control is establishing a connection.

Silent indicates that the user will not be notified.

Notify indicates that the user will see a text window on his device letting him know that a connection has been established.

Prompt-Allow will provide the user with a prompt to allow or deny the connection. If the user does not respond, the connection will be allowed.

Prompt-Deny will provide the user with a prompt to allow or deny the connection. If the user does not respond, the connection will be denied.

Policy Seconds Select how long the notification or prompt will be displayed. If you selected **Prompt-Allow** or **Prompt-Deny**, this is the number of seconds Remote Control will wait before establishing or denying the connection.

Password A password to require Remote Control users to provide a password before connecting to a mobile device.

Allow Sleep while connected Allows the mobile device to enter sleep mode while connected to Remote Control. If you do not enable this option, Remote Control will not allow the mobile device to enter sleep mode while connected.

To configure client settings from the mobile device:

1 Launch the Remote Control application on the mobile device.

2 Tap **File > Configure**.

The *Configure* dialog box appears.

NOTE: If the **Allow Client Configuration** option is not enabled from the Remote Control Console, the *Not Available* dialog box appears. The device user will not be able to access client settings.

3. Configure the settings as desired.
4. Click **OK**.

   The Remote Control client is updated with the new settings.

Clearing Client Settings

You can clear all client configuration settings using the **Clear Client Settings** option in the Standard Viewer. When you select this option, all your client configurations are removed, including anything that was configured on the mobile device. This option is useful if you have enabled the **Allow Client Configuration** option.

To clear client settings:

- From the Standard Viewer, click **Tools > Clear Client Settings**.

Connecting to Mobile Devices

After you configure the client and server settings, deploy the Remote Control client to the mobile device. Once the mobile device has the client installed, and you have added Remote Control licenses through Avalanche, you can create Remote Control connection sessions. A connection session is when the mobile device is connected to Remote Control, allowing you to view and control the mobile device.

The Remote Control Client has an option to preconnect. When preconnect is enabled, the mobile device will automatically connect to the Remote Control Server without receiving a connection request. Then, when a user begins a connection session, the session begins quickly and easily because the device is already connected to the server. You can enable or disable preconnect from the Remote Control Console.

When you have initiated a connection session, the device appears in a Remote Control Viewer. If you launch the viewer from the Avalanche Web Console, the connection session will appear in the Web Viewer. If you launch from the Avalanche Java Console or the Remote Control Console, the connection session will appear in the Standard Viewer.

NOTE: Device skins are not supported in the Web Viewer. They may appear, but they won't have any functionality.

This section provides information about the following Remote Control connection tasks:

- Connecting to a Mobile Device
- Closing Remote Control Sessions
- Standard Viewer Tasks
- Web Viewer Tasks

Connecting to a Mobile Device

A connection session can be initiated from the Avalanche Java Console or the Avalanche Web Console.

When you initiate a connection session, the computer you are connecting from sends a request to the Remote Control Server. If the device is preconnected (has already established a connection to the server), the server connects the viewer to the device. If the device is not preconnected, the server requests the device to connect back to the server, and when the device responds the server connects the viewer to the device. Alternately, the Standard Viewer may try to connect to the device directly without routing traffic through the server. This option is only available when the device and viewer are on the same LAN.

NOTE: If the device is not configured to preconnect, the device user can manually preconnect by opening the Remote Control Client and tapping **File > Connect to Server**.

To connect to a device from the Avalanche Java Console:

- From the **Mobile Device Inventory** tab, right-click the name of the device and select **Remote Control** from the context menu.

  -Or-

- From the *Mobile Device Details* dialog box, click the **Device Control** tab and then double-click **Remote Control**.

  The *WLRemoteControl* dialog box appears while the viewer attempts to contact the device. When the Remote Control session has been initiated, the Standard Viewer appears. Clicking within the Standard Viewer sends the mouse click to the connected device. Typing on the physical keyboard sends the key commands to the mobile device.

To connect to a device from the Avalanche Web Console:

1. From the **Inventory** tab, click on the name of the device you want to connect to.

   The Mobile Device Details page appears.

2. In the Tools panel, click **Remote Control**.

   The Remote Control Web Viewer appears while the viewer attempts to contact the device. While the device is not connected, only the **Status** and **Edit Device** options will be available in the Available Commands panel. When the Remote Control session has been initiated, other commands will appears. Click **View** to open the device view and interact with the device.

Closing Remote Control Sessions

When you close the window that the Standard Viewer appears in, the session is disconnected. The following are alternate methods to disconnect a connection session.

To close a connection session:

- From the Standard Viewer, select **File > Exit**.

  -Or-

- From the Web Viewer, click **Disconnect** in the Available Commands panel.

Standard Viewer Tasks

This section provides information about using Remote Control once you are connected to a mobile device. The tasks detailed in this section assume you are connected to a mobile device.

NOTE: There are two different Viewer interfaces, depending on how you initiated the Remote Control connection. If you launched from the Avalanche Java Console, Remote Control will use the Standard Viewer. If you launched from the Avalanche Web Console, Remote Control will use the Web Viewer. You cannot connect to a device with both the Standard Viewer and the Web Viewer at the same time.

This section contains tasks for working from the Standard Viewer. For information on working from the Web Viewer, see Web Viewer Tasks on page 136.

Once you connect to a mobile device, the Standard Viewer offers a variety of tools and configuration options. The Standard Viewer has the following tabs:

- **Device**. From this tab you can view the mobile device and perform operations on the mobile device. Clicking within the Standard Viewer sends the mouse click to the connected device. Typing on the keyboard sends the key commands to the mobile device.

- **File System.** From this tab you can access the file system on the mobile device. For detailed information about tasks you can perform in the File System tab, see Accessing the File System.

- **Registry Viewer**. The Registry Viewer allows you to view and edit the registry on the mobile device. For detailed information about the Registry Viewer, see Using the Registry Viewer.

- **Processes**. The Process Manager provides a view of the processes that are currently running on the mobile device. For detailed information, see Using the Process Manager.

- **Access Log**. The Remote Control logging feature stores information about the current connection session of Remote Control. For detailed information, see Accessing the Log File.

- **Device Info**. The **Device Info** tab provides information about the mobile device to which you are connected. For details about this tab, see Viewing Device Information.

The Standard Viewer has the following toolbar buttons:

Record. Begins to record a video.

Stop Record. Stops a video recording.

Camera. Takes a picture of the current mobile device screen.

Toggle Skin. Toggles whether a skin for the device is displayed or not.

Refresh. Refreshes the mobile device screen.

Zoom in. Zooms in on the mobile device display.

Zoom out. Zooms out on the mobile device display.

Autoscale. Automatically scales the mobile device display to fit the size of the window you have open.

Set Video Mode. Allows you to set the video mode to **Standard** or **Image**.

This section also provides information about the following Standard Viewer tasks:

- Configuring Display and Capture Options
- Using Device Tools

Accessing the File System

You can access the File Explorer of the mobile device using the Standard Viewer. This enables you to perform tasks and operations in the File Explorer on the mobile device from your Remote Control connection session. Access the File Explorer by opening the Standard Viewer clicking the **File System** tab. You can also access the File System from the Avalanche *Mobile Device Details* dialog box. Click the **Device Control** tab and then double-click the **File System** icon.

This section provides information about the following tasks from the Standard Viewer:

- Creating New Folders
- Copying Files to the PC
- Copying Files to the Mobile Device
- Manipulating Files on the Device
- Pasting Text

Creating New Folders

You can create and name directories on the device using the File Explorer.

To create a new folder on the device from the Standard Viewer:

1. Click on the **File System** tab.
2. Navigate to the location where you want to create the new folder.
3. Right-click and select **New**.

   The folder is created in the selected location.
4. Right-click the new folder and select **Rename Folder**.
5. Type the name of the folder.

Copying Files to the PC

You can copy files from the mobile device to the PC.

To copy files to the PC using the Standard Viewer:

1. Click on the **File System** tab.
2. Select the file or folder you want to copy to the PC. From the **Files** menu, select **Copy to PC**.

   -Or-

   Right-click the file you want to copy and select **Copy to PC**.

   The *Browse for Folder* dialog box opens.
3. Navigate to the location where you want to save the file.
4. Click **OK**.

   The folder is copied to the selected location.

Copying Files to the Mobile Device

You can copy files from the machine running Remote Control and place them in the File Explorer of a connected mobile device.

To copy files to the mobile device using the Standard Viewer:

1. Click on the **File System** tab.
2. Navigate to where you want to place the file.
3. From the **Files** menu, select **Copy to Remote**.

   The *Open* dialog box appears.
4. Locate the file that you want to copy to the mobile device and click **Open**.

   The *Sending Files Status* dialog box appears. The files are copied to the selected location.

5 Once the file transfer is complete, click **OK**.

NOTE: You can also drag files directly from the PC and drop them into the File Explorer.

Manipulating Files on the Device

From the File Explorer, you can run, open, view or delete files located on the mobile device. You can run any file with an `.exe` extension.

To run/open/view/delete a file on the mobile device from the Standard Viewer:

1 Click on the **File System** tab.

2 Using the tree view, navigate to the location of the file.

3 Right-click the file and select the desired option.

- If you are running a program, the program opens on the mobile device.
- If you are opening a file, the file appears on the mobile device.
- If you are viewing a file, the file appears on the PC.
- If you are deleting a file, the file is removed from the list.

4 Click the **Device** tab to view the mobile device screen.

Pasting Text

Remote Control allows you to copy and paste text from the PC to the mobile device. Only textual information can be copied and pasted. For example, you could copy text from a text editor on the PC to Pocket Word on the mobile device. Both text editors must be open.

Use the **Paste to device** command to paste information from the PC to the mobile device.

To copy and paste information using the Standard Viewer:

1 Open a text editor on both PC and the mobile device.

2 From the text editor on your PC, select the text to be copied and pasted.

3 Right-click and select **Copy**.

4 In the Standard Viewer, select **Edit > Paste to device**.

The text appears in the text editor on the mobile device.

Using the Registry Viewer

From the **Registry Viewer** tab in the Standard Viewer, you can browse and view the registry of a connected mobile device. Access the device's registry from the Standard Viewer by clicking the **Registry Viewer** tab. You can also access the Registry Viewer through the *Mobile*

Device Details dialog box. Click the **Device Control** tab and then double-click the Registry Viewer icon.

This section provides information about the following Registry Viewer tasks:

- Creating New Registry Keys
- Creating Key Values
- Viewing Binary Data
- Modifying Key Values
- Editing Binary Data
- Deleting Key Values
- Exporting Registries
- Comparing Registries

Creating New Registry Keys

From the **Registry Viewer** tab, you can create new registry keys on the mobile device.

To create a new registry key using the Standard Viewer:

1. Open the Registry Viewer.
2. Navigate to where you want to create a new key.
3. Right-click and select **New Key**.

   A **New Key** folder appears.
4. Right-click the **New Key** folder and select **Rename**.
5. Name the folder.

Creating Key Values

You can create String, Binary, DWORD, and Multi-String values in the mobile device registry.

To create key values using the Standard Viewer:

1. Open the Registry Viewer.
2. Navigate to where you want to create a new key.
3. Right-click and from the menu that appears, select the key value you want create.

   The value appears in the file list box.

Viewing Binary Data

For any registry key, you can display the binary data for that key.

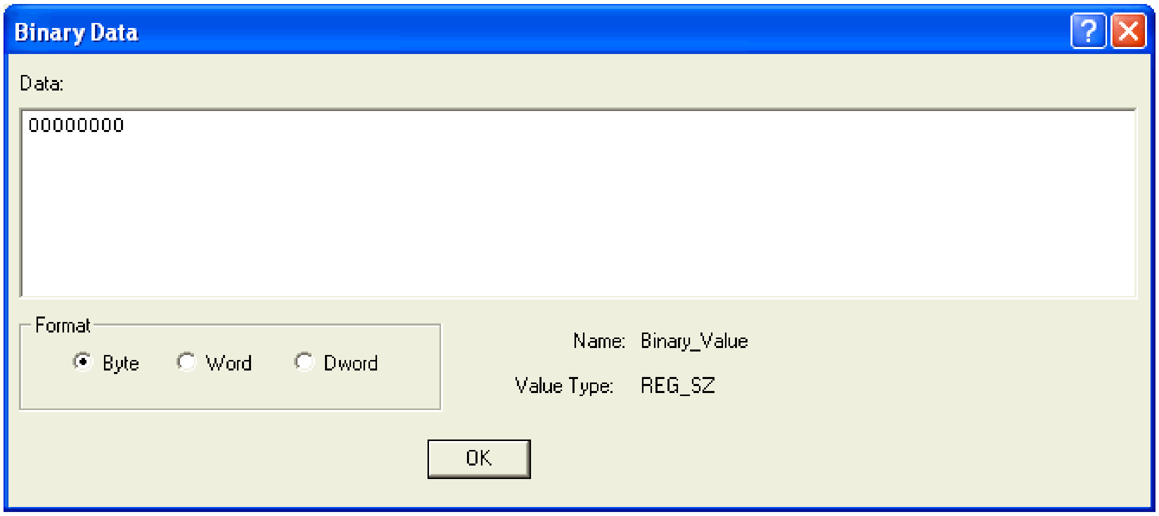
To view binary data using the Standard Viewer:

1 Open the Registry Viewer.

2 Navigate to the location of the key you want to view.

3 Right-click the key and select **Display Binary Data**.

The *Binary Data* dialog box appears.



Data:
00000000

Format
● Byte ○ Word ○ Dword

Name: Binary_Value

Value Type: REG_SZ

Binary Data

4 Use the options in the Format area to display the data in **Byte**, **Word** or **Dword** format.

5 Click **OK** when you are finished.

Modifying Key Values

You can modify key values in the **Registry Viewer** tab of the Standard Viewer.

To modify key values using the Standard Viewer:

1 Click the **Registry Viewer** tab.

2 Navigate to the location of the key you want to edit.

3 Right-click the key and select **Modify**.

A dialog box appears according to what type of key you are modifying.

- If you are modifying a String or Binary value, the *Edit String* dialog box appears.
- If you are modifying a DWORD key value, the *Edit DWORD Value* dialog box appears.

- If you are modifying a Multi-String value, the *Edit Multi-String* dialog box appears.

4 Using the configuration options available in each dialog box, edit the key value.

5 Click **OK** when you are finished.

The key value is modified.

Editing Binary Data

You have the ability to modify the binary data of each type of key value in the **Registry Viewer** tab of the Standard Viewer.

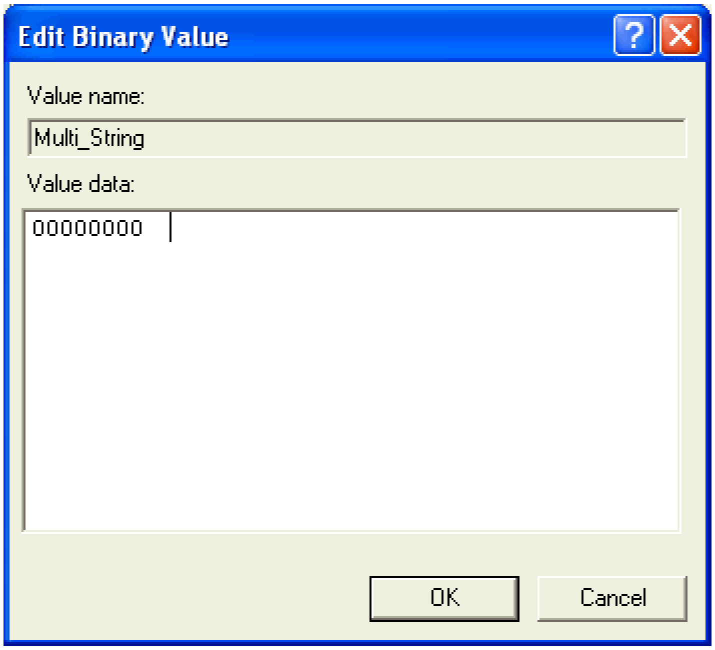
To modify binary data using the Standard Viewer:

1 Click the **Registry Viewer** tab.

2 Navigate to the location of the key you want to modify.

3 Right-click the key and select **Modify Binary Data**.

The *Edit Binary Value* dialog box appears.



Multi_String

00000000

Edit Binary Value

4 In the **Value data** text box, edit the binary value as desired.

5 Click **OK** when you are finished.

Deleting Key Values

You can delete registry key values that you no longer need.

To delete key values using the Standard Viewer:

1 Click the **Registry Viewer** tab.

2 Navigate to the location of the key you want to delete.

3 Right-click the key and select **Delete**.

A dialog box appears asking you to confirm that you want to delete this key value.

4 Click **Yes** if you want to permanently delete the value.

The key value is removed from the registry.

Exporting Registries

You can export registries from the mobile device and save them as `.xml` files on your computer.

To export a registry using the Standard Viewer:

1 Click the **Registry Viewer** tab.

2 Navigate to the location of the registry you want to export.

3 From the **File** menu, select **Export**.

A *Save As* dialog box appears.

4 Navigate to the location where you want to save the registry.

5 Name the registry and click **Save**.

The registry is saved as an `.xml` file.

Comparing Registries

There are two methods you can use to compare registries:

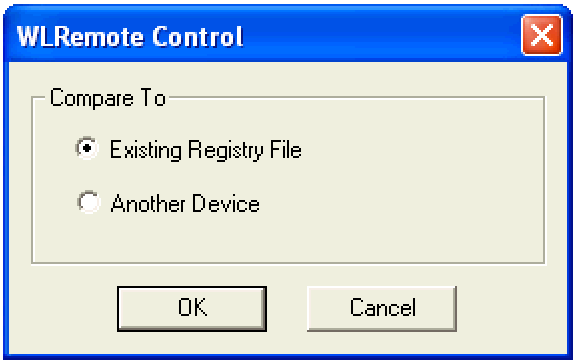
- You can compare the registry on a mobile device to a registry you have saved and exported.
- You can compare the registry of one device to another device after establishing a second connection session.

To compare registries from the Standard Viewer:

1 Click the **Registry Viewer** tab.

2 From the **File** menu, select **Compare**.

A dialog box appears.



WLRemote Control

Compare To

● Existing Registry File

○ Another Device

3 If you are comparing it to a saved registry, select the **Existing Registry** option and click **OK**. In the dialog box that appears, navigate to the location of the registry to which you want to compare and click **Open**.

-Or-

If you are comparing it to the registry of another device, select **Another Device** and click **OK**. In the dialog box that appears, specify the connection type and IP address for the second device and click **OK**.

A *Registry Compare* dialog box appears displaying the existing registry file.

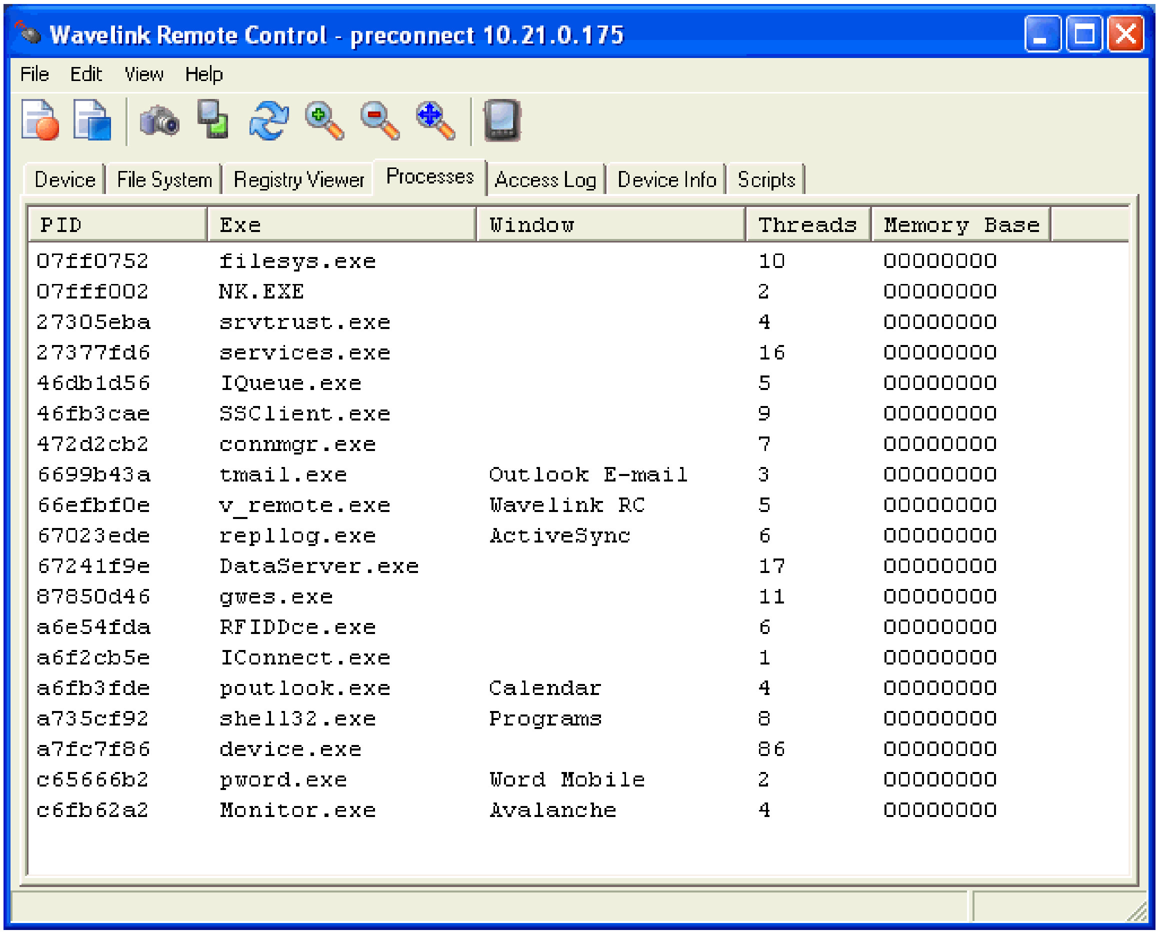
4 When you are finished comparing registries, close the *Registry Compare* dialog box.

Using the Process Manager

The **Processes** tab in the Standard Viewer allows you to view the processes that are currently running on the mobile device. You have the option to activate or kill (end) any of the processes. Activating a process brings that process to the foreground of the device screen. Killing a process stops the process.

To use the Process Manager:

1 Click the **Processes** tab.



PID	Exe	Window	Threads	Memory Base
07ff0752	filesys.exe		10	00000000
07fff002	NK.EXE		2	00000000
27305eba	srvtrust.exe		4	00000000
27377fd6	services.exe		16	00000000
46db1d56	IQueue.exe		5	00000000
46fb3cae	SSClient.exe		9	00000000
472d2cb2	connmgr.exe		7	00000000
6699b43a	tmail.exe	Outlook E-mail	3	00000000
66efbf0e	v_remote.exe	Wavelink RC	5	00000000
67023ede	repllog.exe	ActiveSync	6	00000000
67241f9e	DataServer.exe		17	00000000
87850d46	gwes.exe		11	00000000
a6e54fda	RFIDDce.exe		6	00000000
a6f2cb5e	IConnect.exe		1	00000000
a6fb3fde	poutlook.exe	Calendar	4	00000000
a735cf92	shell32.exe	Programs	8	00000000
a7fc7f86	device.exe		86	00000000
c65666b2	pword.exe	Word Mobile	2	00000000
c6fb62a2	Monitor.exe	Avalanche	4	00000000

Process Manager

2 Select a process and right-click to **Activate** or **Kill** that process.

Accessing the Log File

The Remote Control logging feature stores information about the connection sessions for Remote Control.

This section provides information about the following logging options:

- Viewing and Clearing Log Files
- Configuring Logging

Viewing and Clearing Log Files

You can view the log file for a current Remote Control session from the **Access Log** tab. If you need to delete the information that displays in the log file, you can clear the entire file. When you select to clear the log file, the entire log in the **Access Log** tab is removed. You cannot select individual items to clear.

To clear the log file:

1. Click the **Access Log** tab.
2. From the **Edit** menu, select **Clear Log**.

   -Or-

   Right-click within the log and select **Clear Log**.

   The **Access Log** tab clears.

Configuring Logging

Remote Control supports the following log levels:

- **Critical**. This level writes the least information to the log file, reporting only critical errors that cause a process to abort.
- **Error**. This level writes Error messages and Critical messages to the log file.
- **Warning**. This level writes Critical messages, Error messages, and Warning messages to the log file.
- **Informational**. This level writes enough information to the log file to diagnose most problems.
- **Debug**. This logging level writes large amounts of information to the log file that can be used to diagnose more serious problems.

You can change the logging for a particular connection session through the *Configure* dialog box located in the Standard Viewer.

To change the logging configuration:

1. Click the **Access Log** tab.
2. From the **File** menu, select **Configure**.

   The *Configure* dialog box appears.
3. In the Logging area, select the log level from the **Level** drop-down menu.
4. Enter the maximum size you want the log level to reach in the **Max Size** text box.
5. Click **OK**.

   The *Configuration Data Change* dialog box appears. This dialog box indicates that you changed something from the original profile configuration.

- If you want to use your updated changes, but do not want to update the configuration file, select the **Use New Configuration** option.
- If you want to use your updated changes and update the configuration file to reflect those changes, select the **Use New Configuration and Update config file** option.

6 Click **OK**.

The new logging information is applied.

NOTE: You can also set up the logging configuration when you configure the Client. For more information, see Editing the Remote Control Package on page 109.

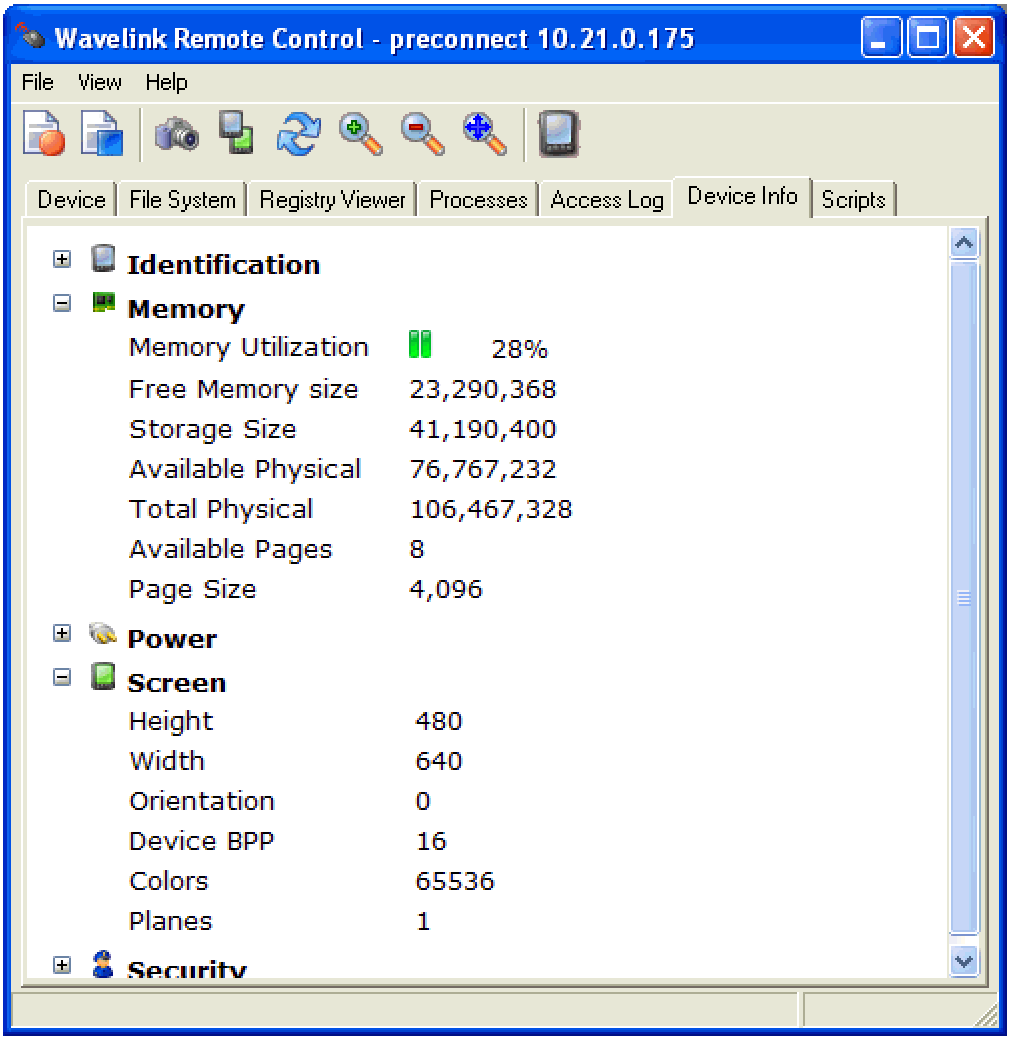
Viewing Device Information

The **Device Info** tab in the Standard Viewer provides information about the mobile device to which you are connected. This information includes:

- Identification, including OEM information and the operating system versions.
- Memory, including the amount of free memory left on the device and storage space.
- Power, including information about the battery level and charging status of the mobile device.
- Screen, including information about the screen size and orientation.
- Security, including password information.

To view device information:

- From the Standard Viewer, click the **Device Info** tab.



Identification

Memory

Memory Utilization	28%
Free Memory size	23,290,368
Storage Size	41,190,400
Available Physical	76,767,232
Total Physical	106,467,328
Available Pages	8
Page Size	4,096

Power

Screen

Height	480
Width	640
Orientation	0
Device BPP	16
Colors	65536
Planes	1

Security

Device Info

Configuring Display and Capture Options

When you create a Remote Control connection session, you can configure the following display and capture options:

- Setting Video Mode
- Configuring Display Refresh Rates
- Sizing the Mobile Device Display
- Toggling Statistics
- Using Device Skins
- Recording Videos
- Performing Screen Captures

Setting Video Mode

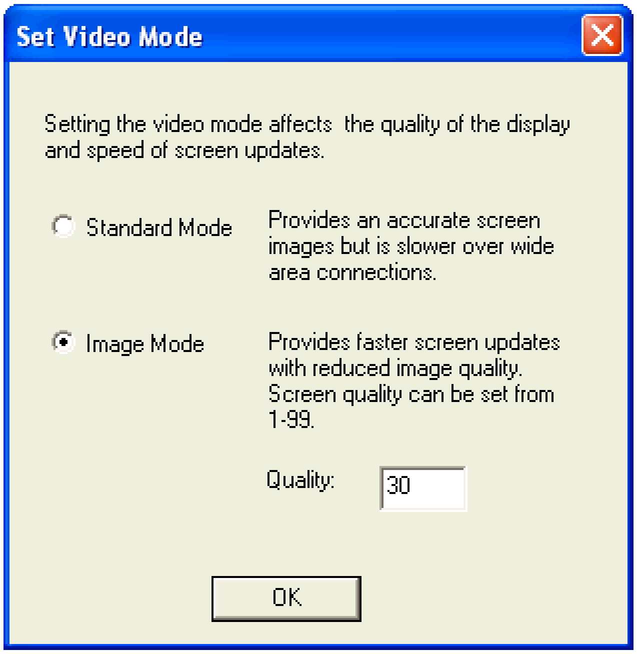
You can set two types of video mode depending on how you want the mobile device screen to appear and how fast you want the program to run.

- **Standard Mode**. This mode provides the clearest, most accurate screen images. However the refresh rate is slower over wide area connections.
- **Image Mode**. This mode provides faster screen updates with reduced image quality. You can set the screen display quality from one - 99 based on preference.

To set video mode:

1 From the Standard Viewer, click the Video Mode icon.

The *Set Video Mode* dialog box appears.



Set Video Mode

Setting the video mode affects the quality of the display and speed of screen updates.

○ Standard Mode — Provides an accurate screen images but is slower over wide area connections.

● Image Mode — Provides faster screen updates with reduced image quality. Screen quality can be set from 1-99.

Quality: 30

Set Video Mode

2 Select the video mode you want to use and click **OK**.

Configuring Display Refresh Rates

You can configure the rate at which Remote Control refreshes the mobile device screen display. The refresh rate can range from 1 to 17 frames per second. Your selection is dependent on the speed of the mobile device and the communication method you are using. Select the best setting for your usage that does not impact the mobile device CPU too heavily and allows for reasonable screen updates.

NOTE: You can also configure the refresh rate option when you configure the Client. For more information, see Editing the Remote Control Package on page 109.

To configure the refresh rate:

1 From the Standard Viewer, click **File > Configure**.

The *Configure* dialog box appears.

2 From the **Refresh Rate** drop-down list, select the rate at which you want the screen display to refresh.

3 Click **OK**.

The *Configuration Data Change* dialog box appears. This dialog box indicates that you changed something from the original profile configuration.

- If you want to use your updated changes, but do not want to update the configuration file, select the **Use New Configuration** option.
- If you want to use your updated changes and would like to update the configuration file to reflect those changes, select the **Use New Configuration and Update config file** option.

4 Click **OK**.

Sizing the Mobile Device Display

While you are viewing a device, you can configure the size of the mobile device display to scale from .5x - 4x. There is also an auto-scale option that will fit the display to the size of the window you have open.

NOTE: You can also configure scale setting when you configure the Client. For more information, see Editing the Remote Control Package on page 109.

To change the display scale:

- From the **View** Menu, select **Scale** and then the size you want the display to be.

  -Or-

- Use the **Zoom In**, **Zoom Out**, or **Autoscale** toolbar options to adjust the size of the display.

To set the scale for the profile:

1 From the **File** menu, select **Configure**.

The *Configure* dialog box appears.

2 From the **Scale** drop-down list, select the size of the mobile device display.

3 Click **OK**.

The *Configuration Data Change* dialog box appears. This dialog box indicates that you changed something from the original profile configuration.

- If you want to use your updated changes, but do not want to update the device configuration file, select the **Use New Configuration** option.
- If you want to use your updated changes and update the configuration file to reflect those changes, select the **Use New Configuration and Update config file** option.

4 Click **OK**.

The device will appear as the size you selected.

Toggling Statistics

You can display connection statistics at the bottom of the Standard Viewer. The statistics include bytes sent, bytes received, the number of keys pressed during the session, and the number of mouse clicks during the session.

To toggle statistics:

1 Click the **Device** tab.

2 From the **View** menu, select **Toggle Statistics**.

Using Device Skins

From the Standard Viewer, you can toggle between a selected skin and the default view (no skin). To use skins, you must enable the **Show Skin** option when you are configuring the Client or from the *Configure* dialog box in the Standard Viewer.

If you did not enable the **Show Skin** option when you configured the Client, you can configure the connection to display skins from the Standard Viewer.

NOTE: For information on how to enable the **Show Skin** option, see Editing the Remote Control Package on page 109.

Once you enable the **Show Skin** option, Remote Control displays the skin for the connected mobile device. You can toggle the skin to display or not display from the **Device** tab in the Standard Viewer.

To enable the Show Skin option:

1 From the **File,** select **Configure**.

The *Configure* dialog box appears.

2 Enable the **Show Skin** option.

3 Select which skin to display from the **Skin** drop-down list.

4 Click **OK**.

The *Configuration Data Change* dialog box appears. This dialog box indicates that you changed something from the original profile configuration.

- If you want to use your updated changes, but do not want to update the configuration file, select the **Use New Configuration** option.
- If you want to use your updated changes and would like to update the configuration file to reflect those changes, select the **Use New Configuration and Update config file** option.

5 Click **OK**.

The skin image appears in the **Device** tab of the *Standard Viewer*.

To toggle skins:

1 Select the **Device** tab in the Standard Viewer.

2 From the **View** menu, select **Toggle Skin**.

-Or-

Click the **Toggle Skin** icon in the Standard Viewer toolbar.

Recording Videos

You can record a video of your Remote Control session for training or demonstration purposes. First, you must enable AVI as the recording method. You can select the AVI recording method from the *Configure* dialog box in the Standard Viewer. You can play the AVI file using any program compatible with the AVI video file format, such as Windows Media Player.

To display the cursor while recording:

1 From the **File** menu, select **Configure**.

The *Configure* dialog box appears.

2 If you want the cursor to display in the AVI video, enable the **Show Cursor** option.

3 Click **OK**.

The *Configuration Data Changed* dialog box appears. This dialog box indicates that you changed something from the original profile configuration.

- If you want to use your updated changes, but do not want to update the configuration file, select the **Use New Configuration** option.
- If you want to use your updated changes and update the configuration file to reflect those changes, select the **Use New Configuration and Update config file** option.

4 Click **OK**.

The new recording information is applied.

To record the AVI file:

1 In the Standard Viewer, click the Record toolbar icon.

The *Save As* dialog box appears.

2 Name the file and click **Save**.

The *Video Compression* dialog box opens.

3 Configure the compression options and click **OK**.

4 From the **Device** tab in the Standard Viewer, perform the actions on the mobile device that you want to record.

5 Click the Stop Record toolbar icon when you are finished.

The AVI file is saved in the directory specified.

Performing Screen Captures

When you are connected to a mobile device through a Remote Control session, you can capture screen images from the mobile device.

Before you can take screen captures using Remote Control, you must select the method by which you want to capture the screen image. You can capture screen shots using three different methods:

- **File**. Use this option to save the image to a specified file. Once you capture the screen image, you can specify where you want to save the file.
- **Clipboard**. Use this option to place the image on the clipboard.
- **One-click**. Use this option to click once and send the screen capture to a previously specified file format. The file format must be chosen in the *Configure* dialog box. The file name will be automatically created based on the current time and date.

You can configure screen capture methods from the Standard Viewer. You can also configure screen capture methods when you configure the Client. For more information, see Editing the Remote Control Package on page 109.

To configure the screen capture method:

1 In the Standard Viewer, select **File > Configure**.

The *Configure* dialog box opens.

2 In the Screen Capture area, select the method you want to use when performing screen captures.

3 Click **OK**.

The *Configuration Data Change* dialog box appears. This dialog box indicates that you changed something from the original profile configuration.

- If you want to use your updated changes, but do not want to update the configuration file, select the **Use New Configuration** option.
- If you want to use your updated changes and update the configuration file to reflect them, select the **Use New Configuration and Update config file** option.

4 Click **OK**.

The screen capture method you configured is now enabled.

To perform a screen capture:

1 In the **Device** tab, navigate to the screen view of the device you want to capture.

2 Click the Camera toolbar icon.

The image is saved according to the screen capture method you configured in the *Configure* dialog box.

Using Device Tools

When you are connected to a device, Remote Control has several tools to help you control the device. These tools include:

- **Soft Reset**. Forces a warm boot on the device. When you reset the device, the Remote Control connection is terminated.
- **Suspend**. Puts the mobile device in a suspended (sleep) state. When you suspend the device, the Remote Control connection is terminated.
- **Clearing Client Settings**. Clears changes to the Remote Control settings that the device user may have set.

To use the device tools:

1 Click the **Device** tab.

2 From the **Tools** menu, select the tool you want to use.

If you select **Soft Reset** or **Suspend**, the connection session is terminated.

If you select **Clearing Client Settings**, any Remote Control settings changed by the device user are reset.

Web Viewer Tasks

This section provides information about using the Remote Control Web Viewer once you are connected to a mobile device. The tasks detailed in this section assume you are connected to a mobile device. For information about creating a connection session, see Connecting to Mobile Devices on page 115.

NOTE: There are two different Viewer interfaces, depending on how you initiated the Remote Control connection. If you launched from the Avalanche Java Console, Remote Control will use the Standard Viewer. If you launched from the Avalanche Web Console, Remote Control will use the Web Viewer. You cannot connect to a device with both the Standard Viewer and the Web Viewer at the same time.

This section contains tasks for working from the Web Viewer. For information on working from the Standard Viewer, see Standard Viewer Tasks on page 117.

Once you connect to a mobile device, Remote Control offers a variety of functionality, tools and configuration options. The Web Viewer has the following tabs:

- **Device**. For information on tasks performed from the **Device** tab, see The Device Tab.
- **Files**. The **Files** tab allows you to view and modify the files on the device. You can run, open, download, rename, or delete files. For information on tasks performed from the **Files** tab, see Using the File Explorer.
- **Registry**. The **Registry** tab allows you to view and modify the device registry. For information on tasks performed from the **Registry** tab, see Using the Registry Explorer.
- **Processes**. The **Processes** tab allows you to view, kill, and activate processes on the device. For information tasks performed from the **Processes** tab, see Using the Process Manager.
- **Device Info**. The **Device Info** tab provides information on the device ID, memory, power, screen, and security. You cannot change any of the information from this tab. For details on the information available on this tab, see Viewing Device Information.
- **Scripts**. The **Scripts** tab allows you to create scripts in JavaScript to run on your device using Remote Control. For more information on how to use the Script Editor, see the *Remote Control Scripting Reference Guide* on the Wavelink web site.

NOTE: Skins may be displayed in the Web Viewer, but they will not be functional.

The Device Tab

The **Device** tab in the Web Viewer allows you to interact with the device and view its access history and logs. You can also perform tasks such as a reboot or device sync. The tab has four panels:

Device Description Panel

The Device Description panel on the Web Viewer **Device** tab provides information about the device you are connected to, a thumbnail of the current display on the device, and buttons for updating or refreshing the thumbnail. Device information may include:

Status The connection status of the device.

OEM Info OEM info as reported by the device.

Server Address Address for the Avalanche Mobile Device Server.

Ava Term ID Terminal ID assigned to the device by Avalanche.

Last Seen Last time the device was connected to.

Description Device description set in Remote Control Console.

IP Address IP address of the mobile device.

Phone Number Phone number for the device.

Carrier Carrier for the device’s phone service.

Available Commands Panel

The following commands are performed from the Available Commands panel on the **Device** tab:

View Opens a real-time view of the device in a new tab or window.

Status Displays information about the connection status. When you click **Status**, the *Device Status* dialog box appears. This dialog box allows you to refresh the status of the device, disconnect, reboot, or ping the device, or display the Remote Control Client interface on the device.

Edit Device Allows you to edit the device description details, including the phone number, carrier, name and description.

Disconnect Disconnects the device from the Remote Control session.

Reboot Performs a warm boot of the device. The connection session is terminated.

Suspend Sends the device into a suspended (sleep) state. The connection session is terminated.

Text Message	Sends an SMS text message to the mobile device.
Device Sync	Sends an SMS message to the device requesting it to connect to the Avalanche Mobile Device Server.

Device Log Panel

The Device Logs panel displays Remote Control logged activity for the device. This includes the time of the activity, the user who performed the action, whether the action was successful, and possible additional information.

Access History Panel

The Access History Panel displays Remote Control connection history for the device. This includes the time of the activity, the user who attempted to connect, the IP address the Avalanche user connected from, and the access type for the connection.

Using the File Explorer

You can access the File Explorer of the mobile device from your PC during your Remote Control connection session. This enables you to view, copy, rename, or delete files and perform tasks on the mobile device.

To use the File Explorer:

1. From the Avalanche Web Console, navigate to the Mobile Device Details page and click **File Explorer**.

   -Or-

   After you have established a Remote Control session with the device, click the **Files** tab in the Web Viewer.

2. Use the folder icons to navigate to the desired file.

   - When you select the file, the file information appears in a panel above the File Explorer, and you have the options to **Run**, **Open**, **Download** the file from the mobile device, **Rename**, or **Delete**.

   - To copy a file to the device, navigate to the location you want the file stored and click **Upload File**. When the Uploading Files area appears, click **Browse** to find the file you want to copy to the device. After selecting the file, click **Upload**.

   - Use the **Add Directory** and **Delete Directory** options to change the file structure.

   Remote Control will make the changes on the device as you perform the desired tasks.

Using the Registry Explorer

From the **Registry** tab in the Web Viewer, you can view and edit the registry of a connected mobile device.

To view and edit the registry:

1 From the Avalanche Web Console, navigate to the Mobile Device Details page and click **Registry Explorer**.

-Or-

After you have established a Remote Control session with the device, click the **Registry** tab in the Web Viewer.

2 Use the tree view to navigate to the registry key you want to view or edit.

- If you are adding or deleting a registry key, click **Add Key** or **Delete Key** at the top of the panel.
- If you are editing a current value, select the name of the key and the Editing Registry Value panel appears. Make changes as desired and click **Save**.
- If you are adding a value, click **Add New Value** and the Adding Registry Value panel appears. Make changes as desired and click **Save**.

Remote Control will make the changes on the device as you perform the desired tasks.

Using the Process Manager

The **Processes** tab in the Web Viewer allows you to view the processes that are currently running on the mobile device. You have the option to activate or kill (end) any of the processes. Activating a process brings that process to the front of any other programs running on the mobile device. Killing a process stops the process.

To use the Process Manager:

- From the Avalanche Web Console, navigate to the Mobile Device Details page and click **Process Manager**.

  -Or-

- After you have established a Remote Control session with the device, click the **Processes** tab in the Web Viewer.

  - To kill a process, select it from the list and click **Kill**.
  - To activate a process, select it from the list and click **Activate**.

Remote Control will make the changes on the device as you perform the desired tasks.

Viewing Device Information

The **Device Info** tab in the Web Viewer provides information about the mobile device to which you are connected. This information includes:

- Identification, including OEM information and the operating system versions.
- Memory, including the amount of free memory left on the device and storage space.
- Power, including information about the battery level and charging status of the mobile device.
- Screen, including information about the screen size and orientation.
- Security, including password information.

To view device information:

- After you have established a connection, click the **Device Info** tab in the Web Viewer.

Chapter 12: Managing Mobile Device Profiles

You can use a mobile device profile to change settings on your mobile devices, as well as add, change, and remove custom properties and registry keys.

A mobile device profile has the following general options:

Status Enables or disables the profile.

Home Sets the home location for the profile.

Notes Any notes for the profile.

Server Address Specifies the address of a specific mobile device server you want the devices to connect to.

Enable SMS Notification Allows SMS messages to be sent to the device from the Avalanche Console.

Force Package Synchronization Synchronizes each file of each package on the device without checking the meta-file, which provides information about the state of the files. When the option is not enabled, the server checks the meta-file, and then synchronizes only the files that have been altered or do not match.

Restrict simultaneous device updates Limits the number of devices using the profile that are allowed to update simultaneously. This may be useful if there is a particular update that will take significant bandwidth or time. Restrict how many devices receive that update at a time so that other functions aren't affected.

Orphan Package Removal Removes packages that have been orphaned from the device. A package is considered orphaned if it has been deleted from the Avalanche Console, if the software profile it belongs to has been disabled, or if the package has been disabled. Orphaned packages must be listed by name. Orphaned packages must be listed by name. Orphan package removal will only happen once, when the profile is first applied.

Selection Criteria Determines which devices the profile is applied to. For information on selection criteria, see Using Selection Criteria on page 163.

Authorized Users The **Authorized Users** button allows you to assign privileges for a profile to a user that does not have rights for that profile. This allows you to give a user permission for one specific profile, rather than all profiles of a specific type. Users that already have permission for the profile will not appear in the list of available users. For information about creating users and assigning permissions, see Managing User Accounts on page 35.

The home location for the profile is the location you have selected when you create the profile. Other options on a mobile device profile such as custom properties, registry keys, device wipe folders, and advanced configurations are described in the following sections:

- Configuring Device Wipe Folders
- Editing Custom Properties for Mobile Device Profiles
- Editing Registry Keys for a Mobile Device Profile
- Configuring Mobile Device Profile Advanced Settings

NOTE: For information on exporting a profile to use for configuring an Enabler, see Exporting Profiles for Configuring Enablers on page 60.

To create and configure a mobile device profile:

1 From the **Profiles** tab, click **Add Profile**.

The Add Profile Wizard appears.

2 Select the **Mobile Device Profile** option and click **Next**.

3 Type a **Name** for the profile and set the status to either **Enabled** or **Disabled**. Click **Next**.

4 Use the Selection Criteria Builder to create selection criteria for the profile. Click **Next**.

5 Confirm that the information is correct and click **Finish**.

The profile is created. Use the **Edit** button to configure the options for the profile.

Configuring Device Wipe Folders

Device wipe folders in a mobile device profile allow you to specify folders or directories on the device that contain sensitive information. When a device is wiped, all the information in the folders is deleted.

To configure device wipe folders:

1 From the **Profiles** tab, select the mobile device profile from the Profile List.

2 Click **Edit**.

3 In the **Mobile Device Profile** tab, click **Add** in the Device Wipe Folders area.

The *Add Folder* dialog box appears.

4 Type the path to the folder on the device and click **OK**.

If the server is unable to contact the device using a TCP/IP connection, it will attempt to send the wipe command using SMS. When the device's Enabler receives the command, it will delete all files in the specified folders and force the device to reboot. If any of the selected files were in use, the Enabler will try again to delete them after the reboot.

For information on performing a device wipe after the mobile device profile has been deployed, see Wiping a Mobile Device on page 98.

Editing Custom Properties for Mobile Device Profiles

Custom properties allow you to define specific properties that you want applied to the mobile device. An example of a custom property would be `location = Chicago`. Once a custom property has been applied to a device, you can use it as a selection criterion. You can apply custom properties to mobile devices through a mobile device profile.

You also have the option to edit or remove custom properties currently existing on the device through a mobile device profile. You must know the name of the property in order to edit or remove it.

NOTE: Deleting a property from a profile will not remove the property from the device.

To add a custom property:

1. From the **Profiles** tab, select the profile you want to configure.
2. Click **Edit**.
3. In the Device Properties area, select the group (such as General or Custom) to which you want to add the property. Click **Add**.

   The *Add Property* dialog box appears.
4. Type the **Property Name** and **Property Value** in the text boxes.
5. Select **add** from the **Action** drop-down list.
6. Click **OK**.

   The task is added to the list in the Properties area. The property will be added when the profile is applied on the mobile device.
7. Save your changes.

To edit or remove a custom property from the device:

1. From the **Profiles** tab, select the profile you want to configure.
2. Click **Edit**.
3. In the Device Properties area, select the property you want to edit. Click **Edit**.

The *Edit Property* dialog box appears.

4 If you want to edit the value of the property, type the new value in the **New Property Value** text box.

5 If you are editing the value of the property, select **add** from the **Action** drop-down list. If you want to remove the property from the device, select **remove** from the **Action** drop-down list.

6 Click **OK**.

The task is added to the list in the Properties area. The property will be edited when the profile is applied on the mobile device.

7 Save your changes.

Editing Registry Keys for a Mobile Device Profile

You can add registry keys to a mobile device profile which will be added to the device registry when the profile is applied. Once you add a registry key to the profile, you can add values for the key. You also have the option to edit or remove existing registry keys or values on the device. You must know the name and location of the key or value in order to edit or remove it.

This section contains information on the following tasks:

- Adding a Registry Key to a Mobile Device Profile
- Editing or Removing a Registry Key or Value

Adding a Registry Key to a Mobile Device Profile

When you add registry keys and values to a mobile device profile, they are added to the device registry when the profile is applied.

To add a registry key:

1 From the **Profiles** tab, select the profile you want to configure.

2 Click **Edit**.

3 In the Registry Settings area, select where you want to add the key and click **Add**.

The *Add Registry Key* dialog box appears.

4 Select the **Parent Key** from the drop-down list.

5 Type the **Name** of the new key in the text box.

6 Select **Add** from the **Action** drop-down list.

7 Click **OK**.

The key is added to the profile and you can configure its value.

To add a value to a registry key:

1 From the **Profiles** tab, select the profile you want to configure.

2 Click **Edit**.

3 In the Registry Settings area, select the key to which you want to add a value and click **Add a new registry value**.

The *Add Registry Value* dialog box appears.

4 Type the **Name** of the new value in the text box.

5 Select the **Type** from the drop-down list.

6 Type the **Data** in the text box.

7 Select **Add** from the **Action** drop-down list.

8 Click **OK**.

The task is added to the list in the Registry Settings area. The value will be added when the profile is applied on the mobile device.

Editing or Removing a Registry Key or Value

You can remove an existing registry key on a mobile device through a mobile device profile. Make changes to the key from the profile and apply the profile. If it is a mobile device profile, deploy the profile; if it is a Scan to Config profile, print and scan the barcodes. You must know the name of the key/value in order to remove it.

To remove a registry key:

1 From the **Profiles** tab, select the profile you want to configure.

2 Click **Edit**.

3 In the Registry Settings area, select the parent key of the key you want to delete and click **Add a new registry key**.

The *Add Registry Key* dialog box appears.

4 Ensure the **Parent Key** in the drop-down list is correct.

5 Type the **Name** of the key in the text box.

6 Select **Remove** from the **Action** drop-down list.

7 Click **OK**.

The task is added to the list in the Registry Settings area. The key will be removed when the profile is applied on the mobile device.

8 Click **Save** to save your changes.

To edit or remove a registry key value:

1 From the **Profiles** tab, select the profile you want to configure.

2 Click **Edit**.

3 In the Registry Settings area, select the key for which you want to edit or remove a value and click **Add a new registry value**.

The *Add Registry Value* dialog box appears.

4 Type the **Name** of the existing value in the text box.

5 If you want to edit the **Type** or **Data** of the value, enter the appropriate information in the provided boxes.

6 If you are editing the value, select **Add** from the **Action** drop-down list. If you want to remove the value from the device, select **Remove** from the **Action** drop-down list.

7 Click **OK**.

The task is added to the list in the Registry Settings area. The value will be changed when the profile is applied on the mobile device.

8 Click **Save** to save your changes.

Configuring Mobile Device Profile Advanced Settings

You can configure GPS reporting, geofence areas, time zone settings and update restrictions for your mobile devices from a mobile device profile. This section includes the following topics:

- Location Based Services
- Geofence Areas
- Regional Settings
- Update Restrictions

Location Based Services

Location-based services allow you to manage GPS statistics collection when your mobile devices have GPS capabilities and a phone. Configure the following options:

Enable location-based services Enables GPS reporting for devices using the selected mobile device profile.

Reporting interval Determines how often the device reports its GPS statistics to the Mobile Device Server.

Report location using cell towers Uses information from nearby cell towers to establish the location of the device.

Report location using GPS Uses GPS coordinates to establish the location of the device.

GPS acquisition timeout Determines how often the device checks its GPS coordinates.

Prompt user to initiate GPS acquisition Prompts the mobile device user to ask if Avalanche should be allowed to collect and report location-based data. This prompt will appear when the Enabler is launched.

Notify user after _ consecutive GPS failures Provides a notification to the mobile device user after the device has failed to acquire GPS coordinates the specified number of times.

To configure location-based services:

1. From the **Profiles** tab, select the mobile device profile from the Profile List.
2. Click **Edit**.
3. In the **Advanced Settings** tab, enable the desired options in the Location Based Services area.
4. Save your changes.

Geofence Areas

A geofence is a virtual perimeter defined by GPS coordinates. When you configure a geofence area and define it as the Home area, Avalanche can generate an alert when devices report a GPS position that is outside of the defined area.

To configure a geofence area:

1. From the **Profiles** tab, select the mobile device profile from the Profile List.
2. Click **Edit**.
3. In the **Advanced Settings** tab, ensure that **Enable location-based services** is enabled.
4. Click **Add** in the Geofence Areas region.

The *Add Geofence Area* dialog box appears.

5 Type a name for the area in the **Name** text box.

6 If you want the area to be a home area, enable the **Is a Home Area** check box.

7 Enter the start and end latitude and longitude for the geofence. The start point should be the southwest corner of your area, and the end point should be the northeast.

8 Click **Select**.

The area is added to the list.

Regional Settings

You can set the region and time zone for your mobile devices from a mobile device profile.

To change the regional settings of a mobile device profile:

1 From the **Profiles** tab, select the profile from the Profile List.

2 Click **Edit**.

3 From the **Advanced Settings** tab, use the drop-down lists in the Regional Settings area to select the region and time zone for your devices.

- If you want to edit the time zone settings that load automatically when you select the time zone from the drop-down list, click **Edit Time Zone**.
- If you want to revert to the time zone settings used on the local computer, click **Refresh Time Zone**.
- If you want the devices to adjust for Daylight Savings time automatically, enable the **Automatically adjust clock for Daylight Savings Time** option.

4 Save your changes.

Update Restrictions

For more control over bandwidth usage, restrict device-to-server updates by using blackout windows. During a device-to-server blackout, the mobile devices are not allowed to communicate with a Mobile Device Server.

To create a blackout window:

1 From the **Profiles** tab, select a mobile device profile from the Profile List.

2 Click **Edit**.

3 From the **Advanced Settings** tab, click **Add** in the Update Restrictions area.

The *Add Exclusion Window* dialog box appears.

4 Select the start and end time of the blackout window, and enable the boxes for the days you want the blackout to apply.

NOTE: Blackout windows are scheduled using a 24-hour clock. If you create a window where the start time is later than the end time, the window will continue to the end time on the following day. For example, if you scheduled a window for 20:00 to 10:00 on Saturday, it would run from Saturday 20:00 until Sunday 10:00.

5 Click **OK**.

6 Save your changes.

Chapter 13: Managing Mobile Device Groups

To better organize your wireless network, use the Avalanche Console to create collections of mobile devices called mobile device groups. These groups allow you to manage multiple devices simultaneously, using the tools available for managing individual mobile devices. A mobile device group can include devices assigned to the group's home location or associated sub-locations. Each mobile device can be a member of multiple mobile device groups.

A mobile device group will be available at its home location and inherited by any sub-locations. When a mobile device group is created, the home location is set by default to the location you currently have selected.

You can add authorized users for all mobile device groups or enable a user for a specific mobile device group. For information on adding an authorized user, see Assigning Authorized Users to Mobile Device Groups on page 42.

The topics in this section include:

- Creating Mobile Device Groups
- Viewing Devices in a Mobile Device Group
- Sending Messages to Mobile Device Groups
- Editing Properties for Mobile Device Groups
- Additional Mobile Device Group Functions

Creating Mobile Device Groups

Mobile device groups allow you to group devices together based on selection criteria you configure. You can create dynamic or static groups. In both group types, new devices can be added to the group based on changes to the selection criteria.

- **Dynamic Mobile Device Groups**. When you create a dynamic group, you configure selection criteria to define which devices you want to belong to the group. The devices currently in the Mobile Device Inventory that match the selection criteria are added to the group.

  When a new device that matches the selection criteria for a dynamic mobile device group connects to the Avalanche Console, it is automatically placed in the mobile device group. Dynamic mobile device groups will continually add and remove mobile devices based on the selection criteria, without further management.

- **Static Mobile Device Groups**. When you create a static group, you configure selection criteria to define which devices you want to belong to the group. The devices currently in the Mobile Device Inventory that match the selection criteria are added to the group.

  When a new device matching the selection criteria for a static mobile device group connects to the Avalanche Console, it will **not** automatically be placed in the mobile device group. To modify a static mobile device group, modify the selection criteria as desired and add the mobile devices to the group. You cannot remove individual mobile devices from a static group.

  The home location for the group is the location that is selected when the group is created.

To create a mobile device group:

1 Select the **Device Groups** tab.

2 Click **Add Group**.

The *Create Device Group* dialog box appears.

3 Type a **Name** for the group.

4 Select whether you want the group to be **Static** or **Dynamic**.

5 Select whether you want the group to be **Enabled** or **Disabled**.

6 Use the Selection Criteria Builder to create criteria to define the device group.

7 Click **OK**.

The group appears in the Device Groups List.

To add mobile devices to a static mobile device group:

1 Select the **Device Groups** tab.

2 Select the static mobile device group from the Device Groups List.

3 Click **Edit**.

4 In the Device Group Properties area, click **Add Matching Devices**.

Any devices in the current Mobile Device Inventory that match the selection criteria are added to the group.

5 Save your changes.

Viewing Devices in a Mobile Device Group

The **Device Group** tab shows a set of mobile devices in the currently selected mobile device group. The following default information is provided for each mobile device:

Model Name The model name of the mobile device.

Terminal ID The unique ID automatically generated by Avalanche or assigned by a Console user.

MAC Address The Media Access Control address of a mobile device. This address uniquely identifies this mobile device on a network from a physical standpoint.

IP Address The Internet Protocol address assigned to the mobile device.

Status The client update status of the mobile device. A check mark indicates that the mobile device is up-to-date, while an X indicates that an update is available but not yet loaded on the device.

Last Contact The date and time of the last contact the mobile device had with Avalanche.

Recent Activity The status of a mobile device with respect to Avalanche. For example, when the mobile device receives new software, the activity status is `Downloading`.

You can also customize the columns in the device list or filter the devices displayed. For information on customizing the device list, see Managing Device Inventory Displays on page 17.

Sending Messages to Mobile Device Groups

You can send messages to the users of all mobile devices in a device group simultaneously.

To send messages to device groups:

1 Select the **Device Groups** tab.

2 Right-click the mobile device group you want to send a message to and select **Send Text Message** from the context menu.

The *Send Text Message: Group of Devices* dialog box appears.

3 Type a message in the **Text Message Field**.

4 Enable the **Provide Audible Notification** text box if you want a sound to play when the mobile device receives the message.

5 Click **OK**.

The Recent Activity column reports the status of the message for each device in the group.

Editing Properties for Mobile Device Groups

You can modify mobile device properties from a mobile device group. When you edit device properties for a group, the Console retrieves the common properties from all the devices in the group. You can then add, edit, and delete properties for the group. All property changes made at this level will be applied on the mobile devices in the group.

NOTE: See Building Selection Criteria on page 163 for information on using properties in selection criteria.

To add a property to a mobile device group:

1 Select the **Device Groups** tab.

2 Right-click the mobile device group whose properties you want to edit and select **Edit Device Properties** from the context menu.

The *Edit Group Mobile Device Properties* dialog box appears.

3 Click **Add Property**.

The *Add Device Property* dialog box appears.

4 From the **Category** drop-down list, select the category where you want the property to be saved.

5 Enter the name of the property in the **Property Name** text box.

6 Enter the value of the property in the **Property Value** text box.

7 Click **OK**.

The new property is added to the properties list.

8 When you are finished adding properties, click **OK** to return to the Avalanche Console.

To edit a mobile device group property:

1 Select the **Device Groups** tab.

2 Right-click the mobile device group whose properties you want to edit and select **Edit Device Properties** from the context menu.

The *Edit Mobile Device Group Properties* dialog box appears.

3 Select the property that you want to edit and click **Edit Property**.

The *Edit Device Property* dialog box appears.

4 Type the **New Property Value**.

5 Click **OK**.

The edited property appears in the list.

6 Click **OK** to return to the Avalanche Console.

To delete a mobile device group property:

1 Right-click on a mobile device group and select **Edit Device Properties**.

The *Edit Mobile Device Group Properties* dialog box appears.

2 Select the property that you want to delete and click **Delete Property**.

3 Confirm that you want to delete the property.

The Pending Value column for the property displays the status of the property.

4 Click **OK** to remove the property and return to the Avalanche Console.

The property will be deleted after the next update.

Additional Mobile Device Group Functions

Mobile device groups include other functions, allowing you to more efficiently manage your mobile devices. These options are available by right-clicking the mobile device group and selecting the appropriate option.

The additional options for mobile device groups are as follows:

Enable/Disable Allows you to enable or disable the group. When the group is disabled, any selection criteria using the group as a selection variable will return a “false” value.

Update Now Allows you to update all mobile devices within that group immediately.

Clone Group Clones the group and its settings.

Remove Group Deletes the group from the Avalanche Console.

Chapter 14: Managing Alert Profiles

Manage alerts in Avalanche using alert profiles. An alert profile gives you options for configuring what network events generate an alert and who is notified when an alert is generated. A server going offline or a completed synchronization are examples of alert events.

This section provides information about the following topics:

- Creating and Configuring Alert Profiles
- Alerts Tab

Creating and Configuring Alert Profiles

Alert profiles are configured with a list of events that will generate an alert. These profiles are then deployed to the servers. When an event on the list occurs, an alert is sent to the Avalanche Console. If the profile is configured for forwarding the alert to e-mail recipients or a proxy, the Console forwards the alert.

The **Authorized Users** button allows you to assign privileges for a profile to a user that does not have rights for that profile. This allows you to give a user permission for one specific profile, rather than all profiles of a specific type. Users that already have permission for the profile will not appear in the list of available users. For information about creating users and assigning permissions, see Managing User Accounts on page 35.

The settings that can be configured for an alert profile include:

Profiled Contacts Each alert profile can notify one or more e-mail addresses when specified events occur. If you want the Avalanche Console to send notification by e-mail, you must add the e-mail address to the Email Recipients list for that profile. The entire contact list will receive e-mails for all alerts generated by that profile.

Profiled Proxies The Avalanche Console allows you to set one or more proxy hosts for an alert profile. When you add a proxy to a profile, the Console automatically forwards all alerts for that profile to the IP address of the proxy, enabling you to integrate Avalanche with your existing network management tools.

Profiled Alerts Avalanche provides a list of events that will generate alerts. You can choose events from this list when you create an alert profile.

See the following sections for additional information on configuring alert profiles:

- Adding E-Mail Contacts
- Adding SNMP Proxies

To create an alert profile:

1 From the **Profiles** tab, click **Add Profile**.

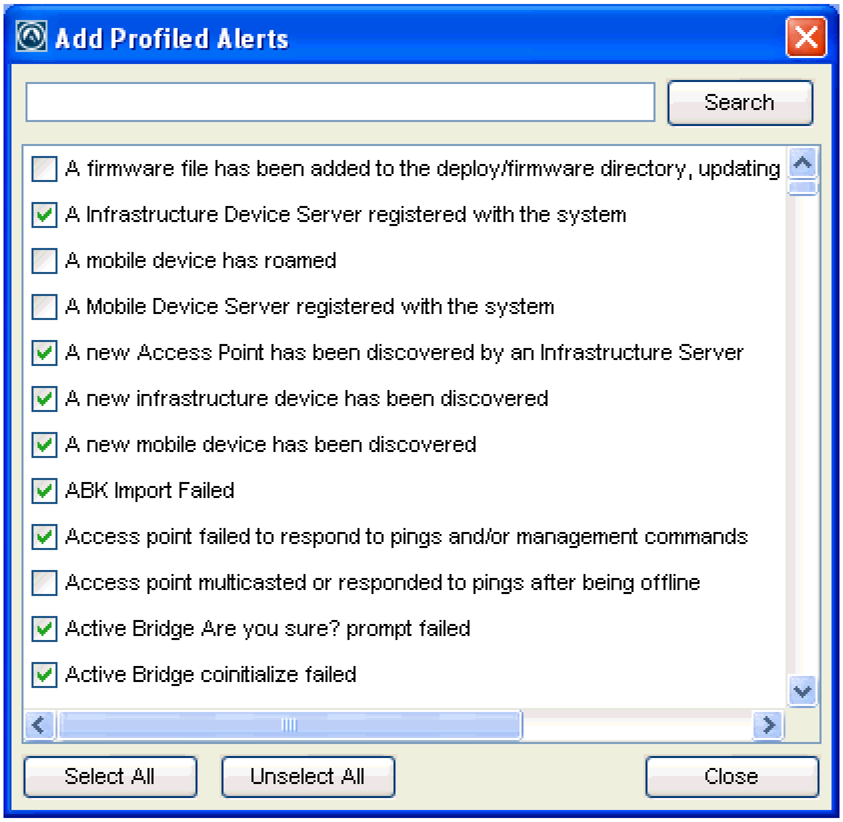
The Add Profile Wizard appears.

2 Select the **Alert Profile** option and click **Next**.

3 Type a **Name** for the profile and set the status to either **Enabled** or **Disabled**. Click **Next**.

4 Click **Add** to specify the alerts the profile will monitor.

The *Add Profiled Alerts* dialog box appears.



☐ A firmware file has been added to the deploy/firmware directory, updating

☑ A Infrastructure Device Server registered with the system

☐ A mobile device has roamed

☐ A Mobile Device Server registered with the system

☑ A new Access Point has been discovered by an Infrastructure Server

☑ A new infrastructure device has been discovered

☑ A new mobile device has been discovered

☑ ABK Import Failed

☑ Access point failed to respond to pings and/or management commands

☐ Access point multicasted or responded to pings after being offline

☑ Active Bridge Are you sure? prompt failed

☑ Active Bridge coinitialize failed

Add Profiled Alerts dialog box

5 From the list, select the events for which you want an alert to be generated. When you are finished, click **Close**.

6 The selected alerts appear in the list. click **Next**.

7 Confirm that the information is correct and click **Finish**.

The profile is added to the **Profile List**.

To configure an alert profile:

1 From the **Profiles** tab, select the alert profile you want to configure.

2 Click **Edit**.

3 Select **Enabled** to enable the profile, if desired.

4 In the **Alert Profile** tab, click **Add** in the Profiled Alerts area. From the list, select the events for which you want an alert to be generated. When you are finished, click **Close**.

5 If you want to forward alerts to an e-mail address or a proxy address:

- If you want to receive an e-mail when an alert is generated, click **Add** in the Profiled Contacts area.

  The *Contact Information* dialog box appears.

  Enter the contact information and click **OK**. The contact will appear in the Profiled Contacts list.

NOTE: You must configure the e-mail settings in the *Preferences* dialog box before Avalanche can e-mail you when alerts are generated. For information on configuring e-mail settings, see Configuring E-mail Settings on page 26.

- If you want to forward alerts to a SNMP proxy, click **Add** in the Profiled Proxies area.

  The *Proxy Address* dialog box appears.

  Enter the proxy address and click **OK**. The address will appear in the Profiled Proxies list.

6 Save your changes.

The alert profile is created and configured, and can be assigned to a location.

Adding E-Mail Contacts

Each alert profile can notify one or more e-mail addresses when related events occur. If you want the Avalanche Console to notify you of an alert by e-mail, add the e-mail address to the Profiled Contacts list for that profile. The entire contact list will receive e-mails for all alerts generated by that profile.

NOTE: You must configure the e-mail settings before Avalanche will send e-mails when alerts are generated. For information on configuring e-mail settings, see Configuring E-mail Settings on page 26.

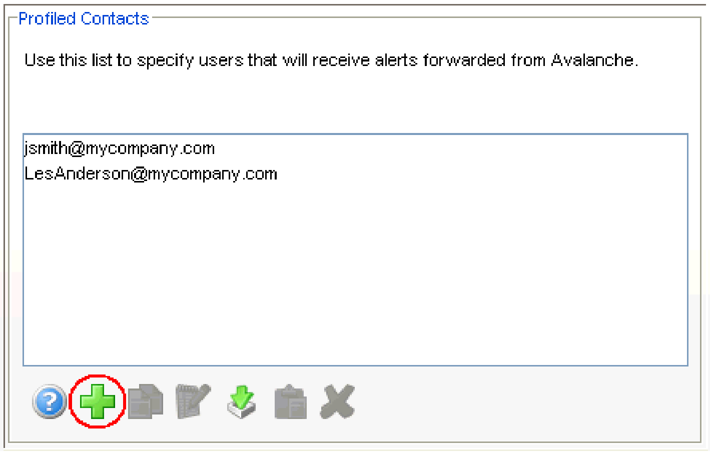
A list of e-mail addresses in a comma-delimited `.csv` file (for example, one exported from Microsoft Outlook) can be imported in order to add multiple e-mail addresses at a time.

To add e-mail contacts:

1 On the **Profiles** tab, select the profile you want to configure from the Profile List.

2 Click **Edit**.

3 In the **Profiled Contacts** tab, click **Add**.



Profiled Contacts

Use this list to specify users that will receive alerts forwarded from Avalanche.

jsmith@mycompany.com
LesAnderson@mycompany.com

Add button in the Profiled Contacts area

The *Contact Information* dialog box appears.

4 Type the desired information in the provided text boxes. An e-mail address is required. When you are done, click **OK**.

The contact is displayed in the **Profiled Contacts** list box.

5 Repeat Step 4 until you are finished adding e-mail addresses.

6 Save your changes.

To import e-mail addresses:

1 On the **Profiles** tab, select the profile you want to configure from the Profile List.

2 Click **Edit.**

3 In the Profiled Contacts region, click **Import Contacts**.

An *Open* dialog box appears.

4 Navigate to and select the `.csv` file that contains the e-mail addresses that you want to import.

5 Click **Open**.

The e-mail addresses contained in the text file appear in the **Available Contacts** list.

6 Click **OK**.

The contacts display in the **Profiled Contacts** list.

Adding SNMP Proxies

The Avalanche Console allows you to set one or more SNMP proxies for an alert profile. When you add a proxy to a profile, the Console automatically forwards all alerts for that profile to the IP address of the proxy, enabling you to integrate Avalanche with your existing network management tools.

To add an SNMP proxy:

1. On the **Profiles** tab, select the profile you want to configure from the Profile List.
2. Click **Edit**.
3. In the Profiled Proxies region, click **Add**.

   The *Proxy Address* dialog box appears.
4. In the **Proxy Address** text box, enter the IP address and click **OK**.

   The address appears in the **Profiled Proxies** list box.
5. Repeat Steps 3 and 4 until you are finished adding proxy addresses.
6. Save your changes.

Alerts Tab

The **Alerts** tab provides a real-time view of the health of your wireless network. The tab consists of two areas: the Map and the Alert Browser. This section contains information on the following tasks:

- Using the Alert Browser
- Using the Avalanche Map

Using the Alert Browser

In the **Alerts** tab, the area at the bottom of the screen is called the Alert Browser. The browser is a table overview of the alerts that occur on your wireless network. It provides the following information about each alert:

Ack	Allows you to acknowledge that you have seen the alert.
Alert	The type of alert.
Date	The time and date when the event occurred.

IP	The IP address where the event occurred.
Description	A brief description of the event.

When the Alert Browser begins to fill with alerts, you may want to remove acknowledged alerts that are no longer relevant.

In the *Settings* dialog box, configure the way the Alert Browser manages and displays alerts. You can configure the following settings:

- Number of days an alert remains in the Alert Browser.
- Maximum number of alerts that are listed in the Alert Browser.
- Maximum number of alerts to store. Alerts are stored in the database on the Enterprise Server.

To acknowledge an alert:

- In the Alert Browser, enable the checkbox next to the alert you want to acknowledge. To immediately show the result, click **Refresh**.

  -Or-

- To acknowledge all alerts in the list, click **Acknowledge All**.

  The locations in the Map view stop flashing.

To clear alerts:

1. Acknowledge any alerts you want to clear by marking the checkbox next to the alert.
2. Click **Clear All**.

   All acknowledged alerts will be removed from the list. Alerts that were not marked as acknowledged will remain in the Alert Browser.

To customize the Alert Browser functions:

1. Click **Tools > Settings**.

   The *Settings* dialog box appears.

2. On the **General** tab in the Alert Browser Settings area, use the boxes to configure the alert settings.
3. Click **Apply** to save your changes.
4. Click **OK** to close the dialog box.

   The Alert Browser will update to reflect your changes.

Using the Avalanche Map

The map provides a geographical overview of the health of your network. Use the following methods to navigate the map:

- Use the navigation arrows to display different portions of the map.
- Center the map on its default location by using the center button of the navigation arrows.
- Use the magnifying glass icons to zoom in and out.
- Apply filters so that only specific wireless components appear within the map. These filters are activated by the check boxes located next to the navigation arrows. You can apply the following filters:

Combined Device Servers Displays server locations that contain both a Mobile Device Server and an Infrastructure Server.

Mobile Device Servers Displays server locations that contain only a Mobile Device Server.

Infrastructure Servers Displays server locations that contain only an Infrastructure Server.

View Map By Region Displays only those server locations that belong to the area selected in the Navigation Window.

Mobile Devices Displays the mobile devices associated with the region selected.

Mobile Device GPS History Displays mobile devices by the GPS history.

- Color-code map components. This helps identify components and provide notifications of network health. The color codes for the components that appear in the map are as follows:

Purple Indicates a server location with both a Mobile Device Server and an Infrastructure Server.

Blue Indicates a server location with only a Mobile Device Server.

Dark Green Indicates a server location with only an Infrastructure Server.

Yellow Indicates a server location with one or more warning-level alerts (but no critical alerts).

Red Indicates a server location with one or more critical alerts.

When a server location generates a warning or critical alert, the icon in the Map flashes yellow or red, based on the highest severity level in its alert list. The flashing stops when you acknowledge the alert in the Alert Browser. The icon returns to its base color when all warnings and critical alerts for the server location have been cleared from the Alert Browser.

You can also save specific map views to simplify navigation.

To save a map view:

1 Position the map using the navigation arrows and zooming in on the relevant geographic area.

2 Click **Save View**.

3 Type the name of the view in the *Save Current View* dialog box.

4 Click **OK**.

The view can be accessed by selecting it from the **Go to View** drop-down list. The view will only be available to users on the local machine.

Chapter 15: Using Selection Criteria

Selection criteria are sets of rules which you can apply to profiles or devices. The rules are generally device properties such as the model name or OS type. These criteria define which mobile devices receive a profile or are added to a group. For example, set a profile so that it is only applied to Hand Held 7400 devices by using the criterion:

```
ModelName = HHP7400
```

After the profile is enabled and applied to a location, it is distributed to devices in the location that meet the selection criterion.

If you want to set criteria but only want to match part of the expression, use an asterisk (*) as a wildcard to represent single or multiple characters. A hyphen (-) can be used to indicate a range of numbers. You can also use parentheses and boolean operators for flexible combination of multiple variables. These options can reduce the size and complexity of selection criteria.

NOTE: The database interfaces used by Avalanche put a length limit on SQL expressions. Selection criteria containing more than 150 expressions have a good chance of exceeding the limits. Wavelink recommends limiting selection criteria to 20 selection variables or less.

Additional selection criteria are typically built into each software package to restrict the distribution of the package to devices that can use it. The built-in selection criteria associated with a software package are set by the package developer and cannot be modified after the package has been created.

The selection criteria builder provides a list of operators and preset selection variables, and also allows you to add custom properties as selection variables. Use the selection criteria builder to build valid selection criteria.

This section provides the following information:

- Building Selection Criteria
- Selection Variables
- Operators

Building Selection Criteria

You can access the Selection Criteria Builder from several different places in the Avalanche Console, including network profiles, software profiles, and mobile device groups. To access the Selection Criteria Builder, click the Selection Criteria button:

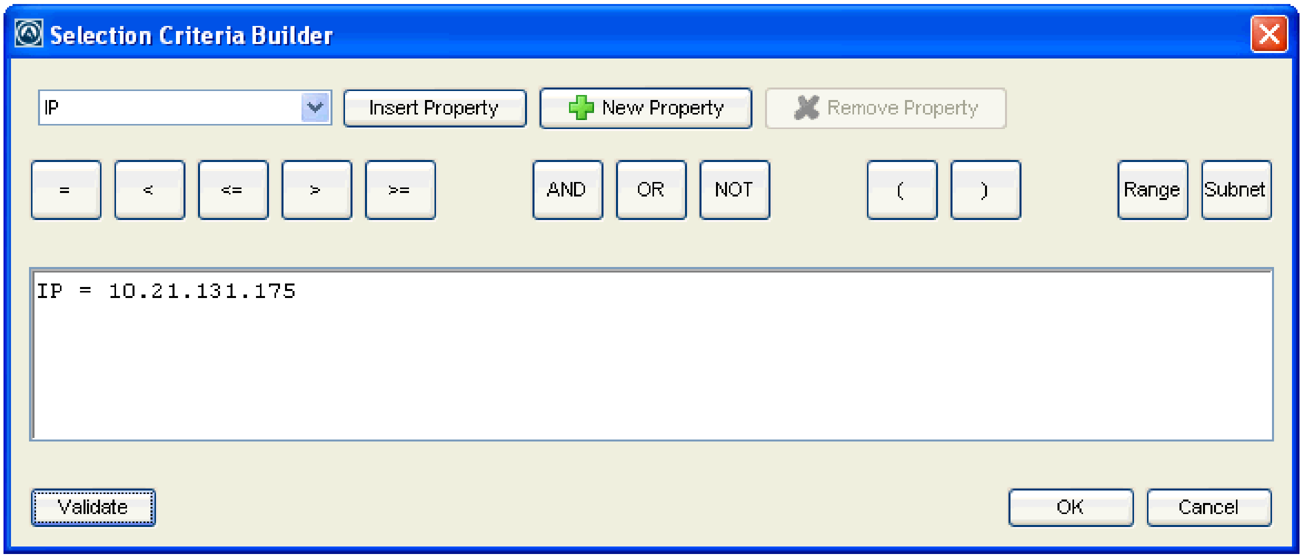
Selection Criteria button

In the Selection Criteria Builder, you can build the selection criteria string by selecting or typing string elements one element at a time. The string elements include:

- Selection variables such as **ModelName** or **KeyboardName**. Avalanche comes with a default list of variables, or you can add custom properties as selection variables.
- Operators such as AND (&) and OR (|) that are used to assign a value to a selection variable or to combine multiple variables. Parentheses are recommended when multiple operators are involved. Nesting of parentheses is allowed.
- Actual values that are assigned to a selection variable. For example, if you assign a value of 6840 to a **ModelName** variable by building the string `ModelName = 6840`, then you will restrict packages or profiles to model 6840 mobile devices.

To build selection criteria:

1 Access the Selection Criteria Builder.



```
IP = 10.21.131.175
```

Selection Criteria Builder

2 From the drop-down list, select a property and click **Insert Property**. For information about properties, see Selection Variables on page 165.

3 Select one of the operator buttons. For more information about operators, see Operators on page 171.

4 Type a value for the property that you selected.

5 For each additional element you want to add to the selection criteria string, repeat the preceding steps.

NOTE: Due to the potential complexity of long selection criteria strings, it is recommended that you limit the selection criteria to 20 selection variables or less.

6 Click **Validate** to see if Avalanche accepts the criteria as valid.

Using profiles, you can add custom properties to your devices. These custom properties or properties already existing on the device can be used for selection criteria. In order to use a property as a selection variable, add the property to the Selection Criteria Builder.

NOTE: Asterisks are not allowed in property names or values because the symbol denotes a wildcard.

To use a custom property as a variable:

1 From the Selection Criteria Builder, select **New Property**.

The *Add Custom Property* dialog box appears.

2 Enter the name for the custom property and click **OK**.

The new property is added to the drop-down list.

3 Click **OK** to close the *Selection Criteria Builder* dialog box.

Selection Variables

Selection criteria are based on the use of selection variables. Some selection variables are preset, or you can create your own from custom properties.

You can place numbers and strings directly in the selection criteria string with or without quotes. Selection criteria strings are case sensitive.

For example, the following selection criteria strings are all valid:

```
ModelName=6840
ModelName = 6840
ModelName=”6840”

Series = S
```

While these are not:

```
series = s
Series = s
```

Long strings are also supported as selection criteria. For example, the following string is valid:

```
Series = 3 | (MAC = 00-A0-F8-27-B5-7F | MAC = 00-A0-F8-80-3D-4B | MAC = 00-
A0-F8-76-B3-D8 | MAC = 00-A0-F8-38-11-83 | MAC = 00-A0-F8-10-24-FF | MAC =
00-A0-F8-10-10-10)
```

NOTE: Due to the potential complexity of long selection criteria strings, it is recommended that you limit the selection criteria to 20 selection variables or less.

The following table lists the preset selection variables:

Columns The number of display columns the mobile device supports. The possible value range is 1 – 80.

Example:

`Columns > 20`

EnablerVer Enabler version number. Values with decimals must be surrounded by double quote marks.

EnablerVer = "3.10-13"

IP IP address of the mobile devices.

Enter all IP addresses using dot notation. IP addresses can be written in three ways:

- Direct comparison with a single IP address. For example, `IP = 10.1.1.1`.
- Comparison with an arbitrary address range. For example, `IP = 10.1.1.5 - 10.1.1.15` (This can also be written as `IP = 10.1.1.5 - 15`.)
- Comparison with a subnet. This is done by supplying the network number along with the subnet mask or CIDR value. For example, `IP = 10.1.1.0/255.255.255.0`
  Using CIDR notation, this can also be written as `IP = 10.1.1.0/24`

KeyboardCode A number set by the device manufacturer and used internally by the BIOS to identify the keyboard type.

Supported values include:

`0` = 35-Key
`1` = More than 35 keys and WSS1000
`2` = Other devices with less than 35 keys

Example:

```
KeyboardCode = 0
```

KeyboardName The style of keyboard the mobile device is using (46key, 35key, etc.). This selection variable is not valid for CE devices.

Supported values include:

```
35KEY

46KEY

101KEY

TnKeys
```

Example:

```
KeyboardName = 35KEY
```

Last Contact

The last time the device contacted a server. The parser for the LastContact property allows specifying absolute time stamps or relative ones.

Examples of time-stamp formats:

- mm/dd/yyyy

  `LastContact = “12/22/2005”` (All day)

- HH:MM mm/dd/yyyy

  `LastContact = “23:15 12/22/2005”` (All minute long, 24-hour notation)

- hh:mm AP mm/dd/yyyy

  `LastContact = “11:15 PM 12/22/2005”` (All minute long, 12-hour notation)

- Range-forms of the above

The relative format uses an offset from the current time.

- <offset>M

  `LastContact = 60M` (60 minutes in the past)

- <offset>H

  `Last Contact = 1H` (one hour in the past, the whole hour)

- <offset>D

  `Last Contact = 1D` (one day in the past, the whole day)

- Range-forms of the above, including inverted ranges

  `LastContact=7D-1M`

MAC

MAC address of the mobile device.

Enter any MAC addresses as a string of hexadecimal digits. Dashes or colons between octets are optional. For example:

```
MAC = 00:A0:F8:85:E8:E3
```

ModelName

The standard model name for a mobile device. This name is often a number but it can be alphanumeric. Device details often display the model name.

A few of the supported values include:

```
1040, 1740, 1746, 1840, 1846, 2740, 2840, 3140, 3143,
3540, 3840, 3843, 3940, 4040, 5040, 6140, 6143, 6840,
6843, 6940, 7240, 7540, 7940, 8140, 8940, PTC960,
TR1200, VT2400, WinPC, WT2200, 7000CE, HHP7400, MX1,
MX2, MX3, VX1, iPAQ, iPAD, Falcon, ITCCK30, ITC700
```

Example:

```
ModelName = 6840
```

ModelCode

A number set by the device manufacturer and used internally by the BIOS to identify the hardware.

Supported values include:

1= LRT 38xx/LDT
2 = VRC39xx/69xx
3 = PDT 31xx/35xx
4 = WSS1000
5 = PDT 6800
6 = PDT 6100

Example:

```
ModelCode <= 2
```

This matches all 38xx, 39xx, and 69xx devices.

OSVer

The OS version as reported by the Enabler. Values with decimals in them must be surrounded by double quote marks.

```
OSVer = “4.20”
```

OS Type

The OS type as reported by the Enabler.

```
OSType = PocketPC
```

Processor

The processor as reported by the Enabler.

```
Processor = ARM
```

ProcessorType The processor type as reported by the Enabler.

```
ProcessorType = xScale
```

Assigned IP IP address of the mobile device.

Enter all IP addresses using dot notation. IP addresses can be written in three ways:

- Direct comparison with a single IP address. For example, `IP = 10.1.1.1`.
- Comparison with an arbitrary address range. For example, `IP = 10.1.1.5 - 10.1.1.15` (This can also be written as `IP = 10.1.1.5 - 15`.)
- Comparison with a subnet. This is done by supplying the network number along with the subnet mask or CIDR value. For example, `IP = 10.1.1.0/255.255.255.0`
  Using CIDR notation, this can also be written as `IP = 10.1.1.0/24`

Series The general series of a device. This is a single character: '3' for Symbol '3000' series mobile devices, '7' for Symbol '7000' series mobile devices, etc.

Supported values include:

`3` = DOS 3000 Series
`P` = DOS 4000 and 5000 Series
`7` = DOS 7000 Series
`T` = Telxon devices
`C` = CE devices
`S` = Palm devices
`W` = Windows machines
`D` = PSC and LXE DOS devices

Example:

```
Series = 3
```

Rows The number of display rows the mobile device supports. The possible value range is 1 to 25.

Example:

```
(KeyboardName=35Key)&(Rows=20)
```

This example matches all mobile devices with 20 rows and 35-key keyboards.

Syncmedium The type of synchronization medium used by the mobile device.

Supported values include:

```
any
ip
serial
```

Terminal ID The unique ID for the mobile device generated by Avalanche or assigned by a user. The initial terminal ID is 1, and the values increment as needed. You can redefine terminal IDs for mobile devices as needed. If you are using terminal IDs in a workstation ID, the value must not exceed the character limit for the host. Typically, hosts support 10 characters.

Example:

```
Terminal ID = 5
```

@exists Enables the user to check for the existence of a property. The `@exists` function name is case-sensitive and can only be used with an EQ or NE operator.

Example:

```
@exists ne some.property
```

```
@exists ==Some.property & Some.property = “value”
```

Operators

All selection criteria strings are evaluated from left to right, and precedence of operations is used when calculating the selection criteria. When more than one operator is involved, you must include parentheses in order for the selection criteria string to be evaluated properly.

For example:

```
(ModelName=3840) or ((ModelName=6840) and (KeyboardName= 46Key))
```

This states that both 3840 mobile devices (regardless or keyboard type) and 6840 mobile devices with a 46-key keyboard will be included.

You may use the symbol of the operator (!, &, |, etc.) in the selection criteria or the letter abbreviation (NOT, AND, OR, etc.). If you use the letter abbreviation for the operator, then you must use uppercase letters. Spaces around operators are optional, and you can use the wildcard character [*] for left wildcard constants and right wildcard constants.

Operators use the following precedence:

1 Parentheses

2 OR operator

3 AND operator

4 NOT operator

5 All other operators

The following operators can be used along with parentheses to combine multiple variables.

NOT (!) Binary operator that negates the boolean value that follows it.

```
! (KeyboardName = 35Key) & (Rows = 20)
```

All mobile devices receive the software package except for those with both 20 rows and 35Key keyboards.

AND (&) Binary operator that results in TRUE if and only if the expressions before and after it are also both TRUE.

Example:

```
(ModelName=3840) | ((ModelName=6840) & (KeyboardName= 46Key))
```

OR (|) Binary operator that results in TRUE if either of the expressions before and after it are also TRUE.

```
(ModelName =6840) | (ModelName = 3840)
```

6840 and 3840 mobile devices can receive the software package.

EQ (=) Binary operator that results in TRUE if the two expressions on either side of it are equivalent.

Example:

```
ModelName = 6840
```

NE (!=) Not equal to.

Example:

ModelName != 6840

Targets all non-6840 mobile devices.

> Binary operator that results in TRUE if the expression on the left is greater than the expression on the right.

Example:

```
Rows > 20
```

< Binary operator that results in TRUE if the expression on the left is less than the expression on the right.

Example:

```
Rows < 21
```

>= Binary operator that results in TRUE if the expression on the left is greater than or equal to the expression on the right.

Example:

```
Rows >= 21
```

<= Binary operator that results in TRUE if the expression on the left is less than or equal to the expression on the right.

Example:

```
Rows <= 20
```

* Wildcard operator.

Wildcard expressions should be quoted and must be used with either an EQ or NE operator.

Keyboardname = “35*” - Tail is the wildcard

Keyboardname = “*35” - Head is the wildcard

Keyboardname = “*” - Entire constant is the wildcard

You can also use wildcards for IP addresses.

```
IP = 10.20.*.*
```

This would be equivalent to 10.20.0.0-10.20.255.255. A wildcard address must contain all four octets and can only be used with either the EQ or the NE operator.

Chapter 16: Using the Task Scheduler

The Task Scheduler enables you to schedule network management activities for your locations. This allows you to specify which locations receive the changes and implement changes during periods of low network activity. You can schedule activities such as applying profiles, or backing up or restoring the database.

Scheduling options for the Task Scheduler include:

Perform the task now

Runs the task immediately.

Schedule a one-time event for the task

Performs the task once at the scheduled time. This selection allows you to configure the following options:

Task Start Time. The date and time of day the event will begin.

Run until complete. When this option is selected, the task will run until it is complete.

Use End Time. The time of day when the task will end.

Use Location’s Local Time. Uses the time local to the specified server(s) rather than the local time of the enterprise server.

Schedule a recurring event for the task

Performs the task repeatedly at the scheduled times. This selection allows you to configure the following options:

Task Start Time. The time of day the event will begin.

Use end time. The time of day the event will end.

Use Location’s Local Time. Uses the time local to the specified server(s) rather than the local time of the enterprise server.

Daily. The task is performed daily. When Daily is selected, you can also configure the following options:

Every weekday. Runs the scheduled task every day Monday - Friday.

Every weekend. Runs the scheduled task every Saturday and Sunday.

Weekly. The task is performed on a weekly basis. When **Weekly** is selected, you can also configure the following options:

Run every __ week(s) on. This option allows you to configure whether the task is run weekly or at a longer interval. For example, if you want the task to run every other Saturday, type 2 in the text box and enable the **SAT** checkbox.

[days of the week]. These check boxes allow you to specify which days of the week the task is performed.

Monthly. The task is performed on a monthly basis. When **Monthly** is selected, you can also configure the following option:

Run on the __ day, every __ month(s). This option allows you to set the day of the month to run the task, and how many months apart the task should be run.

Start date. Specifies the date the task should begin running.

No end date. When this option is selected, the task will continue repeating indefinitely.

End by. When this option is selected, the task will no longer run after the specified date.

The Task Scheduler allows you to perform the following tasks:

- Applying and Synchronizing Profiles
- Backing Up the System
- Restoring the System
- Removing Completed Tasks

Applying and Synchronizing Profiles

A profile must be applied and sent to the server in order for the settings to take effect. When you use the Task Scheduler to apply and deploy profiles, select a time for the profile to be synced.

To deploy a profile:

1 Click **Tools > Task Schedule**.

The *Task Schedule* dialog box appears.

2 Click **Add**.

The *Scheduled Task Wizard* dialog box appears.

3 Select **Apply / Synchronize Profiles** from the **Task Type** drop-down list and click **Next**.

The *Select the Targets* screen appears.

4 Select the locations to which the profile will be applied by enabling the check box next to the location name. You can also select the locations where the profile will be deployed at the time the task is performed. Click **Next**.

NOTE: If the scheduled task only applies the profile, the profile will be synced during the next server synchronization.

The *Schedule the Time Window* dialog box appears.

5 Determine when the event will occur and click **Next**.

The *Review Your Task* dialog box appears.

6 Review your the task to ensure that it is correct and click **Next**.

The *Task Scheduled* dialog box appears.

7 Click **Next** to schedule a new event, or click **Finish**.

Backing Up the System

This section provides information about using the Task Scheduler to back up the Avalanche system. Backup and restore functionality is available when you are using PostgreSQL databases installed at the same location as the Enterprise Server. When you back up Avalanche, the enterprise database information and software packages are saved in a zip file.

You should back up the system regularly. If for any reason Avalanche files are deleted or corrupted, you will be able to restore them from the backup files. For information on the default backup directory or changing where backups are stored, see Specifying the Backup Location on page 23.

NOTE: If you are attempting to back up your system on a Linux operating system, Wavelink recommends you perform the back up manually.

To back up the system:

1 Click **Tools > Task Schedule**.

The *Task Schedule* dialog box appears.

2 Click **Add**.

The *Scheduled Task Wizard* appears.

3 Select **System Backup** from the **Task Type** drop-down list and click **Next**.

The Create A System Backup screen appears.

4 In the **Tag Name** text box, enter a name for the system backup and click **Next**.

NOTE: The tag is an identifier that can be used to select the correct file when restoring the system. The tag is not the same as the name of the zip file.

The Select Scheduling Options screen appears.

5 Determine when the event will occur and click **Next**.

The Review Your Task screen appears.

6 Review your task to ensure that it is correct and click **Next**.

The Task Scheduled screen appears.

7 Click **Next** to schedule a new event, or click **Finish**.

The task is added to the **Scheduled and Recurring Tasks** list.

Restoring the System

If you have created a system backup using the Task Scheduler, you can use the Task Scheduler to restore the information to Avalanche.

You cannot restore a system backup from a previous version of Avalanche. The backup version must match the Avalanche version. If you attempt to restore a system backup from a previous version of Avalanche, the restoration will fail.

NOTE: If you are attempting to restore the system on a Linux operating system, Wavelink recommends you perform the restoration manually.

To restore the system:

1 Click **Tools > Task Schedule**.

The *Task Schedule* dialog box appears.

2 Click **Add**.

The *Scheduled Task Wizard* appears.

3 Select **Restore System** from the **Task Type** drop-down list and click **Next**.

The Restore A System Backup screen appears.

4 Select the system backup you wish to restore and click **Next**.

- Select **Restore the most recent system backup** to restore Avalanche to the latest backup file.
- Select **Restore by path** to specify the file name and path of the desired system backup.
- Select **Restore selected** to choose the desired system backup from the list according to the tag name.

The Review Your Task screen appears.

5 Review your task to ensure that it is correct and click **Next**.

The Task Scheduled screen appears.

6 Click **Next** to schedule a new event, or click **Finish**.

The task is added to the **Scheduled and Recurring Tasks** list.

7 Restart the enterprise server, statistics server, and Tomcat service after the files are restored. If Avalanche is installed on a Windows OS, this is done from the Windows Services list. For the specific names of the services, see Avalanche Services on page 197.

Removing Completed Tasks

When the Task Scheduler has completed an event, that event appears in the **Completed Tasks** list. By default the Task Scheduler is set to retain all completed tasks in the list. You can configure Avalanche to remove tasks periodically.

To schedule task removal:

1 Click **Tools > Task Schedule**.

The *Task Schedule* dialog box appears.

2 Enable the **Remove Completed Events After** option and then select the number of days you want to pass before the completed tasks are removed.

3 Click **Refresh** to update the scheduler.

The completed tasks will be removed according to your settings.

SSL Certificates for the Web Console

When you use the Avalanche Web Console, by default it connects to the server using Hypertext Transfer Protocol (http), which is not encrypted. If you want your information to be encrypted, you can configure Avalanche to use https with an SSL certificate instead.

If you intend to use Avalanche with an SSL certificate for a secure connection, you have the options of purchasing a certificate through a third-party Certificate Authority (such as Verisign) or creating a self-signed certificate.

NOTE: If you create a self-signed certificate, web browsers will not initially recognize the certificate and will display warning messages that the site is not trusted. They may require you to make an exception in order to connect. The connection will be encrypted, however.

Self-signed certificates may also limit some functionality depending on the Flash plug-in for your browser. This would affect uploading software packages, e-mail lists, or floorplan images using the Web Console.

This section contains instructions for the following tasks:

- Implementing a Certificate from a Certificate Authority
- Implementing a Self-Signed Certificate

Implementing a Certificate from a Certificate Authority

You can choose to use Avalanche with a certificate from a Certificate Authority. Note that the following instructions are based upon acquiring a certificate through the certificate authority Verisign. The steps may vary somewhat when using another certificate authority vendor.

Wavelink strongly recommends that you backup the keystore file, the actual certificate file, the intermediate certificate, the certificate request, and the server.xml document after you have implemented your certificate. This would include the following files:

- amckeystore.keystore
- [your certificate].cer
- intermediateCA.cer
- certreq.csr
- server.xml

This section contains the following tasks for obtaining an SSL certificate from a certificate authority:

- Creating a Keystore

- Generating the Certificate Signing Request
- Importing an Intermediate Certificate
- Importing a Certificate
- Activating SSL for Tomcat
- Accessing the Web Console over a Secure Connection
- Troubleshooting

Creating a Keystore

To create a keystore for the certificate, use the keytool.exe utility. You will need to provide a Common Name (domain name), organizational unit, organization, city, state, and country code. You will also need to provide a keystore name and passwords for the keystore and alias. These are arbitrary, but should be noted for future reference.

To generate a keystore for the certificate:

1 From a command line, navigate to:

```
[Avalanche installation directory]\JRE\Bin
```

2 Use the command:

```
keytool -genkey -alias amccert -keyalg RSA -keystore
amckeystore.keystore
```

3 At the prompt **Enter keystore password**, type the keystore password. When prompted, re-enter the password.

4 At the prompt **What is your first and last name**, type the Common Name.

NOTE: The Common Name (domain name) you enter should be one that your company owns. Add a DNS entry if needed to resolve this computer to the Common Name.

5 At the prompts, enter your organizational unit, organization, city, state, and the country code.

6 When you are prompted to review your information, type `yes` to confirm that it is correct. If you type `no`, you will be guided through the prompts again.

7 At the prompt **Enter key password for <amccert>**, type a password to use for the alias. If you want to use the same password for the alias as you used for the keystore, press `Return`.

An example of generating a keystore:

```
Enter keystore password: avalanche

Re-enter new password: avalanche
```

```
What is your first and last name?[Unknown]: avaself.wavelink.com

What is the name of your organizational unit?[Unknown]: Engineering

What is the name of your organization?[Unknown]: Wavelink Corporation

What is the name of your City or Locality?[Unknown]: Midvale

What is the name of your State or Province?[Unknown]: Utah

What is the two-letter country code for this unit?[Unknown]: US

Is CN=avaself.wavelink.com, OU=Engineering, O=Wavelink Corporation,
L=Midvale, ST=Utah, C=US correct?[no]: yes

Enter key password for <amccert>(RETURN if same as keystore
password):
```

Generating the Certificate Signing Request

Once you have created the keystore, you can use the keytool.exe utility to generate a certificate signing request (`certreq.csr`) file to send to a certificate authority.

To generate a certificate signing request:

1 From a command line, navigate to:
  `[Avalanche installation directory]\JRE\Bin`

2 Use the command:
  ```
  keytool -certreq -keyalg RSA -alias amccert -file certreq.csr
  -keystore "[Avalanche installation
  directory]\JRE\bin\amckeystore.keystore"
  ```

3 Enter your keystore password.

When you apply to a certificate authority for an SSL web server certificate, you will need to submit the `certreq.csr` file. This file should be created in the `[Avalanche installation directory]\JRE\bin` folder.

Importing an Intermediate Certificate

When you acquire an intermediate certificate from your certificate authority, import it into the keystore. You may need to copy the contents of the intermediate certificate to a text editor and save the file as `intermediateCA.cer`. This file must be saved in the `[Avalanche installation directory]\JRE\bin` directory before you can import it.

To import an intermediate certificate:

1 From a command line, navigate to:
  `[Avalanche installation directory]\JRE\bin`

2 Use the command:

```
keytool -import -alias intermediateCA -keystore "[Avalanche
installation directory]\JRE\bin\amckeystore.keystore"
-trustcacerts -file intermediateCA.cer
```

NOTE: In this command, the filename `intermediateCA.cer` is used. If your intermediate certificate has a different name, use it instead.

3 Enter your keystore password.

The intermediate certificate is added to the keystore.

Importing a Certificate

Once you have received your certificate, you need to import it into the keystore. Your certificate will probably come as a file with the extension `.cer` or in the body of an e-mail. If it comes in the body of an e-mail, copy the contents to a text editor and save the file with a `.cer` extension. This file must be saved in the `[Avalanche installation directory]\JRE\bin` directory before you can import it.

To import a certificate:

1 From a command line, navigate to:
`[Avalanche installation directory]\JRE\bin`

2 Use the command:

```
keytool -import -alias amccert -keystore "[Avalanche installation
directory]\JRE\bin\amckeystore.keystore" -trustcacerts -file
ava-wavelink-com.cer
```

NOTE: As an example, `ava-wavelink-com.cer` is used as the filename. Replace this filename with the name of your certificate.

3 Enter your keystore password.

The certificate is added to the keystore.

Activating SSL for Tomcat

Once you have generated a certificate, you must activate SSL for Tomcat. You must modify the `server.xml` file and then restart the Tomcat server.

To activate SSL for Tomcat:

1 Navigate to
`[Avalanche Install location]\WebUtilities\tomcat\conf`
and open the `server.xml` file with a text editor such as Notepad.

2 Find

```
<Connector port="8443" protocol="HTTP/1.1" SSLEnabled="true"
maxThreads="150" scheme="https" secure="true" clientAuth="false"
sslProtocol="TLS" />
```

3 Remove the comment markers so that the section is not commented out.

4 Modify the section to contain the following information:

```
<Connector port="8443"
protocol="org.apache.coyote.http11.Http11NioProtocol"
SSLEnabled="true" maxThreads="150" scheme="https" secure="true"
clientAuth="false" sslProtocol="TLS" keystoreFile="C:\Program
Files\Wavelink\AvalancheMC\ JRE\bin\amckeystore.keystore"
keystorePass="[keypass]"/>
```

Where `[keypass]` is the keystore password you entered when creating the certificate. For the above example, this would be `avalanche`.

```
keystorePass=”avalanche”
```

NOTE: If you are not using port 443 for any other applications, you can change the connector port to 443. Changing the port to 443 will allow you to access the Web Console without entering the port within the URL.

5 Save your changes to the file.

6 Restart the Apache Tomcat for Wavelink service.

Accessing the Web Console over a Secure Connection

Once you have generated a certificate, activated SSL for Tomcat, and restarted the Tomcat server, you can access the Web Console over a https connection.

To access the Web Console over a secure connection:

- In the address field of your browser, type:

```
https://[Your Domain Name]:8443/AvalancheWeb
```

-Or-

- If you changed the connector port to 443, type:

```
https://[Your Domain Name]/AvalancheWeb
```

Troubleshooting

To troubleshoot issues connecting to the Apache Tomcat server using SSL after changes are made, go to

```
[Avalanche installation directory]\WebUtilities\Tomcat\logs
```

to find Catalina Tomcat logs.

NOTE: You need to stop the Tomcat service to get all the log messages.

Example log file: `catalina.2010-02-24.log`

Implementing a Self-Signed Certificate

These instructions explain how to generate a self-signed certificate in the Apache Tomcat environment. If you choose not to use a Certificate Authority, you can still use a https connection to connect to the Web Console by creating your own certificate.

NOTE: Internet browsers will not recognize a self-signed certificate as legitimate and will display warnings before allowing you access.

NOTE: Wavelink strongly recommends backing up `server.xml` and `selfsignkeystore.keystore` when you have implemented a self-signed certificate.

This section contains the following tasks for implementing a self-signed certificate:

- Generating a Certificate
- Activating SSL for Tomcat
- Accessing the Web Console over a Secure Connection
- Troubleshooting

Generating a Certificate

To create a self-signed certificate, use the keytool.exe utility. You will need to provide a Common Name (domain name), organizational unit, organization, city, state, and country code when creating your certificate. You will also need to provide a keystore name and passwords for the keystore and alias. These are arbitrary, but should be noted for future reference.

To generate a self-signed certificate:

1 From a command line, navigate to:
```
[Avalanche installation directory]\JRE\Bin
```

2 Use the command:

```
keytool -genkey -alias amcselfcert -keyalg RSA -keystore
selfsignkeystore.keystore
```

3 At the prompt **Enter keystore password**, type the keystore password. When prompted, re-enter the password.

4 At the prompt **What is your first and last name**, type the Common Name.

NOTE: The Common Name (domain name) you enter should be one that your company owns. Use a DNS entry if needed to resolve this computer to the Common Name.

5 At the prompts, enter your organizational unit, organization, city, state, and the country code.

6 When you are prompted to review your information, type `yes` to confirm that it is correct. If you type `no`, you will be guided through the prompts again.

7 At the prompt **Enter key password for <amcselfcert>**, type a password to use for the alias. If you want to use the same password for the alias as you used for the keystore, press `Return`.

An example of generating a self-signed certificate:

```
Enter keystore password: avalanche

Re-enter new password: avalanche

What is your first and last name?[Unknown]: avaself.wavelink.com

What is the name of your organizational unit?[Unknown]: Engineering

What is the name of your organization?[Unknown]: Wavelink Corporation

What is the name of your City or Locality?[Unknown]: Midvale

What is the name of your State or Province?[Unknown]: Utah

What is the two-letter country code for this unit?[Unknown]: US

Is CN=avaself.wavelink.com, OU=Engineering, O=Wavelink Corporation,
L=Midvale, ST=Utah, C=US correct?[no]: yes

Enter key password for <amcselfcert>(RETURN if same as keystore
password):
```

Activating SSL for Tomcat

Once you have generated a certificate, you must activate SSL for Tomcat. You must modify the server.xml file and then restart the Tomcat server.

To activate SSL for Tomcat:

1. Navigate to
   `[Avalanche Install location]\WebUtilities\tomcat\conf`
   and open the `server.xml` file with a text editor such as Notepad.

2. Find
   ```
   <Connector port="8443" protocol="HTTP/1.1" SSLEnabled="true"
   maxThreads="150" scheme="https" secure="true" clientAuth="false"
   sslProtocol="TLS" />
   ```

3. Remove the comment markers so that the section is not commented out.

4. Modify the section to contain the following information:
   ```
   <Connector port="8443"
   protocol="org.apache.coyote.http11.Http11NioProtocol"
   SSLEnabled="true" maxThreads="150" scheme="https" secure="true"
   clientAuth="false" sslProtocol="TLS" keystoreFile="C:\Program
   Files\Wavelink\AvalancheMC\JRE\bin\selfsignkeystore.keystore"
   keystorePass="[keypass]"/>
   ```

   Where `[keypass]` is the keystore password you entered when creating the certificate. For the above example, this would be `avalanche`.

   ```
   keystorePass=”avalanche”
   ```

NOTE: If you are not using port 443 for any other applications, you can change the connector port to 443. Changing the port to 443 will allow you to access the Web Console without typing the port as part of the URL.

5. Save your changes to the file.

6. Restart the Apache Tomcat for Wavelink service.

Accessing the Web Console over a Secure Connection

Once you have generated a certificate, activated SSL for Tomcat, and restarted the Tomcat server, you can access the Web Console over a https connection.

To access the Web Console over a secure connection:

- In the address field of your browser, type:

  ```
  https://<Domain Name>:8443/AvalancheWeb
  ```

  -Or-

- If you changed the connector port to 443, type:

```
https://<Domain Name>/AvalancheWeb
```

Troubleshooting

To troubleshoot issues connecting to the Apache Tomcat server using SSL after changes are made, go to

```
[Avalanche installation directory]\WebUtilities\Tomcat\logs
```

to find Catalina Tomcat logs.

NOTE: You need to stop the Tomcat service to get all the log messages.

Example log file: `catalina.2010-02-24.log`

Configuring the Remote Control Server for SSL

The Remote Control Server can be configured to use SSL for connections between the server and a browser, so when you use the Remote Control Console, the connection is encrypted. It also encrypts connections between the viewer and the server. In order to use SSL, you must have a certificate and a private key.

If you intend to use Remote Control with an SSL certificate for a secure connection, you can either purchase a certificate through a third-party Certificate Authority (such as Verisign) OR create a self-signed certificate.

NOTE: If you create a self-signed certificate, web browsers may not initially recognize the certificate and display warning messages that the site is not trusted. They may require you to make an exception in order to connect. The connection will be encrypted, however.

To configure Remote Control for SSL, complete one of the following tasks:

- Implementing a Certificate from a Certificate Authority
- Implementing a Self-Signed Certificate

Implementing a Certificate from a Certificate Authority

You can use Remote Control with a certificate from a Certificate Authority. Remote Control requires that the certificate be imported into the Java keystore. The steps may vary depending on the certificate authority vendor.

Wavelink strongly recommends that you backup the keystore and certificate files after you have implemented your certificate.

The steps provided below use the Java keytool utility. The following tasks are necessary to implementing an SSL certificate from a certificate authority:

- Creating a Keystore
- Generating the Certificate Signing Request
- Importing the Certificate
- Configuring Remote Control to Use SSL
- Accessing the Remote Control Console over a Secure Connection
- Configuring the Package with the Server Address

Creating a Keystore

To create a keystore for the certificate, use the keytool.exe utility. You will need to provide a domain name (Common Name), organizational unit, organization, city, state, and country code. You will also need to provide a keystore name and passwords for the keystore and alias. These should be noted for future reference.

To generate a keystore for the certificate:

1 From a command line, navigate to:

```
[RC installation directory]\jre\bin
```

where `[RC installation directory]` is the directory where Remote Control is installed.

2 Use the command:

```
keytool -genkey -alias rcselfcert -keyalg RSA -keystore keystore
```

3 At the prompt **Enter keystore password**, type the keystore password. When prompted, re-enter the password.

4 At the prompt **What is your first and last name**, type the domain name. The domain name you enter should be the domain name for the server where Remote Control is installed. Wavelink recommends using the fully qualified domain name unless you plan to use a wildcard certificate.

NOTE: Remote Control will not function if the domain name on the certificate is incorrect.

5 At the prompts, enter your organizational unit, organization, city, state, and the country code.

6 When you are prompted to review your information, type `yes` to confirm that it is correct. If you type `no`, you will be guided through the prompts again.

7 At the prompt **Enter key password for <rcselfcert>**, press `Return` to use the same password for the key.

8 The certificate and keystore are created.

An example of generating a keystore:

```
Enter keystore password: avalanche
Re-enter new password: avalanche
What is your first and last name?[Unknown]: domain.wavelink.com
What is the name of your organizational unit?[Unknown]:
Engineering
What is the name of your organization?[Unknown]: Wavelink
```

```
Corporation
What is the name of your City or Locality?[Unknown]: Midvale
What is the name of your State or Province?[Unknown]: Utah
What is the two-letter country code for this unit?[Unknown]: US
Is CN=domain.wavelink.com, OU=Engineering, O=Wavelink Corporation,
L=Midvale, ST=Utah, C=US correct?[no]: yes
Enter key password for <rcselfcert>(RETURN if same as keystore
password):
```

Generating the Certificate Signing Request

Once you have created the keystore, you can use the keytool.exe utility to generate a certificate signing request (`certreq.csr`) file to send to a certificate authority.

To generate a certificate signing request:

1 From a command line, navigate to:

```
[Remote Control installation directory]\jre\bin
```

2 Use the command:

```
keytool -certreq -keyalg RSA -alias rcselfcert -file certreq.csr
-keystore "[Remote Control installation
directory]\JRE\bin\keystore"
```

3 Enter your keystore password.

When you apply to a certificate authority for an SSL web server certificate, you will need to submit the `certreq.csr` file. This file should be created in the `[Remote Control installation directory]\jre\bin` folder.

Importing the Certificate

When you acquire your certificate and any intermediate certificates from the certificate authority, import them into the keystore. Depending on the format of the files, you may need to convert them to a format that the keystore will recognize. Copy the file or files to the `[Remote Control installation directory]\JRE\bin` directory before you import.

NOTE: If you generated the CSR from the computer where Remote Control is installed, the keystore will already have the private key. If you need to import the private key to a different keystore or if you need to combine the certificate file and intermediate certificates, use a tool such as OpenSSL to convert the files to a single file in PKCS12 format before importing the file to the keystore.

To import a certificate:

1 From a command line, navigate to:

```
[Remote Control installation directory]\JRE\bin
```

2 Use the command:

```
keytool -import -alias amccert -keystore keystore -trustcacerts -
file example.cer
```

NOTE: As an example, `example.cer` is used as the filename. Replace this with the name of your certificate file.

3 Enter your keystore password.

The certificate is added to the keystore. After you have imported the certificate, copy the keystore file (named `keystore`) to the `Remote Control 4.1\cfg` directory.

Configuring Remote Control to Use SSL

Once you have generated a certificate, configure Remote Control with the keystore information. Modify the `server.properties` file and then restart the Remote Control server. If you do not want the password in clear text, obfuscate the password using the provided instructions.

NOTE: The properties file is case-sensitive.

To activate SSL for Remote Control:

1 Navigate to:

```
[RC Install location]\cfg
```

and open the `server.properties` file with a text editor such as Notepad.

2 If the key password and the keystore password are the same, insert the following lines:

```
Web.HTTP.Enable = 0
Web.HTTPS.Enable = 1
Web.SSL.KeyPassword = [password]
Web.SSL.KeyStore = cfg/keystore
Web.SSL.MaxIdleTime = 60000
Web.SSL.Port = 8900
```

Where `[password]` is the password for both the key and keystore.

Or, if the key password and keystore password are different, insert the following lines:

```
Web.HTTP.Enable = 0
Web.HTTPS.Enable = 1
Web.SSL.KeyPassword = [key password]
Web.SSL.Password = [keystore password]
Web.SSL.KeyStore = cfg/keystore
Web.SSL.MaxIdleTime = 60000
Web.SSL.Port = 8900
```

Where `[key password]` and `[keystore password]` are your passwords for the key and keystore.

3 Save your changes to the file.

4 Restart the Remote Control service.

To obfuscate a password:

1 From a command line, navigate to:

```
[Remote Control installation location]\lib
```

2 Use the command:

```
java.exe -cp jetty-6.1.24.jar;jetty-util-6.1.24.jar
org.mortbay.jetty.security.Password [password]
```

where `[password]` is the password you want obfuscated.

The command will generate an obfuscated password that begins `OBF:`. Use the entire line as a password in the `server.properties` file. For example:

```
Web.SSL.KeyPassword = OBF:1vgt1t331vg1
```

Accessing the Remote Control Console over a Secure Connection

Once you have imported the certificate, copied the keystore file to the Remote Control cfg directory, and configured and restarted Remote Control, you can access the Console over a https connection.

To access the Remote Control Console over a secure connection:

- In the address field of your browser, type:

```
https://<Domain Name>:8900/app/setup_logon.vm
```

Configuring the Package with the Server Address

In order to connect to a device after configuring the server to use SSL, you must configure the Remote Control package with the new server port and protocol.

NOTE: This document provides instructions on configuring the package from the Java Console. The task can also be accomplished from the Web Console.

To configure the package with the server address:

1 On the **Profiles** tab, select the software profile that has the Remote Control package.

2 From the Software Packages area of the **Software Profile** tab, select the package and click **Configure**. The *Configure Software Package* dialog box appears.

3 From the available list, double-click **Server Location**. The *Remote Control Server Location* dialog box appears.

4 In the Server text box, type the address and port for the Remote Control server, including the https protocol. For example:

```
https://servername.headquarters.yourcompany.com:8900
```

5 Click **OK**.

The software package is ready for synchronization.

Implementing a Self-Signed Certificate

These instructions explain how to generate and use a self-signed certificate for Remote Control. If you choose not to use a Certificate Authority, you can still use a https connection to connect to the Web Console by creating your own certificate.

NOTE: Internet browsers may not recognize a self-signed certificate as trusted and display warnings before allowing you access.

Wavelink strongly recommends backing up the server configuration and keystore files after you have implemented a self-signed certificate.

This section contains the following tasks for implementing a self-signed certificate:

- Generating a Certificate
- Configuring Remote Control to Use SSL
- Accessing the Remote Control Console over a Secure Connection
- Configuring the Package with the Server Address

Generating a Certificate

To create a self-signed certificate, use the keytool.exe utility. You will need to provide the domain name (Common Name), organizational unit, organization, city, state, and country code when creating your certificate. You will also need to provide a keystore name and a password for the keystore and key. These should be noted for future reference.

To generate a self-signed certificate:

1 From a command line, navigate to:

```
[RC installation directory]\jre\bin
```

where `[RC installation directory]` is the directory where Remote Control is installed.

2 Use the command:

```
keytool -genkey -alias rcselfcert -keyalg RSA -keystore keystore
```

3 At the prompt **Enter keystore password**, type the keystore password. When prompted, re-enter the password.

4 At the prompt **What is your first and last name**, type the domain name. The domain name you enter should be the domain name for the server where Remote Control is installed. Wavelink recommends using the fully qualified domain name unless you plan to use a wildcard certificate.

NOTE: Remote Control will not function if the domain name on the certificate is incorrect.

5 At the prompts, enter your organizational unit, organization, city, state, and the country code.

6 When you are prompted to review your information, type `yes` to confirm that it is correct. If you type `no`, you will be guided through the prompts again.

7 At the prompt **Enter key password for <rcselfcert>**, press `Return` to use the same password for the key.

8 The certificate and keystore are created. Copy the keystore file (named `keystore`) to the `Remote Control 4.1/cfg` directory.

An example of generating a self-signed certificate:

```
Enter keystore password: avalanche
Re-enter new password: avalanche
What is your first and last name?[Unknown]: domain.wavelink.com
What is the name of your organizational unit?[Unknown]:
Engineering
What is the name of your organization?[Unknown]: Wavelink
Corporation
What is the name of your City or Locality?[Unknown]: Midvale
What is the name of your State or Province?[Unknown]: Utah
What is the two-letter country code for this unit?[Unknown]: US
Is CN=domain.wavelink.com, OU=Engineering, O=Wavelink Corporation,
L=Midvale, ST=Utah, C=US correct?[no]: yes
Enter key password for <rcselfcert>(RETURN if same as keystore
password):
```

Configuring Remote Control to Use SSL

Once you have generated a certificate, configure Remote Control with the keystore information. Modify the `server.properties` file and then restart the Remote Control server. If you do not want the password in clear text, obfuscate the password using the provided instructions.

NOTE: The properties file is case-sensitive.

To activate SSL for Remote Control:

1 Navigate to

```
[RC Install location]\cfg
```

and open the `server.properties` file with a text editor such as Notepad.

2 If the key password and the keystore password are the same, insert the following lines:

```
Web.HTTP.Enable = 0
Web.HTTPS.Enable = 1
Web.SSL.KeyPassword = [password]
Web.SSL.KeyStore = cfg/keystore
Web.SSL.MaxIdleTime = 60000
Web.SSL.Port = 8900
```

Where `[password]` is the password for both the key and keystore.

Or, if the key password and keystore password are different, insert the following lines:

```
Web.HTTP.Enable = 0
Web.HTTPS.Enable = 1
Web.SSL.KeyPassword = [key password]
Web.SSL.Password = [keystore password]
Web.SSL.KeyStore = cfg/keystore
Web.SSL.MaxIdleTime = 60000
Web.SSL.Port = 8900
```

Where `[key password]` and `[keystore password]` are your passwords for the key and keystore.

3 Save your changes to the file.

4 Restart the Remote Control service.

To obfuscate a password:

1 From a command line, navigate to:

```
[Remote Control installation location]\lib
```

2 Use the command:

```
java.exe -cp jetty-6.1.24.jar;jetty-util-6.1.24.jar
org.mortbay.jetty.security.Password [password]
```

where `[password]` is the password you want obfuscated.

3 The command will generate an obfuscated password that begins `OBF:`. Use the entire line as a password in the `server.properties` file. For example:

```
Web.SSL.KeyPassword = OBF:1vgt1t331vg1
```

Accessing the Remote Control Console over a Secure Connection

Once you have generated a certificate, copied the keystore file to the Remote Control cfg directory, and configured and restarted Remote Control, you can access the Console over a https connection.

To access the Remote Control Console over a secure connection:

- In the address field of your browser, type:

```
https://<Domain Name>:8900/app/setup_logon.vm
```

Configuring the Package with the Server Address

In order to connect to a device after configuring the server to use SSL, you must configure the Remote Control package with the new server port and protocol.

NOTE: This document provides instructions on configuring the package from the Java Console. The task can also be accomplished from the Web Console.

To configure the package with the server address:

1 On the **Profiles** tab, select the software profile that has the Remote Control package.

2 From the Software Packages area of the **Software Profile** tab, select the package and click **Configure**. The *Configure Software Package* dialog box appears.

3 From the available list, double-click **Server Location**. The *Remote Control Server Location* dialog box appears.

4 In the Server text box, type the address and port for the Remote Control server, including the https protocol. For example:

```
https://servername.headquarters.yourcompany.com:8900
```

5 Click **OK**.

The software package is ready for synchronization.

Avalanche Services

This is a list all of the Avalanche services. Under each service title, you'll find the file path where the service is located for a default installation and which server the service is associated with.

Apache Tomcat for Wavelink

C:\Program Files\Wavelink\Avalanche\WebUtilities\Tomcat\bin\tomcat7.exe

The Tomcat server is responsible for making the Web Console available. It is normally installed with the Enterprise Server.

Wavelink Authentication Service AMC

C:\Program Files\Wavelink\AvalancheSE\CESecureServer.exe

The authentication server authenticates users when your system is configured to use SecurePlus or integrated logon. It is installed with the Enterprise Server.

Wavelink Avalanche Service Manager

C:\Program Files\Wavelink\Avalanche\Service\WLAmcServiceManager.exe

The service manager starts and stops the mobile device server. It is installed with a device server.

Wavelink Avalanche Enterprise Server

C:\Program Files\Wavelink\AvalancheSE\eserver.exe

This is the enterprise server.

Wavelink Information Router

C:\Program Files\Wavelink\AvalancheSE\WLInfoRailService.exe

The inforail service handles messages between servers and databases. It is normally installed with the enterprise server.

Wavelink License Server

C:\Program Files\Wavelink\AvalancheSE\WLLicenseService.exe

The license server manages licensing. It is normally installed with the enterprise server.

Wavelink Stat Server Enterprise

C:\Program Files\Wavelink\AvalancheSE\StatServer.exe

The statistics server handles reports and device statistics. It is generally installed with the enterprise server.

Wavelink Avalanche Agent

C:\Program Files\Wavelink\Avalanche\Service\WLAvalancheService.exe

This is the mobile device server.

Port Information

This section provides information about the ports used in Avalanche MC.

Database Inbound Ports

The databases listen on different ports depending on the database management system you are using (PostgreSQL, Oracle, or Microsoft SQL Server) and whether the database administrator has changed the port number. The following table lists the default port for each database management system. Be sure to configure Avalanche and your network with the correct port number.

The standard Avalanche installation uses a PostgreSQL database management system.

Database Management System	Default Port	UDP/TCP	Source
PostgreSQL	5432	TCP	Enterprise Server, Statistics Server, Web Console
Oracle	1521	TCP	Enterprise Server, Statistics Server, Web Console
MS SQL Server	1433	TCP	Enterprise Server, Statistics Server, Web Console

Enterprise/Statistics Server Ports

The following table provides a list of ports that the Enterprise and Statistics Server use to communicate. The Tomcat server is usually installed local to the Enterprise Server.

Traffic Description	Port	UDP/TCP	Source	Destination
LDAP user verification.	389	TCP	Enterprise Server	LDAP server
Active Directory user verification.	5002	TCP	Enterprise Server	Active Directory server
Mobile device server requesting licenses from the License Server.	7221	TCP	Mobile Device Server	Enterprise Server

Traffic Description	Port	UDP/TCP	Source	Destination
InfoRail transmission of information between servers, consoles, databases.	7225	TCP	Mobile Device Server, Enterprise Server, Web and Java Console, databases	Mobile Device Server, Statistics Server, databases
InfoRail talking to itself.	7226	TCP	Local traffic	Local traffic
Web Console requesting information.	8080	TCP	Web Console	Tomcat server

NOTE: If you use an SSL certificate, the Tomcat server listens on 8443 for a connection. You can change this to 443 in the `server.xml` file if no other program is using 443. For more information on changing the port for a Web Console connection, see SSL Certificates for the Web Console on page 179.

Mobile Device Server Ports

The following table provides a list of the ports that the Mobile Device Server uses to communicate with the Enabler installed on a mobile device.

Traffic Description	Port	UDP/TCP
Protocol Service. Traffic between the server and the Enabler.	1777	UDP/TCP
MUV3. Services persistent connections to mobile devices.	1778	TCP

SecurePlus and Remote Control Ports

SecurePlus (known in earlier versions as CE Secure) uses port 5001 (TCP). The following table provides a list of the ports that are used by Wavelink Avalanche Remote Control.

Usage	Port	Type	RC Server	Console/ Viewer	RC Client
Contacting a mail server (Optional)	25[1] 110[2]	TCP	Out	N/A	N/A
Device Connection[3]	1899	TCP	In/Out	Out	In/Out

[1] For SMTP.

[2] For POP3.

[3] For Avalanche On Demand or WAN connections, this port must be forwarded from the public IP to the internal server address.

Usage	Port	Type	RC Server	Console/ Viewer	RC Client
Server Control	1900	TCP	In	Out	N/A
Status Checks	1903	UDP	Out	Out	In
Avalanche License Server	7221	TCP	Out	N/A	N/A
Avalanche Tomcat Server	8080	TCP	Out	N/A	N/A

Uninstalling Avalanche

You can run the Avalanche uninstall utility from the Windows Control Panel or from the **Programs** menu.

When you uninstall Avalanche, you are given the option to uninstall the PostgreSQL database as well. If you select to uninstall Avalanche and the PostgreSQL database, all components of Avalanche and the database will be removed. If you select to uninstall Avalanche but leave the database, the `\db` folder located in the default installation directory will remain on your system. (The default location is `C:\Program Files\Wavelink\AvalancheMC\db`.)

The uninstall utility will not remove a Remote Control Server. Remote Control components have separate utilities for uninstallation. For more information, see the *Remote Control User Guide*.

If you uninstall and reinstall the enterprise server (on the same system) without uninstalling the device servers, the device servers are automatically discovered and appear in the **Unassigned Server Locations** region. If you install the enterprise server on a different system, device servers are not auto-discovered.

To uninstall Avalanche:

1 From the **Start** menu, select **Settings > Control Panel > Add or Remove Programs > Wavelink Avalanche** and click **Change/Remove**.

-Or-

From the **Start** menu, select **Programs > Wavelink Avalanche > Uninstall Avalanche**.

The *Uninstall Wizard* appears.

2 Follow the wizard prompts, based on what you want to remove.

Upon completion, Avalanche and any selected components are removed from your system.

Wavelink Contact Information

If you have comments or questions regarding this product, please contact Wavelink Customer Service.

E-mail Wavelink Customer Support at: CustomerService@wavelink.com

For customers within North America and Canada, call the Wavelink Technical Support line at 801-316-9000 (option 2) or 888-699-9283.

For international customers, call the international Wavelink Technical Support line at +800 9283 5465.

For Europe, Middle East, and Africa, hours are 9 AM - 5 PM GMT.

For all other customers, hours are 7 AM - 7 PM MST.