Remote Control

Avalanche Remote Control

User Guide

Version 4.1.3

Table of Contents

Chapter 1: Introduction

Remote Control allows you to connect to, view, and control mobile devices from the Avalanche Console. With Remote Control, an administrator can remotely diagnose and fix both applications and device settings, or provide guidance for a device user. This reduces mobile device down-time and increases productivity. Remote Control can also be used for presenting software to an audience, rapid data entry, or automated software testing.

Remote Control has the following components:

- **Remote Control Server**. The Remote Control Server facilitates network connections for Remote Control. You can configure server connection settings and set up the SMS e-mail gateway from the Remote Control Console.

- **Remote Control Client**. The client portion of Remote Control is deployed to a mobile device as an Avalanche package and runs automatically when you start-up or reboot the device.Once you download the Remote Control package to the mobile device, you can configure a limited number of client settings from the device.

- **Remote Control Standard Viewer**. The Standard Viewer allows you to interact with a remote device you are connected to. The Standard Viewer is accessed through the Avalanche Java Console.

- **Remote Control Web Viewer**. The Remote Control Web Viewer allows you to interact with a remote device through a web browser. The Remote Control Web Viewer is accessed through the Avalanche Web Console.

NOTE: You cannot connect to the same device with both the Web Viewer and the Standard Viewer at the same time.

- **Remote Control Console**. The Remote Control Console allows you to configure server settings.

- **Skins Editor**. The Skins Editor allows you to import device skin images you download or create and then assign keymaps to the skins. When a skin is associated with a connection, an image of the device is displayed along with the screen, and you can click on device buttons to perform tasks.

Chapter 2: Installing Avalanche Remote Control

Remote Control comes as two separate files: the Remote Control Server installation file (`.exe`) and the Remote Control software package (`.ava`). The installation file installs the Remote Control server on a local computer. The Remote Control software package contains the client software that needs to be installed on the mobile device. The software package must be added to an Avalanche profile before it can be configured and deployed to the device.

This section provides the following installation information:

- System Requirements

- Installing the Remote Control Server on Windows

- Installing the Remote Control Server on Linux

- Installing and Configuring the Client

- Installing the Remote Control Skins Editor

NOTE: Use of Remote Desktop or other terminal services in conjunction with Wavelink Avalanche Remote Control is not recommended.

System Requirements

There are two sets of requirements necessary to install and run Avalanche Remote Control: for installing the Remote Control Server and for installing the Remote Control Client. You must have Avalanche 5.2 or later (either Mobility Center or Site Edition) installed in order to use Remote Control 4.1. Wavelink recommends installing Remote Control local to the Enterprise Server database.

Client System Requirements

- Avalanche Enabler 3.50-12 or later versions

- Windows CE (4.2 or later), PocketPC 2003, Windows Mobile (5.0 or later), Windows XP or Windows XP embedded devices, or Windows 7

- 200 KB of disk space

- 200 KB of Flash memory

Server System Requirements

OS	Windows XP Professional 32 bit
	Windows Vista 32 or 64 bit

	Windows 2003 Server 32 bit
	Windows 2008 Server 32 or 64 bit
	Windows 2008 Server R2 32 or 64 bit
	Windows 7 32 or 64 bit
	Linux 2.4 or 2.6 kernel (Red Hat 7.3 or Red Hat Enterprise 4 are recommended)
	1-1000 Simultaneous Connections
CPU	Single Core at 2.8 GHz or greater
RAM (minimum)	2 GB
(recommended)	3 GB (using a 32-bit OS) or 4 GB (using a 64-bit OS)
Disk Space (minimum)	4 GB
(recommended)	8 GB

Installing the Remote Control Server on Windows

The Remote Control Server installation file installs the Remote Control Server. The Remote Control software package and Client are installed separately.

NOTE: Previous versions of Remote Control should be removed before Remote Control 4.1 is installed.

To install the Remote Control Server:

1   Obtain the Remote Control Server installation file and save it on the system where you want to install the Remote Control Server.

2   Double-click the Remote Control Server installation file.

    A *Welcome* dialog box appears.

3   Click **Next**.

    The Remote Control Server Password screen appears.

4   Provide a username and password to use to access the Remote Control Console and click **Next**.

    The License Agreement screen appears.

5   Agree to the terms of the license and click **Next**.

The Select Destination Location screen appears.

6   Click **Next** to accept the default installation folder, or click **Browse** to navigate to a folder of your choice. After you select an installation folder, click **Next** to continue the installation process.

The Select Start Menu Folder screen appears.

7   Click **Browse** to navigate to and select the folder where you want to create Remote Control shortcuts in the **Start** menu.

8   Click **Next**.

The Ready to Install screen appears.

9   Click **Install** to begin the installation.

The Remote Control Setup Wizard installs Remote Control.

If Remote Control is not installed local to the Avalanche Enterprise Server, you must configure Remote Control to access the license server. For information on configuring the Remote Control Server, see Synchronizing with the Avalanche License Server on page 10.

10   To close the installation wizard, click **Finish**.

Installing the Remote Control Server on Linux

The Remote Control Server installation file installs the Remote Control Server. The Remote Control software package and Client are installed separately.

To install the Remote Control Server:

1   Modify the firewall to allow Remote Control traffic. For information on Remote Control port usage, see Ports List on page 71.

2   Create a directory where Remote Control will be installed.

3   Extract the Remote Control tar file to the directory with the following command:

```
-tar -xvf [filename].tar
```

where `[filename]` is the name of the Remote Control tar file.

4   Navigate to the `Remote Control` directory that was created in the installation directory.

5   To start the server, type `./wlrcserv.sh`

The service will run as long as the window is open. For instructions on configuring Remote Control, see Using the Remote Control Console on page 9.

Installing and Configuring the Client

To install the Remote Control client on the mobile device, add the package to a new or existing Avalanche software profile. After the package has been added to a profile, you can enable, configure, and deploy it to mobile devices. For details about creating and deploying software profiles or adding software packages in Avalanche SE or MC, see the Avalanche user guide.

When you configure the software package, you have options to configure skin and logging options, a password to connect to the device, notification policies, and connection options such as the server address and client preconnect. For more information on configuring the Client from Avalanche, see Editing the Remote Control Package on page 16.

Installing the Remote Control Skins Editor

The Remote Control Skin Editor installation file installs the utility to edit Remote Control skins.

To install the Remote Control Skins Editor:

1   Save the Remote Control Skins editor installation file on the system where you want to install.

2   Double-click the installation file.

A *Welcome* dialog box appears.

3   Click **Next**.

The License Agreement screen appears.

4   Agree to the terms of the license and click **Next**.

The Select Destination Location screen appears.

5   Click **Next** to accept the default installation folder, or click **Browse** to navigate to a folder of your choice. After you select a folder, click **Next** to continue the installation process.

The Select Start Menu Folder screen appears.

6   Click **Browse** to navigate to and select the folder where you want to create Remote Control shortcuts in the **Start** menu.

7   Click **Next**.

The Ready to Install screen appears.

8   Click **Install** to begin the installation.

The Remote Control Setup Wizard installs the Skins Editor.

9   To close the installation wizard, click **Finish**.

Chapter 3: Licensing

Remote Control requires one license for each mobile device it manages. You can access and configure the Remote Control Console without a license, but you will not be able to communicate with a mobile device.

Licensing for Remote Control is handled through Avalanche. The Avalanche License Server is responsible for supplying licenses to Remote Control mobile devices. Before you can use Remote Control, you must activate your Remote Control licenses through Avalanche and provide Remote Control with the address of the License Server.

This section provides the following licensing information:

- Types of Licenses

- Activating Remote Control Licenses

- Activating Demo Mode

NOTE: For information on configuring Remote Control to contact the license server, see Synchronizing with the Avalanche License Server on page 10.

Types of Licenses

Remote Control requires a license for each mobile device it manages. When a Mobile Device Server detects a new wireless device, a license request is sent to the License Server. The License Server then sends a license to the Mobile Device 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, Remote Control can connect to 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.

NOTE: The License Server uses TCP port 7221. For the License Server to function properly, this port must be open and not blocked by a firewall.

There are two types of licenses available with Remote Control: base and maintenance. Base licenses are required to manage devices when using any variety of Remote Control version 4 (4.x). You will also need maintenance licenses if you have upgraded beyond version 4.1. For example, if you upgraded to 4.5, you would need a 4.x base license and a maintenance license for each device you want to manage.

Base licenses do not expire. Maintenance licenses are valid through a specific date. 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 Remote Control licenses, please contact Wavelink Customer Service.

Activating Remote Control Licenses

In order to use your licenses for Remote Control, you need to activate them through the Avalanche Console.

To activate Remote Control:

1 Obtain the Avalanche product licensing code from Wavelink.

NOTE: You receive this information in an e-mail from Wavelink upon purchasing Remote Control.

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

The *Licensing* dialog box appears.
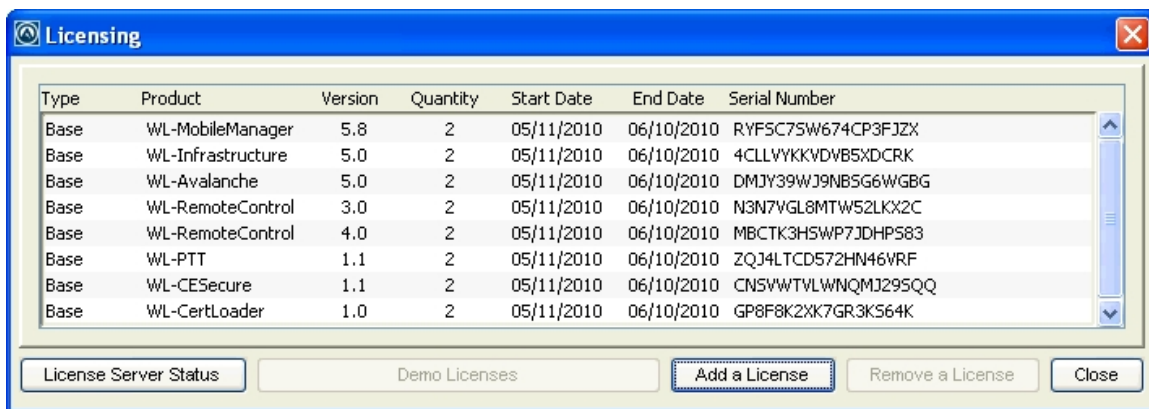
Licensing dialog box

3 Click **Add a License**.

The *Add a License* dialog box appears.

4 Click **Activate a License**.

The *Activate a License* dialog box appears.

5 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 licenses appear in the *Licensing* dialog box.

Activating Demo Mode

If you are installing Remote Control for demonstration purposes, you can run the product in demo mode. When you activate Demo Mode in Avalanche, you activate all the demo licenses for that installation. Demo mode includes 2 base licenses for Remote Control.

To activate demo mode:

1   Access the *Licensing* dialog box from the Avalanche Console by clicking **Tools > Manage Licensing**.

    The *Licensing* dialog box appears.

2   Click **Demo Licenses**.

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

Chapter 4: 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

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 16.

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**.

Chapter 5: 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 9.

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

- Using a Mobile Device Profile for Remote Control 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 11

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.

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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 16.

> **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 21 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**.

Using a Mobile Device Profile for Remote Control Settings

Configure Remote Control settings for a device by using a mobile device profile. The mobile device profile allows you to configure the following options for the Remote Control client:

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   The length of time that 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 session.

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   Configure the maximum size that the log file can reach before creating a new
Size   log file. New log files do not override previous log files.

Client Sleep   Allows the mobile device to enter sleep mode while connected to Remote
While   Control. If you do not enable this option, Remote Control will not allow the
Connected   mobile device to enter sleep mode while connected.

Allow Client   Grants client configuration control to the mobile device user. This allows the
Configuration   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 control from the Remote Control
                      Console, disable this option and redeploy the settings to the mobile device.

Disable   When this option is enabled, the mobile device user cannot exit the Remote
Client Exit   Control application.

Client   Configures the device to always pre-connect to the Remote Control Server.
Pre-connect
to Server

Client   When this option is enabled, the device will attempt to connect to the server
Connect on   when it is cradled.
ActiveSync

Corporate   This determines if VPN or port forwarding will be used by the mobile device
Connection   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.

Show Skin   Displays a skin when you are connected to a device. When this option is enabled, select the skin you want to use from the drop-down menu. If you choose **Autodetect**, Remote Control will use device information to display the correct skin.

NOTE: When you configure Remote Control settings using a mobile device profile, the profile settings will override other Remote Control settings.

To configure Remote Control settings using a mobile device profile:

1   Log in to the Avalanche Web Console.

2   From the **Profiles** tab, click the name of the mobile device profile you want to configure.

The Mobile Device Profile Details page appears.

3   Enable the **Manage Remote Control Settings** option.
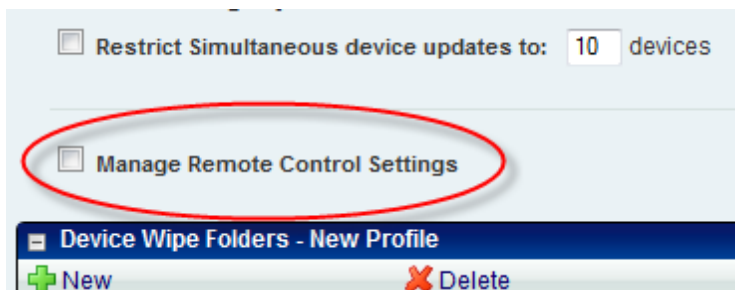
Mobile Device Profile Details

4   In the Remote Control Settings panel, configure the options as desired.

5   Save your changes.

Chapter 6: 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 45.

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.

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.
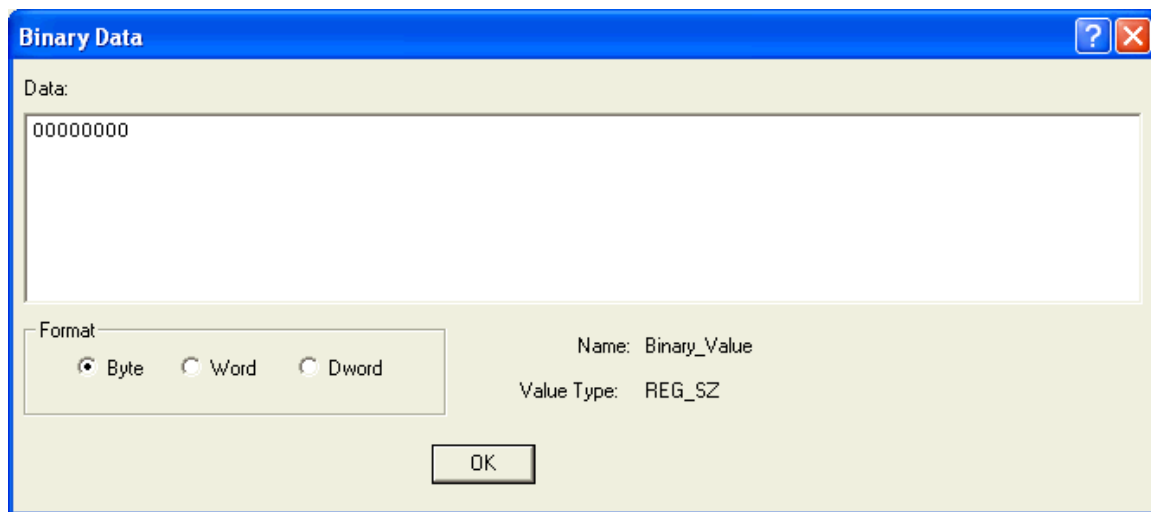
Binary Data

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.

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.
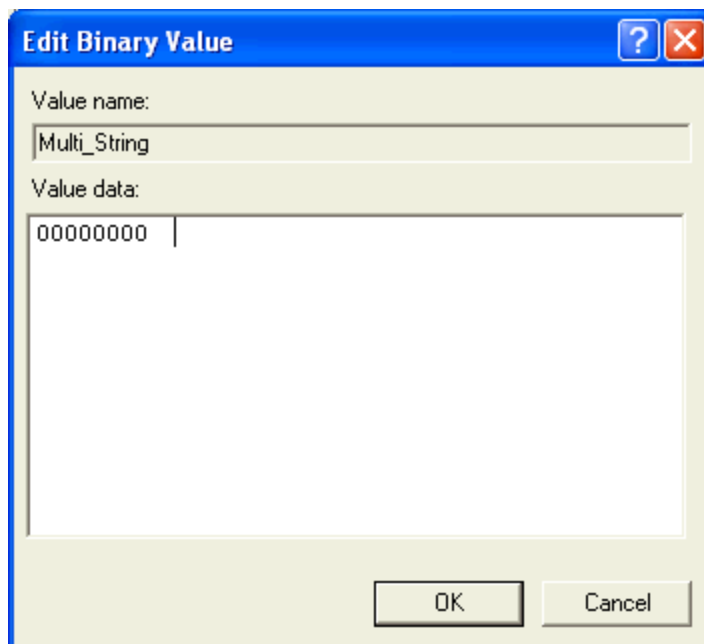
Edit Binary Value

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.

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.
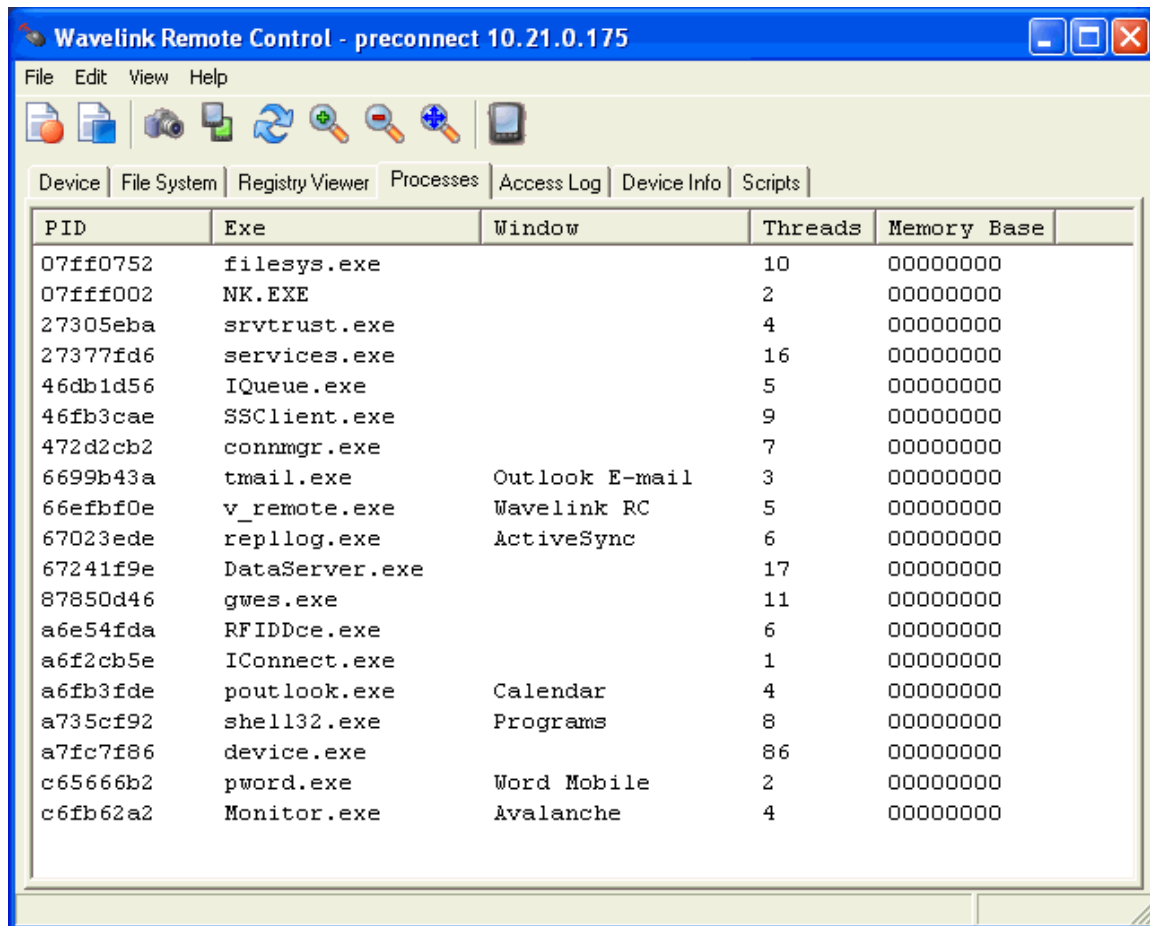
Process Manager

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 16.

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.
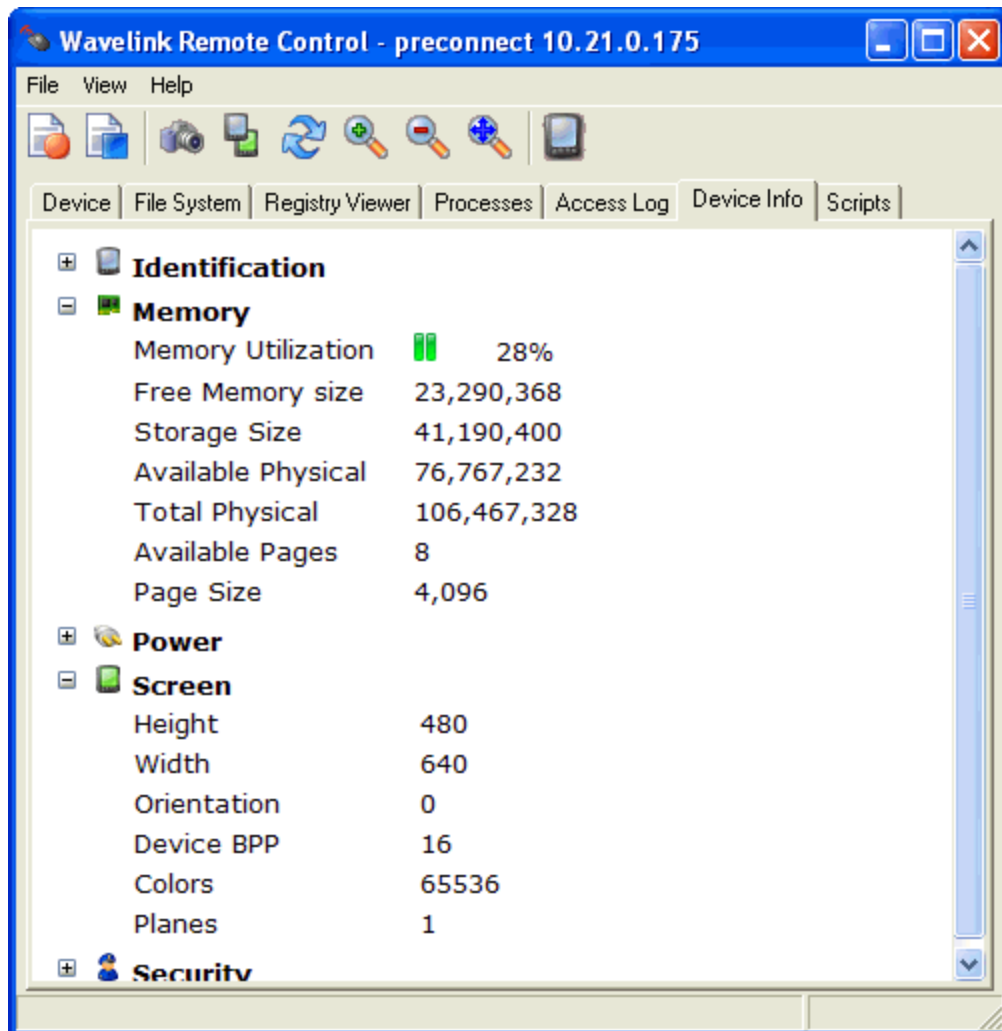
Device Info

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.
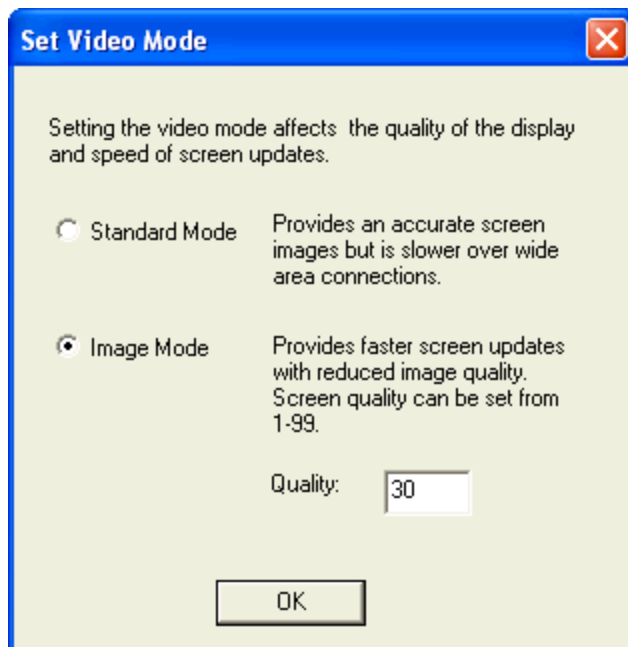
Set Video Mode

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.

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.

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 16.

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.

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 16.

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 24.

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 26.

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 7: Managing Device Skins

Skins display an image of the mobile device in the Standard Viewer. To reduce the size of the software package, Remote Control is only packaged with a select number of device skins. However, a variety of device skins from major manufacturers is available from the **Skin Download Manager** on the Wavelink web site. You also have the option of creating a new skin.

Using the Skins Editor, you can import skin images you download or create and then assign keymaps to the skins. You can then configure Remote Control to detect what type of device you are connecting to and automatically display the associated skin. The Skins Editor is installed separately. For information on installing it, see Installing the Remote Control Skins Editor on page 5.

Keymaps allow you to use the skin, or image of the mobile device, just as you would if you were pressing the buttons on the actual device. The keymaps assign specific functions to each key on the image of the mobile device. You have the ability to create custom keymaps for any of your mobile devices.

> **NOTE:** Device skins and keymaps are only available with the Standard Viewer.

This section provides information about the following tasks:

- Accessing the Skins Editor
- Downloading Skins
- Creating and Editing Skins
- Packaging Skins
- Applying Skins

Downloading Skins

The Skin Download Manager has mobile device skins that you can download to the Skins Editor and use in Remote Control. These skins may be created by Wavelink or other Remote Control users. Users can create skins and then upload them to the Web site for other people to download. For information about packaging a skin you created and uploading it to the Skin Download Manager, see Packaging Skins on page 59.
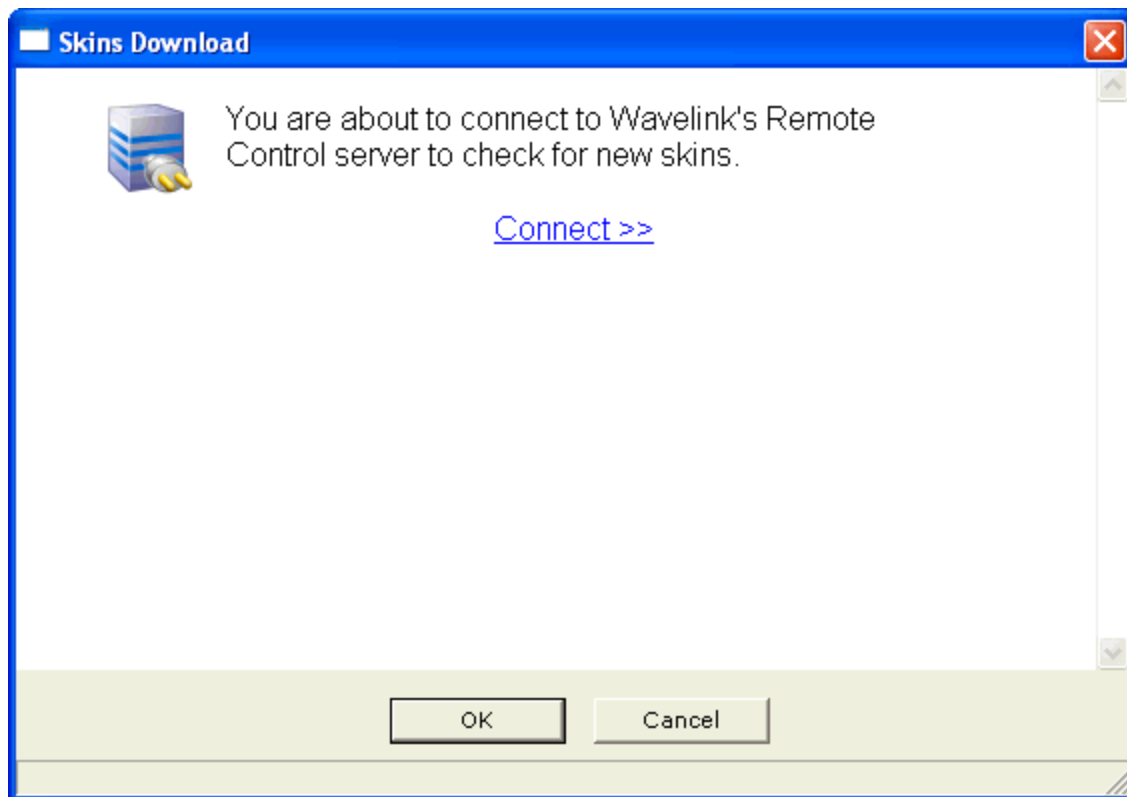
When you download a skin from the Skin Download Manager, the skins are stored on the Remote Control Server and also appear in the Skins List of the Skins Editor.

To download skins:

1   From the Skins Editor, click **Skin > Download From Web**.

The *Skins Download* dialog box appears.

Skins Download

2   Click **Connect**.

You will connect to the Wavelink Skin Download Manager.
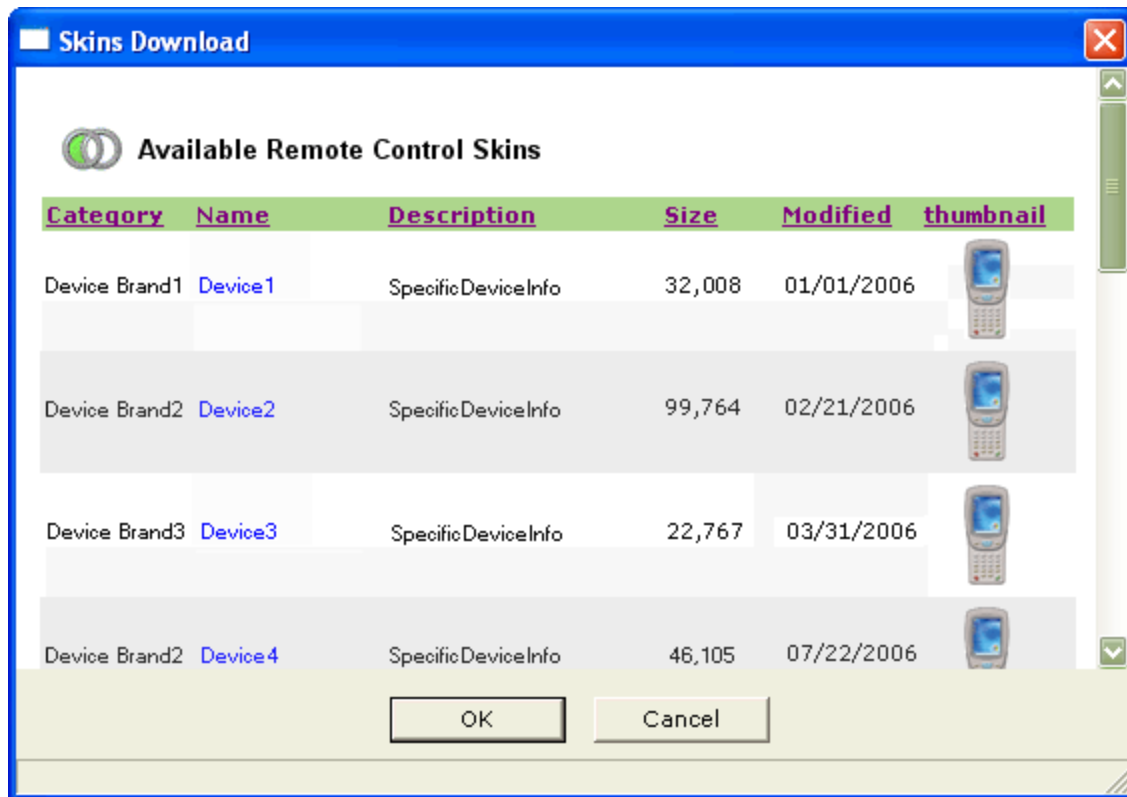
Skins Download

3   Click on the name of the skin you want to download.

NOTE: For each skin, there may be a number of different keyboard configurations. Be sure to select the skin with the keyboard configuration matching your device.

The skin files are downloaded to the `\Skins` folder in the Remote Control installation directory. The skin will appear in the skin list of the Skins Editor.

4   When you are done downloading skins, click **OK**.

Once you download a skin, it is immediately visible to Remote Control, the Remote Control Console and the Skins Editor. You can open the skin from the list of skins.

Accessing the Skins Editor

The Skins Editor is installed separately from the Remote Control server or package. Once it is installed, it is accessed through the Windows Start menu.

The Skins Editor allows you to split the preview screen. Using the split preview screen, you can view different images of the mobile device skin at the same time. For example, you can view the color map in one screen and the actual device buttons in another.

- Click **Start > Programs > RC Skins Editor 4.1 > Skins Editor**.

- From the **View** menu, select **Split Device View**.
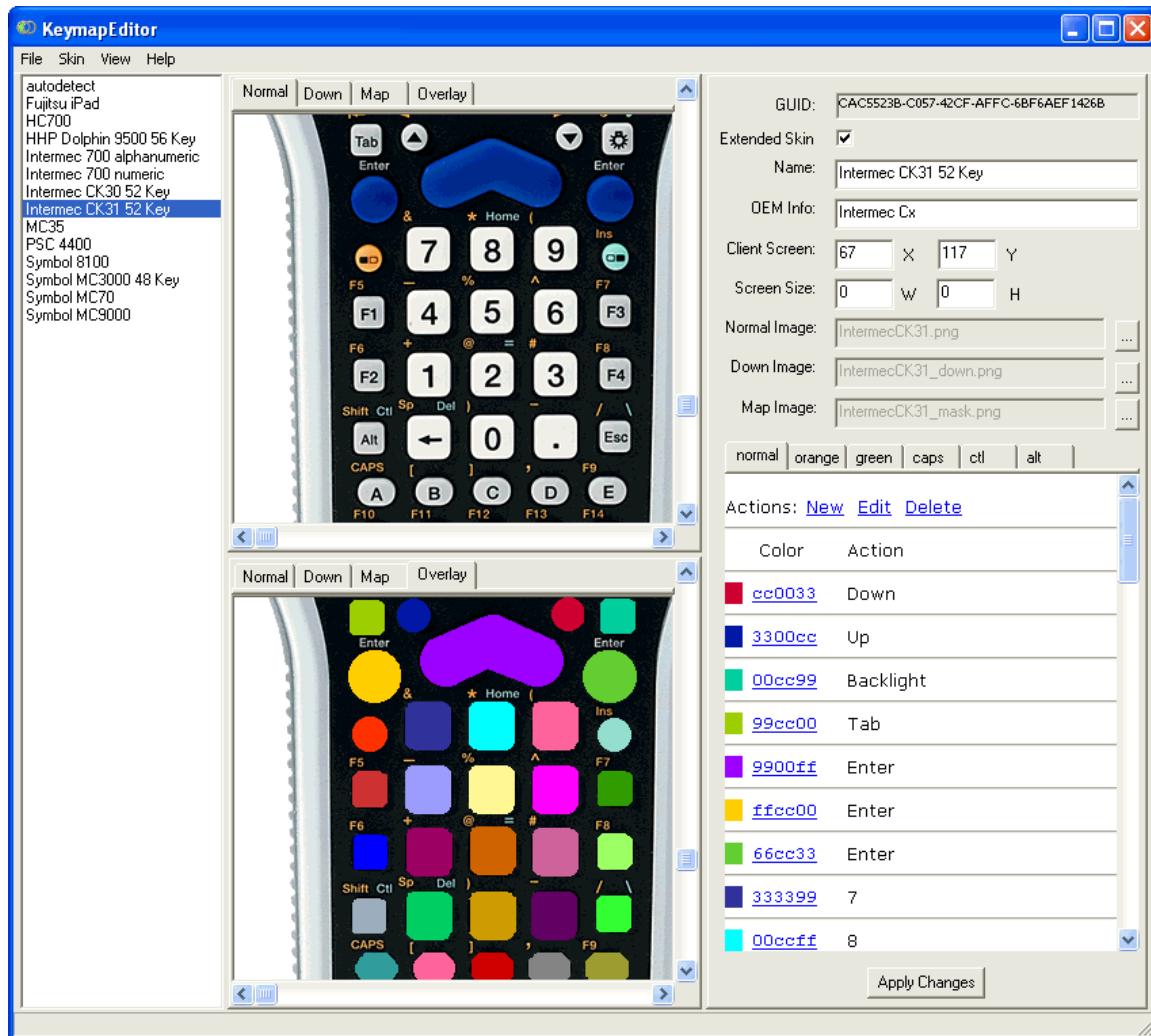
Split Screen

Creating and Editing Skins

In order to create a new skin, you must complete the following tasks:

1   **Create an image of the mobile device.** Using a camera and/or graphics design program, create an image of the mobile device. This will be the image that appears when you connect to the mobile device and display the skin.

2 **(Optional) Create a down image of the mobile device.** Using a graphics design program, create an image of the mobile device when a key is in a down state. The down image can be the same as the main image.

3 **Create a keymap image.** Using a graphics design program, create a keymap for the mobile device keys/buttons you want to configure in the Skins Editor. The keymap assigns a unique color to each button area of the skin, and then the color is associated with a button action when you configure the skin. The keymap image should be the same size as the device image.

Part of a keymap image

NOTE: All image files should be saved as `.png` or `.bmp`.

---

4 **Create a new skin.** Create a new skin in the Skins Editor by clicking **Skin > New**.

5 **Import each image into the Skins Editor.** When the images are imported, the Skins Editor can display the images, as well as a composite image of the device overlaid with the keymap. For information on importing the skin images, see Importing Images on page 55.

6 **Configure the skin details.** The Skins Editor allows you to configure the size and position of the screen and the actions for each button. For information on configuring the skin information, see Configuring Skin Information on page 56.

7 **Create key states.** Key states define how keys behave when the user presses keys such as SHIFT, CTRL, or ALT. For information on creating key states, see Creating Key States on page 57.

8 **Edit key details.** Define what each key press will do. This includes defining which keys toggle key states and multi-click key options. For information on editing key details, see Configuring Key Actions on page 58.

Importing Images

Import the images you created of the mobile device into the Skins Editor. Imported images will be available to display in the *Standard Viewer* when you connect to a mobile device. You can import the following types of images:

- **Normal**. This image is the normal display of the mobile device when it is in a stand-by state. This image displays upon a Remote Control connection to the mobile device.

- **Down**. This image displays the mobile device when a key is in the down state. This image can be the same as the normal image.

- **Map**. This image is the keymap for the mobile device. The image should display all the buttons that you want to configure for the mobile device as a unique color button. You use this image to map an action for each key. For an example of a map image, see Accessing the Skins Editor on page 52.

As you import each image, **Normal**, **Down**, and **Map** tabs appear in the preview area. You can click each tab to display the specific image. When you are finished importing, an **Overlay** tab appears. Use this tab to compare the Map image to the Normal (actual) image of the mobile device. You can verify that the buttons on the map image match up with the buttons on the mobile device image.

To import images:

1   From the device list in the Skins Editor, select the device for which you want to import images.

2   Click the **[...]** button to the right of the **Normal Image** text box.

3   Locate the image file you want to import and click **Open**.

    The image displays in the **Normal** tab.

4   Click the **[...]** button next to the **Down** text box.

5   Locate the image file you want to import and click **Open**.

    The image displays in the **Down** tab.

6   Click the **[...]** button next to the **Map** text box.

7   Locate the image file you want to import and click **Open**.

    The image displays in the **Map** tab.

8   Click **Apply Changes** to save your changes.

Configuring Skin Information

Create a new skin file before importing skin images. The skin file contains the device information for that specific skin. Remote Control uses this information to detect the type of device it is connecting to and then displays the appropriate skin.

You can configure the following types of skin information:

- **Extended Skin**. Extended skins are skins that have configured keymaps. If you are not going to configure a keymap for this skin, do not enable this option.

- **Name**. This is the name of the skin.

- **OEM Info**. This may be the complete OEM string returned by the device or a partial string. Remote Control will match the complete OEM string, returned by the device, with the data entered here. For example, if a device returns "My Device 3100" and another device returns "My Device 3110", a skin with the OEM String "My Device 31" would match both. This is useful when similar devices can share the same keyboard information and slight display differences are not significant.

- **Client Screen** (**X** and **Y** coordinates). These coordinates reflect the height and width that the skin will display in the Standard Viewer.

- **Screen Size** (**W**idth and **H**eight). If two similar devices return the same OEM but have different screen sizes, you can specify the screen size for this skin so that Remote Control will auto detect the correct skin.

NOTE: A GUID is automatically assigned to the skin. You cannot configure this information.

To configure skin information:

1 From the **Skins** menu, select **New**.

2 In the device information area, enable the **Extended Skin** option if you are creating an extended skin.

3 In the **Name** text box, enter the name of the skin.

4 In the **OEM Info** text box, enter device manufacturer information you want the Remote Control auto-detect feature to associate this skin with.

5 In the **Client Screen** text boxes, enter the pixel height and width for the skin image for the device.

6 In the **Screen Size** text boxes, enter the pixel height and width for the screen.

7 Click **Apply Changes** to save your changes.

Once you enter information for the mobile device, you are ready to import the images of the device that you have created.

Creating Key States

Using key states, you can create many different actions for each mobile device key. For example, you can configure a key to send "a" in the normal state and "A" in a CAPS LOCK state. This allows multiple uses for the same keys.

You also have the option of making each key a multi-click key. This means that in one state, a key can perform up to four different actions depending on the number of times it is pressed.

Each state can be defined as a sticky state. When a state is sticky, it will persist until the user changes the state again. If the state is not set to be sticky, then after another key is pressed, the device will be reset to the default state. (For example, CAPS LOCK is a sticky state that persists until the user switches the state. SHIFT normally changes the state until a key is pressed and then the device goes back to the default state.)

To create new device states:

1 In the Actions Editor area, click **New**.

The *New State* dialog box appears.

New State

2 Enter a name for the state.

3 Enable the **Default** option if you want this state to be the default state the keys are in when displayed in the Standard Viewer.

4 Enable the **Sticky** option if you want this state to be sticky.

5 Click **OK** when you are finished.

The new state appears as a tab in the Actions Editor area.

Configuring Key Actions

You can configure key behavior for each button you created in your keymap image for the mobile device skin. The key can be configured differently depending on the state the device is in or how many times the key is pressed. Keys can also be configured to toggle the state of the device.

To configure key actions:

1   After you have imported the device image and keymap image into the Skins Editor, click on the key you want to configure. (You can click on the key from any of the device views: Normal, Down, Map, or Overlay.)

    The *Edit Key Detail* dialog box appears.
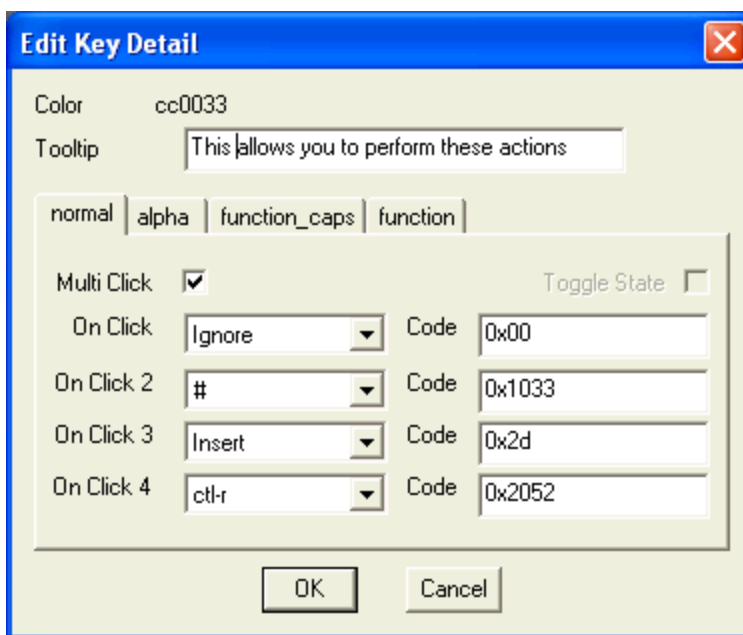
Edit Key Detail

2   Enter a **Tooltip** for the key. The information you enter into the **Tooltip** text box will display in the Standard Viewer when you move the mouse over that key.

3   Each key state you have created appears as a tab. Each tab defines what happens when the key is pressed while the device is in that state.

4   From the **On Click** drop-down list, select the action you want this key to perform on the first click. You can also enter the code for the action you want the key to perform in the **Code** text box.

   • If you want the key to be a multi-click key, enable the **Multi Click** option and configure the **On Click 2**, **On Click 3** and **On Click 4** options using the drop-down lists.

- If you want this key to toggle the state of the mobile device (for example, act as the shift key), enable the **Toggle** option and type the name of the state that you want the device to switch to in the **Code** text box.

5   Continue configuring the key for all the states.

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

    The key is now assigned to perform the actions you configured.

7   Click **Apply Changes** to save the key configuration.

Packaging Skins

Only a certain number of skins are included with the Remote Control software package. However, you can access and import other skins with the Wavelink web site Skins Download Manager. Additionally, if you create new skins for mobile devices, you can package the skins and upload them to the Wavelink Web site for other Remote Control users to access.

To package skins:

1   In the Skins list, select the skin you want to send to Wavelink.

2   From the **Skin** menu, select **Send to Wavelink**.

    The *Upload Skins Package to Wavelink* dialog box appears.

Upload Skins Package to Wavelink

You are about to create a Wavelink Remote Control slins package.

Name: M. Smith

Company   Company, Inc.

Email   msmith@company.com

Comments

Attached is a new skin package.

OK   Cancel

Upload Skins Package to Wavelink

3   Enter your name, company and e-mail in the appropriate text boxes.

4   Add any comments about the skin you are sending in the **Comments** text box.

5   Click **OK**.

Remote Control packages all the files used to create the selected skin and send the package to Wavelink. Wavelink then posts the skin on the Skins Download Manager, allowing other Remote Control users to download it.

Applying Skins

You can apply or change a skin from either the Web Viewer or the Standard Viewer when you are connected to a mobile device.

NOTE: You can also set a default skin from the Remote Control Console or from an Avalanche mobile device profile. For more information, see Configuring Connection Profiles on page 15 or Using a Mobile Device Profile for Remote Control Settings on page 21. When you have configured a skin using a mobile device profile, the profile settings will override other Remote Control settings.

To apply a skin while you are connected with the Web Viewer:

1   From the **Device** tab of the Web Viewer, click **Edit Device** in the Available Commands panel.

2   Click **Assign New**.

3   The *Select a profile* dialog box appears.

4   Click the name of the connection profile with the desired skin from the list.

5   Click **Save**.

6   The skin will appear when you view the device.

To apply a skin while you are connected with the Standard Viewer:

1   From the **File** menu in the Standard Viewer, select **Configure**.

The *Configure* dialog box opens.

2   Enable the **Show Skin** option.

3   From the **Skin** drop-down list, select which skin you want to display.

If you select **Autodetect**, Remote Control attempts to detect the type of device you are using and apply that skin.

4   Click **OK**.

The *Configuration Data Changed* dialog box appears. This dialog box indicates that you changed something from the original profile configuration.
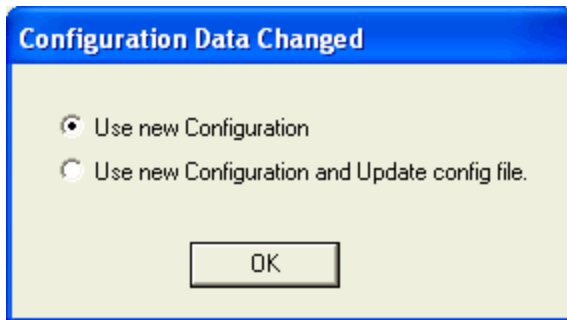
Configuration Data Changed

- If you want to use the updated changes, but do not want to update the configuration file, select the **Use New Configuration** option.

- If you want to use the 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 selected skin displays in the Standard Viewer.

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.

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.

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.

- 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.

---

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.

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.

Ports List

The following table provides information about the default ports used with Remote Control and Avalanche.

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
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

---

[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.

Wavelink Contact Information

Visit our web site at www.wavelink.com. 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.