MC9000 Series Addendum
for Embedded Windows® CE 5.0

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Introduction

This addendum is a companion guide to the **MC9000-G for Embedded Windows® .NET Product Reference Guide** and **MC9000-K/S for Embedded Windows® .NET Product Reference Guide**, and describes the differences between the Windows® .NET 4.2 and Windows CE 5.0 operating systems as they pertain to the MC9000 with Windows Embedded CE mobile computers.

Screens and windows pictured in this guide are samples and can differ from actual screens.

Configurations

This guide covers the following configurations:

- **MC9000-K/S** - Windows CE 5.0 operating system, color display, 64MB ROM/64MB RAM memory, laser scanner, batch communication.
- **MC9060-G/K/S** - Windows CE 5.0 operating system, 802.11b radio, color or monochrome display, 64MB ROM/64MB RAM memory, laser scanner or imager.

Chapter Descriptions

Topics covered in this guide are as follows:

- **Chapter 1, Windows CE 5.0 Features and Installation** lists the differences between the Windows CE .NET 4.2 and CE 5.0 operating systems as they pertain to the MC9000, and provides instructions on upgrading an MC9000 Windows CE .NET 4.2 mobile computer to CE 5.0.
- **Chapter 2, New Features** describes the additional options available in the CE 5.0 operating system.
- **Chapter 3, Wireless Applications** describes how to configure the wireless connection in the CE 5.0 operating system.

Notational Conventions

The following conventions are used in this document:

- “Mobile computer” refers to the Symbol MC9000.
- **Italics** are used to highlight the following:
  - Chapters and sections in this and related documents
  - Dialog box, window, and screen names
  - Drop-down list and list box names
  - Check box and radio button names
  - Icons on a screen.
- **Bold** text is used to highlight the following:
  - Key names on a keypad
  - Button names on a screen.
- Bullets (•) indicate:
  - Action items
  - Lists of alternatives
  - Lists of required steps that are not necessarily sequential.
- Sequential lists (e.g., those that describe step-by-step procedures) appear as numbered lists.
Related Documents and Software

The following documents provide more information about the MC9000 mobile computers.

- Symbol Applications Guide for Symbol Devices, p/n 72-68901-xx
- Microsoft® Applications Guide for Mobile and Win CE 5.0, p/n 72-78456-xx
- SMDK Help File for Symbol Terminals, p/n 72E-38880-xx
- ActiveSync software, available at the Microsoft web site: http://www.microsoft.com

For the latest version of this guide and all guides, go to: http://www.symbol.com/manuals.

Service Information

If you have a problem with your equipment, contact the Symbol Global Customer Interaction Center for your region (see below for contact information). Before calling, have the model number, serial number, and several of your bar code symbols at hand.

Call the Global Customer Interaction Center from a phone near the equipment so that the service person can try to talk you through your problem. If the equipment is found to be working properly and the problem is symbol readability, the Global Customer Interaction Center will request samples of your bar codes for analysis at our plant.

If your problem cannot be solved over the phone, you may need to return your equipment for servicing. If that is necessary, you will be given specific directions.

Symbol Technologies is not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty. If the original shipping container was not kept, contact Symbol to have another sent to you.

For service information, warranty information or technical assistance contact or call the Symbol Global Customer Interaction Center. For contact information, go to: www.symbol.com/contactsupport.

If you purchased your Symbol product from a Symbol Business Partner, contact that Business Partner for service.

For the latest version of this guide go to: http://www.symbol.com/manuals.
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Introduction

Differences between the Windows CE .NET 4.2 and Windows CE 5.0 operating systems on the MC9000 series mobile computer include:

- The mobile computer now supports a 1 GB SD card.
- The mobile computer now supports image capture. See Imaging on page 2-3.
- The mobile computer now supports imager pick list mode. See Imager Scanning on page 2-3.
- The mobile computer supports iDockIt, a connection utility which manages activities between the mobile computer and a connected cradle (Ethernet, modem, serial, or USB), a USB cable, or a serial cable. See iDockIt on page 2-5.
- The Windows CE 5.0 operating system only supports mobile computers with 64MB ROM/64MB RAM memory.
- The Rapid Deployment (RD) Client is updated to support new security features.
- The MC9000G includes Wavelink TN Client version 5.1. For information on Wavelink, visit http://www.wavelink.com/.
- Control Panel includes options for Backlight, Keylight, and System Information. See Control Panel Options on page 2-5.
- Wireless LAN configuration is updated. See Chapter 3, Wireless Applications.
- Series 9000 Demo Window functions do not include S24 DS Settings, S24 FH Settings, or MSR Cameo.

Installing Windows CE 5.0

Update the MC9000 Series Windows CE .NET 4.2 mobile computer with Windows CE 5.0 using a USB or serial connection, an SD card, or AirBEAM® Smart. First obtain the Device Configuration Package (DCP) for MC9000c50 with Windows CE v5.0, which contains the files required for upgrade. Visit Symbol’s Solution Builder at http://sb.symbol.com/SB641/en/US/partnerMkt/SB for information on obtaining the DCP.

Upgrading to CE 5.0 via USB Connection

Use the Terminal Configuration Manager (TCM) on the desktop computer and the Initial Program Loader (IPL) on the mobile computer to upgrade the OS. For more information on TCM and IPL, see the MC9000-G for Embedded Windows® CE .NET Product Reference Guide or the MC9000-K/S for Embedded Windows® CE .NET Product Reference Guide.

Windows XP

To update the mobile computer with Windows CE 5.0 using the Terminal Configuration Manager (TCM):

1. Install the DCP onto the desktop computer.
   
   **Note**
   If you use a firewall, the firewall may prevent some files from installing. To verify that the DCP installation is complete, ensure the following folder contains files, and is not empty:
   ```
   <Your drive>:\Program Files\Symbol Device Configuration Package\MC9000c50\<version number folder>\OSUpdate\Images
   ```

2. Place the mobile computer into Initial Program Loader (IPL) mode:
   a. Connect the Single Slot Serial/USB cradle to power and place the device in the cradle, or attach the CAM to the device and connect power.
   b. Hold the trigger and **Power** button until IPL Mode instructions appear on the screen.
   c. Release the **Power** button only.
   d. When the IPL Mode main menu appears, release the trigger.
3. On the mobile computer, select the partition to download from the IPL main menu. You must download the Partition Table first and the Monitor partition last. Download the other partitions in any order.
4. On the **Select Transport** menu, select **USB**.
5. Select **USB Standard** from the **USB Configuration** menu.
7. Connect the mobile computer to the desktop computer via USB cable using the cradle or CAM. The desktop computer displays the New Hardware Found installation wizard.
8. On the desktop computer, select Install from a list or specific location, and click Next.
9. Select the Include this location in the search checkbox, and click Next.
10. On the warning window that appears, click Continue Anyway.
11. Click Finish.
12. Open TCM on the desktop computer. Select Start - Programs - Symbol Device Configuration Packages - MC9000c50 - TCM.
14. On the Load Terminal window, select USB from the Comm Port drop-down list.
15. Click the ... button.
16. In the Files to Load window, select the file(s) specified in IPL in Step 3, then click Open.
17. Click Download.
18. Repeat steps 3-6 and 13-15 for the remaining partitions.
19. After downloading all required partitions, if the mobile computer does not automatically reset, select System Reset on the IPL main menu on the mobile computer.

**Windows 2000**

To update the mobile computer with Windows CE 5.0 using the Terminal Configuration Manager (TCM):

1. Install the DCP onto the desktop computer.

   **Note** If you use a firewall, the firewall may prevent some files from installing. To verify that the DCP installation is complete, ensure the following folder contains files, and is not empty: `<Your drive>\Program Files\Symbol Device Configuration Package\MC9000c50\<version number folder>\OSUpdate\Images`

2. Place the mobile computer into Initial Program Loader (IPL) mode:
   a. Connect the Single Slot Serial/USB cradle to power and place the device in the cradle, or attach the CAM to the device and connect power.
   b. Hold the trigger and Power button until IPL Mode instructions appear on the screen.
   c. Release the Power button only.
   d. When the IPL Mode main menu appears, release the trigger.
3. On the mobile computer, select the partition to download from the IPL main menu. You must download the Partition Table first and the Monitor partition last. Download the other partitions in any order.
4. On the Select Transport menu, select USB.
5. Select USB Standard from the USB Configuration menu.
7. Connect the mobile computer to the desktop computer via USB cable using the cradle or CAM. The desktop computer displays the New Hardware Found installation wizard.
8. On the desktop computer, select Search for a suitable driver for my device (recommended), and click Next.
9. Select the Specify a location checkbox, and click Next.
10. Click OK to accept the path that appears indicating the location of the driver files.
11. Click Next.
12. Click **Finish**.
13. Open TCM. Select **Start - Programs - Symbol Device Configuration Packages - MC9000c50 - TCM**.
14. Select **File - Load Terminal**.
15. On the **Load Terminal** window, select **USB** from the **Comm Port** drop-down list.
16. Click the **...** button.
17. In the **Files to Load** window, select the file(s) specified in IPL in Step 3, then click **Open**.
18. Click **Download**.
19. Repeat steps 3-6 and 13-16 for the remaining partitions.
20. After downloading all required partitions, if the mobile computer does not automatically reset, select **System Reset** on the IPL main menu on the mobile computer.

**Upgrading to CE 5.0 via Serial Connection**

Use the Terminal Configuration Manager (TCM) on the desktop computer and the Initial Program Loader (IPL) on the mobile computer to upgrade the OS. For more information on TCM and IPL, see the **MC9000-G for Embedded Windows® CE .NET Product Reference Guide** or the **MC9000-K/S for Embedded Windows® CE .NET Product Reference Guide**.

Upgrading the OS via USB is significantly faster than via serial connection.

---

1. Install the DCP onto the desktop computer.

   If you use a firewall, the firewall may prevent some files from installing. To verify that the DCP installation is complete, ensure the following folder contains files, and is not empty:

   `<Your drive>:\Program Files\Symbol Device Configuration Package\MC9000c50<version number folder>\OSUpdate\Images`

2. Place the mobile computer into Initial Program Loader (IPL) mode:
   a. Connect the Single Slot Serial/USB cradle to power and place the device in the cradle, or attach the CAM to the device and connect power.
   b. Hold the trigger and **Power** button until IPL Mode instructions appear on the screen.
   c. Release the **Power** button only.
   d. When the IPL Mode main menu appears, release the trigger.
3. On the mobile computer, select the partition to download from the IPL main menu. You must download the Partition Table first and the Monitor partition last. Download the other partitions in any order.
4. On the **Select Transport** menu, select **Serial**.
5. Select the baud rate from the **Select Baud Rate** menu.
6. On the **Download File** menu, select **Download**.
7. Connect the mobile computer to the desktop computer via serial cable using the cradle or CAM.
8. Open TCM on the desktop computer. Select **Start - Programs - Symbol Device Configuration Packages - MC9000c50 - TCM**.
9. Select **File - Load Terminal**.
10. On the **Load Terminal** window, select the appropriate serial COM port from the **Comm Port** drop-down list. Also select the baud rate from the **Baud Rate** drop-down list.
11. Click the **...** button.
12. In the **Files to Load** window, select the file(s) specified in IPL in Step 3, then click **Open**.
Upgrading to CE 5.0 via SD Card
To upgrade using a Secure Digital (SD) card:

1. Install the DCP onto the desktop computer.

   **Note**
   If you use a firewall, the firewall may prevent some files from installing. To verify that the DCP installation is complete, ensure the following folder contains files, and is not empty:

   `<Your drive>\Program Files\Symbol Device Configuration Package\MC9000c50\<version number folder>\OSUpdate\Images`


3. Connect the mobile computer to power and to the desktop computer via a serial or USB cable using the Single Slot Serial/USB cradle or CAM, and set up a partnership between the two computers using ActiveSync. Refer to the MC9000-G Product Reference Guide for Embedded Windows® CE .NET or the MC9000-K/S for Embedded Windows® CE .NET Product Reference Guide for instructions.

4. In the ActiveSync window on the desktop computer, select Explore.

5. On the drive in which you installed the DCP (typically C:), navigate to the directory:

   `\Program Files\Symbol Device Configuration Packages\MC9000c50\V1.0`.

6. Copy the OSUpdate folder into the My Device\Storage Card\ folder on the mobile computer.

7. On the mobile computer, tap Start - Programs - Windows Explorer.

8. Double-tap the Storage Card folder.

9. For a mobile computer with a color display, double-tap the 9000c50enColor_SD.LNK file.

   For a mobile computer with a monochrome display, double-tap the 9000c50enMono_SD.LNK file.

10. After the update completes and the mobile computer reboots, remove the SD card.

Upgrading to CE 5.0 via AirBEAM Smart
To upgrade using AirBEAM Smart, use the files in the OSUpdateFiles folder in the directory C:\Program Files\Symbol Device Configuration Packages\MC9000c50\V1.0. See the MC9000-G Product Reference Guide for Embedded Windows® CE .NET or the MC9000-K/S for Embedded Windows® CE .NET Product Reference Guide for instructions on using AirBEAM Smart.

Downgrading to Windows CE .NET 4.2
To downgrade a Windows CE 5.0 mobile computer to the Windows CE .NET 4.2 operating system, use a USB or serial connection. First obtain the Microsoft Windows CE.Net v4.2 Upgrade for MC 90xx-G Terminals from devzone.symbol.com.

**Note**
You cannot use AirBEAM Smart or an SD card to downgrade the mobile computer.

Follow the procedures in Upgrading to CE 5.0 via USB Connection on page 1-3 or Upgrading to CE 5.0 via Serial Connection on page 1-5 to downgrade to Windows CE .NET 4.2, using the package downloaded from the devzone.
New Features

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Introduction
This chapter describes the additional features the MC9000 with Windows CE 5.0 supports.

Imaging
Mobile computers with an integrated imager have the following features:

- Omnidirectional reading of a variety of bar code symbologies, including the most popular linear, postal, PDF417, and 2D matrix code types.
- The ability to capture and download images to a host for a variety of imaging applications.
- Advanced intuitive laser aiming for easy point-and-shoot operation.

The imager uses digital camera technology to take a digital picture of a bar code, stores the resulting image in its memory, and executes state-of-the-art software decoding algorithms to extract the data from the image.

Operational Modes
Mobile computers with an integrated imager support three modes of operation, listed below. Activate each mode by pulling the trigger or pressing the Scan button.

- **Decode Mode**: In this mode, the mobile computer attempts to locate and decode enabled bar codes within its field of view. The imager remains in this mode as long as you hold the trigger, or until it decodes a bar code.

- **Pick List Mode**: This mode allows you to selectively decode a bar code when more than one bar code is in the mobile computer’s field of view. To accomplish this, move the aiming crosshair over the required bar code to decode only this bar code. This feature is ideal for pick lists containing multiple bar codes and manufacturing or transport labels containing more than one bar code type (either 1D or 2D).

- **Image Capture Mode**: Use this mode to capture an image within the mobile computer’s field of view. This is useful for capturing signatures or images of items like damaged boxes.

Imager Scanning
1. Ensure that a scan-enabled application is loaded on the mobile computer.
2. Aim the scan window at the bar code.
3. Press the scan button. The red laser aiming pattern turns on to assist in aiming. Ensure the bar code is within the area formed by the brackets in the aiming pattern. The scan LED lights red to indicate that scanning is in process, then lights green and a beep sounds, by default, to indicate the bar code was decoded successfully. Note that when the mobile computer is in Pick List Mode, the imager does not decode the bar code until the crosshair touches the bar code.
4. Release the scan button. Imager decoding usually occurs instantaneously. The mobile computer repeats the steps required to take a digital picture (image) of a poor or difficult bar code as long as the scan button remains pressed.
iDockIt

iDockIt is a connection utility which manages activities between the mobile computer and a connected cradle (Ethernet, modem, serial, or USB), a USB cable, or a serial cable. For more information on the utility, see the documentation provided with iDockIt.

iDockIt features:

- The ability to manage multiple cradle profiles. iDockIt auto-detects the cradle communication type and behaves accordingly.
- Integrated modem capabilities using TAPI interface.
- Runs as a tray application, and always runs in the background.
- uConnect software, allowing automatic multi-dock USB synchronization.
- The ability to configure settings within the application.
- Options to change parameters upon docking (with or without settings time-out).
- The ability to force synchronization events.
- The ability to disable WLAN connection on the device to ensure synchronization is performed via dock.
- Management of multiple connection types without losing settings.

Control Panel Options

The Control Panel now includes options for Backlight, Keylight, and System Information.

Backlight

Use the Backlight tabs to adjust backlight brightness and power settings.

Battery Power

To set the backlight settings when using battery power:

1. Select Start - Settings - Control Panel, and double-tap the Backlight icon.

   ![Figure 2-4. Backlight Settings Window - Battery Power Tab](image)

2. Select the Disable backlight if device is not used for check box to turn off the backlight when the device is not used for a certain period of time. Select this period of time from the drop-down list. Available times are 10 seconds, 30 seconds, 1 minute, 2 minutes, 3 minutes, 4 minutes, and 5 minutes.

3. Select the Enable backlight when a button is pressed or the screen is tapped check box to turn on the backlight when one of these events occur.

4. Tap ok.
**External Power**

To set the backlight settings when using external AC power:

1. Select *Start - Settings - Control Panel*, double-tap the *Backlight* icon.
2. Tap the *External Power* tab.

![Figure 2-5. Backlight Settings Window - External Power Tab](image)

3. Select the *Disable backlight if device is not used for* check box to turn off the backlight when the device is not used for a certain period of time. Select this period of time from the drop-down list. Available times are 1 through 10 minutes in 1-minute intervals.
4. Select the *Enable backlight when a button is pressed or the screen is tapped* check box to turn on the backlight when one of these events occur.
5. Tap *ok*.

**Brightness**

To set a brightness level for the backlight:

1. Select *Start - Settings - Control Panel*, double-tap the *Backlight* icon.
2. Tap the *Brightness* tab.

![Figure 2-6. Backlight Settings Window - Brightness Tab](image)

3. Select the *Disable backlight* check box to turn off the backlight completely.
4. If the *Disable backlight* check box is unchecked, use the slider to adjust screen brightness.
5. Tap *ok*. 
Keylight

Use the Keylight tabs to adjust the brightness and power settings of the keypad light.

Battery Power

To set the keypad light settings when using battery power:

1. Select Start - Settings - Control Panel, and double-tap the Keylight icon.

   ![Figure 2-7. Keylight Settings Window - Battery Power Tab](image)

2. Select the Disable keylight if device is not used for check box to turn off the keypad light when the device is not used for a certain period of time. Select this period of time from the drop-down list. Available times are 10 seconds, 30 seconds, 1 minute, 2 minutes, 3 minutes, 4 minutes, and 5 minutes.

3. Select the Enable keylight when a button is pressed or the screen is tapped check box to turn on the keypad light when one of these events occur.

4. Tap ok.

External Power

To set the keypad light settings when using external AC power:

1. Select Start - Settings - Control Panel, double-tap the Keylight icon.

2. Tap the External Power tab.

   ![Figure 2-8. Keylight Settings Window - External Power Tab](image)
3. Select the *Disable keylight if device is not used for* check box to turn off the keypad light when the device is not used for a certain period of time. Select this period of time from the drop-down list. Available times are 1 through 10 minutes in 1-minute intervals.

4. Select the *Enable keylight when a button is pressed or the screen is tapped* check box to turn on the keypad light when one of these events occur.

5. Tap **ok**.

**Advanced**

To enable or disable the keypad light and backlight tracking:

1. Select **Start - Settings - Control Panel**, double-tap the **Keylight icon**.
2. Tap the **Advanced** tab.

![Figure 2-9. Keylight Settings Window - Advanced Tab](image)

3. Select the *Disable keylight* check box to turn off the keypad light completely.

4. Select the *Track Backlight* check box to turn the keylight on and off with the backlight, i.e., when the backlight is on, the keylight is on, and when the backlight is off, keylight is off.

5. Tap **ok**.
**System Information**

Use the *System Information* tabs to view information on the mobile computer’s system components.

**System Tab**

The *System* tab displays the versions of the operating system, applications, and partitions running on the mobile computer.

Select *Start - Settings - Control Panel*, and double-tap the *System Info* icon.

![Figure 2-10. System Information Window - System Tab](image)

**Display Tab**

The *Display* tab displays information for the mobile computer’s screen.

Select *Start - Settings - Control Panel*, double-tap the *System Info* icon, then tap the *Display* tab.

![Figure 2-11. System Information Window - Display Tab](image)
Misc Tab

The Misc tab displays the size and speed for various mobile computer components.

Select Start - Settings - Control Panel, double-tap the System Info icon, then tap the Misc tab.

![System Information Window - Miscellaneous Tab](image)

Figure 2-12. System Information Window - Miscellaneous Tab
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Change Password Dialog Box .......................................... 3-40
Export ................................................................. 3-40
Cold Boot Persistence ....................................................... 3-42
Registry Settings .......................................................... 3-42
Log On/Off Application .................................................... 3-43
User Already Logged In .................................................... 3-43
No User Logged In ........................................................ 3-43
Introduction

Wireless LANs allow mobile computers to communicate wirelessly and to send captured data to a host device in real time. Before a mobile computer can be used on a WLAN, the facility must be set up with the required hardware to run the wireless LAN and the mobile computer must be properly configured. Refer to the documentation that came with the Access Points (APs) for instructions on setting up the hardware.

To configure the mobile computer, a set of wireless applications provide the user with the tools to configure and test the wireless radio embedded the mobile computer. The following wireless applications are available on the task tray from the Wireless Application menu:

- Wireless Status
- Wireless Diagnostics
- Find WLANs
- Manage Profiles
- Options
- Log On/Off
- Enable/Disable Radio
- Cancel Menu
- Exit.

Tap the Signal Strength icon to display the Wireless Application menu.

Signal Strength Icon

The Signal Strength icon in the task tray indicates the mobile computer’s wireless signal strength as follows:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Status</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Good Signal Strength Icon" /></td>
<td>Excellent signal strength</td>
<td>Wireless LAN network is ready to use.</td>
</tr>
<tr>
<td><img src="image" alt="Very Good Signal Strength Icon" /></td>
<td>Very good signal strength</td>
<td>Wireless LAN network is ready to use.</td>
</tr>
<tr>
<td><img src="image" alt="Good Signal Strength Icon" /></td>
<td>Good signal strength</td>
<td>Wireless LAN network is ready to use.</td>
</tr>
</tbody>
</table>
Turning the WLAN Radio On and Off

To turn the WLAN radio off tap the *Signal Strength* icon and select *Disable Radio*.

![Figure 3-2. Disable Radio](image)

To turn the WLAN radio on tap the *Signal Strength* icon and select *Enable Radio*.

![Figure 3-3. Enable Radio](image)

---

### Table 3-1. Wireless Applications Icons, Signal Strength Descriptions (Continued)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Status</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Fair signal strength</td>
<td>Wireless LAN network is ready to use. Notify the network administrator that the signal strength is only “Fair”.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Poor signal strength</td>
<td>Wireless LAN network is ready to use. Performance may not be optimum. Notify the network administrator that the signal strength is “Poor”.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Out-of-network range (not associated)</td>
<td>No wireless LAN network connection. Notify the network administrator.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>No wireless LAN network card detected.</td>
<td>No wireless LAN network card detected or radio disabled. Notify the network administrator.</td>
</tr>
</tbody>
</table>
Find WLANs Application

Use the Find WLANs application to discover available networks in the vicinity of the user and mobile computer. To open the Find WLANs application, tap the Signal Strength icon - Find WLANs. The Find WLANs window displays.

![Find WLAN Window](image)

Find WLAN display is limited to 32 items (ESSIDs or MAC addresses). A combination of up to 32 ESSIDs/APs may be displayed.

Valid ESSID that were not displayed in the Find WLAN Window may be entered manually. See Figure 3-5 on page 3-6.

The Find WLANs list displays:

- WLAN Networks - Available wireless networks with an icon that indicates signal strength and encryption type. The signal strength and encryption icon is described in tables Table 3-2 and Table 3-3.
- Network Type - Type of network.
- Channel - Channel that the AP is transmitting on.
- Signal Strength - Displays the signal strength of the signal from the AP.

![Table 3-2. Signal Strength Icon](image)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Excellent signal</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Very good signal</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Good signal</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Fair signal</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Poor signal</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>Out of range or no signal</td>
</tr>
</tbody>
</table>

![Table 3-3. Encryption Icon](image)

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>No encryption WLAN is an infrastructure network.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>WLAN is an Ad-Hoc network.</td>
</tr>
<tr>
<td><img src="image" alt="Icon" /></td>
<td>WLAN access is encrypted and requires a password.</td>
</tr>
</tbody>
</table>
Tap-and-hold on a WLAN network to launch a context sensitive menu. The menu provides two options: Connect and Refresh. Select Refresh to refresh the WLAN list. Wireless profiles may also be created from one of the listed networks by selecting a network from the list and then selecting Connect. Selecting Connect displays the Profile Editor Wizard. The wizard is initialized to set the values for the selected network. After the profile editing is completed, it automatically connects to the newly edited profile.

**Profile Editor Wizard**

The Profile Editor Wizard displays when creating a new profile, or editing an existing profile. If editing a profile, the fields are populated with the current settings for that profile. If creating a new profile, the known information for that WLAN network are populated into the fields.

Navigate through the wizard using the Next and Back buttons. Tap X to quit, a notification box appears asking the user to confirm the quit. Tap No to return to the wizard or tap Yes to quit and return to the Manage Profiles window.

**Profile ID**

The Profile ID dialog box is the first dialog box in the Profile Editor Wizard. Use the Profile ID dialog box to input the fields for the profile name and the ESSID.

![Profile ID Dialog Box](Image)

**Figure 3-5. Profile ID Dialog Box**

**Table 3-4. Profile ID Fields**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Populated with the name and (WLAN) identifier of the network connection. Use the Name field to enter a user friendly name of the mobile computer profile used to connect to either an AP or another networked computer. Example: The Public LAN.</td>
</tr>
<tr>
<td>ESSID</td>
<td>Populated with the name and (WLAN) identifier of the network connection, or use the ESSID field to enter the name and (WLAN) identifier of a WLAN network connection that was not listed on the Find WLANs window. The ESSID is the 802.11 extended service set identifier. The ESSID is 32-character (maximum) string identifying the WLAN. The ESSID assigned to the mobile computer is required to match the AP ESSID for the mobile computer to communicate with the AP.</td>
</tr>
</tbody>
</table>

Two profiles with the same user friendly name are valid but not recommended.

Tap Next. The Operating Mode dialog box displays.
Operating Mode

Use the Operating Mode dialog box to select the operating mode (Infrastructure or Ad-Hoc) and the country location.

![Operating Mode Dialog Box](image)

**Figure 3-6. Operating Mode Dialog Box**

**Table 3-5. Operating Mode Fields**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Operating Mode     | **Infrastructure:** Select *Infrastructure* to enable the mobile computer to transmit and receive data with an AP. Infrastructure is the mobile computer default mode.  
                     **Ad-Hoc:** Select *Ad Hoc* to enable the mobile computer to form its own local network where mobile computers communicate peer-to-peer without APs using a shared ESSID. |
| Country            | Country is used to determine if the profile is valid for the country of operation. The profile country must match the country in the options page or it must match the acquired country if 802.11d is enabled.  
                     **Single Country Use:**  
                     When the device is only to be used in a single country, set every profile country to *Allow Any Country*. In the Options - Regulatory dialog box (see Figure 3-47 on page 3-38), set the country to the specific country the device is to be used in, and deselect (uncheck) the Enable 802.11d option. This is the most common and the efficient configuration. It eliminates the initialization overhead associated with acquiring a country via 802.11d.  
                     **Multiple Country Use:**  
                     When the device may be used in more than one country, select (check) the Enable 802.11d option in the Regulatory Options dialog box (see Figure 3-47 on page 3-38). This eliminates the need for reprogramming the country (in Options - Regulatory) each time a new country is entered. However, this only works if the infrastructure (i.e. APs) support 802.11d (some infrastructures do not support 802.11d, including some Cisco APs). When the Enable 802.11d option is selected, the Options - Regulatory - Country setting is not used. For a single profile that can be used in multiple countries, with infrastructure that supports 802.11d (including Symbol infrastructure), set the Profile Country to *Allow Any Country*. Under Options - Regulatory, select Enable 802.11d. The Options - Regulatory - Country setting is not used.  
                     For a single profile that can be used in multiple countries, but with infrastructure that does not support 802.11d, set the profile country to *Allow Any Country*, and de-select (uncheck) Enable 802.11d. In this case, the Options - Regulatory - Country setting must always be set to the country the device is currently in. This configuration option is the most efficient and may be chosen for use with any infrastructure. However, the Options - Regulatory - Country setting must be manually changed when a new country is entered.  
                     Note that using a single profile in multiple countries implies that there is a common ESSID to connect to in each country. This is less likely than having unique ESSIDs in each country, this requires unique profiles for each country.  
                     For additional efficiency when using multiple profiles that can be used in multiple countries, the country setting for each profile can be set to a specific country. If the current country (found via 802.11d or set by Options - Regulatory - Country when 802.11d is disabled) does not match the country set in a given profile, then that profile is disabled. This can make profile roaming occur faster. For example, if two profiles are created and configured for Japan, and two more profiles are created and configured for USA, then when in Japan only the first two profiles are active, and when in USA only the last two are active. If they had all been configured for *Allow Any Country*, then all four would always be active, making profile roaming less efficient. |

Tap **Next**. If *Ad-Hoc* mode was selected the Ad-Hoc dialog box displays. If *Infrastructure* mode was selected the Authentication dialog box displays. See **Authentication on page 3-8** for instruction on setting up authentication.
**Ad-Hoc**

Use the *Ad-Hoc* dialog box to select the necessary information to control *Ad-Hoc* mode. This dialog box does not display if *Infrastructure* mode is selected. To Select *Ad-Hoc* mode:

1. Select a channel number from the *Channel* drop-down list. The default is *Channel 1 (2412 MHz)*.

![Figure 3-7. Ad-Hoc Settings Dialog Box](image)

2. Tap *Next*. The *Authentication* dialog box displays.

**Authentication**

Use the *Authentication* dialog box to configure authentication. If *Ad-Hoc* mode is selected, the user can only select *None* because *Ad-Hoc* authentication is not supported. Table 3-6 lists the available authentication options.

![Figure 3-8. Authentication Dialog Box](image)

<table>
<thead>
<tr>
<th>Authentication</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Default setting when authentication is not required on the network.</td>
</tr>
<tr>
<td>EAP TLS</td>
<td>Select this option to enable EAP TLS authentication. EAP TLS is an authentication scheme through IEEE 802.1x. It authenticates users and ensures only valid users can connect to the network. It also restricts unauthorized users from accessing transmitted information. EAP TLS achieves this through secure authentication certificates.</td>
</tr>
<tr>
<td>PEAP</td>
<td>Select this option to enable PEAP authentication. This method uses a digital certificate to verify and authenticate a user’s identity.</td>
</tr>
<tr>
<td>LEAP</td>
<td>Select this option to enable LEAP authentication. LEAP is founded on mutual authentication. The AP and the mobile computer attempting to connect to it require authentication before access to the network is permitted.</td>
</tr>
<tr>
<td>TTLS</td>
<td>Select this option to enable TTLS authentication.</td>
</tr>
</tbody>
</table>

Select an authentication type from the drop-down list and tap *Next*. If *PEAP* or *TTLS* is selected, the *Tunneled* dialog box displays. If *None, EAP TLS* or *LEAP* is selected the *Encryption* dialog box displays. See *Encryption on page 3-16* for encryption options.
**Tunneled Authentication**

Use the *Tunneled Authentication* dialog box to select the tunneled authentication options. There are different selections available for PEAP or TTLS authentication. To select a tunneled authentication type:

1. Tap a tunneled authentication type from the drop-down list.
2. Select the *User Certificate* check box if a certificate is required. The TLS tunnel type requires a user certificate, so the check box is automatically selected.
3. Tap **Next**. The *Installed User Certs* dialog box appears.

Table 3-7 lists the PEAP tunneled authentication options.

### Table 3-7. PEAP Tunneled Authentication Options

<table>
<thead>
<tr>
<th>PEAP Tunneled Authentication</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS CHAP v2</td>
<td>Microsoft Challenge Handshake Authentication Protocol version 2 (MS CHAP v2) is a password-based, challenge-response, mutual authentication protocol that uses the industry-standard Message Digest 4 (MD4) and Data Encryption Standard (DES) algorithms to encrypt responses. The authenticating server challenges the access client and the access client challenges the authenticating server. If either challenge is not correctly answered, the connection is rejected. MS CHAP v2 was originally designed by Microsoft as a PPP authentication protocol to provide better protection for dial-up and virtual private network (VPN) connections. With Windows XP SP1, Windows XP SP2, Windows Server 2003, and Windows 2000 SP4, MS CHAP v2 is also an EAP type.</td>
</tr>
<tr>
<td>TLS</td>
<td>EAP TLS is used during the phase 2 of the authentication process. This method uses a user certificate to authenticate.</td>
</tr>
</tbody>
</table>
Table 3-8 lists the TTLS tunneled authentication options.

### Table 3-8. TTLS Tunneled Authentication Options

<table>
<thead>
<tr>
<th>TTLS Tunneled Authentication</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAP</td>
<td>Challenge Handshake Authentication Protocol (CHAP) is one of the two main authentication protocols used to verify the user name and password for PPP Internet connections. CHAP is more secure than PAP because it performs a three way handshake during the initial link establishment between the home and remote machines. It can also repeat the authentication anytime after the link has been established.</td>
</tr>
<tr>
<td>MS CHAP</td>
<td>Microsoft Challenge Handshake Authentication Protocol (MS CHAP) is an implementation of the CHAP protocol that Microsoft created to authenticate remote Windows workstations. In most respects, MS CHAP is identical to CHAP, but there are a few differences. MS CHAP is based on the encryption and hashing algorithms used by Windows networks, and the MS CHAP response to a challenge is in a format optimized for compatibility with Windows operating systems.</td>
</tr>
<tr>
<td>MS CHAP v2</td>
<td>MS CHAP v2 is a password based, challenge response, mutual authentication protocol that uses the industry standard Message Digest 4 (MD4) and Data Encryption Standard (DES) algorithms to encrypt responses. The authenticating server challenges the access client and the access client challenges the authenticating server. If either challenge is not correctly answered, the connection is rejected. MS CHAP v2 was originally designed by Microsoft as a PPP authentication protocol to provide better protection for dial-up and virtual private network (VPN) connections. With Windows XP SP1, Windows XP SP2, Windows Server 2003, and Windows 2000 SP4, MS CHAP v2 is also an EAP type.</td>
</tr>
<tr>
<td>PAP</td>
<td>Password Authentication Protocol (PAP), has two variations PAP and CHAP PAP. It verifies a user name and password for PPP Internet connections, but it is not as secure as CHAP, since it works only to establish the initial link. PAP is also more vulnerable to attack because it sends authentication packets throughout the network. Nevertheless, PAP is more commonly used than CHAP to log in to a remote host like an Internet service provider.</td>
</tr>
<tr>
<td>MD5</td>
<td>Message Digest-5 (MD5) is an authentication algorithm developed by RSA. MD5 generates a 128-bit message digest using a 128-bit key, IPSec truncates the message digest to 96 bits.</td>
</tr>
</tbody>
</table>
**User Certificate Selection**

If the User Certificate check box on the Tunneled Authentication dialog box is checked or if TLS is the selected authentication type, then the Installed User Certificates dialog box displays. The user is required to select a certificate before proceeding. Select a certificate from the drop-down list of currently installed certificates. When a certificate is selected its name appears in the drop-down list. If the required certificate is not in the list, it must be installed.

![Figure 3-10. Installed User Certs Dialog Box](image)

**User Certificate Installation**

To install a user certificate (EAP TLS only) and a server certificate for EAP TLS and PEAP authentication:

1. Tap **Install Certificate**. The **Credentials** dialog box appears.

![Figure 3-11. Credentials Dialog Box](image)

2. Enter the **User**: (password), and **Server**: information in their respective text boxes.

3. Tap **Retrieve**. A **Progress** dialog appears to indicate the status of the certificate retrieval.

4. Tap **ok** to exit.

After the installation is compete, the Installed User Certs dialog box displays.

**Note**

In order to successfully install a user certificate, the mobile computer must already be connected to a network from which the server is accessible.
Server Certificate Selection

If the Validate Server Cert check box is checked, a server certificate is required. The wizard displays the Installed Server Certs dialog box and a certificate must be selected before proceeding. An hour glass may be displayed as the wizard populates the existing certificate list. If the required certificate is not listed, then it must be installed.

To select a certificate:

1. Tap the down arrow on the drop-down list to display the list of currently installed certificates.
2. Tap a certificate to select and its name appears in the drop-down list.
3. Tap the Install Certificate button to install a certificate.

Figure 3-12. Installed Server Certs Dialog Box

A dialog is displayed that lists the currently loaded certificate files. This dialog lists the certificate files found in the default directory (%Application\FusionApps\Certs) with the default extension.

Figure 3-13. Browse Server Certificates
The default path or extension can be changed (and a new path searched) when the **ENT** key is pressed. A certificate must be selected before tapping the **Install** button.

![Figure 3-14. Confirmation Dialog Box](image)

A confirmation dialog displays verifying the installation. If the information in this dialog is correct, tap the **Yes** button. If the information in this dialog is not correct tap the **No** button. The wizard returns to the *Installed Server Certs* dialog box.

**Credential Cache Options**

If any of the password based authentication types are chosen, then different credential caching options may be specified. These options allow an administrator to specify when the network credentials prompts appear. The network credentials prompts can be set to appear; at connection, on each resume, or at a specified time.

An administrator can enter the credentials directly into the profile which permanently caches the credentials. In this case, user login to the mobile computer is not required. If a profile does not contain credentials entered through the configuration editor, then the user must login to the mobile computer before connecting.

Caching options only apply on credentials that are entered through the login dialog box.

![Figure 3-15. Prompt for Login at Dialog Box](image)

If mobile computer does not have the credentials, the user is prompted to enter a username and password. If the mobile computer has the credentials (previous entered via a login dialog box), it uses these credentials unless the caching options require the mobile computer to prompt for new credentials. If the credentials were entered via the profile, the mobile computer does not prompt for new credentials. **Table 3-9** lists the caching options.
When a user enters the credentials, the credentials are applied to a particular profile. If a user logs out, all of the cached credentials are cleared. If a profile is edited, then all cached credentials for that profile are cleared.

The following authentication types have credential caching:

- EAP TLS
- PEAP
- LEAP
- TTLS.

If the At Time check box is selected the Time Cache Options dialog box displays.

1. Tap the Interval radio button to check credentials at a set time interval.
2. Enter the value in minutes, in the Min box.
3. Tap Next to continue.
4. Tap the At (hh:mm) radio button to check credentials at a set time.
5. Tap Next. The At Time dialog box appears.
6. Enter the time using the 24 hour clock format in the (hh:mm) box.
7. Tap > to move the time to the right. Repeat for additional time periods.
8. Tap Next. The User Name dialog box displays.

The user name and password can be entered (but is not required) when the profile is created. When a profile authenticates with credentials that were entered in the profile, caching rules do not apply. Caching rules only apply on credentials that are entered through the login dialog box.

**Password**

Use the Password dialog box to enter a password. If EAP/TLS is the selected authentication type, the password is not required and the field is disabled.

1. Enter a password in the Password field.
2. Select the Advanced ID check box, if advanced identification is required.
3. Tap Next, the Encryption dialog box displays. See Encryption on page 3-16 for setting the encryption information.
**Advanced Identity**

Use the Advanced ID dialog box to enter the 802.1X identity. The 802.1X identity value can be 63 characters long and is a case sensitive identity supplied to the authenticator. In TTLS and PEAP, it is recommended that this field not contain a true identity, but instead the identity *anonymous*, plus any desired realm (e.g. anonymous@myrealm). A user ID is required before proceeding.

![Figure 3-20. Advanced Identity Dialog Box](image)

When authenticating with a Microsoft IAS server, do not use advanced identity.

**Encryption**

Use the Encryption dialog box to select an encryption type. The Encryption dialog box only allows encryption types that can be used with the currently selected authentication type. See Table 3-11 for the encryption types available with each authentication type.

![Figure 3-21. Encryption Dialog Box](image)

**Table 3-10. Encryption Options**

<table>
<thead>
<tr>
<th>Encryption</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>Use the Open option as the default setting when no data packet encryption is needed over the network. Selecting this option provides no security for the data being transmitted over the network.</td>
</tr>
<tr>
<td>40-Bit WEP</td>
<td>Select 40-Bit WEP for the adapter to use the 40-bit key length WEP encryption. WEP keys are manually entered in the edit boxes. Only the required number of edit boxes for a key length is displayed (10 Hex digit value for 40-bit keys). Use the Key Index drop-down list to configure the four WEP keys. The adapter uses the selected key. Note: The default Hex digit keys are visible any time they are used. As a security precaution after setting the key values for the network, the digits are replaced with asterisks * within the encryption key fields. If the associated AP is using an optional passkey, the active adapter WLAN profile is required to use one as well. The passkey is a plain text representation of the WEP keys displayed in the encryption dialog box. The passkey provides an easy way to enter WEP key data without having to remember the entire 40-bit (10 character) Hex digit string.</td>
</tr>
</tbody>
</table>
128-Bit WEP

Select 128-Bit WEP for the adapter to use the 128-bit key length WEP encryption. WEP keys are manually entered in the edit boxes. Only the required number of edit boxes for a key length is displayed (26 Hex digit value for 128-bit keys). Use the Key Index drop-down list to configure the four WEP keys. The adapter uses the selected key. Note: The default Hex digit keys are visible any time they are used. As a security precaution after setting the key values for the network, the digits are replaced with asterisks * within the encryption key fields.

If the associated AP is using an optional passkey, the active adapter WLAN profile is required to use one as well. The passkey is a plain text representation of the WEP keys displayed in the encryption dialog box. The passkey provides an easy way to enter WEP key data without having to remember the entire 128-bit (26 character) Hex digit string.

TKIP

Select this option to use Wireless Protected Access (WPA) via TKIP. Manually enter the shared keys in the passkey field. Tap Next to display the passkey dialog box. Enter an 8 to 63 character string.

Table 3-11. Encryption / Authentication Matrix

<table>
<thead>
<tr>
<th>Encryption</th>
<th>Open</th>
<th>WEP</th>
<th>TKIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>EAP TLS</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>PEAP</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>LEAP</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>TTLS</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Key Entry Page

If either 40-Bit WEP or 128-Bit WEP is selected the wizard proceeds to the key entry dialog box unless the Use Passkey check box was selected in the Encryption Dialog Box (see Figure 3-21 on page 3-16). To enter the key information:

1. Enter the 40-bit or 128-bit keys into the fields.
2. Tap **Next**.

Figure 3-22. 40-Bit WEP Keys Dialog Box

Figure 3-23. 128-Bit WEP Keys Dialog Box

Passkey Dialog

When a user selects *None* as an authentication and *WEP* as an encryption, the user can chose to enter a passkey by checking the *Use PassKey* check box. The user is prompted to enter the passkey. For WEP, the *Use PassKey* checkbox is only available if the authentication is *None*.

When a user selects *None* as an authentication and *TKIP* as an encryption, the user is forced to enter a passkey. The user cannot enter a passkey if the encryption is *TKIP* and the authentication is anything other than *None*.

Figure 3-24. Passkey Dialog Box

Tap **Next**. The *IP Mode* dialog box displays.
**IP Mode**

Use the IP Mode dialog box to configure network address parameters: IP address, subnet, gateway, DNS and WINS.

![Figure 3-25. IP Config Tab (DHCP)](image)

**Table 3-12. IP Mode Options**

<table>
<thead>
<tr>
<th>Encryption</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHCP</td>
<td>Select Dynamic Host Configuration Protocol (DHCP) from the IP Mode drop-down list to obtain a leased IP address and network configuration information from a remote server. DHCP is the default setting for the mobile computer profile. When DHCP is selected, the IP address fields are read-only.</td>
</tr>
<tr>
<td>Static</td>
<td>Select Static to manually assign the IP, subnet mask, default gateway, DNS and WINS addresses used by the mobile computer profile.</td>
</tr>
</tbody>
</table>

Select either DHCP or Static from the drop-down list and then tap **Next**. If Static IP is selected, the IP Address Entry dialog box displays. If DHCP is selected, the Transmit Power dialog box displays.

**IP Address Entry**

Use the IP Address Entry dialog box to enter the IP address and subnet information.

![Figure 3-26. Static IP Address Entry Dialog Box](image)

**Table 3-13. Static IP Address Entry Fields**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address</td>
<td>The Internet is a collection of networks with users that communicate with each other. Each communication carries the address of the source and destination networks and the particular machine within the network associated with the user or host computer at each end. This address is called the IP address (Internet Protocol address). Each node on the IP network must be assigned a unique IP address that is made up of a network identifier and a host identifier. Enter the IP address as a dotted-decimal notation with the decimal value of each octet separated by a period, for example, 192.168.7.27.</td>
</tr>
<tr>
<td>Subnet Mask</td>
<td>Most TCP/IP networks use subnets in order to effectively manage routed IP addresses. Having an organization’s network divided into subnets allows it to be connected to the Internet with a single shared network address, for example, 255.255.255.0.</td>
</tr>
</tbody>
</table>
Select the *Advanced* check box to enter additional address information.

If the *Advanced* check box is selected then tapping **NEXT** displays the *Advanced Address Entry* dialog box to enter the Gateway, DNS, and WINS address. If the *Advanced* check box is not selected then tapping **NEXT** displays the *Transmit Power* dialog box.

![Figure 3-27. Advanced Address Entry Dialog Box](image)

The IP information that is entered in the profile is only used when the *Enable IP Mgmt* check box is enabled in the *Options - System Options* dialog box (*System Options on page 3-39*). When *Enable IP Mgmt* check box is disabled, the IP information in the profile is ignored and the IP information entered in the Microsoft interface applies.

### Table 3-14. IP Config Advanced Address Entry Fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>G/W</td>
<td>The default Gateway is a device that is used to forward IP packets to and from a remote destination.</td>
</tr>
<tr>
<td>DNS</td>
<td>The Domain Name System (DNS) is a distributed Internet directory service. DNS is used mostly to translate domain names and IP addresses. It is also used to control Internet email delivery. Most Internet service requires DNS to operate properly. If DNS is not configured, Web sites cannot be located and/or email delivery fails.</td>
</tr>
<tr>
<td>WINS</td>
<td>WINS is a Microsoft® Net BIOS name server. WINS eliminates the broadcasts needed to resolve computer names to IP addresses by providing a cache or database of translations.</td>
</tr>
</tbody>
</table>

Tap **Next**. The *Transmit Power* dialog box displays.

**Transmit Power**

The transmit power can be selected for both Ad-Hoc and Infrastructure network types. The *Transmit Power* drop-down list contains different options for each mode. Automatic (i.e. use the current AP settings) and Power Plus (use higher than the current AP settings) are available for *Infrastructure* mode.

Adjusting the *Radio Transmission Power* level enables the user to expand or confine the transmission area with respect to other wireless devices that could be operating nearby. Reducing a coverage area in high traffic areas improves transmission quality by reducing the amount of interference in that coverage area.

![Figure 3-28. Transmit Power Dialog Box (Infrastructure Mode)](image)
Wireless Applications 3-21

Table 3-15. Transmit Power Dialog Box (Infrastructure Mode)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic</td>
<td>Select <em>Automatic</em> to use the AP power level. <em>Automatic</em> is the default mode for mobile computers operating in <em>Infrastructure</em> mode.</td>
</tr>
<tr>
<td>Power Plus</td>
<td>Select <em>Power Plus</em> to set the mobile computer transmission power one level higher than the level set for the AP.</td>
</tr>
</tbody>
</table>

![Transmit Power Dialog Box (Ad-Hoc Mode)](image)

Figure 3-29. Transmit Power Dialog Box (Ad-Hoc Mode)

Table 3-16. Power Transmit Options (Ad-Hoc Mode)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full</td>
<td>Select <em>Maximum</em> power to set the mobile computer to the highest transmission power level. Select <em>Maximum</em> power when operating in highly reflective environments and areas where other devices could be operating nearby. Additionally, use the maximum power level when attempting to communicate with devices at the outer edge of a coverage area.</td>
</tr>
<tr>
<td>30 mW</td>
<td>Select 30 mW, to set the transmit power level to that power level.</td>
</tr>
<tr>
<td>15 mW</td>
<td>Select 15 mW, to set the transmit power level to that power level.</td>
</tr>
<tr>
<td>5 mW</td>
<td>Select 5 mW to set the transmit power level to that power level.</td>
</tr>
<tr>
<td>1 mW</td>
<td>Select <em>Minimum</em> power to set the mobile computer to the lowest transmission power level. Use the minimum power level when communicating with other devices in very close proximity. Additionally, select minimum power in instances where little or no radio interference from other devices is anticipated.</td>
</tr>
</tbody>
</table>

![Battery Usage Dialog Box](image)

Figure 3-30. Battery Usage Dialog Box

Tap **Next** to implement power consumption changes for the mobile computer profile. the Battery Usage dialog box displays.

**Battery Usage**

Use the Battery Usage dialog box to select power consumption of the wireless LAN. There are three settings available: CAM, Fast Power Save and MAX Power Save. Battery Usage cannot be configured in Ad-Hoc profiles.
Power consumption is also related to the transmit power settings.

### Table 3-17. Battery Usage Options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAM</td>
<td>Continuous Aware Mode (CAM) provides the best network performance, but yields the shortest battery life.</td>
</tr>
<tr>
<td>Fast Power Save</td>
<td>Fast Power Save performs in the middle of CAM and MAX Power Save with respect to network performance and battery life. Default.</td>
</tr>
<tr>
<td>MAX Power Save</td>
<td>Max Power Save yields the longest battery life while potentially reducing network performance. In networks with minimal latency. Max Power Save will perform just as well as Fast Power Save, but with increased battery savings.</td>
</tr>
</tbody>
</table>

### Manage Profiles Application

The Manage Profiles window provides a list of user configured wireless profiles. Up to 32 profiles can be defined at any one time. To open the Manage Profiles window, tap the Signal Strength icon - Manage Profiles. The Manage Profiles window displays.

![Manage Profiles Window](image)

**Figure 3-31. Manage Profiles Window**

Icons next to each profile identify the profiles current state.

### Table 3-18. Profile Icons

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="No Icon" /></td>
<td>Profile is not selected, but enabled.</td>
</tr>
<tr>
<td><img src="image" alt="Profile disabled" /></td>
<td>Profile is disabled.</td>
</tr>
<tr>
<td><img src="image" alt="Profile cancelled" /></td>
<td>Profile is Cancelled. A Cancelled profile is disabled until a connect or login function is performed through the configuration editor.</td>
</tr>
<tr>
<td><img src="image" alt="Profile infrastructure" /></td>
<td>Profile is currently in use and describes an infrastructure profile not using encryption.</td>
</tr>
<tr>
<td><img src="image" alt="Profile encryption" /></td>
<td>Profile is currently in use and describes an infrastructure profile using encryption.</td>
</tr>
<tr>
<td><img src="image" alt="Profile ad-hoc" /></td>
<td>Profile is currently in use and describes an ad-hoc profile not using encryption.</td>
</tr>
</tbody>
</table>
The profiles are listed in priority order for use by the automatic roaming feature. Change the order by moving profiles up or down. Edit existing profiles by selecting one in the list and then tap-and-hold to display the menu. The menu allows the selected profile to be connected, edited, disabled (enabled) or deleted. (Note: the Disable menu item changes to Enable if the profile is already disabled.)

A dialog displays to confirm the user's desire to delete a profile, if selected.

**Changing Profiles**

A completed profile is a set of configuration settings that can be used in different locations to connect to a wireless network. Creating different profiles is a good way of having pre-defined operating parameters available for use in various network environments. When the *WLAN Profiles* window initially displays, existing profiles appear in the list.
Editing a Profile
Select a profile from the list. Select Edit from the pop-up menu to display the Profile Wizard where the ESSID and operating mode can be changed for the profile. Use the wizard to edit the profile power consumption and security parameters. See Profile Editor Wizard on page 3-6 for procedure on using the wizard.

Creating a New Profile
Create new profiles from the Manage Profiles window by performing a tap-and-hold anywhere in this window. A menu with only the Add highlighted displays.

![Figure 3-34. Manage Profiles - Add](image)

Select Add to display the Profile Wizard wherein the profile name and ESSID can be set. Use the Profile Wizard to set security, network address information and power consumption level for the new profile.

Deleting a Profile
To delete a profile from the list and select Delete from the pop-up menu. A confirmation dialog box appears.

Ordering Profiles
Select a profile from the list and select Move Up or Move Down from the pop-up to order the profile. If the current profile association is lost, the mobile computer attempts to associate with the first profile in the list and then the next until a new association is achieved.

Profile Roaming must be enabled.
Export a Profile

To export a profile to a registry file, select a profile from the list and select Export from the pop-up menu. The save As dialog box displays with the Application folder and a default name of WCS_PROFILE{profile GUID}.reg (Globally Unique Identifier).

![Figure 3-35. Save As Dialog Box](image)

If required, change the Name field and tap OK. A confirmation dialog box appears after the export is complete.
Wireless Status Application

The Wireless Status application window displays the current wireless connection status and information about the wireless connection.

To open the Wireless Status window, tap the Signal Strength icon - Wireless Status. The Wireless Status window displays.

![Wireless Status Window](image)

**Figure 3-36. Wireless Status Window**

The Wireless Status window contains the following options. Tap the option to display the option window.

- Signal Strength - provides information about the connection status of the current wireless profile.
- Current Profile - displays basic information about the current profile and connection settings
- IPv4 Status - displays the current IP address, subnet and other IP related information assigned to the mobile computer
- Wireless Log - displays a log of important recent activity, such as authentication, association, DHCP renewal completion, in time order
- Versions - displays software, firmware and hardware version numbers
- Quit - Exits the Wireless Status window.

Option windows contain a back button to return to the main Wireless Status window.
**Signal Strength Window**

The *Signal Strength* window provides information about the connection status of the current wireless profile that includes signal quality, missed beacons and transmit retry statistics. The BSSID address (shown as "AP MAC Address") displays the AP currently associated with the connection. If Ad-Hoc mode is in use, the AP MAC Address shows the BSSID of the Ad-Hoc network. All information in this window updates every 2 seconds.

To open the *Signal Status* window, tap *Signal Strength* in the *Wireless Status* window. The *Signal Strength* window displays.

![Figure 3-37. Signal Strength Window](image)

After viewing the *Signal Strength* window, tap the back button to go back to the *Wireless Status* window.

**Table 3-19. Signal Strength Status**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Signal Quality | Displays the Relative Signal Strength Indicator (RSSI) of the signal transmitted between the AP and mobile computer. As long as the Signal Quality icon is green the AP association is not jeopardized. If the icon is red (poor signal), an association with a different AP could be warranted to improve the signal. The signal strength icon changes depending on the signal strength.  
Excellent Signal  
Very Good Signal  
Good Signal  
Fair Signal  
Poor Signal  
Out of Range (no signal).  
The radio card is turned off or there are issues communicating to the radio card. |
| Status         | Indicates if the mobile computer is associated with the AP.                  |
| Signal Quality | Displays a text format of the Signal Quality icon.  
- Excellent Signal  
- Very Good Signal  
- Good Signal  
- Fair Signal  
- Poor Signal  
- Out of Range (No Signal). |
| Tx Retries     | Displays a percentage of the number of data packets retransmitted by the mobile computer. The fewer transmit retries, the more efficient the wireless network is. |
| Missed Beacons | Displays a percentage of the amount of beacons missed by the mobile computer. The fewer transmit retries, the more efficient the wireless network is. Beacons are uniform system packets broadcast by the AP to keep the network synchronized. |
Table 3-19. Signal Strength Status (Continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal Level</td>
<td>The AP signal level in decibels per milliwatt (dBm).</td>
</tr>
<tr>
<td>Noise Level</td>
<td>The background interference (noise) level in decibels per milliwatt (dBm).</td>
</tr>
<tr>
<td>SNR</td>
<td>The access point/mobile computer Signal to Noise Ratio (SNR) of signal strength to noise (interference) in decibels per milliwatt (dBm).</td>
</tr>
<tr>
<td>Roaming Count</td>
<td>Displays the number of APs that the mobile computer has connect to while roaming.</td>
</tr>
<tr>
<td>AP MAC Address</td>
<td>Displays the MAC address of the AP to which the mobile computer is currently connected to.</td>
</tr>
<tr>
<td>Transmit Rate</td>
<td>Displays the current rate of the data transmission.</td>
</tr>
</tbody>
</table>
**Current Profile Window**

The *Current Profile* window displays basic information about the current profile and connection settings. This window updates every two seconds.

To open the *Current Profile* window, tap *Current Profile* in the *Wireless Status* window. The *Current Profile* window displays.

![Image of Current Profile Window]

**Figure 3-38. Current Profile Window**

**Table 3-20. Current Profile Fields**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profile Name</td>
<td>Displays the current profile name that the mobile computer is using to communicate with the AP.</td>
</tr>
<tr>
<td>ESSID</td>
<td>Displays the current profile ESSID name.</td>
</tr>
<tr>
<td>Mode</td>
<td>Displays the current profile mode, either Infrastructure or Ad-Hoc.</td>
</tr>
<tr>
<td>Authentication</td>
<td>Displays the current profile's authentication type.</td>
</tr>
<tr>
<td>Encryption</td>
<td>Displays the current profile's encryption type.</td>
</tr>
<tr>
<td>Channel</td>
<td>Displays the current profile channel setting.</td>
</tr>
<tr>
<td>Country</td>
<td>Displays the current profile country setting.</td>
</tr>
<tr>
<td>Transmit Power</td>
<td>Displays the radio transmission power level.</td>
</tr>
</tbody>
</table>
**IPv4 Status Window**

The IPv4 Status window displays the current IP address, subnet and other IP related information assigned to the mobile computer. It also allows the address to be renewed if the profile is currently using DHCP to obtain the IP information. When the user tap **Renew** a full DHCP discover initiates. The IPv4 Status window should update automatically when the IP address changes.

To open the IPv4 Status window, tap **IPv4 Status** in the Wireless Status window. The IPv4 Status window displays.

![IPv4 Status Window](image)

**Figure 3-39. IPv4 Status Window**

**Table 3-21. IPv4 Status Fields**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Type</td>
<td>Displays the IP type for the current profile, either DHCP or Static. If the current IP type is DHCP, leased IP address and network address data display for the mobile computer. If the current IP type is Static, the values displayed were input manually in the IP Config tab on page 3-19.</td>
</tr>
<tr>
<td>IP Address</td>
<td>Displays the IP address assigned to the mobile computer. The Internet is a collection of networks with users that communicate with each other. Each communication carries the address of the source and destination networks and the particular machine within the network associated with the user or host computer at each end. This address is called the IP address. Each node on the IP network must be assigned a unique IP address that is made up of a network identifier and a host identifier. The IP address as a dotted-decimal notation with the decimal value of each octet separated by a period, for example, 192.168.7.27.</td>
</tr>
<tr>
<td>Subnet</td>
<td>Displays the subnet address. Most TCP/IP networks use subnets in order to effectively manage routed IP addresses. Having an organization’s network divided into subnets allows it to be connected to the Internet with a single shared network address, for example, 255.255.255.0.</td>
</tr>
<tr>
<td>Gateway</td>
<td>Displays the gateway address. A gateway is a device that is used to forward IP packets to and from a remote destination.</td>
</tr>
<tr>
<td>DHCP Server</td>
<td>The Domain Name System (DNS) is a distributed Internet directory service. DNS is used mostly to translate domain names and IP addresses. It is also used to control Internet e-mail delivery. Most Internet service requires DNS to operate properly. If DNS is not configured, Web sites cannot be located or e-mail delivery fails.</td>
</tr>
<tr>
<td>Lease Obtained</td>
<td>Displays the date that the IP Address was obtained.</td>
</tr>
<tr>
<td>Lease Expires</td>
<td>Displays the date that the IP Address expires and a new IP Address is requested.</td>
</tr>
<tr>
<td>DNS</td>
<td>Displays the IP Address of the DNS server.</td>
</tr>
<tr>
<td>WINS</td>
<td>WINS is a Microsoft Net BIOS name server. WINS eliminates the broadcasts needed to resolve computer names to IP addresses by providing a cache or database of translations.</td>
</tr>
<tr>
<td>MAC</td>
<td>An IEEE 48-bit address the mobile computer is assigned at the factory that uniquely identifies the adapter at the physical layer.</td>
</tr>
<tr>
<td>Host Name</td>
<td>Displays the name of the mobile computer.</td>
</tr>
</tbody>
</table>
**Wireless Log Window**

The *Wireless Log* window displays a log of important recent activity, such as authentication, association, DHCP renewal completion, in time order. Users can choose to save the log to a file or to clear the log (within this instance of the application only). There is also an auto scroll feature to automatically scroll down when new items are added to the log.

To open the *Wireless Log* window, tap *Wireless Log* in the *Wireless Status* window. The *Wireless Log* window displays.

![Wireless Log Window](image)

**Figure 3-40. Wireless Log Window**

**Saving a Log**

To save a Wireless Log:

1. Tap the *Save* button. The *Save As* dialog box displays.
2. Navigate to the desired folder.
3. In the *Name* field, enter a file name and then tap *OK*. A text file is saved in the selected folder.

**Clear the Log**

To clear the log, tap *Clear*. 
**Versions Window**

The *Versions* window displays software, firmware and hardware version numbers. This window only updates each time it is displayed. There is no need to update constantly. The content of the window is determined at runtime, along with the actual hardware and software to display in the list. Executable paths of the software components on the list are defined in registry, so that the application can retrieve version information from the executable. “File not found” is displayed if the executable cannot be found at the specified path.

To open the *Versions* window, tap *Versions* in the *Wireless Status* window. The *Versions* window displays.

![Figure 3-41. Versions Window](image)

The window displays software version numbers for the following:

- Configuration Editor
- Fusion Build
- LoginService
- Photon1.0
- WCDig
- WCLaunch
- WCSAPI
- WCSRV
- WCSStatus.
Wireless Diagnostics Application

The Wireless Diagnostics application window provides links to perform ICMP Ping, Trace Routing and Known APs.

To open the Wireless Diagnostics window, tap the Signal Strength icon - Wireless Diagnostics. The Wireless Diagnostics window displays.

Figure 3-42. Wireless Diagnostics Window

The Wireless Diagnostics window contains the following options. Tap the option to display the option window.

- ICMP Ping - tests the wireless network connection.
- Trace Route - tests a connection at the network layer between the mobile computer and any place on the network.
- Known APs - displays the APs in range using the same ESSID as the mobile computer.
- Quit - Exits the Wireless Diagnostics window.

Option windows contain a back button ☐ to return to the main Wireless Diagnostics window.
ICMP Ping Window

The ICMP Ping window allows a user to test a connection at the network layer (part of the IP protocol), between the mobile computer and an AP. Ping tests only stop when the user taps the Stop Test button, closes the Wireless Diagnostics application, or if the mobile computer switches between infrastructure and ad-hoc modes.

To open the ICMP Ping window, tap the ICMP Ping in the Wireless Diagnostics window. The ICMP Ping window displays.

To perform an ICMP ping:

1. In the IP field, enter an IP address or select an IP address from the drop-down list.
2. From the Size drop-down list, select a size value.
3. Tap Start Test. The ICMP Ping test starts. Information of the ping test displays in the appropriate fields.
Trace Route Window

Trace Route traces a packet from a computer to a host, showing how many hops the packet requires to reach the host and how long each hop takes. The Trace Route utility identifies where the longest delays are occurring.

The Trace Route window allows a user to test a connection at the network layer (part of the IP protocol), between the mobile computer and any place on the network.

To open the Trace Route window, tap Trace Route in the Wireless Diagnostics window. The Trace Route window displays.

![Figure 3-44. Trace Route Window](image)

A user can enter an IP address or a DNS Name in the IP combo box, and tap Start Test. The IP combo box should match the same information as shown in the ICMP Ping window's IP combo box. When a test is started, the trace route attempts to find all routers between the mobile computer and the destination. The Round Trip Time (RTT) between the mobile computer and each router is shown, and then the total test time is also shown. The total test time may be longer than all RTTs added together because it is not just including time on the network.
**Known APs Window**

The Known APs window displays the APs in range using the same ESSID as the mobile computer. This window only available when in the Infrastructure mode.

To open the Known APs window, tap Known APs in the Wireless Diagnostics window. The Known APs window displays.

![Known APs Window](image)

**Figure 3-45. Known APs Window**

The icon next to the AP indicates:

- ![M](image) The AP is the currently associated access point, and it is set to mandatory.
- ![M](image) The AP is the currently associated access point, but it is not set to mandatory.
- ![M](image) The mobile computer is not currently associated to this AP, but the AP is set as mandatory.
- ![M](image) The mobile computer is not currently associated to this AP, and AP is not set as mandatory.

Tapping and holding the stylus on a specific AP displays a context sensitive menu with the options: Set Mandatory and Set Roaming. Selecting the Set Mandatory option prohibits the mobile computer from associating with a different AP. The letter M displays on top of the icon when the Set Mandatory option is selected. The mobile computer connects to the selected AP and never roams until:

- Set Roaming is chosen
- The mobile computer roams to a new profile
- The mobile computer is suspended
- The mobile computer resets (warm or cold).

Selecting Set Roaming allows the mobile computer to roam to any AP with a better signal. These settings are temporary and never saved to the registry.

Tap Refresh to update the list of the APs with the same ESSID. A signal strength value of 32 is the highest possible.
Options
Use the wireless Option dialog box to select various operation settings. The options are saved when Save is tapped. If the user taps X before saving and an option was changed, a dialog box displays asking the user to close without saving the changes.

The options are:
- Operating Mode Filtering
- Regulatory
- Band Selection
- System Options
- Change Password
- Export.

Operating Mode Filtering
The Operating Mode Filtering options cause the Find WLANs application to filter the available networks found.

Figure 3-46. OP Mode Filtering Dialog Box

The default value has both AP Networks and Ad-Hoc Networks enabled.

Table 3-22. OP Mode Filtering Options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP Networks</td>
<td>Select the AP Networks check box to display available AP networks and their signal strength within the Available WLAN Networks (see Find WLANs Application on page 3-9). These are the APs available to the mobile computer profile for association. If this option was previously disabled, refresh the Available WLAN Networks window to display the AP networks available to the mobile computer.</td>
</tr>
<tr>
<td>AD-Hoc Networks</td>
<td>Select the Ad-Hoc networks check box to display available peer (adapter) networks and their signal strength within the Available WLAN Networks. These are peer networks available to the mobile computer profile for association. If this option was previously disabled, refresh the Available WLAN Networks window to display the Ad Hoc networks available to the mobile computer.</td>
</tr>
</tbody>
</table>

Tap Save to save the settings or tap X to discard any changes.
**Regulatory Options**

Use the Regulatory settings to configure the country the mobile computer is in. Due to regulatory requirements (within a country) a mobile computer is only allowed to use certain channels.

![Figure 3-47. Regulatory Options Dialog Box](image)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Settings</td>
<td>Select the country of use from the drop-down list. In order to connect to a profile, the profile country must match this setting, or the AP country setting if the Enable 802.11d check box is selected.</td>
</tr>
<tr>
<td>Enable 802.11d</td>
<td>With this check box selected, the WLAN adapter attempts to retrieve the country from APs. Profiles which use Infrastructure mode are only able to connect if the country set is the same as the AP country settings or if the profile country setting is set to Allow Any Country. Check this box requires that ALL APs be configured to transmit the country information.</td>
</tr>
</tbody>
</table>

**Band Selection**

The Band Selection settings identify the frequency bands to be scanned when finding WLANs. These values refer to the 802.11 standard networks.

![Figure 3-48. Band Selection Dialog Box](image)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5GHz Band</td>
<td>With this box checked, the Find WLANs application list includes all networks found in the 5 GHz band (802.11a).</td>
</tr>
<tr>
<td>2.4GHz Band</td>
<td>With this box checked, the Find WLANs application list includes all networks found in the 2.4 GHz band (802.11b and 802.11g).</td>
</tr>
</tbody>
</table>

Tap **Save** to save the settings or tap **X** to discard any changes.
**System Options**

Use the system options to set miscellaneous system setting.

![System Options Dialog Box](image)

**Figure 3-49. System Options Dialog Box**

**Table 3-25. Band Selection Options**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profile Roaming</strong></td>
<td>Select the Profile Roaming check box to configure the mobile computer to roam to the next available WLAN profile when it moves out of range of the current WLAN profile.</td>
</tr>
<tr>
<td><strong>Enable IP Mgmt</strong></td>
<td>Select Enable IP Mgmt check box to enable the Wireless Companion Services to handle IP Address management. When checked, the Wireless Companion Service configures the IP based on what is configured in the network profile. If unchecked, the Wireless Companion Service does not configure the IP information. For this case, the user must configure the IP in the standard Windows IP dialog screen. Enabled by default.</td>
</tr>
<tr>
<td><strong>Auto Time Config</strong></td>
<td>Select Auto Time Config check box to enable automatic update of the system time. The device time is updated during network association, based on the time as set in the AP. This proprietary feature is only supported with Symbol infrastructure. Enabled by default.</td>
</tr>
</tbody>
</table>
Change Password Dialog Box

Use the Change Password dialog box to require a password before any profile can be edited. This allows system administrators to pre-configure profiles and not allow a user to change the network settings. The user could also use this feature to protect their settings from a guest user. By default, the password is not set.

![Change Password Window](image)

Figure 3-50. Change Password Window

1. To create a password for the first time, leave the Current: text box empty and enter the new password in the New: and Confirm: text boxes. Tap Save.
2. To change an existing password, enter the current password in the Current: text box, enter the new password in the New: and Confirm: text boxes. Tap Save.
3. Delete the password, in this case enter the current password in the Current: text box and leave the New: and Confirm: text boxes empty.

Passwords are case sensitive and can not exceed 10 characters.

Export

Use the Export dialog box to export all profiles to a registry file, and to export the options to a registry file. Each of these export functions prompts the user for a filename that is used as the registry file. The “save” dialog box defaults to the application folder, and has a default file name to use. For exporting all profiles, the default filename is: WCS_PROFILES.REG. For exporting the options, the default filename is: WCS_OPTIONS.REG.

![Options - Export Dialog Box](image)

Figure 3-51. Options - Export Dialog Box
To export options:

1. Tap **Export Options**. The *Save As* dialog box displays.

![Figure 3-52. Export Options Save As Dialog Box](image)

2. The default folder is `\Application\FusionApps\Certs\`
3. In the Name field, enter a file name.
4. Tap **OK**.

To export all profiles:

1. Tap **Export All Profiles**. The *Save As* dialog box displays.

![Figure 3-53. Export All Profiles Save AS Dialog Box](image)

2. Navigate to the desired folder.
3. In the *Name* field, enter a file name.
4. Tap **OK**.

When **Export All Profiles** is selected the current profile is also saved. This information is used to determine which profile to connect with after a warm boot or cold boot.
Cold Boot Persistence

Exporting options and profiles can be used to provide cold boot persistence. If the exported registry files are saved in the Application folder, they are automatically utilized on a cold boot, restoring previous profile and option settings.

Currently, only server certificates can be saved for cold boot persistence. To save server certificates for cold boot persistence, the certificate files must be placed in the folder Application\Certs. Saving the certificates to this folder causes the certificates to be installed automatically on a cold boot.

User certificates cannot be saved for cold boot persistence at this time.

Registry Settings

Some of the parameters can be modified through a registry key. The registry path is:

HKLM\SOFTWARE\Symbol Technologies, Inc.\Configuration Editor

<table>
<thead>
<tr>
<th>Key</th>
<th>Type</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CertificateDirectory</td>
<td>REG_SZ</td>
<td>NWindows</td>
<td>The default directory to find certificates.</td>
</tr>
<tr>
<td>EncryptionMask</td>
<td>REG_DWORD</td>
<td>0x0000001F</td>
<td>Defines the encryption types that are currently supported. This is a bitwise mask with each bit corresponding to an encryption type. 1 = Type is supported, 0 = Type is not supported.</td>
</tr>
<tr>
<td>MenuShortCut</td>
<td>REG_SZ</td>
<td>Alt-M</td>
<td>Describes the key combination to use in place of Tap-and-hold or shortcut key sequence to display menus. This value can be a system key sequence (i.e. preceded with ALT) or a single key which triggers the context sensitive menu when the appropriate dialog is visible.</td>
</tr>
<tr>
<td>RefreshTime</td>
<td>REG_DWORD</td>
<td>4000</td>
<td>This registry key defines the number of milliseconds between refreshes of the Manage Profiles dialog.</td>
</tr>
</tbody>
</table>
**Log On/Off Application**

When the user launches the Log On/Off application, the mobile computer may be in two states; the user may be logged onto the mobile computer by already entering credentials through the login box, or there are no user logged on. Each of these states have a separate set of use cases and a different look to the dialog box.

**User Already Logged In**

If a user is already logged into the mobile computer, that user may launch the login dialog box for the following reasons:

- Connect to and re-enable a cancelled profile. To do this, a user would:
  - Launch the password dialog
  - Select the cancelled profile from the profile list
  - Login to the profile.

  NOTE: Cancelled profiles can also be re-enabled by using the Profile Editor Wizard and choosing to connect to the cancelled profile. Cancelled profiles are also be re-enabled when a new user logs on.

- Logoff the mobile computer - to prevent another user from accessing the current users network privileges.
- Switch mobile computer users - to quickly logoff the mobile computer and allow another user to log into the mobile computer.

**No User Logged In**

If no user is logged into the mobile computer, a user must launch the login dialog box and login so that user profiles may be accessed.

**Login Dialog box**

The dialog displays with slightly different if it is:

- Launched by WCS, because the service is connecting to a new profile that needs credentials.
- Launched by WCS, because the service is trying to verify the credentials due to credential caching rules.
- Launched by a user, when a user is logged in.
- Launched by a user, when no user is logged in.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wireless Profile Field</strong></td>
<td>When a user launches the login application, the Wireless Profile field has all the wireless profiles that require credentials available. This currently includes profiles that use EAP TLS, PEAP, LEAP, and EAP-TTLS.</td>
</tr>
</tbody>
</table>
| **Profile Status Icon** | The profile status icon in the dialog (shown next to the profile name) would show one of three states. 
  - The profile selected has been cancelled.
  - The profile selected is enabled but is not the current profile
  - The profile is the current profile (always the case for WCS Launched) |
| **Network Username and Password Fields** | The Network Username and Network Password fields are used as credentials for the profile selected/shown in the Wireless Profile field. Currently these fields are limited to 159 characters. |
| **Mask Password Checkbox** | The Mask Password checkbox determines whether the password field is masked (i.e. displays only the “*” character) or unmasked (i.e. displays the actual text being entered). If the box is checked, the password is unmasked. Unchecking the box causes the password to be masked. The default state is unchecked to cause masked passwords. |
| **Status Field** | The status field is used for displaying status that is important to the login dialog. If the user opens the dialog and needs to prompt for credentials for a particular profile at this time, it can use the status field to let the user know that the network is being held up by the password dialog being open. |
Tapping **OK** sends the credentials though WCS API. If there are no credentials entered, a dialog box displays informing the user which field was not entered.

The **Log Off** button only displays when a user is already logged on. When the **Log Off** button is tapped, the user is prompted with three options: Log Off, Switch Users, and Cancel. Switching users logs off the current user and re-initialize the login dialog box to be displayed for when there is no user logged on. Logging off logs off the current user and close the login dialog box. Tapping **Cancel** closes the Log Off dialog box and the Login dialog box displays.

When the user is logged off, the mobile computer only roams to profiles that do not require credentials or to profiles that were created with the credentials entered into the profile.

The **Cancel** button closes the dialog without logging into the network. If the login dialog was launched by the WCS and not by the user, tapping **Cancel** first causes a message box to display a warning that the cancel disables the current profile. If the user still chooses to cancel the login at this point, the profile is cancelled.

Once a profile is cancelled, the profile is suppressed until a user actively re-enables it or a new user logs onto the mobile computer.
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_____________________________________________________________________________________

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_____________________________________________________________________________________

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_____________________________________________________________________________________
_____________________________________________________________________________________

What can we do to further improve our manuals?

_____________________________________________________________________________________
_____________________________________________________________________________________

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