



## Routine Procedures

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This chapter provides procedures for common tasks related to the client adapter.

The following topics are covered in this chapter:

- [Inserting and Removing a PC Card, page 7-2](#)
- [Upgrading the Client Adapter Software, page 7-3](#)
- [Client Utility Procedures, page 7-12](#)
- [Restarting the Client Adapter, page 7-13](#)

# Inserting and Removing a PC Card

This section provides instructions for inserting a PC card into or removing a PC card from a Windows CE device.

## Inserting a PC Card into a Windows CE Device

Follow the steps below to insert a PC card into a Windows CE device.

**Caution**

This procedure and the physical connections it describes apply generally to conventional PC card slots. In cases of custom or nonconventional equipment, be alert to possible differences in PC card slot configurations.

**Step 1**

Before you begin, examine the PC card. One end has a dual-row, 68-pin PC card connector. The card is keyed so it can be inserted only one way into the PC card slot.

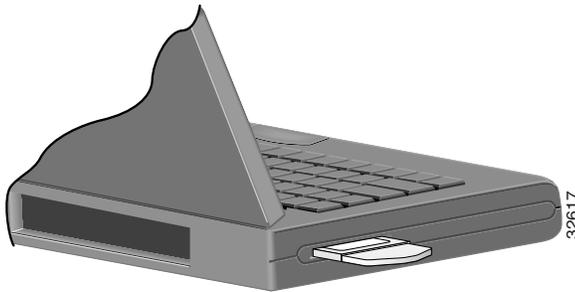
**Caution**

Do not force the PC card into your computer's PC card slot. Forcing it will damage both the card and the slot. If the PC card does not insert easily, remove the card and reinsert it.

**Step 2**

Hold the PC card with the Cisco logo facing up and insert it into the PC card slot, applying just enough pressure to make sure it is fully seated (see [Figure 7-1](#)).

**Figure 7-1** Inserting a PC Card into a Computing Device



## Removing a PC Card from a Windows CE Device

Follow the instructions below whenever you need to remove the PC card from your Windows CE device.

To remove a PC card after it is successfully installed and configured, press the Eject button and pull the card out of the PC card slot. When the PC card is reinserted, your connection to the network should be re-established.

# Upgrading the Client Adapter Software

This section provides instructions for the following procedures:

- Upgrading the firmware, see below
- Upgrading the driver and client utilities, see [page 7-5](#)

## Upgrading the Firmware

The client adapter is shipped with the firmware installed in its Flash memory; however, a more recent version of the firmware may be available from Cisco.com. Cisco recommends using the most current version of radio firmware. Follow the instructions in this section to determine the version of your client adapter's firmware and to upgrade it if a more recent version is available from Cisco.com.

### Determining the Firmware Version

Follow the steps below to determine if you need to upgrade the client adapter's firmware.

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- Step 1** To determine the version of firmware that your client adapter is currently using, double-click the **Cisco ACU icon** or select **Start > Programs > Cisco > Load New Firmware**. The current version of your adapter's firmware is shown on the ACU screen and the Select New Firmware screen, provided a client adapter is inserted in your Windows CE device.
- Step 2** To determine the latest firmware version available on Cisco.com, follow the steps below:
- a. Use your computer's web browser to access the following URL:  
<http://www.cisco.com/public/sw-center/sw-wireless.shtml>
  - b. Locate the section for client adapter firmware.
  - c. Click the link for your client adapter's series (for example, 350 Series).
  - d. Look at the available filenames for radio firmware. The numbers that follow the "v" indicate the version number. For example, v42530 indicates a firmware version of 4.25.30.



**Note** In order to use LEAP authentication, your client adapter and access point firmware must have matching 802.1X draft standards. That is, if the access point uses draft 8 firmware (prior to 11.06) or has draft 8 selected, the client adapter must use draft 8 firmware (prior to 4.25.x). Similarly, if the access point uses draft 10 firmware (11.06 or later) and has draft 10 selected, the client adapter must use draft 10 firmware (4.25.x or later).

- Step 3** If the firmware available from Cisco.com has a higher number than the firmware currently installed in your client adapter, follow the instructions in the ["Loading New Firmware" section on page 7-4](#) to upgrade the firmware.
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## Loading New Firmware

Follow the instructions below to load new firmware into your client adapter.

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- Step 1** Use a serial or USB cable to connect your Windows CE device to a laptop or PC running ActiveSync. A message appears on the Windows CE device indicating that it is connecting to the host. After the Windows CE device is connected, the New Partnership window appears on the laptop or PC. This window asks if you want to set up a partnership.
- Step 2** Perform one of the following:
- If you want to establish a partnership that allows you to synchronize files between the laptop or PC and the Windows CE device, select **Yes**, click **Next**, and follow the instructions on the screen to specify the files to be synchronized and to finish setting up the partnership.
  - If you do not want to synchronize files and want to connect as a “guest,” select **No** and click **Next**. The screen indicates that you are connected as a guest.
- Step 3** Use the laptop or PC’s web browser to access the following URL:  
<http://www.cisco.com/public/sw-center/sw-wireless.shtml>
- Step 4** Locate the section for client adapter firmware.
- Step 5** Click the link for your client adapter’s series (for example, 350 Series).
- Step 6** Click the firmware file for your client adapter.




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**Note** If your wireless network uses LEAP, remember to select a firmware file of the same draft standard as the access points to which your client adapters will be authenticating.

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- Step 7** Read and accept the terms and conditions of the Software License Agreement.
- Step 8** Select the firmware file to download it.
- Step 9** Save the file to a floppy disk or to the hard drive of your laptop or PC.
- Step 10** Locate the file using Windows Explorer, double-click it, and extract the image file (\*.img) to a folder.
- Step 11** In the ActiveSync window on the laptop or PC, click the **Explore** button to view the files on the Windows CE device.
- Step 12** Drag and drop the firmware image from Windows Explorer to a location in the ActiveSync window.




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**Note** If your Windows CE device is a PPC running Windows CE 3.0, you must copy the firmware image to the My Documents folder or a folder under My Documents.

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- Step 13** After the file is copied, disconnect the Windows CE device.
- Step 14** Make sure the client adapter is installed in your Windows CE device and is operational.
- Step 15** On your Windows CE device, select **Start > Programs > Cisco > Load New Firmware**. The Load New Firmware screen appears (see [Figure 7-2](#)).

Figure 7-2 Load New Firmware Screen



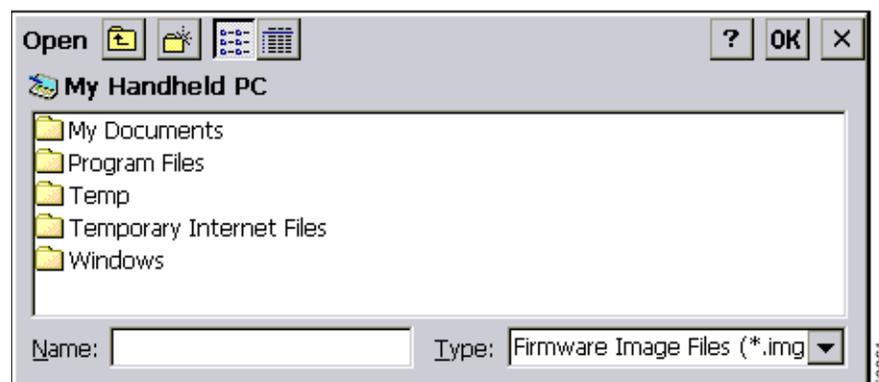
**Step 16** Click the **Select Firmware** button.

The Open window appears (see Figure 7-3).



**Note** The window shown below is on a Windows CE HPC device. The screen looks slightly different on a Windows CE PPC device.

Figure 7-3 Open Window



**Step 17** Find the location of the new firmware image in the Open window.

**Step 18** Click the new firmware image file (\*.img) so it appears in the Name box at the bottom of the Open window.

**Step 19** Click **OK**. If the selected image is loaded successfully into the client adapter's Flash memory, a "Firmware Upgrade Complete!" message appears on the Load New Firmware screen.

## Upgrading the Driver and Client Utilities

Follow the instructions in this section to determine the versions of your client adapter's driver and client utilities and to upgrade them if more recent versions are available from Cisco.com.



**Note** The driver, client utilities, and online help files are installed together.

## Determining the Driver and Client Utility Versions

Follow the instructions in this section to determine if you need to upgrade the client adapter's driver or client utilities.

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- Step 1** To determine the version of the driver that your client adapter is currently using, double-click the **Cisco ACU icon** or select **Start > Programs > Cisco > Aironet Client Utility**. The current version of your adapter's driver is shown on the ACU screen, provided the client adapter is installed in the Windows CE device and is operational.
- Step 2** To determine the version of a client utility that your client adapter is using, open the utility and click the **About** button at the bottom of the screen. The About screen displays the current version of the utility.
- Step 3** To determine the latest driver and client utility versions available on Cisco.com, follow the steps below:
- Use your computer's web browser to access the following URL:  
<http://www.cisco.com/public/sw-center/sw-wireless.shtml>
  - Locate the section for client adapter drivers and utilities.
  - Click the link for Windows CE 2.11 or 3.0, depending on which version of Windows CE your device is running.




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**Note** If you are not sure which version of Windows CE your device is running, refer to the [“Determining the Windows CE Version”](#) section on page 3-2 for instructions.

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- Look at the release numbers of the driver and client utilities in the description below the filename. These are the latest available versions on Cisco.com.
- Step 4** If the driver or client utility version available from Cisco.com is greater than the version currently being used by your client adapter, follow the instructions in the [“Uninstalling the Current Driver and Client Utilities”](#) section below to remove the current driver and client utilities and the instructions in the [“Loading a New Driver and Client Utilities”](#) section on page 7-7 to install the new driver and client utilities.
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## Uninstalling the Current Driver and Client Utilities

Cisco recommends that you uninstall the existing driver and client utilities for your client adapter before upgrading to more recent versions. This section provides instructions for uninstalling your client adapter's current driver and client utilities. The instructions vary depending on your client adapter's current driver version.

### Uninstalling Driver Version 1.4 for Windows CE 2.11

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- Step 1** Terminate any Cisco Aironet applications running on the Windows CE device and eject the client adapter.
- Step 2** Select **Start > Programs > Cisco > Cisco Aironet Uninstall**. The Cisco Aironet Uninstall screen appears.
- Step 3** Select the **Uninstall Cisco Aironet Wireless LAN Adapter** checkbox.

- Step 4** Click **OK**. The utility informs you that the adapter has been uninstalled. The registry entries (but no files) are removed.
- Step 5** Delete the **aironet.dll** driver file and the following help files from the \Windows directory of the Windows CE device: **AuthType.htm**, **CEM.htm**, **Cisco Setup.htm**, **ClieName.htm**, **DataRate.htm**, **DHCP.htm**, **InfrStru.htm**, **LEAP.htm**, **LeapLogin.htm**, **PSMode.htm**, **SSID.htm**, **TxPowe.htm**, **WEP.htm**, and **WorldMode.htm**.
- Step 6** Delete the following client utility files, which are probably in the \Windows\Programs\Cisco directory on the Windows CE device: **Aironet Client Utility.exe**, **Cisco Aironet Uninstall.exe**, **Cisco Link Status.exe**, **Client Encryption Manager.exe**, **Client Statistics Utility.exe**, **Load New Firmware.exe**, and **Site Survey Tool.exe**.
- Step 7** Delete the **Cisco** directory from \Windows\Programs.
- Step 8** Go to the “[Loading a New Driver and Client Utilities](#)” section below for instructions on loading a new driver and client utilities.
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### Uninstalling Driver Version 1.5 or Later for Windows CE 2.11 or 3.0

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- Step 1** Eject the client adapter and remove it from the Windows CE device.
- Step 2** Select **Start > Settings > Control Panel > Remove Programs** (on an HPC device) or **Start > Settings > System tab > Remove Programs** (on a PPC device).
- Step 3** Select **Cisco Wireless LAN Adapter**.
- Step 4** Click **Remove**.
- Step 5** When asked to verify your decision to remove the adapter, click **Yes**.
- Step 6** Click **OK**. The driver, client utilities, registry entries, and Cisco directory are removed.
- Step 7** Go to the “[Loading a New Driver and Client Utilities](#)” section below for instructions on loading a new driver and client utilities.
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### Loading a New Driver and Client Utilities

Follow the instructions below to install a new driver and client utilities for your client adapter.

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- Step 1** Make sure that the client adapter is removed from the Windows CE device.
- Step 2** Use a serial or USB cable to connect your Windows CE device to a laptop or PC running ActiveSync. A message appears on the Windows CE device indicating that it is connecting to the host. After the Windows CE device is connected, the New Partnership window appears on the laptop or PC. This window asks if you want to set up a partnership.
- Step 3** Perform one of the following:
- If you want to establish a partnership that allows you to synchronize files between the laptop or PC and the Windows CE device, select **Yes**, click **Next**, and follow the instructions on the screen to specify the files to be synchronized and to finish setting up the partnership.
  - If you do not want to synchronize files and want to connect as a “guest,” select **No** and click **Next**. The screen indicates that you are connected as a guest.

- Step 4** Use the laptop or PC's web browser to access the following URL:  
<http://www.cisco.com/public/sw-center/sw-wireless.shtml>
- Step 5** Locate the section for client adapter drivers and utilities.
- Step 6** Click the link for Windows CE 2.11 or 3.0, depending on which version of Windows CE your device is running.
- Step 7** Select the **WinCE2.11-PCM-LMC-vx.xx.exe** or **WinCE3.0-PCM-LMC-vx.xx.exe** file.
- Step 8** Read and accept the terms and conditions of the Software License Agreement.
- Step 9** Select the **WinCE2.11-PCM-LMC-vx.xx.exe** or **WinCE3.0-PCM-LMC-vx.xx.exe** file to download it.
- Step 10** Save the file to a floppy disk or to the hard drive of your laptop or PC.
- Step 11** Use Windows Explorer to locate the saved file.
- Step 12** Double-click the \*.exe file for your version of Windows CE (**WinCE2.11-PCM-LMC-vx.xx.exe** or **WinCE3.0-PCM-LMC-vx.xx.exe**). The application creates an Install directory under the ActiveSync directory, extracts the .cab files contained in the \*.exe file, and copies them to the Install directory.
- Step 13** Click **Next** to start the Windows CE Application Manager (CeAppMgr). CeAppMgr interrogates the Windows CE device to determine its processor type.




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**Note** If a Windows CE device is not connected to the laptop or PC (as instructed in [Step 2](#)), click **Exit** to quit the setup program and connect a Windows CE device or click **Next** to continue the installation. If you select **Next**, a message appears indicating that the software will be downloaded the next time a mobile device is connected. Click **OK**. The next time a Windows CE device is connected to the laptop or PC via ActiveSync, CeAppMgr starts automatically and you are prompted to install the software. If you select **Exit**, click **OK** to shut down CeAppMgr and start again beginning with [Step 1](#).

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- Step 14** When a dialog box appears asking if you want to install the client adapter using the default application installation directory, click **Yes**. The default directory is \Windows\Programs\Cisco on HPC devices and \Windows\Start Menu\Programs\Cisco on PPC devices.




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**Note** If you click **No** on an HPC device, CeAppMgr transfers the \*.cab file to the Windows CE device and executes it. This process takes awhile and shows no evidence of activity. Eventually a screen appears on the Windows CE device that asks you where the application files should be installed.

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A message and a progress bar appear indicating that the client adapter is being installed. CeAppMgr copies the processor-specific \*.cab file to the Windows CE device. Then the driver and help files are copied to the \Windows directory, and the client utilities are installed in the \Windows\Programs\Cisco directory on HPC devices or the \Windows\Start Menu\Programs\Cisco directory on PPC devices. Shortcuts to ACU and CEM are automatically added to the desktop on HPC devices.

- Step 15** When the installation process is complete on the laptop or PC, a message appears asking you to check the screen of the Windows CE device to see if any additional steps are required to complete the installation. Click **OK** to terminate the installation process on the laptop or PC.
- Step 16** Complete any required steps on the Windows CE device.
- Step 17** Disconnect the Windows CE device.

**Step 18** Insert the client adapter (with the Cisco logo facing up) into the PC card slot of the Windows CE device. Refer to the “[Inserting a PC Card into a Windows CE Device](#)” section on page 7-2 for specific instructions on inserting the client adapter.

The Windows CE device should configure the client adapter, and the green LED on the adapter should blink. If this does not happen, remove the client adapter, reset the Windows CE device, and reinsert the client adapter.

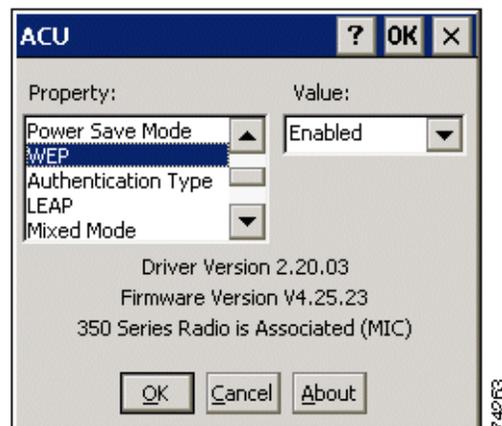
**Step 19** The Cisco Wireless LAN Adapter Settings dialog box appears. (If the dialog box does not appear, select **Start, Settings, Control Panel, Network**, the **Adapters** tab, the Cisco Aironet wireless LAN adapter, and **Properties** on HPC devices or **Start, Settings**, the **Connections** tab, **Network**, and the Cisco Aironet wireless LAN adapter on PPC devices.)

Perform one of the following:

- If your device is connected to a DHCP server, select **Obtain an IP address via DHCP** or **Use server-assigned IP address** and click **OK**.
- If your device is not connected to a DHCP server, select **Specify an IP address** or **Use specific IP address** and follow the steps below:
  - a. Enter the IP address, subnet mask, and default gateway address you want to assign to your device. They can be obtained from your system administrator.
  - b. Select the **Name Servers** tab and enter the primary and secondary DNS and WINS you want to assign to your device. They can be obtained from your system administrator.
  - c. Click **OK**.

**Step 20** Double-click the **Cisco ACU icon** or select **Start > Programs > Cisco > Aironet Client Utility** to open ACU. The ACU screen appears (see [Figure 7-4](#)).

**Figure 7-4 ACU Screen**



**Step 21** Select **SSID** under Property. Then enter your RF network's case-sensitive SSID in the Value box.

SSID	<p>The service set identifier (SSID) identifies the specific wireless network that you want to access.</p> <p><b>Range:</b> Up to 32 characters (case sensitive)</p> <p></p> <p><b>Note</b> If you leave this parameter blank, your client adapter can associate to any access point on the network that is configured to allow broadcast SSIDs (see the AP Radio Hardware page in the access point management system). If the access point with which the client adapter is to communicate is not configured to allow broadcast SSIDs, the value of this parameter must match the SSID of the access point. Otherwise, the client adapter cannot access the network.</p>
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**Step 22** Select **Client Name** under Property. Then enter your Windows CE device's unique client name in the Value box.

Client Name	<p>A logical name for your Windows CE device. It allows an administrator to determine which devices are connected to the access point without having to memorize every MAC address. This name is included in the access point's list of connected devices.</p> <p><b>Range:</b> Up to 16 characters</p> <p></p> <p><b>Note</b> Each computer on the network should have a unique client name.</p>
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**Step 23** Select **Data Rates** under Property. Make sure that **Auto** is selected in the list of options in the Value box.

Data Rates	Specifies the rate at which you want your client adapter to transmit or receive packets to or from access points (in infrastructure mode) or other clients (in ad hoc mode).	
	Auto is recommended for infrastructure mode; setting a specific data rate is recommended for ad hoc mode.	
	<b>Default:</b> Auto	
	<b>Data Rate</b>	<b>Description</b>
	Auto	Uses the 11-Mbps data rate when possible but drops to lower rates when necessary
	1 Mb Only	Offers the greatest range but the lowest throughput
	2 Mb Only	Offers less range but greater throughput than the 1 Mbps Only option
	5.5 Mb Only	Offers less range but greater throughput than the 2 Mbps Only option
	11 Mb Only	Offers the greatest throughput but the lowest range
	 <p><b>Note</b> Your client adapter's data rate must be set to Auto or must match the data rate of the access point (in infrastructure mode) or the other clients (in ad hoc mode) with which it is to communicate. Otherwise, your client adapter may not be able to associate to them.</p>	

**Step 24** Click **OK**. The driver and client utility installation is complete. If the installation was successful, the client adapter's green LED blinks.

**Step 25** Go to [Chapter 4](#) for instructions on setting the client adapter's security features, if desired.

# Client Utility Procedures

This section provides instructions for the following procedures:

- Opening a client utility
- Exiting a client utility
- Determining the version of a client utility
- Deleting client utility icons on HPC devices

## Opening a Client Utility

To open any of the client utilities on your Windows CE device, select **Start > Programs > Cisco** and the utility you wish to open. The screen for that utility appears.

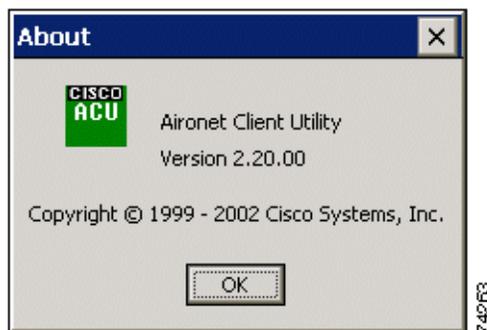
## Exiting a Client Utility

To exit any of the client utilities, click **OK** at the bottom of the screen.

## Determining the Version of a Client Utility

To determine which version of a utility you are running, open the utility and click the **About** button at the bottom of the screen. For example, if you click the **About** button on the ACU screen, the About screen appears (see [Figure 7-5](#)). Click **OK** to return to the utility's main screen.

**Figure 7-5** About Screen



## Deleting Client Utility Icons on HPC Devices

Icons for ACU and CEM are automatically added to the desktop of HPC devices when you install the client utilities. If you wish to remove these icons from your desktop, hold down the **Alt** key and tap the icon, click **Delete**, and click **Yes** to confirm your decision.



**Note**

You can also use File Explorer to browse to the desktop, select the icon, and delete it.

# Restarting the Client Adapter

ACU enables you to restart the client adapter when necessary. For example, you might want to restart the adapter for the following reasons:

- If your client adapter is experiencing poor throughput, you might want to restart the client adapter to try to force it to disassociate from the access point to which it is currently associated in the hope that it will reassociate to an access point with a stronger signal.
- If you use LEAP and then disable it in ACU, you might want to restart the client adapter to ensure that the adapter starts to use the static WEP key set in CEM instead of the dynamic WEP key assigned during LEAP authentication.

Follow the steps below to restart the client adapter.

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**Step 1** Open ACU by double-clicking the **Cisco ACU icon** or selecting **Start > Programs > Cisco > Aironet Client Utility**.

**Step 2** Click **OK** on the ACU screen. The driver stops the client adapter's radio, writes the configuration (although no parameter settings have been changed), and restarts the radio.



**Note** When you click **OK**, the ACU screen closes. You have to re-open ACU to determine if the client adapter is associated to an access point.

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