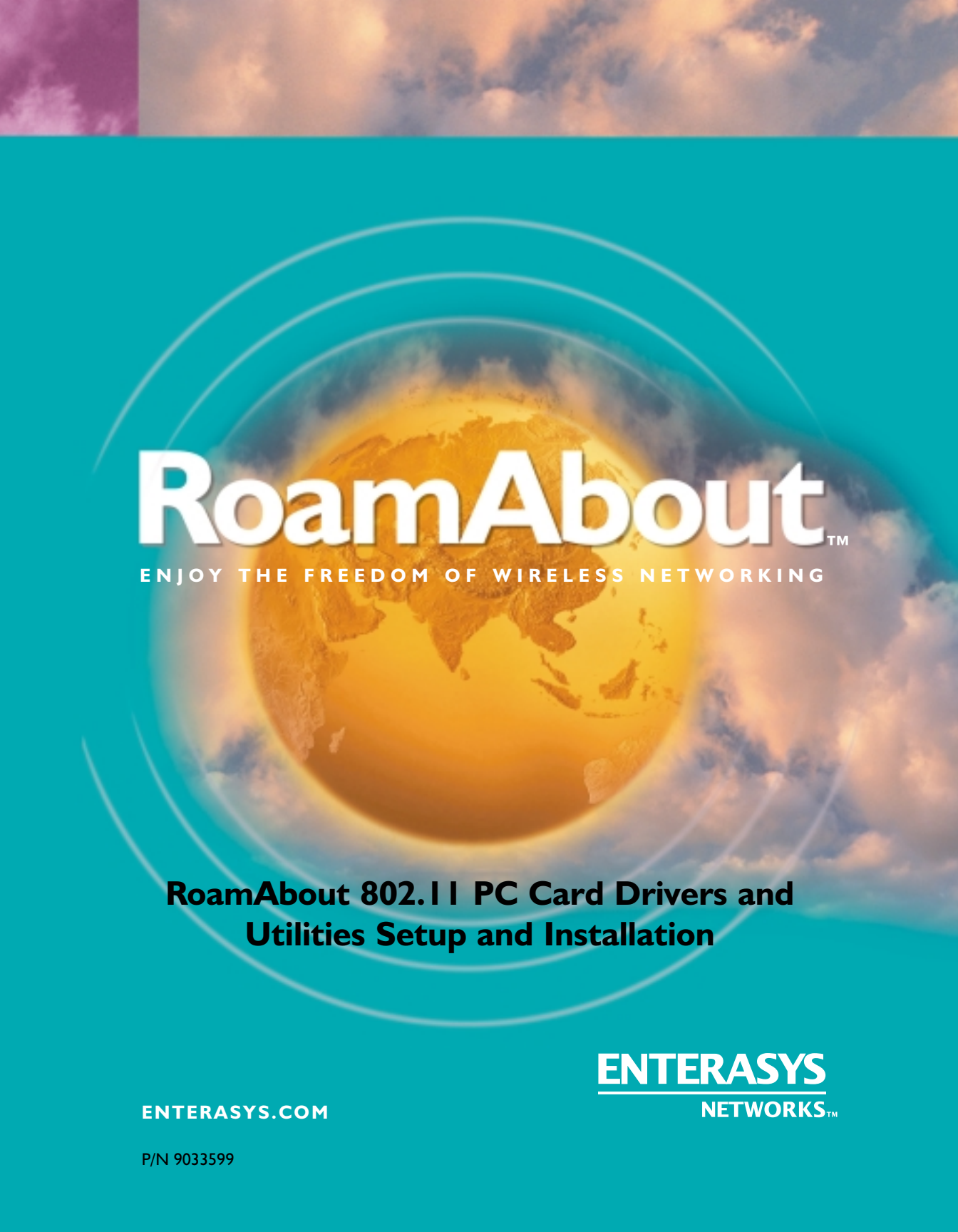

RoamAbout 802.11 PC Card Drivers and Utilities Setup and Installation

ENTERASYS NETWORKS™

ENTERASYS.COM

P/N 9033599

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Preface

This document contains the setup and installation information for all supported RoamAbout DS PC Card drivers and utilities.

Visit the **www.enterasys.com/wireless** web site for the latest upgrades and documentation.

Intended Audience

This document is intended for the wireless network manager. You should have a basic knowledge of Local Area Networks (LANs) and networking functions.

Organization

This document is organized as follows:

Section	Description
Chapter 1	Provides setup and installation information for the Windows 95 driver.
Chapter 2	Provides setup and installation information for the Windows 98 driver.
Chapter 3	Provides setup and installation information for the Windows 2000 driver.
Chapter 4	Provides setup and installation information for the Windows Millennium driver.
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Chapter 7	Provides setup and installation information for the Linux driver.

Section	Description
Chapter 8	Provides setup and installation information for the MS-DOS or Microsoft Windows for Workgroups (usually referred to as Windows 3.1) system.
Chapter 9	Provides setup and installation information for Macintosh driver.
Appendix A	Provides installation and use information for the RoamAbout Client Utility.
Appendix B	Provides installation and use information for the Work Station Update Utility (WSU).

Associated Documents

The documentation, drivers, and utilities can also be downloaded from the RoamAbout Wireless web site.

Check the RoamAbout Wireless web site regularly for product upgrades.

http://www.enterasys.com/wireless

Component	Information Location
RoamAbout Access Point	*RoamAbout Access Point 2000 Hardware Installation Guide* *RoamAbout Access Point 2000 Hardware Installation Quick Start*
RoamAbout Access Point Manager	*RoamAbout 802.11 Wireless Networking Guide*
RoamAbout 802.11 DS PC Card	*RoamAbout 802.11 PC Card Drivers and Utilities CD-ROM Kit*
RoamAbout 802.11 Drivers	*RoamAbout 802.11 PC Card Drivers and Utilities CD-ROM Kit*
RoamAbout Client Utility	*RoamAbout 802.11 PC Card Drivers and Utilities CD-ROM Kit*
RoamAbout Work Station Update	*RoamAbout 802.11 PC Card Drivers and Utilities CD-ROM Kit*

Component	Information Location
RoamAbout Outdoor Solution	*RoamAbout Outdoor Antenna Site Preparation and Installation Guide*
RoamAbout ISA Adapter Card	*RoamAbout ISA Adapter Installation*
RoamAbout PCI Adapter Card	*RoamAbout PCI Adapter Installation*

Getting Help

For additional support related to this device or document, contact Enterasys Networks using one of the following methods:

World Wide Web: http://www.enterasys.com/wireless

Phone: North America: (603) 332-9400
Europe: 353 61 701 910
Asia: +800 8827-2878

Internet mail: support@enterasys.com

To send comments or suggestions concerning this document, contact the Enterasys Networks Technical Writing Department via the following email address: **TechWriting@enterasys.com**

Make sure to include the document Part Number in the email message.

Before calling Enterasys Networks, please have the following information ready:

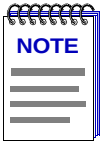
- Your Enterasys Networks service contract number
- A description of the problem
- A description of any action(s) already taken to resolve the problem
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (for example, layout, cable type)
- Network load and frame size at the time of trouble (if known)
- The device history (for example, have you returned the device before, is this a recurring problem)
- Any previous Return Material Authorization (RMA) numbers

Chapter 1

Windows 95 Driver

This chapter provides setup and installation information for the Windows 95 NDIS 3 miniport driver Version 6.25 to support the RoamAbout DS PC card in an 802.11 wireless LAN. This driver works with various versions of the RoamAbout PC Card. However, earlier versions of the RoamAbout PC Card do not support WEP Encryption and cannot be upgraded to support encryption. The **Determining if your Card Supports Encryption** provides the instructions to determine whether or not your PC Card supports encryption.

To install the RoamAbout driver, you should have a working knowledge of Microsoft Windows operations and a working knowledge of installing network adapter cards and network client software.



Depending on your system configuration, your installation procedure may be slightly different from the procedures listed.

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System Requirements

- Operating System: Microsoft Windows 95
- Disk Space: 170 KB
- 16 MB RAM

Determining if your Card Supports Encryption

To determine if the RoamAbout PC Card supports encryption, perform the following:

- Check for a sticker on the back of the PC Card that states support for 40-bit or 128-bit encryption.

  or

- Run the Client Utility (if already installed). Click on the **Help** menu and select **Version Info** from the drop-down list. Check the Card field for WEP encryption allowed. If it does not list WEP encryption allowed, your card does not support this feature.

Upgrading the Driver

Upgrading driver versions prior to 6.25 requires deleting the old driver files from your hard disk before installing the new driver.

When you select the Remove Driver option from the Network Control Panel, the operating system disables the driver but does not delete the driver from your hard disk. Therefore, when you upgrade a driver. Windows recognizes your RoamAbout PC Card as hardware that had been installed before and attempts to reinstall the old driver.

To upgrade your RoamAbout driver, follow the procedure in **Removing the RoamAbout Miniport Driver Version prior to 6.25**. Then, follow the procedure in **Deleting the RoamAbout Driver Files** before you install the new driver.

Removing the RoamAbout Miniport Driver Version prior to 6.25

If you have a RoamAbout Miniport driver installed prior to Version 6.25, you need to perform extra steps. Check the driver version number using your installed RoamAbout Client Utility before performing this procedure.

1) Click on the PC Card (PCMCIA) status icon and select **Stop RoamAbout 802.11 DS (Cabletron)**.

   A message appears stating that you may safely remove this device.

2) Click **OK**.

3) Remove the PC Card from the PC Card slot.

4) Close all open applications.

5) From the Task bar on the Windows desktop, click **Start** then select **Settings-->Control Panel**.

6) In the Control Panel window, double-click on the **Network** icon.

7) Select the **RoamAbout PC Card** and click on the **Remove** button. Then, click **OK**.

   The Windows operating system disables the Miniport driver and updates the driver configuration files.

8) Do NOT restart the computer. Instead, perform the procedure in **Deleting the RoamAbout Driver Files** in this document.

Deleting the RoamAbout Driver Files

The procedure to remove the RoamAbout Miniport Driver files from the hard disk is similar for all Windows operating systems.

If not already done, remove the RoamAbout driver as described in the **Removing the RoamAbout Miniport Driver Version prior to 6.25** section. Otherwise, the Windows Registry is not "cleaned", which can lead to complications when installing the RoamAbout driver in the future.

1) Open the Windows Explorer.

2) In the Explorer menu, click on **View** and select **Options**.

3) From the View tab, select **Show all files** and clear the **Hide MS-DOS file extensions** check box.

4) Click on the **Apply** button to return to the Explorer window.

5) In Explorer, open the Windows operating system folder:

   c:\windows\system

6) Delete the following RoamAbout driver files:

   wvlan41.sys

   wvlanuif.vxd

   wv41inst.dll (if present)

   wvlan41.hlp

   wvlan41.cnt

   wvlan41.fts (if present)

   wvlan41.gid (if present)

   rmabt41.hlp (if present)

   rmabt41.cnt (if present)

   rmabt41.gid (if present)

7) Open **c:\windows\inf** and delete the **rmabt41.inf** file.

8) Close the Windows Explorer and restart your computer.

9) If deleting the driver files was part of an upgrade procedure, install the new driver as described in the **New Installations** section of this document.

New Installations

The computer must be configured with the same network protocols used by the other network devices. The commonly used protocols include TCP/IP, IPX/SPX, and NetBEUI. Refer to the documentation provided by the network protocol software or operating system.

To install the RoamAbout Windows 95 driver, perform the following steps:

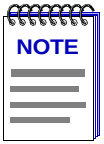
1) Run the **50comupd.exe** file before you install the Windows 95 driver. Browse to the CD-ROM directory \Drivers\Win95\Update95. Or, if you downloaded the driver from the RoamAbout Wireless web site, in the directory you specified during the extraction of the downloaded file.

2) Follow the online instructions.

3) Reboot the computer.

4) Insert the RoamAbout PC Card.

5) Perform one of the following:



When prompted, browse to the CD-ROM directory \Drivers\Win95. Or, if you downloaded the driver from the RoamAbout Wireless web site, in the directory you specified during the extraction of the downloaded file.

- If you see the New Hardware Found dialog, select **Driver from disk provided by Hardware Manufacturer** then click **OK**. Windows 95 starts the Add New Hardware wizard, step through the wizard.
- If you see the **Select Network Adapter** window, select the **RoamAbout PC Card** then click **Have Disk**.
- If you don't see any of the above, perform the following steps to manually install the driver:

  a)Click on **Start-->Settings-->Control Panel**.

  b)Click on the **System** icon.

  c)Select the **Device Manager** tab.

  d)Select **Network Adapters-->RoamAbout 802.11 DS**.

  e)Select **Properties**.

  f)Select the **Driver** tab.

  g)Click on **Update Driver.**

  The system displays Do you want Windows to search for the driver?

  h)Click on **No**, **select driver from list** and click on **Next**.

  i)Click on **Have Disk**.

  j)Browse to the directory containing the driver.

  k)Select the **wlrbt41.inf** file and click on **OK**.

  l)Click on **OK** twice.

  m)Perform Steps 6 through 10 below.

  n)Click on **Finish**.

6) If you are prompted for operating system files, insert the operating system media.

   After the driver is installed, the Add/Edit Configuration Profile window appears.

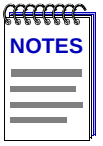
7) Select a profile and edit the profile with your network configuration parameters, such as the Wireless Network Name.

   If you are joining a wireless network with Access Points, enter values specific to the network such as the wireless network name. Press <**F1**> while in a properties window for information, or refer to the RoamAbout 802.11 Wireless Networking Guide.

8) Click **OK**.

9) Close the window when you complete the configuration.

10) Reboot the computer.



If you encounter problems during the installation procedure you must uninstall the RoamAbout Driver before reinstallation. Go to the **New Installations** *section.*

If you receive a message stating that the Client Utility is not installed, complete the driver installation. Then, refer to **Appendix A** *for the instructions to install the Client Utility.*

Reinstallation

If this is a reinstallation of the 6.25 driver, perform the following steps:

1) Click on the PC Card (PCMCIA) status icon and select **Stop RoamAbout 802.11 DS (Cabletron)**.

   A message appears stating that you may safely remove this device.

2) Click **OK**.

3) Run the **50comupd.exe** file before you install the Windows 95 driver. Browse to the CD-ROM directory **\Drivers\Win95\Update95**. Or, if you downloaded the driver from the RoamAbout Wireless web site, in the directory you specified during the extraction of the downloaded file.

4) Follow the online instructions.

5) Reboot the computer.

6) Insert the RoamAbout PC Card.

7) Perform one of the following:

(When prompted, browse to the CD-ROM directory, **\Drivers\Win95**. Or, if you downloaded the files from the RoamAbout Wireless web site, in the directory where you downloaded the files.)

- If you see the **New Hardware Found** dialog, select **Driver from disk provided by Hardware Manufacturer** then click **OK**.
- If the **Add New Hardware Wizard** starts dialog, step through the wizard.
- If you see the **Select Network Adapter** window, select the **RoamAbout PC Card** then click **Have Disk**.
- If you don't see any of the above, perform the following steps to manually install the driver:

  a) Click on **Start-->Settings-->Control Panel**.

  b) Click on the **System** icon.

  c) Select the **Device Manager** tab.

  d) Select **Network Adapters-->RoamAbout 802.11 DS**.

  e) Select **Properties**.

  f) Select the **Driver** tab.

  g) Click on **Update Driver**.

  The system displays "Do you want Windows to search for the driver? "

  h) Click on **No**, **select driver from list** and click on **Next**.

  i) Click on **Have Disk**.

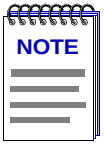
  j) Browse to the directory containing the driver.

  k) Select the **wlrbt41.inf file** and click on **OK**.

  l) Click on **OK** twice.

m) Perform Steps 8 through 11 below.

n) Click on **Finish**.



If you receive a message indicating that the Client Utility is not installed, complete the installation. Then, refer to **Appendix A** *to install the Client Utility.*

8) If you are prompted for operating system files, insert the operating system media.

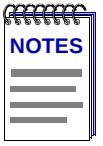
During the driver installation, the **Add/Edit Configuration Profile** window appears.

9) Select a profile and edit the profile with your network configuration parameters, such as the Wireless Network Name.

If you are joining a wireless network with Access Points, enter values specific to the network such as the wireless network name. Press <**F1**> while in a properties window for information, or refer to the RoamAbout 802.11 Wireless Networking Guide.

10) Click **OK**.

11) Close the window when you complete the configuration.



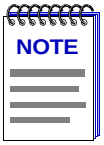
If you encounter problems during the installation procedure you must uninstall the RoamAbout Driver before reinstallation.

If you receive a message stating that the Client Utility is not installed, complete the installation. Then, refer to **Appendix A** *to install the Client Utility.*

Installation Verification

To verify the RoamAbout PC Card Driver installation, perform the following steps:

1) Install the RoamAbout Client Utility (see **Appendix A**)..



Previous versions of the Client Utility do not support the new driver, therefore you must uninstall the previous version and install the new version before you configure the new driver.

2) To start the Client Utility, perform the following:

Click on the Client Utility icon located on the System Tray of your Windows Task bar.

or

From the Windows Task bar, click **Start**, then select **Programs-->RoamAbout-->Client Utility**.

3) Click on the **Help** menu and select **Version Info** from the drop-down list.

Driver Configuration

To view or modify the driver configuration parameters, perform the following steps:

1) Open the Control Panel.

2) Double-click on the **Network** icon.

3) Double-click on the RoamAbout adapter line. Refer to the online help for more information.

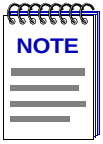
Chapter 2

Windows 98 Driver

This chapter provides setup and installation information for the Windows 98 NDIS 5 miniport driver Version 6.25 to support the RoamAbout DS PC card in an 802.11 wireless LAN.

This driver works with various versions of the RoamAbout PC Card. However, earlier versions of the RoamAbout PC Card do not support WEP Encryption and cannot be upgraded to support encryption. The **Determining if your Card Supports Encryption** section provides the instructions to determine whether or not your PC Card supports encryption.

To install the RoamAbout driver, you should have a working knowledge of Microsoft Windows operations and a working knowledge of installing network adapter cards and network client software.



Depending on your system configuration, your installation procedure may be slightly different from the procedures listed.

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System Requirements

- Operating System: Microsoft Windows 98
- Disk Space: 170 KB
- 16 MB RAM

Determining if your Card Supports Encryption

To determine if the RoamAbout PC Card supports encryption, perform the following:

- Check for a sticker on the back of the PC Card that states support for 40-bit or 128-bit encryption.

  or

- Run the Client Utility (if already installed). Click on the **Help** menu and select **Version Info** from the drop-down list. Check the Card field for WEP encryption allowed. If it does not list WEP encryption allowed, your card does not support this feature.

New Installations

The computer must be configured with the same network protocols used by the other network devices. The commonly used protocols include TCP/IP, IPX/SPX, and NetBEUI. Refer to the documentation provided by the network protocol software or operating system.

To install the RoamAbout Windows 98 driver, perform the following steps:

1) Insert the RoamAbout PC Card.

   Windows 98 starts the Add New Hardware Wizard.

2) Click on **Next**.

3) Select **Search for the best driver (Recommended)**.

4) Click on **Next**.

5) Deselect **Floppy disk drives and CD-ROM drive** and select **Specify a location**.

6) Enter the path of the driver. Enter the path of the driver. For example, the **\Drivers\Win98** directory on the CD-ROM. Or, if you downloaded the driver from the RoamAbout Wireless web site, in the directory you specified during the extraction of the downloaded file.

7) Click on **Next**.

8) If you are prompted for operating system files, insert the operating system media.

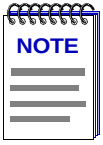
   During the driver installation, the system displays the RoamAbout properties Add/Edit Configuration Profile window.

9) Select the profile and edit the profile with your network configuration parameters, such as the Wireless Network Name.

   If you are joining a wireless network with Access Points, enter values specific to the network such as the wireless network name. Press <**F1**> while in a properties window for information, or refer to the *RoamAbout 802.11 Wireless Networking Guide*.

10) Click **Finish**.

11) Restart the computer.



If you encounter problems during the installation procedure you must uninstall the RoamAbout Driver before reinstallation. Go to the Reinstallation or Upgrade section of this document.

If you receive a message stating that the Client Utility is not installed, complete the installation. Then, go to **Appendix A** *for the in instructions to install the Client Utility.*

Reinstallation

If this is an reinstallation, perform the following steps:

1) Open the **Control Panel** and click on the **System** icon.
2) Click on the **Device Manager** tab.
3) Click on the **Network Adapters** icon.
4) Select **RoamAbout 802.11 DS**.
5) Click on **Properties**.
6) Click on the **Driver** tab.
7) Click on **Update Driver** to start the Update Driver Wizard.
8) Click on **Next**.
9) Select **Search for a better driver than the one your device is using now (Recommended)**.
10) Deselect **Floppy disk drives and CD-ROM drive** and select **Specify a location**.
11) Enter the path of the driver. Enter the path of the driver. For example, the **\Drivers\Win98** directory on the CD-ROM. Or, if you downloaded the driver from the RoamAbout Wireless web site, in the directory you specified during the extraction of the downloaded file.
12) Click on **Next**.

    The Update Driver Wizard displays the message, "What would you like to install?"
13) Select **The Updated Driver (Recommended)**.

    RoamAbout 802.11 DS (Cabletron) is shown.
14) Click on **Next**.

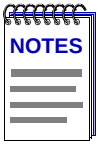
    The location of the driver is shown.
15) If you are prompted for operating system files, insert the operating system media
    During the driver installation, the system displays the RoamAbout properties Add/Edit Configuration Profile window.

16) Select the profile and edit the profile with your network configuration parameters, such as the Wireless Network Name.

If you are joining a wireless network with Access Points, enter values specific to the network such as the wireless network name. Press <**F1**> while in a properties window for information, or refer to the *RoamAbout 802.11 Wireless Networking Guide*.

17) Click **Finish**.

18) Restart the computer.



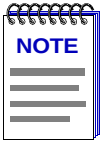
If you encounter problems during the installation procedure you must uninstall the RoamAbout Driver before reinstallation.

If you receive a message stating that the Client Utility is not installed during the installation procedure, complete the installation. Then, go to **Appendix A** *for the instructions to install the Client Utility.*

Installation Verification

To verify the RoamAbout PC Card Driver installation, perform the following steps:

1) Install the RoamAbout Client Utility (see **Appendix A**).



Previous versions of the Client Utility do not support the new driver, therefore you must uninstall the previous version and install the new version before you configure the new driver.

2) To start the Client Utility, perform the following:

Click on the Client Utility icon located on the System Tray of your Windows Task bar.

or

From the Windows Task bar, click **Start**, then select **Programs-->RoamAbout-->Client Utility**.

3) Click on the **Help** menu and select **Version Info** from the drop-down list.

Driver Configuration

To configure the driver view parameters, perform the following steps:

1) Open the **Control Panel**.
2) Double-click on the **Network** icon.
3) Double-click the RoamAbout adapter line. Refer to the online help and the *RoamAbout Wireless 802.11 Networking Guide* for more information.

Chapter 3

Windows 2000 Driver

This chapter provides setup and installation information for the Windows 2000 NDIS 5 miniport driver Version 6.25 to support the RoamAbout DS PC card in an 802.11 wireless LAN. This driver works with various versions of the RoamAbout PC Card. However, earlier versions of the RoamAbout PC Card do not support WEP Encryption and cannot be upgraded to support encryption. The **Determining if your Card Supports Encryption** provides the instructions to determine whether or not your PC Card supports encryption.

To install the RoamAbout driver, you should have a working knowledge of Microsoft Windows operations and a working knowledge of installing network adapter cards and network client software.

You must use the RoamAbout Windows 2000 Version 6.25 driver on Microsoft Windows 2000 platforms. The Microsoft Windows 2000 driver included with on the Windows 2000 CD does not support WEP encryption. Therefore, you must update the RoamAbout Windows 2000 driver.

In This Chapter

Section	Page
System Requirements	**3-2**
Determining if your Card Supports Encryption	**3-2**
Installation	**3-2**
Installation Verification	**3-4**
Driver Configuration	**3-4**

System Requirements

- Operating System: Microsoft Windows 2000
- Disk Space: 720 KB
- 64 MB RAM

Determining if your Card Supports Encryption

To determine if the RoamAbout PC Card supports encryption, perform the following:

- Check for a sticker on the back of the PC Card that states support for 40-bit or 128-bit encryption.

  or

- Run the Client Utility (if already installed). Click on the **Help** menu and select **Version Info** from the drop-down list. Check the Card field for WEP encryption allowed. If it does not list WEP encryption allowed, your card does not support this feature.

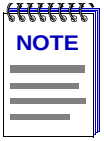
Installation

To extract and install the RoamAbout driver files, perform the following steps:

1) Insert the RoamAbout PC Card.

2) Start the installation, right-click on the **My Network Places** icon located on your desktop. Select **Properties** from the drop-down menu. The Network and Dial-up Connections dialog box appears.

3) Right-click on the **Local Area Connections** icon and select **Properties** from the drop-down menu. The Local Area Connections Properties dialog box appears.



If you have more than one adapter card installed, select the icon that displays RoamAbout 802.11 when you move your cursor over it.

4) Click on the **Configure** button. The Cabletron RoamAbout 802.11 PC Card Properties dialog box appears.

5) Click on the **Driver** Tab.

6) Click on the **Update Driver** button. The Update Driver Wizard appears.

7) Click on **Next** to continue.

8) Click on the button next to **Display a list of known drivers so that I can choose a specific driver.**

9) Click on **Next** to continue.

10) Click on **Have Disk**. For example, the **\Drivers\Win2000** directory on the CD-ROM. Or, if you downloaded the driver from the RoamAbout Wireless web site, in the directory you specified during the extraction of the downloaded file.

11) Click on **WLRBT48** and click **Open**, and then **OK** to copy the files.

RoamAbout 802.11 DS (Cabletron) is highlighted.

12) Click **Next** twice to continue.

13) The Digital Signature Not Found Dialog box appears. Click **Yes** to complete the installation.

14) Click **Finish**.

15) Click **Close**, and then **OK** to close the local Area Connection Properties dialog box.

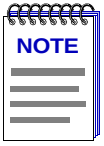
16) If asked to reboot, select **Yes**.

During the driver installation, the system displays the RoamAbout properties Add/Edit Configuration Profile window.

17) Select the profile and click on the **Edit Profile** button. Enter the network configuration parameters, such as the Wireless Network Name.

If you are joining a wireless network with Access Points, enter values specific to the network such as the wireless network name. Press <**F1**> while in a properties window for information, or refer to the RoamAbout 802.11 Wireless Networking Guide.

18) Close the window when done.

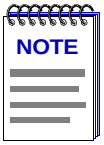


If you encounter problems during the installation procedure you must uninstall the RoamAbout Driver before reinstallation.

Installation Verification

To verify the RoamAbout PC Card Driver installation, perform the following steps:

1) Install the RoamAbout Client Utility (see **Appendix A**).



Previous versions of the Client Utility do not support the new driver, therefore you must uninstall the previous version and install the new version before you configure the new driver.

2) To start the Client Utility, perform the following:

Click on the Client Utility icon located on the System Tray of your Windows Task bar.

or

From the Windows Task bar, click **Start**, then select **Programs-->RoamAbout-->Client Utility**.

3) Click on the **Help** menu and select **Version Info** from the drop-down list.

Driver Configuration

To configure the driver parameters, perform the following steps:

1) Open the **Control Panel**.

2) Double-click on the **Wireless Network** icon.

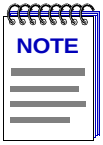
Refer to the online help and the *RoamAbout Wireless 802.11 Networking Guide* for more information.

Chapter 4

Windows Millennium Driver

This chapter provides setup and installation information for the Windows Millennium NDIS 5 miniport driver Version 6.25 to support the RoamAbout DS PC card in an 802.11 wireless LAN. This driver works with various versions of the RoamAbout PC Card. However, earlier versions of the RoamAbout PC Card do not support WEP Encryption and cannot be upgraded to support encryption. The **Determining if your Card Supports Encryption** provides the instructions to determine whether or not your PC Card supports encryption

To install the RoamAbout driver, you should have a working knowledge of Microsoft Windows operations and a working knowledge of installing network adapter cards and network client software.



Depending on your system configuration, your installation procedure may be slightly different from the procedures listed.

In This Chapter

Section	Page
System Requirements	**4-2**
Determining if your Card Supports Encryption	**4-2**
New Installations	**4-2**
Reinstallation or Upgrade	**4-3**
Installation Verification	**4-5**
Driver Configuration	**4-5**

System Requirements

- Operating System: Microsoft Windows Millennium
- Disk Space: 720 KB
- 64 MB RAM

Determining if your Card Supports Encryption

To determine if the RoamAbout PC Card supports encryption, perform the following:

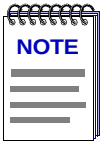
- Check for a sticker on the back of the PC Card that states support for 40-bit or 128-bit encryption.

  or

- Run the Client Utility (if already installed). Click on the **Help** menu and select **Version Info** from the drop-down list. Check the Card field for WEP encryption allowed. If it does not list WEP encryption allowed, your card does not support this feature.

New Installations

The computer must be configured with the same network protocols used by the other network devices. The commonly used protocols include TCP/IP, IPX/SPX, and NetBEUI. Refer to the documentation provided by the network protocol software or operating system.



When prompted, specify a location and then browse to the CD-ROM directory \Drivers\WinMe. Or, if you downloaded the driver from the RoamAbout Wireless web site, in the directory you specified during the extraction of the downloaded file.

To install the RoamAbout Windows Millennium driver, perform the following steps:

1) Insert the RoamAbout PC Card.

   Windows Millennium starts the Add New Hardware Wizard.

2) Click on **Next**.

3) Select **Specify the location of the driver (Advanced)**.

4) Click on **Next**.

5) Deselect **Removable Media (Floppy, CD-ROM...)** and select **Specify a location**.

6) Enter the path of the driver. For example, the **\Drivers\WinME** directory on the CD-ROM. Or, if you downloaded the driver from the RoamAbout Wireless web site, in the directory you specified during the extraction of the downloaded file.

7) Click on **Next**.

8) If you are prompted for operating system files, insert the operating system media.

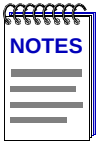
   During the driver installation, the system displays the RoamAbout properties Add/Edit Configuration Profile window.

9) Select the profile and edit the profile with your network configuration parameters, such as the Wireless Network Name.

   If you are joining a wireless network with Access Points, enter values specific to the network such as the wireless network name. Press <**F1**> while in a properties window for information, or refer to the *RoamAbout 802.11 Wireless Networking Guide*.

10) Click **Finish**.

11) Restart the computer.



If you encounter problems during the installation procedure you must uninstall the RoamAbout Driver before reinstallation.

If you receive a message stating that the Client Utility is not installed during the installation procedure, complete the installation. Then, go to **Appendix A** *for instructions to install the Client Utility.*

Reinstallation or Upgrade

If this is an reinstallation or an upgrade to a previous Windows Millennium driver, perform the following steps:

1) Open the Control Panel and click on the **System** icon.

2) Click on the **Device Manager** tab.

3) Select **RoamAbout 802.11 DS**.

4) Click on **Properties**.

5) Click on the **Driver** tab.

6) Click on **Update Driver** to start the Update Device Driver Wizard.

7) Select **Specify the location of the driver (Advanced)**.

8) Click on **Next**.

9) Select **Search for a better driver then the one your device is using now**.

10) Deselect **Removable Media (Floppy, CD-ROM...)** and select **Specify a location**.

11) Enter the path of the driver. Enter the path of the driver. For example, the **\Drivers\WinME** directory on the CD-ROM. Or, if you downloaded the driver from the RoamAbout Wireless web site, in the directory you specified during the extraction of the downloaded file.

12) Click on **Next**.

    The Update Device Driver Wizard displays "What would you like to install".

13) Select **The Updated Driver (Recommended)**.

    RoamAbout 802.11 DS (Cabletron) is shown.

14) Click on **Next**.

    The location of the driver is displayed.

15) Click on **Next**.

16) If you are prompted for operating system files, insert the operating system media.

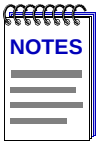
    During the driver installation, the system displays the RoamAbout properties Add/Edit Configuration Profile window.

17) Select the profile and edit the profile with your network configuration parameters, such as the Wireless Network Name.

    If you are joining a wireless network with Access Points, enter values specific to the network such as the wireless network name. Press <F1> while in a properties window for information, or refer to the RoamAbout 802.11 Wireless Networking Guide.

18) Click on **Finish**.

19) Restart the computer.



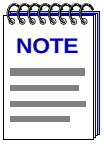
If you encounter problems during the installation procedure you must uninstall the RoamAbout Driver before reinstallation.

If you receive a message stating that the Client Utility is not installed during the installation procedure, complete the installation. Then, go to **Appendix A** for the instructions to install the Client Utility.

Installation Verification

To verify the RoamAbout PC Card Driver installation, perform the following steps:

1) Install the RoamAbout Client Utility (see **Appendix A**)..



Previous versions of the Client Utility do not support the new driver, therefore you must uninstall the previous version and install the new version before you configure the new driver.

2) To start the Client Utility, perform the following:

Click on the Client Utility icon located on the System Tray of your Windows Task bar.
or

From the Windows Tasteable, click **Start**, then select **Programs-->RoamAbout-->Client Utility**.

3) Click on the **Help** menu and select **Version Info** from the drop-down list.

Driver Configuration

To configure the driver parameters, perform the following steps:

1) Open the **Control Panel**.

2) Double-click on the **Wireless Network** icon.

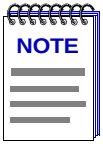
Refer to the online help and the *RoamAbout Wireless 802.11 Networking Guide* for more information.

Chapter 5

Windows NT Driver

This chapter provides setup and installation information for the Windows NT NDIS 4 miniport driver Version 6.25 to support the RoamAbout DS PC card in an 802.11 wireless LAN. This driver works with various versions of the RoamAbout PC Card. However, earlier versions of the RoamAbout PC Card do not support WEP Encryption and cannot be upgraded to support encryption. The **Determining if your Card Supports Encryption** provides the instructions to determine whether or not your PC Card supports encryption.

To install the RoamAbout driver, you should have a working knowledge of Microsoft Windows operations and a working knowledge of installing network adapter cards and network client software.



Depending on your system configuration, your installation procedure may be slightly different from the procedures listed.

In This Chapter

Section	Page
System Requirements	5-2
Determining if your Card Supports Encryption	5-2
Windows NT System Configuration for New Driver Installation	5-2
New Installations	5-3
Reinstallation or Upgrade	5-5

Section	Page
Installation Verification	5-6
Driver Configuration	5-7

System Requirements

- Operating System: Microsoft Windows NT, with Service Pack 4 or later
- Disk Space: 170 KB
- 16 MB RAM

Determining if your Card Supports Encryption

To determine if the RoamAbout PC Card supports encryption, perform the following:

- Check for a sticker on the back of the PC Card that states support for 40-bit or 128-bit encryption.

  or

- Run the Client Utility. Click on the **Help** menu and select **Version Info** from the drop-down list. Check the Card field for WEP encryption allowed. If it does not list WEP encryption allowed, your card does not support this feature.

Windows NT System Configuration for New Driver Installation

If this is the first time you are installing the driver, perform the following steps before you install the RoamAbout driver:

1) Enable the PC Card controller, perform the following steps:

a) In the **Control Panel**, double-click on the **PC Card** icon to open the PC Card Properties window.

b) Double-click one of the PC Card sockets to enable it.

c) Click **OK** and close the PC Card Properties window.

2) Run diagnostics to avoid a device conflict, perform the following steps:

   When you install the driver, Windows NT prompts you to confirm or modify the factory-set device values for the PC Card I/O port (0400-043F) and IRQ (10). To make sure that you use available I/O port and IRQ values, perform the following steps:

   a) Click **Start** and select **Programs-->Administrative Tools-->Windows NT Diagnostics**.

   b) Click on the **Resources** tab. If IRQ 10 is shown as being used, write down an IRQ not listed in the window, such as 9 or 11.

      Click the I/O Port button. If 0400-043F is shown as being used, write down an unlisted I/O port value in the range 0300 to FFC0 with increments of 40. Examples: 0300, 0340, 0380, 03C0; 0400, 0440, 0480, 04C0; . . . FF00, FF40, FF80, FFC0. Typically, addresses before 0400 are used even if not shown in the window.

3) Enable network support:

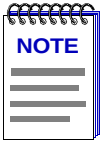
   a) In the Control Panel, double-click on the **Network** icon.

   b) Click **Yes** if prompted to install the network protocols. Otherwise, select the Adapters tab then click Add.

   c) Go to Step 5 in New Installations.

New Installations

The computer must be configured with the same network protocols used by the other network devices. The commonly used protocols include TCP/IP, IPX/SPX, and NetBEUI. Refer to the documentation provided by the network protocol software or operating system.



You must configure your NT system as described in the Windows NT Configuration for New Driver Installation before you install the driver.

To install the RoamAbout Windows NT driver, perform the following steps:

1) Insert the RoamAbout PC Card.

2) Open the Control Panel and double-click on the **Network** icon.

3) Select the **Adapters** tab and click on the **Add** button.

4) Click on **Have Disk**.

   Enter the path of the driver. For example, the **\Drivers\WinNT** directory on the CD-ROM. Or, if you downloaded the driver from the RoamAbout Wireless web site, in the directory you specified during the extraction of the downloaded file.

   The RoamAbout 802.11 PC Card is highlighted.

5) Click **OK**.

6) If you are prompted for operating system files, insert the operating system media.

7) Enter the IRQ and I/O port values if prompted.

   During the driver installation, the system displays the RoamAbout properties Add/Edit Configuration Profile window.

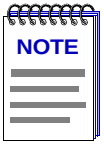
8) Select the profile and click on the **Edit Profile** button. Enter your configuration parameters, such as the Wireless Network Name.

   If you are joining a wireless network with Access Points, enter values specific to the network such as the wireless network name. Press <**F1**> while in a properties window for information, or refer to the *RoamAbout 802.11 Wireless Networking Guide*.

9) Click **OK** to close the window when done.

10) You may need to configure the protocols at this time.

11) Reboot your computer.



If you encounter problems during the installation procedure you must uninstall the RoamAbout Driver before reinstallation. Go to the Reinstallation or Upgrade section of this document.

Reinstallation or Upgrade

If this is an reinstallation or an upgrade to a previous Windows NT driver, perform the following steps:

1) Shutdown your computer.
2) Remove the RoamAbout PC Card.
3) Reboot your system.
4) From the Task bar on the Windows desktop, click **Start** then select **Settings--> Control Panel**.
5) In the Control Panel window, double-click on the **Network** icon.
6) In the **Network Properties** window, select the **Adapters** tab.
7) Highlight **RoamAbout 802.11 DS** and click on the **Remove** button.
8) Click **Yes** to continue.
9) Exit out of the Control Panel.
10) Reboot your system.
11) Insert the RoamAbout PC Card.
12) Double-click on the **Network** icon.
13) Select the **Adapters** tab and click on the **Add** button.
14) Click on **Have Disk**.
15) Enter the path of the driver. For example, the **\Drivers\WinNT** directory on the CD-ROM. Or, if you downloaded the driver from the RoamAbout Wireless web site, in the directory you specified during the extraction of the downloaded file.

    The RoamAbout 802.11 PC Card is highlighted.
16) Click **OK**.
17) If you are prompted for operating system files, insert the operating system media.
18) Enter the IRQ and I/O port values if prompted.
19) During the driver installation, the system displays the RoamAbout properties Add/Edit Configuration Profile window.

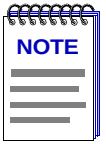
20) Select the profile and edit the profile with your network configuration parameters, such as the Wireless Network Name.

If you are joining a wireless network with Access Points, enter values specific to the network such as the wireless network name. Press <**F1**> while in a properties window for information, or refer to the *RoamAbout 802.11 Wireless Networking Guide*.

21) Close the window when done.

22) You may need to configure the protocols at this time.

23) Reboot your computer.

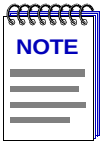


If you encounter problems during the installation procedure you must uninstall the RoamAbout Driver before reinstallation.

Installation Verification

To verify the RoamAbout PC Card Driver installation, perform the following steps:

1) Install the RoamAbout Client Utility (see **Appendix A**)..



Previous versions of the Client Utility do not support the new driver, therefore you must uninstall the previous version and install the new version before you configure the new driver.

2) Start the Client Utility, perform the following:

Click on the Client Utility icon located on the System Tray of your Windows Tasteable.

or

From the Windows Tasteable, click **Start**, then select **Programs-->RoamAbout-->Client Utility**.

3) Click on the **Help** menu and select **Version Info** from the drop-down list.

Driver Configuration

To configure the driver parameters, perform the following steps:

1) Open the **Control Panel**.
2) Double-click on the **Wireless Network** icon.
3) In the Network Properties window, select the **Adapters** tab.
4) Double-click the RoamAbout Adapter line.

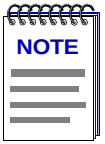
Refer to the online help and the *RoamAbout Wireless 802.11 Networking Guide* for more information.

Chapter 6

Windows CE Driver

This chapter provides setup and installation information for the RoamAbout 802.11 PC Card Driver for Microsoft Windows CE.

To install the RoamAbout driver, you should have a working knowledge of Microsoft Windows CE operations and a working knowledge of installing network adapter cards and network client software.



Windows CE Limitations: *For users familiar with Windows Operating Systems, please be aware that Windows CE does not contain all the communications capabilities that you might expect. For example, two Windows CE devices cannot communicate with each other, but can communicate with other Windows based systems. Consult the Windows CE documentation for more information.*

In This Chapter

Section	Page
System Requirements	6-2
Pre-installation Requirements	6-2
Installation	6-3
Driver Configuration	6-4

System Requirements

- Operating System: Windows CE 2.11
- Disk Space: 170 KB
- 16 MB RAM
- Certified Handhelds: Windows CE V2.11:
    - Compaq Areo
    - HP Jornada 680
    - HP Jornada 820
    - NEC Mobile Pro 770
    - Sharp Tripad
    - Sharp Mobilon Pro PV-5000

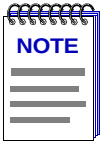
Pre-installation Requirements

To use the RoamAbout 802.11 DS PC Card with your device using the current driver, your handheld device must match the following requirements.

- Ensure that Microsoft Windows CE Services, ActiveSync, is installed on your operating system to download the files to your Windows CE device. For more information about the Windows CE Services refer to the Microsoft Handheld PC Companion booklet and your handheld device user documentation.

If you do not have the Windows CE services on your handheld, you can download it from:

http://www.microsoft.com/TechNet/WCE/tools/actsync.asp



At the time of this release the Microsoft URL was accurate.

- Determine that your Windows CE device is supported, perform the following:

  1) Select **Start-->Settings-->Contro**l Panel from the Windows Task bar.

  2) In the Control Panel, double-click on the **System** icon.

  3) Click on the Device tab to view the processor type. Verify that the processor type is one of the following:

  — MIPS

  — SH3

  — SH4

  — ARM,

  — X86

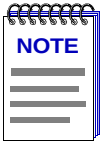
  4) Click on the **System** tab to view the Windows CE version. Verify that the Core System version is 2.11.

Installation

The handheld PC (H/PC) Windows CE devices are used in combination with another computer running Windows CE Services, ActiveSync, to transfer data between the desktop computer and the HPC device.

To install the RoamAbout driver on your handheld device, perform the following steps:

1) Copy the WinCE driver directory to the computer running the Windows CE services.



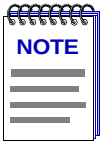
Browse to the CD-ROM directory \Drivers\WinCE. Or, if you downloaded the driver from the RoamAbout Wireless web site, in the directory you specified during the extraction of the downloaded file.

2) Connect the serial cable or docking device of your handheld device to the computer that you are using to install the software.

3) Run the RoamAbout executable file on the computer that is running the Windows CE Services to allow you to transfer the files to your handheld computer:

```
Rmabt404CE211.exe
```

The Windows CE Services automatically transfers the files to your H/PC device.



If you experience problems copying the RoamAbout driver files to your Windows CE device, refer to the Microsoft Handheld PC Companion booklet and the user documentation of your H/PC device for more information about installing and/or troubleshooting the Windows CE Services.

Driver Configuration

To view or modify the RoamAbout configuration parameters, open the Control Panel on your Windows CE device and double-click the **RoamAbout Settings** icon. Configuration information is described in the online help and the *RoamAbout 802.11 Wireless Networking Guide*. The RoamAbout Wireless documentation is also available from the RoamAbout Wireless web site:

http://www.enterasys.com/wireless

Chapter 7

Linux Driver

This chapter provides setup and installation information for the RoamAbout 802.11 PC Card Driver on a Linux system. You should have a working knowledge of Linux operations and a working knowledge of installing network adapter cards and network client software.

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Operating System Support

The following Linux operating systems are supported:

- Red Hat V6.1 and V6.2
- Caldera V2.3 and V2.4
- SuSE V6.3 and V6.4

The binaries for the supported operating systems are loaded under the default workstation installation kernels. If you need a driver for an operating system not listed as supported, the source code (and binary hardware interface code as part of the driver) is provided to build the device driver on Version 2.2 kernel-based Linux systems. This procedure is described in the **How to Manually Configure the Driver Parameters on page 7-10** of this document.

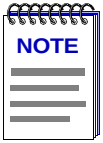
Distribution Kit Contents

Location/Filename after Installation	Description
/usr/local/Enterasys/RoamAbout/RoamAbout_Linux.html	This file contains the RoamAbout 802.11 DS PC Card Linux Driver setup and installation information.
/usr/local/Enterasys/RoamAbout/RedHat6_1.o, RedHat6_2.o, Caldera2_3.o, Caldera2_4.o, SuSE6_3.o, SuSE6_4.o	The binary device driver modules for the 802.11 RoamAbout DS PCMCIA card.
/etc/roamabout_cs.patch /etc/roamabout_cs.SuSE64.patch	The file that creates an entry for the RoamAbout card in /etc/pcmcia/config.
/usr/local/Enterasys/RoamAbout/RoamAboutInstall.sh	Unpacks the binary rpm distribution.
/usr/local/Enterasys/RoamAbout/RoamAboutUnInstall.sh	Restores config files from their originally saved values and deletes kit files.
/usr/local/Enterasys/RoamAbout/RoamAbout-1-3.i386.rpm	The binary RPM kit file.
/usr/local/Enterasys/RoamAbout/RoamAbout-1-3-src.tar	The source files and HCF binary library required to build a binary driver module. Use these files to build a driver module on systems that Enterasys does not ship a binary, such as Debian.

Installation Overview

The following is an overview of the RoamAbout PC Card Linux driver installation sequence. In the text that follows xxx stands for the numerical designation of the release number, such as 101, 102, 200, etc.

1) Copy the Linux driver directory to the computer.



Browse to the CD-ROM directory \Drivers\Linux. Or, if you downloaded the driver from the RoamAbout Wireless web site, in the directory you specified during the extraction of the downloaded file.

2) Ensure that PCMCIA services are configured on your computer. See **How to Configure PCMCIA Services on your Computer on page 7-3**.

3) Mount and extract the binary distribution file. See **How to Mount and Extract the RoamAbout 802.11 DS Binary Distribution on page 7-4**.

4) Setup the RoamAbout configuration parameters. See **How to Configure the RoamAbout DS PC Card on page 7-5**.

5) Restart the computer to verify that the PCMCIA services starts successfully and the network driver is loaded.

How to Configure PCMCIA Services on your Computer

If you had a PCMCIA based device attached to your computer when you installed the operating system, the PCMCIA services are probably already configured. To verify that the Linux PCMCIA services on your computer are installed and configured, perform the following steps:

Ensure that PCMCIA services are configured for your computer.

1) If you are unsure of the status of the PCMCIA services on your computer, perform the following steps:

   a) Enter **rpm -qa | grep pcmcia** at the command line.

      If pcmcia (for example, pcmcia-cs-3.1.8) is not listed, install the pcmcia package from the Linux Kernel Installation CD-ROM.

      If pcmcia is listed go proceed to Step b.

b) Enter **lsmod** at the command line.

Ensure that pcmcia_core and i82365 appear in the list. If they are both listed, go to Step 2.

If both of them are not in the list, then the pcmcia modules are not loading. To load these modules proceed to Step c.

c) If you are running on Red Hat or Caldera system, edit the /etc/sysconfig/pcmcia file with the following:

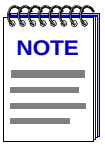
Set the first line to **pcmcia=yes**

Set the second line to **PCIC=i82365**

d) Save the changes.

2) Go to **How to Mount and Extract the RoamAbout 802.11 DS Binary Distribution**.

How to Mount and Extract the RoamAbout 802.11 DS Binary Distribution



This section assumes that you have root privileges.

To mount and extract the RoamAbout 802.11 DS binary distribution, perform the following steps:

1) Change the directory/usr/local to where rmbt-xxx.gz is located.

2) Mount the CD-ROM as a DOS file system under Linux:

```
# mount -t msdos/dev/fd0 /mnt
```

3) Enter the following command to copy the distribution file to the Linux computer:

```
# cp /mnt/rmbt-xxx.gz /usr/local/rmbt-xxx.gz
```

4) Enter the following command to extract the file:

```
# tar xvfz rmbt-xxx.gz
```

The following files are extracted under /usr/local in the Enterasys directory:

```
./Enterasys/RoamAbout/RoamAbout-1-3.i386.rpm
./Enterasys/RoamAbout/RoamAbout-1-3-src.tar
./Enterasys/RoamAbout/RoamAbout_Linux.html
./Enterasys/RoamAbout/RoamAboutInstall.sh
./Enterasys/RoamAbout/RoamAboutUninstall.sh
```

5) Change the directory to `/usr/local/Enterasys/RoamAbout`.

6) Enter the following command to install the binary distribution:

```
#sh RoamAboutInstall.sh
```

This command executes rpm -ivh RoamAbout-1-3.i386.rpm and places the collection of loadable modules containing the roamabout_cs.o binary driver, supporting different kernel versions, in /usr/local/Enterasys/RoamAbout.

How to Configure the RoamAbout DS PC Card

This section describes how to configure the Configure the RoamAbout 802.11 DS PC Card. Refer to the RoamAbout DS PC Card Parameter Information and the PCMCIA documentation for information.

1) Execute the configuration script user string included with the RoamAbout 802.11 DS PC package by entering the following command:

```
# /usr/local/bin/RoamAboutConfig.sh
```

This script specifies parameters required by the driver to operate the card and to communicate with an Access Point or another computer (for example, ad-hoc or peer-to-peer networking). The script deals with only the basic set of possible parameters that might be used which are crucial to the operation of the RoamAbout client card. The script does not prompt or configure such parameters as ‘power management’ and ‘ap density’. See **RoamAbout DS PC Card Parameter Information on page 7-13** for more information about the complete set of configuration parameters. Please be aware that parameter specifications for network name and station name are limited to upper and lower case letters, spaces, underscores, and numbers.

As part of the script operation, a patch places an entry and a "binding" in the file. This allows the roamabout_cs.o to load when the PCMCIA RoamAbout client card is inserted in one of the computer's PCMCIA slots. The patching operation includes a change to the /etc/pcmcia/config.opts which allows one of the IRQ lines to be used for the client card. Each computer varies in the way the IRQ lines are distributed and protected.

The patch operation choice may take the interrupt away from a serial port or a parallel port. Some juggling may be required when it comes to allocating interrupts. If the PCMCIA card driver does not load, see **Troubleshooting on page 7-18** for information to resolve this problem.

The script also makes the necessary changes in /etc/pcmcia/config.opts to load the driver module and configure it with operational parameters. The configuration interface has a size limit of 195 characters long for all configuration parameters. This includes parameter names, values, spaces, quotes, equal signs, and other characters that appear in the 'opts' string specification.

An example of a configuration that does not exceed the character limit:

```
Network name: RoamAbout in Raleigh
Station name: My Station
Enable encryption: Y
Key_1: 12345
Key_2: abcde
Key_3: John1
Key_4: Vicky
Transmit_key_id: 2
```

An example of a configuration that exceeds the character limit using the 128- bit WEP IEEE 802.11 card:

```
Network name: RoamAboutWireless in Paducah_Kentucky
Station name: Best Station on the Network
Enable encryption: Y
Key_1: 1234567890123
Key_2: abcdefghijklm
Key_3: EnterasysSyst
Key_4: Wireless-LANs
Transmit_key_id: 2
```

If you need to manually edit /etc/pcmcia/config.opts or understand in detail the parameter specification limits, review the RoamAbout DS PC Card Parameter Information. The RoamAbout card configuration also allows DHCP configuration. The DHCP configuration for the card is offered as a convenience to get you up and running quickly. It is not intended as a substitute for a thorough Linux networking configuration approach.

2) Reboot the computer to restart the PCMCIA services and system services by entering one of the following commands:

```
# shutdown now
```

or

```
# halt
```

When the computer is shutdown or halted, insert the RoamAbout wireless LAN client card in one of the PCMCIA slots. Then boot the computer. If you chose automatic IP address assignment via DHCP during the execution of /usr/local/bin/RoamAboutConfig.sh, the network card should be indicating it is working upon reaching the login prompt by one solidly lit green LED and one rapidly blinking LED.

3) Configure the network interface for the card if you are not using DHCP.

a) After you log back into the system, examine the state of the networking adapters used, by the system by entering the following command:

```
# ifconfig -a
```

b) From the information shown, determine the name of the RoamAbout device such as eth0 or eth1 and configure an IP address and netmask for the adapter, by entering the following command:

```
# ifconfig eth1 10.100.100.133 netmask
255.255.255.0
```

c) Enter **ifconfig -a** again to determine that the RoamAbout device is ready to communicate.

d) At this point you can 'ping' a target on the same network and get a positive response. For example:

```
# Test with ping (ex: ping 10.100.100.110)
```

You are now ready to use wireless networking. Typically you would want to use the DHCP server to supply an IP address through a RoamAbout Access Point to avoid the manual configuration steps.

Per-Distribution Configuration Notes

The following information is an accumulation of particular information pertinent to some distributions supported by Enterasys Networks, Inc.

Red Hat 6.2

The default workstation installation using Red Hat 6.2 requires the installation of certain networking kits after the main installation has concluded. This represents a change from Red Hat 6.1, which installed these components on a default basis. The kits required to be installed are: inetd-0.16-4, containing the networking services daemon, and pump-0.7.8-1, containing the dhcp client. These RPMs can be found on the Red Hat 6.2 CD-ROM #1 in the directory /RedHat/RPMS.

SuSE 6.4

To get SuSE 6.4 properly configured for DHCP operation the following binary RPM needs to be in place, dhcpcd-1.3.18p3-13, which can be verified as installed by the command, 'rpm -qa | grep dhcpcd-1.3.18p3-13'. This RPM contains the DHCP client, /sbin/dhcpcd.

In addition, the following parameters need to be specified:

```
In file: /etc/rc.config

NETCONFIG="_0"

NETDEV_0="eth0"

IFCONFIG_0="dhcpclient"

DHCLIENT="yes"
```

In file: `/etc/pcmcia/network.opts`

```
DHCP="n"
```

This above parameter disconnects the PCMCIA DHCP operation and allows the standard DHCP run level script, /etc/rc.d/init.d/dhclient, to perform the operation of getting the DHCP client started. This is done to allow proper timing between the loading of the RoamAbout device driver and DHCP client service request

How to Change Kernels and Work with Distribution without Binary Support

If you change kernels and library modules sets you need to build a new driver binary. Enterasys only supports the default installation kernels in the supported distributions. You cannot copy over or reload the module from the new library module directory. The versions and external symbols will not match and cause the load to fail. Versions are checked during the load to match the running kernel. If you are building from source, you must create a kernel development environment for your Linux computer.

The following procedure assumes that the kernel source tree and the PCMCIA segment of the kernel source tree are installed for your particular distribution.

1) Move the driver source tar file, RoamAbout-1-3-src.tar to /usr/src/linux/pcmcia-XXX (XXX to denote the suffix value of your particular PCMCIA distribution)

a) Change directories to /usr/src/linux/pcmcia-XXX.

b) Enter the following command to populate the PCMCIA area with the required files:

```
tar xvf RoamAbout-1-3-src.tar
```

c) Enter the following command:

```
make config
```

Answer the questions presented to create the proper configuration to build the PCMCIA package, or parts of the package.

d) Enter the following command to build the loadable device driver file, roamabout_cs.o, which resides in the ’clients’ directory under the pcmcia directory:

```
make -f roamabout_cs.mk all
```

2) Move roamabout_cs.o to the library modules directory /lib/modules/‘uname -r‘/pcmcia.

3) Enter the following command to perform the card configuration (skip this procedure if you want to perform the configuration manually):

```
/usr/local/bin/RoamAboutConfig.sh
```

How to Manually Configure the Driver Parameters

There are limits to the size and numbers of parameters that you can configure in this release. This means that you may not be able to configure all of the parameters at once. See Example 1, Example 2, and Example 3.

Example 1

The "opts" string in etc/pcmcia/config.opts was tested at the maximum of 195 characters. Character counts include the equal sign (=), the value of the parameter including quotes ("", ‘’), escape signs (\), and spaces contained in and surrounding the parameter.

For example, operating a client card in a network with an Access Point using the following specified parameters; network_name, station_name, enable_encryption=y, key_1=12345, and transmit_key_id=1. The specification takes up to 81 characters on the "opts" string. This leaves 114 characters to divide between the network_name, the station_name and any other parameters. Since the network_name has a limit of 32 characters and the station_name has a limit of 20 characters, for a total of 52 characters, there would be leftover space.

A syntax example for the entire line without the network name and station name filled in (Remember do not count the characters up to and including the open quote after opt and the close quote after transmit_key_id=1):

module "roamabout_cs" opts "network_name=
station_name= enable_encryption=Y key_1=\"12345\"
transmit_key_id=1"

Example 2

Use the same parameters specified in Example 1 with the addition of 4 keys at the 40-bit, 5 ascii character specification. The "opt’ string in this example is 130 characters without the network_name or the station_name specified. This leaves a total of 65 characters to divide between the network_name, station_name, and any other parameters desired.

Syntax example:

module "roamabout_cs" opts "network_name=
station_name= enable_encryption=Y key_1=\"12345\"
key_2=\"12345\" key_3=\"12345\" key_4=\"12345\"
transmit_key_id=1"

A syntax example of the same string with a network name and a station name filled in for reference:

module "roamabout_cs" opts "network_name=RoamAbout1
station_name=Cynthia enable_encryption=Y key_1=\"12345\"
key_2=\"12345\" key_3=\"12345\" key_4=\"12345\"
transmit_key_id=1"

Example 3

Use the same parameters specified in Example 2 with the following additional parameters increased; key_1=1234567890123, key_2=1234567890123, and transmit_key_id=1. The "opt' string in this example is 146 characters, leaving 49 characters to use for the network_name and the station_name.

Syntax example:

module "roamabout_cs" opts "network_name=
station_name= enable_encryption=Y key_1=\"1234567890123\"
key_2=\"1234567890123\" key_3=\"12345\" key_4=\"12345\"
transmit_key_id=1"

To manually configure the driver, perform the following steps:

1) If you need background information read the Linux PCMCIA-HOWTO by David Hinds. You can read the HOWTO section by entering the following:

```
# more PCMCIA-HOWTO
```

2) Add the following lines to the /etc/pcmcia/config file:

```
device "roamabout_cs"
class "network' module "roamabout_cs"
```

and the line

```
card "Cabletron RoamAbout 802.11"
      version "Cabletron","Roamabout 802.11 DS"
      bind "roamabout_cs"
```

3) Edit the /etc/pcmcia/config.opts file using the following examples.

Examples:

a) To attach to an Access Point with the network name of "My Network", you enter the following in the config.opts file:

```
module "roamabout_cs" opts "network_name=My\
Network"
```

Notice that the space character needs to be escaped with a back slash.

b) For the Ad-Hoc (peer-to-peer) network without an access point, enter the following in the config.opts file:

```
module "roamabout_cs" opts "port_type=3"
```

c) To attach to an Access Point with the network name of "Ocean", and export the station name as "Wander", enter the following in the config.opts file:

```
module "roamabout_cs" opts "network_name=Ocean
station_name=Wander"
```

4) Reboot your computer.

RoamAbout DS PC Card Parameter Information

NAME

roamabout_cs - RoamAbout 802.11 PC Card device driver

SYNOPSIS

insmod roamabout_cs.o [irq_mask=n] [irq_list=i,j,...]

[pc_debug=n] [debug_flags=n] [network_name=s]

[port_type=n] [channel=n] [ap_density=n] [transmit_rate=n]

[medium_reservation=n] [card_power_management=s]

[receive_all_multicasts=s] [maximum_sleep_duration=n]

[mac_address=n,n,n,n,n,n] [station_name=s] [enable_encryption=s] [key_1=s]

[key_2=s] [key_3=s] [key_4=s] [transmit_key_id=n]

DESCRIPTION

roamabout_cs is the low-level Card Services driver for the RoamAbout 802.11 PC Card adapters. When this driver is attached to a card, it allocates the next available Ethernet device (eth0..eth#). This device name will be passed on to cardmgr(8) for the card configuration, and reported in the kernel log file with the I/O base address and MAC address used by the card.

FEATURES

- Hot plug/unplug

- Access Point and Ad-Hoc (peer-to-peer) communication

- Card power management

- Interference Robustness

- 3.3 /5 volt cards

- Driver utility interface (UIL)

- 11 MHz card support

- Wired Equivalent Privacy (WEP)

PARAMETERS

irq_mask=n

Specifies a mask of valid interrupts that may be allocated by this driver. If

irq_list is also specified, the values in irq_list are used instead.

Default: 0xdeb8 (IRQ 3,4,5,7,9,10,11,12,14,15)

irq_list=i,j,...

Specifies the set of interrupts (up to 4) that may be allocated by this driver. This overrides the values set in the irq_mask parameter.

pc_debug=n

Selects the PCMCIA debugging level. This parameter is only available if the module is compiled with debugging enabled. A non-zero value enables debugging.

debug_flags=n

Selects the driver debugging level. This parameter is only available if the module is compiled with debugging enabled. Refer to the file debug.h in the source directory for information on the flag values.

network_name=s

Sets the card network name to the specified string value. This parameter accepts a maximum of 32 characters. Whitespace in the network name will need to be escaped with a back slash (for example, network_name=My\ Network).

Default: My_Network

port_type=n

Selects the type of network operation.

1 - Normal Operation (BSS)

3 - Ad-Hoc Demo Mode

Default: 1

channel=n

Sets the channel the Ad-Hoc network will use. This value has no effect when the adapter is used with an Access Point (Normal Operation BSS network) since the Access Point automatically determines the channel. Valid values are 0 to 14. However the channels allowed in your region are subject to local regulations and are limited at manufacturing time of the RoamAbout PC Card. When the provided value is not allowed, the value remains unchanged.

0 - Use default channel

Default: 0

ap_density=n

Sets the density of the Access Points in the network. This value influences the Modem Thresholds.

(EnergyDetectThreshold, CarrierDetectThreshold and DeferThreshold) and the Roaming Thresholds (CellSearchThreshold and OutOfRangeThreshold).

1 - Low

2 - Medium

3 - High

Default: 1

transmit_rate=n

Sets the data rate to be used by the transmitter.

1 - Fixed Low

2 - Fixed Standard

3 - Auto Rate Select (High)

4 - Fixed Medium

5 - Fixed High

6 - Auto Rate Select (Standard)

7 - Auto Rate Select (Medium)

Default: 3

medium_reservation=n

Sets the number of octets in a message or fragment above which a RTS/CTS handshake is performed.

Valid values are 0 to 2347.

500 - Hidden Stations

2347 - No RTS/CTS

Default: 2347

card_power_management=s

Enable or disable card Power Management.

N - Disable

Y - Enable

Default: N

receive_all_multicasts=s

Enable or disable receiving of all multicast packets when Card Power Management is enabled. When enabled, the station will wake up frequently to receive the multicast frames. This causes less optimal power savings.

N - Disable

Y - Enable

Default: Y

maximum_sleep_duration=n

Set the maximum Power Management sleep duration in milliseconds. Valid values are 0 to 65535 milliseconds.

Default: 100

mac_address=n,n,n,n,n,n

Sets the adapter hardware Ethernet address (MAC address) to the value specified. Note that this is to be used to specify a Local MAC address. Do not specify this parameter if the card's universal address is to be used. Valid values are six hexadecimal digit-pairs (prefixed with 0x). Default: <factory assigned address>

station_name=s

Sets the station name to the specified string value. This parameter is used for diagnostic purposes, as a user-friendly identification of this system. This parameter accepts a maximum of 20 characters.

Default: My_Station

enable_encryption=s

Enables or disables encryption of Data, provided the card supports Data Encryption (i.e. 11 Mb cards supporting 40 bit or the advanced 128 bit encryption version).

N - Disable

Y - Enable

Default: N

key_1=encryption_string_1

Specifies one of 4 possible keys for the Data encryption. One of these keys, identified by Transmit_Key_ID, is used for the enciphering of Data that is

transmitted by this station. All keys specified can be used for the deciphering of Data that is received. The key value can be an ASCII character string or a hexadecimal value. The length of the key value can be 5 characters or 10 hexadecimal digits for the standard encryption (40 bit or 128 bit card), or 13 characters or 26 hexadecimal digits for the encryption with extended keys (128 bit encryption card only). The keys defined in the station must match the keys defined in the access points; both on value and number (1 through 4). In 2.0 series Linux kernel modules, values that begin with a number are considered integers. In this case a hexadecimal value string or a character string starting with a number, will need to be surrounded by escaped back slashes (for example, key_1=\"0x1122334455\" key_2=\"12xyz\"). 5 or 13, printable character string, or 10 or 26 hex digits if preceded by "0x".

If this parameter is omitted, the default of the MAC is used (= 0-length).

key_2= encryption_string_2

Same as key_1.

key_3= encryption_string_3

Same as key_1.

key_4= encryption_string_4

Same as key_1.

transmit_key_id=n

Designates which of the keys is to be used for the enciphering of data that is transmitted by this station.

Integer in the range 1..4.

Default: 1

SECURITY

On a multi-user system only the system administrator needs access to the WEP encryption keys. In this case, consider to remove the read permission for normal users of the PCMCIA config.opts file and the system log file.

Troubleshooting

This section provides basic troubleshooting information.

Beeps

When the RoamAbout 802.11 DS PC Card is inserted, the card manager will emit beeps in different tones to indicate success or failure of particular configuration steps.

Two high beeps

The card was identified and configured successfully.

One high beep followed by a low beep

The card was identified, but could not be configured. Examine the system log (dmesg) for PCMCIA error or warning messages.

One low beep

The card could not be identified.

- Execute "cardctl ident" to display the adapter PnP information. Verify the PnP information matches an entry in the PCMCIA configuration file (/etc/pcmcia/config).
- Examine the system log (dmesg) for PCMCIA error or warning messages.

LEDs

The RoamAbout 802.11 DS PC Card has two LEDs that indicate the state of the adapter and network.

Power LED (toward the middle of the adapter)

This LED indicates that the power is on, and that the card is functional. In normal operation mode with Card Power Management disabled, it is on. If Card Power Management is enabled, the LED blinks rapidly (several times per second). If the LED is off, there is a problem with the configuration.

- The most common problem is that IRQs are not properly chosen in /etc/pcmcia/ config.opts. Review the settings in the /etc/pcmcia/config.opts file.
- Execute 'tail -f /var/log/messages'. Then, remove the card and reinsert the card. You may receive messages indicating the PCMCIA subsystems attempt to configure and manage the card. These messages may provide an answer to the problem.

Transmit/Receive LED (closer to the edge of the adapter)

This LED flashes when it transmits or receives packets.

Both LEDs blink at the same time every 10 seconds

The adapter was unable to make contact with the named wireless network. Verify the network_name, in the config.opts file matches the network name of the access point.

LEDs indicate normal operation, but no traffic

The Power LED is on or blinking rapidly, and the Transmit/Receive LED is flashing, but there's no traffic.

- If the network is operating in normal mode (for example, port_type = 0 or not specified), and a network_name has been specified, verify that the workstation network parameters (ifconfig, route, etc.) are correct for the wireless network.
- If the network is operating in Ad-Hoc (peer-to-peer) mode (for example, port_type = 3), the adapter needs another workstation/adapter to communicate with. Verify that the network parameters on both of the workstations (ifconfig, route, etc.) are correct.

Refer to the**RoamAbout DS PC Card Parameter Information** section for additional configuration, feature and support information.

Chapter 8

MS-DOS and Workgroup for Windows Driver

To install the RoamAbout driver on an MS-DOS or Microsoft Windows for Workgroups (usually referred to as Windows 3.1) system, you should have a working knowledge of MS-DOS operations and a working knowledge of installing network adapter cards and network client software.

For complete setup and installation information, refer to the *RoamAbout 802.11 DS PC Card MS-DOS and Windows 3.1 Installation Guide* located on the RoamAbout 802.11 PC Card Drivers and Utilities CD-ROM. Or, download the document from the RoamAbout Wireless web site.

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Driver Types

There are two RoamAbout drivers available for your MS-DOS or Windows 3.x system:

- RoamAbout DOS ODI driver (WVLAN43.COM)
- RoamAbout packet driver (WVLAN42.COM)

The RoamAbout DOS ODI driver is typically used with the Novell NetWare client software.

To install these network drivers, you also need a program called the RoamAbout PC Card access driver (WVLANCAD). The WVLANCAD software is included with the RoamAbout driver software. The WVLANCAD driver enables you to access the PC Card via any PC Card slot that is controlled by an Intel 82365 PCIC or computers that support Card and Socket Services.

Installation Overview

The following is an overview of the RoamAbout PC Card driver installation. Use MS-DOS to install the RoamAbout driver on a Windows 3.x system.

1) Copy the DOS directory to your computer
2) Setup the WVLANCAD program.
3) Install the network client software for your network operating system.
4) Setup the RoamAbout configuration parameters.
5) Restart the computer to verify that WVLANCAD executes successfully and the network driver is loaded.

To setup the various configuration parameters, you may need to edit a number of system files. You can use any MS-DOS line editor, such as the EDIT command, to edit these files. For example:

```
c:\ edit config.sys
```

Copy the RoamAbout Software

The RoamAbout PC Card driver includes a small batch file (CPY2HDSK.BAT) that copies the RoamAbout software to the computer.

To copy the RoamAbout software, perform the following steps:

1) To install the software on a computer that does not have a CD-ROM, or if you downloaded the software from the RoamAbout Wireless web site, copy the files to a floppy diskette.

2) Run the batch file CPY2HDSK.BAT with a chosen directory name. For example:

```
A:\cpy2hdsk C:\roamabt
```

Setup the WVLANCAD Program

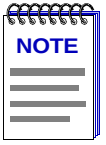
The computer needs dedicated software that identifies the presence of a PC Card in the PC Card slot. For the RoamAbout PC Card, this can be one of the following:

- Card & Socket services software as provided by various software vendors.
- The WVLANCAD Card Access Driver (WVLANCAD.SYS).

The card software must be loaded before any other program (network driver or utility) tries to access the RoamAbout PC Card.

This section describes the proper WVLANCAD installation procedure and settings for the following systems:

- Computers using Card & Socket Services
- Intel 82365 PCIC based computers



MEMORY ERRORS: *It is possible that you may run out of DOS memory when installing the new wvlancad.sys driver. The new wvlancad.sys driver uses more conventional memory than the previous version. If you run into memory problems do not install the CAD and Socket Services.*

Card & Socket Services

To ensure that WVLANCAD is always run at start-up time, perform the following:

1) Open (edit) the CONFIG.SYS system file. For example:

```
c:\ edit c:\config.sys
```

2) Add a DEVICE statement that identifies the path and filename of the WVLANCAD program. The format of the device line is as follows:

```
DEVICE = [path name]wvlancad.sys
```

Example:

```
DEVICE = c:\roamabt\wvlancad.sys
```

With Card & Socket Services, you do not need to set any parameters (Memory, IRQ, I/O Port) in the DEVICE statements. However, if you would like to override the default settings, follow the directions in **Intel 82635 PCIC on page 8-4**, using **Table 8-1 on page 8-5** to identify valid parameter values that can be included in the WVLANCAD.SYS DEVICE statement.

Intel 82635 PCIC

The RoamAbout PC Card access driver (WVLANCAD) must be started before any program (network driver or utility) can access the PC Card. To ensure that WVLANCAD always runs at start-up, edit the system file CONFIG.SYS to include a DEVICE statement that identifies the:

- Path and file name of the WVLANCAD program.
- Memory address of the RoamAbout PC Card.
- I/O port address of the RoamAbout PC Card.
- Interrupt request line number (IRQ) of the RoamAbout PC Card.

Use **Table 8-1 on page 8-5** to identify valid parameter values that can be included in the DEVICE statement.

For your card to function properly, verify that the values you select to include in the DEVICE statement are not used by another device in the computer. Consult with your LAN administrator or a computer expert to determine an available memory address, I/O port address, and IRQ value that you can use to install the WVLANCAD driver.

Alternatively, you can use the Microsoft diagnostics program (MSD.EXE). For more information about this program, refer to the MS-DOS operating system documentation.

You can use any MS-DOS line editor to edit the CONFIG.SYS file. For example:

```
c:\ edit c:\config.sys
```

The format of the device line is as follows:

```
DEVICE = [path name]wvlancad.sys /m=xxxx /b=xxxx /i=nn
```

For example, if your device line is:

```
DEVICE = c:\roamabt\wvlancad.sys /m=d100 /b=0340 /i=11
```

The WVLANCAD is programmed to use:

- Memory address d100 - d1FF
- I/O port address ‘0340’H
- IRQ 11

Table 8-1: WVLANCAD Configuration Parameter Values

Parameter	Description	Valid Values
<path>	Disk drive and directory containing WVLANCAD.SYS (do not type the brackets)	
/m=xxxx	Memory address	4-digit hexadecimal value Valid range: C000 - EF00 in increments of 100 For example: C000, C100, C200, or C300.
/b=xxxx	I/O port address	4-digit hexadecimal value Valid range: 0300 - FFC0 in increments of 40 For example: 0300, 0340, 0380, 03C0, FF00, FF40, FF80, or FFC0.
/i=nn	IRQ	1-digit or 2-digit decimal value Valid values: 3, 4, 5, 7, 9, 10, 11, 12, 14, or 15

When you edit the CONFIG.SYS file, note the following:

- Remove any other PCMCIA-related DEVICE statement from the CONFIG.SYS file. For example, you must remove any DEVICE statements for Card Services or Socket Services. Consult the documentation that came with your computer or other PCMCIA device to help you to identify these statements.
- If your computer has a memory manager program installed such as EMM386.EXE, exclude the memory address space that you assigned to the WVLANCAD program. To exclude the memory space address, add an exclude parameter to the DEVICE statement that activates the memory manager program.

  For example, if your computer uses the EMM386.EXE memory manager program, your DEVICE statement is:

  ```
  DEVICE=c:\dos\emm386.exe noems x=d100-d1ff
  ```

- If using Microsoft Windows 3.x, use an ASCII text editor such as Notepad to edit the Windows SYSTEM.INI file to protect the memory address space assigned to the WVLANCAD program. For example, add the following statement to section 386Enh.

  ```
  = [386Enh] ... EMMExclude=D100-D1FF
  ```

Install the Network Client Software

To use the RoamAbout PC Card in a network environment, you need to install network client software. If you have network client software installed, you should remove this software and run the network client installation program again.

1) Make the directory that contains the network client software the active directory.

For example, if you install the network client software from the A drive:

Make the A drive the active drive. For example: C:\A:

2) Follow the directions in the network client software documentation to start the installation.

3) When prompted to select a driver, use **Other Driver**. This option could also be referred to as **Updated** or **OEM driver**, or **driver provided by other vendor**.

4) Remove the network client software disk from the diskette drive and insert the diskette with the driver software.

5) Follow the instructions that appear on your screen.

Setup the RoamAbout Parameters

To connect your RoamAbout PC Card to a RoamAbout network system, you must configure the parameters to match the values of the network. These values should match the values set for the RoamAbout Access Points, or as agreed upon by the ad-hoc network participants.

This section describes how to set the parameters for the following RoamAbout drivers:

- RoamAbout DOS ODI Driver
- RoamAbout Packet Driver

DOS ODI Driver Configuration

When you are installing the network client software for Novell NetWare, the installation program prompts you to enter the RoamAbout parameters and save your parameter settings in the Novell network configuration file, NET.CFG.

If your network client software did not prompt you to enter the parameters or if you want to modify the RoamAbout parameter settings, you may need to edit the NET.CFG file manually as described in the **About the NET.CFG File on page 8-11**.

Table 8-2 lists the various RoamAbout parameters and their value ranges and usage.

Table 8-2: RoamAbout DOS ODI Driver Parameter Values

Parameter	Description
Wireless_Network_Name	Alphanumeric string that identifies the network to which you want to connect your computer. Valid values: Up to 32 printable characters (spaces allowed) where: • Enter the name between “double-quote marks”; otherwise, the name is converted to UPPER-CASE characters. The wireless network name is case sensitive. • To connect to a specific network, the wireless network name must match the value set in the Access Points in the network. • The value, ANY, enables your client to connect to any IEEE 802.11 network. However, if the Access Point has Secure Access enabled, you must enter the wireless network name to connect to the Access Point.

Parameter	Description
Station_Name	Alphanumeric string that identifies your computer on the network. Also used by the RoamAbout Client Utility. Valid values: Up to 32 printable characters (spaces allowed). Enter the name between “double-quote marks”; otherwise, the name is converted to UPPER-CASE characters.
PortType	Parameter that determines whether the PC Card connects to a wireless infrastructure network (with an Access Point) or an ad-hoc network (peer-to-peer network). Valid values: • 1 - Connect to a wireless infrastructure network • 3 - Connect to an ad-hoc network Refer to the *RoamAbout 802.11 Wireless Networking Guide* for information on wireless network configurations.
AP_Density	Parameter that controls the roaming sensitivity of your client (must be the same as the Access Point). Valid Values: • 1 - Low Density (default) • 2 - Medium Density • 3 - High Density
Transmit_Rate[1]	Controls the rate at which the PC Card transmits its data. Valid values: • 1 - 1 Mbit • 2 - 2 Mbit Fixed • 3 - Auto Rate, highest rate supported by card (default) • 4 - 5.5 Mbit Fixed • 5 - 11 Mbit Fixed • 6 - 2 Mbit Auto Rate • 7 - 5.5 Mbit Auto Rate See the *RoamAbout 802.11 Wireless Networking Guide* for more information.
Node_Address	To be used only when your network system requires local MAC addressing. Valid values: • None - Uses the card’s factory installed universal MAC address (default). • 12 hexadecimal digits that identify the user-defined local MAC address. The second digit of the first digit-pair must be 2, 6, A, or E.

Parameter	Description
Medium_Reservation	Enables/disables the RTS/CTS mechanism. Valid values: • 2347 (default) - Disables medium reservation. • Numeric value in the range of 0-2346 enables the RTS/CTS protocol and sets the frame length threshold from which the client should start using the RTS/CTS. Recommended value for the hidden station problem is 500. Refer to the *RoamAbout 802.11 Wireless Networking Guide* for more information.
Card_Power_Management	Enables or disables Power Management. Valid Values: • Y - Enable Power Management • N - Disable Power Management (default) When enabling Power Management you also need to set the Maximum_Sleep_Duration and Receive_All_Multicasts parameters. When you disable Power Management, these two parameters are disabled as well.
Maximum_Sleep_Duration	This parameter specifies the Listen Interval of the client's Power Management scheme, which is the maximum time the client is allowed to spend consecutively in DOZE state. Valid Values: any numerical value in the range of 1-65535 (default value is 100). In nearly all cases, you should NOT change the default value. If Card_Power_Management is disabled, this parameter is ignored.
Receive_All_Multicasts	This parameter specifies whether the client must receive all multicast frames when in Power Management mode. Valid Values: • Y - Receive all Multicasts (default) • N - Do not receive all Multicasts When this parameter is enabled, the RoamAbout client wakes up at regular intervals to receive the multicast frames. Although enabling this option may yield less optimal power savings, you are advised to leave this parameter enabled when using your computer in regular networking environments. If Card_Power_Management is disabled, this parameter is ignored.
Enable_Encryption	This parameter enables or disables Data Encryption. Valid values: • Y - Enable Encryption • N - Disable Encryption (default) For more information about this parameter, refer to the *RoamAbout 802.11 Wireless Networking Guide*.

Parameter	Description
Key1	This parameter specifies one of four possible keys for the Data encryption. All keys specified can be used for the deciphering of data that is received. Valid values: • 5 printable character string, or 10 hexadecimal digits preceded by 0x. • 13 printable character string, or 26 hexadecimal digits preceded by 0x. (Only available with a RoamAbout PC Card that supports 128-bit encryption.) If this parameter is omitted, the default is no key. The keys defined in the client must match the keys defined in the Access Points. In addition the key in position 1 must match the key in position 1 on the Access Point. The keys in positions 2, 3, and 4 must also match the keys in positions 2, 3, and 4 on the Access Point.
Key2	Same description as Key1.
Key3	Same description as Key1.
Key4	Same description as Key1.
Transmit_Key_ID	Designates which key is used for enciphering the data transmitted by this client. Valid values: 1, 2, 3, or 4.

[1] This parameter does not influence the data rate at which the client is able to receive data. For example, if the transmit rate is locked to 1 Mbit/s, the client may still receive messages that were transmitted at 2 Mbit/s.

About the NET.CFG File

The RoamAbout configuration parameters for the DOS ODI driver are stored in a network configuration file called NET.CFG. A sample of a NET.CFG file is included on the RoamAbout software diskette, and is identified as *WVLAN43.CFG*.

If you installed the Novell network client software described earlier in this chapter, this file was created automatically. Proceed with **Completing the Installation on page 8-18**, unless you want to modify the RoamAbout parameter settings.

A NET.CFG file must always include a Link Driver statement that refers to the appropriate network driver and a list of parameters and parameter values that apply to the referenced driver.

For the RoamAbout driver, the NET.CFG file appears as follows:

```
LINK DRIVER WVLAN43

; BASIC PARAMETERS
    WIRELESS_NETWORK_NAME XXXXXXXX
    STATION_NAME XXXXXXXX
;ADVANCED PARAMETERS
;    AP_DENSITY 1
;    TRANSMIT_RATE 3
;    MEDIUM_RESERVATION 2347
;    NODE ADDRESS
```

All lines that start with a semi-colon (;) are informational comments to the user. The driver ignores these lines.

Table 8-2 on page 8-7 lists the various RoamAbout parameters with their value ranges and usage.

If the installation program of your network client software did not prompt you to identify a driver or specify the RoamAbout parameters, you may need to identify the proper location of the RoamAbout DOS ODI driver and the NET.CFG file. This allows your network client software to find the correct driver.

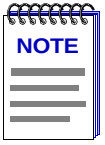
Copy the RoamAbout DOS ODI driver and the NET.CFG file to the same directory that you selected to install the network operating system software. For example, if you selected the directory, C:\NETWORK, use the following copy commands:

```
c:\
cd\roamabt\dosodi
copy wvlan43.com c:\network
copy net.cfg c:\network
```

1) Edit the NET.CFG file to add the statement:

2) `Link Driver WVLAN43`

3) Enter the RoamAbout parameter values on a new line, directly after the Link Driver statement.



When modifying NET.CFG, ensure that all RoamAbout parameter lines are indented. Use the TAB *key on your keyboard to create an indent at the beginning of each line that contains a RoamAbout parameter.*

4) When finished, save NET.CFG and restart your computer.

5) Proceed with the **Completing the Installation on page 8-18**.

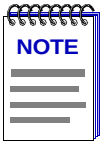
Packet Driver Configuration

When installing the RoamAbout packet driver, you need to edit a number of system files. To ensure that the packet driver is loaded at start-up, add a few command line statements to the AUTOEXEC.BAT file. These statements should include:

- A path to the directory that contains the packet driver.
- A Load Driver statement.

The RoamAbout parameters are identified in a network configuration file called PACKET.INI. The packet driver and PACKET.INI must reside in the same directory. When you used the commands as identified in the **Copy the RoamAbout Software on page 8-3**, this directory is typically:

`c:\roamabt\packet`



If PACKET.INI contains an unknown keyword, the packet driver displays an error message and loads anyway. If PACKET.INI has a configuration parameter with an invalid value, the packet driver displays an error message but does not load.

To set up the RoamAbout packet driver:

1) Edit the AUTOEXEC.BAT file of your computer to add the path and file name of the RoamAbout packet driver and the Load Driver statement:

```
cd\roamabt\packet
lh=wvlan42.com l
```

2) To set the RoamAbout parameters, edit the PACKET.INI file. The structure of the PACKET.INI file is:

```
   BASIC PARAMETERS
   WIRELESS_NETWORK_NAME XXXXXXXX
   STATION_NAME XXXXXXXX
   ADVANCED PARAMETERS
;  AP_DENSITY 1
;  TRANSMIT_RATE 3
;  MEDIUM_RESERVATION 2347
;  MAC ADDRESS
```

All lines that start with a semi-colon (;) are informational comments to the user. The driver ignores these lines.

The settings for the parameters depend on the configuration of the wireless network.

3) To set a parameter value, remove the semi-colon **(;)** preceding the parameter name and enter a value within the range as specified in **Table 8-3 on page 8-14**.

At the end of the PACKET.INI file is an additional set of generic packet driver parameters that are not directly related to RoamAbout operation.

```
;    DRIVER_CLASS 1
;    NOVELL_FLAG NO
;    PACKET_INTERRUPT 60
```

4) Consult your LAN administrator to select the appropriate values that apply in your situation from the range specified in **Table 8-4 on page 8-18**.

5) When finished, save the PACKET.INI file and restart your computer.

6) Proceed with the **Completing the Installation on page 8-18**.

Table 8-3: RoamAbout Packet Driver Parameter Values

Parameter	Description
Wireless_Network_Name	Alphanumeric string that identifies the network to which you would like to connect your client. Valid values: Up to 32 printable characters (spaces allowed) where: • Enter the name between "double-quote marks"; otherwise, the name is converted to UPPER-CASE characters. The Wireless Network Name is case sensitive. • To connect to a specific network only, the Wireless Network Name must match the value set in the RoamAbout Access Points in the network. • The value, ANY, enables your client to connect to any IEEE 802.11 network. However, if the RoamAbout Access Point has Secure Access enabled, you must enter the wireless network name to connect to the wireless network.
Station_Name	Alphanumeric string that identifies your computer on the network, also used by the RoamAbout Client Utility. Valid values: Up to 32 printable characters (spaces allowed).
Port_Type	Parameter that determines whether the PC Card connects to a wireless infrastructure network (with an Access Point) or an ad-hoc network (peer-to-peer network). Valid values: • 1 - Connect to a wireless infrastructure network • 3 - Connect to an ad-hoc network Refer to the *RoamAbout 802.11 Wireless Networking Guide* for information on wireless network configurations.
AP_Density	Parameter that controls the roaming sensitivity of your computer (must be the same as the Access Point). Valid values: • 1 - Low density (default) • 2 - Medium density • 3 - High density

Parameter	Description
Transmit_Rate[1]	Controls the data rate at which your RoamAbout PC Card transmits its data. Valid values: • 1 - 1 Mbit • 2 - 2 Mbit Fixed • 3 - Auto Rate, highest rate supported by card (default) • 4 - 5.5 Mbit Fixed • 5 - 11 Mbit Fixed • 6 - 2 Mbit Auto Rate • 7 - 5.5 Mbit Auto Rate See the *RoamAbout 802.11 Wireless Networking Guide* for more information.
MAC_Address	To be used only when your network system requires local MAC addressing. Valid values: • None - Uses the card's factory installed universal MAC address (default). • 12 hexadecimal digits that identify the user-defined local MAC address. The second digit of the first digit-pair must be 2, 6, A, or E.
Medium_ Reservation	Enables/disables the RTS/CTS mechanism. Valid values: 2347 (default) Disables medium reservation. Numeric value in the range of 0-2346 Enables the RTS/CTS mechanism, and sets the frame length threshold from which the client should start using the RTS/CTS mechanism. (Recommended value or the hidden station problem is 500.) See the *RoamAbout 802.11 Wireless Networking Guide* for more information.

Parameter	Description
Card_Power_Management	Enables or disables Power Management. Valid Values: • Y - Yes, enable Power Management • N - No, disable Power Management (default) When enabling Power Management you also need to set the Maximum_Sleep_Duration and Receive_All_Multicasts parameters. When you disable Power Management, these two parameters are disabled as well.
Maximum_Sleep_Duration	This parameter specifies the maximum time the client is allowed to spend consecutively in DOZE state. Valid Values: any numerical value in the range of 1-65535 (default is 100). In nearly all cases, you should NOT change the default value. This parameter determines the Listen Interval of the client's Power Management scheme. If Card_Power_Management is disabled, this parameter is ignored.
Receive_All_Multicasts	This parameter specifies whether the client must receive all multicast frames when in Power Management mode. Valid Values: • Y - Receive all Multicasts (default) • N - Do not receive all Multicasts When this parameter is enabled, the RoamAbout client wakes up at regular intervals to receive the multicast frames. Although enabling this option may yield less optimal power savings, you are advised to leave this parameter enabled when using your computer in regular networking environments. If Card_Power_Management is disabled, this parameter is ignored.
Enable_Encryption	This parameter enables or disables Data Encryption. Valid values: • Y - Enable Encryption • N - Disable Encryption (default) For more information about this parameter, refer to the *RoamAbout 802.11 Wireless Networking Guide*.

Parameter	Description
Key1	This parameter specifies one of 4 possible keys for the Data encryption. All keys specified can be used for the deciphering of data that is received. Valid values: • 5 printable character string, or 10 hexadecimal digits preceded by 0x. • 13 printable character string, or 26 hexadecimal digits preceded by 0x. (Only available with a RoamAbout PC Card that supports 128-bit encryption.) If this parameter is omitted, the default is no key. The keys defined in the client must match the keys defined in the Access Points. In addition the key in position 1 must match the key in position 1 on the Access Point. The keys in positions 2, 3, and 4 must also match the keys in positions 2, 3, and 4 on the Access Point.
Key2	Same description as Key1.
Key3	Same description as Key1.
Key4	Same description as Key1.
Transmit_Key_ID	Designates which key is to be used for enciphering the data that is transmitted by this client. Valid values: 1, 2, 3, or 4.

[1] This parameter does not influence the data rate at which the client is able to receive data. For example, if the transmit rate is 'locked' to 1 Mbit/s, the client may still receive messages that were transmitted at 2 Mbit/s.

For more information about each of the RoamAbout parameters:

- Consult the description for the RoamAbout parameters as described in the *RoamAbout 802.11 Wireless Networking Guide*.
- Type the following command lines at the MS-DOS prompt to display help for the RoamAbout packet driver.

```
cd\roamabt\packet
wvlan42.com h
```

Table 8-4: Packet Driver Specific Parameters

Parameter	Description
Driver_Class	A specific packet driver parameter that controls the frame format. Valid values: • 1 - DIX Ethernet (v2.0) frame format (default) • 11 - IEEE 802.3 with 802.2 headers frame format
Novell_Flag	Enables support for the Novell IPX 802.3 frame format. Valid values: • Y - Convert all 802.3 type packets to 8137 type packets • N - Do not use the NovellFlag (default)
Packet_Interrupt	This parameter identifies the software interrupt number that the packet driver should use. Valid values (hexadecimal): • 60 (default) • 70

Completing the Installation

To finish the installation, insert the RoamAbout PC Card and restart the computer. Carefully read the messages that appear on the screen to verify that:

- The WVLANCAD program executes correctly.
- Your computer loads the correct driver parameter settings of the PC Card.

Correct execution of the WVLANCAD program is confirmed with a message, such as:

```
IEEE Card Access Driver, Variant X, Version XX.XX
Memory: xxxx, I/O Base: xxxx, IRQ xx
Card Access Driver Installed
```

Where:

- XX.XX identifies the version of the RoamAbout PC Card access driver.
- xx or xxx identifies the values that you entered upon installation of the WVLANCAD software, as described in the **Intel 82635 PCIC on page 8-4**.

A successful load of the DOS ODI driver is confirmed with the following message:

```
IEEE DOS ODI Driver Variant X, v0.0x (yymmdd)
Desired SSID = AAAAAAAAAA
Driver loaded successfully
IRQ xx, Port xxxx, Node Address = xxxxxxxxxxxx L
Max Frame 1514 bytes, Line Speed 2 Mbps, Bus ID 3
Board 1, Frame ETHERNET_802.2, LSB Mode
```

Where:

- AAAAAAAAA identifies the wireless network name entered in the NET.CFG file.
- xx or xxx identifies the values that you entered upon installation of the WVLANCAD software, as described in the **Intel 82635 PCIC on page 8-4**.

A successful load of the packet driver is confirmed with the following message:

```
IEEE Packet Driver, Variant X, Version X.XX
Novell Flag NOT set
IO Base=xxxx IRQ=xx MAC Address=xxxxxxxxxxxx
Packet Interrupt=0xXX
```

Where:

- Version X.XX identifies the version of the RoamAbout packet driver.
- xx or xxx identifies the values that you entered upon installation of the WVLANCAD software as described in the **Intel 82635 PCIC on page 8-4**.
- Packet Interrupt 0xXX identifies the value you specified in the PACKET.INI file.

Advanced Options

Dual Card Configuration

When you intend to use multiple RoamAbout PC Cards in a single computing device, such as a wireless server, the CONFIG.SYS file should contain a DEVICE statement with unique parameter values for each card. For example:

```
DEVICE = c:\roamabt\wvlancad.sys /m=d100 /b=0340 /i=11
DEVICE = c:\roamabt\wvlancad.sys /m=e300 /b=04C0 /i=14
```

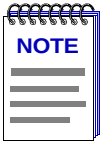
Start-Up Menu Configuration

When you intend to use your computer in combination with multiple PC Cards, an MS-DOS start-up menu may provide a useful solution in one or more of the following situations:

- You are using your computer in combination with another PC Card that requires Card and Socket Services.
- You want to use your computer with a RoamAbout PC Card or Ethernet adapter card.

The start-up menu enables you to set up the computer to prompt the computer user to select a specific configuration. Subject to the selected menu option, the computer automatically loads the drivers and programs required for each specific option.

The start-up menu is a standard MS-DOS feature that is described in the Microsoft MS-DOS User's Guide.



When using multiple boot options to swap RoamAbout PC Cards with Ethernet adapters and vice versa, you need to install the network client software twice, selecting separate directories for each of the network client configurations. The start-up menu should identify which network configuration file is loaded for each item subject to the selected menu item. Failing to do so results in the network client install programs overwriting the configuration settings of the card you installed first.

Chapter 9

Macintosh Driver

This chapter provides setup and installation information for the Macintosh Driver V4.02 to support the RoamAbout DS PC card in an 802.11 wireless LAN. This driver works with various versions of the RoamAbout PC Card. However, earlier versions of the RoamAbout PC Card do not support WEP and cannot be upgraded to support encryption. The **Determining if your Card Supports Encryption** provides the instructions to determine whether or not your PC Card supports encryption.

To install the RoamAbout driver, you should have a working knowledge of Macintosh operations and a working knowledge of installing network adapter cards and network client software.

In This Chapter

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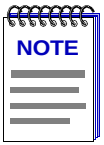
System Requirements	**9-2**
Determining if your Card Supports Encryption	**9-2**
Remove Previously Installed Driver	**9-2**
Driver Installation and Configuration	**9-3**

System Requirements

- PowerBook 2400, 3400, or G3 running System 7.6.1 or later with Open Transport V1.1.2 or later. On these systems, the driver is not compatible with earlier Macintosh system software.
- PowerBook 1400 or 5300 running System 7.5.3 or later with Open Transport V1.1.2 or later. On these systems, the driver is not compatible with Apple Classic
- PowerBook 190 System 7.5.2 or later with Open Transport (V1.1.2 or later) or Apple Classic.



To install the PC Card in an Apple PowerBook system, the system must have a PC Card slot

Determining if your Card Supports Encryption

To determine if the RoamAbout PC Card supports encryption, check for a sticker on the back of the PC Card that states support for 40-bit or 128-bit encryption.

Remove Previously Installed Driver

You must remove a previously installed driver when you:

- Upgrade a driver
- Change the type of driver

For example, you would change the type of driver when migrating from Apple Classic to Apple Open Transport.

To remove the driver, proceed as follows:

1) Insert the RoamAbout Drivers and Utilities CD-ROM into your Apple PowerBook. Or, if you downloaded the driver from the RoamAbout Wireless web site, go to the directory where you downloaded the driver.

2) If you are installing the files from the CD-ROM, double-click on the **CD-ROM** icon on the desktop of your computer to display the contents of the CD-ROM.

or

If you downloaded the driver from the RoamAbout Wireless web site, double-click on the directory where you downloaded the driver to display the contents.

3) Double-click on the **ARA40200.hqx** file to unstuff the files.

4) Double-click on the **RoamAbout Installer** to start the installation program.

5) In the Welcome window, click **Continue**.

6) From the list of options, select **Custom Remove**.

7) Click all boxes to completely remove the driver. If you have any open applications, you are prompted to close them.

8) Follow the on-line instructions.

9) When completed, restart your computer.

Driver Installation and Configuration

Before you install the driver, install and enable the network protocols (Apple's Open Transport or Apple Classic), and remove any previously installed wireless networking software.

1) If this is an upgrade, remove the previously installed driver. Go to the **Remove Previously Installed Driver** section in this document.

2) Insert the RoamAbout Drivers and Utilities CD-ROM into your Apple PowerBook. Or, if you downloaded the driver from the RoamAbout Wireless web site, go to the directory where you downloaded the driver.

3) Double-click on the **ARA40200.hqx** file to unstuff the files.

4) Double-click on **RoamAbout Installer** to start.

5) Click **Continue** in the Welcome window to proceed.

6) In the list of options, select the option for your computer as follows. Typically, you should select **Easy Install**.

   For PowerBook 2400, 3400, or G3 running System 7.6.1 or later, Easy Install chooses **RoamAbout PC Card Networking Software (PCI)**.

   For PowerBook 1400 or 5300 running System 7.5.3 or later, Easy Install chooses **RoamAbout PC Card Networking Software (PPC)**. Use Custom Install to choose **RoamAbout PC Card Networking Software (68K)** for Apple Classic compatibility.

For PowerBook 190 running System 7.5.2 or later, Easy Install chooses **RoamAbout PC Card Networking Software (68K)**.

7) Restart the computer when prompted. After the restart, close any unnecessary windows.

8) Insert the PC Card (logo side up) into the PC Card slot. The RoamAbout 802.11 DS icon is displayed. For PowerBook 3400 and G3 systems, use the lower PC Card slot. The upper slot sometimes fails to properly recognize the PC Card, which may cause unreliable operation.

9) Open the Apple Menu, select **Control Panels** then **AppleTalk**.

10) In the AppleTalk window, select **RoamAbout 802.11 DS** (if it is not present, select **Ethernet**) from the **Connect Via** list.

11) Close the AppleTalk window. Click **Save** to confirm the changes.

12) Open the Apple menu, select **Control Panels** then select **RoamAbout Setup**.

13) Enter the wireless network name in the RoamAbout Network field if joining an infrastructure network. The wireless network name is case sensitive.

14) When done, restart your computer.

You may need to set other parameters depending on your wireless network configuration. See the Read Me file or the *RoamAbout 802.11 Wireless Networking Guide* for more information. Otherwise, click **OK** and restart the computer when prompted.

Appendix A

RoamAbout Client Utility

The RoamAbout Client Utility V6.0 is a management tool that you can use to verify the quality of your wireless radio connection to the RoamAbout network. The Client Utility can be installed on any computer running Microsoft Windows 95, 98, 2000, NT, or Millennium.

Use the RoamAbout Client Utility to:

- Check the quality of wireless communications between the RoamAbout client and the associated Access Point (or another client in an ad-hoc network).
- Check the communications quality between the client and all other Access Points (within radio range) in the wireless infrastructure network. This test allows you to optimize placement of the RoamAbout client and Access Points.
- Display information about the configuration settings of the RoamAbout client and the Access Point.
- Perform a diagnostic test on the RoamAbout PC Card.
- Check the version numbers of the RoamAbout components installed in the client.
- Store test results in log files.

In this Appendix

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Installing the Client Utility	**A-2**
Start the RoamAbout Client Utility	**A-3**
Card Diagnostics	**A-5**
Link Test	**A-6**
Site Monitor	**A-7**
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Remove the Client Utility Icon from the Windows Task bar	A-8
Uninstall the Client Utility	A-9

Installing the Client Utility

The Client Utility shipped with the RoamAbout driver might not fully work for previous generation RoamAbout drivers. You should always use the Client Utility that was shipped with the RoamAbout driver. The Client Utility installation is managed through an installation wizard.

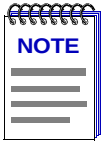
After you install the RoamAbout driver, install the RoamAbout Client Utility by performing the following steps:

1) Start the installation procedure by double-clicking on the **setup** executable file:

- On your RoamAbout CD-ROM in the Client Utility under the selected driver folder.
- If you downloaded an update from the RoamAbout Wireless web site, in the directory you specified during the download.

2) The installation wizard automatically install the program files in the following directory on the hard disk of your computer:

```
C:\Program Files\RoamAbout\Client
```



Optionally, you may choose to select another folder or hard disk for the installation.

The following files are installed in the specified directory:

- CMRBT.exe (Client Utility executable)
- CMRBT.hlp (Client Utility Help information(
- CMRBT.cnt (Client Utility Help Contents)

3) Reboot your computer.

Start the RoamAbout Client Utility

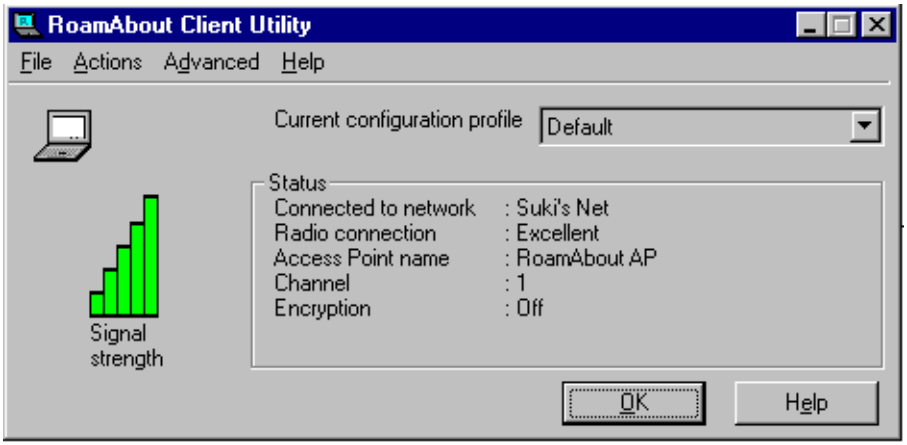
To start the RoamAbout Client Utility, perform the following:

- Click on the Client Utility icon , located on the System Tray of your Windows Task bar.
  or
- From the Windows Task bar, click **Start**, then select **Programs→RoamAbout→Client Utility**.

The RoamAbout Client Utility main window, shown in **Figure 9-1**, displays the following information:

- If connected to an infrastructure network, the name of the network.
- The quality of the communications with the selected network as indicated by a Green (Good), Yellow (Adequate) or Red (Poor) indicator.
- Error message if the PC Card is not functioning properly.

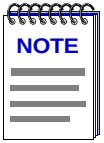
Figure 9-1: RoamAbout Client Utility Main Window



You can perform the following tasks from the RoamAbout Client Utility main window:

- Select another user-defined configuration profile
- Add or Edit a user-defined configuration profile
- Diagnose the performance of your wireless PC Card by using one of the options under the Advanced menu.
  - — Perform a PC Card hardware test running the Card Diagnostics. The Card Diagnostics option verifies your hardware and can help determine the cause of a malfunctioning card. The Card Diagnostics option is Card Check.
  - — Perform a radio Link Test with a single Access Point or computer. The Link Test option allows you to verify the communications quality of the RoamAbout PC Card in more detail. It allows you to investigate the performance of the RoamAbout radio link between:
    - o Your computer and another wireless computer.
    - o Your computer and the current Access Point.
  - — Perform a Site Survey using the Site Monitor option. The Site Monitor option allows you to display the communications quality of your computer with multiple Access Points in its vicinity. The Site Monitor option allows you to conduct a site survey to
    - o Determine the overall wireless coverage of your LAN network.
    - o Determine or optimize the placement of your Access Points, to provide seamless connectivity to mobile stations.

For detailed information about each Client Utility window, consult the RoamAbout Client Utility on-line help by clicking the **Help** button in each window, or pressing the <**F1**> key.



If the wireless network uses encryption and the client does not, the initial client utility window could show a valid network connection. However, the client might not be able to exchange data with the network.

Card Diagnostics

Use the Card Diagnostics window to investigate the operation of your RoamAbout PC Card and the installed driver. Click on the **Test Card Now** button to perform the card diagnostics. The results of the card diagnostics are listed under the self test fields.

Running the Card Test may disrupt normal operation of the RoamAbout PC Card. This may result in a loss of your current connection to your network. When you click the 'Test Card Now' button, the RoamAbout Client Utility displays a warning that allows you to either abort or proceed with the Card Test.

Click on the **Generate Report** button to create a log file of the wireless network card components and system settings of your computer. If you need to contact RoamAbout technical support, the card test results may help the support representative determine the cause of a malfunctioning device.

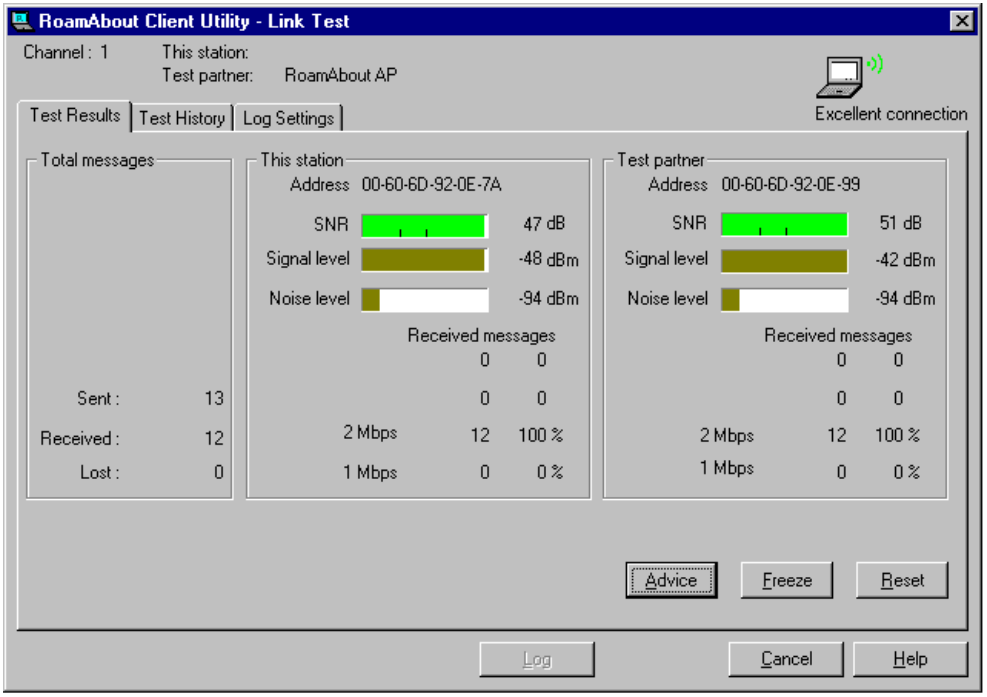
Link Test

Use the RoamAbout Client Utility Link Test window (**Figure 9-2**) to investigate the specific link between the RoamAbout client and its test partner. If connected to a infrastructure network, the test partner is the associated Access Point. If configured for an ad-hoc network, you can select another client in the network to be the test partner.

To monitor the communications quality of the client connection to the network, Link Test actively exchanges test messages with the test partner.

When you run the Link Test while roaming through a network environment with multiple Access Points, the link test partner (Access Point) changes as you move from cell to cell.

Figure 9-2: RoamAbout Client Utility Link Test



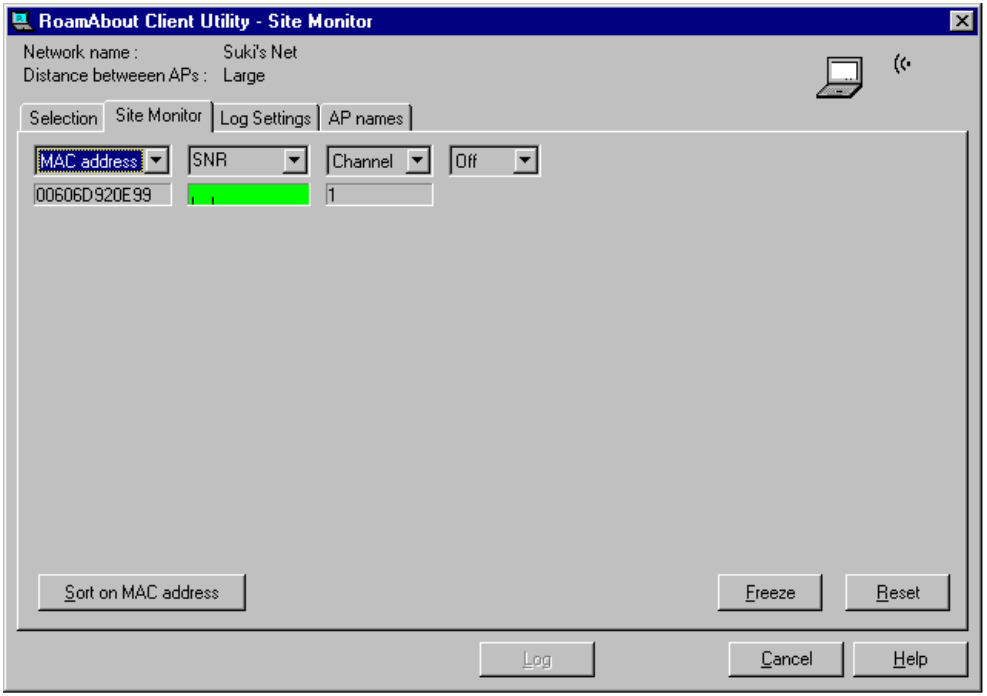
Site Monitor

Use the RoamAbout Client Utility Site Monitor window, shown in **Figure 9-3**, to monitor the radio communications quality with multiple RoamAbout Access Points simultaneously.

The Site Monitor window only displays the Access Points within range of the client. If the Site Monitor window does not display all the Access Points that you expect, the unlisted Access Point might be out of range of your client or using another wireless network name.

The Site Monitor window offers a set of pull-down menus that enable you to display and organize diagnostic information according to your preferences. The Site Monitor function also allows you to save measurement data to a log file.

Figure 9-3: RoamAbout Client Utility Site Monitor Window



Close the Client Utility

To close the Client Utility, perform the following steps:

1) Use the right-mouse button to click on the Client Utility icon in System Tray of your Windows task bar.

2) From the pop-up menu select **Exit**.

When you restart your computer, the Client Utility icon reappears automatically on the Task bar.

Remove the Client Utility Icon from the Windows Task bar

If you do not want the Client Utility icon to appear on your Windows Task bar every time you power up your computer, perform the following steps:

1) From the Windows Task bar, click **Start**, then select **Settings-->Task bar**.

2) Click on the **Start Menu** tab.

3) Click on the **Remove** button. The Remove Shortcuts/Folders window appears.

4) Scroll down the list of items and double-click on **Startup**.

5) Select **Client Utility** and click the **Remove** button. The program removes the icon form your start-up program.

6) Click on the **Close** button to return to the Task bar Properties window.

7) Click on the **OK** button to exit.

Uninstall the Client Utility

To uninstall the Client Utility program from your computer, perform the following steps:

1) Close the Client Manager. Right-click on the Client Utility icon and select **Exit**.

2) From the Windows Task bar, click **Start**, then select **Settings-->Control Panel**.

3) Double-click on the **Add/Remove Programs** icon.

4) Scroll down the list of items and select **RoamAbout Client Utility**.

5) Click on the **Add/Remove** button to uninstall the Client Utility software from your computer.

Appendix B

RoamAbout WSU

The RoamAbout WSU V6.06 tool updates the firmware (also called embedded software) of your RoamAbout 802.11 PC Cards. The firmware is included in the tool (wsu10606.exe). Double-click on the **wsu10606.exe**. Refer to the online help for more information.

Both the Primary functions and the Station functions can be updated. The firmware itself is already included in the tool (wsu.exe).

When you launch the WSU tool, it performs a test to verify the following:

- Hardware version of your RoamAbout PC Card.
- Current firmware version of the card.
- Compatibility of the current Miniport driver with the new firmware.

Once completed, the WSU displays a summary of this information in the Main screen of the tool.

IMPORTANT:

- The new Miniport Drivers require the station firmware on the RoamAbout 802.11 PC Card Version 6.04, or higher.
- This firmware update requires the RoamAbout Miniport driver Version 6.25. Upgrade the driver **before** you upgrade the station firmware.

In this Appendix

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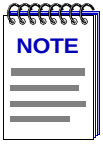
Station Requirements	B-2
Upgrading the PC Card Firmware	B-3

Operating System Requirements

The WSU tool is a Microsoft Windows based tool that requires one of the following Microsoft operating systems on the computer that you want to use for upgrading your RoamAbout PC Cards:

- Microsoft Windows 95
- Microsoft Windows 98
- Microsoft Windows NT V4.0
- Microsoft Windows 2000
- Microsoft Millennium

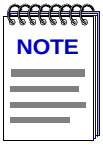


When the RoamAbout 802.11 PC Cards are used in an Apple MAC OS, MS-DOS, or WinCE system/device, you need a station with one of the supported Microsoft Windows operating systems listed above to update the cards.

Station Requirements

The WSU tool runs on any desktop or laptop computer equipped that meets the following requirements:

- A supported Microsoft Windows operating system
- Equipped with a PC Card slot to insert the RoamAbout PC Card that you want to update.
- A 32-bit RoamAbout 802.11 DS Miniport Driver installed.



When the RoamAbout 802.11 PC Cards are used in an Apple MAC OS, MS-DOS, or WinCE system/device, you need a station with one of the supported Microsoft Windows operating systems listed in the **Operating System Requirements** *section.*

Upgrading the PC Card Firmware

To allow a successful update, you may need to install a newer version of the RoamAbout 802.11 DS Miniport driver on the station that runs the WSU tool.

To copy and use the WSU, perform the following:

1) Ensure that the PC card is installed, and that the driver is operational.

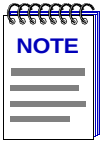
2) Copy the WSU folder onto a hard drive.

3) Double-click on the **wsu10606.exe**.

4) Click on the **Details** button to display the version information of all of the RoamAbout components. This option is also useful when contacting RoamAbout Technical Support.

5) If all of the items listed are compatible, click on the **Update** button.

   - When you are trying to load firmware older than the card's current version, the WSU tool prompts you to confirm the downgrade.
   - When you are trying to load firmware that is not compatible with the RoamAbout 802.11 DS Miniport installed on your computer, the WSU tool displays a warning message.



When the card update is completed successfully, don't forget to update the RoamAbout driver on the computer that you want to use in combination with the updated card.