Utilities

This section describes procedures for using utilities and updating firmware depending on the operating system used.

These topics are covered in this section:

Site Survey and Link Test

To perform a meaningful site survey, you need to conduct a test that accurately models the intended use of the system. It is important to perform a site survey using equipment that is similar to that implemented. Survey these items:

- Transmit power
- Antennas and types
- Antennas and locations
- Packet (fragment) size
- Interference

Conduct the site survey with all variables set to the operational values. You should also perform it during the time the RF link is generally functioning with all other systems and noise sources operational. For efficiency, execute the site survey application entirely from the mobile station.

The link test tool helps determine the RF network coverage. The results of the link test help eliminate low RF signal level areas that can result in loss of connection between the PC Card and the access point.

It is important to remember that the information being displayed is from the access point viewpoint. Therefore, packets sent are from the access point to the PC Card client. Packets received are from the PC Card to the access point. Signal quality is an estimate of the signal strength recorded at the time of packet reception by the radio.

Using Windows 3.11 or DOS to Perform a Link Test Using Telnet

Note   For additional information about performing link tests, refer to the documentation for the access point your system is using.

Link test through a Telnet session/connection is a useful tool for determining:

- Coverage range of an access point
- Communication range of stations/mobile stations

Follow these steps to perform the link test using a Telnet session.

Step 1   Install the drivers.

Step 2   Configure the drivers for network operation.

Step 3   Ensure that mobile or portable PC Card devices and the access point have unique IP assignments.

Step 4   Set up an access point for the intended operation (set fragmentation thresholds, RTS thresholds, and so on.)

Step 5   Start the operating system on the mobile station.

Step 6   Configure the adapter.

Step 7   Make sure the mobile station is associated to the access point.

Step 8   Start a Telnet session on the mobile station to the access point. Depending on the system in use, the Telnet application might have logging and note taking capability. If so, enable these modes.

Step 9   Navigate through the access point menu to the link test option. See the appropriate access point technical reference manual for more information.

Step 10   Set up the test options to accurately model the system.

Step 11   Set the test for continuous operation with a 1-second delay.

Step 12   Begin traversing the area around the access point to determine its coverage. If logging and notes are not possible with the Telnet application, maintain a manual log.

The Telnet session packets are interspersed with test packets that might increase the round trip time for some frames. The link test will show progress changes as the test is being conducted.

The first-time delivery success rate for the packet cannot be important for transaction based systems and can result in a slightly larger range. Using longer packets can provide some degree of safety margin in the range estimate.

Note   Roundtrip time is affected by the Telnet session maintenance.

Loading New Firmware Versions

We recommend that you use the Cisco Windows-based Aironet Client Utility (ACU) for your firmware updates. After updating the firmware by this method, you can reinstall the adapter in its MS-DOS computing device.

DOS Utilities

This section describes the MS-DOS utility programs used to perform configuration and diagnostics of the Cisco Aironet wireless LAN client adapters. The programs work on the PCM34x, LMC34x, PCM35x, and LMC35x. The programs cannot work on older cards, depending on the hardware features and firmware levels of those cards.

Configuration Utilities

The configuration programs update the firmware of the card. First unload any protocol driver. These configuration utilities are shipped with the drivers:

- WEPDOS.EXE—sets a WEP transmit key and key values
- AWCALLID.EXE—establishes a call ID number

The following utility does not ship with the drivers. To obtain it, contact your local Cisco System Engineer.

- AWCLEAP.EXE—sets and clears LEAP username and passwords

Diagnostic Utilities

The following diagnostic utility ships with the drivers:

- PCMCIA.COM—turns the PCMCIA slot on so that the other utilities can access the adapter. The utility also turns the slot off.

- RADINFO.EXE—displays the adapter's radio statistics

DOS Utilities Running Environment

The DOS utilities run well under MS-DOS 6.22.

For the PCM350 and LM350 PCMCIA cards, the DOS utilities do not use card and socket services for configuring the cards; they program the PCMICIA socket directly. Therefore, an 82365-compatible socket controller is required for proper operation. Many, but not all, socket controllers have this capability.

Note   If a utility program does not run, use the PCMCIA.COM utility to turn the adapter's slot on. After you are finished running the utility programs, use PCMCIA.COM to turn the adapter's slot off.

Layout and Format

Information on each utility in this section is presented in the following format:

Description	This section contains a general description of the utility and how it is used.
Syntax	The correct syntax is shown in this section in the following format:
	COMMAND [-option] [-option]
Options	Available options are listed here with a brief description of their purpose.
Standard Options (Default settings in brackets)	The following options are considered standard options because they are common to the utilities that require their use:
	-p[IO base] IO base address (hex) [380]
	-io#l-misa#l-isa# IO type, #={8l16}
	-b [membase] Memory base address (hex) [D000:0]
	-I [irq] Interrupt request (decimal) [5]
	-s [slot] Slot number (decimal) [0]
	-365 82365 card startup
	-pci PCI card startup;
	-nocheck I/O access not tested on startup
	Standard options are available when they are displayed as part of the command or when using the help (-?) option.
Remarks	This section contains information about the utility that can help the user.

General Usage Notes

Syntax

The utility does not run unless its command syntax is correct. In most cases, an error message appears, informing you that the command or option was invalid.

The -pci switch activates the utility's PCI card startup feature. Use this switch when you have a PC card client or an LM client running in a PCI carrier card.

Running the Utilities

The utilities are started by entering the appropriate command and options at the command prompt and pressing **Enter**. The following general guidelines might be helpful.

When a utility has standard options:

- Enter the card startup switch (-365) as the first option. This option informs the utility to start the adapter.

- The default IO base address (0x380) works in most cases, depending on the platform on which you are running the utilities. If the utility reports problems accessing the card's registers, you might need to move this window. The card requires a contiguous 64-byte I/O window to work properly.

- The default base address (D000:0000) is used to access the card's PCMCIA configuration registers and enable the card interface. A 2-Kb window is required.

- The default IRQ (5) also works in most cases, depending on the platform on which you are running the utilities. Most of the utilities do not actually require the use of an interrupt.

Getting Help

Use the -? option to display a brief explanation of the utility and its command syntax.

Configuration Utilities

AWCLEAP.EXE

Description	Sets the LEAP username and password	
Syntax	AWCLEAP [username|noname] password [-clear] [-d]	
Options	username	Sets a username
	-noname	Disables the username feature
	password	Sets a LEAP password
	-clear	Clears current username and password
	-d	Displays current settings
Standard Options (Default settings in brackets)	-p[I0 base]	IO base address (hex) [380]
	-io#|-misa#|-isa#	IO type, #={8|16}
	-b [membase]	Memory base address (hex) [D000:0]
	-I [irq]	Interrupt request (decimal) [5]
	-s [slot]	Slot number (decimal) [0]
	-365	82365 card startup
	-pci	PCI card startup
	-nocheck	I/O access not tested on startup
Remarks	The card startup option (-365) is required to run this utility.	
	This utility is not shipped with the drivers. To obtain it, contact your local Cisco System Engineer.	

AWCALLID.EXE

Description	Programs and displays the adapter's call ID assignment.	
Syntax	AWCALLID [callid] [-clear] [-d]	
Options	callid	A 12-digit decimal number assigned by the MKK.
	-clear	Clears the current callid
	-d	Displays the current callid
Standard Options (Default settings in brackets)	-p[IO base]	IO base address (hex) [380]
	-io#|-misa#|-isa#	IO type, #={8|16}
	-b [membase]	Memory base address (hex) [D000:0]
	-I [irq]	Interrupt request (decimal) [5]
	-s [slot]	Slot number (decimal) [0]
	-365	82365-card startup
	-pci	PCI-card startup
	-nocheck	I/O access not tested on startup
Remarks	The card startup option (-365) is required to run this utility.	

If no call id is entered, or the call id is invalid, the following error message appears:

```
ERROR: Invalid Callid or problem accessing LM350
```

A valid call ID produces this message:

```
Callid:<callid string>
```

Note   This program is only required in Japan and only when the adapter is used in a legacy network.

AWCALLID.EXE

Description	Programs and displays the adapter's call ID assignment.	
Syntax	AWCALLID [callid] [-clear] [-d]	
Options	callid	A 12-digit decimal number assigned by the MKK.
	-clear	Clears the current callid
	-d	Displays the current callid
Standard Options (Default settings in brackets)	-p[IO base]	IO base address (hex) [380]
	-io#l-misa#l-isa#	IO type, #={8l16}
	-b [membase]	Memory base address (hex) [D000:0]
	-I [irq]	Interrupt request (decimal) [5]
	-s [slot]	Slot number (decimal) [0]
	-365	82365-card startup
	-pci	PCI-card startup
	-nocheck	I/O access not tested on startup
Remarks	The card startup option (-365) is required to run this utility.	

If no call id is entered, or the call id is invalid, the following error message appears:

```
ERROR: Invalid Callid or problem accessing LM350
```

A valid call ID produces this message:

```
Callid:<callid string>
```

Note   This program is only required in Japan and only when the adapter is used in a legacy network.

WEPDOS.EXE

Description	Selects a transmit key index	
Syntax	WEPDOS [-tx#] [ascii] [hex] [-key#] [home] [-d]	
Options	-tx#	Selects the transmit key index (1,2,3,or 4) for enterprise networking
	ascii	A 5-character ASCII string
	hex	A 10-character hex digit string
	-key#	Default key index: 1, 2, 3, or 4
	home	Selects the key for use with home access points
	-d	Displays current settings
Standard Options (Default settings in brackets)	-p[IO base]	IO base address (hex) [380]
	-io#|-misa#|-isa#	IO type, #={8|16}
	-b [membase]	Memory base address (hex) [D000:0]
	-I [irq]	Interrupt request (decimal) [5]
	-s [slot]	Slot number (decimal) [0]
	-365	82365-card startup
	-pci	PCI-card startup
	-nocheck	I/O access not tested on startup
Remarks	The card startup option (-365) is required to run this utility.	

This example shows the display after setting the transmit key index to #1 and then using the display (-d) option:

```
C:>WEPDOS -365 -p180 -tx1

Setting transmit key index to 1

C:>WEPDOS -365 -p180 -d

WEP128 encryption is enabled.
Enterprise and home networking is supported.
Firmware supports four keys.

C:\>
```

Diagnostic Utilities

PCMCIA.COM

Description	Turns the PCMCIA slot on or off so that the utility programs can access and communicate with the card.	
Syntax	PCMCIA [ON	OFF] [-SLOT0 |-SLOT1] [-TITAN] [-BASE <addr>] [-LOAD] [-BOOT]	
Options	ON |OFF	Enables or disables the specified PCMCIA slot.
	-SLOTn	Identifies the slot to turn on or off.
	-TITAN	Not used with 340 or 350 series adapters.
	-BASE <addr>	Base address for the memory window used to access the PCMCIA configuration space. This must point to an unused 2-Kb block in the host system memory space.
	-LOAD	Used to load new firmware.
	-BOOT	Turns on the PCMCIA slot so the other utility programs can access the adapter.
Standard Options (Default settings in brackets)	-p[IO base]	IO base address (hex) [380]
	-io#|-misa#|-isa#	IO type, #={8|16}
	-b [membase]	Memory base address (hex) [D000:0]
	-I [irq]	Interrupt request (decimal) [5]
	-s [slot]	Slot number (decimal) [0]
	-365	82365-card startup
	-pci	PCI-card startup
	-nocheck	I/O access not tested on startup
	Standard options are available when they are displayed as part of the command or when using the help (-?) option.	
Remarks	Use this utility to activate the adapter's slot when the other utility programs do not work and to turn it off when finished running the utility programs. The following example shows the proper command syntax to turn the slot on, run a utility program, and turn the card off:	

```
PCMCIA ON -BOOT
RADINFO
PCMCIA OFF
```

RADINFO.EXE

Description	Displays the card's radio configuration.
Syntax	RADINFO [-pci] [SLOT0|SLOT1] [-BASE <addr>]

Options

-pci	PCI card startup
SLOTn	Identifies the slot in which the card resides.
BASE <addr>	Base address for the memory window used to access the PCMCIA configuration space. This must point to an unused 2-Kb block in the host system-memory space.

Standard Options (Default settings in brackets)   None

Remarks   This is a typical RADINFO information display:

```
C:>RADINFO

RADINFO Radio Information - Rev 1.47
I/O Base Address: 0x180
Product Code: Mercury
Hardware Version: Rev. B1
Processor Version: A503
Bootblock Revision: Rev. 1.50
Firmware Revision: Rev. 4.23
MAC Address: 04 40 96 47 93 E5

C:\>
```