



Release Notes for Cisco Aironet MS-DOS Drivers and Utilities for WLAN Client Cards

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The Cisco Aironet MS-DOS drivers for WLAN client cards function in the same manner as the MS-DOS drivers for wired NIC's, but they have the need for additional radio parameters. Those additional radio parameters define the WLAN parameters that the radio card must match before it can associate with an access point.

The Cisco MS-DOS drivers for Aironet WLAN client cards are the AWCpkt driver for the IP protocol, the AWCodi driver for the Novell protocol, the AWCndis driver for the IBM NetBeui protocol. All three of these drivers support the LM4800, PC4800, LMC340, PC340, LMC350, and the PCM350 cards. This makes the cards interchangeable as far as the driver is concerned. New to the current drivers is support for LEAP, World Mode, and the 350 series client cards. The LM4800, because of hardware limitations, cannot accommodate LEAP. Because LEAP and World Mode are firmware dependent, the client firmware must be upgraded to the latest version.

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Introduction

This document describes the system requirements, upgrade procedures, new and changed information, and caveats for the following releases of Cisco Aironet software:

- Version 2.04 of MS-DOS drivers for IP, Novell, and NetBeui
- Latest editions of 5 MS-DOS utilities to support various WLAN configurations

**Note**

Version numbers have not been assigned to the MS-DOS Utilities included with this release.

System Requirements

MS-DOS drivers and utilities can be used with only Cisco Aironet 340, 350, 4500, and 4800 Series Wireless LAN Client Adapters (PC , PCI, and LM cards) installed in computing devices running MS-DOS version 6.22, Windows 3.x, or Windows For Workgroups 3.xx.

Upgrading to a New Driver Release

There is no need to uninstall the old driver before upgrading to a new driver. Replace the current NIC driver with the upgraded Cisco Aironet driver, then make the appropriate update to the configuration file.

Loading a New Driver and Utilities

The new driver files replace the previous driver files. Installation is accomplished at the command prompt using standard MS-DOS commands.

Driver Overview

The MS-DOS and Windows for Workgroups based drivers must have a configuration file created (or edited) with an ASCII text editor.

The drivers and associated files do not ship with the adapter. You must download them from the Wireless Software Center at Cisco.com. The downloadable file, DOSDRVS.EXE, is a self-extracting executable file containing separate self-extracting executable files for each driver. After downloading and running the DOSDRVS.EXE file, you can run the driver file for your specific application. The UTIL.EXE file must also be run to extract the utility programs for these drivers. The structure of the DOSDRVS.EXE file is shown in [Table 1](#).

Table 1 *DOSDRVS.EXE File Structure*

Filename	Description
DOSDRVS.EXE	A self-extracting executable file containing these self-extracting executable files: <ul style="list-style-type: none"> • PKT.EXE—packet driver and files • ODI.EXE—ODI driver and files • NDIS.EXE—NDIS2 driver and files • UTIL.EXE—configuration and diagnostic utilities • DOSINST.PDF—<i>Cisco Aironet Wireless Client Adapters Installation and Configuration Guide for MS-DOS</i> in portable data file format
PKT.EXE Files	
CSCPKT.COM	Packet driver
CSCPKT.INI	Sample initialization file
READ1ST.TXT	Text file containing driver and installation notes
ODI.EXE Files	
CSCODI.COM	ODI driver
NET.CFG	Sample initialization file
READ1ST.TXT	Text file containing driver and installation notes
NDIS.EXE Files	
CSCNDIS2.DOS	NDIS driver
PROTOCOL.INI	Sample initialization file
READ1ST.TXT	Text file containing driver and installation notes
UTIL.EXE Files	
AWCALLID.EXE	Establishes a call ID number
PCMCIA.COM	Turns the PCMCIA slot on or off to allow utilities to access the adapter
RADINFO.COM	Displays the adapter's radio statistics
WEPDOS.EXE	Sets a WEP transmit key and key values

Windows for Workgroups 3.11 NDIS2 Installation

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- Step 1** Power on your computer, and start Windows for Workgroups.
 - Step 2** Extract the NDIS.EXE files to the directory containing the network files on your computer's hard drive.
 - Step 3** Go to the Network program group, and click **Network Set-Up**.
 - Step 4** Under Network Setup, choose **Networks.....**
 - Step 5** Under Networks, choose **Install Microsoft Windows Network**. Click **OK**.
 - Step 6** Under Network Setup, choose **Drivers....**
 - Step 7** Under Network Drivers, choose **Add Adapters**.
 - Step 8** If the drivers were already copied to the hard disk, they will be displayed in the list.
 - Step 9** Under Add Adapter, choose the appropriate Cisco Aironet Adapter. If it is not on the menu list, choose **Unlisted** or **Updated Network Driver**. Choose the correct Cisco Aironet Adapter, and click **OK**.
 - Step 10** If the chosen adapter is displayed in the **Network Drivers**, click **Setup**.
 - Step 11** Select the appropriate parameters, such as Infrastructure Mode, SSID, Channel, and Bitrate.
 - Step 12** Exit Windows for Workgroups.
 - Step 13** To modify the PC Card system parameters, edit the PROTOCOL.INI file in the Windows directory.
 - Step 14** Reboot your computer.
-

DOS NDIS2 Installation

The Cisco Aironet Wireless LAN Adapter can be installed in a NetBIOS-compliant MS-DOS environment such as MicroSoft LAN Manager or PC LAN. The installation of this driver includes creating or editing a configuration file (PROTOCOL.INI).

It is required that this file contains the lines shown in [Table 2](#).

Table 2 *Minimum PROTOCOL.INI Driver Settings*

Infrastructure Mode	Ad Hoc Mode
[CSCNDIS2]	[CSCNDIS2]
DRIVERNAME = CSCNDIS2\$	DRIVERNAME = CSCNDIS2\$
If INFRASTRUCTURE = YES If omitted, default is YES	INFRASTRUCTURE = NO
SSID = <your SSID>	SSID = <your SSID>
	CHANNEL = <channel>

Additional variables defined in the following section can also be used. Follow these steps to install the driver.

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- Step 1** Power on your computer.
 - Step 2** Extract the NDIS.EXE files to the directory containing the network files on your computer's hard drive.
 - Step 3** Copy the PROTOCOL.INI file to the network directory or merge statements from the Cisco Aironet supplied file into your existing PROTOCOL.INI file.
 - Step 4** Modify the CONFIG.SYS file. After the line containing: Device = PROTMAN.DOS, add Device = [drive:] [path] CSCNDIS2.DOS.
 - Step 5** To modify the PC Card system parameters, edit the PROTOCOL.INI file in the network directory. For a list of parameters which can be modified. See [Table 2](#).
 - Step 6** Reboot your computer.
-

DOS Packet Driver Installation

The installation of this driver includes creating or editing a configuration file (CSCPKT.INI). This file must contain the lines shown in [Table 3](#).

Table 3 Minimum CSCPKT.INI Driver Settings

Infrastructure Mode	Ad Hoc Mode
[CSCPKT]	[CSCPKT]
INFRASTRUCTURE = YES If omitted, default is YES	INFRASTRUCTURE = NO
SSID = <your SSID>	SSID = <your SSID>
	CHANNEL = <channel>

Additional variables defined in the following section can also be used.

The Wireless LAN Adapter can be installed in a MS-DOS environment by using MS-DOS IP stack products such as FTP software.

Follow these steps to install the driver.

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- Step 1** Power on your computer.
 - Step 2** Extract the PKT.EXE files to the directory containing the network files on your computer's hard drive.
 - Step 3** Make sure that the CSCPKT.INI file is in the directory containing the Packet driver.
 - Step 4** If you would like to modify the PC Card system parameters, edit the CSCPKT.INI file. For a list of parameters that can be modified, see [Table 3](#).
 - Step 5** Load the driver by typing **CSCPKT [-cinuw] <int_number>** at the MS-DOS prompt (for example, CSCPKT 0x65) and press **Enter**.



Note <int_number> is an interrupt vector location in the range of 0x60 to 0x7F.

**Note**

To unload the driver, enter **CSCPKT -u <int_number>** (for example, **CSCPKT -u 0x65**). The <int_number> value must be the same value used when you installed the driver.

Step 6 Load the MS-DOS IP stack.

ODI Driver Installation

The PC card can be installed in an ODI compliant MS-DOS environment such as Novell NetWare. Follow these steps to install the driver.

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- Step 1** Power on your computer.
- Step 2** Extract the CSCODI.COM files to the directory containing the network files on your computer's hard drive.
- Step 3** Copy the NET.CFG file, or merge the Aironet supplied NET.CFG file into your existing NET.CFG file in the network directory.
- Step 4** Modify the adapter's system parameters by editing the NET.CFG file. The following parameters can be modified:
- Link driver CSCODI
 - INFRASTRUCTURE = YES (If omitted, default is YES)
 - SSID = <your SSID>
 - CHANNEL = <channel> (only required in Ad Hoc Mode)
- Step 5** Run the batch files created by the NetWare installation disks, or manually load the driver from AUTOEXEC.BAT or the command line. This can be done by running LSL, followed by CSCODI, IPXODI, and NETX or VLM.
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General Information

The following INI and CFG file lines might appear anywhere within a section. Only the sections containing these lines will be parsed:

- AWCPKT.INI file can have a section header of [CSCPKT].
- PROTOCOL.INI file can have any section header, but the section must contain the keyword and parameter, for example DRIVERNAME=CSCNDIS2.
- NET.CFG file must have a section header of [Link Driver CSCODI].

The following general information is pertinent:

- Multiple sections are supported.
- Blank lines are supported.
- Comments begin with semicolon and can appear anywhere on a line.
- Keywords can be uppercase or lowercase and can be surrounded by white space if desired.

- Any parameter or variable that can be set to ON or OFF can also be set to YES or NO, respectively.
- Any parameter that begins with *0x* will be assumed to be hexadecimal. Any parameter that begins with a digit (excluding the *0x* case) will be assumed to be decimal. Any parameter that begins with quotes will be assumed to be a quoted string parameter. Any other parameter will be assumed to be an unquoted string parameter.
- For PROTOCOL.INI string parameters, double quotes are required around the string if the string contains any special characters.

**Note**

The PROTOCOL.INI file does not support some of the white space characters in a quoted string. If a string begins with an alphabetic character and contains no special characters, the quotes can be omitted.

- For Packet string parameters, the string can be enclosed with double quotes or single quotes. If a string is quoted, any character except a “null” and the quote delimiter itself can occur between the quotes.

**Note**

If double quotes are used for a delimiter, a single quote can appear in the string, and vice versa. If the string begins with an alphabetic character and contains no special characters, the quotes can be omitted.

- For numeric parameters, the value can be hexadecimal or decimal. Hexadecimal numbers must be preceded with the characters *0x* but all characters can be uppercase or lowercase.

Driver Keywords and Settings

The default PC card configuration is set to:

- Constant Awake Mode.
- Infrastructure Mode—allows association with any access point matching the SSID supplied by the user.
- The factory supplied network address.
- Receive directed packets to this address as well as multicasts and broadcasts.
- Retry data packets up to 16 times before discarding the frame.
- Retry RTS sequence up to 16 times before discarding the frame.
- RTS exchange on all frames greater than 300 bytes.
- Fragment frames longer than 700 bytes.
- Discard fragmented transmit packets if not delivered in 5 seconds.
- Discard fragmented receive frames if not complete after 10 seconds.
- Active scanning with 3 Kusec energy detect time and 20 Kusec probe response wait timeout.
- Rescan if 8 beacons are consecutively missed.
- Send an access point keep-alive message every 10 seconds.

**Note**

Refer to the *Cisco Aironet Wireless LAN Client Adapters Installation and Configuration Guide for MS-DOS* for information on configuring your client adapter.

New and Changed Information

This section describes new and changed information for driver release 2.04.

Support for 350 Series Client Cards

Release 2.04 supports 350 series client adapters.

LEAP and World Mode

LEAP and World Mode support is included in release 2.04. These keywords are identified and defined in the Network Variables section of the *Cisco Aironet Wireless LAN Adapters Installation and Configuration Guide for MS-DOS*.

Documentation

The documentation for the Cisco Aironet 340 and 350 Series Wireless LAN Adapters is changing with this release. Prior versions of client adapter software for Windows CE are documented in the *Cisco Aironet Wireless LAN Client Adapters Hardware Installation Guide* and the *Cisco Aironet Wireless Client LAN Adapters Software Configuration Guide*, both of which also contain information for Windows, Linux, and Macintosh. Now one MS-DOS specific document, which covers driver release 2.04, is available. This document is entitled *Cisco Aironet Wireless LAN Client Adapters Installation and Configuration Guide for MS-DOS*.

Limitations and Restrictions

This section describes known limitations and restrictions in release 2.04.

Partial Support for Legacy Cards

The driver supports Aironet 4800 cards, but does not support LEAP or World Mode functions.

Updating Firmware

Cisco highly recommends that you update the client with the latest firmware.

Getting Bug Information on Cisco.com

If you are a Cisco registered user, you can use the Cisco TAC Software Bug Toolkit, which consists of three tools (Bug Navigator, Bug Watcher, and Search by Bug ID Number) that help you to identify existing bugs (or caveats) in Cisco software products.

Access the TAC Software Bug Toolkit today at: <http://www.cisco.com/support/bugtools/>.

Troubleshooting

For the most up-to-date, detailed troubleshooting information, refer to the Cisco TAC website at <http://www.cisco.com/public/support/tac/home.shtml>. Select **Wireless Technologies** under “Top Issues.”

Related Documentation

For more information about Cisco Aironet client adapters for MS-DOS, refer to the *Cisco Aironet Wireless LAN Adapters Installation and Configuration Guide for MS-DOS*.

Obtaining Documentation

The following sections explain how to obtain documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following URL:

<http://www.cisco.com>

Translated documentation is available at the following URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package shipped separately from the Cisco Aironet Series Wireless LAN Adapters CD that shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

Ordering Documentation

Cisco documentation is available in the following ways:

- Registered Cisco Direct Customers can order Cisco product documentation from the Networking Products Marketplace:
http://www.cisco.com/cgi-bin/order/order_root.pl
- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:
<http://www.cisco.com/go/subscription>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

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Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

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Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two types of support are available through the Cisco TAC: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Inquiries to Cisco TAC are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Which Cisco TAC resource you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

Cisco TAC Web Site

The Cisco TAC Web Site allows you to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to the following URL:

<http://www.cisco.com/tac>

All customers, partners, and resellers who have a valid Cisco services contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to the following URL to register:

<http://www.cisco.com/register/>

If you cannot resolve your technical issues by using the Cisco TAC Web Site, and you are a Cisco.com registered user, you can open a case online by using the TAC Case Open tool at the following URL:

<http://www.cisco.com/tac/caseopen>

If you have Internet access, it is recommended that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses issues that are classified as priority level 1 or priority level 2; these classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer will automatically open a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to the following URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled; for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). In addition, please have available your service agreement number and your product serial number.

This document is to be used in conjunction with the documents listed in the “[Related Documentation](#)” section.

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