Release Notes for Cisco Aironet 340 Series Base Stations with Firmware Release 8.81

June 25, 2002

Contents

CISCO SYSTEMS

Corporate Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

Introduction

This maintenance release consists of a new firmware version for the Cisco Aironet 340 Series Base Station (hereafter referred to as the *base station*).

The base station is a small unit that incorporates a wireless LAN transceiver (radio) that acts as the center point of a standalone wireless network and as the connection between wireless devices and a wired LAN network. Wireless devices can communicate with a network infrastructure through the base station. The base station also supports Ethernet or dial-up access to the Internet.

The base station connects to a wired LAN through a standard Ethernet port by using a 10BASE-T RJ-45 (twisted pair) connector or through a standard telephone port by using an RJ-11 connector. The wireless client devices can associate with the base station through the wireless LAN. The base station configuration parameters can be changed from a wireless device by using an Internet browser or the Cisco Aironet Base Station Client Utility (BSCU).

Important Information

The two base station models (AIR-BSM342 and AIR-BSE342) have reached their end of life. For additional information, refer to the End-Of-Life announcements at the following URLs:

http://www.cisco.com/warp/public/cc/pd/witc/ao350ap/prodlit/1422_pp.htm

http://www.cisco.com/warp/public/cc/pd/witc/ao350ap/prodlit/1570_pp.htm

New and Changed Information

The base station firmware (version 8.81) revised the browser interface and corrected several open caveats.

System Requirements

The wireless LAN supported by the base station requires a wireless device that contains an IEEE 802.11b client radio from Cisco Aironet or another vendor. This client radio allows you to communicate to the Internet through the base station or to configure the base station using an Internet browser.

To configure the base station using the BSCU, your wireless device must contain the following:

- Microsoft Windows based operating system
- Cisco Aironet Wireless LAN Client Adapter with firmware version 4.23 or later
- Cisco Aironet Wireless LAN Client Adapter driver version 6.64 or later

Determining the Firmware Version

To determine the firmware version of a Cisco Aironet Wireless LAN Adapter (hereafter referred to as the client adapter) perform one of the following:

- Using the ACU, select the **Status** option in the *Commands* drop-down menu.
- Using the BSCU, select the **Status** option in the *Client* drop-down menu.

Determining the Driver Version

To determine the client adapter driver version perform one of the following:

- Using the ACU, select the **Status** option in the *Commands* drop-down menu.
- Using the BSCU, select the **Status** option in the *Client* drop-down menu.

For driver upgrade instructions, refer to the *Cisco Aironet Wireless LAN Client Adapter Installation and Configuration Guide for Windows*.

Important Notes

On-Line Technical Tips

The Cisco Technical Assistance Center (TAC) provides valuable on-line technical tips, sample configurations, and frequently asked questions (FAQs) for the base station at the following URL:

http://www.cisco.com/warp/public/102/

Base Station with Default Settings

To prevent unauthorized access to your base station and your Internet connection, you should change the SSID and WEP key from their default settings.

When the base station is set to default values, the firmware configures the base station to allow associations to mixed cells. This allows the base station to associate with a wireless device that is configured with the default SSID value but with or without the default WEP key.

When the base station is configured to non-default values, the firmware changes the base station configuration to prohibit associations to mixed cells. This forces all wireless devices to support the correct SSID and WEP settings before they can associate with the base station.

Note The Aironet Client Utility (ACU) (version 5.01 or later) does not support the Home Network tab found in earlier versions of the utility. If you use the ACU (version 5.01 or later) to set your client card to the base station default values, you must select (check) the Allow Association to Mixed Cells parameter found on the Network Security tab. After the base station configuration is changed from the default values, you must de-select (uncheck) the Allow Association to Mixed Cells parameter for your client adapter.

Cisco Aironet Client Utility

The Cisco Aironet Client Utility (ACU) is designed to configure your client adapter for operation in an enterprise or home network environment. To operate with the base station, your client adapter must be configured with the same SSID and WEP key settings as your base station.

The ACU cannot be used to configure the base station. To configure the base station, you must use your Internet browser or the BSCU. For instructions on configuring your base station refer to the *Cisco Aironet 340 Series Base Station Software Configuration Guide*.

When using the ACU (version 5.01 and later) to configure your client adapter for operation in an enterprise environment, you should create a home profile with your base station settings for SSID and WEP key.

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Note The base station does not support LEAP authentication. In your home profile for the ACU (version 5.01 and later), you should ensure the ACU Network Security Type is set to *none* and WEP is set to *Use Static WEP Keys*.

When you move your wireless PC from your office environment to your home, use your ACU (version 5.01 and later) to switch your client adapter to your home profile. When using an earlier version of the ACU, you must manually select the *Use Home Network Configuration* option that contains your home base station SSID and WEP settings.

Wireless PC Network Settings

To communicate with the base station, your wireless PC Network settings (IP address, subnet mask, and default gateway) must be compatible with the base station. These settings can be manually or automatically configured. Automatic configuration is recommended and occurs when your network settings are configured to *Obtain an IP address automatically* or *Obtain an IP address from a DHCP server*. For additional information, refer to Appendix C of the *Cisco Aironet 340 Series Base Station Software Configuration Guide*.

Application Configuration Changes

The base station with integrated modem (BSM342) provides an autodialer that automatically dials your ISP over the telephone line. After you configure the base station (with integrated modem), you may have to change the network configuration setting of your PC applications (such as Email and Internet browser programs) to use a LAN connection rather than a dial-up connection. This change allows the base station to control the dial-up connection to your ISP.

In all PCs using the base station for their internet connection, you should deactivate Network Proxy or Proxy Server settings on the Internet browsers. This prevents long delays caused by the browsers being unable to locate a proxy server.

ISP Login

For dial-up connections some ISPs require a special login name and password that is different from the username and password used for your email account. The special login name and password may not be apparent because they are typically embedded into a configuration file used by the ISP access software.

If you experience ISP login problems, recheck the base station configuration parameters and try again. If you continue to experience ISP login problems, contact your ISP and obtain the *Login Name* and *Password* used by their special access software for your account. Reconfigure the base station with these parameters.

Access Point Mode

In access point mode when the base station is configured to automatically obtain a network IP address, the address received from the network DHCP server becomes the base station's wireless IP address. To browse to the base station from your wireless PC, you must use the new IP address and your client adapter must have an IP address in the same subnet. If your client adapter is configured to obtain an IP address from the network DHCP server, it automatically receives the correct network parameters.

Note You should record the base station's new IP address and your client's adapter's new network settings (IP address, subnet mask, and default gateway) received from the network DHCP server.

Note In access point mode, the base station does not support an integrated DHCP server function for wireless devices.

If your base station received an IP address from a network DHCP server and then looses the Ethernet connection, you may not be able to browse to the base station after powering up your wireless PC. This occurs because your client adapter is unable to receive the correct network settings from the DHCP server. To browse to the base station, you can perform one of the following operations:

- Re-establish the base station's connection to the network DHCP server and turn your wireless PC off and on.

- Manually configure your client adapter's network parameters (IP address, subnet mask, and default gateway) to match the base station's new network settings received from the DHCP server.

- Reset the base station to default values by pressing the reset button and configure your client adapter's SSID and WEP settings to correspond to the base station's default values shown in Table 1.

  Note The default settings configure the base station into cable/DSL modem mode.

Table 1   Base Station Default Values

Parameter	Base Station Default Value
SSID	tsunami
WEP	0123456789012 (ASCII) or 30313233343536373839303132 (Hex)
IP Address	192.168.200.1

PPP over Ethernet

The base station firmware (version 8.81) changed the *Service name* parameter to *Service provider* and now supports a new *autodetect* option. When the autodetect option is selected, the base station attempts to automatically detect service providers available on the Ethernet link.

The base station firmware (version 8.81) browser interface now supports new status messages:

- Finding service provider—displays when the base station is attempting to detect a service provider.
- Failed, Idle—displays when the base station is unable to detect a service provider.
- Please select service provider—displays when multiple service providers are detected. You must select from the list provided or you can enter a specific service provider name.

> **Note** When using PPPoE mode, you should deactivate the Cisco Aironet Base Station Connection Status (BSCS) utility because the new PPPoE status messages cause the utility to lock up.

When you are using PPP-over-Ethernet (PPPoE) connections, use the ISP name for the base station's Service Provider (or Service Name) parameter; for example: *ISPname.net*.

The base station firmware (version 8.81) will now send the username parameter to the ISP server exactly as entered. Previously, if the username parameter did not include the @ extension, the firmware would append the service name parameter to the username; for example, username@ISPname.net.

> **Note** If you are currently using a PPPoE connection, you may have to correctly re-enter your username parameter because the base station firmware (version 8.81) will not append the service provider name.

PC Firewall Software

PC firewall software products, such as Zone Alarm, attempt to protect the PC from unauthorized accesses by blocking the PCs internal ports. When improperly configured, this firewall operation can cause very long delays or program error conditions when using the BSCU and BSCS utilities.

The base station firmware uses an FTP process to transfer configuration information to the wireless PC for use by the BSCU and the BSCS utilities. During the FTP process, the base station firmware attempts to access the wireless PCs FTP ports (1136, 1138, 1140, and 1142). The software firewall operation can stop the needed FTP transfers between the base station and the wireless PC.

When using a PC firewall software product, you should configure the firewall for the following local network operations:

- Allow your wireless radio card and it's subnetwork into the local network
- Allow Local Servers
- Allow FTP program access on the local network
- Allow TCP/IP program access on the local network

Since the base station uses the local network, you can configure your PC firewall's Internet settings to your individual needs.

AOL Dial-Up Protocols

The base station with integrated modem does not support the America On Line (AOL) proprietary dial-up protocols.

BSCU Utility

The reset button instructions on the BSCU's Set Up Base Station With My Settings screen are shown below:

```
Reset the Base Station now, and click OK when the Base Station's middle LED is
flashing yellow. If you don't reset the Base Station, the middle LED won't flash
yellow.
The Base Station will then be set up with your current settings.
```

These instructions apply when you change the base station SSID or WEP key settings using the BSCU.

> **Note** The BSCU can only change the base station SSID or WEP key settings when the unit contains default values (reset button pressed or a new unit). The reset button is located in a small hole on the left side of the power connector (on the rear of the unit).

After you change the base station SSID or WEP key with the BSCU and you return to the Set Up Base Station With My Settings screen, you must press the base station **Reset** button using a paper clip. A single momentary push is sufficient, you don't have to hold the Reset button. Wait for the base station Status LED to quickly blink yellow; then click the **OK** button on the bottom of the BSCU screen. The BSCU will use the settings shown on the Set Up Base Station With My Settings screen to configure the base station and your client adapter in the wireless PC.

When you change the Base Station Name parameter using the BSCU or the browser interface, you must remove and reconnect the power cable on the back of the unit for the BSCU or the ACU to display the new name.

BSCS Utility

The BSCS utility is automatically installed when you install the BSCU and appears as a telephone icon in the Windows system tray. To activate the BSCS utility, double-click the telephone icon.

The BSCS utility is default configured to automatically pop-up for error messages. If you wish to deactivate the automatic pop-up error messages, right-click the **telephone icon**, click on **Preferences,** then click the **Pop-Up For Error Messages** check box to remove the check mark.

> **Note** When the base station is not available or not powered-up, the BSCS pops-up with a Connection Status error message indicating *No Response From Base Station*. This message occurs every 60 seconds when the BSCS attempts to connect to the base station and when you move your wireless PC outside the wireless network or you return to an enterprise environment. To prevent this message, turn-off the BSCS *Pop-Up For Error Messages* option.

Another BSCS default configuration setting allows the utility to run when Windows starts. To prevent automatic start-up, right-click the **telephone icon** in the Windows system tray, click on **Preferences,** then click the **Automatically Run When Windows Starts** check box to remove the check mark.

The BSCS utility operates only when the base station is configured for cable or DSL modem, PPP over Ethernet, or dial-up modes. The BSCS does not provide connection status information when the base station is configured for access point mode. In access point mode, the BSCS status display may only indicate `Connection Type: Access Point Mode` or may indicate the last status message prior to configuring the base station into access point mode; for example: `Connection Type: Cable/DSL Modem` and `Connection Status: No Response From Base Station`.

> **Note** When using PPPoE mode, you should deactivate the Cisco Aironet Base Station Connection Status (BSCS) utility because the new PPPoE status messages cause the utility to lock up.

Cisco VPN Connections

When using the base station with Cisco VPN connections, you may need to change VPN's MTU setting. For high-speed connections (such as cable or DSL modem) change the MTU size to 1400, but for dial-up connections change the MTU size to 576. You can change the MTU size with the VPN 3000 client software. This helps maintain your VPN connection by preventing message packets from being fragmented and subsequently lost.

The base station firmware (version 8.81) supports the Cisco VPN 3000 client. Now you do not need to select a special NAT mode VPN server.

Connecting to a Router

When connecting the base station to a router that provides a DHCP server and Network Address Translation (NAT), you must configure the base station for access point mode prior to connecting to the router. Ensure that the wireless PC (used to configure the base station) and the base station are configured to obtain an IP address automatically or ensure the network information is correctly configured for the router's wired network.

When you complete the configuration of the wireless PC and the base station, follow these steps:

Step 1 Turn off power to the wireless PC and the router.

Step 2 Disconnect the power connector from the rear of the base station.

Step 3 Connect an Ethernet cable between the base station and the router.

Step 4 Apply power to the router and wait until it is running.

Step 5 Connect the power connector to the base station and wait until the Status LED is blinking green.

Step 6 Turn-on power to the wireless PC.

Obtaining Latest Firmware and Software

You can obtain the latest firmware and software for the base station at the Cisco Software Center website:

http://www.cisco.com/public/sw-center/sw-wireless.shtml

From this web page, follow the steps below to obtain base station firmware and software:

Step 1   To obtain the base station firmware, click on **Cisco Aironet 340 Series** in the base station firmware section.

Step 2   To obtain the following software, click on **Windows** in the individual file section:

- Base Station Connection Status (BSCS) utility

- Cisco Aironet Base Station Client Utility (BSCU)

- Cisco Aironet IP Setup Utility (IPSU)

- Cisco Aironet Wireless LAN Client Adapter driver

For driver installation instructions for your Windows operating system, refer to the *Cisco Aironet Wireless LAN Client Adapter Installation and Configuration Guide for Windows*.

Caveats

Base Station Firmware Closed Caveats

The following caveats have been resolved for base station firmware version 8.81:

- CSCds52328—The base station with integrated modem (BSM342) continues to re-dial after the line is manually disconnected.

- CSCds78800—The base station browser interface screen needs a *Submit* or *Apply* button.

- CSCds78809—When you change the base station name, the new name does not show up on the BSCU or the ACU.

  Workaround—You must remove and reconnect the power cable on the back of the unit for the BSCU or the ACU to display the new name.

- CSCdt31763—The base station crashes in dial-up mode when dialing.

- CSCdt50651—When a base station with an integrated modem (BSM342) is configured for dial-up mode and has wired clients that it is serving, it does not give a DHCP IP address to a HP LaserJet printer that is set to perform BootP requests.

- CSCdt75111—Service name should be changed to service provider name.

- CSCdt81502—After manually setting a static IP address, the base station does not correctly show the subnet mask following a power cycle.

- CSCdu09091—The base station (BSE342) locks up after no activity for approximately 9 seconds when configured in PPP_over_ethernet mode and connected to a DSL modem with a Unisphere ERX at the telephone company.

- CSCdu49085—The base station modem does not properly detect the Greek dial-tone.

- CSCdu49528—The base station DHCP server does not work correctly with a Pocket PC 3.0 device.

- CSCdv04929—Large ping packets on Ethernet makes the base station reboot.

- CSCdv85452—When connected to an SMC Cable/DSL Router, the base station does not get a DHCP IP address.

- CSCdx67546—The base station is not able to process the PPP_over_E thernet (PPPoE) discover stage. The PPPoE client on the base station does not process any PPPoE server without the domain name.

- Dialup—The following problems were fixed:

    – Problem in dial-up PPP protocol caused the connection to a particular dial-in server to fail.

    – When using the browser interface, if *Start a connection* was selected when the base station was dialing, the base station modem was mistakenly marked as bad. If the connection was already connected, the base station disconnected and redialed.

- PPPoE—The following problems were fixed:

    – The base station was not correctly handling session terminate messages from the server.

    – The base station was not correctly parsing error messages from the server and would lock-up.

Documentation Updates

This section describes errors, omissions, and changes to the base station documentation.

BSCU

The BSCU Status screen also displays the base station Media Access Control (MAC) address in the Associated Base Station MAC field. The MAC is a unique 48-bit number used in Ethernet data packets to identify an Ethernet device, such as the base station.

When you activate BSCU, the utility uses network commands to automatically release and renew the wireless PC IP address (for all operating systems except Windows 95). If the wireless PC is configured to automatically receive an IP address from a DHCP server, the PC receives new address parameters from the base station. This process ensures that the wireless PC and the base station are on the same network subnet to allow proper communications.

BSCS

The BSCS utility does not display the full 50 characters that the base station allows for the Login Username, Login Password, Phone Number, Service (or Service Provider Name), or Domain Name parameters.

Note When using PPPoE mode, you should deactivate the BSCS utility because the new PPPoE status messages cause the utility to lock up.

When you right-click the BSCS telephone icon in the System Tray, you can select the BSCS Preferences option. The BSCS Preference screen provides two check box options as shown in Table 2:

Table 2   BSCS Preferences Check Box Options

Check Box Options	Description
Automatically Run When Windows Starts	A check mark indicates the utility automatically activates during the operating system start-up process. To change this option, click in the check box to remove or add the check mark.
	Default: Checked to auto start
Pop Up For Error Messages	A check mark indicates the BSCS status screen will pop-up on the display screen when an error condition is detected. The BSCS utility attempts to obtain a base station status approximately every 60 seconds. To change the pop up option, click in the check box to remove or add the check mark.
	Default: Checked to pop-up

The BSCS utility provides an additional error indication as shown in Table 3:

Table 3   BSCS Error Indication

Error Indication	Description
No Response from Base Station	Indicates the BSCU is unable to obtain base station status information. This error can occur when the base station is in access point mode, when the base station is powered down, or when the base station can not respond.
	This error occurs in access point mode when the base station IP address is changed from the default value of 192.168.200.1. Also, when this error occurs, the BSCS Connection Type may not be accurate because the current status was not received from the base station.
	Verify the base station has power available. If the problem continues, contact technical support for assistance.

Internet Browser Interface

Base station firmware version 8.81 provides Internet browser screens with Save buttons for each entry box field. When you enter information in an entry box field, you must click the associated Save button. The Save button is equivalent to pressing the Enter key that was required in the earlier version of the firmware.

The base station provides a new *Refresh Status* link on the bottom of the main base station home screen. When you are viewing the base station home screen, the preferred method to refresh the screen is to click **Refresh Status** rather than use the browser refresh option.

The base station allows you to load new base station firmware from your Internet browser using the *Load new firmware via browser* option available on all base station screens.

The *Service name* parameter in the PPP-over-Ethernet (PPPoE) mode has changed to *Service provider*. An *autodetect* feature has also been added as a default option. You can click **autodetect** to enable or disable the feature. When autodetect is enabled, the base station polls the wired network to get a list of service providers. When multiple service providers are found, the `Please select service provider` message displays requesting that you select from the list provided. If there is only one service provider found (the usual case), the base station automatically uses that name. Even when autodetect is enabled, you can still enter the name of your service provider in the entry field; for example, ISPname.net. After manually entering a service provider name, click **Save** to send your entry to the base station.

In PPPoE mode, the base station firmware (version 8.81) sends the username parameter to the ISP server exactly as entered. Previously, if the username parameter did not include the @ extension, the firmware would append the service name parameter to the username; for example, *username@ISPname.net*.

> **Note** If you are upgrading your base station firmware and are currently using a PPPoE connection, you may have to re-enter your username parameter because the base station firmware (version 8.81) will not append the service provider name.

In PPPoE mode, the base station firmware (version 8.81) provides the following new status messages:

- Finding service provider—Displays when the base station is attempting to detect a service provider.
- Failed, Idle—Displays when the base station is unable to detect a service provider.
- Please select service provider—Displays when multiple service providers are detected.

In all base station modes, the browser interface adds *Winsock server 1* and *Winsock server 2* parameters. These parameters are used to specify IP addresses for NetBios WINS servers that will be passed to the clients by the base station DHCP server. The base station DHCP server fills these values in automatically if they are provided by the ISP's DHCP server.

Related Documentation

- *Cisco Aironet 340 Series Base Station Hardware Installation Guide*
- *Cisco Aironet 340 Series Base Station Software Configuration Guide*
- *Quick Start Guide: Cisco Aironet 340 Series Base Station*
- *Cisco Aironet Wireless LAN Client Adapter Installation and Configuration Guide for Windows*
- *Mounting Instructions for Cisco Aironet Access Points, Base Stations, and Workgroup Bridges*

You can obtain the related documents on the Cisco web site at following URL:

http://www.cisco.com/univercd/cc/td/doc/product/wireless/aironet/index.htm

Service and Support

For the most up-to-date troubleshooting information, refer to the Cisco Technical Assistance Center Web site at *http://www.cisco.com/tac*, and select **Wireless Technologies** in the Select Area of Interest drop-down list in the Top Issues section.

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 Cisco Documentation CD-ROM package. 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 through an annual subscription.

Ordering Documentation

Cisco documentation is available in the following ways:

* Registered Cisco.com users (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).

Documentation Feedback

If you are reading Cisco product documentation on Cisco.com, you can submit technical comments electronically. Click the **Fax** or **Email** option under the "Leave Feedback" at the bottom of the Cisco Documentation home page.

You can e-mail your comments to bug-doc@cisco.com.

To submit your comments by mail, use the response card behind the front cover of your document, or write to the following address:

Cisco Systems
Attn: Document Resource Connection
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

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.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com is a highly integrated Internet application and a powerful, easy-to-use tool that provides a broad range of features and services to help you to

- Streamline business processes and improve productivity
- Resolve technical issues with online support
- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

You can self-register on Cisco.com to obtain customized information and service. To access Cisco.com, go to the following URL:

http://www.cisco.com

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.