



# Release Notes for Cisco Aironet 1300 Series Outdoor Access Point/Bridge for Cisco IOS Release 12.3(7)JA

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**August 15, 2005**

These release notes describe open and resolved caveats for Cisco IOS Release 12.3(7)JA on the Cisco Aironet 1300 Series Outdoor Access Point/Bridge (hereafter called the *access point/bridge*). They also provide important information about the access point/bridge.

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# Introduction

The Cisco Aironet 1300 Series Outdoor Access Point/Bridge is an 802.11b/g device that provides high speed and cost-effective wireless connectivity between multiple fixed or mobile networks and clients. The flexibility of the device allows it to operate as an access point, wireless bridge, or workgroup bridge. Building a metropolitan area wireless infrastructure with the access point/bridge provides deployment personnel with a flexible, easy to use solution that meets the security requirements of wide area networking professionals.

The access point/bridge supports the 802.11b/g standard, providing 54-Mbps data rates with a proven, secure technology. Cisco makes the maintenance and installation of the access point/bridge easy by integrating it with your wired network using the Cisco SWAN solution. Based on the Cisco IOS operating system, the access point/bridge includes advanced features such as Fast Secure Roaming, QoS, and VLANs.

## System Requirements

You can install Cisco IOS Release 12.3(7)JA on any 1300 series outdoor access point/bridge.

## Finding the IOS Software Version

To determine the version of IOS running on your access point/bridge, use a Telnet session to log into the access point/bridge and enter the **show version** EXEC command. This example shows command output from an access point/bridge running Cisco IOS Release 12.2(15)JA:

```
ap> show version
Cisco Internetwork Operating System Software
IOS (tm) C1310 Software (C1310-K9W7-M), Version 12.2(15)JA
Copyright (c) 1986-2004 by Cisco Systems, Inc.
```

You can also find the software version on the System Software Version page in the device's web-browser interface. The software version appears at the top left of most pages in the web-browser interface.

## Upgrading to a New Software Release

For instructions on installing access point software for your access point:

- 
- Step 1** Follow this link to the Cisco home page:  
<http://www.cisco.com>
  - Step 2** Click **Technical Support and Documentation**. The Technical Support and Documentation page appears.
  - Step 3** Click **Wireless**. The Wireless Support Resources page appears.
  - Step 4** Scroll down to the Wireless LAN Access section.
  - Step 5** Click **Cisco Aironet 1300 Series**. The Cisco Aironet 1300 Series Introduction page appears.
  - Step 6** Under the Configure section, click **Install and Upgrade Guides**. A list of configuration documents appears.

- Step 7** Click **Cisco Aironet 1300 Series Outdoor Access Point/Bridge Software Configuration Guide, 12.3(7)JA**.
- Step 8** Navigate to the Managing Firmware and Configurations chapter.
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For information on Cisco IOS software, click this link to browse to the Cisco IOS Software Center on Cisco.com:

<http://www.cisco.com/cisco/software/navigator.html>

## Updates to Existing Features

These existing features are supported on access points/bridges running Cisco IOS Release 12.3(7)JA:

- Power software requirement—Changes maximum power to 50mW for 802.11b rates and 30mW for 802.11g rates.
- Workgroup bridge role—Provides access point/bridge with capability to operate as a workgroup bridge.

## New Features

This section lists new features in Cisco IOS Release 12.3(7)JA for the access point/bridge:

- AAA cache and profile
- SSH v2 server support

### AAA Cache and Profile

AAA cache and profile is a new capability to cache the information returned from the RADIUS or TACACS+ server a more efficient handling of the authentication process.

### SSH v2 Server Support

SSH v2 server support is a standards-based protocol to provide secure Telnet capability for router configuration and administration.

## Installation Notes

This section contains important information to keep in mind when installing your access point/bridge.

## Warnings



Warning

This warning means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.



Warning

Only trained and qualified personnel should be allowed to install, replace, or service this equipment.



Warning

Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can come into contact with such circuits. When installing the antenna, take extreme care not to come in contact with such circuits, as they may cause serious injury or death. For proper installation and grounding of the antenna, please refer to national and local codes (e.g. U.S.: NFPA70, National Electrical Code, Article 810, in Canada: Canadian Electrical Code, Section 54).



Warning

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than:  
120 VAC, 15A U.S. (240vac, 10A International)



Warning

This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground connector. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.



Warning

Read the installation instructions before you connect the system to its power source.



Warning

Do not work on the system or disconnect cables during periods of lightning activity.



Warning

Do not operate your wireless network near unshielded blasting caps or in an explosive environment unless the device has been modified to be especially qualified for such use.



Warning

In order to comply with radio frequency (RF) exposure limits, the antennas for this product should be positioned no less than 6.56 ft. (2 m) from your body or nearby persons.



Warning

This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.

## Vehicle Installations

The following warnings apply to vehicle installations:



Warning

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**A readily accessible two-pole disconnect device must be incorporated in the fixed wiring.**

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Warning

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**Connect the unit only to CD power source that complies with the safety extra-low (SELV) requirements in IEC 60950 based safety standards.**

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## Safety Information

Follow the guidelines in this section to ensure proper operation and safe use of the access point/bridge.

### FCC Safety Compliance Statement

FCC Compliance with its action in ET Docket 96-8, has adopted a safety standard for human exposure to RF electromagnetic energy emitted by FCC-certified equipment. When used with approved Cisco Aironet antennas, Cisco Aironet products meet the uncontrolled environmental limits found in OET-65 and ANSI C95.1, 1991. Proper operation of this radio device according to the instructions in this publication results in user exposure substantially below the FCC recommended limits.

### Safety Precautions



Warning

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**Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can come into contact with such circuits. When installing the antenna, take extreme care not to come into contact with such circuits, as they may cause serious injury or death. For proper installation and grounding of the antenna, please refer to national and local codes (e.g. U.S.:NFPA 70, National Electrical Code, Article 810, in Canada: Canadian Electrical Code, Section 54).**

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Each year hundreds of people are killed or injured when attempting to install an antenna. In many of these cases, the victim was aware of the danger of electrocution, but did not take adequate steps to avoid the hazard.

For your safety, and to help you achieve a good installation, please read and follow these safety precautions. **They may save your life!**

1. If you are installing an antenna for the first time, for your own safety as well as others, seek professional assistance. Your Cisco sales representative can explain which mounting method to use for the size and type antenna you are about to install.
2. Select your installation site with safety, as well as performance in mind. Remember: electric power lines and phone lines look alike. For your safety, assume that any overhead line can kill you.
3. Call your electric power company. Tell them your plans and ask them to come look at your proposed installation. This is a small inconvenience considering your life is at stake.

4. Plan your installation carefully and completely before you begin. Successful raising of a mast or tower is largely a matter of coordination. Each person should be assigned to a specific task, and should know what to do and when to do it. One person should be in charge of the operation to issue instructions and watch for signs of trouble.
5. When installing your antenna, remember:
  - a. **Do not** use a metal ladder.
  - b. **Do not** work on a wet or windy day.
  - c. **Do** dress properly—shoes with rubber soles and heels, rubber gloves, long sleeved shirt or jacket.
6. If the assembly starts to drop, get away from it and let it fall. Remember, the antenna, mast, cable, and metal guy wires are all excellent conductors of electrical current. Even the slightest touch of any of these parts to a power line complete an electrical path through the antenna and the installer: **you!**
7. If any part of the antenna system should come in contact with a power line, **don't touch it or try to remove it yourself. Call your local power company.** They will remove it safely.
8. If an accident should occur with the power lines call for qualified emergency help immediately.

## 1300 Series Installation

The 1300 series access point/bridge is available in two configurations:

- Integrated antenna access point/bridge (with 13-dBi patch array antenna)
- External antenna access point/bridge (with antenna connector for use with an external antenna)



**Note**

To meet regulatory restrictions, the external antenna configuration and the external antenna must be professionally installed.



**Note**

When installing the dual-coax cable, it is acceptable to unzip or pull the two cables apart at the ends if more separation is needed between the male F connectors.

Personnel installing the access point/bridge must understand wireless bridging techniques, antenna alignment and adjustment, and grounding methods. The integrated antenna configuration can be installed by an experienced IT professional.

## Important Notes

This section describes important information about the access point/bridge.

### Default IP Address Behavior

When an unconfigured outdoor access point/bridge boots, it attempts to obtain an IP address from a DHCP server. If it fails to locate a DHCP server, it continues attempting to request an IP address from the DHCP server. To eliminate this behavior, you must access the access point/bridge through its console port and assign a static IP address.

If you want to reset the access point/bridge to its default settings and a static IP address, use the *write erase* or *erase /all nvram* command. If you want to erase everything including the static IP address, in addition to the above commands, use the *erase* and *erase boot static-ipaddr static-ipmask* command.

**Caution**

You should never delete any of the system files prior to resetting defaults or reloading software.

## SNMP Configuration `snmp-server ifindex persist` Causes Continuous Reboot

Access points and bridges sometimes continuously reboot when the configuration contains this line:  
`snmp-server ifindex persist`

Remove this line from the configuration before upgrading to this release. If you upgrade to this release and the configuration contains this line, remove the line and delete the `ifIndex-table` file from NVRAM.

## Default Username and Password Are *Cisco*

When you open the 1300 series interface, you must enter a username and password. The default username for administrator login is *Cisco*, and the default password is *Cisco*. Both the username and password are case sensitive.

## Changes to the Default Configuration—Radios Disabled and No Default SSID

In this release, the radio is disabled by default, and there is no default SSID. You must create an SSID and enable the radio before the access point/bridge will allow wireless associations from other devices. These changes to the default configuration improve the security of newly installed access points and bridges.

## Enabling MBSSIDs Without VLANs Disables Radio Interface

If you use the `mbssid` configuration interface command to enable multiple BSSIDs on a specific radio interface but VLANs are not configured on the access point, the access point disables the radio interface. To re-enable the radio, you must shut down the radio, disable multiple BSSIDs, and re-enable the radio. This example shows the commands you use to re-enable the radio:

```
AP(config)# interface d1
AP(config-if)# shut
AP(config-if)# no mbssid
AP(config-if)# no shut
```

After you re-enable the radio, you can enable VLANs on the access point and enable multiple BSSIDs.

## Some Client Devices Cannot Associate When QoS Is Configured

Some wireless client devices, including Dell Axim handhelds and Hewlett-Packard iPaq HX4700 handhelds, cannot associate to an access point when the access point is configured for QoS. To allow these clients to associate, disable QoS on the access point. You can use the QoS Policies page on the access point GUI to disable QoS, or enter this command on the CLI:

```
ap(config-if)#no dot11 qos mode
```

## Proxy Mobile-IP Feature Removed

The proxy Mobile-IP feature is not supported in Cisco IOS Releases 12.3(2)JA and later.

## WPA/2 With Concatenation Not Supported

Cisco IOS Release 12.3(7)JA does not support this feature.

## Hard Coded Ethernet Port Settings Degrade GUI Performance

Ethernet port settings on the access point/bridge must be set to auto speed and auto negotiation. If you use any other setting, the GUI operates very slowly.

## TACACS+ and DHCP IP Address Sometimes Locks Out Administrators

When you configure an access point for TACACS+ administration and to receive an IP address from the DHCP server, administrators might be locked out of the access point after it reboots if the administrator does not have a local username and password configured on the access point. This issue does not affect access points configured with a static IP address. Administrators who have been locked out must regain access by using the mode button to reset the unit to default settings.

## Access Point/Bridge Does Not Support Loopback Interface

When configuring the access point/bridge as an access point, you must not configure a loopback interface.

**Caution**

Configuring a loopback interface might generate an IAPP GENINFO storm on your network and disrupt network traffic.

## Non-Cisco Aironet 802.11g Clients Might Require Firmware Upgrade

Some non-Cisco Aironet 802.11g client devices require a firmware upgrade before they can associate to the 802.11g radio in the access point/bridge when it is configured as an access point or workgroup bridge. If your non-Cisco Aironet 802.11g client device does not associate to the access point/bridge, download and install the latest client firmware from the manufacturer's website.



## Throughput Option for 802.11g Radio Blocks Association by 802.11b Clients

When you configure the 802.11g 1300 series radio for **best throughput**, the access point/bridge sets all data rates to basic (required). This setting blocks association from 802.11b client devices. The **best throughput** option appears on the web-browser interface Radio0-802.11G Settings pages and in the **speed** CLI configuration interface command.

## Use force-reload Option with archive download-sw Command

When you upgrade access point or bridge system software by entering the **archive download-sw** command on the CLI, you must use the **force-reload** option. If the access point or bridge does not reload the Flash after the upgrade, the pages in the web-browser interface might not reflect the upgrade. This example shows how to upgrade system software successfully using the **archive download-sw** command:

```
AP# archive download-sw /force-reload /overwrite tftp://10.0.0.1/ image-name (image name)
```

## Radio MAC Address Appears in ACU

When a Cisco Aironet client device associates to an access point or bridge running IOS software, the device's MAC address that appears on the Status page in the Aironet Client Utility (ACU) is the MAC address for the access point or bridge radio. The MAC address for the access point or bridge's Ethernet port is printed on the label on the back of the access point or bridge.

## Radio MAC Address Appears in Access Point/Bridge Event Log

When a client device roams from an access point (such as access point *alpha*) to another access point (access point *bravo*), a message appears in the event log on access point alpha stating that the client roamed to access point bravo. The MAC address that appears in the event message is the MAC address for the access point/bridge.

## Mask Field on IP Filters Page Behaves the Same As in CLI

In Cisco IOS Release 12.2(8)JA and later, the mask that you enter in the Mask field on the IP Filters page in the access point/bridge GUI behaves the same way as a mask that you enter in the CLI. If you enter 255.255.255.255 as the mask, the access point/bridge accepts any IP address. If you enter 0.0.0.0, the access point/bridge looks for an exact match with the IP address that you entered in the IP Address field.

## System Software Upgrade Sometimes Fails Using Microsoft Internet Explorer 5.01 SP2

A system software upgrade sometimes fails when you use Microsoft Internet Explorer version 5.01 SP2 to upgrade system software using the HTTP Upgrade page in the web-browser interface. Use a later version of Microsoft Internet Explorer to perform HTTP system software upgrades, or use TFTP to upgrade system software. Click this URL to browse to the *Cisco 1300 Series Wireless Bridge Software Configuration Guide* for complete instructions on performing software upgrades:

[http://www.cisco.com/en/US/docs/wireless/access\\_point/1300/12.3\\_4\\_JA/configuration/guide/brsc1234.html](http://www.cisco.com/en/US/docs/wireless/access_point/1300/12.3_4_JA/configuration/guide/brsc1234.html)

## Corrupt EAP Packet Sometimes Causes Error Message

During client authentication, the access point/bridge sometimes receives a corrupt EAP packet and displays this error message:

```
Oct 1 09:00:51.642 R: %SYS-2-GETBUF: Bad getbuffer, bytes= 28165
-Process= "Dot11 Dot1x process", ipl= 0, pid= 32
-Traceback= A2F98 3C441C 3C7184 3C604C 3C5E14 3C5430 124DDC
```

You can ignore these messages.

## When Cipher is TKIP Only, Key Management Must Be Enabled

When “Cipher TKIP” is configured on a VLAN, the SSID(s) for that VLAN must use WPA or CCKM key management. If you do not configure the SSID(s) for that VLAN with WPA or CCKM, client authentication fails on the SSIDs.

## Non-Cisco Aironet Clients Sometimes Fail 802.1x Authentication

Some non-Cisco Aironet client adapters do not perform 802.1x authentication to the access point/bridge unless you configure **Open authentication with EAP**. To allow both Cisco Aironet clients using LEAP and non-Cisco Aironet clients using LEAP to associate using the same SSID, you might need to configure the SSID for both **Network EAP** authentication and **Open authentication with EAP**.

## Pings and Link Tests Sometimes Fail to Clients with both Wired and Wireless Network Connections

When you ping or run a link test from an access point to a client device installed in a PC running Microsoft Windows 2000, the ping or link test sometimes fails when the client has both wired and wireless connections to the LAN. Microsoft does not recommend this configuration. For more information, refer to Microsoft Knowledge Base article 157025 at this URL:

<http://support.microsoft.com/default.aspx?scid=kb;en-us;157025&Product=win2000>

## Limitation to PAgP Redundancy on Switches Connected by Bridge Links

When running PAgP on switched connected to series bridges, for ethernet traffic redundancy and load balance be aware that PAgP switchover takes at least 30 seconds, which is too slow to maintain certain traffic (for example, TCP) when switching from port to the other. There is no workaround for this limitation.

## Ethernet Duplex Settings

The access point/bridge is implemented with an unmanaged and unconfigurable 10/100baseT switch embedded in the power injector. All ports on the switch are set for auto-speed, auto-duplex, and auto-MDIX. Port 0 on the switch is used for the coaxial link to the access point/bridge. Port 1 on the switch is used for the RJ45 jack on the power injector.

The speed and duplex settings on the access point/bridge FastEthernet0 interface apply only to the link between the access point/bridge port and port 0 on the power injector. They are entirely independent of the speed and duplex settings used on the RJ45 port (port 1) on the power injector. Therefore, for best performance, you should not change the port 0 default settings. The default settings result in a 100Mbps, full-duplex configuration used on the link between the access point/bridge and the power injector switch.

The connecting port (the port on the device connected to the power injector's RJ45) must be set to half duplex or (preferably) auto duplex. If it is set to auto-duplex, the power injector switch port should negotiate full duplex. If it is set to half duplex, the power injector switch port falls back to half-duplex. The connecting port must not be configured to full duplex. If it is, the power injector switch port fails to negotiate full-duplex, falls back to half duplex, which causes a duplex mismatch.

The following guidelines for setting Ethernet speed and duplex should always be observed:

- The internal FastEthernet0 interface should always be set for speed auto and duplex auto regardless of the settings of the device to which the external LAN port on the power injector is connected (the connecting port).
- The connecting port should always be set for one of the following:
  - 100 Mbps, auto duplex (recommended)
  - 100 Mbps, half duplex
  - 10 Mbps, auto duplex
  - 10 Mbps, half duplex



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**Note** Setting the port to 10 Mbps will most likely degrade throughput.

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- The connecting port should never be set to full duplex.

Failure to follow these guidelines will result in lost data due to late collisions, CRC errors, etc.

# Caveats

This section lists [Open Caveats](#) and [Resolved Caveats](#) in Cisco IOS Release 12.3(7)JA for the access point/bridge.

## Open Caveats

These caveats are open in Cisco IOS Release 12.3(7)JA for the access point/bridge:

- CSCed17799—Warning message does not display for a sufficient period of time.  
When user attempts to delete an infrastructure SSID using the GUI, the warning popup message displays for approximately one second.
- CSCej08390—Access points and bridges sometimes continuously reboot when the configuration contains this line:  

```
snmp-server ifindex persist
```

  
Remove this line from the configuration before upgrading to this release. If you upgrade to this release and the configuration contains this line, remove the line and delete the ifIndex-table file from NVRAM.
- CSCsa74809—TEA wireless bridge crashes on SNMP polling.  
The root bridges crash frequently in a wireless network consisting of 1300 series access point/bridges in workgroup bridge mode. In most cases, the root bridge writes the crashinfo file and reloads.  
There is no workaround for this condition.
- CSCsb29038—A 1310 with integrated antenna shows diversity options on GUI.  
The GUI shows the diversity options even though diversity is not supported on integrated antenna configurations. If the user configures diversity, an HTTP error 404 displays when attempting to apply the change.

## Resolved Caveats

These caveats are resolved in Cisco IOS Release 12.3(7)JA for the access point/bridge:

- CSCsb24007  
Multiple voice-related vulnerabilities are identified in Cisco IOS software, one of which is also shared with Cisco Unified Communications Manager. These vulnerabilities pertain to the following protocols or features:
  - Session Initiation Protocol (SIP)
  - Media Gateway Control Protocol (MGCP)
  - Signaling protocols H.323, H.254
  - Real-time Transport Protocol (RTP)
  - Facsimile reception  
Cisco has made free software available to address these vulnerabilities for affected customers. Fixed Cisco IOS software listed in the Software Versions and Fixes section contains fixes for all vulnerabilities mentioned in this advisory.

There are no workarounds available to mitigate the effects of any of the vulnerabilities apart from disabling the protocol or feature itself.

This advisory is posted at

<http://www.cisco.com/en/US/products/csa/cisco-sa-20070808-IOS-voice.html>.

- CSCeb52431—When logging into a TACACS+ server, access points sometimes send hundreds of additional authentication requests to the server after a successful authentication.
- CSCeh42053—Access point/bridge no longer shows dot11radio 0 enabled.
- CSCeh42504—When VLANs are configured and the radio interface goes down, the traceback INTERFACE\_ACE\_API-3-NOADDSUBBLOCK no longer displays.
- CSCeh65538 (duplicate of CSCei09772)—Access point/bridge now accepts associations after a traffic burst.
- CSCei09744—The access point/bridge roams within specifications.
- CSCei09772—The access point/bridge no longer shuts down the radio interface after roaming.
- CSCsb06824—Open authentication is no longer added to an EAP SSID when a non-root bridge configuration is loaded.
- CSCsb12321—The access point bridge table is now correct when a workgroup bridge roams.
- CSCsb14224—Reverse ARP now works on all VLANs.
- CSCsb26690—The access point/bridge no longer crashes when more than 20 devices are associated.
- CSCsb31323, CSCsa98906—In non-root bridge or workgroup bridge mode, the access point/bridge no longer requires an infrastructure SSID.
- CSCsa53019—Access point/bridge experiences UDP traffic performance problem when using WEP. Cisco has been unable to reproduce this caveat.
- CSCsa54608—The Cisco IOS Firewall Authentication Proxy for FTP and/or Telnet Sessions feature in specific versions of Cisco IOS software is vulnerable to a remotely-exploitable buffer overflow condition.

Devices that do not support, or are not configured for Firewall Authentication Proxy for FTP and/or Telnet Services are not affected.

Devices configured with only Authentication Proxy for HTTP and/or HTTPS are not affected.

Only devices running certain versions of Cisco IOS are affected.

Cisco has made free software available to address this vulnerability. There are workarounds available to mitigate the effects of the vulnerability.

This advisory will be posted at

[http://www.cisco.com/en/US/products/csa/cisco-sa-20050907-auth\\_proxy.html](http://www.cisco.com/en/US/products/csa/cisco-sa-20050907-auth_proxy.html).

- CSCeh88199—Critical temperature threshold established for access point/bridge.
- CSCeh84137—Dot11 arp cache causes the access point/bridge to reload.

Cisco has been unable to reproduce this caveat.

- CSCsa98961—dot11RetryCount SNMP counters now agree with the CLI.

## If You Need More Information

If you need information about a specific caveat that does not appear in these release notes, you can use the Cisco Bug Toolkit to find caveats of any severity. Click this URL to browse to the Bug Toolkit:

<http://tools.cisco.com/Support/BugToolKit/>

(If you request a defect that cannot be displayed, the defect number might not exist, the defect might not yet have a customer-visible description, or the defect might be marked Cisco Confidential.)

## Troubleshooting

For the most up-to-date, detailed troubleshooting information, refer to the Cisco TAC website at <http://www.cisco.com/cisco/web/support/index.html>. Click **Technology Support**, choose **Wireless** from the menu on the left, and click **Wireless LAN**.

## Documentation Updates

This section lists changes, errors, and omissions from user documentation for access points.

## Related Documentation

This section lists documents related to Cisco IOS Release 12.3(7)JA and to access points/bridges.

## Platform-Specific Documents

These documents describe installation and configuration of the 1300 series:

- *Quick Start Guide: Cisco Aironet 1300 Series Wireless Bridge*
- *Cisco IOS Command Reference for Cisco Aironet Access Points and Bridges*
- *Cisco Aironet 1300 Series Wireless Bridge Hardware Installation Guide*
- *Cisco Aironet 1300 Series Bridge Mounting Instructions*
- *Cisco Aironet 14-dBi Vertically Polarized Sector Antenna (AIR-ANT2414S-R)*

## Cisco IOS Software Documentation Set

You can find the most current Cisco IOS documentation on Cisco.com. Follow these steps to find the documentation for Cisco IOS Release 12.3:

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**Step 1** Follow this link to the Cisco home page:

<http://www.cisco.com>

**Step 2** Click **Technical Support and Documentation**.

- Step 3** In the pop-up screen, click **Technical Support and Documentation**. The Technical Support and Documentation page appears.
  - Step 4** Click **Cisco IOS Software**. The Cisco IOS Software Support Resources page appears.
  - Step 5** Click **Cisco IOS Software Release 12.3 Mainline**.
  - Step 6** Choose the appropriate document.
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## Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as an RSS feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service. Cisco currently supports RSS Version 2.0.

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