



FAQ and Troubleshooting Guide for the CiscoWorks Wireless LAN Solution Engine

Release 2.13

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FAQ and Troubleshooting Guide for the CiscoWorks Wireless LAN Solution Engine
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Preface

This guide provides troubleshooting hints, FAQs, and information on faults for the CiscoWorks Wireless LAN Solution Engine and Wireless LAN Engine Express. This guide consists of the following chapters:

- [FAQs and Troubleshooting](#)
- [Fault Descriptions](#)

This guide is frequently updated on Cisco.com.

Audience

This document is for system administrators and network administrators who are responsible for managing a wireless network and are familiar with the concepts and terminology of Ethernet and wireless local area networking.

Conventions

This document uses the following conventions:

Item	Convention
Commands and keywords	boldface font
Variables for which you supply values	<i>italic</i> font
Displayed session and system information	screen font
Information you enter	boldface screen font
Variables you enter	<i>italic screen</i> font
Menu items and button names	boldface font
Selecting a menu item in paragraphs	Option > Network Preferences
Selecting a menu item in tables	Option > Network Preferences



Note

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

**Caution**

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Product Documentation

**Note**

We sometimes update the documentation after original publication. Therefore, you should also review the documentation on Cisco.com for any updates.

[Table 1](#) describes the product documentation for WLSE 2.12. Unless otherwise indicated, these documents apply to both the WLSE and WLSE Express.

Table 1 **Product Documentation**

Document Title	Available Formats
<i>Release Notes for the CiscoWorks Wireless LAN Solution Engine</i>	On Cisco.com: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/index.htm
<i>Configuring Devices for Management by the CiscoWorks Wireless LAN Solution Engine</i>	On Cisco.com: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/index.htm
<i>Installation and Configuration Guide for the 1130-19 CiscoWorks Wireless LAN Solution Engine</i>	<ul style="list-style-type: none"> Printed document included with the product. PDF on the WLSE Recovery CD-ROM. On Cisco.com: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/index.htm
<i>Installation and Configuration Guide for the 1030 CiscoWorks Wireless LAN Solution Engine Express</i>	<ul style="list-style-type: none"> Printed document included with the product. PDF on the WLSE Recovery CD-ROM. On Cisco.com: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/index.htm
<i>Installation and Configuration Guide for the 1133 CiscoWorks Wireless LAN Solution Engine</i>	<ul style="list-style-type: none"> Printed document included with the product. PDF on the WLSE Recovery CD-ROM. Online: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/index.htm

Table 1 **Product Documentation (continued)**

Document Title	Available Formats
<i>Regulatory Compliance and Safety Information for the 1130-19 CiscoWorks Wireless LAN Solution Engine</i>	<ul style="list-style-type: none"> Printed document included with the product. PDF on the WLSE Recovery CD-ROM. On Cisco.com: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/index.htm
<i>Regulatory Compliance and Safety Information for the 1030 CiscoWorks Wireless LAN Solution Engine Express</i>	<ul style="list-style-type: none"> Printed document included with the product. PDF on the WLSE Recovery CD-ROM. On Cisco.com: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/index.htm
<i>Regulatory Compliance and Safety Information for the CiscoWorks 1133 Wireless LAN Solution Engine</i>	<ul style="list-style-type: none"> Printed document included with the product. PDF on the WLSE Recovery CD-ROM. Online: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/index.htm
<i>User Guide for the CiscoWorks Wireless LAN Solution Engine</i>	<ul style="list-style-type: none"> From the WLSE online help. PDF on the WLSE Recovery CD-ROM. On Cisco.com: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/index.htm
<i>Upgrading CiscoWorks Wireless LAN Solution Engine Software</i>	<ul style="list-style-type: none"> From the WLSE online help. On Cisco.com: www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/index.htm.
<i>Supported Devices Table for the CiscoWorks Wireless LAN Solution Engine</i>	On Cisco.com: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/index.htm
Context-sensitive online help	Select an option from the WLSE navigation tree, then click Help .
<i>Developer Guide for the CiscoWorks Wireless LAN Solution Engine</i>	On Cisco.com in the Software Center: http://www.cisco.com/cgi-bin/tablebuild.pl/wlan-sol-eng

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation at this URL:

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

You can access the Cisco website at this URL:

<http://www.cisco.com>

You can access international Cisco websites at this URL:

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

Product Documentation DVD

Cisco documentation and additional literature are available in the Product Documentation DVD package, which may have shipped with your product. The Product Documentation DVD is updated regularly and may be more current than printed documentation.

The Product Documentation DVD is a comprehensive library of technical product documentation on portable media. The DVD enables you to access multiple versions of hardware and software installation, configuration, and command guides for Cisco products and to view technical documentation in HTML. With the DVD, you have access to the same documentation that is found on the Cisco website without being connected to the Internet. Certain products also have .pdf versions of the documentation available.

The Product Documentation DVD is available as a single unit or as a subscription. Registered Cisco.com users (Cisco direct customers) can order a Product Documentation DVD (product number DOC-DOCDVD=) from the Ordering tool or Cisco Marketplace.

Cisco Ordering tool:

<http://www.cisco.com/en/US/partner/ordering/>

Cisco Marketplace:

<http://www.cisco.com/go/marketplace/>

Ordering Documentation

Beginning June 30, 2005, registered Cisco.com users may order Cisco documentation at the Product Documentation Store in the Cisco Marketplace at this URL:

<http://www.cisco.com/go/marketplace/>

Cisco will continue to support documentation orders using the Ordering tool:

- Registered Cisco.com users (Cisco direct customers) can order documentation from the Ordering tool:

<http://www.cisco.com/en/US/partner/ordering/>

- Instructions for ordering documentation using the Ordering tool are at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 1 800 553-NETS (6387).

Documentation Feedback

You can rate and provide feedback about Cisco technical documents by completing the online feedback form that appears with the technical documents on Cisco.com.

You can send comments about Cisco documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

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

We appreciate your comments.

Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

<http://www.cisco.com/go/psirt>

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies—security-alert@cisco.com

An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- Nonemergencies—psirt@cisco.com

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

**Tip**

We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.x through 8.x.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.htm

The link on this page has the current PGP key ID in use.

Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

Cisco Technical Support & Documentation Website

The Cisco Technical Support & Documentation website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, at this URL:

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

Access to all tools on the Cisco Technical Support & Documentation website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

<http://tools.cisco.com/RPF/register/register.do>

**Note**

Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, documentation, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

<http://www.cisco.com/go/marketplace/>

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

<http://www.ciscopress.com>

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

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

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

<http://www.cisco.com/go/iqmagazine>

or view the digital edition at this URL:

<http://ciscoiq.texterity.com/ciscoiq/sample/>

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

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

- Networking products offered by Cisco Systems, as well as customer support services, can be obtained at this URL:

<http://www.cisco.com/en/US/products/index.html>

- Networking Professionals Connection is an interactive website for networking professionals to share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:

<http://www.cisco.com/discuss/networking>

- World-class networking training is available from Cisco. You can view current offerings at this URL:

<http://www.cisco.com/en/US/learning/index.html>



FAQs and Troubleshooting

Revised: June 20, 2006, OL-8376-01

This chapter provides FAQs and troubleshooting hints for all WLSE functions.

This chapter is organized as follows:

- General Questions—Information that is general in nature and not directly related to one of the following categories—See [General FAQs and Troubleshooting, page 1-1](#)
- Deployment Wizard—[Deployment Wizard Troubleshooting, page 1-10](#)
- Faults—[Faults FAQs and Troubleshooting, page 1-11](#)
- Devices—[Devices FAQs and Troubleshooting, page 1-15](#)
- Configuration—[Configuration FAQs and Troubleshooting, page 1-21](#)
- Firmware—[Firmware FAQs and Troubleshooting, page 1-27](#)
- Reports—[Reports FAQs and Troubleshooting, page 1-31](#)
- Radio Manager—[Radio Manager FAQs and Troubleshooting, page 1-35](#)
- Sites—[Sites FAQs and Troubleshooting, page 1-41](#)
- Intrusion Detection System (IDS)—[Intrusion Detection System FAQs and Troubleshooting, page 1-49](#)
- Admin (troubleshooting the WLSE appliance)—[Admin FAQs and Troubleshooting, page 1-54](#)
- Internal AAA Server (WLSE Express Only)—[Internal AAA Server \(WLSE Express Only\) FAQs and Troubleshooting, page 1-62](#)

General FAQs and Troubleshooting

- [General FAQs, page 1-1](#)
- [General Troubleshooting, page 1-4](#)

General FAQs

- [Q.Can several users be logged on and managing the same access point at once?](#)
- [Q.Does the WLSE support Network Address Translation \(NAT\)?](#)
- [Q.Is Telnet enabled or disabled by default on the WLSE?](#)

- Q. Which ports and protocols does the WLSE use?
- Q. Which transport protocols and authentication methods does WLSE use?
- Q. Can I use a different HTTP port to manage the access point?
- Q. Can SSH be disabled?
- Q. Devices are being displayed by IP address instead of hostname. Can I change this?
- Q. How can I get information about the WLSE's operating system and hardware?
- Q. Can I install WLSE 2.13 software on a CiscoWorks 1105 appliance?
- Q. How many access points can a WLSE manage?
- Q. What MIBs does WLSE 2.13 support?
- Q. Why doesn't my WLSE session automatically time out when there has been no input for the configured time-out period?
- Q. Will access point connectivity be disrupted during an upgrade?

Q. Can several users be logged on and managing the same access point at once?

A. Yes, several users can view data and reports on the same access point. More than one user can create configuration and firmware update jobs for the same access point and these will be run in the order they are scheduled. Configuration templates may be modified by more than one user at the same time and the last write will overwrite the others.

Q. Does the WLSE support Network Address Translation (NAT)?

A. No.

Q. Is Telnet enabled or disabled by default on the WLSE?

A. Telnet is disabled by default for security reasons. SSH is enabled by default.

Q. Which ports and protocols does the WLSE use?

A. For information about the TCP and UDP ports and protocols used by and hosted by the WLSE, see Appendix C, "Ports and Protocols", in the online help or in the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13* on Cisco.com at http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/index.htm.

Q. Which transport protocols and authentication methods does WLSE use?

A. See Appendix C, "Ports and Protocols", in the online help or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13* on Cisco.com at http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/index.htm.

Q. Can I use a different HTTP port to manage the access point?

A. Yes, the HTTP port can be changed on the access point. The change will be reflected in WLSE after the next inventory cycle, or if you choose to run inventory now for the devices on which HTTP port was changed. This is assuming the inventory is done by SNMP and not HTTP.

- Q.** Can SSH be disabled?
- A.** It cannot be disabled on the WLSE itself, but you can use the firewall command to deny all SSH connections. For example, the following CLI command will cause the WLSE to reject all incoming SSH connections on the Ethernet 0 interface but allows connections through other protocols and other ports:
- ```
firewall ethernet0 private ssh
```
- Q.** Devices are being displayed by IP address instead of hostname. Can I change this?
- A.** Select **Devices > Discover > DISCOVER > Advanced Options**. In the Name Format field, enter %hostname% as the name format.
- Q.** How can I get information about the WLSE's operating system and hardware?
- A.** For information about the operating system, WLSE model name, CPU and disk capacity, run the **show version** CLI command. For other information about the hardware, see the Technical Specifications appendix in the *Installation and Configuration Guide for the CiscoWorks Wireless LAN Solution Engine*.
- Q.** Can I install WLSE 2.13 software on a CiscoWorks 1105 appliance?
- A.** No. WLSE 2.13 software can be installed on a CiscoWorks 1130 series or 1030 Express only.
- Q.** How many access points can a WLSE manage?
- A.** A WLSE Express (1030) can manage 50 access points (100 radios). A WLSE 1130 series can manage up to 2500 access points (5000 radios). You can purchase a CD to upgrade the WLSE Express to managing 100 access points.
- Q.** What MIBs does WLSE 2.13 support?
- A.** WLSE 2.13 supports the following MIBs:

| MIB Name                             | Description                                                                                                                                     |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| MIB-II                               | This MIB is used to manage TCP/IP-based Internets.                                                                                              |
| CISCO-CDP-MIB                        | This MIB is used to manage the Cisco Discovery Protocol in Cisco devices.                                                                       |
| CISCO-DEVICE-EXCEPTION-REPORTING-MIB | This MIB defines the SNMP objects for devices that use SNMP notification as an exception reporting mechanism.                                   |
| CISCO-APPLIANCE-REDUNDANCY-MIB       | This MIB defines the SNMP objects that report the status of High Availability (HA) functionality in Cisco network management appliance devices. |
| HOST-RESOURCES-MIB                   | This MIB is used to manage host systems.                                                                                                        |

- Q.** Why doesn't my WLSE session automatically time out when there has been no input for the configured time-out period?
- A.** This is a known problem that does not occur on all UI screens. However, note that after the configured time elapses, even if the session has not timed out, when you click on any other WLSE tab in the UI, a new login prompt appears.
- Q.** Will access point connectivity be disrupted during and upgrade?

- A.** Upgrading your WLSE will not disrupt service on your access points. The APs connectivity will remain intact and the WLAN will function normally.

## General Troubleshooting

This section provides the following troubleshooting information:

- **Symptom** After the WLSE reboots, the Internal Server Error message appears in the UI.
- **Symptom** When I try to access an access point web page through the WLSE, the following error message appears: Action Cancelled.
- **Symptom** Cannot recover after incorrect setup program entry.
- **Symptom** Cannot log into the system.
- **Symptom** Cannot log in as a system administrator.
- **Symptom** After the WLSE 1130 series starts up, the setup login prompt appears. After you use the setup program, the WLSE cannot connect to the network.
- **Symptom** Cannot connect to the WLSE using a Web browser.
- **Symptom** The system time or date is incorrect.
- **Symptom** The system cannot boot from the hard drive during a reboot.
- **Symptom** Cannot connect to system with Telnet or Telnet interaction is slow.
- **Symptom** Cannot boot from the recovery CD.
- **Symptom** Cannot successfully connect to the WLSE by using a console.
- **Symptom** Pop-up windows are blocked and screens are not refreshed.
- **Symptom** After performing certain operations on the WLSE, such as clicking Apply in the Display Faults page, then clicking the client browser Refresh button, a pop-up message is generated indicating that the page cannot be refreshed.
- **Symptom** The Web interface of the WLSE is not available, but you can log in to the CLI.

---

**Symptom** After the WLSE reboots, the Internal Server Error message appears in the UI.

**Possible Cause** The servlet engine in the WLSE is starting up. In a redundant WLSE pair, the active WLSE has lost contact with the standby WLSE. The standby WLSE is not up yet and returns this error when the active WLSE makes a request of it. This message will disappear when the standby WLSE has started up.

**Recommended Action** Wait for 20 to 30 seconds, then log in again.

**Symptom** When I try to access an access point web page through the WLSE, the following error message appears: Action Cancelled.

**Possible Cause** The SNMP user on the access point does not have enough rights.

**Recommended Action** Log in to the access point web interface, select **Setup > Security > User Information**, and make sure that the user corresponding to the SNMP community (which is set up in the WLSE under **Discovery > Device Credentials**) has been granted rights for the following: firmware, admin, and SNMP.

**Symptom** Cannot recover after incorrect setup program entry.

**Possible Cause** You entered incorrect text during the initial setup and want to fix the entry.

**Recommended Action** Exit setup by pressing **Ctrl-c**. Then run **erase config** to remove the incorrect installation information and rerun the setup program. If you use the erase config command to erase the previous WLSE configuration, and run the setup program again, you will be required to get a new certificate. Use the **mkcert** command or **Admin > Appliance > Security > SSL (HTTPS)**.

**Symptom** Cannot log into the system.

**Possible Cause** You did not run the setup program to create an initial system configuration or you lost all the user account passwords.

**Recommended Action**

1. Did you run the setup program after booting the system for the first time?  
If no, run the setup program.  
If yes, continue to the next step.
2. Do you know the password for any system user accounts?  
If no, see [Symptom Cannot log in as a system administrator., page 1-5](#).  
If yes, continue to the next step.
3. If you are certain you entered a valid username and password, contact Cisco's Technical Assistance Center for assistance.

**Symptom** Cannot log in as a system administrator.

**Possible Cause** All administrator passwords have been lost.

**Recommended Action** Perform the procedure from the “Managing the WLSE System via the CLI” chapter of the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13* on Cisco.com at [http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw\\_1105/wlse/2\\_13/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/index.htm).

**Symptom** After the WLSE 1130 series starts up, the setup login prompt appears. After you use the setup program, the WLSE cannot connect to the network.

**Possible Cause**

- The network cable is not connected to the Ethernet 0 port.
- The Ethernet 0 interface is disabled or misconfigured.
- The system is configured correctly, but the network is down or misconfigured.
- DNS is misconfigured. Ping commands will result in a 50-70% failure rate in Pings from the WLSE (Web interface and CLI).

**Recommended Action**

1. Verify that the network cable is connected to the Ethernet 0 port and the Ethernet indicator is lit.
  - If the network cable is not connected, connect it.
  - If the network cable is connected but the Ethernet indicator is not lit, these are the probable causes:
    - The network cable is faulty.
    - The network cable is the wrong type (for example, a cross-over type, rather than the required straight-through type).
    - The port on the default gateway to which the system connects is down.
  - If the network cable is connected and the Ethernet indicator is on but the system cannot connect to the network, continue to the next step.
2. Use the **ping** command to perform the following tests:
  - Try to ping a well-known host on the network. A DNS server is a good target host.
    - If the ping command gets a response, the system is connected to the network. If the system cannot connect to a particular host, the problem is either with the network configuration or that host. Contact your network administrator for assistance.
    - If the ping command does not get a response, continue.
  - Attempt to connect to another host on the same subnet as the system.
    - If the ping command can connect to a host on the same subnet, but cannot connect to a host on a different subnet, the default gateway is probably down.
    - If the ping command cannot connect to any hosts, continue to the next step.
3. Use the **show interfaces** command to determine if the Ethernet 0 interface is disabled or misconfigured.
  - For more information on the **show interfaces** command, see the CLI appendix in the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13*.
  - If the Ethernet 0 interface is disabled, enable it. If it is misconfigured, configure it correctly. For more information, see the **interface** command description in the CLI appendix in the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13*.
  - If the interface is enabled and correctly configured, continue to the next step.
4. Contact your network administrator to verify that there are no conditions on the network that prevent the system from connecting to the network.
  - If conditions prevent the system from connecting to the network, have your network administrator correct them.

5. If no conditions are preventing the system from connecting to the network, contact Cisco's Technical Assistance Center.

**Symptom** Cannot connect to the WLSE using a Web browser.

**Possible Cause**

- The system cannot connect to the network.
- HTTP or HTTPS is not enabled
- If connecting via HTTP, the IP address was not appended with **:1741**.
- The client system is not configured.

**Recommended Action**

1. Make sure that the system can connect to the network. Attempt to connect the system using a Web browser.  
If you cannot connect, continue.
2. If you are attempting to connect via HTTP, verify that:  
The IP address is appended with **:1741**.  
HTTP or HTTPS is enabled.
3. Verify that you are using a supported browser and the browser is configured correctly, and attempt to connect to the WLSE. For more information about browsers, see the *Installation and Configuration Guide for the CiscoWorks Wireless LAN Solution Engine* or the “Getting Started” section in the online help.
4. If you still cannot connect through the browser, continue to step 5.
5. At the system console, or through Telnet, verify that the Web Server and tomcat are running by entering the following:  

```
services status
```

  
If they are running, go to step 8. If they are not running continue to step 6.
6. Stop the system services by entering the following:  

```
services stop
```
7. Restart the system services by entering the following:  

```
services start
```
8. Try to connect the system using a Web browser.  
If you cannot connect, continue to the next step.
9. Reboot the system by entering the **reload** command.  
For more information on the **reload** command, see the CLI appendix in the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13*.
10. If you still cannot connect to the system using a Web browser, contact Cisco's Technical Assistance Center for assistance.

**Symptom** The system time or date is incorrect.

**Possible Cause**

- NTP is misconfigured.
- The system clock is set incorrectly.

**Recommended Action** Make sure NTP is configured correctly and that the system clock is set correctly.

For information about maintaining the system time and date, see the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13*. You can access a PDF version of this guide by clicking **View PDF** in the WLSE's online help.

**Symptom** The system cannot boot from the hard drive during a reboot.

**Possible Cause**

- The disk has a physical error.
- The disk image is corrupted.

**Recommended Action** If the WLSE cannot boot from the hard drive, the hard drive needs to be reimaged. Use the Recovery CD to reimage your WLSE. For more information, see the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13*. You can access a PDF version of this guide by clicking **View PDF** in the WLSE's online help.

**Symptom** Cannot connect to system with Telnet or Telnet interaction is slow.

**Possible Cause**

- Telnet is disabled or configured incorrectly.
- The WLSE cannot recognize host names.

If you are not using name recognition, slow or non-existent telnet interaction is an expected problem.



---

**Note** Telnet is disabled by default. SSH is enabled by default.

---

**Recommended Action**

If the problem is not the network, perform the following steps. Connect to the console port if you cannot Telnet to the WLSE.

1. Check the Telnet settings to be sure Telnet is enabled and configured correctly. For more information, see the following

To check the Telnet settings, or to enable or disable Telnet on specific domains or IP addresses, use the **telnetenable** CLI command. For more information on this command, see the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13*. You can access a PDF version of this guide by clicking **View PDF** in the WLSE's online help

To enable or disable Telnet on individual ports, use the **firewall** CLI command. For more information on this command, see the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13*. You can access a PDF version of this guide by clicking **View PDF** in the WLSE's online help

2. If you have specified hosts using the **telnetenable** CLI command, make sure the host from which you are attempting to Telnet is on the list.
3. If you are using a DNS server, perform the following step:

Configure the system to use a functioning DNS server by entering:

```
ip name-server ip-address
```

where *ip-address* is the IP address of the DNS server.

If you are using the import CLI command, proceed to the next step.

4. Verify that the system can get DNS services from the network by entering the following command:

```
nslookup dns-name {hostname | ip-address}
```

where *dns-name* is the DNS name of a host on the network that is registered in DNS and *hostname* and *ip-address* is the same IP address specified in 2. The command returns the IP address of the host.

5. If the system cannot resolve DNS names to IP addresses, the DNS server it is using is not working properly.

Resolve the network DNS problem, then continue.

6. If you are using the **import** CLI command to resolve host names, verify that the WLSE can resolve host names by entering the following command:

```
ping hostname
```

where *hostname* is a host name that has been mapped to an IP address, or imported in a host file, using the **import** command.

7. If the system can resolve DNS names to IP addresses but you still cannot connect to the system using Telnet, or Telnet interaction with the system is extremely slow, contact Cisco's Technical Assistance Center.

**Symptom** Cannot boot from the recovery CD.

**Possible Cause** The CD may look like it is firmly on the spindle, but it may not be.

**Recommended Action** Press the CD firmly onto the spindle. Also, see the following symptom, [Symptom Cannot successfully connect to the WLSE by using a console.](#)

**Symptom** Cannot successfully connect to the WLSE by using a console.

**Possible Cause** A monitor and/or keyboard are attached to the video port and USB port.

**Recommended Action** Attach the console terminal or PC to the console/serial port. Use the Hyper Terminal emulator on the PC.

**Symptom** Pop-up windows are blocked and screens are not refreshed.

**Possible Cause** A pop-up blocker is running in the browser.

**Recommended Action** Disable the pop-up blocker while using the WLSE web interface or add the WLSE to the pop-up allowed list.

**Symptom** After performing certain operations on the WLSE, such as clicking Apply in the Display Faults page, then clicking the client browser Refresh button, a pop-up message is generated indicating that the page cannot be refreshed.

**Possible Cause** The browser Refresh button was used.

**Recommended Action** Avoid using the Refresh button on the browser. Instead, use the navigational tools provided by the WLSE user interface. If either of the following messages display, click **Cancel**: on Internet Explorer, “The page cannot be refreshed without resending the information. Click Retry to send the information again, or click Cancel to return to the page that you are trying to view;” and on Firefox, “The page you are trying to view contains POSTDATA. If you resend the data, any action the form carried out (such as search or online purchase) will be repeated. To resend the data, click OK. Otherwise, click Cancel.

**Symptom** The Web interface of the WLSE is not available, but you can log in to the CLI.

**Possible Cause** The SNMP community file may be corrupted.

**Recommended Action** See the **reset device-snmp** command in the “Using CLI Commands” chapter in the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13* on Cisco.com. This command is intended as a last resort and should be used with caution. Please read the command description in the User Guide before using this command.

## Deployment Wizard Troubleshooting

**Symptom** An error message displays when I try to access the Wizard.

**Possible Cause** You may not have the appropriate roles and privileges assigned to your login.

**Recommended Action** Select **Admin > User Admin > Manage Roles**, and make sure that both the **Wizard > WLSE Wizard** and **Configure > Auto Update** options are checked.

**Symptom** An error message displays when I try to create an auto-managed configuration in the Deploy Config screen.

**Possible Cause** The subnet that you selected is already used in another auto-managed configuration. Someone may have deleted the configuration template by using the options under the Config tab, but did not delete the related auto-managed configuration.

**Recommended Action** Delete the auto-managed configuration from the main Config tab (**Configure > Auto Updated > Auto-Managed Configuration**).

**Symptom** Access points do not get the expected configuration applied from a Wizard template.

**Possible Cause** An auto-managed configuration template exists that is assigned to meet other matching criteria.

**Recommended Action** Check the matching criteria by selecting **Configure > Auto Update > Auto-Managed Configuration > Assign Templates**.

## Faults FAQs and Troubleshooting

- [Faults FAQs, page 1-11](#)
- [Faults Troubleshooting, page 1-13](#)

### Faults FAQs

- [Q.Does acknowledging a fault clear it?](#)
- [Q.How can I remove cleared faults? They are taking up a lot of space in my database.](#)
- [Q.Why didn't the fault color on the device tree change \(it remains red\) after I Acknowledged a P1 fault on an AP?](#)
- [Q.What traps are sent from the WLSE?](#)
- [Q.What traps are received by the WLSE?](#)
- [Q.Does a MIB or trap definition file exist for the WLSE?](#)
- [Q.What information is emailed in a fault notification?](#)
- [Q.Why I am not receiving any email fault notifications for low priority faults?](#)
- [Q.After I change the refresh rate in the Display Faults screen, why does it revert back to the default of 300 seconds when I log out, then log back in again?](#)
- [Q.Why is a fault that is set to one priority level reported as a different priority level?](#)
- [Q.If I have a large number of access points, 1,000 or more, will increasing the polling cycles for policies that report traps to the WLSE enable faster processing of the faults?](#)
- [Q.What happens to faults when radio management features are disabled using the radiomanager disable CLI command?](#)
- [Q.The Fault Summary table is displaying the SSID in hexagonal format \(for example, "\x00\x00\x00\x00\x00\x00\x00\x00"\). What causes this?](#)

**Q.** Does acknowledging a fault clear it?

**A.** No, it only removes it from the Active list. For a description of fault states, see the information on understanding fault states in the online help.

**Q.** How can I remove cleared faults? They are taking up a lot of space in my database.

**A.** Clearing a fault does not purge the fault itself. To purge the old faults:

- a. Select **Devices > Discover > Inventory > Polling**.

- b. Change the Fault History Truncation Interval parameter to reduce the number of days the cleared faults are saved.
- Q. Why didn't the fault color on the device tree change (it remains red) after I Acknowledged a P1 fault on an AP?
- A. When you Acknowledge existing fault(s) for a device, the corresponding fault color (red for P1 and P2 severity faults; orange for P3, P4, and P5 severity faults) for that device in the Reports section of the WLSE does not change.
- Q. What traps are sent from the WLSE?
- A. Traps are sent based on fault policy and threshold settings on the WLSE. The WLSE only sends out v2c traps, so make sure your trap listener is configured to accept v2c traps.  
Solaris 2.8- based NetView 7.1 receives and displays the SNMP v2c fault notification traps from WLSE, but Windows-based NetView 7.1 supports only v1 traps and cannot receive and display any v2c traps from the WLSE.
- Q. What traps are received by the WLSE?
- A. The WLSE is able to receive SNMP traps about two policies from access points rather than having to poll the access point for the information: RF Port Status and RF Port Admin Status. If the WLSE is enabled to receive the traps, the poll interval for these policies can be increased, which reduces the load on the WLSE, and allows faster processing of the faults when they do occur. To enable traps sent to the WLSE, select **Configure > Templates > IOS > Services > SNMP**.
- Q. What information is emailed in a fault notification?
- A. For a description see the online help.
- Q. Does a MIB or trap definition file exist for the WLSE?
- A. Yes, from the Cisco.com download site, download MIB CISCO-DEVICE-EXCEPTION-REPORTING-MIB.my and load it into the trap receiver.
- Q. Why I am not receiving any email fault notifications for low priority faults?
- A. No email notification is sent for lower priority faults if higher priority faults already exists for that fault.
- Q. After I change the refresh rate in the Display Faults screen, why does it revert back to the default of 300 seconds when I log out, then log back in again?
- A. Changes to the refresh timer are applied only to a particular session. This is done by design.
- Q. Why is a fault that is set to one priority level reported as a different priority level?
- A. When more than one fault is reported against a device, the fault priorities are aggregated, and the maximum priority of all the active faults for that device is displayed. For example, if the device has a P1, a P2, and a P3 fault against it, only the P1 is displayed in the Severity column. However, when you click on the Description for that fault, all three priorities are displayed with an explanation for each.
- Q. If I have a large number of access points, 1,000 or more, will increasing the polling cycles for policies that report traps to the WLSE enable faster processing of the faults?

- A.** Yes. For more detailed information on which policies can report traps (RF Port Status and RF Port Admin Status) to the WLSE and how to set it up, see the online help or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, 2.13*.
- Q.** What happens to faults when radio management features are disabled using the `radiomanager disable` CLI command?
- A.** The following happens:
- No new radio management related faults are generated.  
Any radio management related faults that existed before the command was executed must be cleared manually. After the faults are manually cleared, they are not regenerated even if the fault condition still exists.
  - Non radio management faults are generated, then are cleared permanently when the fault condition is rectified.  
Any non radio management faults that existed before the command was executed can be cleared manually. However, if the fault conditions still exist, the faults are regenerated.
- Q.** The Fault Summary table is displaying the SSID in hexagonal format (for example, "\x00\x00\x00\x00\x00\x00\x00\x00\x00"). What causes this?
- A.** If the SSID contains unprintable characters, the WLSE displays it in hex notation. In this example, the SSID is set to 9 hex zeros.
- The WLSE displays unprintable characters as `\xNN`, where `NN` is the hex value of each character, followed by the length of the SSID in bytes. For example, "`\x00`" [1] means that the SSID contains the hex value `\x00` and is 1 byte long. In addition, any double quote marks or backslashes that are part of the SSID octets are displayed using a preceding backslash (for example, `\` or `\\`).

## Faults Troubleshooting

This section provides the following troubleshooting information:

- **Symptom** After adding an AAA server to a WLSE, the fault 'AAA server is Not available' is generated for that AAA server.
- **Symptom** A polling interval for a fault is increased from one minute to a higher value, yet the fault reappears after one minute, not in new time set for the polling.
- **Symptom** The Display Fault view is blank.
- **Symptom** Email fails to arrive at its destination.
- **Symptom** No VLAN fault information is displayed for IOS access points.
- **Symptom** No email notifications are being received for low priority faults.
- **Symptom** SNMP Unreachable faults are displayed more frequently than the set polling interval.

**Symptom** After adding an AAA server to a WLSE, the fault 'AAA server is Not available' is generated for that AAA server.

**Possible Cause** There are several reasons for this error messages: the wrong secret (a secret that does not match what is configured on the AAA server) was entered; the WLSE IP address is not configured as a NAS on the server, or the server is unreachable.

**Recommended Action** Enter the correct secret; the one that is configured on the AAA server or configure the WLSE IP address as NAS on the server.

**Symptom** A polling interval for a fault is increased from one minute to a higher value, yet the fault reappears after one minute, not in new time set for the polling.

**Possible Cause** The new polling time did not register.

**Recommended Action** Disable fault polling on the relevant policy or threshold, then manually clear the fault. Change the fault polling interval on the policy or threshold to the new setting, then enable fault polling on the relevant policy or threshold.

**Symptom** The Display Fault view is blank.

**Possible Cause** There are no faults to report based on the filtering criteria you entered.

**Recommended Action** Not applicable.

**Symptom** Email fails to arrive at its destination.

**Possible Cause** The SMTP server is not configured properly.

**Recommended Action** Configure the SMTP server by selecting Admin > Appliance > Configure Mailroute.

**Symptom** No VLAN fault information is displayed for IOS access points.

**Possible Cause** WEP keys have not been configured in each VLAN. When the WEP keys are configured in the IOS access points, VLAN information is accessible by SNMP.

**Recommended Action** Configure the WEP keys for the corresponding VLAN.

**Symptom** No email notifications are being received for low priority faults.

**Possible Cause** No email notification is sent for lower priority faults if higher priority faults already exists for that fault

**Recommended Action** None.

**Symptom** SNMP Unreachable faults are displayed more frequently than the set polling interval.

**Possible Cause** When the WLSE polls for any faults, it also checks if the device is SNMP reachable. If the device is unreachable, it will generate an SNMP Unreachable fault no matter what the SNMP Reachable poll interval is.

**Recommended Action** None.

## Devices FAQs and Troubleshooting

- [Devices FAQs, page 1-15](#)
- [Devices Troubleshooting, page 1-17](#)

### Devices FAQs

- [Q.Can the WLSE auto rename new APs to a unique name - for example incrementally in the form of ap01, ap02 and so on?](#)
- [Q.Why is hostname \(device name\), sysContact, and sysLocation information not updated in the WLSE after I change these parameters on the access points?](#)
- [Q.What is an invalid CDP seed?](#)
- [Q.Can I discover devices if CDP is disabled?](#)
- [Q.What are the extra inventories listed in the Run Now folder?](#)
- [Q.What are the results of adding or removing an interface from an access point?](#)
- [Q.Can the WLSE discover access points that are connected to non-Cisco switches?](#)
- [Q.Can I register an access point as an AAA server to be monitored by the WLSE?](#)
- [Q.How does the WLSE handle duplicate IP addresses on APs?](#)
- [Q.Will the WLSE discover a router or switch that has no access points connected to it?](#)

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- Q.** Can the WLSE auto rename new APs to a unique name - for example incrementally in the form of ap01, ap02 and so on?
- A.** Auto assigning incremental names to APs is not possible, but a workaround could be to select **Devices > Discover > Discover > Advanced Options**, and use the Name Format field. Click **Learn About Name Format** to understand the various options.
- Q.** Why is hostname (device name), sysContact, and sysLocation information not updated in the WLSE after I change these parameters on the access points?
- A.** The hostname (device name), sysContact, and sysLocation parameters are updated during discovery, not during inventory. You should rediscover the devices (without deleting them), after making the changes on the access points.

- Q.** What is an invalid CDP seed?
- A.** An invalid seed is a device that does not run Cisco Discovery Protocol (CDP), such as a PC or workstation). Such a device does not function as a seed because it does not allow the WLSE to traverse the network and find other devices. In the discovery run log, invalid seeds are shown as SNMP unreachable.
- Q.** Can I discover devices if CDP is disabled?
- A.** If CDP is disabled on network devices, you can still discover access points by entering the IP addresses of all of them on the WLSE as seed values. However, the WLSE cannot discover switches directly attached to such access points, and switch-related reports will be empty.
- Q.** What are the extra inventories listed in the Run Now folder?
- A.** The radio manager automatically runs periodic inventories for relevant functionality.
- Q.** What are the results of adding or removing an interface from an access point?
- A.** If you physically remove an interface (for example, removing 11b from a dual-interface AP 1200), the WLSE will automatically detect the change during the next inventory cycle. If you physically *add* an interface, you must delete the device and rediscover it. Otherwise, the inventory data might be invalid.
- Q.** Can the WLSE discover access points that are connected to non-Cisco switches?
- A.** You cannot use CDP to discover the APs, but you can import them from a file or enter them all as seed devices in the WLSE. Alternatively, if you have configured Wireless Domain Services, the APs may automatically be discovered if they are within the range of the participating APs.
- Q.** Can I register an access point as an AAA server to be monitored by the WLSE?
- A.** Yes, you can register an AP 1100 or AP 1210 as an AAA server. However, if you register an AP as an AAA server, you can no longer use the WLSE to manage that AP as a wireless device.
- Q.** How does the WLSE handle duplicate IP addresses on APs?
- A.** The WLSE must be able to handle situations in which an AP is assigned an address that is already assigned to another device that has been discovered by the WLSE. The WLSE handles these situations by sending appropriate internal events, placing the device that previously had the address in the Duplicate IP folder and updating the database. Detection of duplicate addresses occurs during periodic checking for rebooted APs and during discovery.
- For information on how you should handle devices in the Duplicate IP folder, see the online help for the Devices tab or the section called “Handling Duplicate IP Addresses on Access Points” in the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13* on Cisco.com.
- Q.** Will the WLSE discover a router or switch that has no access points connected to it?
- A.** The WLSE does not discover a router or switch that has no supported access point or bridge attached to it.

# Devices Troubleshooting

This section contains the following troubleshooting information:

## Discovery/Device Management Troubleshooting

- **Symptom** Devices were discovered but are not displayed in the GUI; for example, in Reports.
- **Symptom** There is a time discrepancy in the scheduled discovery jobs.
- **Symptom** The SNMP Query Authorization Exception is recorded in the discovery log.
- **Symptom** An error message appears in the discovery run log.
- **Symptom** An IOS access point configured with an iee802dot11 view is not discovered.
- **Symptom** When importing or exporting devices from an RME server, the message “Failed to connect to server. WLSE will try to connect as RME 4.0.” appears.
- **Symptom** After changing the device name format, device names are not updated in the device tree.
- **Symptom** After creating a customized device name format, truncation of device names in displays such as device trees makes it difficult or impossible to distinguish one device from another.
- **Symptom** Instead of a proper device name or IP address, the WLSE is displaying device names as %dns%, %hostname%, or %description%.
- **Symptom** After a device is moved from unmanaged to managed, the name format is not applied.
- **Symptom** The IP address of a device was changed, but the Device Details display does not reflect this change.
- **Symptom** When trying to discover a WLSM, the error message “device is not supported” is listed in the discovery log.
- **Symptom** AP 1230 and AP 1231 are not shown in WLSE displays.

## Inventory Troubleshooting

- **Symptom** Frequent client inventories are causing too much network traffic or degrading WLSE performance.
- **Symptom** Inventory is taking longer than expected and a message about no logs available appears in the inventory log.

## AAA Server Troubleshooting

- **Symptom** The name of an AAA server is displayed as %hostname% instead of the name entered by the user when the AAA server was added.

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**Symptom** Devices were discovered but are not displayed in the GUI; for example, in Reports.

**Possible Cause** The devices have not been moved to the Managed state.

**Recommended Action** Select **Devices > Discover > Managed Devices**. Move the devices from New or Unmanaged to Managed.

Intermediate switches with no access points directly connected to them are shown to be discovered in the **Devices > Discover > DISCOVERY > Logs** but will not show up in **Devices > Discover > Managed Devices > Manage/Unmanage**.

**Symptom** There is a time discrepancy in the scheduled discovery jobs.

**Possible Cause** The local or system time is not set correctly on the WLSE.

**Recommended Action**

- a. Reset the WLSE system time (UTC) using CLI commands as follows:
  - Enter **services stop** to stop services.
  - Enter the **clock** command to reset the time.
  - Enter **services start** to restart the services.
- b. Set the local browser time. Select **Admin > Appliance > Time/NTP/Name/Webtimeout**.

**Symptom** The SNMP Query Authorization Exception is recorded in the discovery log.

**Possible Cause** The community string on the access point does not have admin and firmware rights.

**Recommended Action** In the configuration template or on the access point, assign the missing rights to the community string. For more information, see the information on setting up devices in the online help or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, 2.13*.

**Symptom** An error message appears in the discovery run log.

**Table 1-1** Discovery Run Log Messages

| Message                                                                                                                                                                                                                                             | Possible Cause                                                                                                                                                                                                                                                                                | Recommended Action                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No seeds defined.                                                                                                                                                                                                                                   | Although discovery is initially enabled and runs every 24 hours, it will not run unless you add seed devices.                                                                                                                                                                                 | See the online help or the <i>User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13</i> .                                                                                                                                                                                                                                                                                                     |
| Inventory collection was not run for updated devices, run on-demand inventory or wait for the next scheduled inventory                                                                                                                              | An automatic inventory does not run for rediscovered devices.                                                                                                                                                                                                                                 | Run an on-demand inventory or wait for the next scheduled inventory. See the online help or the <i>User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13</i> .                                                                                                                                                                                                                                |
| IP conflict for <i>ip_address (hostname)</i> . Identifier or ethernet MAC is <i>identifier or MAC address</i> . A device already exists under this IP address. If the original device was replaced, please delete it first and run discovery again. | A newly discovered device has the same IP address as a previously discovered device. The new device will not be discovered until the conflict is resolved. The identifier shown is for the previously discovered device. For access points, the identifier shown is the Ethernet MAC address. | If you want both devices to be managed, assign a different IP address to the newly discovered device. If you substituted a new device for a previous device and want to retain the IP address, delete the old device. In either case, run discovery again or wait for the next scheduled discovery. See the online help or the <i>User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13</i> . |

**Table 1-1** Discovery Run Log Messages (continued)

| Message                                                                                                        | Possible Cause                                                                                                                                                               | Recommended Action                                                                                           |
|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Unable to auto-manage device: x.x.x.x due to MAC filter values or time period for auto-management has expired. | A new device is being discovered but could not be auto-managed because the MAC filter values exclude the device or the time period selected for auto-management has expired. | See the online help or the <i>User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13</i> . |

**Symptom** An IOS access point configured with an iee802dot11 view is not discovered.

**Possible Cause** The community string should be configured with an ISO view.

**Recommended Action**

1. In the Web interface of the AP, select Services > SNMP.
2. Select the Read/Write community string associated with an iee802dot11 view. In the Object Identifier field, enter “iso.” Select Read-Only or Read-Write and click **Apply**.
3. On the WLSE, select Devices > Discover > DISCOVER > Advanced Options. Make sure auto-manage is enabled.
4. Run discovery on the device, using the community string that has the ISO view.

Result: The WLSE discovers the device and places it in the Managed folder.

**Symptom** When importing or exporting devices from an RME server, the message “Failed to connect to server. WLSE will try to connect as RME 4.0.” appears.

**Possible Cause** WLSE tried to connect to the server by using the current mechanism. That method failed, so the WLSE connected by using the RME 4.0 mechanism.

**Recommended Action** The import or export has probably succeeded, but you should check the final job status to make sure (**Devices > Discover > DISCOVER > Logs**).

**Symptom** After changing the device name format, device names are not updated in the device tree.

**Possible Cause** If there are many devices in the device tree, it may take some time to perform the update and the page may not automatically be refreshed.

**Recommended Action** Navigate to some other screen and then return to the device tree. The device tree will be updated correctly to the new name format.

**Symptom** After creating a customized device name format, truncation of device names in displays such as device trees makes it difficult or impossible to distinguish one device from another.

**Possible Cause** In device trees, only 30 characters can be displayed.

**Recommended Action** Reconstruct the device identifier string so that the unique portion of the name comes first; for example, place the IP address first.

**Symptom** Instead of a proper device name or IP address, the WLSE is displaying device names as %dns%, %hostname%, or %description%.

**Possible Cause** The default device identifier used by the WLSE in its displays is the device's hostname. If no hostname is assigned to the device, %hostname% is used instead. For the %dns% or %description% name, a user has changed the default device identifier but there is no DNS name or the user has not assigned a description. The default device identifier string is set under **Devices > Discover > DISCOVER > Advanced Options**.

**Recommended Action** If you use the IP address as the default identifier, the device name display will always be correct. For more information, see the online help or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13* on Cisco.com.

**Symptom** After a device is moved from unmanaged to managed, the name format is not applied.

**Possible Cause** When devices are moved from unmanaged to managed, the current name format choice is not applied until the next inventory runs.

**Recommended Action** Run an inventory on the device. Select **Devices > Discover > Inventory > Run Inventory**.

**Symptom** The IP address of a device was changed, but the Device Details display does not reflect this change.

**Possible Cause** The device tree under MANAGED DEVICES shows the state of the system at the time you select the Managed Devices option. Therefore, if device details change or the device changes to another state after you display the page, these changes not automatically displayed.

**Recommended Action** If you refresh the page from the browser or navigate to another page and then return to Managed Devices, the page will be updated to show changes that have occurred.

**Symptom** When trying to discover a WLSM, the error message "device is not supported" is listed in the discovery log.

**Possible Cause** WLSM does not support CDP and cannot be discovered by using the regular discovery job mechanism

**Recommended Action** None. WLSM will be discovered through WLCCP, as long as WDS is properly configured. For more information on configuring WDS for the WLSM, see the document *Configuring Devices for Management by the CiscoWorks Wireless LAN Solution Engine* on Cisco.com.

**Symptom** AP 1230 and AP 1231 are not shown in WLSE displays.

**Possible Cause** These APs have the same sysObjectID as the AP 1210.

**Recommended Action** Check the AP 1210 system group and other WLSE listings for AP 1210. AP 1230 and AP 1231 will be shown there.

---

**Symptom** Frequent client inventories are causing too much network traffic or degrading WLSE performance.

**Possible Cause** Running frequent client inventories when managing large numbers of access points (1,000 or more) generates a great deal of traffic and may degrade WLSE performance.

**Recommended Action** Increasing the Wireless Client Poll Interval in **Devices > Discover > Inventory > Polling** will reduce the polling frequency. If you need more frequent client polling for a subset of your access points, use the Scheduled Inventory feature instead (**Devices > Discover > Inventory > Run Inventory**).

**Symptom** Inventory is taking longer than expected and a message about no logs available appears in the inventory log.

No logs available. Waiting for resources to start job.

**Possible Cause** If there are also SNMP timeouts on the network, inventory jobs will take much longer. Other jobs may be using all of the available resources. Also, the next scheduled inventory will not run until the current inventory finishes.

**Recommended Action** None.

**Symptom** The name of an AAA server is displayed as %hostname% instead of the name entered by the user when the AAA server was added.

**Possible Cause** This sometimes occurs after updating the system software to 2.9.1 or 2.11, or 2.13.

**Recommended Action** Select **Devices > Discover > AAA Server** and remove the AAA server. Then, add the server again.

## Configuration FAQs and Troubleshooting

- [Configuration FAQs, page 1-21](#)
- [Configuration Troubleshooting, page 1-25](#)

### Configuration FAQs

- [Q.Can I override the SSHv2 option for a regular config job?](#)
- [Q.Can I use multiple WLSE sessions simultaneously to configure WLSE templates?](#)

- Q.Can I give a configuration job a name that is used for a firmware or radio management job?
- Q.Why do I get the following error message when I upload a configuration template with SCP using the Overwrite option: Invalid SSH version running on the device?
- Q.What happens when I apply a configuration to a device with an existing configuration?
- Q.If a template is valid for an access point with an 802.11g radio, can I also apply that template to an access point with an 802.11b radio?
- Q.If a template is valid for a 1310 wireless bridge in bridge mode, can I also apply that template to a 1310 wireless bridge in access point mode?
- Q.If I create a configuration template that includes WEP key settings how can I verify that they were set on the access point.
- Q.How long is the configuration job history kept in the WLSE?
- Q.What mechanism do configuration jobs use to initiate a configuration upload?
- Q.What kinds of job logs are available?
- Q.What is startup configuration template?
- Q.If I make changes to the startup template, will those modifications be automatically uploaded to the access points that already had a startup template applied?
- Q.What is auto configuration?
- Q.Can I use Device Specific settings with Startup templates?
- Q.Why is my configuration job for a crypto key taking so long to complete?

---

**Q.** Can I override the SSHv2 option for a regular config job?

**A.** By default, if you select SSH as the transport protocol for your config job, the WLSE will use either SSHv1 or SSHv2 depending on the device version. For the devices with version 12.3(7)JA or earlier, SSHv1 is used; for version 12.3(8)JA or later, SSHv2 is used.

If you want to override the SSHv2 option for devices with version 12.3(8)JA or later, and use SSHv1 instead, you must do the following:

- a. Enter the following in your browser window: `http://<wlseip>:1741/debug/jobprops.jsp`.
- b. Select the **SSHv1** for the SSH version.
- c. Click **Save**.

**Q.** Can I use multiple WLSE sessions simultaneously to configure WLSE templates?

**A.** No. You should not open two sessions of the WLSE at the same time to configure the templates.

**Q.** Can I give a configuration job a name that is used for a firmware or radio management job?

**A.** No. Job names cannot be duplicated.

**Q.** Why do I get the following error message when I upload a configuration template with SCP using the Overwrite option: Invalid SSH version running on the device?

**A.** This message displays when the access point is running a software version that does not support SCP. SCP is supported starting with version 12.3(4)JA.

**Q.** What happens when I apply a configuration to a device with an existing configuration?

- A.** The two configurations are merged unless you have specified that you want to overwrite the existing configuration when you ran the job. If you select **Apply Template to Running Configuration** when you create the Configuration job, the selected configuration template will replace the startup-config on the selected device(s).
- Q.** If a template is valid for an access point with an 802.11g radio, can I also apply that template to an access point with an 802.11b radio?
- A.** No. You can only apply a template valid for an access point with an 802.11g radio to an access point with an 802.11g radio.
- Q.** If a template is valid for a 1310 wireless bridge in bridge mode, can I also apply that template to a 1310 wireless bridge in access point mode?
- A.** No. You can only apply a template valid for a 1310 wireless bridge in bridge mode, to a 1310 wireless bridge in bridge mode.
- Q.** If I create a configuration template that includes WEP key settings how can I verify that they were set on the access point.  
(The access point does not show WEP key settings on its web interface)?
- A.** For security reasons, the access point does not show or send WEP key information. One of the ways to verify the update is to look at the WEP Key length. The only way to verify the contents of the WEP key is to try associating a client that uses that WEP key.
- Q.** How long is the configuration job history kept in the WLSE?
- A.** The default time is 30 days. You can change this by navigating to Devices > Discover > Inventory > Polling > Job History Truncation Interval. Also, by default, for the recurring jobs, the last 30 runs are maintained in the database.
- Q.** What mechanism do configuration jobs use to initiate a configuration upload?
- A.** WLSE configuration jobs use Telnet/SSH or TFTP/SCP:
- Telnet/SSH is used when merging the selected configuration to the running configuration, or when copying the running configuration to the startup configuration.
  - SCP/TFTP is used when the selected configuration template will replace the startup-config on the selected device(s), or when the device(s) will be rebooted after the copy to startup-config succeeds.
- Q.** What kinds of job logs are available?
- A.** There are two kinds of job logs: Job run log and the jobvm log.
- The job run log is where events are logged for a particular job's run. This log can be used to check what went wrong with the job and make any required corrections. The job run log can be viewed by selecting a particular job from the job list, then clicking **Job Run Detail**. From the window that pops up, select a particular run for the job, then click **Job Run Log**.
  - The jobvm.log is a global log for all types of jobs. It is used mainly for development troubleshooting. The jobvm.log can be viewed by selecting Admin > Appliance > View Log File, then clicking **jobvm.log**.

**Q.** What is startup configuration template?

Startup configuration template is used right after a device (access point) reboots. It requires DHCP server to be properly set up to allow the access point to pick its startup configuration from WLSE. For this to work, you must set up the following:

- a. Enter the <IP address of the WLSE> in the **Boot Server Host Name** field (option number 066) on the DHCP server.
- b. Enter <startup file name> in the **BootfileName** field (option number 067) on the DHCP server.

For additional information, or for information about configuring a router as a DHCP server, see the online help.

**Q.** What is auto configuration?

**A.** Auto configuration is used after the device has been discovered and inventory has been collected for it. This template can be applied based on criteria you define while saving your auto-configuration template.

**Q.** If I make changes to the startup template, will those modifications be automatically uploaded to the access points that already had a startup template applied?

**A.** No. If you make modifications to the startup template, you will have to Reload the access point to apply the new template.

**Q.** Can I use Device Specific settings with Startup templates?

**A.** Device Specific settings are applicable only with Config Regular and Config Auto jobs. Because the commands for Device Specific settings are generated at job runtime based on the device attributes, a Startup template configuration will not contain Device Specific configurations.

**Q.** Why is my configuration job for a crypto key taking so long to complete?

**A.** When a crypto key that has more than 512 bytes is configured using custom commands or a template, the job might take longer to complete than a typical configuration job. The command output is as follows:

```
ssl-proxy(config)# crypto key generate rsa general-keys label ssh-key
The name for the keys will be: ssh-key
Choose the size of the key modulus in the range of 360 to 2048 for your
General Purpose Keys. Choosing a key modulus greater than 512 may take a few minutes.
```

## Configuration Troubleshooting

This section provides the following troubleshooting information:

- **Symptom** When I perform a configuration update to the startup-configuration of a device, the device becomes unreachable.
- **Symptom** Configuration jobs fail when the hostname command is used in the Custom Values page.
- **Symptom** The WLSE will not save a newly-created configuration template.
- **Symptom** A configuration job fails using a template imported from an IOS access point.
- **Symptom** The banner command in an IOS custom template fails or is incomplete.
- **Symptom** An IOS template job failed.
- **Symptom** Configuration jobs fail because the Telnet/SSH credentials are not valid, even though credentials have been entered on the WLSE.
- **Symptom** Access points do not get the expected configuration applied from an auto-managed configuration template.
- **Symptom** An SCP job fails with username having 15 privilege.

---

**Symptom** When I perform a configuration update to the startup-configuration of a device, the device becomes unreachable.

**Possible Cause** The template is missing the Integrated Routing and Bridging configurations.

**Recommended Action** Edit the template and add the following configuration to Custom Value page:

```
bridge irb
interface FastEthernet0
bridge-group 1
bridge 1 route ip
```

**Symptom** Configuration jobs fail when the hostname command is used in the Custom Values page.

**Possible Cause** If the template is configured to disable Telnet or SSH using the Services > Telnet/SSH page, and if the hostname command precedes the enabling of Telnet or SSH in the Custom Values page, the configuration job will fail after applying the hostname command.

**Recommended Action** Enter the hostname command as the last command in the Custom Values page.

**Symptom** The WLSE will not save a newly-created configuration template.

**Possible Cause** The popup blocker on the Web interface has not been disabled.

**Recommended Action** Disable popup-blocking software or add the WLSE to the “allow” list.

**Symptom** A configuration job fails using a template imported from an IOS access point.

**Possible Cause** It has commands such as `power local 100` that cause it to fail.

**Recommended Action** Check the job log to see which commands failed; remove the commands from the template using the Custom Values screen; then save the template and rerun the configuration job.

**Symptom** The banner command in an IOS custom template fails or is incomplete.

**Possible Cause** The banner command fails because it contains 240 or more characters.

**Possible Cause** A delimiter in the banner string, can cause a partial banner to be applied to the device. For example, if the following command is typed in the custom template using the letter “c” as the delimiter: `banner motd c This is to check banner c`, the following is displayed when previewed: “`banner motd c This is to c.`” The banner displays incorrectly because there is a word in the banner (check) that begins with the same character used as the delimiter.

**Recommended Action** Use less than 240 characters in the banner string, and do not use characters for delimiters if the characters are also used in the text of the banner.

**Symptom** An IOS template job failed.

**Possible Cause** The template has the hostname configured instead of the IP address, and the DNS name resolution is not configured correctly on the access point.

**Recommended Action** Use the IP address or configure the DNS name correctly on the access point.

**Symptom** Configuration jobs fail because the Telnet/SSH credentials are not valid, even though credentials have been entered on the WLSE.

**Possible Cause** The credentials entered on the WLSE do not exactly match the data entered in **Devices > Discovery > Device Credentials > Telnet/SSH User/Password**.

**Recommended Action** Make sure that the Telnet/SSH credentials data entered on the WLSE show the correct device login response. Match the device login sequence with the credential fields, as shown in [Symptom Firmware jobs fail because the Telnet/SSH credentials are not valid., page 1-30](#).

**Symptom** Access points do not get the expected configuration applied from an auto-managed configuration template.

**Possible Cause** An auto-managed configuration template exists that is assigned to meet other matching criteria.

**Recommended Action** Check the matching criteria by selecting **Configure > Auto Update > Auto-Managed Configuration > Assign Templates**.

**Symptom** An SCP job fails with username having 15 privilege.

**Possible Cause** If the device is having the following configuration:

```
aaa new-model
no aaa authentication login default
no aaa authorization exec default
```

Logging in with privilege 15 username/password, requires that the enable secret/password be entered in exec mode.

**Recommended Action** Configure the authentication to use local or server level authentication.

## Firmware FAQs and Troubleshooting

- [Firmware FAQs, page 1-27](#)
- [Firmware Troubleshooting, page 1-28](#)

### Firmware FAQs

- [Q.I have an AP 1232, but under Firmware > Images > Import, there is no AP1232 Device Type to select. Which one should I choose?](#)
- [Q.How can firmware images be imported?](#)
- [Q.Are firmware jobs run by using both HTTP and SNMP?](#)
- [Q.What kinds of job logs are available?](#)
- [Q.How many devices can I have in one firmware job?](#)
- [Q.Can I give a firmware job a name that is used for a configuration or radio management job?](#)

---

**Q.** I have an AP 1232, but under Firmware > Images > Import, there is no AP1232 Device Type to select. Which one should I choose?

**A.** AP1210.

**Q.** How can firmware images be imported?

**A.** Firmware images can be imported to WLSE from the desktop as well as Cisco.com. While importing any image from Cisco.com, the WLSE reads the version string and the device type for the image attributes. For imports from the desktop, you must make sure that the version and the device type strings are correctly entered in the image attributes.

**Q.** Are firmware jobs run by using both HTTP and SNMP?

**A.** No. Firmware upgrades use SNMP only. Make sure the following setup parameters are in place before running the upgrade job:

SNMP credentials for the device (with admin and firmware privileges on the AP) must match those entered on the WLSE SNMP device credentials screen.

- Q.** What kinds of job logs are available?
- A.** There are two kinds of job logs: Job run log and the jobvm log.
- The job run log is where events are logged for a particular job's run. This log can be used to check what went wrong with the job and make any required corrections. The job run log can be viewed by selecting a particular job from the job list, then clicking **Job Run Detail**. From the window that pops up, select a particular run for the job, then click **Job Run Log**.
  - The jobvm.log is a global log for all types of jobs. It is used mainly for development troubleshooting. The jobvm.log can be viewed by selecting **Admin > Appliance > View Log File**, then clicking **jobvm.log**.
- Q.** How many devices can I have in one firmware job?
- A.** There is no limit, although it is recommended that you work with device groups and set up jobs accordingly (for example, by location or building). The WLSE can run 10 jobs in parallel. While a job is running, the WLSE allocates resources for updating 20 devices in parallel. At any given time, 20 devices will be upgrading and the remainder will be waiting for resources to become available.
- Creating a single job with more than 100 access points is not recommended. If you are updating the firmware on a large number of access points, you might want to convert a few APs initially to get familiar with the process. Once you are familiar with the process, you can create a job with 20 devices, then increase the number of devices if no devices are failing. By running a smaller job, you will also know how much time it takes for the job to complete.
- Q.** Can I give a firmware job a name that is used for a configuration or radio management job?
- A.** No. Job names cannot be duplicated.

## Firmware Troubleshooting

This section provides the following troubleshooting information:

- **Symptom** When uploading an image to an access point from a remote TFTP server, the access point reports an Invalid checksum error or Unknown failure.
- **Symptom** There is a time discrepancy in a job.
- **Symptom** Email about job completion fails to arrive at destination.
- **Symptom** Firmware is not updated on all the devices included in a job.
- **Symptom** An SNMP job fails.
- **Symptom** When downloading firmware from Cisco.com, an error message about cryptography permissions appears.
- **Symptom** When downloading firmware from Cisco.com, an error message about connectivity failure appears.
- **Symptom** Firmware jobs fail because the Telnet/SSH credentials are not valid.

**Symptom** When uploading an image to an access point from a remote TFTP server, the access point reports an Invalid checksum error or Unknown failure.

**Possible Cause** The image filename entered in the job does not match the image filename on the remote TFTP server.

**Recommended Action** Make sure the filenames on the job and on the server are the same.

**Possible Cause** The selected image and the selected devices are of different device types. For example, if an AP1100 image and the BR1300 device type are chosen.

**Recommended Action** Make sure the selected image and the selected devices are of same type.

**Symptom** There is a time discrepancy in a job.

**Possible Cause** The time was not set correctly on the WLSE.

**Recommended Action**

- a. Reset the WLSE time to Universal Coordinated Time (UTC) using CLI commands as follows:  
Enter **services stop** to stop services.  
Enter the **clock** command to reset the time.  
Enter **services start** to restart the services.
- b. Set the time in local browser time, select Admin > Appliance > Time/NTP/Name.

For more information on setting the time, see the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13*. You can access a PDF version of this guide by clicking **View PDF** in the WLSE's online help.

**Symptom** Email about job completion fails to arrive at destination.

**Possible Cause** The SMTP server is not specified.

**Recommended Action** Configure the mail route by selecting Admin > Appliance > Configure Mailroute.

**Symptom** Firmware is not updated on all the devices included in a job.

**Possible Cause** There were warnings displayed when the job was saved. Jobs for devices with warnings do not run; the job runs only for devices that do not have any warnings.

**Recommended Action** Solve the problems indicated in the warning messages before running the job.

**Possible Cause** If two firmware jobs were scheduled closely together, the second job contained some of the same devices as the first job. Those devices could not be updated because the first job was already running.

**Recommended Action** It is recommended that firmware jobs be run on groups of devices. Each group should be exclusive; that is, no device should be a member of more than one group.

For more information on updating firmware, see the *User Guide for the CiscoWorks Wireless LAN Solution Engine, 2.13*. You can access a PDF version of this guide by clicking **View PDF** in the WLSE's online help.

**Symptom** An SNMP job fails.

**Possible Cause** The read community string does not have sufficient permissions.

**Recommended Action** The access point must have a user with at least SNMP, FIRMWARE, and ADMIN permissions for read-only access.

**Symptom** When downloading firmware from Cisco.com, an error message about cryptography permissions appears.

**Possible Cause** The first time you attempt to download firmware, the WLSE displays this message: Error while selecting or displaying image details. Please log into cisco.com and make sure your username has acknowledged cryptography permissions for downloading IOS images.

**Recommended Action** Log into Cisco.com and acknowledge the cryptography permissions. After you have acknowledged these permissions, you can import IOS images to the WLSE.

**Symptom** When downloading firmware from Cisco.com, an error message about connectivity failure appears.

**Possible Cause** DNS is not configured on the WLSE.

**Recommended Action** Configure DNS on the WLSE and make sure the WLSE can resolve the cisco.com domain name. For information about configuring DNS, see the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13* or the Installation and Configuration Guide for your hardware.

**Symptom** Firmware jobs fail because the Telnet/SSH credentials are not valid.

**Possible Cause** The credentials entered on the WLSE do not exactly match the data entered in **Devices > Discovery > Device Credentials > Telnet/SSH User/Password**.

**Recommended Action** Make sure that the Telnet/SSH credentials data entered on the WLSE show the correct device login response. Match the device login sequence with the credential fields as follows.

**Table 1-2 Telnet/SSH Credentials Required**

| Device Login Sequence                                                                       | Telnet Credential Fields Required                                 |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Username:<br>Password:<br>prompt> <b>enable</b><br>Password:<br>enable prompt #             | User Name<br>User Password<br>Enable Password                     |
| Password:<br>prompt> <b>enable</b><br>Password:<br>enable prompt#                           | User Password<br>Enable Password                                  |
| Username:<br>Password:<br>enable prompt#                                                    | User Name<br>User Password                                        |
| enable prompt#                                                                              | (no credentials required)                                         |
| Username:<br>prompt> <b>enable</b><br>Password:<br>enable prompt#                           | User Name<br>Enable Password                                      |
| Username:<br>prompt#                                                                        | User Name                                                         |
| Username:<br>Password:<br>prompt> <b>enable</b><br>Username:<br>Password:<br>enable prompt# | User Name<br>User Password<br>Enable User Name<br>Enable Password |

## Reports FAQs and Troubleshooting

- [Reports FAQs, page 1-31](#)
- [Reports Troubleshooting, page 1-32](#)

### Reports FAQs

- Q.** When does data for the reports get aggregated?
- A.** The first weekly/monthly aggregation does not start at the beginning of the week/month. The first aggregation might happen earlier than the beginning of the week/month. After the first weekly/monthly aggregation, all subsequent weekly/monthly aggregation occurs every 7 days for weekly aggregation, or every 30 days for monthly aggregation from the first time the aggregation occurred.
- Q.** Are any of the Current or Trend reports real-time reports?
- A.** The reports are not real time. They are based on data that is collected periodically. The frequency with which the data is collected is user configurable (see Devices > Discover > Inventory > Polling). The data shown in reports is as current as the time the data was collected from the devices.
- Q.** In the Group Performance Report: RF Utilization, how is the value in the As Of column calculated?

- A.** The As Of column indicates the starting time of the aggregation for the utilization report. Therefore, the starting time shown might be earlier than the date range selected for the report.
- Q.** How long can report data be kept in WLSE?
- A.** the trends reports data is kept in the WLSE database for a specific amount of time, which can be configured (see Devices > Discover > Inventory > Polling).
- Q.** The SSID field in the **Manage Rogues > Rogue AP List** report is being displayed in hexagonal format (for example, "\x00\x00\x00\x00\x00\x00\x00\x00"). What causes this?
- A.** If the SSID contains unprintable characters, the WLSE displays it in hex notation. In this example, the SSID is set to 9 hex zeros.
- The WLSE displays unprintable characters as \xNN, where NN is the hex value of each character, followed by the length of the SSID in bytes. For example, "\x00" [1] means that the SSID contains the hex value \x00 and is 1 byte long. In addition, any double quote marks or backslashes that are part of the SSID octets are displayed using a preceding backslash (for example, \" or \\).
- Q.** Why is the device information in the reports under Device Center not displaying properly when I view them with a Firefox browser?
- A.** Firefox does not support line breaks or long text (maximum 50 characters).

## Reports Troubleshooting

This section provides the following troubleshooting information:

- **Symptom** The Top N Busiest Clients report and the Client Statistics report display 0 (zero) values.
- **Symptom** The client association data in the Group Client Association report differs from the data shown in the Current Client Associations report.
- **Symptom** The access point data in the Historical Associations report is not accurate.
- **Symptom** The Summary and/or Detailed report for access points is empty.
- **Symptom** The group report for a user-defined group contains no data.
- **Symptom** After running a job, the updated data does not appear in a report.
- **Symptom** Email fails to arrive at its destination.
- **Symptom** There is a time discrepancy in the scheduled email jobs.
- **Symptom** No VLAN information is displayed for IOS access points.
- **Symptom** There is a discrepancy in the first aggregation intervals after the first time the WLSE started up or after the WLSE's software was upgraded.
- **Symptom** In the Group Client Association Report, the Number of Clients Associated with this Group displays a 0 (zero).

**Symptom** The Top N Busiest Clients report and the Client Statistics report display 0 (zero) values.

**Possible Cause** Wireless client polling frequency is set to 51 minutes by default. The counters could reset between two polling cycles which would cause zero values when the reports are run.

**Recommended Action** Increase the polling frequency by selecting Devices > Discover > Inventory > Polling.

**Caution**

---

Increasing the polling frequency could have an effect on performance.

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**Symptom** The client association data in the Group Client Association report differs from the data shown in the Current Client Associations report.

**Possible Cause** The data for the Group Client Association report is collected using performance attributes polling and the data shown in the Current Client Association report uses wireless client polling.

Whichever report has a higher polling frequency will contain the most up to date data. Select Devices > Discover > Inventory > Polling to view polling frequency.

**Recommended Action** None.

**Symptom** The access point data in the Historical Associations report is not accurate.

**Possible Cause** The wireless client was associated with an access point managed by the WLSE, but subsequently associated with an access point that was added to the network, but not yet managed by the WLSE.

**Recommended Action** Verify that the associated access points are in the managed devices folder by selecting Devices > Discover > Managed Devices > Manage/Unmanage.

**Symptom** The Summary and/or Detailed report for access points is empty.

**Possible Cause** The SNMP user may not have the correct rights assigned.

**Recommended Action**

- a. Open a browser window to the access point, and select Setup > Security > User Information.
- b. Make sure that the user corresponding to the SNMP community (which is set up in WLSE in Discovery > Device Credentials) has been granted rights for the following: Ident, firmware, admin, snmp, and write.
- c. If not, click on the user and assign all these rights.

**Symptom** The group report for a user-defined group contains no data.

**Possible Cause** Reports cannot be displayed for a user-defined group that contains another group.

**Recommended Action** Display individual reports for the sub-groups or devices within the user-defined group.

**Symptom** After running a job, the updated data does not appear in a report.

**Possible Cause** A full polling cycle has not completed and the new data has not been entered in the database.

**Recommended Action** Verify that the polling cycle has completed as follows:

- a. Select Admin > Appliance > Status > View Log File.
- b. Click **jobvm.log**.
- c. Scroll through the log to find the message: “Finished Inventory” for your particular job.

**Symptom** Email fails to arrive at its destination.

**Possible Cause** The SMTP server is not configured properly.

**Recommended Action** Configure the SMTP server by selecting Admin > Appliance > Configure Mailroute.

You can also Telnet or SSH to the WLSE and clear the send queue, the user queue, and the mail log and then send email to yourself. For example:

```
admin@mywlse: mailcontrl clear
admin@mywlse: mail to email_address
```

**Symptom** There is a time discrepancy in the scheduled email jobs.

**Possible Cause** The time is not set correctly on the WLSE.

**Recommended Action**

- a. Reset the WLSE time to Universal Coordinated Time (UTC) using CLI commands as follows:
  - Enter **services stop** to stop services.
  - Enter the **clock** command to reset the time.
  - Enter **services start** to restart the services.
- b. Set the time in local browser time, select Admin > Appliance > Time/NTP/Name.

**Symptom** No VLAN information is displayed for IOS access points.

**Possible Cause** WEP keys have not been configured in each VLAN. When the WEP keys are configured in the IOS access points, VLAN information is accessible by SNMP.

**Recommended Action** Configure the WEP keys for the corresponding VLAN.

**Symptom** There is a discrepancy in the first aggregation intervals after the first time the WLSE started up or after the WLSE’s software was upgraded.

For example, weekly data is displayed within 2 days of initial startup or upgrade, or the aggregation period began before the initial startup or upgrade.

**Possible Cause** This is because the very first aggregations are based on day and time that the WLSE's system software was installed, and the formula for computing the next aggregation is causing this discrepancy.

**Recommended Action** No action is required. Subsequent aggregations will occur at the normal intervals.

**Symptom** In the Group Client Association Report, the Number of Clients Associated with this Group displays a 0 (zero).

**Possible Cause** The devices in the group have IOS version 12.3(2)JA or earlier, which will provide a negative value for the number of clients associated. The WLSE ignores negative values and reports them as 0.

**Recommended Action** Upgrade the devices to the latest IOS version.

## Radio Manager FAQs and Troubleshooting

- [Radio Manager FAQs](#)
- [Radio Manager Troubleshooting](#)

### Radio Manager FAQs

#### Configuration

- [Q.For each AP to report radio information back to WLSE, does each AP need to be configured as a WDS AP?](#)
- [Q.If so, do I need a separate username and password for each? If not, how many WDS APs would I need?](#)
- [Q.Do I need a separate infrastructure SSID for the APs that are configured as WDS?](#)
- [Q.Why does a WLSE radio plan recommend the same channel for adjacent APs?](#)

#### Radio Monitoring

- [Q.Is there a problem if Radio Monitoring is always disabled?](#)
- [Q.What is the throughput impact if Radio Monitoring is enabled?](#)

#### Self Healing

- [Q.How do “Hot Standby” and “Self-Healing” work together?](#)
- [Q.In a centralized deployment where WLSE is located in a central location and wireless network is being managed across the WAN, how does Self Healing behave when there is a WAN failure?](#)
- [Q.The suggested new settings are confusing—why does Self Healing decrease the transmit power?](#)
- [Q.After the administrator replaces the failed AP, will WLSE detect it and change the power of that AP back to its original power?](#)
- [Q.I am seeing warning messages in the self healing run log. What do they mean?](#)

**Auto Re-Site Survey**

- Q. Is there a limit to the number of floors or access points that can be enabled for the auto re-site survey?
- Q. Will it cause problems if a floor that has no access points yet is added to Auto Re-Site Survey?

**Miscellaneous**

- Q. Can I give a radio management job a name that is used for a firmware or configuration management job?
- Q. Can I use a non-Cisco RADIUS server with radio management?
- Q. Why does the Client MAC Spoofing fault reappear after it has been cleared?

**Configuration**

- Q.** For each AP to report radio information back to WLSE, does each AP need to be configured as a WDS AP?
- A.** No, one WDS AP or WDS Router must be configured for each AP subnet. The WDSs should be configured to know about WLSE.

For example, if you have 3 AP subnets in a building, you must set up 3 APs as WDS APs. Those 3 APs must be configured with the IP of the WLSE, and the non-WDS APs must be configured with the WLCCP username and password. These configuration settings will allow the APs to send information to the WDS APs, which the WDS APs will then forward to WLSE.



**Note** You could also set up a WLSM (Wireless LAN Services Module) device to manage your APs. One WLSM-WDS device can manage multiple AP subnets.

- Q.** If so, do I need a separate username and password for each? If not, how many WDS APs would I need?
- A.** No, you do not need a separate username and password for each. Each WDS AP (either 1100 or 1200) supports up to 30 APs.
- Q.** Do I need a separate infrastructure SSID for the APs that are configured as WDS?
- A.** No, the infrastructure SSID configuration does not need to be altered.
- Q.** Why does a WLSE radio plan recommend the same channel for adjacent APs?
- A.** In a WLAN (versus a traditional 2G cellular), the co-location of physically adjacent APs on the same channels is not considered a bad deployment or misconfiguration. For a detailed explanation, see the section Understanding Frequency and Transmit Power Planning in the online help or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, 2.13*.

**Radio Monitoring**

- Q.** Is there a problem if Radio Monitoring is always disabled?
- A.** If you disable Radio Monitoring, you will not have access to several features, including continuous detection of rogue APs, self-healing networks, auto re-site surveys, and certain Radio Manager reports.

- Q.** What is the throughput impact if Radio Monitoring is enabled?
- A.** Each AP scans all supported non-serving channels every 90 seconds. Each non-serving channel scan lasts for 20 to 30ms depending on radio type. Because of the short duration, the overall impact to the throughput should be less than 1% of the total bandwidth.

### Self Healing

- Q.** How do “Hot Standby” and “Self-Healing” work together?
- A.** Hot Standby allows the customer to keep a redundant standby AP set for a primary AP. Then, if the primary AP goes down, the standby will take over—presumably, with the same or similar settings—to allow for no loss in coverage.

With Self Healing, the WLSE monitors the wireless network and if it determines a radio is down, it modifies the power settings of neighboring APs in an attempt to maintain the coverage.

If both Hot Standby and Self Healing are deployed, then Hot Standby takes precedence over Self Healing. In this case, Self Healing does not modify the neighboring APs unless the standby becomes the primary AP *and* that AP goes down as well (a double failure).

- Q.** In a centralized deployment where WLSE is located in a central location and wireless network is being managed across the WAN, how does Self Healing behave when there is a WAN failure?
- A.** The Self Healing feature runs on the WLSE, which means that the downed radio determination is evaluated on the WLSE. The data for this determination is provided to the WLSE over the wired network via the WDS and SWAN architecture. The power setting changes are initiated from the WLSE and deployed over the wired network as well. If there is a prolonged WAN failure between the WLSE and the wireless network under management, the WLSE cannot provide the Self Healing feature.
- Q.** The suggested new settings are confusing—why does Self Healing *decrease* the transmit power?
- A.** Transmit power is not always increased on neighboring APs. When a radio is detected as down, WLSE computes the best coverage possible given the available radios and current channel settings. In response to a downed radio, WLSE only changes power—it does not change the channels. Given these constraints, the power for some radios is turned down while the power for others is turned up to ensure the best coverage. While this may not seem intuitive, it is expected.
- Q.** After the administrator replaces the failed AP, will WLSE detect it and change the power of that AP back to its original power?
- A.** When the failed AP is up again, the next self-healing event recalculates the power setting for the surrounding APs based on the latest radio measurement data (if Radio Monitoring is enabled, radio measurement data is updated every 90 seconds). The new power setting might not be the same as the original one because WLSE does not save the original power settings.

WLSE assumes you are using it for your initial setup and site planning, and therefore Self Healing is merely a rerun of the initial calculations minus the downed radio. When WLSE finds that a failed radio is back up, it reruns the calculations, this time including the radio.

If you use WLSE initially, the calculations will yield the same or equivalent results. If you set your power settings manually, then after the radio is detected as down and then back up, the results of the calculations could differ from your manual settings.

For example, assume you have a network with four APs {A,B,C,D}.

- **When WLSE is used for initial setup:**

You use Assisted Site Survey to generate your power settings and apply the following power settings (respectively):

{5,10,20,5}

AP C goes down and Self Healing adjusts the power settings:

{5,20,down,20}

AP C comes back up and Self Healing adjusts the power settings:

{10,5,20,5}

In the final state, this is an equivalent coverage—perhaps not the exact settings, but equivalent.

– **When you set the power manually and do not use WLSE to calculate the initial coverage:**

You manually set the power setting to:

{10,10,10,10}

AP C goes down and Self Healing adjusts the power settings:

{5,20,down,20}

AP C comes back up and Self Healing adjusts the power settings:

{10,5,20,5}

Self Healing uses the WLSE recommended settings when the AP comes back up, not the manual settings. WLSE is not designed to save check point configurations as part of the management.




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**Note** All Self Healing power settings are temporary, so any reload of the APs will revert to the last saved configuration on the AP itself.

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- Q.** I am seeing warning messages in the self healing run log. What do they mean?
- A.** These messages are warnings—not errors, faults, or actionable items. There are two types of warning messages:

```
Dot11Radio0[MACADDRESS]@IPADDRESS
Does not have any reliable vouchers within range or configuraton
```

For the given radio there are no other radios that have an acceptable path loss or configuration to vouch for the monitored radio. To determine if a radio is transmitting, at least one other radio in the deployment must be able to reliably hear the monitored radio's beacons. In that case, the monitoring for the radios in question will rely solely on the WDS/Registration that is maintained over the AP's Ethernet connection (that is, not wirelessly).

The determination of a reliable voucher for a monitored radio is made based upon RSSI/Path Loss and basic rate sets. Keep in mind, however, that the data rates configured on a radio are not necessarily the same as the basic rate sets (beacon data rates).

The following reports in **Reports > Radio Manager** can help you here:

- Configured Radio Parameters Report
- Path Loss between Manager APs Report

By looking at the path loss and configured data rates between APs you can see if the radio in question has any acceptable radios in range.

```
WARNING: Dot11Radio1[MACADDRESS/BAND]@IPADDRESS
has excessive links to other radios which may make this radio appear stale
(undetectable beacons), total = XX
```

The radio in question is detecting a large amount of neighboring radios. If a radio is detecting too many other radio beacons (the warning message includes the total detected), it might not have the bandwidth to process the beacons. This makes the radio in question unreliable for vouching for other radios.

If the monitored radios do not have enough vouchers or too many radios are detecting excessive links (due to a very congested air space), self healing will rely only on the WDS registration over the Ethernet connection. In this case a radio that fails but remains connected to the Ethernet might not be compensated for. If you are concerned about the likelihood of a downed or tampered radio that remains network connected, you can:

- Add more APs to the coverage plan, or
- Ensure proper coverage with scanning-only APs selectively placed on your critical floors.

If your network is still critically overcrowded, the only means of detection will be over the wired network. If you are still concerned, you might want to investigate using hot standby APs for your critical coverage points.

### Auto Re-Site Survey

- Q.** Is there a limit to the number of floors or access points that can be enabled for the auto re-site survey?
- A.** Auto Re-Site Survey is only limited by the recommended limits for managed APs.
- Q.** Will it cause problems if a floor that has no access points yet is added to Auto Re-Site Survey?
- A.** Selecting floors that do not have APs yet should not cause a processing problem. But enabling Auto Re-Site Survey on an empty floor doesn't make much sense. Instead, you should run Auto Re-Site Survey to recompute the throughput values after the APs have been placed on the floor and the coverage and network is stable.

### Miscellaneous

- Q.** Can I give a radio management job a name that is used for a firmware or configuration management job?
- A.** No. Job names cannot be duplicated.
- Q.** Can I use a non-Cisco RADIUS server with radio management?
- A.** A RADIUS server that supports LEAP is required for infrastructure authentication. RADIUS servers other than Cisco ACS have not been extensively tested. Problems have been observed with the Funk Steel Belt and FreeRADIUS servers.

If you do not want to turn on LEAP in your RADIUS server and you are using AP-based WDS (not WLSM-based WDS), you can turn on the Local Authentication Server (LAS) software feature on the WDS AP. Then, you can use LAS for infrastructure authentication via LEAP while using the external AAA server with non-LEAP authentication for client authentication.

If you use the approach outlined above, you will need to enter the security credential of the WLSE into the each LAS (WDS AP) and make sure that the same credential is added to all the LAS (WDS AP).

If you have many subnets with WDS APs, it will be easier to use a centralized AAA server with LEAP turned on only for SWAN infrastructure authentication. Use AES, PEAP, or a more advanced security scheme for client authentication.

- Q.** Why does the Client MAC Spoofing fault reappear after it has been cleared?
- A.** The WLSE raises faults for all clients identified by MIB `ciscoWdsIdsMacSpoofClient` (1.3.6.1.4.1.9.9.457.1.1.3.1.3). It retains the history of all spoofed MAC addresses.

Because the WDS maintains the history of all spoofed MAC addresses, the WLSE raises the MAC spoofing fault during the poll cycle, even after the fault is cleared on the WLSE. If you have cleared the MAC spoofing condition in the network, you need to Acknowledge the fault on WLSE.

An entry from the WDS MIB is cleared when one of the following occurs:

- The WDS AP reaches the maximum number of events to hold for a reporting non-WDS AP. The maximum number is determined by the following MIBs: `ciscoWdsIdsMaxMacAddresses` and `ciscoWdsIdsMaxEntriesPerMac`.
- The WDS is unconfigured.

## Radio Manager Troubleshooting

This section provides the following troubleshooting information:

- [Symptom WDS has been set up on the AP and WLSE, but WDS isn't authenticating with WLSE.](#)
- [Symptom My clients are not being authenticated through WDS.](#)
- [Symptom The Verify RM Capability tool reports the following error: WLSE-WDS Authentication Test—Failed. FreeRadius 1.5 is being used for authentication.](#)
- [Symptom Self Healing is taking a very long time to complete.](#)

**Symptom** WDS has been set up on the AP and WLSE, but WDS isn't authenticating with WLSE.

The “Not Authenticated” you see in response to the “show wlccp wnm status” command means that the WDS component has not authenticated the WLSE. There are two possible causes:

**Possible Cause** The device credentials in the WLSE are not correct. The user name and password should match the user names and passwords entered on the WDS AP and the AAA server.

**Recommended Action** To correct the credentials:

1. Select **Devices > Discover > Device Credentials > WLCCP Credentials**.
2. Change the **Radius User Name** and **Radius Password** fields to match the user names and passwords entered on the WDS AP and the AAA server.

**Possible Cause** The WDS AP has not been managed in the WLSE.

**Recommended Action** To manage the WDS AP:

1. Select **Devices > Discover > Managed/Unmanaged**.
2. Look in the **New** folder for your WDS AP.
3. Select it, then select **Manage**. The process will take 1-2 minutes.

After the WLSE is authenticated by the WDS, the WDS reports its member APs to the WLSE, so they are “discovered” by the WLSE. After these member APs have been discovered, you will need to manage them as well.

**Symptom** My clients are not being authenticated through WDS.

**Possible Cause** You have not created a server group on the WDS for client authentication.

**Recommended Action** To create a server group on the WDS for client authentication, you can use the AP CLI, the AP web interface, or the WLSE configuration templates for an AP-WDS, or the WLSM CLI for a WLSM-WDS. For more information, see the device setup information in the online help or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, 2.13*.

**Symptom** The **Verify RM Capability** tool reports the following error: WLSE-WDS Authentication Test—Failed. FreeRadius 1.5 is being used for authentication.

**Possible Cause** If the command **show wlcsp wnm status** on the WDS does not show SECURITY KEYS SETUP, then the issue is probably a known problem with FreeRADIUS. FreeRADIUS requires a patch to be fully compliant with Cisco LEAP.

**Recommended Action** You can download this patch from:

<http://lists.freeradius.org/pipermail/freeradius-users/2004-October/037017.html>

**Symptom** Self Healing is taking a very long time to complete.

**Possible Cause** Self-Healing compensation is on a per-building basis. If you have too many APs per building, for example, 200 APs, Self Healing computation can take a long time and, in extreme cases cases, the WLSE might run out of memory. It is recommended that you do not have more than 200 APs in one building.

**Recommended Action** If your building has more than 200 APs, create multiple logical buildings so that no one building has more than 200 APs.

## Sites FAQs and Troubleshooting

- [Sites FAQs](#)
- [Sites Troubleshooting](#)

### Sites FAQs

#### Location Manager

- [Q.Is there is a size limitation for the building image that can be imported in Location Manager?](#)
- [Q.Why does Location Manager show a coverage map for an AP based on the configured transmit power setting even when the radios are shut down?](#)
- [Q.In Location Manager > Rogue > Unknown Radio List, why does the Switch IP Address field say Unknown?](#)

#### Assisted Site survey Wizard

- [Q.Why don't I see the building or floor node in the device tree in the Assisted Site Survey Wizard?](#)
- [Q.Why don't I see the device that I am looking for in the Assisted Site Survey device tree?](#)

- Q.When I select devices in the Assisted Site Survey Wizard, why are some shown in red?
- Q.When I'm using the Assisted Site Survey Wizard, why is the Next button disabled after I complete step one?
- Q.In the Assisted Site Survey Wizard, why is Use Old Radio Scan Data disabled?
- Q.In the Assisted Site Survey Wizard, what does None mean in the Last Scan Time field?
- Q.In the Assisted Site Survey Wizard, why is the Next button disabled on the radio scan step?
- Q.Why did my radio scan job fail in the Assisted Site Survey Wizard?
- Q.When I'm using the Assisted Site Survey Wizard, the radio scan progress advances very slowly. How long does it radio scan normally take?
- Q.Can I skip client walkabout in the Assisted Site Survey Wizard even though the number of data shown is zero?
- Q.In the client walkabout step in the Assisted Site Survey Wizard, what is the Recall button for?
- Q.What is the difference between the Number of Location Data and Number of New Location Data fields?
- Q.In the Constraints and Goals step in the Assisted Site Survey Wizard, how do I select multiple channels in the channel list?
- Q.How long should the Constraints and Goals calculation step take in the Assisted Site Survey Wizard?
- Q.Where can I see the result of the Constraints and Goals calculation in the Assisted Site Survey Wizard?
- Q.If I don't like result of the Constraints and Goals calculation in the Assisted Site Survey Wizard, what can I do?
- Q.When I apply the configuration in the Assisted Site Survey Wizard, where do I see the results?
- Q.In the last step of the Assisted Site Survey Wizard, why is the Next button disabled?

#### AP Radio Scan

- Q.How does AP Radio Scan affect an access point's performance?
- Q.Is the WDS radio required to be up during an AP radio scan?
- Q.Is it necessary to do an AP radio scan after a firmware upgrade to get faster and better results?

#### Radio Parameter Generation

Q.When WLSE is trying to calculate new radio parameter generations, why do I get an error about walkabout locations?

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#### Location Manager

- Q.** Is there is a size limitation for the building image that can be imported in Location Manager?
- A.** Although there is no limit on the file size for each image, for the best performance we suggest that the image file be less than 300KB and less than 1,000x1,000 pixels. For optimal performance, if the image file was created using a graphic editing application, save the file for use as a "web image" if possible.

- Q.** Why does Location Manager show a coverage map for an AP based on the configured transmit power setting even when the radios are shut down?
- A.** If you did not select **Display coverage for operational radio interfaces only** in **Edit > Preferences**, Location Manager displays coverage based on the configured values. Even when a radio is turned off, it still has a configured transmit power. The coverage display is calculated from the WLSE RM database (populated by AP radio scan, client walkabout, and RF monitoring) using a calibrated path loss model. What the display represents is an estimation of the coverage area based on the RM data.
- Q.** In **Location Manager > Rogue > Unknown Radio List**, why does the Switch IP Address field say Unknown?

**Recommended Action** If the switch IP address is *Unknown*, the IP address of the switch that the unknown radio is connected to could not be determined. To find the switch port to which the rogue AP is connected, the Switch Port Location feature uses the rogue AP's BSSID that it hears over the air to make a heuristic guess of the rogue's Ethernet MAC address. This might not be possible, however, if its Ethernet MAC address and BSSID do not follow the one-off rule, where the MAC address is the same or one-off of the BSSID. For more information, see the Understanding Switch Port Location and Suppression section in the online help or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, 2.13*.

#### Assisted Site Survey Wizard

- Q.** Why don't I see the building or floor node in the device tree in the Assisted Site Survey Wizard?
- A.** Expand the building node to see all floors that belong to the building. If you expand the building node and the floors still do not appear, close the Wizard and make sure the building and floor exist in the Location Manager navigation tree. If the building or floor does not exist in the Location Manager navigation tree, you first need to create them and then restart the Assisted Site Survey Wizard. See the topic Adding Building Information in the online help or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, 2.13*.
- Q.** Why don't I see the device that I am looking for in the Assisted Site Survey device tree?
- A.** Expand the building and floor nodes to see all devices that belong to a building or floor. If the device still does not appear, close the Assisted Site Survey Wizard and make sure the device appears in the Location Manager navigation tree. If the device does not appear in the Location Manager navigation tree, select **Tools > Find Device** to locate it. If you find the device, move it to the desired location. See the topic Adding Devices to the Floor Map in the online help or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, 2.13*. If the device does not appear in Location Manager, it might not have been discovered by the system. See the topic Managing Device Discovery in the online help or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, 2.13*. After adding the device and specifying its location, restart the Assisted Site Survey Wizard.
- Q.** When I select devices in the Assisted Site Survey Wizard, why are some shown in red?
- A.** The devices might be red if:
- The devices are not in the Managed state.
  - The devices are not in infrastructure mode.
  - Use the radio management verification tool to check on the status of the devices. Right-click on the device and select **Verify RM Capability**. The radio management verification tool displays problems and information about how to fix the problem. After fixing the devices, you can retry the wizard.

- Q.** When I'm using the Assisted Site Survey Wizard, why is the **Next** button disabled after I complete step one?
- A.** You have not selected any acceptable devices that are required for the next step. If any of the selected devices are shown in red, you need to deselect them before you can go to the next step.
- Q.** In the Assisted Site Survey Wizard, why is **Use Old Radio Scan Data** disabled?
- A.** You might not have previously run radio scan for the selected devices. You must start a new radio scan.
- Q.** In the Assisted Site Survey Wizard, what does *None* mean in the Last Scan Time field?
- A.** The selected device was not included in a previous radio scan.
- Q.** In the Assisted Site Survey Wizard, why is the **Next** button disabled on the radio scan step?
- A.** You need to run radio scan by clicking **Start**. When the radio scan is complete, you will be able to click **Next**.
- Q.** Why did my radio scan job fail in the Assisted Site Survey Wizard?
- A.** Look at the log window to find out exact failure cause. If radio scan failed:
- Make sure the devices have the correct setup for WDS. Also verify that WDS is authenticated to WLSE and that WDS has an IP address pointing to WLSE.
  - Make sure the devices have the correct SNMP read/write community strings that match the WLSE setting.
- Q.** When I'm using the Assisted Site Survey Wizard, the radio scan progress advances very slowly. How long does it radio scan normally take?
- A.** Radio scan normally takes about 5 to 10 minutes to complete. If you suspect the program has stalled, check its status by selecting Radio Manager > AP Radio Scan and viewing the progress of the job.
- Q.** Can I skip client walkabout in the Assisted Site Survey Wizard even though the number of data shown is zero?
- A.** Yes, you can skip client walkabout. However, performing a client walkabout will generate better parameters for your wireless network.
- Q.** In the client walkabout step in the Assisted Site Survey Wizard, what is the **Recall** button for?
- A.** You can click **Recall** to display a list of the last five client MAC addresses that were used for the previous client walkabout. To retrieve a previously used MAC address, click **Recall** and select a MAC address from the list.
- Q.** What is the difference between the **Number of Location Data** and **Number of New Location Data** fields?
- A.** Number of Location Data is the total number of data found by client walkabout for the current session plus any previous sessions. Number of New Location Data is the total number of data found by client walkabout for the current session only. The numbers in these two fields can increase at the same time during a client walkabout.

- Q.** In the Constraints and Goals step in the Assisted Site Survey Wizard, how do I select multiple channels in the channel list?
- A.** For Windows users, control-click on the channels to add them to the selection. The selected channels are highlighted.
- Q.** How long should the Constraints and Goals calculation step take in the Assisted Site Survey Wizard?
- A.** It varies depending on the amount of radio scan and client walkabout data. The more data you have, the longer it will take to calculate.
- Q.** Where can I see the result of the Constraints and Goals calculation in the Assisted Site Survey Wizard?
- A.** If the calculation was successful, you can click **Next** to view the result.
- Q.** If I don't like result of the Constraints and Goals calculation in the Assisted Site Survey Wizard, what can I do?
- A.** Go back and specify different constraints and goals, and then recalculate the constraints and goals.
- Q.** When I apply the configuration in the Assisted Site Survey Wizard, where do I see the results?
- A.** Check Location Manager to view the configuration changes. You might need to refresh the Location Manager window by selecting **View > Refresh Data**. In rare cases, the wizard might have failed to apply the configuration. In that case, check your SNMP settings, particularly the **WRITE** community string, for the devices.
- Q.** In the last step of the Assisted Site Survey Wizard, why is the **Next** button disabled?
- A.** This is the last step in Assisted Site Survey Wizard. You can close the Wizard unless you want to repeat any previous steps.

#### **AP Radio Scan**

- Q.** How does AP Radio Scan affect an access point's performance?
- A.** With all the APs configured to the same channel and at maximum power, there is some degradation in throughput. Also, while the APs step through their various power settings, there may be some loss of coverage. This only lasts for the length of the AP scan (3 to 4 minutes).
- Q.** Is the WDS radio required to be up during an AP radio scan?
- A.** No, but if the WDS radio is not up, the WDS will not be part of the radio scan. If you do include the WDS radio interface in the scan job, you will see some time-outs from this interface in the logs, but the scan will work on the other interfaces as expected. If you are not using a WDS to serve clients, you can turn off the radio to exclude this interface from the scan task.
- Q.** Is it necessary to do an AP radio scan after a firmware upgrade to get faster and better results?
- A.** It is recommended (but not required) that you run AP Radio Scan after any network change. The AP Radio Scan procedure will identify which radios are capable of detecting other radios. This information is periodically collected by WLSE via the WDS, but a Radio Scan will retrieve the information immediately.

### Radio Parameter Generation

- Q.** When WLSE is trying to calculate new radio parameter generations, why do I get an error about walkabout locations?
- A.** Before WLSE can generate radio parameters, you must have previously collected client walkabout data or you must have defined the dimensions of your building and floor(s). If you receive an error, make sure you have entered the correct building and floor dimensions using the Building and Floor Edit Tool in Location Manager and then try running the parameter generation again.

## Sites Troubleshooting

This section contains the following troubleshooting information:

- **Symptom** Location Manager does not display the location of an AP I know to be a rogue because the AP is reported to be in an unknown location.
- **Symptom** After completing the Assisted Site Survey, Location Manager did not update to include the applied configurations.
- **Symptom** It takes a very long time to import a building or floor image in to Location Manager.
- **Symptom** AP coverage is not displaying in Location Manager .
- **Symptom** When selecting View > Radio Band > Show 2.4 GHz, Location Manager does not refresh to show the 2.4 GHz radios.
- **Symptom** The Location Manager cannot be launched when using the Mozilla browser.
- **Symptom** ERROR: Aborting execution of AP Scanning task because there are no applicable Radio Interfaces that can participate.
- **Symptom** I've upgraded WLSE but Location Manager seems to be previous version.
- **Symptom** I've downgraded WLSE to older version, but when I launch Location Manager, it still seems to be the newer version.

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**Symptom** Location Manager does not display the location of an AP I know to be a rogue because the AP is reported to be in an unknown location.

**Possible Cause** The rogue AP was detected by APs whose locations were not specified in Location Manager, or the locations of the reporting APs were specified after the detection of the rogue AP.

**Recommended Action** In the Unknown Radio List window, determine which APs reported the detection. Make sure you have placed the reporting APs on a particular floor in Location Manager. Turn on Radio Monitoring for the reporting APs and after they detect the same rogue AP, the possible location of the rogue AP will be available.

**Symptom** After completing the Assisted Site Survey, Location Manager did not update to include the applied configurations.

**Possible Cause** You did not refresh the Location Manager window.

**Recommended Action** In the Location Manager window, select **View > Refresh Data**.

**Symptom** It takes a very long time to import a building or floor image in to Location Manager.

**Possible Cause** The resolution and pixel size of the image file is very large.

**Recommended Action** Because the larger an image resolution is, the longer it takes to upload to the server and the more memory it uses, it is recommended that your building and floor images be less than 1,000x1,000 pixels.

**Symptom** AP coverage is not displaying in Location Manager .

**Possible Cause** You have not imported an image map for the floor and did not enter the floor dimensions in the Building Tool.

**Recommended Action** Import an image map for the floor or if you do not want to use an image map, enter the floor dimensions in the Building Tool. For more information, see the instructions for adding building information in the online help or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, 2.13*.

**Symptom** When selecting **View > Radio Band > Show 2.4 GHz**, Location Manager does not refresh to show the 2.4 GHz radios.

**Possible Cause** The **View > Radio Band** menu filters the options (radio channel, transmit power, and data rate) that you want to display in the Location Manager window; it does not filter the display of the APs themselves.

**Recommended Action** Use the **View > Radio Band** menu to specify which radio band's view options to display and which information (radio channel, transmit power, and/or data rate) to display.

**Symptom** The Location Manager cannot be launched when using the Mozilla browser.

**Possible Cause** Cookies must be enabled on the browser.

**Recommended Action** Under **Edit > Preferences**, select **Privacy and Security > Cookies**. Enable all cookies or enable cookies for the originating web site only.

**Symptom** ERROR: Aborting execution of AP Scanning task because there are no applicable Radio Interfaces that can participate.

**Possible Cause** This error message says that the AP radio scan is ending because there are no interfaces capable of participating in the scan. It is always included with one or more messages that describe why a given interface was removed from the scan. For example:

WARNING: Skipping device 172.xx.xx.xxx because it is not registered with any WDS

There are quite a few reasons why an interface might be removed from the scan. The WLSE examines each interface separately; after that, if all interfaces have been removed, this error is displayed.

**Recommended Action** Use the radio management verification tool to check on the status of the devices that are displaying errors for AP radio scan. Right-click on each device and select **Verify RM Capability**. The radio management verification tool displays problems and information about how to fix the problem.

**Symptom** I've upgraded WLSE but Location Manager seems to be previous version.

**Possible Cause** You might not have closed the browser before relaunching Location Manager.

**Recommended Action** Close all browsers and Java Runtime instances, then relaunch Location Manager. If the symptom persists, check to see if your cache is enabled for the Java Plug-in. If it is, clear the cache from Java Plug-in Control Panel (for Windows, select **Start > Settings > Control Panel > Java Plug-in**), then restart the browser and relaunch Location Manager.

If the problem still exists, clear the Java cache entries as shown in the following steps:

1. Log in to WLSE and select **Sites > Location Manager**, but do *not* launch Location Manager. WLSE checks for the Java version and loads the necessary Java plug-in. After the Java plug-in is loaded, a new icon appears indicating it is loaded.
2. Right-click on the Java icon and select **Open Console**. The Java console launches. Click on the console and type the following commands, which are all single-character commands:

```
g
x
c
```

Leave the console open.

3. Clear the cache on your browser:  
For Internet Explorer, select **Tools > Internet Options > General > Settings**. Select "Every visit to the page" and click **OK**. Click on **Delete Files**, click **OK** on the pop-up, then click **OK**. This clears all temporary internet files.

For Mozilla Firefox, select **Tools > Options > Privacy > Cache**, then click **Clear**.

For Netscape, select **Edit > Preferences > Advanced > Cache**. Click **Clear Cache** and select "Every time I view the page." Uncheck "Prefetch web pages ...".

4. Restart your browser.

**Symptom** I've downgraded WLSE to older version, but when I launch Location Manager, it still seems to be the newer version.

**Recommended Action** Close all browsers and Java Runtime instances. Launch the Java Plug-in Control Panel (for Windows, select **Start > Settings > Control Panel > Java Plug-in**). Click on **Clear** in Cache tab, then click **Apply**. Relaunch the web browser for WLSE and Location Manager.

If the problem still exists, clear the Java cache entries as shown in steps 1-4 in the previous troubleshooting entry above.

# Intrusion Detection System FAQs and Troubleshooting

- [Intrusion Detection System FAQs](#)
- [Intrusion Detection System Troubleshooting](#)

## Intrusion Detection System FAQs

### Detecting Rogue APs

- [Q.How does WLSE detect rogue APs?](#)
- [Q.What is the difference between a rogue and a friendly AP?](#)
- [Q.How does the WLSE distinguish between a rogue device and an ad-hoc device?](#)
- [Q.How often does rogue AP detection occur and can it be customized?](#)
- [Q.How long does it typically take for the WLSE to detect a rogue access point after it is connected to the network?](#)
- [Q.Can I disable transmit on an AP and yet allow it to receive signals so that it can participate in rogue AP detection?](#)
- [Q.I want to disable Radio Monitoring and detect rogue APs only when AP Radio Scan jobs are scheduled. Is this possible?](#)
- [Q.What requirements and configuration are needed before a client can participate in rogue AP detection?](#)
- [Q.Can the client be used to help triangulate a rogue AP?](#)
- [Q.How can I automatically adjust the channel and power settings on my managed APs to overcome the coverage problems introduced by rogue APs?](#)
- [Q.I understand that WLSE does not accept SNMP traps that indicate an AP detected a rogue. So why is an AP that is currently designated as the WDS generating rogue AP SNMP traps?](#)
- [Q.I configured the Friendly AP-to-Rogue AP no-observation period as 5 minutes, moved a rogue AP \(AP1\) to the friendly list, and shut down its radio. After 5 minutes, AP1 was moved to the rogue AP list. When I moved AP1 back to the friendly list, it was immediately \(with in 40 seconds\) moved back to the rogue AP list.](#)
- [Q.What should I do when my system is overrun with rogue APs?](#)
- [Q.Why is a fault generated regardless of the threshold set for detecting rogue APs with an defined RSSI value under IDS > Manage Network-Wide IDS Settings?](#)

### Interference Detection

[Q.Are the Network-Wide > Interference Detection settings of -87dbm for 10% always the same, or are they the optimal recommended values, or are they calculated depending on the environment? Should they be left alone, or are there any recommendations?](#)

### APs in Scanning-Only Mode

- [Q.Why are the APs running in scanning-only mode having problems with sporadic connection loss and image upgrade failure?](#)
- [Q.Which WLSE IDS functions require dedicated scanning APs?](#)

### Detecting Rogue APs

- Q.** How does WLSE detect rogue APs?
- A.** Here is a brief summary of the rogue AP detection logic:
- a. A rogue AP appears and starts sending out beacons and responding to probe-requests.
  - b. A nearby *managed* and *RM-enabled* AP or client detects the beacon (same channel or off-channel) or probe response (off-channel). The AP or client sends back a beacon report of the rogue AP in the next scheduled RM report. The scheduled internal RM reporting interval is 90 seconds, so this step can take up to 90 seconds to complete.
  - c. The WLSE Radio Manager (RM) receives the beacon report, recognizes that this AP is not in the system (not a managed AP, and not a previously detected radio), and triggers the rogue AP switch-port tracing logic. The WLSE RM does not issue a rogue AP fault at this time.
  - d. The WLSE RM waits for 3 measurement intervals (3x90, or 270 seconds) for other surrounding APs or clients to report the same radio. This delay allows as many APs as possible to detect the rogue and helps pinpoint the rogue's location (which is reported in Step e.) When other APs or clients detect this radio, the reporting AP and the reported RSSI of the rogue AP are stored or updated in the WLSE RM database. This period of time also allows the switch port tracing logic to try to locate the switch port to which this rogue AP might connect. This logic happens in parallel. Depending on the size of the network, the switch port tracing logic may or may not finish before the end of this interval (270 seconds).
  - e. The WLSE RM issues a rogue AP fault. These first steps (b - e) can take from 270 to 360 seconds (3x90 to 4x90) to generate a fault against a particular rogue AP. After the fault has been generated, the fault notifications follow the standard WLSE fault notification process. (You must set up the e-mail notification to receive it.) The fault details page is updated so that when you click on the rogue AP's location, the system will have enough information (if it is available) to do a location triangulation based on the RSSI from the different reporting APs.
  - f. The AP or client continues to update the rogue AP's RSSI, and the Radio Manager continues to update this information in the WLSE. This allows the WLSE to keep the rogue AP's location current and not limited to the position when it was first detected.
- Q.** What is the difference between a rogue and a friendly AP?
- A.** In WLSE, friendly stations are unknown stations that the administrator has identified as "okay"; all other are rogues. Unlike a rogue AP, a friendly AP will *not* trigger a rogue AP fault (that is, a friendly AP will not be detected as a rogue). To change the category type of a rogue AP to Friendly, select **IDS > Manage Rogues**.
- Q.** How does the WLSE distinguish between a rogue device and an ad-hoc device?
- A.** APs and clients detect beacons in the air and send the beacon information to the WLSE via the WDS. These beacons are standard 802.11 frames. If the beacon information does not match a managed radio in the WLSE (by MAC address), the WLSE will identify it as an Unknown Station.
- An unknown station is either infrastructure or ad-hoc (IBSS). This determination is made from the beacon report; the 802.11 frame contains a byte indicating whether or not the beacon is IBSS (ad-hoc) or not (infrastructure). WLSE relies solely on this flag in the beacon to make this determination.

WLSE considers hardware, both client and access points, to be trusted sources, and assumes that vendors are reporting the field correctly. WLSE expects only client machines and peripherals to emit beacons with the IBSS flag set (it is very unlikely that an access point would emit an IBSS beacon). In rare cases, however, a malicious station can spoof the field. If this happens, WLSE will report whatever value the field is set to.

- Q.** How often does rogue AP detection occur and can it be customized?
- A.** Rogues can be detected within 90 seconds, but are not reported for another 180 seconds. This delay allows as many APs as possible to detect the rogue, which helps pinpoint the rogue's location. Detection frequency cannot be customized, but rogue AP detection and the fault priority that is assigned can be enabled and disabled for the network.
- Q.** How long does it typically take for the WLSE to detect a rogue access point after it is connected to the network?
- A.** To detect a rogue AP, Radio Monitoring *must* be enabled. Radio monitoring gathers radio reports every 90 seconds, so if at least one AP can hear the rogue, WLSE will detect the rogue in approximately 360 to 450 seconds. (It takes 1 to 2 measurement intervals for Radio Monitoring to report a rogue, and the WLSE waits for 3 measurement intervals for other surrounding APs or clients to report the same radio.)
- Q.** Can I disable transmit on an AP and yet allow it to receive signals so that it can participate in rogue AP detection?
- A.** The solution you want is called scanning-only AP mode. Scanning-Only AP mode puts a radio interface in a dedicated mode monitoring the air space surrounding it without carrying any regular WLAN user traffic. For more information, see the scanning-only AP mode information in the online help or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, 2.13*.
- Q.** I want to disable Radio Monitoring and detect rogue APs only when AP Radio Scan jobs are scheduled. Is this possible?
- A.** Radio Monitoring is the preferred method for detecting rogue APs. AP Radio Scan jobs can detect rogues, but only during the scan (approximately 3 to 4 minutes); any rogues that show up after the scan are not detected. In addition, because the scan is so short, it is possible that some rogues will not be detected because they do not respond with a Probe Request during the active scan. When Radio Monitoring is enabled, the rogue will eventually be detected by the beacon frame; it is statistically possible that a beacon will not be seen during an AP scan.
- Q.** What requirements and configuration are needed before a client can participate in rogue AP detection?
- A.** Participation is automatic. Cisco and CCX clients gather radio frequency information as instructed by the APs to which they are associated. APs gather similar information. This data is aggregated at the WDS device and then analyzed by the WLSE.
- Q.** Can the client be used to help triangulate a rogue AP?
- A.** The client's data does not get factored into location triangulation; only the AP data is used.
- Q.** How can I automatically adjust the channel and power settings on my managed APs to overcome the coverage problems introduced by rogue APs?
- A.** To automatically adjust channel and power settings on managed APs after detecting rogue APs, run RM Assisted Configuration (or Auto Site Survey from the Location Manager wizard).

- Q.** I understand that WLSE does not accept SNMP traps that indicate an AP detected a rogue. So why is an AP that is currently designated as the WDS generating rogue AP SNMP traps?
- A.** The AP is generating the detected rogue trap, not the WDS functionality currently operating within the AP. This trap is based on authentication tattletale rogue detection, which is currently not reported to the WLSE.

WLSE uses radio measurements to detect the rogues. The authentication tattletale method uses a message sent from a participating client that indicates some type of authentication issue with some other AP. This other AP is considered to be rogue for one of these reasons:

- The rogue was not running 802.1x.
- Authentication with the rogue timed out.
- Bad user password.
- Authentication challenge failed.

This tattletale method is enabled on the AP itself, detected by the AP, and flagged at the AP via the trap.

- Q.** I configured the Friendly AP-to-Rogue AP no-observation period as 5 minutes, moved a rogue AP (AP1) to the friendly list, and shut down its radio. After 5 minutes, AP1 was moved to the rogue AP list. When I moved AP1 back to the friendly list, it was immediately (with in 40 seconds) moved back to the rogue AP list.
- A.** When the Friendly-to-Rogue policy evaluates a site, any device that hasn't been seen in "too long a time" is reclassified as rogue. This time period starts when WLSE *last observed* the device, not after the administrator has set it to Friendly. To keep an unmanaged device as Friendly, set the maximum unobserved time to a value larger than the amount of time the device is *expected* to not be observed. For example, if a friendly AP is turned off after business hours, the maximum unobserved time should be at least 14 hours (or more for weekends) or the WLSE will reclassify it as rogue.
- Q.** What should I do when my system is overrun with rogue APs?
- A.** Some networks might experience large numbers of rogues due to the nature of their neighboring networks or a one-time storm. When the number of unknown (rogue infra-structure or ad-hoc) radios is high (greater than 5000), your network might experience performance degradation. This can occur when your network is in a crowded airspace, you have products such as printers that have wireless functions that create and/or rotate ad-hoc network IDs, that are attacked by the FakeAP program, or that have APs sending corrupt beacon reports. To handle large numbers of rogues:
- Use **IDS > Manage Network Wide Settings** to disable all rogue detection and processing from either infrastructure or ad-hoc rogues (or both).
  - If your network is in a crowded airspace, examine the report **IDS > Manage Rogues**. This report shows you the RSSI value for the detected rogues. Sorting by RSSI might give you a limit of RSSI values that you could use in **IDS > Manage Network Wide Settings** as a threshold.
  - Use **IDS > Manage Rogues** to delete the rogues that are no longer an issue (for example, from a temporary storm or isolated occurrence) to free up space in the WLSE.
  - For an explanation of the fault, see [IDS \(Intrusion Detection System\) Faults, page 2-14](#).
- Q.** Why is a fault generated regardless of the threshold set for detecting rogue APs with an defined RSSI value under **IDS > Manage Network-Wide IDS Settings**?

For example, the threshold is set for detecting a rouge AP with an RSSI value of greater than -80dBm, but alerts are being generated for a rogue AP with an RSSI value of -200 dBm.

- A.** What happens is as follows:

- First, a rogue is detected which has an RSSI value higher than the configured threshold. For example, it has an RSSI value of -60dBm and the configured threshold is -80dBm.
- Then, the rogue is not seen for a while, and the WLSE marks it for deletion. (Rogue APs that are not heard from for a long time are candidates for deletion from the WLSE.)

### Interference Detection

- Q.** Are the **Network-Wide > Interference Detection** settings of -87dbm for 10% always the same, or are they the optimal recommended values, or are they calculated depending on the environment? Should they be left alone, or are there any recommendations?
- A.** This is the default setting. If it is not adequate, you will need to experiment to find the proper setting for your environment.

### APs in Scanning-Only Mode

- Q.** Why are the APs running in scanning-only mode having problems with sporadic connection loss and image upgrade failure?
- A.** In a heavy-load environment, APs running in scanning-only mode may face sporadic connection loss and image upgrade failure. To resolve these problems, use the following configuration commands to balance CPU time:

```
scheduler interval <100-xxx>
scheduler allocate <3000-xxx> <1000-xxx>
```

Many newer Cisco platforms use the command **scheduler allocate** instead of **scheduler interval**. The scheduler allocate command takes two parameters: a period in microseconds for the system to run with interrupts enabled, and a period in microseconds for the system to run with interrupts masked. Please refer to the IOS documentation for more information about these commands.

- Q.** Which WLSE IDS functions require dedicated scanning APs?
- A.** Only the Unregistered Client function *requires* a scanning AP.

## Intrusion Detection System Troubleshooting

This section contains the following information for troubleshooting the Intrusion Detection System:

- [Q.I configured the Friendly AP-to-Rogue AP no-observation period as 5 minutes, moved a rogue AP \(AP1\) to the friendly list, and shut down its radio. After 5 minutes, AP1 was moved to the rogue AP list. When I moved AP1 back to the friendly list, it was immediately \(with in 40 seconds\) moved back to the rogue AP list.](#)
- [Q.What should I do when my system is overrun with rogue APs?](#)
- [Q.The SSID field in the Manage Rogues > Rogue AP List report is being displayed in hexagonal format \(for example, "\x00\x00\x00\x00\x00\x00\x00\x00"\). What causes this?](#)

- Q.** I configured the Friendly AP-to-Rogue AP no-observation period as 5 minutes, moved a rogue AP (AP1) to the friendly list, and shut down its radio. After 5 minutes, AP1 was moved to the rogue AP list. When I moved AP1 back to the friendly list, it was immediately (with in 40 seconds) moved back to the rogue AP list.

- A.** When the Friendly-to-Rogue policy evaluates a site, any device that hasn't been seen in "too long a time" is reclassified as rogue. This time period starts when WLSE *last observed* the device, not after the administrator has set it to Friendly. To keep an unmanaged device as Friendly, set the maximum unobserved time to a value larger than the amount of time the device is *expected* to not be observed. For example, if a friendly AP is turned off after business hours, the maximum unobserved time should be at least 14 hours (or more for weekends) or the WLSE will reclassify it as rogue.
- Q.** What should I do when my system is overrun with rogue APs?
- A.** Some networks might experience large numbers of rogues due to the nature of their neighboring networks or a one-time storm. When the number of unknown (rogue infrastructure or ad-hoc) radios is high (greater than 5000), your network might experience performance degradation. This can occur when your network is in a crowded airspace, you have products such as printers that have wireless functions that create and/or rotate ad-hoc network IDs, that are attacked by the Fake AP program, or that have APs sending corrupt beacon reports. To handle large numbers of rogues:
- Use **IDS > Manage Network Wide Settings** to disable all rogue detection and processing from either infrastructure or ad-hoc rogues (or both).
  - If your network is in a crowded airspace, examine the report **IDS > Manage Rogues**. This report shows you the RSSI value for the detected rogues. Sorting by RSSI might give you a limit of RSSI values that you could use in **IDS > Manage Network Wide Settings** as a threshold.
  - Use **IDS > Manage Rogues** to delete the rogues that are no longer an issue (for example, from a temporary storm or isolated occurrence) to free up space in the WLSE.

For an explanation of the fault, see [IDS \(Intrusion Detection System\) Faults, page 2-14](#).

- Q.** The SSID field in the **Manage Rogues > Rogue AP List** report is being displayed in hexagonal format (for example, "\x00\x00\x00\x00\x00\x00\x00\x00"). What causes this?
- A.** If the SSID contains unprintable characters, the WLSE displays it in hex notation. In this example, the SSID is set to 9 hex zeros.

The WLSE displays unprintable characters as \xNN, where NN is the hex value of each character, followed by the length of the SSID in bytes. For example, "\x00" [1] means that the SSID contains the hex value \x00 and is 1 byte long. In addition, any double quote marks or backslashes that are part of the SSID octets are displayed using a preceding backslash (for example, \" or \\).

## Admin FAQs and Troubleshooting

This section contains the following information for understanding and troubleshooting the WLSE appliance:

- [Admin FAQs, page 1-54](#)
- [Admin Troubleshooting, page 1-57](#)
- [Troubleshooting Tools for the WLSE Appliance, page 1-61](#)

### Admin FAQs

- [Q.How can I verify the status of the database?](#)
- [Q.What are the rules for WLSE user names and passwords?](#)

- Q.Can I restore a backup that I made on a WLSE running beta software to a WLSE running released software?
  - Q.Can I restore a backup from a WLSE 1105 to a WLSE 1130 series?
  - Q.Can I upgrade from beta software to released software?
  - Q.Are there any special considerations when performing actions on a redundant cluster?
  - Q.Why are the WLSEs in my redundant environment exhibiting problems such as duplicate IPs, etc., and why am I having trouble accessing them with virtual IP addresses?
  - Q.Do I have to get a signed certificate from a certificate authority in order to use WLSE security features such as SSL (HTTPS)?
  - Q.How do I change the password used by WLSE Redundancy?
  - Q.How do I change the user ID used by WLSE redundancy?
  - Q.What are the different redundancy states?
- Q.** How can I verify the status of the database?
- A.** You can verify that the WLSE database is running by using the **show process** CLI command. If the command output includes the db2sync process, the database is running.
- Q.** What are the rules for WLSE user names and passwords?
- A.** User names can be up to 32 characters long. They cannot begin with a number (unless the user is not using the CLI). You can use the alphanumeric characters (A-Z, a-z, 0-9) and numerous special characters. For a complete list of the characters allowed, see the Naming Guidelines appendix in the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13*. Passwords are unlimited in length and you can use all characters except the single quote, double quote, and dollar sign. Both user names and passwords are case-sensitive.
- Q.** Can I restore a backup that I made on a WLSE running beta software to a WLSE running released software?
- A.** No.
- Q.** Can I restore a backup from a WLSE 1105 to a WLSE 1130 series?
- A.** Yes.
- Q.** Can I upgrade from beta software to released software?
- A.** No.
- Q.** Are there any special considerations when performing actions on a redundant cluster?
- A.** Yes, there are special procedures for backup/restore, upgrading the software, and a few other operations. See the online help for the redundancy feature or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13* on Cisco.com.
- Q.** Why are the WLSEs in my redundant environment exhibiting problems such as duplicate IPs, etc., and why am I having trouble accessing them with virtual IP addresses?
- A.** If DNS is enabled, then it is possible the DNS servers specified for use by the WLSE are not operational, not reachable due to a network outage, or not configured correctly. If the DNS server is not set up correctly, proper communication between the Active and Standby WLSEs will not be maintained, and will result in the status for both WLSEs becoming Active-Lost-Standby.

Check the status by using the CLI command `redundancy status`, or by selecting **Admin > Appliance > Redundancy > Redundancy Status**. On the master DNS server, make sure that the DNS zone file for the inverse zone (`in-addr.arpa`) for the netblock contains the necessary PTR records for each WLSE. Please note that if the time required to get a response from the DNS servers when requesting a PTR record in the inverse zone exceeds 15 seconds, then this problem may occur.

See also the Installation Guide for the CiscoWorks Wireless LAN Solution Engine for instructions on configuring name resolution, and Redundancy Requirements under Managing the WLSE in the User Guide for the CiscoWorks Wireless LAN Solution Engine or Online Help to make sure you have set up redundancy correctly.

- Q.** Do I have to get a signed certificate from a certificate authority in order to use WLSE security features such as SSL (HTTPS)?
- A.** No, the WLSE will use the self-signed certificate; however, you may see messages from the browser about the self-signed certificate not being trusted. The self-signed certificate is valid for one year. After that, you can generate another self-signed certificate.
- Q.** If I have set up WLSE redundancy, can I use a one-time password on the WLSE Manage Redundancy screen?
- A.** WLSE does not support one-time passwords in the Manage Redundancy screen (**Admin > Appliance > Redundancy > Manage Redundancy**). The user ID and password you enter on this screen are used by both WLSEs in a redundant environment to authenticate their communication. The password is encrypted and stored on both WLSEs and is reused as required; therefore, one-time passwords are not supported.
- Q.** How do I change the password used by WLSE Redundancy?
- A.** If you are using local authentication, you can change the password for the user ID by selecting **Admin > Appliance > User Admin > Manage Users** or by using the CLI command `username user_id password new_password`. This command synchronizes the password change of `userid` to `new_password` between both WLSEs in the redundant environment.

If you are using remote AAA authentication, in order to change the password, you must first disable redundancy (**Admin > Appliance > Redundancy > Manage Redundancy**), change the password on the AAA server, and then re-enable redundancy.

- Q.** How do I change the user ID used by WLSE redundancy?
- To change the user ID used by WLSE redundancy, you must first disable redundancy (**Admin > Appliance > Redundancy > Manage Redundancy**), change the user ID and password (**Admin > Appliance > User Admin > Manage Users**), and then re-enable redundancy.
- Q.** What are the different redundancy states?
- A.** [Table 1-3](#) describes the possible redundancy states and what they mean.

**Table 1-3 Redundancy States**

| Redundancy State | Description                                                                                      |
|------------------|--------------------------------------------------------------------------------------------------|
| Not Configured   | Redundancy is not enabled.                                                                       |
| Starting         | Configured for redundancy and is initializing. This state can apply to active and standby nodes. |
| Active           | Redundancy is enabled. This is the active node at the current time.                              |

**Table 1-3 Redundancy States**

| Redundancy State            | Description                                                                                                                                                                                                                                                           |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Active Lost Router          | Active node is not receiving responses from the standby node or from the default gateway. This could signify a network issue.                                                                                                                                         |
| Active Lost Standby         | Active node is not receiving responses from the standby node.                                                                                                                                                                                                         |
| Active Upgrade              | Active node is waiting for the standby node to complete a WLSE upgrade.                                                                                                                                                                                               |
| Active Load Standby         | Standby node requested a full database backup and will not be operational until the backup database is received from the active node and is restored on the standby node. The standby node is in Pre Standby state until the backup database has been fully restored. |
| Active System Check Failure | System check process has discovered a problem with the active node, but the standby node is not available.                                                                                                                                                            |
| Active Password Change      | Redundancy user ID password is being changed on the active node.                                                                                                                                                                                                      |
| Active Initialization       | Appliance is attempting to start the database and processes in order to become the active node.                                                                                                                                                                       |
| Pre Standby                 | Appliance is configured to be in standby mode and is attempting to restore data from the active node, but is not yet in standby mode.                                                                                                                                 |
| Standby                     | Redundancy is enabled. This is the standby node at the current time.                                                                                                                                                                                                  |
| Standby Upgrade             | Standby node is attempting to upgrade WLSE software on the appliance.                                                                                                                                                                                                 |
| Standby Password Change     | Redundancy user ID password is being changed on the standby node.                                                                                                                                                                                                     |

## Admin Troubleshooting

This section contains the following information for troubleshooting the appliance:

- **Symptom** After adding users to an external authentication server and configuring the authentication module on the WLSE, users cannot log in to the WLSE.
- **Symptom** Users cannot log in after failure of the alternative authentication source.
- **Symptom** Some users are not listed under User Admin > Manage Users.
- **Symptom** When using Internet Explorer 6.0 to install a new image on a WLSE from a repository located on a Windows XP machine, the progress bar does not appear in the Install Software Updates window. This problem also occurs when you use Internet Explorer 6.0 and a Windows XP system as a client to install a new image on a WLSE.
- **Symptom** Cannot back up the WLSE configuration to a Windows 2000 or Windows XP Server.

- **Symptom** Cannot back up WLSE configuration to a remote server when using the secure file transfer option.
- **Symptom** The ACS Failed Login Report link is missing.
- **Symptom** When using the MS NT Domain authentication module, the user could not log in by using the domain password.
- **Symptom** The error message “AAA server not available” is falsely displayed for the following built-in AAA server types: LEAP server, RADIUS server, PEAP server (applies to WLSE Express only).
- **Symptom** In a redundant cluster, faults cannot be created or cleared, and there may be other symptoms. The daemons.log file contains the following messages, which indicate a virtual machine crash.
- **Symptom** Both WLSEs in an HA pair are claiming the same VIP address.
- **Symptom** The Device Interaction field is empty when I try to test my Telnet/SSH credentials using the Telnet/SSH Tool under Admin > Appliance > Connectivity Tools.

**Symptom** After adding users to an external authentication server and configuring the authentication module on the WLSE, users cannot log in to the WLSE.

**Possible Cause** Users do not have local accounts on the WLSE.

**Recommended Action** All users must have local accounts on the WLSE. Each user on the external authentication server must have a local user account matching that username. Set up the local accounts under **Admin > User Admin > Manage Users**.

**Symptom** Users cannot log in after failure of the alternative authentication source.

**Possible Cause** The WLSE falls back to the Local authentication module.

**Recommended Action**

- Users can log in using their local passwords.
- The system administrator can log in using the admin log in.
- All users with CLI access can log in using the CLI.
- If you still cannot log in, follow the procedure on recovering from the loss of all admin passwords in the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13*.

**Symptom** Some users are not listed under User Admin > Manage Users.

**Possible Cause** Only the creator of a user can view that user’s name in the list. However, the admin user and any user with the System Administration role can view all users.

**Recommended Action** None.

**Symptom** When using Internet Explorer 6.0 to install a new image on a WLSE from a repository located on a Windows XP machine, the progress bar does not appear in the Install Software Updates window. This problem also occurs when you use Internet Explorer 6.0 and a Windows XP system as a client to install a new image on a WLSE.

**Possible Cause** The Internet Explorer 6.0 browser on Windows XP does not come with the Java plug-in installed.

**Recommended Action** Before using a Windows XP machine as a *remote repository* to update WLSE software, review the Readme file that accompanies the software image on Cisco.com.

**Symptom** Cannot back up the WLSE configuration to a Windows 2000 or Windows XP Server.

**Possible Cause** The backup directory is not writable.

**Recommended Action** Set the directory to UNIX mode and make it write-enabled. For more information, see the backup and restore instructions in the online help or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, 2.13*.

**Symptom** Cannot back up WLSE configuration to a remote server when using the secure file transfer option.

**Possible Cause** The shared key has changed on the remote server.

**Recommended Action** If you are sure this is a legitimate change, use the **clearbackuphosts** CLI command to clear the key that is stored on the WLSE. Then, rerun the backup.

**Symptom** The ACS Failed Login Report link is missing.

**Possible Cause** Someone has deleted the link.

**Recommended Action** This link requires a special procedure for recreating it. See the online help for the Links feature or the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13* on Cisco.com.

**Symptom** When using the MS NT Domain authentication module, the user could not log in by using the domain password.

**Possible Cause** The incorrect hostname format may be entered for the primary domain controller

**Recommended Action** When entering the hostname for the domain controllers, you must use the WINS name (simple hostname) instead of an IP address or a fully qualified domain name.

**Symptom** If a redundant pair of WLSE Express systems are configured as active AAA RADIUS server and standby AAA RADIUS server and subsequently configured to be monitored by the WLSE, the “HA Standby AAA radius server Not Available” fault is generated and then clears shortly afterward.

This fault is generated at synchronization and failover whenever the standby AAA RADIUS server goes down.

**Possible Cause** At each instance of synchronization and failover, the standby AAA RADIUS server goes down, thereby triggering the “HA standby AAA radius server not available” fault during each instance.

**Recommended Action**

- a. Select **Faults > Manage Fault Settings**.
- b. Select the AAA Server settings in the relevant fault profile.
- c. Set the consecutive polling cycle count to 2 for the “Radius Server Not Available” fault.

Result: This fault may reoccur, but only rarely.

**Symptom** The error message “AAA server not available” is falsely displayed for the following built-in AAA server types: LEAP server, RADIUS server, PEAP server (applies to WLSE Express only).

**Possible Cause** The IP domain name has not been configured on the WLSE.

**Recommended Action** Enter the CLI command **ip domain-name** *domain* (where *domain* is your domain name; for example cisco.com). Then reload the WLSE.

**Symptom** In a redundant cluster, faults cannot be created or cleared, and there may be other symptoms. The daemons.log file contains the following messages, which indicate a virtual machine crash.

```
Heap at VM Abort:
Heap
def new generation total 13120K, used 10188K [0x44650000, 0x45480000, 0x47f30000)
 eden space 11712K, 74% used [0x44650000, 0x44ee32d0, 0x451c0000)
 from space 1408K, 100% used [0x45320000, 0x45480000, 0x45480000)
 to space 1408K, 0% used [0x451c0000, 0x451c0000, 0x45320000)
tenured generation total 116544K, used 53879K [0x47f30000, 0x4f100000, 0x64650000)
 the space 116544K, 46% used [0x47f30000, 0x4b3cdcc8, 0x4b3cde00, 0x4f100000)
compacting perm gen total 16384K, used 5729K [0x64650000, 0x65650000, 0x68650000)
 the space 16384K, 34% used [0x64650000, 0x64be84e0, 0x64be8600, 0x65650000)

Local Time = Sat Jul 2 03:21:02 2005
Elapsed Time = 1226
#
HotSpot Virtual Machine Error : 11
Error ID : 4F530E43505002EF
Please report this error at
http://java.sun.com/cgi-bin/bugreport.cgi
#
Java VM: Java HotSpot(TM) Server VM (1.4.2_06-b03 mixed mode)
#
An error report file has been saved as hs_err_pid2874.log.
Please refer to the file for further information.
#
Using configuration file '/etc/sysconfig/idled.cf'.
received SIGHUP
```

**Possible Cause** A virtual machine crash has occurred after upgrade of a redundant pair from 2.11 to 2.13.

**Recommended Action** First, confirm that a virtual machine crash has occurred by checking the daemons.log file (Admin > Appliance > Status > View Log File). Then, perform the following steps:

- a. Telnet or SSH into the standby 2.13 system and execute the CLI command `services stop`.

- b. Telnet or SSH into the active 2.13 system and execute the CLI command **reload**. Wait until the reload is complete.
- c. Telnet or SSH into the standby 2.13 system and execute the CLI command **services start**.

**Symptom** Both WLSEs in an HA pair are claiming the same VIP address.

**Possible Cause** When two devices (for example, device\_A and device\_B) claim the same IP address, it is possible that some other devices (for example, device\_C and device\_D) might connect to one of the devices (for example, device\_A) while other devices (for example, device\_E and device\_F) might connect to the other device, device\_B, when specifying the IP address claimed by both device\_A and device\_B.

WLSE uses authentication when each WLSE contacts the other WLSEs, and if the authentication response takes longer than the 15 second timeout, the WLSEs believe the other WLSE appliance is not functioning properly.

In addition, when the AAA server takes longer than 15 seconds, both WLSEs will be in Active-Lost-Standby status.

**Recommended Action** When using external AAA service, make sure the AAA server is able to respond to the WLSE in less than 10 seconds. If the AAA server cannot respond to the WLSE in less than 10 seconds, switch the WLSE to use local authentication by selecting **Admin > Appliance > Security > Authentication Modules**, and choose Local.

**Symptom** The Device Interaction field is empty when I try to test my Telnet/SSH credentials using the Telnet/SSH Tool under **Admin > Appliance > Connectivity Tools**.

**Possible Cause** Another user using the Telnet/SSH tool page simultaneously can cause the Device Interaction field to be empty.

**Recommended Action** Wait a few seconds and try using the Telnet/SSH Tool again.

## Troubleshooting Tools for the WLSE Appliance

This section describes some of the tools you can use to troubleshoot the WLSE appliance.

### Generating Diagnostics for Technical Assistance

The **Diagnostics** option of the Admin tab provides tools to aid in troubleshooting. You can use these tools when you have a problem that might require assistance from the Cisco Technical Assistance Center (TAC). These tools are:

- **WLSE Info**—Create an information and status report.
- **Self Test**—Create a self-test report.
- **Processes**—View and manage major processes running on the appliance.

### Viewing Log Files

The **Admin > Appliance > Status > View Log** option lists available log files and allows you to view and download them.

## Consolidating and Saving Log Files

The `dumptechn` CLI command calls the `diagnostic-info` and `tarlog` commands, tars their output to an archive called `dumptechn.tgz`, and sends the output to a named user and location. For information on this command, see the “Using the CLI” appendix in the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13* on Cisco.com at [http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw\\_1105/wlse/2\\_13/u\\_gd/app\\_cli.htm](http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_13/u_gd/app_cli.htm).

# Internal AAA Server (WLSE Express Only) FAQs and Troubleshooting

This section contains the following information for understanding the WLSE Express internal AAA server.

## Internal AAA Server (WLSE Express) FAQs

- Q.** Can I use the WLSE Express’ internal AAA server for purposes beside WLSE/WDS authentication?
- A.** No. The WLSE AAA server is a RADIUS server that allows client devices to share a common authentication database, and cannot be used for any other purpose.
  
- Q.** Can you set a maximum number of sessions for one "guest user" per user ID?
- A.** No. You cannot set a maximum number of sessions for any user ID or automatically control session management in any way on the WLSE Express. The only control over AAA sessions you have is through the AAA session GUI and CLI, which allow you to display the existing sessions, and query and delete sessions by user ID or session ID.

You can share one "guest user" account between multiple users; there is no built-in session limit.



## Fault Descriptions

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This section provides the following information on the faults displayed in **Faults > Display Faults**. The following information is provided:

- **Fault**—The fault as it appears in the Display Faults table.
- **Explanation**—An explanation as to why the fault occurred.
- **Related Setting**—The threshold or policy you assigned to devices under **Faults > Manage Fault Settings**, **IDS > Manage IDS Settings**, or **IDS > Manage Network-Wide IDS Settings**, when applicable.
- **Recommended Action**—An action that can be taken to clear the displayed fault.

Fault tables are provided for each device type:

- [Access Point /Bridge Faults, page 2-2](#)
- [Radio Interface Faults, page 2-8](#)
- [IDS \(Intrusion Detection System\) Faults, page 2-14](#)
- [Voice Faults, page 2-24](#)
- [WLSE Faults, page 2-24](#)
- [AAA Server Faults, page 2-26](#)
- [Switch Faults, page 2-31](#)
- [Router Fault, page 2-33](#)
- [WLSM Faults, page 2-33](#)

# Access Point/Bridge Faults

**Table 2-1** Access Point Faults

| Fault Description                                                                              | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Related Setting                                                                                                                                             | Recommended Action                                                                                                                                                                     |
|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Access point <i>ssid</i> reclassified from Friendly to Rogue due to <i>rule</i>                | <p>An access point that was previously determined to be Friendly has been reclassified to Rogue:</p> <p><i>ssid</i> is the Service Set Identifier of the unmanaged radio's BSS.</p> <p><i>rule</i> is one of the following:</p> <ul style="list-style-type: none"> <li>Change in RSSI ordering between observers</li> </ul> <p>The estimated proximity of the unmanaged radio between two observers has switched—if the WLSE thought that observer A was closer to radio R than observer B, it now thinks that observer B is closer to radio R than observer A.</p> <ul style="list-style-type: none"> <li>Difference in relative RSSI between original and current observers exceeded threshold</li> </ul> <p>While radio R's strength changed by factor M between observer A and observer B, it changed by factor M+T between observer B and observer C. That is, it does not</p> | <p>IDS &gt; Manage Network-Wide IDS Settings &gt; Rogue AP Detection &gt; Friendly to Rogue AP Reclassification</p> <p>or</p> <p>IDS &gt; Manage Rogues</p> | Use the fault details page to mark it friendly if the AP is known, or to delete it from the WLSE database if it is an unknown AP.                                                      |
| Access point <i>ssid</i> reclassified from Friendly to Rogue due to <i>rule</i><br>(continued) | <p>appear that radio R's change in strength is merely due to a change in its power configuration.</p> <ul style="list-style-type: none"> <li>Fewer than two observers</li> <li>Too long without any observations</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                             |                                                                                                                                                                                        |
| AP CPU utilization is Degraded<br>( <i>utilization %</i> )                                     | <p>The fault threshold set for the degraded state has been exceeded.</p> <p>When this fault has been cleared, the following message displays: AP CPU utilization is Ok.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Manage Fault Settings > Access Point/Bridge Thresholds > CPU Utilization                                                                                    | <p>Verify that the fault threshold is set correctly.</p> <p>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.</p> |

Table 2-1 Access Point Faults (continued)

| Fault Description                                               | Explanation                                                                                                                                                                                                                                                                                 | Related Setting                                                                              | Recommended Action                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AP CPU utilization is Overloaded<br>(utilization %)             | The fault threshold set for the overloaded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: CPU utilization is Ok.                                                                                                                         | Manage Fault Settings > Access Point/Bridge Thresholds > CPU Utilization                     | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                                                                                   |
| AP is not registered with a WDS                                 | The managed access point is not registered with any WDS.<br><br>For Radio Manager functionality to work, all access points must register with a WDS. If an access point is not registered, it will be excluded from all the Radio Manager procedures, which will provide incorrect results. | Manage Fault Settings > Access Point/Bridge > Registration Error                             | Verify that the WLCCP AP credentials are configured correctly so that the AP can register with a WDS in its subnet.<br><br>For more information, see the managing devices information in the online help or the <i>User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13</i> . |
| AP memory utilization is Degraded (utilization %)               | The fault threshold set for the degraded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: AP memory utilization is Ok.                                                                                                                     | Manage Fault Settings > Access Point/Bridge Thresholds > Memory Utilization                  | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                                                                                   |
| AP memory utilization is Overloaded (utilization %)             | The fault threshold set for the overloaded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: AP memory utilization is Ok.                                                                                                                   | Manage Fault Settings > Access Point/Bridge Thresholds > Memory Utilization                  | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                                                                                   |
| AP registered with an Unmanaged WDS: ipAddressOfTheUnManagedWDS | AP is registered with a WDS but that WDS is not managed by WLSE.<br><br>When this fault is cleared, the following message displays: AP registered with a managed WDS.                                                                                                                       | Manage Fault Settings > Access Point/Bridge > Registration Error                             | Manage the WDS.                                                                                                                                                                                                                                                                                   |
| Broadcast Key Rotation is disabled                              | The broadcast key rotation has been disabled.<br><br>When this fault is cleared, the following message displays: Broadcast Key Rotation is enabled.                                                                                                                                         | Manage Fault Settings > Access Point/Bridge Policies > Key Rotation per VLAN                 | Log in to the access point and enable the broadcast key rotation interval.                                                                                                                                                                                                                        |
| Device state is rogue access point: ssid                        | The WLSE detected a rogue access point (where <i>ssid</i> is the Service Set Identifier of the unmanaged radio's BSS). This is an access point that is not being managed and is unknown to the WLSE.                                                                                        | IDS > Manage Network-Wide IDS Settings > Rogue AP Detection<br><br>or<br>IDS > Manage Rogues | Use the fault details page to mark it friendly if the AP is known, or to delete it from the WLSE database if it is an unknown AP.<br><br>These faults do not automatically clear after the Rogue AP no longer appears in the network; you must manually delete or clear the fault.                |

Table 2-1 Access Point Faults (continued)

| Fault Description                                   | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Related Setting                                                                                         | Recommended Action                                                                                                                                                                                                        |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device was not reachable via SNMP                   | <p>The SNMP Agent could be down.</p> <p>Using the SNMP threshold setting, you configure the WLSE to poll the sysUpTime MIB object periodically. If at any time the WLSE fails to poll this MIB object, the WLSE generates this fault.</p> <p>Also, if while polling any other MIB objects for other fault policies or thresholds associated with the device, the WLSE observes the device is SNMP unreachable, it generates this fault.</p> <p>And lastly, during rediscovery if a previously-discovered device is found to be SNMP unreachable, the WLSE generate this fault.</p> <p>When this fault is cleared, the following message displays: Device was reachable via SNMP.</p> | Manage Fault Settings > Access Point/Bridge Thresholds > SNMP Reachable                                 | <p>Make sure SNMP is enabled on the device and that the agent is not down.</p> <p>Take a MIB walk of the device and ensure that the sysUpTime returns a non-zero value, which indicates that the device is reachable.</p> |
|                                                     | The SNMP community string in the access point has been changed, and then a discovery job is run.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Not applicable.                                                                                         | Change the SNMP community string on the WLSE to match the new community string on the access point, then run discovery again.                                                                                             |
| EAP per SSID for Cisco-Supplicant is disabled       | <p>The Network EAP or the Open authentication is disabled on this SSID.</p> <p>When this fault is cleared, the following message displays: EAP per SSID for Cisco Supplicant is enabled.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Manage Fault Settings > Access Point/Bridge Policies > EAP Per SSID Enforced for Cisco-Supplicant       | Log in to the access point and enable both Network EAP and Open authentication on that SSID.                                                                                                                              |
| EAP per SSID for Non-Cisco-Supplicant is disabled   | <p>The Network EAP or the Open authentication is disabled on this SSID.</p> <p>When this fault is cleared, the following message displays: EAP per SSID for Non-Cisco Supplicant is enabled.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Manage Fault Settings > Access Point/Bridge Policies > EAP Per SSID Enforced for Non-Cisco-Supplicant   | Log in to the access point and enable both Network EAP and Open authentication on that SSID.                                                                                                                              |
| EAP per SSID for Mixed-Cisco-Supplicant is disabled | <p>The Network EAP or the Open authentication is disabled on this SSID.</p> <p>When this fault is cleared, the following message displays: EAP per SSID for Cisco Supplicant is enabled.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Manage Fault Settings > Access Point/Bridge Policies > EAP Per SSID Enforced for Mixed-Cisco-Supplicant | Log in to the access point and enable both Network EAP and Open authentication on that SSID.                                                                                                                              |

Table 2-1 Access Point Faults (continued)

| Fault Description                                                                                                                                                                                                                      | Explanation                                                                                                                                                              | Related Setting                                                                    | Recommended Action                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ethernet bandwidth utilization is Degraded ( <i>utilization %</i> )                                                                                                                                                                    | The fault threshold set for the degraded state has been exceeded.<br>When this fault is cleared, the following message displays: Ethernet bandwidth utilization is OK.   | Manage Fault Settings > Access Point/Point Thresholds > Ethernet Port Utilization  | Verify that the fault threshold is set correctly.<br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Ethernet bandwidth utilization is Overloaded ( <i>utilization %</i> )                                                                                                                                                                  | The fault threshold set for the overloaded state has been exceeded.<br>When this fault is cleared, the following message displays: Ethernet bandwidth utilization is OK. | Manage Fault Settings > Access Point/Bridge Thresholds > Ethernet Port Utilization | Verify that the fault threshold is set correctly.<br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Excessive frame counts:<br><ul style="list-style-type: none"> <li>• Action</li> <li>• Association</li> <li>• Authentication</li> <li>• Deauthentication</li> <li>• Disassociation</li> <li>• Probe</li> <li>• Reassociation</li> </ul> | See <a href="#">IDS (Intrusion Detection System) Faults, page 2-14</a>                                                                                                   |                                                                                    |                                                                                                                                                                             |
| Firmware version policy violation ( <i>version number</i> )                                                                                                                                                                            | The wrong version number for policy checking has been entered.<br>When this fault is cleared, the following message displays: Firmware version is valid.                 | Manage Fault Settings > Access Point/Bridge Policies > Firmware Version            | Make sure that the firmware version that is entered in the policy setting matches the firmware version on the access point.                                                 |
|                                                                                                                                                                                                                                        | The access point is running an unauthorized firmware version.<br>When this fault is cleared, the following message displays: Firmware version is valid.                  |                                                                                    | Make sure that you have entered authorized versions in the policy setting.<br>Update the firmware on the access point to an authorized version.                             |

Table 2-1 Access Point Faults (continued)

| Fault Description                                                                            | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Related Setting                                                          | Recommended Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HotStandBy is active                                                                         | <p>The access point that is configured for hot standby has become active.</p> <p>The following conditions could cause the hot standby access point to become active: the primary access point is down, the Ethernet port is down, or the Radio port is down.</p> <p>When this fault is cleared, the following message displays:<br/>HotStandBy is disabled.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                             | Manage Fault Settings > Access Point/Bridge Policies > HotStandby Status | <ol style="list-style-type: none"> <li>1. Check the primary access point, the Ethernet port, or the Radio port to see why the hot standby access point has been activated.</li> <li>2. Correct the condition. For example, if the Radio Port on the formerly active access point was in a disabled state, then enable it using the access point GUI.</li> <li>3. Launch the GUI for access point that is currently in Active Takeover mode.</li> <li>4. Select Hot Standby, click <b>Disabled</b>, then click <b>Apply</b>.</li> <li>5. Click <b>Enabled</b>, then enter the Radio MAC address of Monitored Radio Port, leave the Polling interval and Timeout for Each Polling fields blank,.</li> <li>6. Click <b>Apply</b> to reconfigure the access point to Hot Standby mode.</li> </ol>                                              |
| <p>Inconsistent device state found: <i>MIB-name table-name. OID-name problem-details</i></p> | <p>One or more configuration values of the AP/BR are either out-of-range or are in conflict with another configuration value. The fault description and corresponding swan.log entry provide details about the suspect value, including the official public MIB name of the SNMP OID for which the error was found.</p> <p>When a radio is declared to have an invalid configuration or has failed, it cannot be manipulated by Radio Management and is removed from SWAN RM operations. For example, if just the 802.11a radio on a WDS is not configured correctly, only that radio is excluded from RM operations; the 802.11b/g radio and the WDS remains fully RM-operational. This behavior can help you isolate the portions of your network that are affected by misconfigurations or failures.</p> | Not applicable.                                                          | <p>To resolve an inconsistent configuration, several possibilities exist:</p> <ul style="list-style-type: none"> <li>• It is possible that the most recent Inventory failed for the device. Re-running inventory might clear the condition.</li> <li>• If the configuration value being contested is user-editable, you can correct the problem using the WLSE templates, the AP/BR GUI, or the AP/BR CLI.</li> <li>• If the configuration value being contested is not user-editable, this is probably an IOS error. You will need to upgrade the affected AP/BR to the most recent version of IOS.</li> </ul> <p>For information about the MIB referenced in the fault description, see <a href="http://www.cisco.com/public/sw-cent er/netmgmt/cmtk/mibs.shtml">http://www.cisco.com/public/sw-cent er/netmgmt/cmtk/mibs.shtml</a>.</p> |

Table 2-1 Access Point Faults (continued)

| Fault Description                                     | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Related Setting                                                                    | Recommended Action                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MIC is disabled for the VLAN <i>number</i>            | MIC is not enabled for the selected VLAN on the access point.<br><br>When the fault is cleared, the following message displays: MIC is enabled.                                                                                                                                                                                                                                                                                                                                                                                | Manage Fault Settings > Access Point/Bridge Policies > MIC per Vlan                | Log into the access point and enable the VLAN. Then, using the WLSE fault settings, enable the MIC for that VLAN.                                                                                                                                                                                                                                                                                                         |
| Radar Detected on Channel <i>origChannel</i>          | On its current channel, the AP detected likely contention with a radar device, so it needs to leave that channel and find another. The AP will automatically scan for another channel, but might be unable to accept associations for one minute. This one minute delay is the required scan time on another Dynamic Frequency Selection channel that must elapse before the AP can accept associations.<br><br>When this fault is cleared, the following message displays: No radar detected on new channel <i>newChannel</i> | Manage Fault Settings > Radio-802.11a Policies > Dynamic Frequency Selection (DFS) | The WLSE will automatically handle the assignment of another channel for those APs affected by the Radar Detection. However, if these faults become common, you should re-run Assisted Configuration (RPG) soon after a DFS event has occurred (or just manually deselect the DFS channel from the Assisted Config Wizard). This will reorganize the site to avoid the affected channel and make future conflicts likely. |
| Vlan WEP key length policy violation                  | The WEP key length for the selected VLAN setting has been violated.<br><br>When this fault has been cleared, the following message displays: Vlan WEP key length is ok.                                                                                                                                                                                                                                                                                                                                                        | Manage Fault Settings > Access Point/Bridge Policies > WEP Encryption per Vlan     | Make sure the WEP key length selected in the policy setting matches the access point settings.                                                                                                                                                                                                                                                                                                                            |
| WDS appears down.                                     | The WLSE failed to receive “keep active” messages from the WDS. This happens when the WDS is down or when the network is down.                                                                                                                                                                                                                                                                                                                                                                                                 | Manage Fault Settings > WDS > WLSE-WDS Link Status                                 | Check the network connectivity, and the WDS status.                                                                                                                                                                                                                                                                                                                                                                       |
| WDS Registered with another WLSE ( <i>IPaddress</i> ) | The WDS is registered with a different WLSE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Manage Fault Settings > WDS > Authentication Failures                              | Determine which WLSE is supposed to manage that WDS from an RM perspective. Then modify the wnm configuration on the WDS to point to the correct WLSE.<br><br>For more information, see the managing devices information in the online help or the <i>User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13</i> .                                                                                      |

Table 2-1 Access Point Faults (continued)

| Fault Description                     | Explanation                                                                                                                                                                                                                               | Related Setting                                                     | Recommended Action                                                                                                                                                                                                                                            |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WEP is disabled                       | WEP is not enabled for the VLAN defined on the access point. (Note that the VLAN number is displayed in the Type column under Faults > Display Faults.)<br><br>When the fault is cleared, the following message displays: WEP is enabled. | Manage Fault Settings > Access Point/Bridge Policies > WEP per Vlan | Make sure you have set the policy correctly for the VLAN.                                                                                                                                                                                                     |
| WLSE failed to authenticate with WDS. | Authentication required to open a WLCCP channel between the WLSE and the WDS failed.                                                                                                                                                      | Manage Fault Settings > WDS > Authentication Failures               | Verify that the WLSE credentials used to authenticate with the WDS are correct.<br><br>For more information, see the managing devices information in the online help or the <i>User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.13</i> . |

## Radio Interface Faults

Table 2-2 Radio Interface Faults

| Fault Description                                             | Explanation                                                                                                                                               | Related Setting                                                        | Recommended Action                                                                                                                                                              |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AP is in a Degraded state <i>number</i> associated clients    | The fault threshold set for the degraded state has been exceeded.<br><br>When this fault is cleared, the following message displays: AP is in OK state.   | Manage Fault Settings > Radio-802.11x Thresholds > Associated Clients  | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| AP is in an Overloaded state <i>number</i> associated clients | The fault threshold set for the overloaded state has been exceeded.<br><br>When this fault is cleared, the following message displays: AP is in OK state. | Manage Fault Settings > Thresholds > Access Point > Associated Clients | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |

Table 2-2 Radio Interface Faults (continued)

| Fault Description                                              | Explanation                                                                                                                                                                                                              | Related Setting                                                     | Recommended Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Appeared up/down. Compensated for by Up/Down radio(s).         | The indicated radio appeared up or down on this AP, so other radios were modified to maintain coverage.<br><br>After self healing has been applied to the other AP, this fault indicates the radio that had the failure. | Radio Manager > Self Healing > Finish                               | Display the Self Healing fault details page, then select the document with the eyeglasses. A list of radios with the old and new power settings is displayed. These radios can compensate for the downed or recovered radio. If self healing is configured to automatically apply changes, then these are the values that were applied. If self healing is configured for manual application of the compensation calculations, then the recommended values are shown with an option to apply them to the indicated radios.<br><br>Check the radio to determine why it is down and resolve the problem. |
| Broadcast SSID is enabled.                                     | The broadcast mode for the SSID on the interface has been disabled.<br><br>When this fault is cleared, the following message displays: Broadcast SSID is disabled.                                                       | Manage Fault Settings > Radio-802.11x Policies > Broadcast Disabled | Log in to the access point and disable the broadcast mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Broadcast is enabled for Radio-x SSID <i>ssid</i> fault.       | An SSID, which you do not want broadcast, is being broadcast.<br><br>When this fault is cleared, the following message displays: Broadcast is disabled for Radio-x SSID <i>ssid</i> fault.                               | Manage Fault Settings > Radio-802.11x Policies > Broadcast SSID     | Log in to the access point and make sure that the SSID, which is in WLSE's "Do not Broadcast SSID" list is not selected for Broadcast on the access point.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Client association rate is Degraded <i>number</i> per minute   | The fault threshold set for the degraded state has been exceeded.<br><br>When this fault is cleared, the following message displays: Client association rate is OK.                                                      | Manage Fault Settings > Radio-802.11x Thresholds > Association Rate | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Client association rate is Overloaded <i>number</i> per minute | The fault threshold set for the overloaded state has been exceeded.<br><br>When this fault is cleared, the following message displays: Client association rate is OK.                                                    |                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Compensation determination is in progress                      | The WLSE determined that a radio was down or back up. Self Healing is attempting to compensate for the failed or recovered radio.                                                                                        | Not applicable.                                                     | There is no action necessary; Self Healing is attempting to adjust the power on other neighboring radios (which can be on other floors) to maintain coverage.                                                                                                                                                                                                                                                                                                                                                                                                                                          |

Table 2-2 Radio Interface Faults (continued)

| Fault Description                                                     | Explanation                                                                                                                                                                                                                                                                              | Related Setting                                                                                                                  | Recommended Action                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Compensation calculation did not complete due to errors               | Errors forced the cancellation of Self Healing compensation calculations.                                                                                                                                                                                                                | Not applicable.                                                                                                                  | Display the Self Healing fault details page, then select the document with the eyeglasses. The error messages displayed on this page will explain the problem.<br><br>Determine the action necessary to clear the fault condition.                           |
| Compensation finished with errors                                     | Self Healing compensation calculations finished but there were errors. For example, a power change cannot be applied to a radio because:<br><br>1) The community strings for the device are wrong for the AP.<br>2) AP is down or unreachable<br>3) Wrong configuration set on the radio | Not applicable.                                                                                                                  | Determine the action necessary to clear the fault condition.<br><br>For example, if WLSE determines that five radios are needed to compensate for a down radio and only one has bad community strings, the changes to the other four radios will take place. |
| Compensation did not complete due to timeout of <i>timeout</i> (mins) | Self Healing compensation calculations took longer than 30 minutes.                                                                                                                                                                                                                      | Not applicable.                                                                                                                  | Display the Self Healing fault details page, then select the document with the eyeglasses. The error messages displayed on this page will explain the problem.<br><br>Determine the action necessary to clear the fault condition.                           |
| EAP is disabled                                                       | The EAP per SSID has been disabled.<br><br>When this fault is cleared, the following message displays: EAP is enabled                                                                                                                                                                    | Manage Fault Settings > Radio-802.11x Policies > EAP Enforced for Cisco Supplicant/ Non-Cisco Supplicant/ Mixed-Cisco Supplicant | Log in to the access point and enable the Network EAP and Open authentication.                                                                                                                                                                               |
| Infrastructure SSID policy violation                                  | The infrastructure SSID does not match the infrastructure SSID set on the access point.<br><br>When this fault is cleared, the following message displays: Infrastructure SSID is valid.                                                                                                 | Manage Fault Settings > Radio-802.11x Policies > Infrastructure SSID                                                             | Log in to the access point and make sure the WLSE's Infrastructure SSID matches the access point infrastructure SSID                                                                                                                                         |

Table 2-2 Radio Interface Faults (continued)

| Fault Description                                           | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Related Setting                                                          | Recommended Action                                                                                                                                                                                                                                      |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Not Monitored because:<br><i>reason, Ignored</i>            | To qualify for Self Healing, an AP must: <ul style="list-style-type: none"> <li>• Enable Radio Monitoring on both Serving and Non-Serving channels.</li> <li>• Be configured with a WDS that is authenticated with the WLSE (link status must be okay too).</li> </ul>                                                                                                                                                                                           |                                                                          | The faults will clear when the WDS/WLSE is reauthenticated and Radio Monitoring is enabled correctly.                                                                                                                                                   |
| Number of CCMP Replay Discarded is Overloaded.              | The fault threshold set for the overloaded state has been exceeded.<br><br>When the fault is cleared, the following message displays:<br>Number of CCMP Replays Discarded is OK.                                                                                                                                                                                                                                                                                 | IDS > Manage IDS Settings > IDS-802.11x > CCMP Replays Discarded         | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                                         |
| Packet Error is in Degraded state ( <i>error rate %</i> )   | The fault threshold set for the degraded state has been exceeded.<br><br>When this fault is cleared, the following message displays:<br>Packet Error is in OK state.<br><br>The radio interfaces on the devices may be very under utilized, which can trigger the degradation problem.<br><br>For example, if a total of three packets are sent over the radio, and two of them are corrupt, the percentage would be $2/3 = 66\%$ , and could trigger the alarm. | Manage Fault Settings > Radio-802.11x Thresholds > RF Port Packet Errors | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.<br><br>Remove the alarm from the profile associated with these devices. |
| Packet Error is in Overloaded state ( <i>error rate %</i> ) | The fault threshold set for the overloaded state has been exceeded.<br><br>When this fault is cleared, the following message displays:<br>Packet Error is in OK state.                                                                                                                                                                                                                                                                                           |                                                                          | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                                         |
| Port is administratively set to down                        | The port has been set to Down by the administrator.<br><br>When this fault is cleared, the following message displays: Port is up                                                                                                                                                                                                                                                                                                                                | Manage Fault Settings > Radio-802.11x Thresholds > RF Port Status        | There is no action necessary; the port has been deliberately shut down.                                                                                                                                                                                 |

Table 2-2 Radio Interface Faults (continued)

| Fault Description           | Explanation                                                                                                                                                                                                                                                                                                                              | Related Setting                                                        | Recommended Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port is down                | The port is operationally down.<br>When this fault is cleared, the following message displays: Port is up                                                                                                                                                                                                                                | Manage Fault Settings > Radio-802.11x Thresholds > RF Port AdminStatus | Check the device to determine why the port is down.<br><br>If you have added or removed an interface from an access point, the WLSE might generate an erroneous fault. See <a href="#">Q.What are the results of adding or removing an interface from an access point?</a> , page 1-16.<br><br>The fault RF Port AdminStatus is enabled by default and must remain enabled with a default polling time of 5 minutes. Self healing ignores any radio set as administratively down, but this can only be detected if fault polling is enabled. |
| PSPF is disabled            | The PSPF port has been disabled.<br>PSPF (Publicly Secure Packet Forwarding) is a feature that prevents client devices associated to a bridge or access point from inadvertently sharing files with other client devices on the wireless network.<br><br>When the fault is cleared, the following message displays: The PSPF is enabled. | Manage Fault Settings > Access Point/Bridge Policies > PSPF Enabled    | Log in to the access point and enable the PSPF setting.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Requires healing: %reason%. | The indicated radio appeared up or down on this AP. Self Healing has been started.<br><br>After compensation results have been for other radios, this fault indicates the radio that had the failure.                                                                                                                                    | Not applicable.                                                        | There is no action necessary; Self Healing will attempt to adjust the power on other radios on the floor to maintain coverage.<br><br>Possible reasons self healing is required: <ul style="list-style-type: none"> <li>• An applicable radio is avoiding or no longer avoiding radar.</li> <li>• An AP has unregistered or re-registered with its WDS</li> <li>• A radio that had its beacons heard by other radios has not been heard by any radio (and vice-versa)</li> </ul>                                                             |

Table 2-2 Radio Interface Faults (continued)

| Fault Description                                                                                                           | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Related Setting                                                                     | Recommended Action                                                                                                                                                                                                         |                                                                         |                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Retry Count rate is Degraded <i>number</i> per minute</p> <p>Retry Count rate is Overloaded <i>number</i> per minute</p> | <p>The retry count rate alarm indicates if the wireless medium is congested. The alarm will be raised if the MSDU retransmission rate per minute is greater than the specified threshold. For example, if the overloaded state is set to greater than 90, a fault will be raised for an interface that has more than 90 MSDUs that required retransmission in a minute.</p> <p>When the fault is cleared, the following message displays: Retry Count rate is OK.</p> | <p>Manage Fault Settings &gt; Radio-802.11x Thresholds &gt; Max Retry Count</p>     | <p>Verify the threshold settings. There could be too many clients or access points located near the radio interface for which fault is raised. Clear the alarm and increase the threshold, or reduce the polling time.</p> |                                                                         |                                                                                                                                                                                                                                                                                                                            |
| <p>RF bandwidth utilization is Degraded (<i>utilization %</i>)</p>                                                          | <p>The fault threshold set for the degraded state has been exceeded.</p> <p>When the fault is cleared, the following message displays: RF bandwidth utilization is OK</p>                                                                                                                                                                                                                                                                                             | <p>Manage Fault Settings &gt; Radio-802.11x Thresholds &gt; RF Port Utilization</p> | <p>Verify that the fault threshold is set correctly.</p> <p>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.</p>                                     |                                                                         |                                                                                                                                                                                                                                                                                                                            |
| <p>RF bandwidth utilization is Overloaded (<i>utilization %</i>)</p>                                                        | <p>The fault threshold set for the overloaded state has been exceeded.</p> <p>When the fault is cleared, the following message displays: RF bandwidth utilization is OK</p>                                                                                                                                                                                                                                                                                           |                                                                                     |                                                                                                                                                                                                                            | <p>Serving and non-serving channel Radio Monitoring must be enabled</p> | <p>For Self Healing to work, all radios on the floor must be configured with Radio Monitoring. The fault will indicate which radios need to be configured with both serving and non serving radio monitoring.</p> <p>When the fault is cleared, the following message displays: Qualifies for Self Healing Monitoring.</p> |
| <p>Serving and non-serving channel Radio Monitoring must be enabled</p>                                                     | <p>For Self Healing to work, all radios on the floor must be configured with Radio Monitoring. The fault will indicate which radios need to be configured with both serving and non serving radio monitoring.</p> <p>When the fault is cleared, the following message displays: Qualifies for Self Healing Monitoring.</p>                                                                                                                                            | <p>Not applicable.</p>                                                              | <p>Enable Radio Monitoring for both serving and non-serving channels.</p> <p>Or, use the Location Manager tool, <b>Verify RM Capability</b>.</p>                                                                           |                                                                         |                                                                                                                                                                                                                                                                                                                            |

Table 2-2 Radio Interface Faults (continued)

| Fault Description                                        | Explanation                                                                                                                                                          | Related Setting                                                       | Recommended Action                                                                                                                                                          |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WEP Error is in Degraded state ( <i>error rate %</i> )   | The fault threshold set for the degraded state has been exceeded.<br>When this fault has been cleared, the following message displays:<br>WEP Error is in OK state   | Manage Fault Settings > Radio-802.11x Thresholds > RF Port WEP Errors | Verify that the fault threshold is set correctly.<br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| WEP Error is in Overloaded state ( <i>error rate %</i> ) | The fault threshold set for the overloaded state has been exceeded.<br>When this fault has been cleared, the following message displays:<br>WEP Error is in OK state |                                                                       |                                                                                                                                                                             |
| WEP key length policy violation                          | The WEP key length setting has been violated.<br>When this fault has been cleared, the following message displays:<br>WEP key length is OK.                          | Manage Fault Settings > Radio-802.11x Policies > WEP Key Length       | Check the WEP key settings on the interface to make sure they match the WLSE settings.                                                                                      |

## IDS (Intrusion Detection System) Faults

Table 2-3 IDS Faults

| Fault Description                                                            | Explanation                                                                                                                                                                                                                                | Related Setting                                                   | Recommended Action                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 802.11-B/G Interference Detected<br>- or -<br>802.11-A Interference Detected | The WLSE detected a non-802.11 interference.                                                                                                                                                                                               | IDS > Manage Network-Wide IDS Settings > Interference Detection   | Look at the fault description to determine which AP reported the interference, then take corrective action by removing the interference source.                                                                                                    |
| Ad-hoc network creation detected: <i>ssid</i>                                | An ad-hoc network was formed by some wireless clients (where <i>ssid</i> is the Service Set Identifier of the UnmanagedRadio's BSS). One of your infrastructure APs or other clients sent this information to the WLSE via your WDS setup. | IDS > Manage Network-Wide IDS Settings > Ad-hoc Network Detection | If the information is available, the WLSE will show the clients that are participating in the network (and that it can detect) in the fault details page. Use the Location Manager to find these APs and verify that this is not a security issue. |

Table 2-3 IDS Faults (continued)

| Fault Description                                                                        | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Related Setting                                                                                                                                                   | Recommended Action                                                                                                                      |
|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <p>Ad-hoc network <i>ssid</i> reclassified from Friendly to Rogue due to <i>rule</i></p> | <p>An ad-hoc network that was previously determined to be Friendly has been reclassified to Rogue.</p> <p><i>ssid</i> is the Service Set Identifier of the unmanaged radio's BSS.</p> <p><i>rule</i> is one of the following:</p> <ul style="list-style-type: none"> <li>• Change in RSSI ordering between observers</li> </ul> <p>The estimated proximity of the unmanaged radio between two observers has switched—if the WLSE thought that observer A was closer to radio R than observer B, it now thinks that observer B is closer to radio R than observer A.</p> <ul style="list-style-type: none"> <li>• Difference in relative RSSI between original and current observers exceeded threshold</li> </ul> <p>While radio R's strength changed by factor M between observer A and observer B, it changed by factor M+T between observer B and observer C. That is, it does not appear that radio R's change in strength is merely due to a change in its power configuration.</p> <ul style="list-style-type: none"> <li>• Fewer than two observers</li> <li>• Too long without observations</li> </ul> | <p>IDS &gt; Manage Network-Wide IDS Settings &gt; Ad-hoc Network Detection &gt; Friendly to Rogue AP Reclassification</p> <p>or</p> <p>IDS &gt; Manage Rogues</p> | <p>Use the fault details page to mark it friendly if the network is known, or to delete it from the WLSE database if it is unknown.</p> |

Table 2-3 IDS Faults (continued)

| Fault Description                                            | Explanation                                                                                                                                   | Related Setting                                                     | Recommended Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bad MIC while MFP enabled                                    | This fault is raised against the AP that is <i>observed</i> generating the violation.                                                         | Not applicable.                                                     | Investigate the possibility that a rogue AP is conducting a spoofing attack against the managed network. Also, make sure that an MFP configuration error (see <a href="#">MFP Configuration error (Detect disabled; should be enabled)</a> , page 2-19) is not the root cause of the MFP Validation error. It is also possible that communications problems between the WDS and its registered APs have prevented MFP key rotation messages from reaching either the detector or generator AP. |
| Bad Sequence Number while MFP enabled                        | This fault is raised against the AP that is <i>observed</i> generating the violation.                                                         | Not applicable.                                                     | See <a href="#">Bad MIC while MFP enabled</a> , page 2-16).                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| CCMP DecryptErrorsClient is detected                         | The fault threshold has been exceeded for the number of decryption errors detected by the CCMP play mechanism on the interface.               | IDS > Manage IDS Settings > CcmpDecryptErrorsClient                 | Verify that the fault threshold is set correctly.<br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                                                                                                                                                                                                                                                                                    |
| CCMP Replay Client is detected                               | The fault threshold set has been exceeded.<br>When this fault is cleared, the following message displays:<br>There is no CCMP Replay detected | IDS > Manage IDS Settings > General Settings > CcmpReplaysClient    | Verify that the fault threshold is set correctly.<br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                                                                                                                                                                                                                                                                                    |
| Client association rate is Degraded <i>number</i> per minute | The fault thresholds been exceeded.<br>When this fault is cleared, the following message displays:<br>Client association rate is OK.          | IDS > Manage IDS Settings > IDS-802.11x > Authentication Error Rate | Verify that the fault threshold is set correctly.<br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition                                                                                                                                                                                                                                                                                                                     |

Table 2-3 IDS Faults (continued)

| Fault Description                                                                                            | Explanation                                                                                                                                                                                                                      | Related Setting                                                                         | Recommended Action                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Client authentication error rate is Degraded <i>number</i> per minute                                        | The fault threshold set for the degraded state has been exceeded.<br><br>When this fault is cleared, the following message displays:<br>Client association error rate is OK.                                                     | IDS > Manage IDS Settings > IDS-802.11x > Authentication Error Rate                     | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                                                                                                                                                                                                              |
| Client authentication error rate is Overloaded <i>number</i> per minute                                      | The fault threshold set for the overloaded state has been exceeded.<br><br>When this fault is cleared, the following message displays:<br>Client association error rate is OK.                                                   |                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Client TKIP RemoteMICFailure is detected                                                                     | A wireless client has detected a MIC failure. The MIB value that is polled is cDot11WidsTkipRemoteMicFailures.<br><br>When this fault is cleared, the following message displays:<br>There is no TKIP RemoteMICFailure detected. | IDS > Manage IDS Settings > General IDS Settings > TkipRemoteMicFailureClient           | Occasionally MIC failures can occur during key rotation. To diagnose the problem, you should: <ul style="list-style-type: none"> <li>• Check the IOS version.</li> <li>• Enable 802.1x logs on the AP.</li> <li>• Perform an SNMP walk of cDot11WidsProtectFailClientTable to determine which clients are reporting the TKIP MIC failure. If just one client is reporting the failure, it could be a client issue</li> </ul> |
| EAPOL FLOOD is detected (Flood count: <i>floodcount</i> )                                                    | The fault threshold has been exceeded.<br><br>When this fault is cleared, the following message displays:<br>There is no EAPOL Flood detected.                                                                                   | IDS > Manage IDS Settings > General IDS Settings > EAPOL Detection                      | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition                                                                                                                                                                                                                                               |
| Excessive Action Frames in Channel: <i>channel</i> [Frames: <i>framecount</i> ,Interval: <i>windowsize</i> ] | The fault thresholds been exceeded.<br><br>When this fault is cleared, the following message displays:<br>Excessive Action Frames not present in Channel.                                                                        | IDS > Manage IDS Settings > General IDS Settings > Excessive Management Frame Detection | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                                                                                                                                                                                                              |
| Excessive Action Frames from STA: <i>station</i> [Frames: <i>framecount</i> ,Interval: <i>windowsize</i> ]   | The fault thresholds been exceeded.<br><br>When this fault is cleared, the following message displays:<br>Excessive Action Frames from STA: <i>station</i> not present                                                           | IDS > Manage IDS Settings > General IDS Settings > Excessive Management Frame Detection | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                                                                                                                                                                                                              |

Table 2-3 IDS Faults (continued)

| Fault Description                                                                                                      | Explanation                                                                                                                                                                  | Related Setting                                                                         | Recommended Action                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Excessive Association Frames in Channel: <i>channel</i> [Frames: <i>framecount</i> ,Interval: <i>windowsize</i> ]      | The fault thresholds been exceeded.<br>When this fault is cleared, the following message displays:<br>Excessive Association Frames not present in Channel: <i>channel</i>    | IDS > Manage IDS Settings > General IDS Settings > Excessive Management Frame Detection | Verify that the fault threshold is set correctly.<br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Excessive Association Frames from STA: <i>station</i> [Frames: <i>framecount</i> ,Interval: <i>windowsize</i> ]        | The fault thresholds been exceeded.<br>When this fault is cleared, the following message displays:<br>Excessive Association Frames from STA: <i>station</i> not present      | IDS > Manage IDS Settings > General IDS Settings > Excessive Management Frame Detection | Verify that the fault threshold is set correctly.<br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Excessive Authentication Frames in Channel: <i>channel</i> [Frames: <i>framecount</i> ,Interval: <i>windowsize</i> ]   | The fault thresholds been exceeded.<br>When this fault is cleared, the following message displays:<br>Excessive Authentication Frames not present in Channel.                | IDS > Manage IDS Settings > General IDS Settings > Excessive Management Frame Detection | Verify that the fault threshold is set correctly.<br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Excessive Authentication Frames from STA: <i>station</i> [Frames: <i>framecount</i> ,Interval: <i>windowsize</i> ]     | The fault thresholds been exceeded.<br>When this fault is cleared, the following message displays:<br>Excessive Authentication Frames from STA: <i>station</i> not present   | IDS > Manage IDS Settings > General IDS Settings > Excessive Management Frame Detection | Verify that the fault threshold is set correctly.<br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Excessive Deauthentication Frames in Channel: <i>channel</i> [Frames: <i>framecount</i> ,Interval: <i>windowsize</i> ] | The fault thresholds been exceeded.<br>When this fault is cleared, the following message displays:<br>Excessive Deauthentication Frames not present in Channel.              | IDS > Manage IDS Settings > General IDS Settings > Excessive Management Frame Detection | Verify that the fault threshold is set correctly.<br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Excessive Deauthentication Frames from STA: <i>station</i> [Frames: <i>framecount</i> ,Interval: <i>windowsize</i> ]   | The fault thresholds been exceeded.<br>When this fault is cleared, the following message displays:<br>Excessive Deauthentication Frames from STA: <i>station</i> not present | IDS > Manage IDS Settings > General IDS Settings > Excessive Management Frame Detection | Verify that the fault threshold is set correctly.<br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Excessive Disassociation Frames in Channel: <i>channel</i> [Frames: <i>framecount</i> ,Interval: <i>windowsize</i> ]   | The fault thresholds been exceeded.<br>When this fault is cleared, the following message displays:<br>Excessive Disassociation Frames not present in Channel.                | IDS > Manage IDS Settings > General IDS Settings > Excessive Management Frame Detection | Verify that the fault threshold is set correctly.<br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |

Table 2-3 IDS Faults (continued)

| Fault Description                                                                                                                 | Explanation                                                                                                                                                                    | Related Setting                                                                         | Recommended Action                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Excessive Disassociation Frames from STA: <i>station</i><br>[Frames: <i>framecount</i> ,Interval: <i>wind</i><br><i>owsize</i> ]  | The fault thresholds been exceeded.<br><br>When this fault is cleared, the following message displays:<br>Excessive Disassociation Frames from STA: <i>station</i> not present | IDS > Manage IDS Settings > General IDS Settings > Excessive Management Frame Detection | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Excessive Probe Frames in Channel: <i>channel</i><br>[Frames: <i>framecount</i> ,Interval: <i>wind</i><br><i>owsize</i> ]         | The fault thresholds been exceeded.<br><br>When this fault is cleared, the following message displays:<br>Excessive Probe Frames not present in Channel.                       | IDS > Manage IDS Settings > General IDS Settings > Excessive Management Frame Detection | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Excessive Probe Frames from STA: <i>station</i><br>[Frames: <i>framecount</i> ,Interval: <i>wind</i><br><i>owsize</i> ]           | The fault thresholds been exceeded.<br><br>When this fault is cleared, the following message displays:<br>Excessive Probe Frames from STA: <i>station</i> not present          | IDS > Manage IDS Settings > General IDS Settings > Excessive Management Frame Detection | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Excessive Reassociation Frames in Channel: <i>channel</i><br>[Frames: <i>framecount</i> ,Interval: <i>wind</i><br><i>owsize</i> ] | The fault thresholds been exceeded.<br><br>When this fault is cleared, the following message displays:<br>Excessive Reassociation Frames not present in Channel.               | IDS > Manage IDS Settings > General IDS Settings > Excessive Management Frame Detection | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Excessive Reassociation Frames from STA: <i>station</i><br>[Frames: <i>framecount</i> ,Interval: <i>wind</i><br><i>owsize</i> ]   | The fault thresholds been exceeded.<br><br>When this fault is cleared, the following message displays:<br>Excessive Reassociation Frames from STA: <i>station</i> not present  | IDS > Manage IDS Settings > General IDS Settings > Excessive Management Frame Detection | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| MFP Configuration error (Detect disabled; should be enabled)                                                                      | This fault is raised against an AP that contains an MFP-related configuration error.<br><br><b>Note</b> No fault is raised against an AP that does <i>not</i> support MFP.     | Not applicable.                                                                         | Restart the affected AP.                                                                                                                                                        |
| MFP Timebase Invalid (bad SNTP)                                                                                                   | This fault is raised against an AP that has a bad timebase.                                                                                                                    | Configure > Templates > Services > SNTP                                                 | Configure the AP to reference an SNTP server.                                                                                                                                   |
| No MIC while MFP Enabled                                                                                                          | This fault is raised against the AP that is <i>observed</i> generating the violation.                                                                                          | Not applicable.                                                                         | See <a href="#">Bad MIC while MFP enabled, page 2-16</a> ).                                                                                                                     |

Table 2-3 IDS Faults (continued)

| Fault Description                              | Explanation                                                                                                                                                                      | Related Setting                                                          | Recommended Action                                                                                                                                                              |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of CCMP Replay Discarded is Degraded.   | The fault threshold set for the degraded state has been exceeded.<br><br>When the fault is cleared, the following message displays:<br>Number of CCMP Replays Discarded is OK.   | IDS ><br>Manage IDS Settings > IDS-802.11x >CCMP Replays Discarded       | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Number of CCMP Replay Discarded is Overloaded. | The fault threshold set for the overloaded state has been exceeded.<br><br>When the fault is cleared, the following message displays:<br>Number of CCMP Replays Discarded is OK. |                                                                          |                                                                                                                                                                                 |
| Number of EAPOL Flood Count is Degraded        | The fault threshold set for the degraded state has been exceeded.<br><br>When this fault is cleared, the following message displays:<br>EAPOL Flood Count is OK.                 | IDS ><br>Manage IDS Settings > General IDS Settings > EAPOL Detection    | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Number of EAPOL Flood Count is Overloaded      | The fault threshold set for the overloaded state has been exceeded.<br><br>When this fault is cleared, the following message displays:<br>EAPOL Flood Count is OK.               |                                                                          |                                                                                                                                                                                 |
| Number of TKIP counter measure is Degraded.    | The fault threshold set for the degraded state has been exceeded.<br><br>When the fault is cleared, the following message displays:<br>Number of TKIP Counter Measure is OK.     | IDS ><br>Manage IDS Settings > IDS-802.11x >TKIP Counter Measure Invoked | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Number of TKIP counter measure is Overloaded.  | The fault threshold set for the overloaded state has been exceeded.<br><br>When the fault is cleared, the following message displays:<br>Number of TKIP Counter Measure is OK.   |                                                                          |                                                                                                                                                                                 |

Table 2-3 IDS Faults (continued)

| Fault Description                                 | Explanation                                                                                                                                                                        | Related Setting                                                            | Recommended Action                                                                                                                                                              |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of TKIP Local MIC failures is Degraded.    | The fault threshold set for the degraded state has been exceeded.<br><br>When the fault is cleared, the following message displays:<br>Number of TKIP Local MIC failures is OK.    | IDS ><br>Manage IDS Settings<br>> IDS-802.11x<br>>TKIP Local MIC failures  | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Number of TKIP Local MIC failures is Overloaded.  | The fault threshold set for the overloaded state has been exceeded.<br><br>When the fault is cleared, the following message displays:<br>Number of TKIP Local MIC failures is OK.  |                                                                            |                                                                                                                                                                                 |
| Number of TKIP Remote MIC failures is Degraded.   | The fault threshold set for the degraded state has been exceeded.<br><br>When the fault is cleared, the following message displays:<br>Number of TKIP Remote MIC failures is OK.   | IDS ><br>Manage IDS Settings<br>> IDS-802.11x<br>>TKIP Remote MIC failures | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Number of TKIP Remote MIC failures is Overloaded. | The fault threshold set for the overloaded state has been exceeded.<br><br>When the fault is cleared, the following message displays:<br>Number of TKIP Remote MIC failures is OK. |                                                                            |                                                                                                                                                                                 |
| Number of TKIP replay errors is Degraded.         | The fault threshold set for the degraded state has been exceeded.<br><br>When the fault is cleared, the following message displays:<br>Number of TKIP replay errors is OK.         | IDS ><br>Manage IDS Settings<br>> IDS-802.11x<br>>TKIP Replays Detected    | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Number of TKIP replay errors is Overloaded.       | The fault threshold set for the overloaded state has been exceeded.<br><br>When the fault is cleared, the following message displays:<br>Number of TKIP replay errors is OK.       |                                                                            |                                                                                                                                                                                 |

Table 2-3 IDS Faults (continued)

| Fault Description                                                        | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Related Setting                                                               | Recommended Action                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Radio Role must be “roleScanner” to support Frame Monitoring (was $x$ ). | <p>This fault is raised when a radio is initially configured for Frame Monitoring (where <math>x</math> is the integer value of the SNMP OID <b>cd11IfStationRole</b> from the CISCO-DOT11-IF-MIB), but then someone configures the radio out of scanning-only mode. As a side effect, this also disables Frame Monitoring.</p> <p>When this fault is cleared, the following message displays:<br/>Radio Role is “roleScanner” and supports Frame Monitoring.</p> | Radio Mgr > Frame Monitoring                                                  | <p>Review your network to determine the action necessary to clear the fault condition.</p> <p>Although this situation might simply be that an administrator no longer needs to monitor or scan a portion of their site any longer, it could also be an intruder who has somehow gained console access to a Scanning AP and is attempting to “blind” IDS services for a portion of a site.</p> |
| TKIP Replay is detected                                                  | <p>The fault threshold set has been exceeded.</p> <p>When this fault is cleared, the following message displays:<br/>There is no TKIP Replay detected.</p>                                                                                                                                                                                                                                                                                                        | IDS > Manage IDS Settings > General IDS Settings > TkipReplayClient           | <p>Verify that the fault threshold is set correctly.</p> <p>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.</p>                                                                                                                                                                                                        |
| TKIP LocalMICFailure is detected                                         | <p>The fault threshold set has been exceeded.</p> <p>When this fault is cleared, the following message displays:<br/>There is no TKIP LocalMICFailure detected.</p>                                                                                                                                                                                                                                                                                               | IDS > Manage IDS Settings > General IDS Settings > TkipLocalMicFailure Client | <p>Verify that the fault threshold is set correctly.</p> <p>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.</p>                                                                                                                                                                                                        |
| Unexpected MIC while MFP Disabled                                        | This fault is raised against the AP that is <i>observed</i> generating the violation.                                                                                                                                                                                                                                                                                                                                                                             | Not applicable.                                                               | See <a href="#">Bad MIC while MFP enabled, page 2-16</a> ).                                                                                                                                                                                                                                                                                                                                   |

Table 2-3 IDS Faults (continued)

| Fault Description                     | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Related Setting                                                                    | Recommended Action                                                                                                                                                                                                                             |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unregistered Client(s) present        | <p>One or more unregistered clients have been detected in the wireless network, and are unsuccessfully attempting to authenticate with the APs.</p> <p>The unregistered client fault is triggered when an AP in scanning mode detects a number of probe requests and association requests from a station, client, or access point, which crosses the configured threshold in the configured time.</p> <p>The registration attempts are not being made to the scanning AP; the attempts are being made to regular APs that the scanning AP notices.</p> <p>The scanning AP counts the packets per station.</p> <p>(The fault is generated based on the configured Client Registration Request Count within a 15-minute period. The default is 100 registrations, but can be changed to 200, 300, 400 or 500. )</p> <p>This fault is cleared when no registration attempts are detected during the observation interval (the client leaves the wireless network or is not seen or reported by any Scanning APs).</p> | IDS ><br>Manage IDS Settings > General IDS Settings > Unregistered Client          | <p>Set the priority of the fault to be generated and the threshold for the failed authentication attempts by the client.</p> <p>Make a physical check near the scanning AP that reported this fault to see if there are any rogue clients.</p> |
| Wireless Client MAC spoofing detected | <p>The WLSE has detected a spoofed MAC address.</p> <p>Whenever the WDS detects an authentication taking place for a known MAC address, it verifies that the same user ID is being used. If the user ID does not match, the authentication is rejected and a fault is issued.</p> <p>When this fault is cleared, the following message displays: No Wireless Client MAC Spoofing Detected.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | IDS ><br>Manage IDS Settings > General IDS Settings > Wireless Client MAC Spoofing | Review your network to determine the action necessary to clear the fault condition.                                                                                                                                                            |

# Voice Faults

**Table 2-4** Voice Faults

| Fault Description                                                                              | Explanation                                                                                                                                                                                                                                                                                                                                                                                  | Related Setting                                                                                                                         | Recommended Action                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Voice Bandwidth Exceeded<br>[Bandwidth In Use: <i>current%</i> ,Threshold: <i>threshold%</i> ] | <p>This is a warning that is triggered only when the voice bandwidth in use exceeds the threshold limit.</p> <p>The higher the percentage of bandwidth being used, the less is available for new phone calls to be placed or to roam in. The default configured bandwidth for voice is 75%. After reaching 100% of the configured bandwidth in use, no additional calls can be accepted.</p> | <b>Faults &gt; Manage Fault Settings</b> , then Edit the Default profile. Select <b>RADIO-802.11a THRESHOLDS &gt; Voice Bandwidth</b> . | You can (at the expense of data traffic clients such as laptops) increase the amount of bandwidth reserved for voice traffic. But a better solution would be to find a solution that would reduce the voice traffic on the congested cell. |

# WLSE Faults

**Table 2-5** WLSE Faults

| Fault Description                                         | Explanation                                                                                                                                                                                                                                                                                    | Related Setting                     | Recommended Action                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Auto Resite Survey Performance Degradations               | <p>There is at least one floor with a 20% difference in the base and current performance values on one or more floors configured for Auto Re-Site Survey.</p> <p>The fault will clear when there are no longer any buildings or any floors with 20% differences in the performance values.</p> | Radio Manager > Auto Re-Site Survey | <p>Select the document with the eyeglasses in the detail view of the fault condition. A list of all buildings and floors that have performance degradations is displayed.</p> <p>First, check the details for the floor and if needed, run Radio Manager Assisted Configuration. Then select Auto Re-Site Survey to set the new base values.</p> |
| Data may not have been successfully restored from active. | The standby WLSE has detected a failure in the active WLSE and is becoming active before it successfully synchronized with the active WLSE.                                                                                                                                                    | Not applicable.                     | Make sure the WLSEs are correctly configured and functioning properly.                                                                                                                                                                                                                                                                           |

Table 2-5 WLSE Faults

| Fault Description                                  | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Related Setting                                                    | Recommended Action                                                                                                                                                                                                                                                          |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Duplicate IP Detection                             | <p>During discovery, an AP with a duplicate IP is found and placed in the Duplicate IP folder under Devices &gt; Managed &gt; Manage/Unmanage.</p> <p>This folder contains access points that are in the <i>pending</i> state. A device becomes pending and is placed in this folder when:</p> <ul style="list-style-type: none"> <li>• The same IP address is assigned to more than one access point.</li> <li>• An access point's IP address changes.</li> <li>• You replace a managed access point.</li> </ul> <p>The IP address shown for a device in this folder is the last known address for the device, before the address change occurred.</p> | Manage Fault Settings > Thresholds > WLSE > Duplicate IP detection | For information on how to move devices from the Duplicate IP folder, see the topic: Handling Duplicate IP Addresses on Access Points in the Managing Devices chapter of the <i>User Guide for the CiscoWorks Wireless LAN Solution Engine, 2.13.</i> or in the online help. |
| Fault Engine is overloaded with excessive polling. | <p>The WLSE fault engine is overloaded due a large number of fault policy and threshold polling occurring at one time. This generally occurs when the WLSE is configured to monitor large number of fault policies and thresholds on large number of devices.</p> <p>This fault will clear when the polling rate drops below the internally set threshold.</p>                                                                                                                                                                                                                                                                                          | Not applicable.                                                    | <ul style="list-style-type: none"> <li>• Make sure the WLSE has connectivity to the network.</li> <li>• Reduce the amount of fault polling by disabling certain policies and thresholds.</li> </ul>                                                                         |
| Lost connectivity with router.                     | The WLSE is unable to ping the default router.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Not applicable.                                                    | <p>Make sure that:</p> <ul style="list-style-type: none"> <li>• Connectivity from the WLSE to the gateway router is okay.</li> <li>• The gateway router is functioning properly.</li> </ul>                                                                                 |
| Lost connectivity with standby on ip_address.      | The standby WLSE indicated by the IP address is down.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Not applicable.                                                    | <p>Make sure that:</p> <ul style="list-style-type: none"> <li>• The standby WLSE is up and running.</li> <li>• The standby WLSE is network accessible.</li> <li>• Redundancy has been correctly setup on the Active WLSE.</li> </ul>                                        |

Table 2-5 WLSE Faults

| Fault Description                                                         | Explanation                                                                                     | Related Setting | Recommended Action                                                                           |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------|
| Other node is running a different version. Redundancy will be turned off. | A mismatch of WLSE software version has been detected between the active and the standby WLSEs. | Not applicable. | Make sure the correct WLSE software has been installed on both the active and standby WLSEs. |
| Redundancy active mode enabled                                            | The WLSE sending this message is now active.                                                    | Not applicable. | Confirm that both WLSEs are functioning respectively as Active and Standby.                  |
| Redundancy standby mode.                                                  | The WLSE sending this message is now in standby mode.                                           | Not applicable. | Confirm that both WLSEs are functioning respectively as Active and Standby.                  |
| Redundancy turned off.                                                    | Redundancy has been disabled.                                                                   | Not applicable. | Make sure the WLSEs are correctly configured and functioning properly.                       |
| Regained connectivity with router.                                        | The WLSE that sent this message is now able to ping the default router.                         | Not applicable. | Confirm that both WLSEs are functioning respectively as Active and Standby.                  |
| Regained connectivity with standby on ip_address                          | The Standby WLSE is up.                                                                         | Not applicable. | Confirm that both WLSEs are functioning respectively as Active and Standby.                  |
| System check failed on ip_address for reason: reason.                     | The system check failed.                                                                        | Not applicable. | Make sure the WLSEs are correctly configured and functioning properly.                       |

## AAA Server Faults

Table 2-6 AAA Server Faults

| Fault Description                                                                        | Server Type     | Explanation                                                                                                                                             | Related Setting                                                                   | Recommended Action                                                                             |
|------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Authentication failed. Please check EAP-FAST, EAP-MD5, LEAP, PEAP, or RADIUS credentials | All AAA Servers | Server is reachable but credentials are incorrect.<br><br>When this fault has been cleared, the following message displays:<br>Authentication succeeded | Manage Fault Settings > AAA > EAP-FAST/ EAP-MD5 /LEAP/ PEAP/RADIUS> Response Time | Make sure that the credentials are set correctly by selecting Devices > Discover > AAA Server. |

Table 2-6 AAA Server Faults (continued)

| Fault Description                | Server Type | Explanation                                                                                                                                                                                                                                                                                                                                                                                       | Related Setting                                        | Recommended Action                                                                                                                                                                                                                             |
|----------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EAP-FAST server is not available | EAP-FAST    | <p>Can be caused by any of the following reasons:</p> <ul style="list-style-type: none"> <li>• WLSE IP Address is not configured as a NAS on the server.</li> <li>• Shared secret key does not match the key configured on the server.</li> <li>• Server is unreachable.</li> </ul> <p>When this fault has been cleared, the following message displays:<br/>EAP-MD5 server is available</p>      | Manage Fault Settings > AAA > EAP-FAST > Response Time | <p>Check server configuration to make sure that:</p> <ul style="list-style-type: none"> <li>• WLSE IP address is configured as NAS on the server.</li> <li>• Shared secret key matches the key configured on the server</li> </ul>             |
| EAP-FAST server is Degraded      | EAP-FAST    | <p>The fault threshold set for the degraded state has been exceeded.</p> <p>When this fault has been cleared, the following message displays:<br/>EAP-FAST server is OK</p>                                                                                                                                                                                                                       | Manage Fault Settings > AAA > EAP-FAST > Response Time | <p>Verify that the fault threshold is set correctly.</p> <p>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.</p>                                                         |
| EAP-FAST server is Overloaded    | EAP-FAST5   | <p>The fault threshold set for the overloaded state has been exceeded.</p> <p>When this fault has been cleared, the following message displays:<br/>EAP-FAST server is OK</p>                                                                                                                                                                                                                     | Manage Fault Settings > AAA > EAP-FAST > Response Time | <p>Verify that the fault threshold is set correctly.</p> <p>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.</p>                                                         |
| EAP-MD5 server is not available  | EAP-MD5     | <p>Can be caused by any of the following reasons:</p> <ul style="list-style-type: none"> <li>• WLSE IP Address is not configured as a NAS on the server.</li> <li>• Shared secret key does not match with the key configured on the server.</li> <li>• Server is unreachable.</li> </ul> <p>When this fault has been cleared, the following message displays:<br/>EAP-MD5 server is available</p> | Manage Fault Settings > AAA > EAP-MD5 > Response Time  | <p>Check the server configuration to make sure that:</p> <ul style="list-style-type: none"> <li>• The WLSE IP address is configured as NAS on the server.</li> <li>• The shared secret key matches the key configured on the server</li> </ul> |

Table 2-6 AAA Server Faults (continued)

| Fault Description            | Server Type | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                           | Related Setting                                       | Recommended Action                                                                                                                                                                                                                   |
|------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EAP-MD5 server is Degraded   | EAP-MD5     | The fault threshold set for the degraded state has been exceeded.<br><br>When this fault has been cleared, the following message displays:<br>EAP-MD5 server is OK                                                                                                                                                                                                                                                                    | Manage Fault Settings > AAA > EAP-MD5 > Response Time | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                      |
| EAP-MD5 server is Overloaded | EAP-MD5     | Fault threshold for the overloaded state has been exceeded.<br><br>When this fault has been cleared, the following message displays:<br>EAP-MD5 server is OK                                                                                                                                                                                                                                                                          | Manage Fault Settings > AAA > EAP-MD5 > Response Time | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                      |
| LEAP server is not available | LEAP        | Can be caused by any of the following: <ul style="list-style-type: none"> <li>You enabled this policy and are using a non-Cisco client with EAP.</li> <li>WLSE IP Address is not configured as a NAS on the server.</li> <li>Shared secret key does not match the key configured on the server.</li> <li>Server is unreachable.</li> </ul> When this fault has been cleared, the following message displays: LEAP server is available | Manage Fault Settings > AAA > LEAP > Response Time    | Check the server configuration and make sure that: <ul style="list-style-type: none"> <li>The WLSE IP address is configured as NAS on the server.</li> <li>The shared secret key matches the key configured on the server</li> </ul> |
| LEAP server is Degraded      | LEAP        | The fault threshold set for the degraded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: LEAP server is OK.                                                                                                                                                                                                                                                                         | Manage Fault Settings > AAA > LEAP > Response Time    | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                      |

Table 2-6 AAA Server Faults (continued)

| Fault Description                                              | Server Type | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Related Setting                                             | Recommended Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LEAP server is Overloaded                                      | LEAP        | The fault threshold set for the overloaded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: LEAP server is OK.                                                                                                                                                                                                                                                                                                                | Manage Fault Settings > AAA > LEAP > Response Time          | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| PAC is either invalid or expired. Please reimport new PAC file | EAP-FAST    | PAC file is either invalid or expired.                                                                                                                                                                                                                                                                                                                                                                                                                                         | This fault is not generated based on a threshold violation. | Generate a new PAC file from the EAP-FAST server you are trying to monitor and make sure that the expiry time is set properly when generating the PAC file.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| PEAP server is not available                                   | PEAP        | Can be caused by any of the following reasons: <ul style="list-style-type: none"> <li>• PEAP monitoring is not enabled.</li> <li>• WLSE IP Address is not configured as a NAS on the server.</li> <li>• Shared secret key does not match with the key configured on the server.</li> <li>• Server is unreachable.</li> <li>• EAP-GTC is required for reports and faults.</li> </ul> When this fault has been cleared, the following message displays: PEAP server is available | Manage Fault Settings > AAA > PEAP > Response Time          | Check the server configuration and make sure that: <ul style="list-style-type: none"> <li>• PEAP monitoring is enabled under Manage Fault Settings &gt; AAA &gt; PEAP &gt; Response time.</li> <li>• WLSE IP address is configured as NAS on the authentication server.</li> <li>• If both NICs in the WLSE are assigned an IP, both should be added as NAS in the PEAP authentication server.</li> <li>• Shared secret key matches the key configured on the server.</li> <li>• WLSE requires EAP-GTC for PEAP monitoring, which is used for PEAP-related reports and faults. They will not work with MS-CHAPV2.</li> </ul> |
| PEAP server is Degraded                                        | PEAP        | The fault threshold set for the degraded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: PEAP server is OK.                                                                                                                                                                                                                                                                                                                  | Manage Fault Settings > AAA > PEAP > Response Time          | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                                                                                                                                                                                                                                                                                                                                                                                                              |

Table 2-6 AAA Server Faults (continued)

| Fault Description              | Server Type | Explanation                                                                                                                                                                                                                                                                                                                                                                    | Related Setting                                      | Recommended Action                                                                                                                                                                                                                        |
|--------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PEAP server is Overloaded      | PEAP        | The fault threshold set for the overloaded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: PEAP server is OK                                                                                                                                                                                                                 | Manage Fault Settings > AAA > PEAP > Response Time   | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                           |
| RADIUS server is not available | PEAP        | Can be caused by any of the following reasons: <ul style="list-style-type: none"> <li>• WLSE IP Address is not configured as a NAS on the server.</li> <li>• Shared secret key does not match with the key configured on the server.</li> <li>• Server is unreachable.</li> </ul> When this fault has been cleared, the following message displays: RADIUS server is available | Manage Fault Settings > AAA > RADIUS > Response Time | Check your server configuration and make sure that: <ul style="list-style-type: none"> <li>• The WLSE IP address is configured as NAS on the server.</li> <li>• The shared secret key matches the key configured on the server</li> </ul> |
| RADIUS server is Degraded      | PEAP        | The fault threshold set for the degraded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: RADIUS server is OK.                                                                                                                                                                                                                | Manage Fault Settings > AAA > RADIUS > Response Time | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                           |
| RADIUS server is Overloaded    | PEAP        | The fault threshold set for the overloaded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: RADIUS server is OK.                                                                                                                                                                                                              | Manage Fault Settings > AAA > RADIUS > Response Time | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition.                                                           |

# Switch Faults

**Table 2-7**      **Switch Faults**

| Fault Description                                      | Explanation                                                                                                                                                                             | Related Setting                                  | Recommended Action                                                                                                                                                              |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU utilization is Degraded ( <i>utilization %</i> )   | The fault threshold set for the degraded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: CPU utilization is Ok.                       | Manage Fault Settings > Switch > CPU Utilization | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| CPU utilization is Overloaded ( <i>utilization %</i> ) | The fault threshold set for the overloaded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: CPU utilization is Ok.                     | Manage Fault Settings > Switch > CPU Utilization | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Device was not reachable via SNMP                      | The SNMP Agent on the switch is down.<br><br>When this fault has been cleared, the following message displays: Device was reachable via SNMP.                                           | Manage Fault Settings > Switch > SNMP Reachable  | Make sure that the switch SNMP agent is active.                                                                                                                                 |
| Module is down                                         | The module is down.<br><br>When this fault has been cleared, the following message displays: Module is up.                                                                              | Manage Fault Settings > Switch > Module Status   | Check the module in the switch and correct the problem.                                                                                                                         |
| Port could not agree with other end on duplex mode     | The port could not agree with the far end on port duplex, and is in disagree(3) mode.<br><br>When this fault has been cleared, the following message displays: Port duplex state is OK. | Not applicable.                                  | Make sure the duplex mode on both ends match.                                                                                                                                   |
| Port is administratively set to down                   | The port has been set to down by the administrator.<br><br>When this fault is cleared, the following message displays: Port is UP.                                                      | Manage Fault Settings > Switch > Port Status     | Confirm that the switch port has been deliberately shut down, and that it is not down due to some other accidental operation.                                                   |

Table 2-7 Switch Faults (continued)

| Fault Description                                                        | Explanation                                                                                                                                                                           | Related Setting                                        | Recommended Action                                                                                                                                                              |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port is down.                                                            | The port is operationally down.<br><br>When this fault is cleared, the following message displays:<br>Port is UP.                                                                     | Manage Fault Settings ><br>Switch > Port Status        | Check the switch to determine why the port is down.                                                                                                                             |
| Switch memory utilization is Degraded ( <i>utilization %</i> )           | The fault threshold set for the degraded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: Switch memory utilization is Ok.           | Manage Fault Settings ><br>Switch > Memory Utilization | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Switch memory utilization is Overloaded ( <i>utilization %</i> )         | The fault threshold set for the overloaded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: Switch memory utilization is Ok.         | Manage Fault Settings ><br>Switch > Memory Utilization | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Switch Port bandwidth utilization is Degraded ( <i>utilization %</i> )   | The fault threshold set for the degraded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: Switch port bandwidth utilization is Ok.   | Manage Fault Settings ><br>Switch > Port Utilization   | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |
| Switch Port bandwidth utilization is Overloaded ( <i>utilization %</i> ) | The fault threshold set for the overloaded state has been exceeded.<br><br>When this fault has been cleared, the following message displays: Switch port bandwidth utilization is Ok. | Manage Fault Settings ><br>Switch > Port Utilization   | Verify that the fault threshold is set correctly.<br><br>If the threshold is set correctly, review your network to determine the action necessary to clear the fault condition. |

# Router Fault

**Table 2-8 Router Fault**

| Fault Description                 | Explanation                                                                                                                                   | Related Setting                                 | Recommended Action                              |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| Device was not reachable via SNMP | The SNMP Agent on the switch is down.<br><br>When this fault has been cleared, the following message displays: Device was reachable via SNMP. | Manage Fault Settings > Router > SNMP Reachable | Make sure that the router SNMP agent is active. |

# WLSM Faults

**Table 2-9 WLSM Faults**

| Fault Description                     | Explanation                                                                                                                                                                                                                                                                                                                                                   | Related Setting                                       | Recommended Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device was not reachable via SNMP     | The SNMP Agent on the WLSM is down.<br><br>When this fault has been cleared, the following message displays: Device was reachable via SNMP.                                                                                                                                                                                                                   | Manage Fault Settings > WLSM > SNMP Reachable         | Make sure that the SNMP agent is active.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| WLSM HSRP state has changed to Active | A switchover has occurred and the standby WLSM has become active.<br><br>If the WLSM goes back to standby state, the WLSE will automatically clear the fault.<br><br><b>Note</b> See the Recommended Actions column for information regarding clearing the fault manually or acknowledging the fault when the the WLSM does not go back to the standby state. | Manage Fault Settings > WLSM > HSRP Standby to Active | Investigate the reason for the switchover. For example it could have been caused by any of the following reasons: the active WLSM might have become defective, it may have been physically pulled out of the chassis, or the configuration may have been modified.<br><br>After the reason for the switchover has been determined, schedule an inventory job to synchronize the current HSRP states of the WLSMs. After inventory is complete, either move the fault to the Acknowledge state or clear it. |





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