



Getting Started

The following topics provide an overview of the Wireless LAN Solution Engine (WLSE), information about WLSE displays, and assistance with getting started:

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Caution

The WLSE does not support Network Address Translation (NAT).

Before You Begin

Before using the WLSE for monitoring, reporting, and other tasks, you should:

- Install and configure the WLSE or WLSE Express, as described in the relevant installation and configuration guide:
 - *Installation and Configuration Guide for the CiscoWorks 1130-19 Wireless LAN Solution Engine, Release 2.11.*
 - *Installation and Configuration Guide for the CiscoWorks 1030 Wireless LAN Solution Engine Express, Release 2.11.*
- Set up devices and device management by either:
 - Using the Deployment Wizard (for deploying access points and WDS devices in a Cisco SWAN framework), as described in the online help and the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.11.*
 - Using the procedures in these documents:
Configuring Devices for Management by the CiscoWorks Wireless LAN Solution Engine (for all devices in the wireless network)
[Chapter 4, “Device Discovery and Management.”](#)

For information on locating these documents on Cisco.com, see [Finding WLSE Documentation on Cisco.com, page 1-21.](#)

Overview of the Wireless LAN Solution Engine

The WLSE is a hardware and software solution for managing Cisco wireless devices. The WLSE has the following major features:

- Configuration and Firmware
The configuration feature allows you to apply a set of configuration changes to access points and bridges and to archive configurations. Using the firmware feature, you can upgrade the firmware on access points and bridges.
- Reporting
Allows you to display reports for tracking device, client, and security information. Reports can be emailed, printed, and exported.

- **Fault and Policy Monitoring**
Provides device monitoring for fault and performance conditions, monitoring of authentication server responses, and monitoring of policy misconfigurations.
- **Radio Management**
Helps you manage your WLAN radio environment. All the device information shown under this tab is polled from the managed devices in your network. Radio Manager features simplify the deployment, expansion, and day-to-day management of the WLAN.
- **Site Management**
Displays a graphical view of the WLAN environment.

The WLSE works by gathering fault, performance, and configuration information about Cisco devices that it discovers in your network. The devices must be properly configured for discovery. After devices are discovered, you decide which devices to manage with the WLSE.

Integrating the WLSE with Network Management Systems

You can integrate the WLSE with other network management systems as follows:

- Add a link to a WLSE from a CiscoWorks server, using CiscoWorks Management Connection—See [Integrating the WLSE with a CiscoWorks Server](#), page 1-4.
- Launch a CiscoWorks server's desktop from the WLSE—See [Creating Links](#), page 16-80.
- Use the WLSE's fault notification interface to forward WLSE faults as SNMP traps and syslog messages—See [Notification Settings](#), page 3-79.

**Note**

The WLSE supports SNMP v2c traps. SNMP v1 traps are not supported. Only network management systems that support v2c traps can integrate with the WLSE.

- Forward intrusion detection system (IDS) events to network management systems.
- Share inventory by exporting devices to and importing devices from Resource Manager Essentials (RME) running on a CiscoWorks server—See the following:
 - [Exporting Devices to a CiscoWorks Server, page 4-104](#)
 - [Importing Devices from a CiscoWorks Server, page 4-58](#)
- Upgrade the software on a WLSE by using the Software Image Management (SWIM) tool of Resource Manager Essentials running on a CiscoWorks server.

Integrating the WLSE with a CiscoWorks Server

You can use CiscoWorks Management Connection to add external application links to a CiscoWorks server's navigation tree. Such links allow you to access the applications directly from the navigation tree.

Adding links to a WLSE involves installing a connection to the WLSE's URL, as outlined in the following procedure.

Procedure

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- Step 1** Enter the CiscoWorks server's URL in the browser (for example, `http://my-cwserver:1741/`).
- Step 2** Select **Management Connection > Administration > Create**.
- Step 3** Follow the directions in the CiscoWorks online help.



Note In the screen titled Enter Item Information, enter any name for the connection in the Item Name field. Enter `main.html` in the URL field.

- Step 4** When you finish, the connection to the WLSE appears under **Management Connection > Connections**.
-

Understanding the Web Interface

When you log into the WLSE through the World Wide Web, the set of features (tabs and subtabs) displayed in the UI depends on the roles assigned to your user login. A user with system administrator privileges can access the features in all of the tabs and subtabs, while other users may see only a subset of features. For more information about user roles, see [Managing Roles](#), page 16-69.

This section describes the following aspects of the UI:

- The supported browsers and versions and browser configuration—See [Configuring the Web Browser](#), page 1-5.
- The dashboard, including the tabs and subtabs; the buttons in the upper right corner; and the Deployment Wizard—See [The WLSE Dashboard](#), page 1-9.
- How device names and IP addresses are displayed in the WLSE GUI—See [Device Identifier Display](#), page 1-14.
- How the WLSE displays time—See [Understanding WLSE Time Displays](#), page 1-15.
- How to use the device selector and Search—See [Using the Device Selector](#), page 1-17.
- How to sort table data—See [Sorting Table Data](#), page 1-18.

Configuring the Web Browser

Normally, all WLSE tasks are performed in the Web interface. Before you connect to the Web interface, make sure you are using a supported browser and that the browser is properly configured.

- [Supported Browsers](#), page 1-6
- [Configuring Internet Explorer](#), page 1-7
- [Configuring Mozilla](#), page 1-8

**Note**

While using the WLSE's Web interface, you should disable popup-blocking software or add the WLSE to the "allow" list.

Supported Browsers

Before connecting to the WLSE web interface, make sure you are using a supported browser and the browser is properly configured. The supported browsers for WLSE 2.11 are listed in [Table 1-1 on page 1-6](#). Use the procedures in [Configuring Internet Explorer, page 1-7](#), or [Configuring Mozilla, page 1-8](#) to configure your browser.


Note

Using earlier, unsupported versions of Internet Explorer compromises the security of the WLSE.

Table 1-1 Supported Browsers

Client Operating System	Supported Browsers
Windows 2000, Windows NT, and Windows XP	Microsoft Internet Explorer 6.0 with Service Pack 1 Mozilla 1.6
Japanese Windows 2000, Windows NT, and Windows XP	Japanese Microsoft Internet Explorer 6.0 with Service Pack 1 Mozilla 1.6
Solaris 8 and 9	Mozilla 1.6
Japanese Solaris 8 and 9	Japanese Mozilla 1.6
Java plug-in	1.4.2 or higher Note The Java Plug-in is required for some WLSE functions, such as Location Manager.

Configuring Internet Explorer

**Note**

While using the WLSE's Web interface, you should disable popup-blocking software or add the WLSE to the "allow" list.

To configure Internet Explorer 6.0, perform the following steps:

Step 1 Select **Tools > Internet Options**.

Step 2 Enable JavaScript:

- a. Select **Security**.
- b. Make sure that the Internet icon is selected, and click **Custom Level**.
- c. Scroll to Scripting and select the following:
 - Select Enable for Active scripting.
 - Select Enable for Allow paste operations via script.
 - Select Enable for **Scripting of Java applets**.
- d. Click **OK**.

Step 3 Configure the browser to accept all cookies:

- a. Select **Privacy**.
- b. Move the slider down to until "Accept all Cookies" appears.
- c. Click **OK**.

Step 4 Change the default font to improve readability:

- a. Select **General**. Then elect **Fonts**.
- b. Select a sans-serif font (for example, Arial) from the **Web page font** and **Plain text font** lists.
- c. Click **OK**, then click **OK** again.

The text in the browser window is redrawn using the new fonts. Not all of the fonts will change after this user-defined font option is set.

Step 5 Disable caching:

- a. Select **General**. Then select **Settings**.

- b. Under “Check for newer versions of stored pages,” select **Every visit to the page**.

Step 6 Click **OK**.

Step 7 Windows XP does not come with the Java Plugin installed on Internet Explorer 6.0. This causes problems when updating the software on a WLSE. If you plan to use a Windows XP client or server to update WLSE software, see the following references:

- Using a Windows XP client and Internet Explorer 6.0—See [Installing the Software Upgrade, page 16-17](#).
- Using a Windows XP server and Internet Explorer 6.0—See [Creating a Repository on a Windows Server, page 16-15](#).

Configuring Mozilla



Note

While using the WLSE’s Web interface, you should disable popup-blocking software or add the WLSE to the “allow” list.

To configure Mozilla 1.6 or 1.7, perform the following steps:

Procedure

Step 1 Select **Edit > Preferences**.

Step 2 Configure the browser to accept cookies:

- a. Select **Privacy & Security > Cookies**.
- b. Select **Allow all cookies** or **Allow cookies for the originating web site only**.

Step 3 Disable caching:

- a. Select **Advanced > Cache**.
- b. Select **Every time I view the page**.

Step 4 Click **OK**.

The WLSE Dashboard

The WLSE dashboard consists of:

- Tabs and subtabs that provide access to WLSE functions (see [Tabs and Subtabs, page 1-9](#)).
- Buttons in the upper right corner that provide general functions (see [Buttons, page 1-13](#)) and provide access to the Deployment Wizard. For information on the Deployment Wizard, see [Chapter 2, “Using the Deployment Wizard.”](#)

Tabs and Subtabs

The dashboard contains the following tabs and subtabs:

Table 1-2 *Tabs and Subtabs*

Main Tab	Subtabs	For information, see...
IDS	Intrusion Detection System: <ul style="list-style-type: none"> • Setup—create thresholds and policies for Intrusion Detection monitoring. • Summary—view summaries of all intrusions. • Faults—display intrusion detection fault information for the devices in your network. • Reports—view intrusion detection reports on recently polled device information. • Unknown AP Setting—view and change Rogue AP to Friendly AP. 	Using the Intrusion Detection System, page 15-1
Faults	<ul style="list-style-type: none"> • Display Faults—display device faults. • Manage Fault Settings—use profiles to set thresholds and policies. • Notification Settings—send fault information (traps, syslog messages, and emails). 	Fault Monitoring, page 3-1.

Table 1-2 *Tabs and Subtabs (continued)*

Main Tab	Subtabs	For information, see...
Devices	<ul style="list-style-type: none"> • Discover—enable discovery options and run discoveries, reset polling intervals, enter device credentials, manage devices, run inventories, view inventory and discovery logs, import and export devices, monitor AAA servers , and enable enhanced (WDS) client tracking. • Group Management—manage device grouping by setting up static and dynamic groups. 	Device Discovery and Management, page 4-1
Configure	<ul style="list-style-type: none"> • Templates—create IOS, non-IOS, and WLSM configuration templates. 	<ul style="list-style-type: none"> • Using IOS Templates, page 5-1. • Using Non-IOS Templates, page 6-1. • Using WLSM Templates, page 7-1 • Using Wizard Templates, page 8-1
	<ul style="list-style-type: none"> • Archives—view and manage archived configurations. • Jobs—apply configuration templates to access points and retrieve configurations for archiving. • Auto Update—automate initial configuration of access points. 	Managing Device Configurations, page 9-1
Firmware	<ul style="list-style-type: none"> • Images—import firmware for access points and bridges from the desktop or from Cisco.com to the WLSE. • Jobs—upload firmware to access points. 	Upgrading Device Firmware, page 10-1.

Table 1-2 *Tabs and Subtabs (continued)*

Main Tab	Subtabs	For information, see...
Reports	<ul style="list-style-type: none">• Device Center—view device reports.• Radio Manager—view radio management reports.• Wireless Clients—view reports about client associations with access points.• Current—view, export, and email reports.• Trends—view, export, and email reports about current trends.• Realtime—view current reports.• Scheduled Email Jobs—manage email jobs.	Using Reports, page 11-1.

Table 1-2 *Tabs and Subtabs (continued)*

Main Tab	Subtabs	For information, see...
Radio Mgr	<ul style="list-style-type: none"> • Radio Monitoring—monitor WLAN and collect channel measurements for radio configuration, rogue AP discovery, and interference detection. • AP Radio Scan—collect rogue location estimates, radio parameter generation (RPG) data, and coverage data. • Client Walkabout—collect radio measurements and report them to the serving AP as you walk a client station throughout the coverage area. • RM Assisted Configuration—configure APs using measurement data collected from client walkabouts and AP radio scans. • Self Healing—adjust radio parameters of APs using the generated radio measurements to eliminate coverage holes in the face of network failure. • Auto Re-Site Survey—evaluate current AP radio performance on a per-floor basis against baselined performance data. • Frame Monitoring—capture frames of scanning AP and forward to an external frame analysis and monitoring tool. • Manage RM Data—manage collected Radio Measurements. 	Configuring Your WLAN Radio Environment, page 12-1 Using the Radio Manager, page 13-1
Sites	Display graphical view of WLAN environment, including AP locations, radio configurations, and estimated location of unknown APs.	Managing Your WLAN Radio Environment by Sites, page 14-1

Table 1-2 *Tabs and Subtabs (continued)*

Main Tab	Subtabs	For information, see...
Admin	<ul style="list-style-type: none"> • Appliance—manage the WLSE system (view diagnostics, manage WLSE software, manage WLSE security, backup and restore data, configure WLSE redundancy, configure the login screen, set current time, specify NTP servers and name servers, set up routing for email jobs, use connectivity tools and the SNMP query tool, manage files for the built-in TFTP server (WLSE express only), and create WLSE configuration files (WLSE Express only). • System—view information about supported device firmware versions, and import information about newly supported firmware versions. • AAA Administration—(WLSE Express only) use built-in RADIUS server for authentication, authorization, and accounting. • User Admin—manage users and user profiles. • My Profile—reset your password and email address and configure your login environment. • Links—set up and activate links to other systems (such as other WLSEs and CiscoWorks servers) and run ACS failed login reports. 	Managing the WLSE System, page 16-1.

Buttons

The buttons in the upper right corner of the user interface have the following functions:

- Wizard—Displays the Deployment Wizard. See [Deployment Wizard for WDS, page 1-14](#) for more information.
- Overview—Displays an overview of the tabs and their functions.
- Help—Displays online help for the subtab or option you are using and a table of contents and index for online help.

In the online help screens, you can also display the *User Guide for the CiscoWorks Wireless LAN Solution Engine, Release 2.11* by clicking **View PDF**.

You can also display the *FAQ and Troubleshooting Guide for the CiscoWorks Wireless LAN Solution Engine* by clicking **Troubleshooting**.

- About—Displays information about the WLSE software and hardware versions.
- Logout—Logs you out of the WLSE and displays the login screen.

Deployment Wizard for WDS

The Deployment Wizard configures devices and the WLSE and deploys devices in a WDS (Wireless Domain Service) WLAN.

Device Identifier Display

Many WLSE displays include a field for the device identifier:

- By default, the identifier is the device's hostname—See [Default Device Identifier Display, page 1-14](#).
- You can select whether devices will be identified by their DNS name, hostname, IP address, device type, user-defined description, Ethernet MAC address, radio MAC address, or a combination of these identifier types—See [User-Defined Device Identifier, page 1-15](#).

Default Device Identifier Display

By default, the device identifier type is the device hostname. In some displays there are separate fields for device name, sysName, and IP address.

User-Defined Device Identifier

To specify how to identify devices in WLSE displays, select **Devices > Discover > DISCOVER > Advanced Options**. Then enter the desired identifier type in the Name Format field.

If you select the description option, you specify a name for each type in the device detail screen under **Devices > Discover > Managed Devices**.

For more information on using this option, see the online help or [Selecting the Device Name Format, page 4-61](#).

Understanding WLSE Time Displays

It is recommended that you check the current local time on the WLSE the first time you log in. If you need to reset the time, see [Set the Current Local and UTC Time, page 16-59](#). To use NTP to set the time, see [Setting Time, Time Servers, Name Servers, and Web Session Timeout, page 16-59](#).

This section contains information on:

- How time appears in WLSE displays—See [General Time Displays, page 1-15](#).
- A warning message that may appear when you are running WLSE jobs—See [Understanding Time Discrepancy Problems in Job Scheduling, page 1-16](#).

General Time Displays

The WLSE uses browser (client) time in most of its displays. The current WLSE server time, in your local timezone, is displayed in the upper right corner of the screen.

In Internet Explorer, the timestamp usually consists of the browser time (hours:minutes:seconds) and date; for example:

14:17:16 10/12/2004

In some displays the timestamp is the day of the week, month and day, browser time, timezone, and year; for example:

Sat Oct 12 11:15:01 PDT 2004

The WLSE's internal system time is Universal Coordinated Time (UTC), and UTC is displayed in certain logs, such as the discovery run log.

Understanding Time Discrepancy Problems in Job Scheduling

When you schedule a job based on your local time, the scheduled time that you select in the job wizard is converted to the appropriate WLSE server time by using the timezone in which the client system is located.

If a significant time difference is discovered (more than 5 minutes), a warning message is displayed in the final step of the job scheduling wizard. The message displays the offset and whether the WLSE is ahead of or behind your local time.

**Note**

The WLSE server time, in your local timezone, is always displayed in the upper right corner of the screen, so you can compare your local time with the server time.

Procedure

If a time offset warning message appears:

Step 1

Select an action:

- If you click **Cancel**, the job is not saved. The wizard remains at the scheduling screen so you can reschedule the job, if desired.
- If you click OK, the wizard will finish and the job will be scheduled. The actual time that the job is run will be ahead of or behind the scheduled time.

Step 2

To synchronize your local time with WLSE server time, see [Set the Current Local and UTC Time](#), page 16-59.

**Note**

Resetting the local time also resets the server time.

Using the Device Selector

To select a group of devices or individual device for which you want to run a report, use the device selector in the left pane.

Procedure

- Step 1** Click to expand the desired folder.
- Step 2** Click to select a group of devices or an individual device.
-

Using Search

To search for a device, use the dialog box in the left pane above the device selector.



Note

Not all of the following search methods are available on all of the screens.

Procedure

- Step 1** From the list, select the method you want to use to search for the device, then enter the search information.
- Device Name—The name of the device.
 - IP Address—The IP address of the device.
 - AP MAC Address—The Ethernet and radio MAC addresses of the device.
 - Device Description—The description of the device.
 - Serial Number—The top assembly serial number of the access point.
 - APs Based on Client MAC—The MAC address of a known client. For both IOS and non-IOS access points.
 - APs Based on Client Name—The name of a known client.
 - APs Based on Client IP—The IP address of a known client.

- Use an asterisk (*) as a wildcard to denote numbers and letters.

Step 2 Click **Search**. The requested device appears in the Search Results folder.

Understanding the Icons

Search results and folders in the device selector display the following icons indicating the alarm status of the devices:

- Red X—Indicates a P1 or P2 fault or the device is unreachable.
- Yellow exclamation—Indicates a P3, P4, or P5 fault and the device is reachable.
- Green check—Indicates the device has no faults and is reachable.

The icons on the folders reflect the status of the highest severity fault for any of the devices or folders within that folder.

Sorting Table Data

To sort table data, click on the column heading by which you want to sort the data:

- A triangle indicates ascending order.
- An upside-down triangle indicates descending order.
- No triangle indicates that the data is not sorted.

Logging In and Out

After initial setup, only the admin user can log into the WLSE, using the reserved username **admin** and the password specified during initial setup. When you create other logins, you assign one or more roles to each user. Roles define which tabs and subtabs are visible to the user and, therefore, which features users can access. There are predefined roles, which can be edited but not removed; and you can create new roles.

To set up access for other users, see [Managing User Accounts, page 16-71](#) and [Managing Roles, page 16-69](#). The WLSE supports up to 10 simultaneous users.

To log in via the CLI, see [Logging In and Out via CLI, page 17-3](#). Some users may not have access to the CLI.

**Note**

The WLSE Web interface times out after 30 minutes of inactivity. You will be logged out after that time. To change the timeout period, see [Set the Web Timeout Period, page 16-61](#).

Procedure

To log into the Web interface:

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- Step 1** Access the WLSE through a browser by entering the WLSE's IP address or hostname, followed by **:1741** (for example: `http://209.165.128:1741`).

**Note**

The default HTTP port is 1741, but the administrator can configure the WLSE to use port 80 instead. In that case, use the WLSE's IP address or hostname followed by **:80**.

If you using [HTTPS](#) to log in, do not append a port number to the IP address or hostname.

**Tip**

For information on supported browsers, see [Supported Browsers, page 1-6](#).

- Step 2** Enter your username and password and click **Login**.

If you do not see the features you need to use, log out and log back in as a user with those privileges. Contact the system administrator for information about the features you can access.

To log out, click **Logout** in the upper right corner of the window.

Customizing the Web Interface

You can customize the Web interface by:

- [Setting the Default Tab and Subtab, page 1-20](#)
- [Adding a Message to the Splash Screen, page 1-20](#)

Setting the Default Tab and Subtab

By default the overview screen appears when you log in. This screen provides a brief description of each of the main tabs. When you select a tab, the overview describes each of the subtabs.

Use the following procedure to customize the initial display.

Procedure

- Step 1** Select **Set Tab Defaults** in the upper right corner of the overview screen, or select **Administration > My Profile > Set Tab Defaults**.
- Step 2** Select a tab from the list.
- Step 3** Select a subtab or the Overview from the pulldown list.
- Step 4** Click **Save**.

Result: The next time you log in, your home page will be the tab and subtab that you selected.

Adding a Message to the Splash Screen

Use the following procedure to add a message to the splash screen that appears just before the login prompt.

Procedure

- Step 1** Select **Administration > Appliance > Splash Screen**.

- Step 2** Enter your message.
- Step 3** Select **Enable**. The message will be displayed in the splash screen. Users must click **Agree** in the splash screen before the login prompt will appear.
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Finding WLSE Documentation on Cisco.com

The available documentation for the WLSE is described in [Product Documentation, page xxix](#).

You can find WLSE 2.11 documentation on Cisco.com by using one of the following methods.

- Use the following URL:
http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cwparent/cw_1105/wlse/2_11/index.htm
- On the Cisco.com home page, select **Technical Support and Documentation**.
Next, from the Network Management pulldown list, select **CiscoWorks > CiscoWorks WLSE, HSE, and ESSE > Wireless LAN Solution Engine > Wireless LAN Solution Engine 2.11**.
- On the Cisco.com home page, select **Technical Documentation and Support**.
Next, select **Product Support > Network Management**. Under **Wireless Access Management**, select **CiscoWorks Wireless LAN Solution Engine** or **CiscoWorks Wireless LAN Solution Engine Express**.

