



# Radio Management

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The Radio Manager tab displays information to help you manage your WLAN radio environment. All the device information shown under this tab is polled from the managed devices in your network.

The Radio Manager tab includes these options:



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**Note**

Some subtabs may not be visible to some users.

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- Radio Monitoring—See [Radio Monitoring](#), page 7-6
- AP Radio Scan—See [AP Radio Scan](#), page 7-9
- Client Walkabout—See [Client Walkabout](#), page 7-24
- Location Manager—See [Location Manager](#), page 7-39
- RM Assisted Configuration—See [Radio Management Assisted Configuration](#), page 7-60
- Manage RM Measurements—See [Managing RM Measurements](#), page 7-71

**Related Topics**

[Understanding the Radio Manager](#), page 7-2

# Understanding the Radio Manager

The Radio Manager features simplify the deployment, expansion, and day-to-day management of the WLAN by:

- Automatically configuring network-wide radio parameters during initial deployment and network expansion.
- Continuously monitoring the radio environment, detecting interference and rogue APs, and alerting the WLAN administrator to radio network changes.
- Providing information to help visualize the network radio topology, including the path loss between APs and RF coverage.

The following topics provide a high-level overview of how the Radio Manager collects data and uses this data to help you manage your WLAN:

- [Understanding the Radio Manager Features, page 7-2](#)
- [Collecting Radio Location Measurements, page 7-4](#)

## Understanding the Radio Manager Features

The Radio Manager provides these features:

- **Rogue AP detection**

The Radio Monitoring feature uses the radio measurement capabilities on Cisco IOS APs (1100, 1200) and Cisco client adaptors to discover any new 802.11 APs that are transmitting beacons. Both clients and APs periodically scan for other 802.11 beacon frames on both serving channels and neighboring channels. Reports of detected beacons are returned to the Radio Manager, which validates the detected beacons against a list of APs known to be authorized to provide wireless access.

A newly discovered AP that cannot be qualified as being a known authorized AP generates an administrator alert. You can categorize this new AP as one of the following AP types:

- **Managed AP**—An AP that is authorized to provide wireless access to the LAN and requires management services provided by the WLSE.
- **Unmanaged AP**—An AP that is authorized to provide wireless access to the LAN but does *not* require any management services from the WLSE.

- Friendly AP—An AP that is not connected to the LAN, but is known to be detectable by client's or AP's 802.11 radios within the managed WLAN. A Friendly AP is an AP that you know exists, for example, a neighboring network's AP, but that you are not going to modify in any way.
- Rogue AP—An AP that may or may not be connected to the LAN, is detected by client's or AP's 802.11 radios within the managed WLAN, and has not been identified as Friendly. By default, all unknown radios are classified as Rogue until you change them to Friendly.

- **Interference detection**

You can initiate interference detection when you activate Radio Monitoring. Only APs in the radio monitoring list participate in interference detection; clients can detect interference as well. You can define what level of signal strength and duration of signal is required to detect interference. When interference is determined to be present, an alert is generated.

- **Automatic radio parameter generation**

The Radio Manager can generate optimal values for the radio parameters of a given group of APs. Each set of radio parameters can modify the following:

- AP frequency
- AP transmit power
- AP beacon interval

When computing new radio configuration parameters, select any combination of parameters that may be altered. After the desired parameters are selected, the Radio Manager is given free reign to alter each parameter as it sees fit.

### **Related Topics**

- [Collecting Radio Location Measurements, page 7-4](#)

## Collecting Radio Location Measurements

The Radio Manager characterizes the WLAN radio environment using the following radio location measurements obtained from Cisco APs and Cisco clients:

- Beacon—To determine path loss and detect AP rogues (serving channel and non-serving channels).
- Channel load and noise histogram—To characterize the degree of contention and interference (serving channel only).

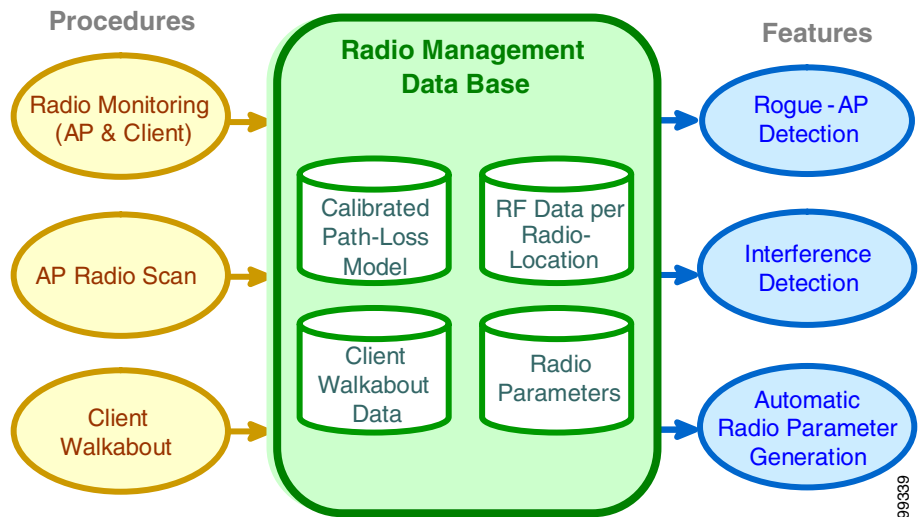
The Assisted Site Survey (see [Using the Assisted Site Survey Wizard, page 7-55](#)) can walk you through the process of determining the optimal radio transmit power and channel selection. It helps you select APs, run an AP radio scan job, perform a client walkabout, and generate radio parameters for the selected APs.

You can also choose to run these features manually. The following table summarizes which procedures produce the data required by the different Radio Manager features:

Feature	Run these procedures	Results are used in:
Rogue AP detection	Radio Monitoring	Location Manager
	AP Radio Scan	Faults
Interference detection	Radio Monitoring	Faults
Automatic radio parameter generation	AP Radio Scan	RM Assisted Configuration
	Client Walkabout (recommended)	Location Manager
		Radio Manager Reports

The results produced by these features constitute the radio knowledge base. This knowledge base (see [Figure 7-1](#)) is saved in the WLSE database and accessed by other Radio Manager features.

Figure 7-1 Radio Data Collection and Knowledge Base



Several Radio Manager procedures are used solely to generate measurement requests and collect the results:

- **Radio Monitoring** periodically gathers radio frequency statistics and identifies specific signal sources. It continuously monitors the radio frequency environment and generates alerts when new APs appear.



**Tip** This feature is your primary means of detecting rogue APs.

- **AP Radio Scan** sets selected APs to transmit beacons on the same channel and detects all neighboring APs. This feature measures the path loss between each AP and every other AP it can hear and scans other channels to detect rogue APs.



**Tip** Run AP radio scans during initial setup, then periodically to capture any changes made to the APs (added, deleted, or moved).

- **Client Walkabouts** provide optimal coverage for the radio parameter generator (see [Radio Management Assisted Configuration, page 7-60](#)). During a walkabout, the client (typically a laptop) is carried throughout the desired coverage area and continuously reports radio measurements back to its serving AP.

**Tip**

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If you do not perform a client walkabout, you *must* enter a floor plan that includes the distances between APs (see [Adding Building Information, page 7-47](#)).

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**Related Topics**

- [Understanding the Radio Manager Features, page 7-2](#)
- [Using the Assisted Site Survey Wizard, page 7-55](#)
- [Radio Monitoring, page 7-6](#)
- [AP Radio Scan, page 7-9](#)
- [Client Walkabout, page 7-24](#)

## Radio Monitoring

Radio Monitoring runs on the specified Cisco IOS APs and its associated CCX-compliant clients to continuously monitor the WLAN radio environment and discover any new APs that are transmitting beacons. The channel measurements are used for radio configuration, rogue AP discovery, and interference detection.

**Note**

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Radio Monitoring is your primary means of detecting rogue APs.

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Use the Radio Monitoring option to:

- Specify the serving channel monitoring option (APs, clients, or both)
- Specify the non-serving channel monitoring option (to monitor channels the AP is not transmitting on)
- Specify the group of APs and clients to perform the channel measurements

**Tip**

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Leave Radio Monitor continuously running on your network so new APs are discovered promptly, the necessary faults are generated, and your reports are accurate and up-to-date.

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An AP can be added to the Radio Monitoring list and also be included on an AP Radio Scan or Client Walkabout; the measurement requests for these two features supersede the monitoring measurement requests. When the other, shorter term procedures end, the APs are returned to the normal radio monitoring mode.

**Note**

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Your login determines whether you can use this option.

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**Related Topics**

- [Setting Radio Monitoring Options, page 7-7](#)
- [Collecting Radio Location Measurements, page 7-4](#)

## Setting Radio Monitoring Options

To detect interference and rogue APs, radio monitoring must be running.

**Tip**

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Leave Radio Monitor continuously running on your network so new APs are discovered promptly, the necessary faults are generated, and your reports are accurate and up-to-date.

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**Prerequisites**

Before you can select devices to be included in radio monitoring, you must have already:

- Discovered the devices (see [Managing Device Discovery, page 3-41](#)).
- Made the devices managed (see [Managing and Unmanaging Devices, page 3-76](#)).
- Authenticated the devices with WDS (see [Setting WDS Thresholds, page 2-46](#)).

## Procedure

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- Step 1** Select **Radio Manager > Radio Monitoring**. The Radio Monitoring Options window appears.
- Step 2** Click **Enable** to monitor your WLAN environment.
- Step 3** For **Serving Channel Monitoring**, select one or both of the following check boxes for measurements on the channel the devices are configured to:
- **APs** to perform monitoring measurements on the Cisco IOS APs on the serving channel.
  - **Clients** to perform monitoring measurements on CCX-compliant clients on the serving channel.
- Step 4** For **Non-Serving Channel Monitoring**, select one or both of the following check boxes to measure other channels in the band:
- **APs** to perform monitoring measurements on the Cisco IOS APs on the non-serving channels.
  - **Clients** to perform monitoring measurements on CCX-compliant clients on the non-serving channels.
-  **Note** Non-serving channel monitoring means that the channels the AP is not transmitting on are monitored. By monitoring non-serving channels, Radio Manager can detect rogue APs that you might not have discovered had it monitored only the channel the AP is transmitting on (the serving channel).
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- Step 5** Click **Select AP**. All managed devices are listed in the Device selector in the middle pane.
- Step 6** Select the devices you want to monitor (see [Using the Device Selector and Search, page 1-9](#)).
- Now that you have selected your radio monitoring options, you need to save your settings.
- Step 7** Click **Finish**. The Finish dialog box appears.
- Step 8** Click **Save** to save your radio monitoring options.

Radio Monitor will now begin monitoring the devices you selected. Radio Monitoring takes measurements every 90 seconds.

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**Related Topics**

- [Collecting Radio Location Measurements, page 7-4](#)
- [Client Walkabout, page 7-24](#)
- [Location Manager, page 7-39](#)

## AP Radio Scan

The AP Radio Scan feature produces path loss data used for rogue location estimations, radio parameter generation data, and coverage display data.

**Note**

The Assisted Site Survey wizard can walk you through the process of determining the optimal radio transmit power and channel selection. It helps you select APs, run an AP radio scan job, perform a client walkabout, and generate radio parameters for the selected APs. See [Using the Assisted Site Survey Wizard, page 7-55](#).

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**Related Topics**

- [Understanding AP Radio Scans, page 7-9](#)
- [Creating a New AP Radio Scan, page 7-11](#)
- [Viewing AP Radio Scan Jobs, page 7-16](#)
- [Editing AP Radio Scan Jobs, page 7-19](#)

## Understanding AP Radio Scans

AP radio scans produce path loss data used for rogue location estimations, radio parameter generation data, and coverage display data. This data is used to determine:

- How an AP is positioned related to other APs

- The amount of path loss due to obstructions (such as walls) between APs

These channel measurements, when combined with other data generated by Radio Monitoring and Client Walkabout, are used for radio configuration, rogue AP discovery, and interference detection.

The AP Radio Scan option allows you to:

- Specify a group of APs that will participate in the scan procedure.
- Change the maximum transmit power level.
- Schedule the new job to run immediately or at a certain date and time. You can also specify whether this job will run only once or periodically.

During the scanning process, an AP radio scan performs the following tasks:

1. Sets the selected APs to the same channel at maximum power.

During a scan, AP frequencies and power levels are temporarily changed but no data rates are modified. For each AP, the channel is fixed and the procedure steps through the power levels up to the maximum transmit power level you have specified.

The radio scan uses temporary configuration parameters so the AP can revert back to its normally configured parameters if the AP is reset or loses connection with the WLSE during the procedure.

2. Measures the signal strength of each AP.
3. Calculates the path loss of each AP.
4. Steps through the power levels to determine the power step calibration of each AP.
5. Saves this information in the database as AP radio locations.
6. Sets all APs back to their original power and channel settings.

#### Related Topics

- [Creating a New AP Radio Scan, page 7-11](#)

## Creating a New AP Radio Scan

You should run an AP Radio scan:

- During initial setup.
- After adding, deleting, or moving APs.

You might also choose to run an AP scan periodically to capture any changes made to the APs. You can create multiple scan jobs, but only one job can be run at a time.

**Note**

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A running scan job temporarily degrades wireless LAN service, which might affect client associations. To minimize any disruption, schedule scan jobs to run during off-hours.

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**Note**

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Your login determines whether you can use this option.

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### Prerequisites

Before you can run an AP Radio scan job, you must have already:

- Discovered the devices (see [Managing Device Discovery, page 3-41](#)).
- Made the devices managed (see [Managing and Unmanaging Devices, page 3-76](#)).
- Authenticated the devices with WDS (see [Setting WDS Thresholds, page 2-46](#)).

### Procedure

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- Step 1** Select **Radio Manager > AP Radio Scan**.
- Step 2** Enter a name for the job and click **New Job**. For guidelines on job names, see [Appendix A, “Naming Guidelines.”](#)
- Step 3** The window refreshes with the Job Creation menu in the left pane and the Job Name dialog box in the right pane.
- Step 4** Select the following numbered choices in the left pane to create and run the AP radio scan jobs:



**Note** These steps, except Schedule Job, must be completed, but do not have to be done in order. You can omit scheduling the job and edit the job later to provide a schedule.

1. **Job Name**—See [1. Name the Job and Select the Maximum Transmit Power, page 7-12](#).
2. **Select Devices**—See [2. Select the APs, page 7-13](#).
3. **Schedule Job**—See [3. Schedule the Job, page 7-14](#).
4. **Finish**—See [4. Finish the Job, page 7-15](#).

**Caution**

Clicking on any subtab before you have saved your entries in the Job Creation window will reset the window and you will lose all the information you entered.

**Related Topics**

[Understanding AP Radio Scans, page 7-9](#).

## 1. Name the Job and Select the Maximum Transmit Power

**Procedure**

- Step 1** Click **Job Name**.
- Step 2** Enter the following information:

Field	Description
Job Name	Enter a unique name for the job. For guidelines on naming jobs, see <a href="#">Appendix A, “Naming Guidelines.”</a>

Field	Description
Description	Enter a description of the job. For guidelines on entering descriptions, see <a href="#">Appendix A, “Naming Guidelines.”</a>
Maximum Transmit Power	By default, the power level is set to the maximum value allowed on the AP or the maximum allowed by the regulatory domain.  You might choose to enter a lower power setting when, for example, the default power level might affect a neighboring network.

- Step 3** From the menu in the left pane, go to the next step, Select AP. (See [2. Select the APs, page 7-13.](#))

#### Related Topics

- [Copying AP Radio Scan Jobs, page 7-21](#)
- [Creating a New AP Radio Scan, page 7-11](#)

## 2. Select the APs

#### Procedure

- Step 1** Click **Select AP**. All managed devices are listed in the Device selector in the middle pane.
- Step 2** Select the devices you want to include in the job (see [Using the Device Selector and Search, page 1-9.](#))
- Step 3** From the menu in the left pane, go to the next step, Schedule Job. (See [3. Schedule the Job, page 7-14.](#))

#### Related Topics

- [Creating a New AP Radio Scan, page 7-11](#)

### 3. Schedule the Job

When scheduling an AP radio scan job, you can select Run Now to start the job immediately, or you can schedule the job for a future date and time. You can also save a job without scheduling it, then edit the job later to add the scheduling information.


**Note**

A running scan job temporarily degrades wireless LAN service, which might affect client associations. To minimize any disruption, schedule scan jobs to run during off-hours.

**Procedure**

**Step 1** Click **Schedule Job**.

**Step 2** Enter the following information:

Field	Description
Run Now	Click to run the job. The job will run immediately after you click <b>Save</b> (see <a href="#">4. Finish the Job, page 7-15</a> ). <b>Note</b> This option ignores all of the other scheduling options (Start Date, Start Time, and Repeat).
Start Date	From the lists, select the month, day, and year you want your job to run.
Start Time	From the list, select the hour and minutes of the day you want your job to run.
Repeat	
Enable	Check to run the job repeatedly.
Every	Indicate how often you want the job to repeat by entering a numerical value, then selecting an interval of time: Hours, Days, Weeks, or Months. <b>Note</b> Selecting this option runs the job periodically, starting with the date and time that you entered in the Start Date and Start Time lists.

- Step 3** From the menu in the left pane, select the next task, Finish. (See [4. Finish the Job](#), page 7-15.)

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#### Related Topics

- [Editing AP Radio Scan Jobs](#), page 7-19
- [Deleting AP Radio Scan Jobs](#), page 7-20
- [Creating a New AP Radio Scan](#), page 7-11

## 4. Finish the Job

Before selecting this option, you must name the job and select the maximum transmit power, select the devices, and schedule the job.

#### Procedure

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- Step 1** Click **Finish** in the left pane to complete job creation.
- Step 2** Click **Save** to add the job to the list of scheduled jobs or run the job now, depending on whether you scheduled the job for a later time or chose Run Now in the scheduling screen.

The screen refreshes and the AP Radio Scan Job Save Summary window shows the following information:

Field	Description
Name	Name of the job.
Description	Job description, if any.
Maximum Power	The maximum power setting selected for the job.
Selected APs	Names of the devices selected for the job.
Schedule	Scheduled date and time for the job, or <i>No Schedule</i> if the job has not been scheduled.

- Step 3** To view the job run log, see [Viewing the AP Radio Scan Job Run Log](#), page 7-21.

The job stops automatically after all the required APs respond with the appropriate radio measurements. To stop the job manually, see [Stopping AP Radio Scan Jobs](#), page 7-20.

- Step 4** After the AP Radio Scan has completed successfully, you are ready to run a client walkabout (see [Client Walkabout](#), page 7-24).
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#### Related Topics

- [Viewing AP Radio Scan Jobs](#), page 7-16
- [Deleting AP Radio Scan Jobs](#), page 7-20
- [Creating a New AP Radio Scan](#), page 7-11

## Viewing AP Radio Scan Jobs

Use this screen to view AP radio scan jobs.



#### Note

Your login determines whether you can use this option.

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#### Procedure

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- Step 1** Select **Radio Manager > AP Radio Scan**.

- Step 2** From the Job State list, select the type of job you want to view:
- **Scheduled**—Lists all AP radio scan jobs that have been scheduled
  - **Unscheduled**—Lists all AP radio scan jobs that have not been scheduled
  - **Running**—Lists all AP radio scan jobs that are currently running
  - **All**—Lists all AP radio scan jobs

The screen refreshes to show you details about the specified jobs. The information displayed depends on the Job State you selected: [Scheduled and Unscheduled](#), [Running](#), or [All](#).

- Scheduled and Unscheduled

Field	Description
Job Name	The job name.
Recurring	Indicates if the job is run periodically (Yes or No).
Next Schedule	For scheduled jobs, this indicates when the job will run. For completed jobs, this is the time the job ran.
Owner	The user who last edited the job.

- Running

Field	Description
Job Name	The job name.
Recurring	Indicates if the job is run periodically (Yes or No).
Job Start Time	The time the job started.
Percent Complete	The percent of the job that has completed running.
Next Schedule	Firmware jobs are not recurring.
Owner	The user who last edited the job.

- All

Field	Description
Job Name	The job name.
Recurring	Indicates if the job is run periodically (Yes or No).
Job State	The state of the job. <b>Note</b> A job in the DidNotStart state must be rescheduled.
Next Schedule	For scheduled jobs, this indicates when the job will run. For completed jobs, this is when the job ran.
Last Run Status	The status of the job the last time it was run.
Owner	The user who last edited the job.

- Step 3** To sort table data, click on the corresponding heading (see [Sorting Table Data, page 1-11](#)).
- Step 4** From this window, you can:
- Filter the list of AP radio scan jobs—See [Filtering AP Radio Scan Jobs, page 7-18](#)
  - Edit a job—See [Editing AP Radio Scan Jobs, page 7-19](#)
  - Stop a job—See [Stopping AP Radio Scan Jobs, page 7-20](#)
  - Delete a job—See [Deleting AP Radio Scan Jobs, page 7-20](#)
  - Copy a job to create a new job—See [Copying AP Radio Scan Jobs, page 7-21](#)
  - View the AP radio scan job run log—See [Viewing the AP Radio Scan Job Run Log, page 7-21](#)
  - Refresh the screen—See [Refreshing the AP Radio Scan Job Summary, page 7-23](#)
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## Filtering AP Radio Scan Jobs

Use this option to display a limited set of AP radio scan jobs, making it easier to search for a particular job by name.



**Note** Your login determines whether you can use this option.

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### Procedure

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- Step 1** Select **Radio Manager > AP Radio Scan**.
- Step 2** Click **Filter**.
- Step 3** Enter the name, or part of the name. You can use % as a wildcard: for example, entering %name% displays all the jobs that contain the word “name.”
- Step 4** Click **Apply**. The Job window refreshes and the matching jobs are displayed in the Jobs list.



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**Note** The filter remains in effect until the page is refreshed.

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## Editing AP Radio Scan Jobs

Use this option to edit jobs from the displayed list of jobs.



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**Note** If you have deleted the image that was associated with the job you are editing, the job will show that no image has been selected.

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**Note** Your login determines whether you can use this option.

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### Procedure

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- Step 1** Select **Radio Manager > AP Radio Scan**.
  - Step 2** From the list of jobs, select the job you want to edit.
  - Step 3** Click **Edit**.
  - Step 4** Select choices in the Job Creation Menu. For descriptions of the choices, see [Creating a New AP Radio Scan, page 7-11](#).
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## Stopping AP Radio Scan Jobs

Use this option to stop a running AP Radio Scan job.

**Note**

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Your login determines whether you can use this option.

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**Procedure**

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- Step 1** Select **Radio Manager > AP Radio Scan**.
  - Step 2** From the Job State list, select **Running**.
  - Step 3** Select the job you want to stop.
  - Step 4** Click **Stop**.
  - Step 5** Click **OK** in the popup window.
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## Deleting AP Radio Scan Jobs

Use this option to delete jobs from the displayed list of jobs. Jobs that are scheduled, unscheduled, completed, or did not start can be deleted. Jobs that are running cannot be deleted.

**Note**

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Your login determines whether you can use this option.

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**Procedure**

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- Step 1** Select **Radio Manager > AP Radio Scan**.
  - Step 2** From the list of jobs, select the job you want to delete.
  - Step 3** Click **Delete**.
  - Step 4** Click **OK** in the popup window.
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## Copying AP Radio Scan Jobs

Use this option to create a new job using the data (maximum transmit power and selected APs) from a previously-created job. This option does not copy the schedule data.

**Note**

Your login determines whether you can use this option.

**Procedure**

**Step 1** Select **Radio Manager > AP Radio Scan**.

**Step 2** From the list of jobs, select the job you want to copy.

**Step 3** Click **Copy Job**.

**Note**

This option does *not* copy the schedule data.

**Step 4** Enter the name for the new job in the popup window.

**Step 5** Click **OK**.

## Viewing the AP Radio Scan Job Run Log

Use this option to view the run logs for a selected job.

**Note**

Your login determines whether you can use this option.

**Procedure**

**Step 1** Select **Radio Manager > AP Radio Scan**.

**Step 2** From the All AP Radio Scan Jobs table, select a job, then click **Job Run Log**.

- Step 3** The Job Runs table appears in a separate browser window. This table contains the following information for each run:

Field	Description
Select Run	Select this button to see the details for that run. The details for the selected job run appear below the list of runs for that job.
Job Start Time	The time the job started.
Job End Time	The time the job ended.
Job Status	The status of the job.
Percent Complete	The percent of the job that completed.

This table also provides the following options:

- To sort table data, click on the corresponding heading (see [Sorting Table Data, page 1-11](#)).
- To view the details for a different job run, select another run and click **Job Run Log**. The details for the selected run appear below the list of runs.
- To view the AP location information collected during a job run, select the run and click **AP Location Information**.



**Note** AP location information is available only for the most recently completed AP radio scan job.

The AP Location Information table contains the following information:

Field	Description
AP Name	The name of the access point
IP Address	The IP address for that access point.
Has Scan Data	Whether scan data was collected for this access point (YES or NO).

Field	Description
Neighbors	The number of neighboring access points that have been detected.
Last Scan Time	The date and time this scan was run.

- To refresh the table, click **Refresh**.

## Refreshing the AP Radio Scan Job Summary

If you made recent changes to one or more AP radio scan jobs, you can refresh the job list to make sure you are looking at the latest information.



### Note

Your login determines whether you can use this option.

### Procedure

- Step 1** Select **Radio Manager > AP Radio Scan**. The list of AP radio scan jobs appears.
- Step 2** From the Job State list, select the type of job you want to view.
- Step 3** Click **Refresh**. The screen shows an updated list of the currently displayed jobs.

# Client Walkabout

Client Walkabout measurements are used to determine AP coverage. This data is used to provide optimal coverage for the radio parameter generator.

**Note**

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The Assisted Site Survey wizard can walk you through the process of determining the optimal radio transmit power and channel selection. It helps you select APs, run an AP radio scan job, perform a client walkabout, and generate radio parameters for the selected APs. See [Using the Assisted Site Survey Wizard, page 7-55](#).

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**Related Topics**

- [Understanding Client Walkabouts, page 7-24](#)
- [Client Walkabout Guidelines, page 7-25](#)
- [Creating a New Client Walkabout, page 7-26](#)
- [Viewing Client Walkabouts, page 7-33](#)
- [Editing Client Walkabouts, page 7-34](#)

## Understanding Client Walkabouts

The Client Walkabout option allows you to:

- Specify a group of APs that will participate in the walkabout.
- Specify the maximum transmit power level.

During a client walkabout, up to five client stations, each identified by its 802.11 MAC address, are walked around the coverage area of the WLAN or a portion of the WLAN. The APs are set to the same channel and the transmit power in the APs is increased so that the power required to cover the edges of the WLAN can be determined.

A client walkabout station continuously reports radio measurements back to its serving AP as it roams throughout the coverage area. All measurements are passed to the Radio Manager, which incorporates them into its radio environment database.

**Note**

If you choose not to perform a client walkabout, you must enter a floor plan that includes the distances between APs (see [Adding Floor Information, page 7-49](#)).

**Related Topics**

- [Creating a New Client Walkabout, page 7-26](#)
- [Client Walkabout Guidelines, page 7-25](#)
- [Collecting Radio Location Measurements, page 7-4](#)

## Client Walkabout Guidelines

Although there is no limit to the number of APs that may participate in a walkabout and no performance impact when you include a large number of APs, the total number of *data points* collected during a walkabout session does affect the processing time of RM Assisted Configuration—the larger the data set, the longer it takes to calculate the parameters.

To minimize the time it takes to calculate the radio parameters, try to use these guidelines when performing the walkabout:

- Walk around the proximity of each AP for which you want coverage for approximately 2 minutes. At a rate of capturing one walkabout location every 10 seconds, this will yield about 12 walkabout locations over a 2-minute period. For a floor that contains 10 APs, this translates to a 20-minute walkabout that covers the perimeter of the floor as well as the areas between different APs.
- If you use the Location Manager's RM Assisted Wizard (see [Using the Assisted Site Survey Wizard, page 7-55](#)), you can also see the walkabout results in a table that includes each AP and the number of walkabout locations that can hear that AP. If a location can hear multiple APs, it will be counted multiple times, once per AP. Therefore, the sum of the total location numbers across all selected APs may be (and almost always is) larger than the total number of actual walkabout locations.
- You can run RM Assisted Configuration either on a per-building or per-floor basis. You will usually get better channel combinations if you run RM Assisted Configuration for an entire building.

A longer walkabout will generate more location data. Although collecting more location samples can improve the parameter generation results, it will also increase the number of computations. For a floor consisting of the 10 APs described above, a WLSE1105 will take 10 to 12 minutes or less to complete the parameter generation process—*without* other jobs, such as inventory, configuration, discovery, or another Radio Manager task running simultaneously.

**Note**

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Because the WLSE1130 is a higher performance product, its parameter generation speed will be significantly better than a WLSE1105.

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**Related Topics**

- [Creating a New Client Walkabout, page 7-26](#)
- [Understanding Client Walkabouts, page 7-24](#)

## Creating a New Client Walkabout

Use this option to create a client walkabout session.

**Note**

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Your login determines whether you can use this option.

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**Prerequisites**

Before you can run a client walkabout, you must have already:

- Discovered the devices (see [Managing Device Discovery, page 3-41](#)).
- Made the devices managed (see [Managing and Unmanaging Devices, page 3-76](#)).
- Authenticated the devices with WDS (see [Setting WDS Thresholds, page 2-46](#)).
- Configured the walkabout client to associate with the APs selected for the walkabout.

## Procedure

---

**Step 1** Select **Radio Manager > Client Walkabout**.

**Step 2** Click **New**.

The window refreshes with the Client Walkabout menu in the left pane and the Client Walkabout Name dialog box in the right pane.

**Step 3** Select the following numbered choices in the left pane to create a client walkabout:



---

**Note** All these steps must be completed, but do not have to be done in order.

---

1. **Name**—See [1. Name the Walkabout, page 7-28](#).
2. **Select AP**—See [2. Select the APs, page 7-28](#).
3. **Enter Client MAC**—See [3. Enter Client MAC Addresses, page 7-29](#).
4. **Options**—See [4. Enter Walkabout Options, page 7-30](#).
5. **Finish**—See [5. Finish Creating the Walkabout, page 7-30](#).



### Caution

---

Clicking on a any subtab before you have saved your entries in the Job Creation window will reset the window and you will lose all the information you entered.

---

**Step 4** To run the client walkabout, see [Running the Walkabout, page 7-31](#).

---

## Related Topics

- [Client Walkabout Guidelines, page 7-25](#)

## 1. Name the Walkabout

### Procedure

- Step 1** Click **Name**.
- Step 2** Enter the following data:

Field	Description
Job Name	Enter a unique name for the walkabout.  To make each session easy to identify, consider including the floor number or a similar identifier in the job name.  For additional naming convention guidelines, see <a href="#">Appendix A, “Naming Guidelines.”</a>
Description	Enter a description of the walkabout. For guidelines on entering descriptions, see <a href="#">Appendix A, “Naming Guidelines.”</a>

- Step 3** From the menu in the left pane, go to the next step, Select AP. (See [2. Select the APs, page 7-28.](#))

### Related Topics

[Creating a New Client Walkabout, page 7-26](#)

## 2. Select the APs

### Procedure

- Step 1** Click **Select AP**. All managed devices are listed in the Device selector in the middle pane.
- Step 2** Select the APs you want to include in the session (see [Using the Device Selector and Search, page 1-9](#)).



---

**Note** In each walkabout session, include only the APs on that floor (see [Client Walkabout Guidelines, page 7-25](#)).

---

**Step 3** From the menu in the left pane, go to the next step, Enter Client MAC. (See [3. Enter Client MAC Addresses, page 7-29](#).)

---

#### Related Topics

[Creating a New Client Walkabout, page 7-26](#)

## 3. Enter Client MAC Addresses

#### Procedure

---

**Step 1** Click **Enter Client MAC**.

**Step 2** Enter the 802.11 MAC addresses for up to five clients, or select up to five MAC addresses from the Most Recent dropdown list.



---

**Note** Entering a MAC address that consists of more than 12 characters will generate an error message.

---

**Step 3** From the menu in the left pane, select the next task, Options. (See [4. Enter Walkabout Options, page 7-30](#).)

---

#### Related Topics

[Creating a New Client Walkabout, page 7-26](#)

## 4. Enter Walkabout Options

During a walkabout, the transmit power in the APs is increased so that the power required to cover the edges of the WLAN can be determined. Use this option to reset the maximum transmit power level used by the APs.

### Procedure

- 
- Step 1** Click **Options**.
- Step 2** Select the AP power setting.
- By default, the power level is set to the maximum value allowed on the AP or the maximum allowed by the regulatory domain. You might choose to enter a lower power setting when, for example, the default power level might affect a neighboring network.
- Step 3** From the menu in the left pane, select the next task, Finish. (See [5. Finish Creating the Walkabout, page 7-30](#).)
- 

### Related Topics

[Creating a New Client Walkabout, page 7-26](#)

## 5. Finish Creating the Walkabout

Before selecting this option, you must name the walkabout, select the devices, enter the client MAC addresses, and choose the AP power setting option.

### Procedure

- 
- Step 1** Click **Finish** in the left pane.
- Step 2** Click **Save** to add the walkabout to the list of client walkabouts. The screen refreshes and the Client Walkabout Summary window shows the following information:

Field	Description
Name	Name of the walkabout.

Field	Description
Description	Walkabout description, if any.
Power Mode	AP power setting selected for the walkabout.
Maximum Power	The value of the AP power setting. This field is populated only if you entered a value in Use No More Than __ mW (see <a href="#">4. Enter Walkabout Options, page 7-30</a> ).
Devices	Names of the AP devices selected for the walkabout.
Client MAC Address	The list of client MAC addresses to be used during the walkabout.

**Step 3** To run the walkabout, see [Running the Walkabout, page 7-31](#).

#### Related Topics

[Creating a New Client Walkabout, page 7-26](#)

## Running the Walkabout

When you start a client walkabout, the walkabout session starts immediately and continues until you stop the procedure. Only one client walkabout session can be active at any time.



#### Note

The Client Walkabout feature temporarily degrades wireless LAN service, which might affect client associations. You should run a walkabout session during off-hours to minimize any disruptions to the network.

#### Prerequisites

- You must have successfully created a client walkabout session (see [Creating a New Client Walkabout, page 7-26](#)).

#### Procedure

**Step 1** Take the client (typically a laptop) to the area where the walkabout will be run.

- Step 2** Select **Radio Manager > Client Walkabout**. A list of the current Client Walkabout sessions appears.
- Step 3** Select the name of the client walkabout session that you want to run from the list.
- Step 4** Click **Start**.
- Step 5** To set the coverage area, walk the client (the laptop) around the area. Use these guidelines as you walk:
- Walk at a slow, measured pace. The client takes measurements every 10 seconds, so if you walk too quickly, you will not collect enough data points.
  - Walk the edges of the network.
  - Emphasize areas where you want coverage, such as conference rooms and other enclosed areas.
  - For more information about collecting walkabout data, see [Client Walkabout Guidelines, page 7-25](#).
- Step 6** When you have finished collecting the data, *stop the walkabout*. Select the walkabout session name from the list and click **Stop**.



---

**Note** The client will continue taking measurements if you do not explicitly stop the process.

---

- Step 7** To view the results of the walkabout:
- Click **Detailed** to view walkabout details (see [Viewing Walkabout Session Details, page 7-36](#).)
  - Click **Walkabout Details** to view the AP locations collected during a walkabout (see [Viewing AP Location Details, page 7-37](#)).

You can also use the Location Manager (see [Location Manager, page 7-39](#)) to view the results of the walkabout session.

---

#### Related Topics

- [Viewing Client Walkabouts, page 7-33](#)
- [Starting Client Walkabouts, page 7-35](#)
- [Stopping Client Walkabouts, page 7-35](#)

## Viewing Client Walkabouts

Use this screen to view client walkabout sessions.



### Note

Your login determines whether you can use this option.

### Procedure

**Step 1** Select **Radio Manager > Client Walkabout**.

**Step 2** From the Client Walkabout State list, select the type of walkabout whose status you want to check (Running or All). The window refreshes and the walkabouts are displayed.

Field	Description
Name	The client walkabout name.
Status	The status of the walkabout.
Last Run Started	The time the last run of this client walkabout was started.
Last Run Stopped	The time the last run of this client walkabout was stopped.
Owner	The user who last edited the job.

**Step 3** To sort table data, click on the corresponding heading (see [Sorting Table Data, page 1-11](#)).

**Step 4** From this window, you can:

- Edit a walkabout—See [Editing Client Walkabouts, page 7-34](#).
- Delete a walkabout—See [Deleting Client Walkabouts, page 7-34](#).
- Start a walkabout—See [Starting Client Walkabouts, page 7-35](#).
- Stop a walkabout—See [Stopping Client Walkabouts, page 7-35](#).
- View walkabout run details—See [Viewing Walkabout Session Details, page 7-36](#).

- View the AP locations collected during a walkabout—See [Viewing AP Location Details, page 7-37](#)
  - Refresh the screen—See [Refreshing the Walkabouts Summary, page 7-38](#).
- 

## Editing Client Walkabouts

Use this option to edit a walkabout from the displayed list of walkabouts.

**Note**

Your login determines whether you can use this option.

---

**Procedure**

---

- Step 1** Select **Radio Manager > Client Walkabout**.
  - Step 2** From the list of walkabouts, select the walkabout that you want to edit.
  - Step 3** Click **Edit**.
  - Step 4** Select choices in the Client Walkabout Creation Menu. For descriptions of the choices, see [Creating a New Client Walkabout, page 7-26](#).
  - Step 5** Click **Save** to save your changes. The Client Walkabout Save Summary displays the new settings for this walkabout.
- 

## Deleting Client Walkabouts

Use this option to delete a walkabout from the displayed list of walkabouts. Walkabouts that are running cannot be deleted.

**Note**

Your login determines whether you can use this option.

---

---

**Procedure**

- Step 1** Select **Radio Manager > Client Walkabout**.
  - Step 2** From the list of walkabouts, select the walkabout that you want to delete.
  - Step 3** Click **Delete**.
  - Step 4** Click **OK** in the popup window.
- 

## Starting Client Walkabouts

Use this option to start a client walkabout.



---

**Note** Your login determines whether you can use this option.

---

**Procedure**

- 
- Step 1** Select **Radio Manager > Client Walkabout**.
  - Step 2** From the list of walkabouts, select the walkabout that you want to start.
  - Step 3** Click **Start**.
- 

## Stopping Client Walkabouts

Use this option to stop a running walkabout.



---

**Note** Your login determines whether you can use this option.

---

**Procedure**

- 
- Step 1** Select **Radio Manager > Client Walkabout**.

- Step 2** From the list of walkabouts, select the walkabout that you want to stop.
- Step 3** Click **Stop**.
- 

## Viewing Walkabout Session Details

Use this option to view the details of a client walkabout session.

**Note**

---

Your login determines whether you can use this option.

---

**Procedure**

---

- Step 1** Select **Radio Manager > Client Walkabout**.
- Step 2** Select a walkabout, then click **Detailed**.

**Step 3** The Client Walkabout Details window shows the following information:

Field	Description
Name	Name of the walkabout.
Description	Walkabout description, if any.
Power Mode	AP power setting selected for the walkabout.
Max. Power	The value of the AP power setting. This field is populated only if you entered a value in Use No More Than __ mW (see <a href="#">4. Enter Walkabout Options, page 7-30</a> ).
Selected APs	Names of the AP devices selected for the walkabout.
Client MAC Address	The list of client MAC addresses to be used during the walkabout.
Status	The status of the walkabout.
Last Run Started	The time the last run of this client walkabout was started.
Last Run Stopped	The time the last run of this client walkabout was stopped.

## Viewing AP Location Details

Use this option to view the AP locations collected during a client walkabout session.



### Note

Your login determines whether you can use this option.

### Procedure

- Step 1** Select **Radio Manager > Client Walkabout**.
- Step 2** Select a walkabout, then click **Walkabout Details**.



**Note** AP location information is available only for the *most recently completed* walkabout. If a new walkabout session is in progress, this information is not available for the latest completed walkabout.

**Step 3** The Client Walkabout Details window shows the following information:

Field	Description
AP Name	The name of the access point
IP Address	The IP address for that access point.
Number of Location Data	The number of location data points collected for that access point.

## Refreshing the Walkabouts Summary

You can refresh the list of walkabouts to make sure you are looking at the latest information.



**Note** Your login determines whether you can use this option.

### Procedure

- Step 1** Select **Radio Manager > Client Walkabout**. The list of client walkabout sessions appears.
- Step 2** From the Client Walkabout State list, select the type of walkabouts you want to view (Running or All).
- Step 3** Click **Refresh**. The screen shows an updated list of the currently displayed walkabouts.

# Location Manager

The Location Manager gives you a graphical view of the APs on each floor of your building(s). Location Manager also uses the radio monitoring channel measurements supplied by all managed devices and client stations to calculate the location of unknown APs in your network. It provides a location estimate using measurements from as few as one station, regardless of type. The accuracy of the measurements depends on the number of devices that the measuring entity can detect from the given location.

Location Manager supports up to 1,500 buildings per location with a maximum of 100 floors per building and a maximum of 100 APs per floor.

Location Manager allows you to

- View the location of APs in your building (see [Adding Building Information, page 7-47.](#))
- View the relative location of unknown or rogue APs (see [Finding Unknown Radios, page 7-52](#))
- Determine optimal radio transmit power and channel selection (see [Using the Assisted Site Survey Wizard, page 7-55](#))
- Display the predicted coverage of APs (see [Modifying AP Coverage Display Options, page 7-46](#))

## Prerequisites

Before you can use Location Manager, you must have already:

- Discovered the devices (see [Managing Device Discovery, page 3-41](#)).
- Authenticated the devices with WDS (see [Setting WDS Thresholds, page 2-46](#)).

For more information about navigating in the Location Manager window, see [Understanding the Location Manager Window, page 7-39](#).

## Understanding the Location Manager Window

In the upper left pane of the Location Manager window, you expand the All Locations folder to display the buildings and corresponding floors that you added.

Managed devices appear in the pane in the lower left pane of the Location Manager window. You need to initiate a discovery before they appear in this window. See [Managing Device Discovery, page 3-41](#) for more information.

The summary window in the right pane displays the number of APs in Managed state and Unmanaged state. You can double-click on the name of an AP to center the AP in the display of the floor map. For more information about adding devices to the floor map, see [Adding Devices to the Floor Map, page 7-51](#).

In addition, the All Locations Summary also gives you the number of

- Access Points in Managed State—The number of managed APs
- Access Points in Unmanaged State—The number of unmanaged APs
- Active Alarm Counts—The number of major and minor alarms currently in your network.
- Major Alarm Counts—P1 and P2 alarms (see [Viewing Fault Information, page 2-1](#))
- Minor Alarm Counts—P3, P4, and P5 alarms (see [Viewing Fault Information, page 2-1](#))

Location Manager includes several tools that you can use:

- Measuring Tool (See [Using Location Manager Measuring Tool, page 7-40](#).)
- Modify Contrast Tool (See [Using Location Manager Contrast Sliding Tool, page 7-41](#).)
- Channel Color Key (See [Using Location Manager Channel Color Key, page 7-41](#).)
- Locate Device Tool (See [Locating Devices in Location Manager, page 7-42](#).)

## Using Location Manager Measuring Tool

The Location Manager Distance Measure Tools allow you to measure the distance (in either feet or meters) between APs and perform other measure functions.



### Note

---

The Distance Measure Tool icons appear only when you have added floor information to your building(s). (See [Adding Floor Information, page 7-49](#).)

---

### Procedure

- 
- Step 1** In the Location Manager window, click on either Distance Measure Tool icon. The icon with *ft* indicates feet, and the icon with *m* indicates meters.
- The icon you selected is shaded grey, and the bottom of the Location Manager displays the following message:
- Distance Measure Tool: On
- Step 2** Click and drag your mouse anywhere on the building map to start your measurement from.
- Step 3** Drag your mouse to the desired location. You'll see the measurement display as you're dragging the mouse.
- Step 4** To end the measurement, lift your finger from the mouse.

**Note**

---

If the Distance Measure Tool is enabled, the Edit Location tool is disabled automatically.

---

## Using Location Manager Contrast Sliding Tool

You can modify the background contrast in the image of your floor map by using the Location Manager Contrast sliding tool.

- To make the background image lighter, move the sliding bar to the left.
- To make the background image darker, move the sliding bar to the right.

## Using Location Manager Channel Color Key

Each AP on your floor map has a color associated with it. The color indicates the channel the AP is transmitting on. To verify which color corresponds with which channel, click on the Channel Color Key icon or select **Help > Channel Color Key**. The Channel Color Key legend appears showing you which color represents which channel.

## Using Location Manager Radio Location Color Key

The Location Manager Unknown Radio Location Color Key shows you the possible location of an unknown radio. The color gradations correspond to the percentage of probability that the unknown radio exists in the specified region. Click on the Unknown Radio Location Color Key, located next to the Channel Color Key, or select **Help > Unknown Radio Location Color Key** to view this information.

## Zooming In and Out

When using Location Manager, you might need to zoom in and out to see APs displayed on the floor map. You can zoom in and out by selecting a radio button to the left of your floor image. There are 7 radio buttons that correspond to the following zoom levels:

- 32 pixels per foot
- 16 pixels per foot
- 8 pixels per foot
- 4 pixels per foot
- 3 pixels per foot
- 2 pixels per foot
- 1 pixel per foot

To return to the normal view, select the fourth radio button (4 pixels per foot) in the list.

## Locating Devices in Location Manager

You can search for Devices in the Location Manager window.

### Procedure

---

- Step 1** From the Location Manager window, select **Tools > Find Device**. The Find Device window appears.
- Step 2** From the pulldown menu, select whether to search by device name, IP Address, or MAC Address.

- Step 3** Select either Containing or Exactly Matching.
- Step 4** Enter the text string to search for in the text field.
- Step 5** Click **Search**. The Find Device form displays the device or devices that match your search criteria.
- Step 6** Click on the name of the device you want to locate, then click **Locate Device** at the bottom of the form.

The device you selected appears in the center of the floor map.

---

You can right-click on any AP and select **Device Details**. A new browser opens displaying the AP Summary Report for the AP you selected.

#### Related Topics

- [Changing Location Manager Display Options, page 7-44](#)
- [Adding Devices to the Floor Map, page 7-51](#)

## Obtaining Server Information

From Location Manager, you can

- Verify Server Status (See [Verifying Server Status, page 7-43](#).)
- View Server Messages (See [Viewing Server Messages, page 7-44](#).)

## Verifying Server Status

You can verify the status of your server by selecting **Server > Status**. The Server Status window appears displaying the IP address of the server and the time the server was started. The Server status form also displays the following information:

- UserID—The username of the person who launched Location Manager
- Client Address—The address of the client machine that launched Location Manager
- Login Time—The time that the user launched Location Manager

**Related Topics**

- [Viewing Server Messages, page 7-44](#)

## Viewing Server Messages

You can view server messages after you configure your floor plan with APs by selecting **Server > Message**. The Message Server Message Log window appears displaying messages about your server. This information might be helpful when troubleshooting issues, for example, if the AP display coverage isn't correct.

**Related Topics**

- [Verifying Server Status, page 7-43](#)

## Changing Location Manager Display Options

Location Manager allows you to modify how devices are displayed. You can

- Modify how device names are displayed (See [Modifying Device Name Display, page 7-44](#).)
- Modify what AP information is displayed on the floor map (See [Modifying Floor Map Display Options, page 7-45](#).)
- Modify AP coverage display options (See [Modifying AP Coverage Display Options, page 7-46](#).)

## Modifying Device Name Display

You can select how you want your devices displayed in the Location Manager window by selecting **View > Device Label** and clicking on one of these options:

- Name— Device Names are displayed
- IP Address—IP Addresses of devices are displayed
- MAC Address—MAC addresses of devices are displayed

## Modifying Floor Map Display Options

You can specify what AP information you want displayed on the floor map:

- Channel frequency (See [Displaying Channel Frequency, page 7-45.](#))
- Transmit power (See [Displaying Transmit Power, page 7-45.](#))
- Data rate (See [Displaying Data Rate, page 7-45.](#))
- Coverage display (See [Displaying Coverage, page 7-45.](#))
- Displaying RSS (See [Displaying RSSI from Selected AP, page 7-46.](#))

### Displaying Channel Frequency

To display the channel frequency of the APs on the floor map, select **Display > Channel Frequency**.

The floor map refreshes to show the channel frequency of each AP. The color of the channel frequency number corresponds to the channel. For more information about the colors and what they mean, see [Using Location Manager Channel Color Key, page 7-41.](#)

### Displaying Transmit Power

To display the transmit power of the APs on the floor map, select **Display > Transmit Power**.

The floor map refreshes to show the transmit power (in mW) of each AP.

### Displaying Data Rate

To display the highest basic rate set of the APs on the floor map, select **Display > Data Rate**.

The floor map refreshes to show the data rate (in Mbps) of each AP.

### Displaying Coverage

To display a graphic representation of the transmit coverage of the APs on the floor map, select **Display > Coverage Display**.

The floor map refreshes to show the coverage area of each AP. To learn more about modifying the coverage display, see [Changing Location Manager Display Options, page 7-44.](#)

## Displaying RSSI from Selected AP

To display a numeric value of the received signal strength on the floor map, select **Display > Show RSSI from Selected AP**.

The floor map refreshes to show the received signal strength of each AP.

## Modifying AP Coverage Display Options

You can modify how the coverage of each AP is displayed in the floor map.

### Procedure

- 
- Step 1** Next to the Coverage Display pulldown, click **Options**. The Coverage Display Options form appears.
- Step 2** Select a value in the Display Signal Strength Threshold pulldown. The default is 80% (-55dBm), which means that the coverage area displayed on floor map encompasses the area in which the AP signal stretch is at 80% (-55dBm) of its threshold.
- You can select a different signal strength threshold, which will change the coverage area displayed on the floor map. If, for example, you select 20% (-85dBm) in the Display Signal Strength Threshold field, the coverage area around the AP will increase because it indicates the area in which the AP signal strength is at 20% (or -85dBm) or more of its threshold.
- Step 3** Change the display coloring method by choosing one of these options:
- Use Gradient Color (default)—Uses one color with varying degrees of darkness based on the receiving signal range
  - Use Solid Color—Uses one color with the boundary drawn within the range of the signal strength threshold you selected
- Step 4** Change the Calculation Grid Size by clicking on a value in the pulldown menu. Changing the size to a larger value, for example 8ft., gives you a more general coverage that is not as granular as if you had picked a smaller value, for example 2 ft. The smaller the value you choose, the more time it will take for the floor map to refresh because it will display a more specific coverage area.

- Step 5** Click **Apply**. The floor map refreshes to show the display options you selected.
- 

#### Related Topics

- [Changing Location Manager Display Options, page 7-44](#)

## Adding Building Information

When you start Location Manager, the first thing you need to do is add information about your building(s) and its floor(s).

#### Procedure

---

- Step 1** Select **Radio Manager > Location Manager**. A page appears telling you about the necessary Java plug-in version required to use Location Manager, and it displays the Java version you are currently running.
- Step 2** When you are sure you are running the correct version of the Java plug-in, click **Launch** to start Location Manager. The Location Manager window opens.
- Step 3** The first time you launch Location Manager, a dialog box appears saying that no building or floor information was found. It asks if you want to add a new building.
- Step 4** Click **Yes**.
- On subsequent launches, the buildings, corresponding floors, and relevant devices appear under All Locations.
- Step 5** The Building Tool opens displaying the Create Building Information form. Enter information about the building.

The following table shows the character limits for each field on the Create Building Information form:

Field	Maximum Character Length
Building Name	64 characters
Contact	64 characters
Address	256 characters

- Step 6** To import an image of the building, click **Upload/Select**. For more information about importing an image, see [Importing an Image of the Building, page 7-48](#).



---

**Note** The image filename cannot have any spaces in it. If your image filename has a space in it, rename the file before uploading it.

---

- Step 7** Click **Add Floor** to add information about the floor of the building. For more information about adding information about the floor, see [Adding Floor Information, page 7-49](#).

- Step 8** Click **Save**. You'll see the name of building appear under All Locations in the left pane of the Location Manager window.
- 

#### Related Topics

- [Importing an Image of the Building, page 7-48](#)
- [Adding Floor Information, page 7-49](#)

## Importing an Image of the Building

To use Location Manager, you need an image (.gif, .jpg, .jpeg, or .png) of the layout of your building. You can import this image into the Location Manager by following these steps.



---

**Note** The image filename cannot have any spaces in it. If your image filename has a space in it, rename the file before uploading it.

---



---

**Note** If you import an image at the building level (not a *floor*), that image is the default for all floors in the building.

---

### Procedure

---

- Step 1** In the Location Manager window, right click on a building or floor name and select **Edit Building** (or Edit Floor if you right-clicked on a floor). The Building Tool opens with the Create Floor Information form.
- Step 2** Click **Upload/Select**. The Select Image File screen appears.
- Step 3** Click **Upload** to browse to the location of your image file.
- Step 4** Click on your image file, then click **Select**. You'll see your file added to the Select Image file window.
- Step 5** Click **Select** on the Select Image file window. The image is uploaded. You'll see the name of your image file in the Default Floor Map Image field on the Building Tool window, and your image file should appear in the Map Image Preview field.
- Step 6** On the Map Image preview, drag the red rectangle to cover just the edges of your building, or if desired, drag the rectangle over just a portion of your building. This is particularly important if your image has white space around the building because it helps Location Manager more accurately determine the location of any interferers.
- 

### Related Topics

- [Adding Devices to the Floor Map, page 7-51](#)
- [Adding Floor Information, page 7-49](#)

## Adding Floor Information

After importing an image file of your building, you need to specify the dimensions of the floor(s) so that Location Manager knows the scale of the image you imported and can more accurately report the location of any interferers. When you first import an image file into Location Manager, the floor dimensions are the pixel size of the imported image.

If you don't know the dimensions of your floor, see [When You Don't Know Floor Dimensions, page 7-50](#) for more information.

### Procedure

**Step 1** In the Location Manager window, right click on the building name and select **Add Floor**. The Building Tool opens with the Create Floor Information form.

**Step 2** Enter the name of the floor and import an image map. For more information, see [Importing an Image of the Building, page 7-48](#).



**Note** The image filename cannot have any spaces in it. If your image filename has a space in it, rename the file before uploading it.



**Note** If you previously imported an image to your building, that image is the default for all floors in the building. To upload a new image for the floor, import a new image.

**Step 3** Select whether the measurement is in feet or meters using the pull-down menu, and then enter the dimensions of your floor in the Floor Dimensions field.

**Step 4** On the Map Image preview, drag the red rectangle to cover just the edges of your floor, or if desired, drag the rectangle over just a portion of your floor, for example, a conference room. This is particularly important if your image has white space around the building or conference room because it helps Location Manager more accurately determine the location of any interferers.

### Related Topics

- [When You Don't Know Floor Dimensions, page 7-50](#)

## When You Don't Know Floor Dimensions

If you don't know the dimensions of the floor, you can add dimension information to Location Manager using:

- The dimensions of a smaller area, for example, a conference room.
- The distance between two points, for example, two devices.

---

**Procedure**

- Step 1** If you know the dimensions of a portion of the floor (or the distance between two devices), in the Building Tool, enter that measurement (or the distance between the two devices) in the Floor Dimension field. To improve accuracy, specify a measurement for the largest area possible.
- Step 2** On the imported image map, drag the red rectangles to cover just the area that you specified the dimensions for. Or if using the distance between two devices, put two corners of the rectangle at each AP location.
- 

## Adding Devices to the Floor Map

After you add a new building and new floor and import an image map, you can place the devices on the floor map for each floor.

You need to initiate a discovery before you can add them to a building or floor. See [Managing Device Discovery, page 3-41](#) for more information.

---

**Procedure**

- Step 1** From the list of devices in the bottom left window of Location Manager, click on a device name and drag it to its approximate location on the image of the floor map.
- You do not need to place the devices in the exact location on the image map, but the closer the device on the map matches its location on the floor, the more accurately Location Manager will be when giving you information about unknown radios and interferers.
- Step 2** Continue to drag and drop devices on to the floor map.
- 

The floor map indicates the alarm status of each device:

- Red indicates the device has faults with major alarms.
- Yellow indicates the device has faults with minor alarms.
- Green indicates the device has no faults.

- Grey indicates the device is unmanaged.

You can right-click on any AP and select **Device Details**. A new browser opens displaying the AP Summary Report for the AP you selected.

#### Related Topics

- [Moving Devices on Image Map, page 7-52](#)
- [Using Location Manager Channel Color Key, page 7-41](#)

## Moving Devices on Image Map

If you already placed a device on your image map and need to change its location, you can move it to a new location by following these steps:

#### Procedure

---

- Step 1** Click on the Enable Edit Location Mode icon.
- Step 2** Click on the device you want to move.
- Step 3** You can either drag the device to a new location on the map, or you can select **Edit > Cut**.
- Step 4** If you select **Edit > Cut**, click on the new location for the device, then select **Edit > Paste**.

The device appears in the new location on the image map.

---

#### Related Topics

- [Adding Devices to the Floor Map, page 7-51](#)

## Finding Unknown Radios

Location Manager helps you find unknown radios in your network by using the received signal strength from all detecting APs to locate the unknown radio relative to the detecting APs.

Location Manager can also estimate the distance between the detecting AP and the unknown radio.

### Procedure

---

**Step 1** In the Location Manager window, click on the Unknown Radio List icon or select **Tools > Unknown Radio List**. The Unknown Radio List window opens displaying a list of all unknown radios found.

**Step 2** At the top of the Unknown Radio List window, select which devices you want to view:

- **Rogue**— An APs that has not been identified as Friendly. By default, all unknown radios are classified as Rogue until you change them to Friendly.
- **Friendly**—An AP that you know exists, for example, a neighboring network's AP, but that you are not going to modify in any way.

The window refreshes to display the devices of the unknown radio type you selected.

**Step 3** Click on a device name. The Unknown Radio List window refreshes with data specific to that device.

The **Reported By** field shows the device or devices that detected the unknown radio:

- If the **APs** checkbox is selected, the Reported By field displays the APs that detected the selected unknown radio.
- If the **Clients** checkbox is selected, clients detected the selected unknown radio.

If the device you selected does not have a building name listed in the Building field, the **Location Estimation** field indicates the estimated location as unknown.

**Step 4** Click **Change to Friendly** (if you selected Rogue from the Unknown Radio Type pulldown) to change the status of the selected unknown radio from Rogue to Friendly.

If you selected Friendly from the Unknown Radio Type pulldown, you can click **Change to Rogue** to change the status of the selected unknown radio from Friendly to Rogue.

**Step 5** Click **Display Location** to view the approximate location of the unknown radio on the building map. You'll see the possible location of the unknown radio shaded in color. The darkest shade indicates the most probable location.

Because Location Manager does not know the transmit power of the unknown radio, you might need to change the display options as explained in [Changing Location Manager Display Options, page 7-44](#).



---

**Note** If the Unknown Radio List dialog box is covering the Location Manager window, you might need to close the dialog box to see the unknown radio displayed on the building map in Location Manager.

---

**Step 6** To delete a rogue AP when you have determined that it no longer exists, you can remove it by clicking **Delete**.

---

#### Related Topics

- [Displaying Unknown Radios in the Floor Map, page 7-54](#)

## Displaying Unknown Radios in the Floor Map

You can view the location of unknown radios in the Location Manager window by following these steps:

#### Procedure

---

**Step 1** In the Location Manager window, select the unknown radio type that you want to view in the Unknown Radios pulldown menu. The pulldown menu might contain MAC addresses or IP addresses of devices in your network.



---

**Note** You might need to zoom out if you cannot see the possible location of the unknown radio in the Location Manager window. See [Zooming In and Out, page 7-42](#).

---

**Step 2** Click **Options** to modify the display options for the unknown radio. The default transmit power selected is 50mW and 100mW.

**Step 3** Click on different transmit power options to increase the area on the floor map in which the unknown radio might be located. If you select all transmit powers, the floor map will display all possible areas that the unknown radio might be located.

- Step 4** Select whether to use the Exclusion Algorithm. By default, the Exclusion Algorithm is selected so that, in its calculations, Location Manager includes the APs in the general area that did not detect the unknown radio. If you deselect the Exclusion Algorithm option, only the APs that detected the unknown radio are used in the location calculation.
- 

#### Related Topics

- [Finding Unknown Radios, page 7-52](#)

## Using the Assisted Site Survey Wizard

The Assisted Site Survey walks you through the process of determining the optimal radio transmit power and channel selection. It helps you select APs, run an AP radio scan job, perform a client walkabout, and generate radio parameters for the selected APs.

The Assisted Site Survey takes you through the following steps:

1. **AP Selection**—See [1. Selecting the APs, page 7-55](#).
2. **AP Radio Scan**—See [2. Viewing Radio Scan Data, page 7-56](#).
3. **Client Walkabout**—See [3. Performing a Client Walkabout, page 7-57](#).
4. **Radio Parameter Generation**—See [4. Generating Radio Parameters, page 7-58](#).

### 1. Selecting the APs

#### Procedure

---

- Step 1** Select **Radio Manager > Location Manager > Wizard > Assisted Site Survey**. The Assisted Site Survey Wizard appears.
- Step 2** Select the APs you want to participate in the site survey:
- To select all APs in a building, click on the building name, then click **Add**.
  - To select all APs on a floor, click on the floor name, then click **Add**.
  - To select individual APs, click on the AP name, then click **Add**.

- Step 3** To remove an AP that you previously selected, click on the AP name, then click **Remove**.
- Step 4** Click **Next** to go to the next step ([2. Viewing Radio Scan Data, page 7-56](#)).
- 

## 2. Viewing Radio Scan Data

After you selected the APs to participate in the assisted site survey, the wizard checks to see if there is any existing radio scan data for the APs you selected. If there is no previous scan data, the wizard asks you to run a new radio scan setup. In addition, the following information is displayed in the table:

Field	Description
Name	Name of the AP
IP Address	IP address of the AP
Last Scan Time	Time the most recent radio scan job started. If this field indicates <i>None</i> , you need to run a new radio scan.

### Procedure

---

- Step 1** Select one of the following options:
- Start new radio scan setup—The wizard starts a new radio scan job. Select this option if there is no previous radio scan date for the selected APs.
  - Use old radio scan data—The wizard uses the data collected from the most recent radio scan job. Use this option if the number of neighbors is accurate.



**Note** A running scan job temporarily degrades wireless LAN service, which might affect client associations. To minimize any disruption, schedule scan jobs to run during off-hours.

---

- Step 2** If you select to start a new radio scan setup, you need to specify the AP's maximum transmit power setting for the radio scan procedure. By default, the power level is set to the maximum value allowed on the AP. See [Understanding AP Radio Scans, page 7-9](#).

- Step 3** To start the new radio scan, click **Start**. You'll see informational messages appear in the text box and when the scan is complete, the form will display the following information:

Field	Description
Name	Name of the AP
IP Address	IP address of the AP
Last Scan Time	Time the most recent radio scan job started

- Step 4** Click **Next** to go to the next step ([3. Performing a Client Walkabout, page 7-57](#)).

#### Related Topics

- [Understanding AP Radio Scans, page 7-9](#)

## 3. Performing a Client Walkabout

Performing a Client Walkabout is an optional procedure in the Assisted Site Survey Wizard. If the APs you selected have data from a previous Client Walkabout session, this information is displayed in the wizard. For more information, see [Understanding Client Walkabouts, page 7-24](#).

#### Procedure

- Step 1** Select one of the following options:
- Start Client Walkabout Setup—The wizard walks you through the steps of setting up a Client Walkabout. See [Client Walkabout Guidelines, page 7-25](#).
  - Skip Client Walkabout—If the location data is accurate, you can skip the client walkabout and go directly to [4. Generating Radio Parameters, page 7-58](#).
- Step 2** If you select to start Client Walkabout Setup, you need to enter at least one client MAC address, and up to five addresses, that will move around during the walkabout.

- Step 3** Select the AP power setting. By default, the power level is set to the maximum value allowed on the AP or the maximum allowed by the regulatory domain. You might choose to enter a lower power setting when, for example, the default power level might affect a neighboring network.
- Step 4** Click **Start** to start the Client Walkabout. When the Client Walkabout is complete, click **Stop** and the following information is displayed:

Field	Description
Name	Name of the AP
IP Address	IP address of the AP

- Step 5** Click **Next** to go to the next step ([4. Generating Radio Parameters, page 7-58](#)).

#### Related Topics

- [Client Walkabout Guidelines, page 7-25](#)

## 4. Generating Radio Parameters

You need to set channel constraints and transmit power constraints for the APs you selected. The wizard can help you configure your APs by internally utilizing measurement data collected from a Client Walkabout and AP radio scanning. The wizard recommends optimal radio transmit power, channel selection, and beacon interval (optional), and then applies these configuration settings to the APs, if desired.



#### Tip

To get optimal channel settings, run the radio parameter generation on a per building basis. That is, include all APs in one building in a single radio parameter generation job.

#### Procedure

- Step 1** Click on one of the Constraints options:
- All APs—Applies the constraints to all APs you selected to participate in the site survey

- Individual AP—Allows you to specify constraints for individual APs.
- Step 2** Enter a value in the Minimum and Maximum Transmit Power fields. By default, the transmit power is set to the maximum value allowed on the AP or the maximum allowed by the regulatory domain. You might choose to enter a lower power setting when, for example, the default power level might affect a neighboring network.
- Step 3** Under Goal, enter a numerical value for the expected maximum number of clients per AP, and a numerical value for the expected average number of clients per AP.
- Step 4** Select whether to enable black hole mitigation. If you select this option, Radio Manager recommends a beacon interval, which is slightly altered from what the AP is configured to, for the APs. If you do not select the Black Hole Mitigation option, Radio Manager will not recommend a beacon interval.
- Step 5** Click **Start** to start the configuration parameter calculation. When the radio parameter generation is complete, a message appears at the bottom of the screen.
- Step 6** Click **Next** to view the calculation results and apply the configuration to the APs.
- Step 7** After reviewing the calculation results, click **Apply Configuration** to apply the configuration changes to the APs.



---

**Note** The configuration on your devices will not change unless you click **Apply Configuration**.

---



---

**Note** To view the changes from the Assisted Site Survey displayed graphically in Location Manager, in the Location Manager window, select **View > Refresh Data**.

---

#### Related Topics

- [AP Radio Scan, page 7-9](#)
- [Client Walkabout, page 7-24](#)
- [Radio Management Assisted Configuration, page 7-60](#)

# Radio Management Assisted Configuration

RM Assisted Configuration can help you configure your APs by internally utilizing measurement data collected from a Client Walkabout and AP radio scanning. RM Assisted Configuration recommends optimal radio transmit power, channel selection, and beacon interval (optional), and then applies these configuration settings to the APs, if desired.

**Tip**

To get optimal channel settings, run RM Assisted Configuration on a per building basis. That is, include all APs in one building in a single RM Assisted Configuration job.

**Note**

Your login determines whether you can use this option.

**Related Topics**

- [Creating a New Assisted Configuration Task, page 7-65](#)
- [Viewing Assisted Configuration Tasks, page 7-60](#)
- [Editing Assisted Configuration Tasks, page 7-61](#)

## Viewing Assisted Configuration Tasks

You can view RM assisted configuration tasks.

**Note**

Your login determines whether you can use this option.

**Procedure**

- Step 1** Select **Radio Manager > RM Assisted Configuration**. The RM Assisted Configuration screen appears.
- Step 2** From the pulldown menu, select what type of configuration tasks you want to view:
  - All—Lists all configuration tasks

- **Planning**—Lists configuration tasks whose constraints are still being calculated by the RM Assisted Configuration engine.



---

**Note** A configuration job stays in the Planning state if something disrupts the network, for example, a server crashes or is restarted.

---

- **Unscheduled**—Lists all configuration tasks that have not been scheduled
- **Scheduled**—Lists all configuration tasks that have been scheduled
- **Completed**—Lists all completed configuration tasks

The screen refreshes to show you details about the specified configuration tasks. You can sort the configuration tasks by name, status, next schedule, or owner by clicking on the corresponding column heading.

---

#### Related Topics

- [Editing Assisted Configuration Tasks, page 7-61](#)
- [Copying Assisted Configuration Tasks, page 7-62](#)
- [Creating a New Assisted Configuration Task, page 7-65](#)

## Editing Assisted Configuration Tasks

You can edit assisted configuration tasks that were previously created.



---

**Note** Your login determines whether you can use this option.

---

#### Procedure

---

- Step 1** Select **Radio Manager > RM Assisted Configuration**. The RM Assisted Configuration screen appears.
- Step 2** From the RM Assisted Configuration pulldown menu, select the configuration tasks you want to edit. The screen refreshes to show the corresponding tasks.

- Step 3** Click on the radio button next to the task you want to modify, then click **Edit**. See [Radio Management Assisted Configuration, page 7-60](#) for more information about completing the task.
- 

#### Related Topics

- [Copying Assisted Configuration Tasks, page 7-62](#)
- [Deleting Assisted Configuration Tasks, page 7-63](#)
- [Creating a New Assisted Configuration Task, page 7-65](#)

## Copying Assisted Configuration Tasks

To create a new assisted configuration task that is similar to a previously created configuration task, you can make a copy of an existing configuration task and then make modifications to the copied task.



#### Note

Your login determines whether you can use this option.

---

#### Procedure

---

- Step 1** Select **Radio Manager > RM Assisted Configuration**. The RM Assisted Configuration screen appears.
- Step 2** From the RM Assisted Configuration pulldown menu, select the configuration tasks you want to copy. The screen refreshes to show the corresponding tasks.
- Step 3** Click on the radio button next to the task you want to modify, then click **Copy**.
- Step 4** Enter a new name for the copied configuration, then click **OK**. The copied configuration appears in the task list.
- 

#### Related Topics

- [Editing Assisted Configuration Tasks, page 7-61](#)
- [Creating a New Assisted Configuration Task, page 7-65](#)

- [Refreshing the List of Configuration Tasks, page 7-64](#)

## Deleting Assisted Configuration Tasks

You can delete assisted configuration tasks that were previously created.

**Note**

---

Your login determines whether you can use this option.

---

**Procedure**

- 
- Step 1** Select **Radio Manager > RM Assisted Configuration**. The RM Assisted Configuration screen appears.
- Step 2** From the RM Assisted Configuration pulldown menu, select the configuration tasks you want to delete. The screen refreshes to show the corresponding tasks.
- Step 3** Click on the radio button next to the task you want to remove, then click **Delete**. A dialog box appears asking if you want to delete the selected task.
- Step 4** Click **OK**. The configuration is deleted from the task list.
- 

**Related Topics**

- [Refreshing the List of Configuration Tasks, page 7-64](#)
- [Creating a New Assisted Configuration Task, page 7-65](#)

## Viewing Details of a Configuration Task

You can view details of selected configuration tasks.

**Note**

---

Your login determines whether you can use this option.

---

### Procedure

---

- Step 1** Select **Radio Manager > RM Assisted Configuration**. The RM Assisted Configuration screen appears.
- Step 2** From the RM Assisted Configuration pulldown menu, select the configuration tasks you want to view. The screen refreshes to show the corresponding tasks.
- Step 3** Click on the radio button next to the task you want to view details of, then click **Details**.

The Radio Management Assisted Configuration Details window appears listing information about the configuration task.

---

### Related Topics

- [Editing Assisted Configuration Tasks, page 7-61](#)
- [Copying Assisted Configuration Tasks, page 7-62](#)
- [Refreshing the List of Configuration Tasks, page 7-64](#)
- [Creating a New Assisted Configuration Task, page 7-65](#)

## Refreshing the List of Configuration Tasks

If you made recent changes to configuration tasks, you can refresh the list of configuration tasks to make sure you're looking at the latest information. You might also need to refresh the configuration tasks if you have a configuration in the Planning state.



### Note

---

Your login determines whether you can use this option.

---

### Procedure

---

- Step 1** Select **Radio Manager > RM Assisted Configuration**. The RM Assisted Configuration screen appears.
- Step 2** From the RM Assisted Configuration pulldown menu, select **All**. The screen updates to show all the RM assisted configuration tasks.

- Step 3** Click on **Refresh**. The screen refreshes and shows an updated list of all configuration tasks.
- 

#### Related Topics

- [Editing Assisted Configuration Tasks, page 7-61](#)
- [Creating a New Assisted Configuration Task, page 7-65](#)

## Creating a New Assisted Configuration Task

When you have a APs or a group of APs that you want to configure, you can use RM Assisted Configuration to configure the APs. Using AP Scan and Client Walkabout data, RM Assisted Configuration generates optimal values for the radio parameters of a given group of APs.



#### Tip

To get optimal channel settings, run RM Assisted Configuration on a per building basis. That is, include all APs in one building in a single RM Assisted Configuration job.

---



#### Note

The Assisted Site Survey wizard can walk you through the process of determining the optimal radio transmit power and channel selection. It helps you select APs, run an AP radio scan job, perform a client walkabout, and generate radio parameters for the selected APs. See [Using the Assisted Site Survey Wizard, page 7-55](#).

---



#### Note

Your login determines whether you can use this option.

---

#### Prerequisites

Before you can create a new RM assisted configuration task, you must have already:

- Discovered the devices (see [Managing Device Discovery, page 3-41](#))

- Made the devices managed (see [Managing and Unmanaging Devices, page 3-76](#))
- Perform an AP Radio Scan (see [AP Radio Scan, page 7-9](#))
- Perform a Client Walkabout (optional but recommended) or add device information in Location Manager. See [Client Walkabout, page 7-24](#) and [Location Manager, page 7-39](#).

### Procedure

---

- Step 1** Select **Radio Manager > RM Assisted Configuration**. The RM assisted configuration information appears.
- Step 2** Enter a task name in the blank field and click **New**. The screen refreshes with the Job Name dialog box in the right pane, and the Task Creation job in the left pane.
- Step 3** Select the following numbered choices in the left pane to create a new RM assisted configuration task:
1. **Job Name**—[1. Naming the Configuration Task, page 7-67](#).
  2. **Select Devices**— See [2. Selecting Devices, page 7-67](#).
  3. **Constraints and Goals**—See [3. Assigning Constraints and Goals, page 7-68](#).
  4. **Calculated Parameters**—See [4. Calculating Parameters, page 7-69](#).
  5. **Calculated Results**— See [5. Viewing the Calculated Results, page 7-69](#).
  6. **Schedule**—See [6. Scheduling the Assisted Configuration, page 7-70](#).
  7. **Done**— See [7. Finishing the Task, page 7-70](#).



### Caution

---

Clicking on any subtab (for example, Radio Monitoring or Client Walkabout) before you have saved your entries in the Jobs window will cause the window to reset and you will lose all the information you entered.

---

## 1. Naming the Configuration Task

### Procedure

**Step 1** Click **Name**.

The screen refreshes so you can enter information about the new task. You'll see the name you entered in the Task Name field.

**Step 2** Enter the following information:

Field	Description
Job Name	Enter a unique name for the job. For guidelines on naming jobs, see <a href="#">Appendix A, "Naming Guidelines."</a>
Description	Enter a description of the job. For guidelines on entering descriptions, see <a href="#">Appendix A, "Naming Guidelines."</a>

**Step 3** From the menu in the left pane, go to the next step, Selecting Devices. (See [2. Selecting Devices, page 7-67](#))

## 2. Selecting Devices

### Procedure

**Step 1** Click **Select Devices**. All managed devices are listed in the Device selector in the middle pane.

**Step 2** Select the devices you want to include in the job. See [Using the Device Selector and Search, page 1-9](#)).

**Step 3** From the menu in the left pane, go to the next step, Constraints and Goals. See [3. Assigning Constraints and Goals, page 7-68.](#))

### Related Topics

- [Creating a New Assisted Configuration Task, page 7-65](#)

### 3. Assigning Constraints and Goals

After selecting the devices for the assisted configuration task, you need to specify the constraints and goals of the task.

#### Procedure

---

- Step 1** Determine whether you want to apply the constraints to all APs that you selected in Step 2 or if you want to apply the constraints to individual APs that you selected in Step 2.
- Step 2** If you selected to apply the constraints to individual APs, a list box appears in which you can select the AP on which to apply the constraints. Click on the AP name in the list box.
- Step 3** For the Channel Set, select either option:
- **Recommended**—Use the channels Radio Manager recommends in the Recommended field.
  - **Custom**—Select the channels from the Custom selection box. You can Ctrl-click to select more than one channel from the selection box.
- Step 4** Enter a number for the minimum transmit power and a number for the maximum transmit power. By default, the power level is set to the maximum value allowed on the AP or the maximum allowed by the regulatory domain. You might choose to enter a lower power setting when, for example, the default power level might affect a neighboring network.
- Step 5** Enter a numerical value for the expected maximum number of clients per AP and a numerical value for the expected average number of clients per AP.
- Step 6** Select whether to enable black hole mitigation. If you select this option, Radio Manager recommends a beacon interval, which is slightly altered from what the AP is configured to, for the APs. If you do not select the Black Hole Mitigation option, Radio Manager displays the beacon interval the AP is currently configured to.
- 

#### Related Topics

- [Creating a New Assisted Configuration Task, page 7-65](#)
- [Editing Assisted Configuration Tasks, page 7-61](#)

- [Deleting Assisted Configuration Tasks, page 7-63](#)

## 4. Calculating Parameters

After you assign the constraints and goals, the next step is for Radio Manager to calculate the parameters. In this step, you will see a progress bar that indicates the progress Radio Manager is making in its calculations.

**Note**

Depending on the number of APs selected for the job and how much data was collected during Client Walkabout, the calculating parameters step could take a while to complete.

To stop the parameter calculation, click on the **Stop** button.

When the parameter calculation is complete, the results are displayed. For more information about the parameter results, see [5. Viewing the Calculated Results, page 7-69](#).

**Related Topics**

- [Creating a New Assisted Configuration Task, page 7-65](#)
- [Editing Assisted Configuration Tasks, page 7-61](#)
- [Deleting Assisted Configuration Tasks, page 7-63](#)

## 5. Viewing the Calculated Results

After Radio Manager calculates the parameters for the assisted configuration job, it displays the calculation results. The calculation results specify the following information:

Field	Description
Name	Name of the AP
Transmit Power	Recommended transmit power for this AP
Channel	Recommended channel for the AP

Field	Description
Beacon Interval	Recommended beacon interval for the AP. If you did not select the Enable Black Hole Mitigation option, this column displays the value the AP is currently configured to. (See <a href="#">3. Assigning Constraints and Goals</a> , page 7-68 for more information.)
Estimated Maximum Throughput	The estimated maximum megabytes per second that the AP can process

## 6. Scheduling the Assisted Configuration

After you have viewed the calculation results of the assisted configuration task (see [4. Calculating Parameters](#), page 7-69 for more information) and want to apply these changes, you need to determine when to apply configuration changes.

### Procedure

- 
- Step 1** Click on **6. Schedule**. The Schedule RM Assisted Configuration Job form appears.
  - Step 2** To start the assisted configuration task immediately, click **Run Now**.
  - Step 3** To run the assisted configuration task at a later time, under Run Later, select a Month, Day, Year to run the configuration task. You must also specify the start time by selecting the hour and minute to start the job.
- 

## 7. Finishing the Task

Before selecting this option, you must name the assisted configuration task, select the devices, enter constraints and goals, and schedule the assisted configuration task.

### Procedure

- 
- Step 1** Click **Finish** in the left pane.

The Done form appears indicating that the job has completed or it has been scheduled (if you scheduled it to run later).

---

## Managing RM Measurements

Use the Manage RM Measurements tab to delete previously-collected radio location measurements, including links and path loss data. You might need to delete radio location data, for example:

- When APs have been added, deleted, or physically moved.



---

**Note** If you run a new AP radio scan, the radio location information for the selected APs is deleted automatically.

---

- If the number of walkabout locations is slowing down the RM Assisted Configuration. You can use the Location Manager's RM Assisted Wizard (see [Using the Assisted Site Survey Wizard, page 7-55](#)), to view the walkabout results, including each AP and the number of walkabout locations that can hear that AP.

### Procedure

---

- Step 1** Select **Radio Manager > Manage RM Measurements**.
- Step 2** Choose the radio location measurements to be deleted:
- **Delete Radio Measurements**—Deletes the AP radio locations collected during AP radio scans and radio monitoring.
  - **Delete Walkabout Measurements**—Deletes the client radio locations collected during client walkabouts.
- Step 3** Click **Select Devices**. All managed devices are listed in the Device selector in the middle pane.



---

**Note** In a multi-storied building, in addition to selecting the APs for that floor, select the APs for the floors above and below as well.

---

- Step 4** Select the devices you want to include in the job (see [Using the Device Selector and Search, page 1-9](#)).
- Step 5** Click **Finish** in the left pane. The selected data is deleted immediately.
- 

**Related Topics**

- [AP Radio Scan, page 7-9](#)
- [Client Walkabout, page 7-24](#)
- [Using the Assisted Site Survey Wizard, page 7-55](#)