



Release Notes for Cisco 2700 and 2710 Location Appliances for Software Release 3.1.42.0

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These release notes describe features, enhancements, and caveats for software release 3.1.42.0 for Cisco Location Appliances. This release of location appliance software supports both Cisco 2700 and 2710 location appliances.



Note

For details on compatibility with Cisco Wireless LAN Controllers and Cisco Wireless Control Systems (WCSs), refer to the “[System Requirements](#)” section on page 2 prior to installing this software.



Note

Refer to the online version of the *Cisco 2700 Series Location Appliance Installation and Configuration Guide* for details on the physical installation and initial configuration of the location appliance at:

http://www.cisco.com/en/US/products/ps6386/prod_installation_guides_list.html

Contents

These release notes contain the following sections:

- [Introduction](#), page 2
- [System Requirements](#), page 2
- [Important Notes](#), page 4
- [Screen and Path Changes](#), page 6
- [Caveats](#), page 9
- [Troubleshooting](#), page 13
- [Related Documentation](#), page 13
- [Obtaining Documentation, Support, and Security Guidelines](#), page 13



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Introduction

Location appliances compute, collect, and store historical location data using Cisco wireless LAN controllers and access points to track the physical location of wireless devices. The collected location data can be viewed in GUI format in Cisco WCS.

System Requirements

You can install this software release on any 2700 or 2710 location appliance.

Table 1 summarizes the controller and Cisco WCS software releases that are compatible with the location appliance.

Table 1 Minimum Software Requirements

System	Minimum Software Release
Controller	Release 4.1.185.10 or 4.2.61 (or later 4.2.x)
Cisco WCS	Release 4.2.62 (or later 4.2.x)
Cisco WCS Navigator	Release 1.1.62 (or later 1.1.x)

Backwards Compatibility of Location Appliance Software

Location appliance software is backwards compatible with the previous two location appliance releases. Therefore, you can only upgrade two releases forward. For example, you can directly upgrade from release 2.1 or 3.0 to 3.1 but you cannot directly upgrade to release 3.1 from releases 1.1, 1.2 or 2.0.

Upgrading to this Software Release

For instructions on using either Cisco WCS or a console port to download this software on location appliances, refer to the “Updating Location Appliance Software” section in the “Installation and Configuration” chapter of the *Cisco 2700 Series Installation and Configuration Guide*.

Click this link to browse to that document:

http://www.cisco.com/en/US/products/ps6386/prod_installation_guides_list.html

Backup of Release 2.0.x or Later Cannot be Restored on Earlier Releases

A backup of location appliance software releases 2.0.x and later cannot be restored on any location appliance running an earlier software release. Before you upgrade a location appliance to 2.0.x release or later, Cisco recommends that you create a backup of the earlier release and archive it. This will enable you to convert an upgraded system to an earlier release, if necessary.

Location Appliance Image is Compressed

If you download the server image *.gz file using Cisco WCS, the location appliance automatically decompresses (unzips) it, and you can proceed with the installation as before. If you manually download the compressed *.gz file using FTP, you must first decompress the files before running the installer. These files are compressed under the LINUX operating system and must be decompressed using the *gunzip* utility program. The unzip method you use is defined by the filename you are trying to unzip.

To make the bin file executable, use the following command:

```
chmod +x filename.bin
```

Database File Must Be Copied to a Separate Directory Prior to Software Upgrade

To prevent an overwrite of the location appliance database during a software upgrade, you must backup (less than 8 GB) or copy (8 GB or greater) the database file *server-eng.db* to a secure location prior to installation of release 2.1.x and greater.



Note Transfer of the database file using FTP or SFTP to a different machine or an */opt/backups* directory is recommended to provide a secure location.

After the new software is installed, you must transfer the database file *server-eng.db* back into the */opt/locserver* directory.

- If the database file is 8GB or greater, copy the database file to a secure directory by entering the following commands:

```
/opt/locserver/db/linux/server-eng.db
/opt/locserver/db/linux/solid.ini
/opt/locserver/db/dbopts.db (if it exists)
/opt/locserver/attach/*
```

To keep the database under 8 GB in size, note the following recommendations:

- Reduce the frequency of history polling of elements (clients and tags)
- Increase the frequency of history pruning to reduce overall database size (Location > Location Servers > Administration > History Parameters).
- If the database file is less than 8GB, a backup is recommended prior to the install.



Note The database file can be copied to any secure directory other than */opt/locserver*. For more details, refer to the WCS database backup and restore processes in Chapter 11 of the Cisco Wireless Control System Configuration Guide found at the following URL:

<http://www.cisco.com/en/US/docs/wireless/wcs/4.2/configuration/guide/wcsmain.html#wp1077130>

Secure Shell V1.0 is No Longer Supported

Secure shell (SSH) version 1 (v1) is not supported in releases 3.1, 3.0 and 2.1.x due to known security issues; however, SSH version 2 (v2) is supported.



Note After installing release 3.1, you must reboot the location appliance to remove support of SSH v1.

Updated Location Appliance Software Version Shown in Cisco WCS After Polling

After a software update, the new location appliance software version does not immediately appear in location server queries on Cisco WCS. Up to 5 minutes is required for the new version to appear. Cisco WCS, by default, queries the location appliance every 5 minutes for status.

Important Notes

This section describes important information about new features and contains operational notes for software release 3.1.42.0 for location appliances.

Operational Notes

The following operational notes are relevant to this release.

Mandatory Setting of Time Zone on Controllers

If a location appliance (release 3.1 or later) is installed in your network and associated with a controller installed with release 4.2 or later, it is mandatory that the time zone be set on the controller to ensure proper synchronization between the two systems, and a highly recommended setting in networks that do not have location appliances.

Universal Coordinated Time (UTC) is used as the standard for setting the time zone system time of the controller.

You can automatically set the time zone during initial system setup of the controller or manually set it on a controller already installed in your network.

**Note**

Refer to Chapter 3 of the *Cisco Location Appliance Configuration Guide, Release 3.1* at the following link for configuration details.

http://www.cisco.com/en/US/products/ps6386/products_installation_and_configuration_guides_list.html

Mandatory Default Root Password Change

You must change the default root password during initial configuration of the location appliance to ensure optimum network security.

- You are prompted to change the password during the setup script.
- You can also change the password using the Linux command, **passwd**.

Automatic Installation Script for Initial Setup

An automatic setup wizard is available to step you through the initial setup of the location appliance. You can also set up the location appliance manually.

An example of the complete automatic setup script (and manual setup process) is provided in the *Cisco 2700 Series Installation and Configuration Guide*. You can find this document online at:

http://www.cisco.com/en/US/products/ps6386/prod_installation_guides_list.html

Location History Timestamps Match Browser's Location

The Cisco WCS timestamp is based on the browser's location and not on the location appliance settings. Changing the time zone of the Cisco WCS or on the location appliance does not change the timestamp for the location history.

New Feature Support

Please note the new feature support in release 3.1.

Tracking Parameters (Administration Parameter)

With release 3.1, you can specify the elements (client stations, active asset tags, rogue clients and rogue access points) that you actively track. Additionally, out of the 2,500 trackable elements, you can specify how many of a given element you want the controller to track.

Only those elements designated for tracking by the controller are viewable in Cisco WCS maps, queries, and reports. No events and alarms are collected for non-tracked elements and they are not used in calculating the 2,500 element limit.

Path: Location > Location Servers > *Server Name* > Administration > Tracking Parameters

For details see Chapter 4 of the *Cisco Location Appliance Configuration Guide, Release 3.1* at:

http://www.cisco.com/en/US/products/ps6386/products_installation_and_configuration_guides_list.html

Filtering Parameters (Administration Parameter)

In Cisco WCS, you can limit the number of elements whose location is tracked by filtering on:

- MAC addresses

Specific MAC addresses can be entered and labeled as allowed or disallowed from location tracking. You can import a file with the MAC addresses that are to be allowed or disallowed or you can enter them individually using Cisco WCS.

- Probing clients

Probing clients are associated to another controller but their probing activity causes them to be detected by another controller and counted as an element by the “probed” controller as well as its primary controller.

Path: Location > Location Servers > *Server Name* > Administration > Filtering Parameters

For details see Chapter 4 of the *Cisco Location Appliance Configuration Guide, Release 3.1* at:

http://www.cisco.com/en/US/products/ps6386/products_installation_and_configuration_guides_list.html

NMSP Parameters (Previously Named LOCP Parameters)

The Location Protocol (LOCP) is renamed Network Mobility Services Protocol (NMSP) in release 3.1.

Path: Location > Location Servers > *Server Name* > Advanced > NMSP Parameters

For information on compatibility with previous location appliance releases, see Chapter 4 of the *Cisco Location Appliance Configuration Guide, Release 3.1* at:

http://www.cisco.com/en/US/products/ps6386/products_installation_and_configuration_guides_list.html

Chokepoint Usage (Location Parameters)

Three new configurable chokepoint parameters are available on the location parameter window.

- Enabling chokepoints for use in determining the location of Cisco Compatible Extension (CX) version1 asset tags
- Using perimeter chokepoints for interfloor location conflicts associated with Cisco CX v1 asset tags
- Setting the chokepoint out of range timeout value that determines how much time must pass before RSSI values are again used for determining location for Cisco CX v1 asset tags

Path: Location > Location Servers > *Server Name* > Advanced > Location Parameters

For details see Chapter 4 of the *Cisco Location Appliance Configuration Guide, Release 3.1* at:

http://www.cisco.com/en/US/products/ps6386/products_installation_and_configuration_guides_list.html

Screen and Path Changes

The following features appear in Cisco WCS on either modified or different windows than in release 4.1.

- Analyzing Element Location Accuracy Using Testpoints

Configuration steps for this location appliance feature are modified in Cisco WCS 4.2.

For details see Chapter 7 of the *Cisco Location Appliance Configuration Guide, Release 3.1* at:

http://www.cisco.com/en/US/products/ps6386/products_installation_and_configuration_guides_list.html

- Search panel for alarms (see [Figure 1](#))

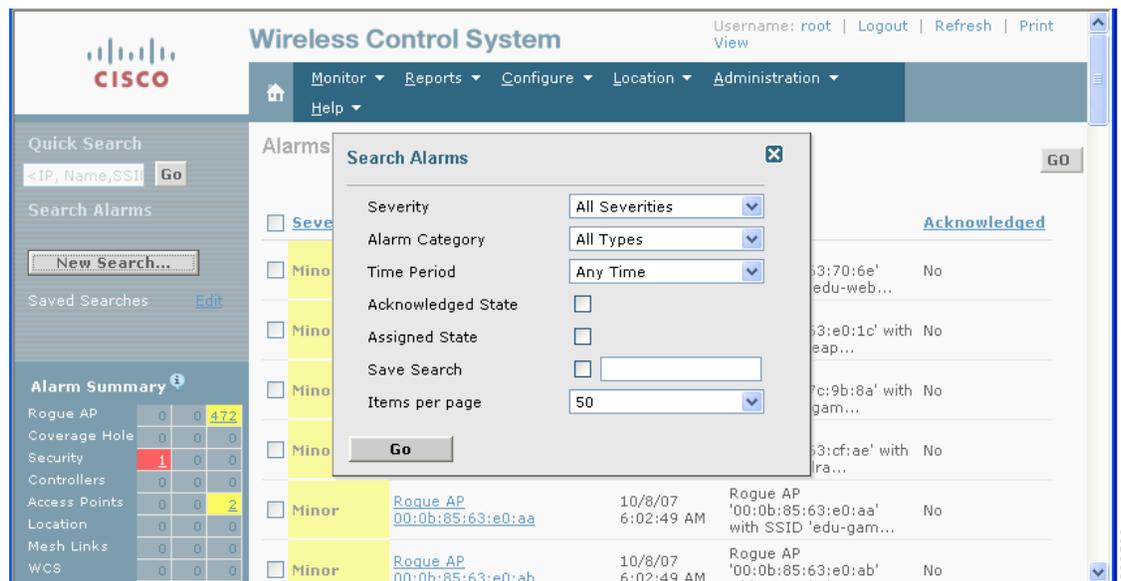
The alarms search panel has two additional parameters: Acknowledged State and Assigned State.

- Checking the Acknowledged State check box excludes acknowledged alarms and their count from the Alarm Summary.
- Checking the Assigned State check box excludes assigned alarms and their count from the Alarm Summary.

For details see Chapter 8 of the *Cisco Location Appliance Configuration Guide, Release 3.1* at:

http://www.cisco.com/en/US/products/ps6386/products_installation_and_configuration_guides_list.html

Figure 1 Monitor > Alarms > New Search Panel

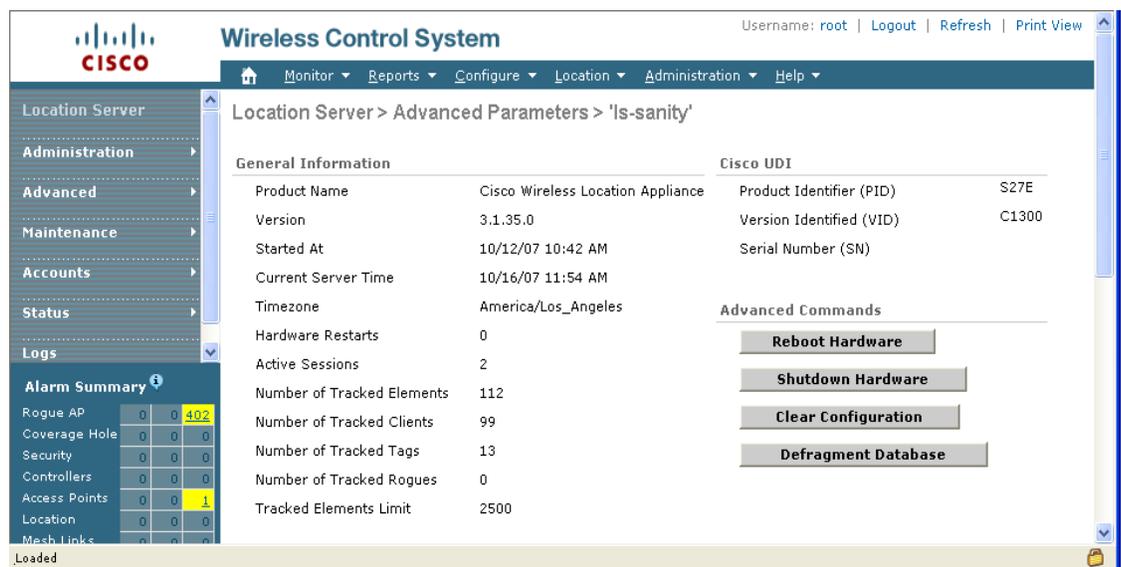


- Change of Advanced Command buttons on the Advanced Parameters window

In Cisco WCS, a new button, Shutdown Hardware, is available on the Advanced Parameters window, and the Run Java GC button is no longer displayed (see Figure 2).

For details see Chapter 8 of the *Cisco Location Appliance Configuration Guide, Release 3.1* at http://www.cisco.com/en/US/products/ps6386/products_installation_and_configuration_guides_list.html

Figure 2 Location Server > Location Servers > Server Name > Advanced > Advanced Parameters



- Online help for Cisco WCS references a Not Tracked column in error

In Cisco WCS, the Tracking Parameters window does not currently display a Not Tracked column as referenced in the online help. A copy of the current window is shown in Figure 3.

For details see Chapter 4 of the *Cisco Location Appliance Configuration Guide, Release 3.1* at: http://www.cisco.com/en/US/products/ps6386/products_installation_and_configuration_guides_list.html

Figure 3 Location Server > Location Servers > Server Name > Tracking Parameters

The screenshot shows the Cisco Wireless Control System (WCS) interface. The main content area is titled 'Location Server > Tracking Parameters > 'Is-sameer-local''. It contains two main sections: 'Tracking Parameters' and 'SNMP Parameters'.

Tracking Parameters Table:

Enable	Tracking Parameters	Enable Limiting	Limit Value	Active Value
<input checked="" type="checkbox"/>	Client Stations	<input type="checkbox"/>	0	0
<input checked="" type="checkbox"/>	Asset Tags	<input type="checkbox"/>	0	0
<input type="checkbox"/>	Rogue Clients and AccessPoints	<input type="checkbox"/>	0	0
<input type="checkbox"/> Exclude Ad-Hoc Rogues				

SNMP Parameters:

The SNMP parameters are applicable for Controller version 4.1 or below

SNMP Parameters	SNMP Polling Interval (secs)
SNMP Retry Count: 3	Client Stations: 300
SNMP Timeout (secs): 5	Asset Tags: 600
	Rogue Clients and AccessPoints: 600
	Statistics: 900

Alarm Summary Table:

Category	Count	Count	Count	Count
Rogue AP	0	0	616	0
Coverage Hole	0	0	0	0
Security	0	0	0	0
Controllers	0	0	0	0
Access Points	0	0	12	0
Location	0	0	0	0
Mesh Links	0	0	0	0
WCS	0	0	0	0

- New two-tabbed panel on the Location Servers summary page provides expanded information. General and performance information for a location appliance is displayed automatically on the Location Servers summary page (choose Location > Location Servers > *Server Name*). Previously, performance information (CPU and memory utilization and element count details) was only available by running a report (choose Reports > Performance Reports). Figure 4 shows the new Cisco WCS window.

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Figure 4 Location > Location Servers > Server Name



Caveats

This section lists open and resolved caveats in location appliance release 3.1.42.0

Open Caveats

There are no new open (unresolved) caveats in this release. The following caveats remain open in this release:

- CSCsh47150—Moving a building from one location to another within a campus might cause synchronization errors. The synchronization page might indicate that the building already exists and attempt to pull it; and if you initiate a synchronization at this time, then it might result in an inaccurate mapping of access points.

Workaround: Unassign the campus or building elements from the location server, then synchronize. Reassign the campus or building elements and then synchronize again.

- CSCsj99244—The location server backup function in release 4.2 of Cisco WCS (Location > Location Servers > Maintenance > Backup) does not work on Japanese Windows 2003 SP2.

Workaround: Change the AM/PM portion of the backup file name to English before performing the backup. For example, given the backup file name, ls-sanity_071015_0410AM.lsbackup (shown in English) you would change the “AM” portion of the file text.

- CSCsk18826—Cisco WCS might experience slower refresh and rendering times when managing large controller networks (200 or more) because of increased page synchronization requirements. Additionally, the CPU use for the web browser increases substantially and the browser might be unresponsive for a short period of time.

Workaround: None.

- CSCsk62082—In some cases, enabling one of the location smoothing options (*less, average, more or max smoothing*) on a location appliance might result in inaccurate location calculations for elements (Location > Location Servers > *Server Name* > Advanced > Location Parameter).

Workaround: Turn off smoothing.

- CSCsk71342—When a sort is initiated on the controller or profile names column headings of the Clients detail window (Monitor > Clients > Total Clients), an error message similar to the following appears: “No clients found on the location server(s) for the chosen criteria. Make sure that you have location servers added to Cisco WCS otherwise search on WCS Controllers.” No sorting errors exist for the other column headings on the Clients detail window.

Workaround: None.

- CSCsk71543—In rare occurrences, after a search for asset tags detected within the last 15 minutes, clicking on the MAC address of one of the resulting tags might not open the Tag Properties window.

Workaround: Choose Monitor > Tags and then click the Total Tags link to reach the Tags summary window. Click on the appropriate tag MAC address.

- CSCsk71692—After clicking a map icon on the Monitor > Maps > *Map Name* window to open a full-screen view of that map, you are unable to exit that view.

Workaround: Enter the Cisco WCS IP address into the browser URL field.

- CSCsk74074—In some cases, when you select the Synchronize Servers option (Location > Location Servers > *Server Name* > Location > Synchronize Server) for a selected location server, it synchronizes all reachable location servers in addition to the selected location server. Eventually, an error appears indicating that the location servers cannot be synchronized because they are unreachable.

Workaround: None.

- CSCsk74908—After enabling limiting for clients and tags on the Tracking Parameters window (Location > Location Servers > *Location Server* > Administration > Tracking Parameters), the calculation for “not tracked” elements is not always reflected correctly. This item is not currently displayed or supported on the Tracking Parameters window of Cisco WCS in release 4.2 but is incorrectly noted as supported in the Cisco WCS online help.

Workaround: None.

- CSCsk79730—When multiple location appliances are added to Cisco WCS and one or more location appliances are not reachable, the user cannot launch Monitor Lite. This happens only when a location appliance in the network is unreachable.

Workaround: In Cisco WCS, **login** as an admin user and remove the unreachable location appliance from the All Location Servers summary window (Location > Location Servers) and then login as a Monitor Lite user. Monitor Lite will launch correctly.

- CSCsk83415—When a location object is returned through the SOAP API, the floorHierarchy element list is always empty rather than returning campus, building, floor, and group elements. This generally occurs whenever a location object is requested.

Workaround: Users can view the hierarchy within the fullHierarchy and simpleHierarchy elements in the location object. The location object information is presented in a string format and is separated by a bar (|).

- CSCsk83459—When starting a location accuracy test, clicking the Start button for two MAC addresses almost simultaneously might result in unexpected results.

Workaround: Start location accuracy tests for MAC addresses at different times.

- CSCsk87607—When a location accuracy test is tracking a large number of elements and it is left in the enabled state for a number of days, the resulting log file might be so large as to time out when downloading.

Workaround: Log into the location server via SSH and move or remove log files of the following format: rf-*MAC-address*.log (rf-00-0c-cc-5c-07-18.log) from the */opt/locserver/logs* directory.

Resolved Caveats

The following caveats are resolved in this release:

- CSCsl70782—Location server performance has improved significantly when using Cisco WCS location and calibration tools. The processor-intensive calculation process was redesigned to work more efficiently, and no longer slows over time until it crashes.
- CSCsq71288—Client Statistics now display in the Location History list for the Location Server when using an SNMP-enabled controller. Client Statistics no longer only displays correctly under the Monitor > Clients > *client_mac_address* > Statistics tab for controllers using SNMP.
- CSCsr20910—Using the Monitor > Maps > RF Calibration Models feature no longer causes slow performance in calibration conditions that approach 100 data points. However, rebooting Cisco WCS may still be necessary for large calibration models of more than 200 data points to restore good performance.
- CSCsr29356—The location reporting of an element by access points from different, non-overlapping coverage regions no longer results in an incorrect location calculation for the element in some circumstances.
- CSCsr81679—Disabling the Chokepoint Usage feature by unchecking the check box from the Location Server > Context Aware Service > Advanced > Location Parameters page no longer results in location elements disappearing from the associated RF Map.
- CSCsr46769—The location server now correctly generates an event notification when a client whose IP address is entered into the Location Server > Context Aware Service > Advanced > Notification Parameters page goes missing. This resolved caveat applies to the WLC 4.1.x.x, WCS 4.2.x.x, and Location 3.1.x.x software releases.
- CSCsu22604—Cisco WCS and the location appliance no longer get out of synch after a few days. When running Cisco WCS software releases 4.2.x.x and Location software releases 3.1.x.x, it is no longer necessary to clear the location server database to restore synchronicity.
- CSCsu40311—The location appliance no longer experiences such high CPU utilization that it crashes when synchronizing network designs with calibration models for many floors with Cisco WCS. Cisco WCS software releases 3.1.35.0 and Location software releases 4.2.97.0 have been modified to support the synchronization of higher numbers of complex network designs.

The following caveats were resolved in earlier releases:

- CSCsj54172—SNMP initialization and subsequent initialization of the location module no longer fails when the */etc/hosts* file does not have an entry for the location appliance's host name and IP address. The location appliance no longer continues to run without SNMP polling and location calculation and without reporting to the log file.
- CSCsh79227—When connectivity between the location appliance and the controller was lost, alerts were not reported in Cisco WCS. Alerts were only reported when Cisco WCS lost connectivity to a controller.

- CSCsi12681—In cases where secure shell (SSH) versions earlier than 4.2, which did not support the GSSAPIDelegateCredentials option, were installed on the location appliance, third party security scanners would indicate security problems.
- CSCsi17755—When the time in the location appliance was updated manually to adjust for daylight saving time, Cisco WCS did not display the manually entered time.
- CSCsi21064—Chokepoint heatmap circles on the map did not automatically resize after using the zoom in and out feature. Chokepoint mapping was only accurate when displaying in the default map size.
- CSCsi34248—The test fire function did not work for location change and battery level notifications. Test-fire verifies that an event notification is sent by the location appliance when a defined event definitions is triggered.
- CSCsi45791—When the battery remaining percentage (%) value was unknown (binary 1111), Cisco WCS displayed the battery remaining percentage (%) in the Battery Life field for Cisco CX version1 asset tags as "-1%" rather than the correct value of "unknown."
- CSCsi46367— For some asset tags, the location history function (Monitor > Tags > Location History) did not automatically display any tag entries beyond the first listed when the play button was clicked.
- CSCsi51747—Cisco WCS did not display a tamper count for tampering notifications received from the Cisco CX version1 tags.
- CSCsj71650—The serial console port on the location appliance could hang when connected to certain models of USB serial converters.
- CSCso29306—When a CAD image was imported for use as a Floor Map within Cisco WCS, the maps would not get pushed to the location server during synchronization. Therefore, when a network design object was retrieved from the location server (through APIs or from other Cisco WCS servers) the map image was empty. This only happened when a CAD file was imported as a floor map.
- CSCso29570—Database reporting errors were reported in event logs.
- CSCso33201—For some outdoor antennas the heatmap displayed a non-uniform coverage pattern. When the heatmap threshold was set low, often heatmaps would indicate no coverage when there was coverage between the areas. The problem was addressed by: 1) acknowledging that the antenna pattern was non-uniform, and; 2) smoothening the antenna patter that considered the environmental multipath effect, making the coverage pattern more realistic.
- CSCso69865—The NullPointerException event was reported in location server logs when very low RSSIs values were present.
- CSCso73789—The imported asset information in Cisco WCS (Location > Location Servers > *Server name* > Administration > Import Asset Information) would report clients on the map without any issue. However, after a certain period of time, many of the clients on the map were reported as *not set* because the imported information was overwritten and lost. Therefore, the asset information needed to be reimported each time the problem occurred.

If You Need More Information

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

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

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

Troubleshooting

For the most up-to-date, detailed troubleshooting information, refer to the Cisco TAC website at:

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

Click **Troubleshooting**. Choose your product (Wireless > Unified Wireless LAN Management > Cisco Wireless Location Appliance), and then select the **Troubleshoot and Alerts** heading on the product page.

Related Documentation

The following documents are related to location appliances:

- *Cisco 2700 Series Location Appliance Installation and Configuration Guide*
- *Cisco Location Appliance Configuration Guide, Release 3.1*
- *Cisco Wireless Control System Configuration Guide, Release 4.2*



Note

You can see the latest online versions of these documents by selecting the Wireless category and then the appropriate product from the Wireless LAN Controller and Wireless LAN Management > Unified Wireless LAN Management sub-category panels at the following link:

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

Obtaining Documentation, Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

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

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