Release Notes for Cisco 2700 and 2710 Location Appliances for Software Release 5.1.30.0

Last Revised: March 6, 2009

These release notes describe features, enhancements, and caveats for software release 5.1.30.0 for Cisco Location Appliances. This release of location appliance software supports both Cisco 2700 and 2710 location appliances.

Note Location appliances are identified as location servers in Cisco WCS and in supporting documentation.

Note For details on compatibility with Cisco Wireless LAN Controllers and Cisco Wireless Control Systems (WCS), 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 Getting Started 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

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 1summarizes the minimum software release requirements for the Cisco WCS and controller to interoperable with the release 5.1 of the location appliance.

Table 1   Minimum Software Requirements

System	Minimum Software Release
Controller	Releases 4.1.192.22M, 4.2.130.0 (or later), or 5.1.147.0 (or later) **Note** Controller release 5.0.x is not compatible with location appliance release 5.1.x
Cisco WCS	Release 5.1.64 (or later)
Cisco WCS Navigator	Release 1.3.64 (or later)

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 3.1 and 4.0 to 5.1 but you cannot directly upgrade to release 5.1 from releases earlier than 3.1.

Upgrading to this Software Release

For instructions for using either Cisco WCS or for manually downloading this software to 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* (78-17180-03 and later). You can find this document at:

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

Backup of Software Cannot be Restored on Earlier Releases

A backup of location appliance software releases 5.1 cannot be restored on any location appliance running an earlier software release. Before you upgrade a location appliance to 5.1, Cisco recommends that you create a backup of the earlier release and archive it. This enables 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 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

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 appliance queries on Cisco WCS. Up to five minutes is required for the new version to appear. Cisco WCS, by default, queries the location appliance every five minutes for status.

Important Notes

This section describes important information about new features and operational notes for software release 5.1.30.0 for location appliances.

Operational Notes

The following operational notes are relevant to this release.

Controller and Associated Location Appliances Must be Mapped to the Same NTP and WCS Server

Communications between the location appliance, Cisco WCS and the controller are in universal time code (UTC). Configuring NTP on each system provides devices with the UTC time. An NTP server is required to automatically synchronize time between the controller, Cisco WCS and the location appliance.

The mobility services engine and its associated controllers must be mapped to the same NTP server and the same Cisco WCS server.

Local time zones can be configured on a location appliance to assist network operations center (NOC) personnel in locating events within logs.

> **Note** You can configure NTP server settings during the automatic installation script. Refer to the *Cisco 2700 Series Location Appliance Getting Started Guide* for details on the automatic installation script. You can find this document online at:
> http://www.cisco.com/en/US/products/ps6386/prod_installation_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.

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

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

Synchronization Required When Upgrading to Release 5.1 or Importing CAD Floor Images

When upgrading to release 5.1 from release 5.x (and earlier, excluding 4.2.130.0) synchronization is required after the software upgrade.

Synchronization is also required after upgrading to release 5.1, if the floor images used in Cisco WCS are CAD images.

Release 4.1 of AeroScout MobileView Required for Northbound Notifications

If a release of AeroScout MobileView *earlier than 4.1* is in use, incorrect responses are sent to those northbound notifications received from the mobility services engine. Northbound notifications are then resent by the mobility services engine, overloading the notification queue and resulting in reports of dropped notifications (CSCsx56618).

Configuration Changes for Greater Location Accuracy

In some RF environments, where location accuracy is around 60 to 70% or where incorrect client or tag floor location map placements occur, you might need to modify the moment RSSI thresholds in the *aes-config.xml* file in the *opt/locserver/conf/* directory of the location server (CSCsw17583).

The RSSI parameters that might need modification are:

- locp-individual-rssi-change-threshold
- locp-aggregated-rssi-change-threshold
- locp-many-new-rssi-threshold-in-percent
- locp-many-missing-rssi-threshold-in-percent

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Caution Please contact TAC for assistance in modifying these parameters.

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.

PDAs with Limited Probe Requests Might Affect Location

Many PDAs do not continuously send out probe requests after initial association to the Cisco Unified Wireless Network (CUWN). Therefore, calculating the location accuracy of such PDAs using RSSI readings might not always be optimal.

Mandatory Setting Required on Intel 802.11n and 802.11 b/g/n Client Cards for Accurate Calibration

The Cisco CX RM option within Intel's Enterprise Security Profile must be enabled to ensure adequate calibration data points are collected for Intel 802.11n and 802.11 b/g/n client cards.

You can use the Intel Client Software PROSET package to enable the Cisco CX RM option in the Enterprise Security Profile (CSCsl40623).

New Feature Support

Please note the new feature support in release 5.1.

Inclusion and Exclusion Regions on a Floor for Enhanced Location Calculations

To further refine location calculations for clients and tags on a floor, you can define the areas that are included (inclusion areas) in the calculations and those areas that are not (exclusion areas).

For example, you might want to exclude areas such as an atrium or a stairwell within a building but include a work area (such as cubicles, labs, or manufacturing floors).

Cisco WCS Path: **Monitor > Maps >** *Floor > Map Editor*

Define a Rail Line on a Floor

You can define a rail line on a floor that represents a conveyor belt. Additionally, you can define an area around the rail area known as the snap-width to further assist location calculations. This represents the area in which you expect clients to appear. Any clients located within the snap-width area are plotted on the rail line (majority) of the map or just outside of the snap-width area (minority).

The snap-width area is defined in feet or meters (user-defined) and represents the distance that is monitored on both sides (east and west or north and south) of the rail.

Cisco WCS Path: **Monitor > Maps >** *Floor > Map Editor*

Modified Cisco WCS Paths

The previously released features have different paths within Cisco WCS release 5.1:

- Tracking Parameters–You can limit the type and number of clients, rogue clients, rogue access points, and tags that are tracked and locations calculated.

    NEW Cisco WCS Path: Mobility > Mobility Service Engines > *Location Server Name > Location > Administration > Tracking Parameters*.

- Filtering Parameters–You can limit the number of tags, clients, rogue clients, and rogue access points whose locations are tracked by filtering by MAC address.

    NEW Cisco WCS Path: Mobility > Mobility Service Engines > *Location Server Name > Location > Administration > Filtering Parameters*.

- Location Parameters–You can modify parameters that affect the location calculation of clients and tags.

    NEW Cisco WCS Path: Mobility > Mobility Service Engines > *Location Server Name > Location > Advanced > Location Parameters*.

Caveats

This section lists open and resolved caveats in location appliance release 5.1.30.0.

✎ **Note** There was no release 5.0 for the location appliance.

Open Caveats

The following caveats are open (unresolved) in release 5.1.30.0:

- CSCsk17031—The history page loads slowly when you query the location history of a tag or client.

    Workaround: You can increase the interval between historical readings of client, tags, and rogue clients and access points. You can also prune the data more frequently (Location Server > Administration > History Parameters).

- 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.

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

    Workaround: None.

Caveats ■

- CSCsl40623–Fewer data points are collected with Intel 802.11n and 802.11 b/g/n client cards during calibration when the Cisco Compatible Client Extension (CX) RM option within the Enterprise Security Profile is not enabled.

    Workaround: Use the Intel Client Software PROSET package to ensure that the Enterprise Security Profile is selected and that the Cisco Compatible CX RM option in this profile is enabled.

- CSCsm03250–When Cisco WCS logs are downloaded, no logs for the location appliance are downloaded.

    Workaround: None.

- CSCso74174–Online help could not be launched for the location accuracy tool (Tools > Location Accuracy Tool).

    Workaround: Select **Help** from the Cisco WCS navigation bar. In the online help summary page that appears, select Tools > Location Accuracy Tools.

- CSCsr00359–A superuser cannot import civic information. Permission is denied.

    Workaround: None.

- CSCsw17583–In some RF environments, where location accuracy is around 60 to 70% or where incorrect client or tag floor location placements occur, you might need to modify the moment RSSI thresholds in the *aes-config.xml* file in the *opt/locserver/conf/* directory of the location server.

    Workaround: Contact TAC with assistance in modifying the RSSI threshold parameters in the *aes-config.xml* file on the location server.

- CSCsx56618–If a release of AeroScout MobileView *earlier than 4.1* is in use, incorrect responses are sent to those northbound notifications received from the mobility services engine. Northbound notifications are then resent by the mobility services engine, overloading the notification queue and resulting in reports of dropped notifications.

    Workaround: Install release 4.1 of AeroScout MobileView.

Resolved Caveats

The following caveats are resolved in release 5.1.30.0.

- CSCsh47150—Moving a building from one location to another within a campus no longer causes synchronization errors. The synchronization page indicated that the building already existed and attempted to pull it. If you initiated a synchronization at this time, then it sometimes resulted in an inaccurate mapping of access points.Workaround was t**o** unassign the campus or building elements from the location appliance, synchronize and then reassign the campus or building elements and then synchronize again.

- 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 savings 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.

- CSCsj54172—SNMP initialization failed and subsequent initialization of the location module failed when the /etc/hosts file did not have an entry for the location appliance's host name and IP address. The location appliance would continue to run but SNMP polling and location calculation did not occur and did not report in the log file.

- CSCsj71650—The serial console port on the location appliance could hang when connected to certain models of USB serial converters.

- CSCsj99244–The location server backup function in release 4.2 of Cisco WCS (Location > Location Servers > Maintenance > Backup) did not work on Japanese Windows 2003 SP2. The workaround was to modify 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.

- CSCsk62082–In some cases, enabling one of the location smoothing options (less, average, more or max smoothing) on a location appliance sometimes resulted in inaccurate location calculations for elements (Location > Location Server > *Location Server > Server Name > Advanced > Location Parameter*). Workaround was to turn off smoothing.

- CSCsk71342–When sorting on the controller or profile name column headings on the Clients detail window (Monitor > Clients > *Total Clients*), an error message similar to the following appeared: "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 existed for the other column headings on the Clients detail window.

- 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. The workaround was to enter the Cisco WCS IP address into the browser URL field.

- 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 was not always reflected correctly. This item was not displayed or supported on the Tracking Parameters window of Cisco WCS in release 4.2 but was incorrectly noted as supported in the Cisco WCS online help.

- CSCsk79730–When multiple location appliances were added to Cisco WCS and one or more location appliances were not reachable, then the user could not launch Monitor Lite. This happened only when a location appliance in the network was unreachable. The workaround was to log into Cisco WCS 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 would then launch correctly.

- CSCsk83415–When a location object was returned through the SOAP API, the floorHierarchy element list was always empty rather than returning campus, building, floor, and group elements. This generally occurred whenever a location object was requested. The workaround was for users to 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 (|).

- CSCsk87607–When a location accuracy test was tracking a large number of elements and it was left in the enabled state for a number of days, large log files would fill the logs directory. A subsequent download of a given log file would time-out given the size of the file. The workaround was to log into the location appliance 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.

- CSCsk88821—When creating maps, the floor information for a building was not retained, and Cisco WCS displayed an error. there was no workaround.

- CSCsl38408–When using the Map Editor, you were unable to resize the map using the link found at the top of the page. Clicking the '*To resize based on available browser space click here'* link did not resize the map.

- CSCsl40623–Few data points were collected with Intel 802.11n and 802.11 b/g/n client cards during calibration when the Cisco Compatible Client Extension (CX) RM option within the Enterprise Security Profile was not enabled. The workaround was to use the Intel Client Software PROSET package to ensure that the Enterprise Security Profile was selected and that the Cisco Compatible CX RM option in this profile was enabled.

- CSCsl51342–A user with *super user* privileges was denied access to the Edit Location Presence information from Map detail page drop-down menu. A *permission denied* message displayed. The workaround was to choose Location Presence from the Map list window by checking the required map instead.

- CSCsl54522–The port number that displayed in the pop-up when you moved over a client icon on a map often differed from the port number that displayed in the client general properties panel that displayed when you clicked on the client icon on the map. These port values should have been the same in both displays. The workaround was to use the port value that displayed on the client general properties panel.

- CSCsl63883–Lower location accuracy was seen for non-Cisco CX compatible Aeroscout tags with firmware versions earlier than 0415.

- CSCsl77797–The Location Accuracy Tool (Tools > Location Accuracy Tool) did not generate a spatial image when the map was not imported as a GIF file. the workaround was to import maps as JPEG files.

- CSCsl92801–In Cisco WCS, when you selected Monitor > Tags, the tag properties page often did not list associated controllers under the controller column despite a successful synchronization with the location appliance. However, tags did display properly on the WCS map and when you entered the *show rfid summary* command for the associated controller. (Controller was enabled with RFID tag tracking).

- CSCsm03250–When Cisco WCS logs are downloaded, no logs for the location appliance are downloaded.

- CSCsm13643–When the zoom function (larger or smaller) was used on a floor map with multiple tags, the devices did not stay coupled to their actual locations during the window resizing. The Accuracy Tool was used to collect the data.

- CSCsm93369—After you assigned a network design to a location server and clicked Synchronize, Cisco WCS returned the synchronize servers page showing the design as unassigned.

- CSCso05664–In rare circumstances, the location appliance would become unreachable to Cisco WCS. Problem was identified within the software and modified.

- CSCso29306–When a CAD image was imported for use as a floor map, the image was not pushed to the location appliance during synchronization. So when a network design object was retrieved from the location appliance (through APIs or to other Cisco WCS stations) the map image was empty. This only happened when a CAD image was imported as a floor map.

- CSCsq23489–When a large number of obstacles (such as walls, doors, cubicles and glass) were defined on a map (using the map editor) synchronization between Cisco WCS and the location appliance would fail. A database error was reported in the log files and a number of the obstacles had erroneous mappings (x,y coordinates).

- CSCsq61215–The serial number of the location appliance did not appear on the advanced parameters page of Cisco WCS. (Mobility > Mobility Service Engines > *Server* > System > Advanced Parameters).

Closed Caveats

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

    Workaround: Start location accuracy tests for MAC addresses at different times (releases 3.135 and earlier) or use the Accuracy Tool (Tools > Accuracy Tool) found in release 4.0.

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://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl

(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.** Then choose your product (Wireless >Unified Wireless LAN Management > Cisco Wireless Location Appliance) and then select the **Troubleshoot and Alerts** heading on the product page to find information on the problem you are experiencing and other service advisories.

Related Documentation

The following documents are related to location appliances:

- *Cisco 2700 Series Location Appliance Getting Started Guide*

- *Cisco Location Appliance Configuration Guide, Release 5.1*

- *Cisco Wireless Control System Configuration Guide, Release 5.1*

- *Cisco Wireless LAN Controller Configuration Guide, Release 5.1*

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/web/psa/products/tsd_products_support_configure.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

This document is to be used in conjunction with the documents listed in the Related Documents section.