Release Notes for Cisco Mobility Services Engine, Release 7.4.100.0

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These release notes describe the requirements, features, limitations, restrictions (caveats), and related information for release 7.4.100.0 of the Cisco mobility services engines and its services:

- Connected Mobile Experiences
- Wireless Intrusion Protection System (wIPS)
- Mobile Concierge
- Location Analytics

Note Cisco 3310 and 3350 mobility services engines are not supported from Release 7.4 onwards.

Note Before installing this software, see the "Upgrading the MSE" section on page 6 for details on compatibility with the Cisco wireless LAN controllers (WLC) and the Cisco Prime Infrastructure.

Note You need licenses to run all the MSE services. For ordering information, see the "Licensing Information for MSE" section on page 9.

Contents

These release notes contain the following sections:

Americas Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

Introduction

This section introduces the Cisco mobility services engine (MSE) and the various services that it supports.

Cisco Mobility Services Engine and Services

The Cisco mobility services engine supports various services within the overall Cisco Unified Wireless Network (CUWN). The Cisco mobility services engine currently supports the following services in Release 7.4.100.0:

- Cisco Connected Mobile Experiences—Allows a mobility services engine to simultaneously track thousands of mobile assets and clients by retrieving contextual information such as presence, location, telemetry data, and historical information.

  CAS relies on two engines for processing the contextual information it receives. The Context Aware Engine for clients and tags (“KC” licenses) processes data for Wi-Fi clients and tags using the RSSI information. The Context Aware Engine for tags (“KT” licenses) processes data for Wi-Fi tags using RSSI and TDoA information. Both these engines can be deployed together or separately depending on the business needs.

  Note For ordering information, see the “Licensing Information for MSE” section on page 9.

- Wireless Intrusion Protection Service—Provides wireless-specific network threat detection and mitigation against malicious attacks, security vulnerabilities, and sources of performance disruption within the CUWN infrastructure. wIPS visualizes, analyzes, and identifies wireless threats, and centrally manages mitigation and resolution of security and performance issues using Cisco monitor mode and Enhanced Local Mode (ELM) Access Points. Proactive threat prevention is also supported to create a hardened wireless network core that is impenetrable by most wireless attacks.
- Mobile Concierge—Cisco Mobile Concierge service provides requirements for mobile clients and servers and describes message exchanges between them. The Mobile Concierge solution delivers a unique in-store experience to customers who are using smartphone. Mobile Concierge service is used by the mobile devices that have been configured with a set of policies for establishing network connectivity. Mobile Concierge service facilitates mobile devices to discover network-based services available in a local network or services that are enabled through service providers. Once you are connected to the stores Wi-Fi network, you will receive different services including electronic coupons, promotional offers, customer loyalty data, product suggestions, and so on.
- Location Analytics Service—The Location Analytics service analyzes wireless device location information in a particular network. The Location Analytics service uses the data provided by the Cisco Mobility Services Engine (MSE) to calculate the location of Wi-Fi devices in the Wireless Local Area Network (WLAN). When a wireless device is enabled in a network, it transmits probe request packets to identify the wireless network in its neighborhood. Even after connecting to the

access point in the WLAN, the client devices continue to transmit probe request packets to identify other access points for better quality of service. The access points gather these request and the associated RSSI from the various wireless devices and forwards them to the Wireless LAN Controller (WLC). The controller then forwards this information to the MSE.

The basic data that is collected from various APs, when analyzed, produces information and knowledge about the movement and behavior patterns of people who are using Wi-Fi devices in the building. For example, the building can be an airport, shopping mall, city center, and so on. The Location Analytics service helps the airport authorities or the building owners to understand the movement of passengers or customer within their building. This helps them improve the signage, make changes to the under utilized areas, and so on.

Note Starting from Release 7.4, the evaluation licenses for 100 clients, 100 tags, and 10 wIPS monitor mode access points come standard on each mobility services engine installed for 120 days, which earlier from Release 6.0 till Release 7.3 was installed for 60 days.

Note From Release 7.4 onwards, licensing is going to be AP based and supports 100 AP evaluation licenses for CAS which is limited to 100 elements (clients, tags, interferes, etc combined). To accomodate this, new L-LS-licenses are introduced.

Software Compatibility Matrix

Table 1 lists the compatibility matrix for the various releases of the Cisco mobility services engine, Cisco Wireless Control System, Cisco Prime Network Control System, and Cisco Wireless LAN controller.

Note Cisco MSE 3310 and 3350 are supported only till Release 7.3.

Note This compatibility matrix lists only the compatibility information of Cisco MSE with other Cisco wireless products. This matrix does not reflect compatibility information between Cisco WLC and Cisco Prime Infrastructure or Cisco NCS. For compatibility information about Cisco Prime Infrastructure with Cisco WLC and other wireless products, see the Cisco Prime Infrastructure Release Notes.

Table 1 Cisco MSE Compatibility Matrix

MSE 3355	MSE 3350	MSE Virtual Appliance	AeroScout CLE	WCS	WLC	Prime Infrastructure / NCS
7.4.100.0	—	7.4.100.0	4.5.2.16 4.4.2.11 4.4.2.7	—	7.4.100.0 7.3.112.0 7.3.101.0 7.2.111.3 7.2.110.0 7.2.103.0 7.0.240.0 7.0.235.3 7.0.235.0 7.0.230.0 7.1.91.0 7.0.220.0 7.0.116.0 7.0.98.218 7.0.98.0	Update 1 for 1.4.0.45 1.4.0.45 Update 4 for 1.3.0.20 Update 1 for 1.3.0.20 1.3.0.20
7.3.101.0	7.3.101.0	7.3.101.0	4.4.2.4	—	7.3.112.0 7.3.101.0 7.2.111.3 7.2.110.0 7.2.103.0 7.0.240.0 7.0.235.3 7.0.235.0 7.0.230.0 7.1.91.0 7.0.220.0 7.0.116.0 7.0.98.218 7.0.98.0	Update 4 for 1.3.0.20 Update 1 for 1.3.0.20 1.3.0.20 1.2.1.12
7.2.110.0	7.2.110.0	7.2.110.0	4.4.2.4	—	7.2.111.3 7.2.110.0 7.2.103.0 7.0.240.0 7.0.235.3 7.0.235.0 7.0.230.0 7.1.91.0 7.0.220.0 7.0.116.0 7.0.98.218 7.0.98.0	Update 4 for 1.3.0.20 Update 1 for 1.3.0.20 1.3.0.20 1.2.1.12 1.1.1.24 1.1.0.58

Table 1 Cisco MSE Compatibility Matrix (continued)

MSE 3355	MSE 3350	MSE Virtual Appliance	AeroScout CLE	WCS	WLC	Prime Infrastructure / NCS
7.2.103.0	7.2.103.0	7.2.103.0	4.4.1.4	—	7.2.103.0 7.0.240.0 7.0.235.3 7.0.235.0 7.0.230.0 7.1.91.0 7.0.220.0 7.0.116.0 7.0.98.218 7.0.98.0	Update 4 for 1.3.0.20 Update 1 for 1.3.0.20 1.3.0.20 1.2.1.12 1.1.124 1.1.0.58
7.0.240.0	7.0.240.0	—	4.3.1.10	7.0.240.0	7.0.240.0 7.0.235.3 7.0.235.0 7.0.230.0 7.1.91.0 7.0.220.0 7.0.116.0 7.0.98.218 7.0.98.0	Update 4 for 1.3.0.20 Update 1 for 1.3.0.20 1.3.0.20 1.2.1.12 1.1.1.24 1.1.0.58 1.0.2.29
7.0.230.0	7.0.230.0	—	4.3.1.19	7.0.230.0	7.0.235.3 7.0.235.0 7.0.230.0 7.1.91.0 7.0.220.0 7.0.116.0 7.0.98.218 7.0.98.0	Update 4 for 1.3.0.20 Update 1 for 1.3.0.20 1.3.0.20 1.2.1.12 1.1.1.24 1.1.0.58 1.0.2.29
7.0.220.0	7.0.220.0	—	4.3.1.19	7.0.220.0	7.1.91.0 7.0.220.0 7.0.116.0 7.0.98.218 7.0.98.0	Update 4 for 1.3.0.20 Update 1 for 1.3.0.20 1.3.0.20 1.2.1.12 1.1.1.24 1.1.0.58 1.0.2.29 1.0.1.4

Table 1 Cisco MSE Compatibility Matrix (continued)

MSE 3355	MSE 3350	MSE Virtual Appliance	AeroScout CLE	WCS	WLC	Prime Infrastructure / NCS
7.0.201.204	7.0.201.204	—	4.2.4.4	7.0.172.0	7.0.116.0 7.0.98.218 7.0.98.0	Update 4 for 1.3.0.20 Update 1 for 1.3.0.20 1.3.0.20 1.2.1.12 1.1.1.24 1.1.0.58 1.0.2.29 1.0.1.4 1.0.0.96
7.0.112.0	7.0.112.0	—	4.2.4.4	7.0.164.3 7.0.164.0	7.0.98.218 7.0.98.0	Update 4 for 1.3.0.20 Update 1 for 1.3.0.20 1.3.0.20 1.2.1.12 1.1.1.24 1.1.0.58 1.0.2.29 1.0.1.4 1.0.0.96
7.0.105.0	7.0.105.0	—	4.2.4.4	7.0.164.3	7.0.98.218	Update 4 for 1.3.0.20 Update 1 for 1.3.0.20 1.3.0.20 1.2.1.12 1.1.1.24 1.1.0.58 1.0.2.29 1.0.1.4 1.0.0.96

Upgrading the MSE

For instructions on automatically downloading the software using the Prime Infrastructure or for manually downloading the software using a local or remote connection, see the "Updating Mobility Services Engine Software" section in Chapter 2 of the *Cisco Mobility Services Engine Getting Started Guide.*

You can find these documents at the following URL:

http://www.cisco.com/en/US/products/ps9742/prod_installation_guides_list.html

This section contains the following topics:

Upgrade Scenarios

The following scenarios are available to upgrade MSE to 7.4.100.0 from 7.x releases:

Note Do not run uninstall on the 7.4 or 7.5 Release, instead stop the MSE and directly run the installer.

Upgrading the MSE to 7.4.100.0 from 7.x Release Without Data Migration

To upgrade from 7.x release to 7.4.100.0 without data migration, follow these steps:

Step 1 Back up the existing database using the Prime Infrastructure. (We recommended this).

All data existing on the system will be lost and a fresh blank database will be created.

Step 2 Transfer the *.tar file for 7.4.100.0 to the MSE appliance:

`CISCO-MSE-L-K9-7-4-100-0-64bit.db.tar`

Step 3 Place the file in the /opt/installers folder. You should manually FTP this file to the appliance.

Note Use binary mode for the transfer. Make sure that the downloaded file sizes are the same as those on Cisco.com.

Step 4 Untar the file: tar -xvf CISCO-MSE-K9-7-4-100-0-64.bit-db.tar
This gives you the following:

- 5 files
- 4 zips
  - database_installer_part1of4.zip
  - database_installer_part20f4.zip
  - database_installer_part3of4.zip
  - database_installer_part4of4.zip
- 1 Cisco-MSE-L-K9-7-4-100-0-64bit.bin.gz

Step 5 To decompress (unzip) the file, execute: gunzip CISCO-MSE-L-K9-7-4-100-0-0-64bit.bin.gz.

Step 6 Enter the following command:

```
chmod +x CISCO-MSE-L-K9-7-4-100-0-64bit.bin
```

Step 7 Stop the MSE service using the following command:

```
service msed stop
```

Step 8 Uninstall the existing MSE software. Choose **deletion of database** when prompted.

Step 9 Invoke the MSE installer.

Doing so installs the new database using the four .zip files for the database along with the MSE software.

Initial database installation can take a long time (20 minutes at least -or- approximately). Do not cancel the installer midway through the installation process.

Once installed, follow the regular procedure to start, stop, or add an MSE to the Prime Infrastructure.

Note The MSE appliance needs to be rebooted using the "reboot" command before starting the MSE services

Upgrading the MSE to 7.4.100.0 from 7.x Release

To upgrade the MSE to 7.4.100.0 from 7.x release, follow these steps:

Note Complete database installation is not required if you are upgrading from 7.0.201.204

Step 1 Download CISCO-MSE-L-K9-7-4-100-0-64bit.bin.gz to the MSE using the standard Prime Infrastructure download software page.

Step 2 Transfer the software to the /opt/installers directory on the MSE server via FTP or another transport method.

Step 3 Unzip the file: gunzip CISCO-MSE-L-K9-7-4-100-0-64bit.bin.gz

Step 4 Enter the following command:

```
chmod +x CISCO-MSE-L-K9-7-4-100-0-64bit.bin
```

Step 5 Run this command: `service msed stop` and restart the MSE.

Step 6 Execute the file with ./CISCO-MSE-L-K9-7-4-100-0-64bit.bin

The installer automatically detects if there is an old database present and asks the relevant questions.

Restoring an Old Database to 7.4.100.0

To restore an old database to 7.4.100.0, follow these steps:

Note The regular Restore option on the Prime Infrastructure cannot be used to restore an older database of older releases such as 6.0, 7.0.105.0, or 7.0.110.0 onto 7.4.100.0.

Step 1 Stop the running MSE 7.4.100.0.

Step 2 Uninstall the software. Delete the database.

Step 3 Based on backed up data that you want to restore, follow the matrix in Table 2 to install a relevant version of MSE.

Table 2 Release Matrix

Version of Database to be restored	New Version that Should be Installed
5.2.0	5.2, 6.0, 7.0
6.0	6.0, 7.0

Step 4 Once you have installed the software, restore the desired database backup onto this using the regular procedure from the Prime Infrastructure.

Step 5 To migrate data to 7.x.x.x, follow the steps in the "Upgrading the MSE to 7.6 from Older Releases with Data Migration" section on page 13.

Compressed Software Image

If you download the mobility services engine image *.gz file using the Prime Infrastructure, the mobility services engine 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 **chmod +x filename.bin** command.

The MSE virtual appliance software is distributed as an Open Virtualization Archive (OVA) file. You can install the MSE virtual appliance using any of the methods for deploying an OVF. For more information on deploying the MSE virtual appliance, see Chapter 5: "MSE Delivery Modes" in the *Cisco Connected Mobile Experiences Configuration Guide, Release 7.4.100.0,* and *Cisco Wireless Intrusion Prevention System, Release 7.4.100.0*, respectively.

Updated Software Version Shown in the Prime Infrastructure After Polling

After a software update, the new mobility services engine software version does not immediately appear in mobility services engine queries on the Prime Infrastructure. Up to 5 minutes is required for the new version to appear. Prime Infrastructure, by default, queries the mobility services engine for status every 5 minutes.

Licensing Information for MSE

- Advanced Location service is introduced in Release 7.4 and it includes Mobile Concierge service and Location Analytics service.

- Client and wIPS licenses are installed from the Prime Infrastructure (Administration > License Center). See, Chapter 2: "Adding and Deleting Mobility Services Engines and Licenses" in the *Cisco Connectecd Mobile Experiences Configuration Guide, Release 7.4.100.0,* and *Cisco Wireless Intrusion Prevention System, Release 7.4.100.0*, respectively.
- Tag licenses are installed using the AeroScout System Manager. See the "Installing Tag Licenses" section in Chapter 2: "Adding and Deleting Mobility Services Engines and Licenses in the *Cisco Mobile Experiences Configuration Guide, Release 7.4.100.0*.
- For complete details on ordering and downloading licenses, see the *Cisco Mobility Services Engine Ordering and Licensing Guide,* at the following URL: http://www.cisco.com/en/US/prod/collateral/wireless/ps9733/ps9742/data_sheet_c07-473865.html
- From Release 7.4 onwards, licensing is going to be AP based and not end point based. To accommodate this, new L-LS-licenses are introduced in this release.

Note CAS licenses will be End of Life with standard 6 months of End of Sales and until then both CAS and LS licenses will co-exist.

- Cisco MSE 3355 supports up to 500 access points for Cisco MSE Location Services or Advanced Location Services. The Cisco MSE virtual appliance supports up to 1,000 access points, depending on the server resources.
- There is no change to endpoint support and MSE 3355 supports 25,000 and high end virtual alliance supports 50000. All licenses are additive.

SKUs for Cisco MSE Location Services

Following are the Cisco MSE Location Services software licenses.

Note You must select L-MSE-PAK to order these licenses.

Order Number	Licenses
L-LS-1AP	License for base Location Services for 1 access point.
L-LS-100AP	License for base Location Services for 100 access points.
L-LS-1000AP	License for base Location Services for 1000 access points.
L-AD-LS-1AP	License for Advanced Location Services for 1 access point.
L-AD-LS-100AP	License for Advanced Location Services for 100 access points.
L-AD-LS-1000AP	License for Advanced Location Services for 1000 access points.

SKU to upgrade from a Location Services to Advanced Location Services:

Order Number	Licenses
L-UPG-LS-1AP	License to upgrade to Advanced Location Services for 1 access point.

Cisco Adaptive Wireless IPS Software

Licenses are available for Monitor Mode and Enhanced Local Mode for Cisco Adaptive wIPS.

SKUs for Cisco Adaptive wIPS in Monitor Mode

Cisco Adaptive wIPS Monitor Mode licenses are based on the number of Monitor Mode access points. Cisco MSE 3355 supports up to 5,000 Monitor Mode access points. The Cisco MSE virtual appliance supports up to 10,000 Monitor Mode access points, depending on server resources. All licenses are additive.

Note You need to select L-MSE-PAK to order these licenses.

Order Number	Licenses
L-WIPS-MM-1AP	Supports 1 Monitor Mode access point.
L-WIPS-MM-100AP	Supports 100 Monitor Mode access points.
L-WIPS-MM-1000AP	Supports 1000 Monitor Mode access points.

SKUs for Cisco Adaptive wIPS in Enhanced Local Mode

Cisco Adaptive wIPS Enhanced Local Mode software licenses are based on the number of local mode (data serving) access points. Cisco MSE supports up to 5,000 local mode access points. The Cisco MSE virtual appliance can track up to 10,000 local mode access points, depending on the server resources. All licenses are additive.

Note You must select L-MSE-PAK to order these licenses.

Order Number	Licenses
L-WIPS-ELM-1AP	Supports 1 Enhanced Local Mode access point.
L-WIPS-ELM-100AP	Supports 100 Enhanced Local Mode access points.
L-WIPS-ELM-1000AP	Supports 1000 Enhanced Local Mode access points.

Cisco Mobility Services Licenses for High Availability

No separate license is required for high availability. To enable high availability, you need to deploy a primary Cisco MSE appliance with Cisco CAS and Adaptive wIPS licenses, and a secondary Cisco MSE appliance without any Cisco CAS or Adaptive wIPS license.

Important Notes

This section describes the operational notes and navigation changes for CAS, wIPS, and the mobility services engine for Release 6.0.103.0 and later releases.

Features and operational notes are summarized separately for the mobility services engine, CAS, and wIPS.

This section contains the following topics:

Operational Notes for a Mobility Services Engine

This section lists the operational notes for the mobility services engine and contains the following topics:

Automatic Installation Script for Initial Setup

An automatic setup wizard is available to help you initially set up the mobility services engine.

An example of the complete automatic setup script is provided in the *Cisco Mobility Services Engine Getting Started Guide*.

You can find these documents at the following URL:

http://www.cisco.com/en/US/products/ps9742/prod_installation_guides_list.html

Parameter Changes During Upgrade from 6.0.x to 7.0.x

You will notice a change in the tracking limits when you do the following:

1. Configure tracking limits in 6.0.x.
2. Upgrade to 7.0.x.

   If limits are greater than licensed counts, limits are removed and licensed counts are enforced instead (CSCtd57386).

Controller and Associated Mobility Services Engine Must be Mapped to the Same NTP and Prime Infrastructure Server

Communication between the mobility services engine, the Prime Infrastructure, and the controller are in Coordinated Universal Time (UTC). Configuring the Network Time Protocol (NTP) on each system provides devices with the UTC time. An NTP server is required to automatically synchronize time between the controller, Prime Infrastructure, and the mobility services engine.

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

Local time zones can be configured on a mobility services engine to assist network operations center personnel in locating events within logs.

Note You can configure NTP server settings while running the automatic installation script. See the *Cisco Mobility Services Engine Getting Started Guide Started Guide* for details on the automatic installation script at the following URL:
http://www.cisco.com/en/US/products/ps9742/prod_installation_guides_list.html

Mandatory Default Root Password Change

You must change the default root password of the mobility services engine while running the automatic installation script to ensure optimum network security.

You can also change the password using the Linux **passwd** command.

Note For the initial login, even if you choose Skip (S), you will be prompted to enter the password. This is because it is mandatory to change the root password at the initial login.

Configuring the Prime Infrastructure Communication Username and Password Using MSE setup.sh

You can configure the Prime Infrastructure Communication username and password using the MSE setup.sh script file.

Scenarios which you might encounter while configuring the Prime Infrastructure username and password are as follows:

- If you configure a new Prime Infrastructure username and password, the password provided is applicable for the new Prime Infrastructure username created.
- If you only configure the Prime Infrastructure username without configuring the Prime Infrastructure password, then the default password admin is applied to the configured username.
- If you only configure the Prime Infrastructure password without configuring the Prime Infrastructure username, then the password for the admin user is changed.
- If you configure an existing username for the Prime Infrastructure username and also configure the password, then the password for that existing user is changed.

Note These users are API users, and they do not have corresponding OS users on the MSE appliance (CSCtj39741).

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 Context Aware Service > Advanced > Location Parameters page on the Prime Infrastructure.

The following RSSI parameters might require modification:

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

Caution Contact Cisco TAC for assistance in modifying these parameters.

Operational Notes for Connected Mobile Experiences

This section lists the operational notes for a mobility services engine and contains the following topics:

Synchronization Required When Upgrading to Release 7.4.100.0 or Importing CAD Floor Images

When upgrading to Release 7.4.100.0 from Release 6.x (and earlier), you must synchronize after the software upgrade and also when CAD-generated floor images are imported into the Prime Infrastructure.

Floor Change or Minimum Distance Required for Location Transitions to Post to the History Log

When history logging is enabled for any or all elements (client stations, asset tags, rogue clients, and access points), a location transition for an element is posted only if it changes floors or the new location of the element is at least 30 feet (10 meters) from its original location.

Note The other conditions for history logging are as follows:

- Clients: Association, authentication, re-association, re-authentication, or disassociation.
- Tags: Tag Emergency button.
- Interferers: Interferer severity change, cluster center change, or merge.

See Services > Mobility Services > Device Name > Context Aware Service > Administration > History Parameters.

Logs can be viewed at Services > Mobility Services > Device Name > Systems > Log.

AeroScout MobileView Release 4.1 Required for Northbound Notifications

If AeroScout MobileView Release 4.1 and earlier is in use, incorrect responses are sent to those northbound notifications received from the mobility services engine. Northbound notifications are then sent again by the mobility services engine, overloading the notification queue and resulting in reports of dropped notifications.

The workaround for this is to upgrade to AeroScout MobileView Version 4.1 (CSCsx56618).

Separate Partner Engine Software Install Not Required for Tag Contextual Information

In Release 5.2 and later, the partner software that supports tag contextual information (temperature, availability, and location calculations) is bundled into the mobility services engine software. No separate download of partner engine software is required as in Release 5.1.

Non-Cisco Compatible Extensions Tags Not Supported

The mobility services engine does not support non-Cisco CX Wi-Fi tags. Additionally, these non-compliant tags are not used in location calculations or shown on the Prime Infrastructure maps.

Cisco Compatible Extensions Version 1 Tags Required at a Minimum

Only Cisco CX Version 1 (or later) tags are used in location calculations and mapped in the Prime Infrastructure.

Monitoring Information Varies for Clients and Tags

Note This information is missing if the AeroScout Tag Engine is used.

In the Monitor > Clients page (when Location Debug is enabled), you can view information on the last heard access point and its corresponding Received Signal Strength Indicator (RSSI) reading.

Calibration Models and Data

If AeroScout engine is used for calculation, then calibration models that are done through the Prime Infrastructure do not apply to tags. If Cisco tag engine is used, everything done on the Prime Infrastructure calibration models and data uses tag calculation.

Calibration models and data do not apply only to tags if AeroScout engine is used for tag calculation. It always applies to Wireless clients, Interferers, Rogue APs, and Rogue Clients.

See Chapter 7, “Context-Aware Planning and Verification” in the *Cisco Context-Aware Software Configuration Guide, Release 7.0* for more details on client calibration.

See the *AeroScout Context-Aware Engine for Tags for Cisco Mobility Services Engine User’s Guide* at the following URL:

http://support.aeroscout.com

Advanced Location Parameters

Advanced location parameters does not apply to tags if AeroScout engine is used and otherwise it works always. Settings for advanced location parameters related to RSSI, chokepoint usage, location smoothing, and assignment of outside walls on floors, are not applicable to tags.

See the "Editing Advanced Location Parameters" section in Chapter 7 of the *Cisco Context-Aware Software Configuration Guide, Release 7.0*.

See Services > Mobility Services > Device Name > Context Aware Service > Advanced > Location Parameters.

Location History Time stamps Match Browser Location

The Prime Infrastructure time stamp is based on the browser location and not on the mobility services engine settings. Changing the time zone on the Prime Infrastructure or on the mobility services engine does not change the time stamp for the location history.

PDAs and Smartphone with Limited Probe Requests Might Affect Location

Many PDAs like smartphones and other Wi-Fi devices with power save mode do not continuously send out probe requests after an initial association to the CUWN. Therefore, calculating the location accuracy of such PDAs using RSSI readings is not always optimal.

Prime Infrastructure Screen and Navigation Changes

- *Services* replaces *Mobility* in the Prime Infrastructure navigation bar.
- A centralized license center to install and view license status is available (see Administration > License Center).
- A Switches tab is a new synchronize option to support the new wired Catalyst switch and wired client feature (see Services > Synchronize Services).

Operational Notes for Location Analytics Service

This section lists the operational notes for Location Analytics service.

WebGL Compatibility

- The Location Analytics in Release 7.4 provides ability to view the analytic results in both 2D (Open Street Maps) and 3D (WebGL) environments. This provides improved understanding of results, on multiple floor paths or when dwell times are calculated throughout a multi-storey building. The 3D environment presents the same information as the 2D environment.
- WebGL is an advanced feature that provides graphic capabilities. Not all browsers support WebGL on a particular hardware. To check your browser compatibility, see the WebGL website. If your browser supports WebGL, then you will see a WebGL rotating cube. If your browser does not support WebGL, you may need to update your video driver.
- For Google Chrome, see the Support website of Google.

- For Mozilla Firefox, go to **Help > Troubleshooting Information** and scroll down to **Graphics and WebGL Renderer**. This indicates if your system supports WebGL and if not it provides information on what is recommended.

Note If your system does not support 3D, then you will see analytic results in 2D Open Street Maps view only.

Jboss Issue

Sometimes Location Analytics service does not start up because of a stray Jboss process that runs as a root user. If Analytics engine does not start and if you notice a stray Jboss process with root permissions running, then you must to do the following:

- Stop Location Analytics service from the Prime Infrastructure.
- Kill the Jboss process.
- chown - R nobody:nobody/opt/mse/analytics.
- Start Location Analytics service from the Prime Infrastructure.

New Feature Support

This section provides a brief description of what is new in this release. For more information about these features, see the *Cisco Connected Mobile Experience Configuration Guide* and *wIPS configuration Guide*, Release 7.4.

MSE Licensing Changes

The following are the licensing changes done in Release 7.4

- From Release 7.4 onwards, AP based licensing is supported for location and advanced location services. The Base location license includes support for Advanced Spectrum, location tracking for rogues and interferers, and Wi-Fi clients and tags.
- Location Services licenses are now either for Base location services or Advanced location services.
  - Base Location services include Context-Aware location, wIPS Location, and CleanAir services (L-LS SKUs).
  - Advanced Location services enables Base Location services along with advanced features like Mobile Concierge and Location Analytics service (L-AD_LS SKUs).
- If you already have Base Location license, you can upgrade to Advanced Location services by buying the upgrade SKUs (L-UPG-LS SKUs).

Note If you have licenses generated from L-CAS or AIR-CAS SKUs, you will be migrated to AP based Base Location service licenses automatically.

Advanced Location Services

The following are the two advanced location services:

Location Analytics Service

The Advanced Location services includes the recently acquired ThinkSmart technoloies Software, which has been integrated into the Cisco Mobility Services Engine. The Location Analytics is a system that provides a set of tools packaged for analyzing Wi-Fi device location data that is coming from the MSE.

The Location Analytics analyzes wireless device location data and provides analytic information for historical trends and patterns. This enables greater visibility into customer movements and behavior throughout the building and throughout the day. The Location Analytics can determine device parameters such as dwell times, crowding, path choice, and aggregate these for common understanding. Business can better understand how their customers interact with different parts of their building or environment such as, where the customers enter from, what are the most popular areas during the day, how long it takes to get around, etc. This allows for better facility planning, measurement of changes to the environment, and business interaction with customers.

Mobile Concierge Service

It includes the Mobile Concierge SDK, a developer's kit that provides an easy to use approach to developing applications and services that leverage the Mobility Services Engine and provide content that is highly personalized for the individual and the context. The Application Partner Ecosystem can use these APIs to provide access to applications and services developed by third-parties for use with the Mobility Services Engine. Mobile Concierge SDK allows end users to receive push notifications, be seamlessly on-boarded to the Wi-Fi network and receive personalized services.

It is a support for L2 MSAP. This allows service discovery without associating to the Network and without requiring a native application on the smartphone. This capability is available only on Android phones shipping in CY13 which have the Snapdragon silicon from Qualcomm Atheros. It also delivers precise indoor location capabilities on mobile devices, by interoperating with Cisco Wi-Fi infrastructure. This collaboration provides a better indoor location capability in venues with Cisco Wi-Fi infrastructure, as well as enhances service discovery, provides greater context, and delivers a better mobile user experience.

New wIPS Signature Support

The following are the new wIPS signatures introduced in Release 7.4.100.0:

- Beacon Fuzzing
- Probe Request Fuzzing
- Probe Response Fuzzing

Adaptive wIPS Signature Enhancement

In Release 7.4, new signature support in Enhanced Local Mode (ELM) is introduced.

Rogue Scaling

Rogue client per rogue AP has been increased from 16 to 256 for all Controllers and 64 for WLC 2504.

Wireless Security and Spectrum Intelligence Module for AP 3600

The wireless security and spectrum intelligence module for AP 3600 does the following:

- 24*7 full spectrum monitor and mitigation for wIPS, CleanAir, Context Awareness, Rogue Detection, and RRM.
- 24*7 on-channel wIPS threat protection
- 23x more security and spectrum coverage
- 30%+ CAPEX cost savings versus dedicated monitor radio
- Zero touch configuration

MSE Meridian Integration

Prior to Release 7.4, Meridian integration with MSE was a manual process and from Release 7.4 onwards, it is a single step process to enable the Meridian integration.

Meridian uses the location update and containment events from the MSE to display the location of a mobile device in the mobile application. In addition, Meridian provides an online content management system to create placemarks, mobile application content, and routing for indoor navigation.

MSE-Qualcomm Solution

The Map Extraction Tool (MET) accepts an indoor map (DXF File) of a venue and after some user input generates QC Map XML and PNG Image that capture the geometric features for walls and doors and POIs such as room numbers. Apart from it, it also generates span xml containing horizontal and vertical span of indoor map. The MET supports following features:

- Mechanism for user to input a DXF file and allows him to see them such that he can perform a grouping of these layers by visualizing them into higher level constructs such as walls, door, portals etc.
- Save previously extracted DXF layers and selections.
- Provide mechanism to backup/restore extracted Floor Areas.
- Generate QCMap XML and PNG image using selected layers. Also provide vertical and horizontal span for the image. All units will be expressed in meters.
- Provide zoom functionality to view building map.

Caveats

This section lists the open caveats in 7.4.100.0 for Windows and Linux. For your convenience in locating caveats in Cisco's Bug Toolkit, the caveat titles listed in this section are taken directly from the Bug Toolkit database. These caveat titles are not intended to be read as complete sentences because the title field length is limited. In the caveat titles, some truncation of wording or punctuation might be necessary to provide the most complete and concise description. The only modifications made to these titles are as follows:

- Commands are in **boldface** type.
- Product names and acronyms may be standardized.
- Spelling errors and typos may be corrected.

If you are a registered cisco.com user, view Bug Toolkit on cisco.com at the following website: http://tools.cisco.com/Support/BugToolKit/.
To become a registered cisco.com user, go to the following website: http://tools.cisco.com/RPF/register/register.do

This section contains of the following topics:

Open Caveats

Table 3 lists the open caveats in Release 7.4.100.0.

Table 3 Open Caveats

ID Number	Caveat Title
CSCud82146	Headline: Tag license violation while restoring the database from one MSE to another. Symptom: There is a mismatch between the actual license and the MSE framework while trying to restore the backup of MSE that has tag license information of another MSE. Condition: This happens while restoring the backup from one MSE (with tag license) to another (with/without tag license). Workaround: You need to restart the MSE services.
CSCuc92827	Headline: The manual SPT in Prime Infrastructure is not working. Symptom: The manual SPT is not working. Condition: This happens in the manual SPT. Workaround: None
CSCue44995	Headline: Location Analytics report—The daily snapshot time periods are not configurable. Symptom: The daily snapshot report does not contain time periods between 9:00 PM- 3:00 AM. Condition: This happens when the report is run on a particular day. Workaround: None.
CSCue60476	Headline: Location Analytics—Clustering error or Timeout error. Symptom: If the MSE is tracking more number of devices, it does not return good data and reports clustering error. Conditions: This happens when there is dense WLAN deployment. Workaround: Take smaller chunks when running a particular operation.

Table 3 Open Caveats (continued)

ID Number	Caveat Title
CSCue60501	Headline: Location Analytics—Negative value is displayed for paths on the floor maps. Symptom: Negative values are displayed for speed, duration, and distance. Condition: This happens when there is dense deployment with many devices. Workaround: None
CSCue44991	Headline: MSE Analytics report— The start and end time in the Analytics reports should include acronym of the time zone. Summary: The start and end time in the reports should include the time zone. Condition: The Analytics reports currently picks the MSE server timezone information. Workaround: None.

Resolved Caveats

Table 4 lists the open caveats in Release 7.4.100.0.

Table 4 Resolved Caveats

ID Number	Caveat Title
CSCub02568	MSE should recalculate client and tag locations after new inclusion region.
CSCub70362	Prime Infrastructure alert for MSE HA has incorrect IP address for the primary MSE.
CSCub77784	After a failed backup, MSE fails to clear the temporary data in the `/opt/data/tmp` location.
CSCuc76811	Fernbank location issue: MSE is not tracking certain clients.
CSCuc09499	Prime Infrastructure admin user: Permission is denied for MSE northbound notifications page.
CSCud17216	The controller could not synchronize with MSE when it was added using DNS.
CSCuc18170	7.4 MSE is not preserving the service status after HA failover.
CSCuc00259	Unable to apply templates to 2500 Series controller.
CSCub40719	MSE-HA-Tag license mismatch between license center and tracking parameters.
CSCub35397	Virtual appliance MSE failed to reconnect due to act lic validation.
CSCub70837	Clear database issued from the Prime Infrastructure for MSE fails when it is issued from the advanced parameters.
CSCud02904	Client and users UI detail page shows duplicate widget with ID.

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, see the Cisco TAC website at the following URL:

http://www.cisco.com/cisco/web/support/index.html

Click **Troubleshooting**, choose your product, and then click 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 the mobility services engine:

- *Cisco Connected Mobile Experiences Software Configuration Guide, Release 7.4*
  http://www.cisco.com/en/US/products/ps9742/tsd_products_support_series_home.html
- *Cisco Wireless Intrusion Prevention System Configuration Guide, Release 7.4*
  http://www.cisco.com/en/US/products/ps9817/products_installation_and_configuration_guides_list.html
- *Cisco Location Analytics Configuration Guide, Release 7.4*
  http://www.cisco.com/en/US/products/ps9742/products_installation_and_configuration_guides_list.html
- *Cisco Mobility Services Engine Getting Started Guide*
  http://www.cisco.com/en/US/products/ps9742/prod_installation_guides_list.html
- The Prime Infrastructure Online Help available with the Prime Infrastructure product.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, 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

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS Version 2.0.

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