Products & Services

Location Appliance to Mobility Services Engine (MSE) and Context-Aware Mobility Service Migration Guide

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Contents

Introduction

This document explains the steps involved in migrating a Cisco 2700 Series Location Appliance to the Cisco 3300 Series Mobility Services Engine.

Prerequisite – Check minimum requirement for migration

When migrating from the Cisco 2700 Series Location Appliance to the Cisco 3300 Series Mobility Services Engine, you need to consider these infrastructure requirements for a successful migration:

- Controllers (Wireless LAN Controllers [WLCs])
  - Supported hardware: WISM, WLC4400, WS-C3750G, WLC2106, NME-AIR-WLC
  - Software supported: Only version 4.2.xxx (xxx>112) or 5.0.xxx (xxx>148) or later supported with MSE
- Access Points (APs)

- Cisco Aironet 1000 Series Access Points are supported only with version 4.2.xxx (xxx>112)
- Cisco AP11xx, 12xx (WLC: requires software version 4.2.xxx (xxx>112) or 5.0.xxx (xxx>148))

Note: No mesh AP support available (either indoor and outdoor).

- Wireless Control System (WCS)
  - Software supported: Only version 5.1.xxx or later

Purchase New Hardware and Software

When migrating from the Cisco 2700 Series Location Appliance to the Cisco 3300 Series Mobility Services Engine (MSE), you must purchase the MSE hardware and Context-Aware Software along with the appropriate licenses (for Wi-Fi Clients or Wi-Fi Tags).

More information on ordering is available in Cisco 3300 Series Mobility Services Engine Licensing and Ordering Guide.

Hardware

The Cisco 3300 series MSE platform today consists of the MSE 3350 (AIR-MSE-3350-K9) and the MSE 3310 (AIR-MSE-3310-K9). This hardware platform allows for the tracking of up to 18,000 and 2,000 devices (Wi-Fi Clients or Wi-Fi Tags) respectively.

More information on the MSE 3300 Series is available at http://www.cisco.com/en/US/products/ps9742/index.html.

Software and Licenses

The license management of the Cisco Context-Aware software allows for the flexibility in the type and quantity of licenses purchased to match the various scenarios. The licenses are additive (up to 18,000 devices tracked on the MSE 3350 platform and up to 2,000 devices tracked on MSE 3310) and thus provide for the growth of the system. The pay-as-you-scale license model is designed for enterprises that need to scale quickly and to have extra capacity to meet future needs. Licenses are available in the following increments for both the Context-Aware Engine for Clients (Client Tracking Engine – includes clients and rogue APs) and Context-Aware Engine for Tags (Tag Tracking Engine).

Devices Tracked	Licensing Options (SKU's)	
	Client Tracking	Tag Tracking
1,000	AIR-CAS-1KC-K9	AIR-CAS-1KT-K9
3,000	AIR-CAS-3KC-K9	AIR-CAS-3KT-K9
6,000	AIR-CAS-6KC-K9	AIR-CAS-6KT-K9
12,000	AIR-CAS-12KC-K9	AIR-CAS-12KT-K9

You receive paper Product Authorization Key (PAK) certificates for the licenses ordered.

Note: Client Licenses also include the capability to locate Rogue APs and Clients.

License deployment examples on the MSE 3350 Platform:

Tracking Requirements	Client License	Tag License
Tracking 2,500 ***Clients***	1 - AIR-CAS-3KC-K9	
Tracking 2,500 ***Tags***		1 - AIR-CAS-3KT-K9
Tracking 2,500 ***Clients*** and ***Tags***	1 - AIR-CAS-3KC-K9	1 - AIR-CAS-3KT-K9
Tracking 3,000 ***Clients*** and 3,000 ***Tags***	1 - AIR-CAS-3KC-K9	1 - AIR-CAS-3KT-K9
Tracking 5,000 ***Tags***		1 - AIR-CAS-6KT-K9
Tracking 7,500 ***Clients*** and 7,500 ***Tags***	1 - AIR-CAS-3KC-K9 1 - AIR-CAS-6KC-K9	1 - AIR-CAS-3KT-K9 1 - AIR-CAS-6KT-K9

More information on the Context-Aware service is available at http://www.cisco.com/en/US/netsol/ns788/index.html.

Support

Hardware Support

Support for the 3300 Series Mobility Services Engine is available through Cisco. The Cisco SmartNet program allows for various options based on the level of hardware support one requires.

Software Support

Context-Aware Engine for Client Tracking

Support for the Context-Aware Engine for Client Tracking is available through Cisco. The Cisco Software Application Support Plus Upgrades (SASU) allows for 24 hour technical assistance from the Cisco Technical Assistance Center (TAC) via telephone and the Web, online tools, plus bug fixes, maintenance, minor releases and upgrades for the software application.

Context-Aware Engine for Tag Tracking

Support for the Context-Aware Engine for Tag Tracking is available through AeroScout.

AeroScout's experienced professional services team is comprised of highly trained engineers, fully committed to providing outstanding support.

You can use AeroScout Support portal to:

- Create and track technical support cases 24 x 7
- Downloads - Documentation, Service packs and product patches
- Knowledgebase - Find solutions to the most common technical problems.

You have to purchase a separate software support agreement from AeroScout. In most cases, an AeroScout representative will contact the customer to renew the support agreement. In other cases, a support contract can be purchased in these ways:

- Customer can purchase support through their Cisco VAR if they are also an AS VAR.
- Customer can send an email to renewals@aeroscout.com and an AeroScout representative will contact the customer directly to renew the support agreement.

Register Context-Aware Software Licenses

The license registration process is separate for the Context-Aware Engine for Clients and the Context-Aware Engine for Tags. Follow the steps outlined below for each of the license types based on what has been ordered.

PAK for Context-Aware Engine for Clients

License enforcement on the Context-Aware Engine for Clients has not yet been enabled. Keep the paper PAK certificate received in a known secure place. When license enforcement is enabled in the future, the application will prompt for a license file at that time and you will be required to go through the registration process as outlined here:

1. Log in to the Cisco Licensing website: https://tools.cisco.com/SWIFT/Licensing/PrivateRegistrationServlet (registered customers only) .
2. Complete the instructions on the Website to register the PAK for clients. This information is required:
    - Customer e-mail address
    - MSE unique device identifier (UDI)
    - PAK certificates for clients

Note: Software versions 5.1 and 5.2 have honors-based licensing. The above steps are not required when using software versions 5.1 and 5.2.

Once the registration process is complete, you receive the license file for Cisco Context-Aware Engine for Clients via e-mail. An email will be sent from licensing@cisco.com with the license file to the e-mail address included during registration. Install the Context-Aware Software license file for clients on the MSE as per the procedure outlined in the configuration guide.

PAK for Context-Aware Engine for Tags

In order to receive the AeroScout Engine license, you must go to the AeroScout support website (support.aeroscout.com) and complete these steps:

1. Create an account (if you do not have one already).

2. A new account credentials will be automatically created and an email with user name and password will be sent to the email address specified by you.

3. Using the provided link, log in to the AeroScout Support Portal and go to Register Products Purchased from the Cisco link.

4. Register your products using the product serial number (in this case, the PAK#).

5. New license and instructions where to download the software from will be sent to you after verification of the PAK.

Download Software (Context-Aware Engine for Tags)

The Mobility Services Engine (MSE 3300 Series) comes pre-loaded with the Context-Aware Engine for Clients (client tracking software) with the 5.1 software release. In the 5.2 software release and later, the MSE will be pre-loaded with the Context-Aware Engine for Clients as well as the Context-Aware engine for Tags.

System Manager software from AeroScout is required to manage the Context-Aware engine for Tags. This software needs to be downloaded directly from AeroScout.

Cisco Software Release Versions	Software to be Downloaded from AeroScout	
	Context-Aware Engine for Tags	System Manager
5.1	Yes	Yes
5.2	No	Yes

Downloading AeroScout Software

Use the URL in the registration approval email to login to the AeroScout support site for downloading AeroScout software. You will have 30 days from the date of registration approval in which to download the software (the counting start date is the day the approval email has been sent to you).

Note: After 30 days you will not be able to download the software or access any online documentation available from the site.

Cisco 2700 Backup and Migrate Historical Data

Back up of Cisco 2700 Location Appliance and Removal

The location database from the current 27xx Location Appliance can be moved to the new Cisco MSE using the backup/restore function in Cisco WCS.

1. The database file is backed up to user-specified directory in WCS. Go to **Mobility > Mobility Service Engines**.

2. Click on **Cisco 2700** in order to select it.

3. Navigate via the menu on the left-hand side of the window to **Maintenance >**

Backup.

Once the database has been backed up, the old 2700 series location appliance should be removed from the WCS.

Set up MSE

By default, the MSE-3300 Series comes with MSE OS and Context Aware Engine for Clients installed. At initial boot-up, you are guided through initial setup via startup script (setup.sh). This script must be used to configure (initial setup or modification at a later day) these parameters:

- Host name or Domain name changes
- IP address/subnet of FE/GE port on MSE
- Dual homing
- Console/ssh access settings
- Root password changes
- WCS user password changes

Users familiar with Linux might be tempted to change any or all of these parameters using other means. The problem with configuring or modifying these parameters using other means is that changes might not populate to all associated files in the MSE, which will cause operational issues. The setup.sh script will take care of making necessary configuration changes to all of the affected files.

The Context Aware Engine for Clients comes by default with the MSE. However, the Context Aware Engine for Tags (AeroScout engine) is a separate engine that must be manually installed. If you have purchased the AeS engine, download this software directly from AeroScout.

1. The WCS is used to transfer the Context Aware Engine for Tags to the MSE. Go to **Mobility > Mobility Service Engines**.

2. After selecting the target MSE for installing the Context Aware Engine for Tags, complete the menu steps below (menu on left-hand side of the screen in WCS). Go to **Partner Engine > Download Software**.

   The WCS software download process places the download file to this directory on the MSE: **/opt/installers**

3. Once the image has been uploaded to the MSE, install the software using this command (note that Linux commands are case sensitive):

   ```
   [root@mse ~]#rpm -Uvh <aeroscout-engine rpm file>
   ```

   Note: The above steps of separately downloading the Context Aware Engine for Tags is only necessary when using software release 5.1. Beginning with software release 5.2, both the Context Aware Engines will bundle both the Context Aware Engine for Clients and the Context Aware Engine for Tags.

4. After the RPM install process completes, enter this command to start the AeS engine:

```
[root@mse ~]#service aeroscout-engine-wd start
```

Other useful commands related to the AeroScout engine watchdog timer are:

- status command: **service aeroscout-engine-wd status**
- stop command: **service aeroscout-engine-wd stop**
- general engine status command: **getserverinfo**

5. Verify that the AeroScout Engine is up and running in WCS by navigating to **Mobility > Mobility Service Engines**.
6. Click on the MSE. Navigate using the menu on the left-hand side of the WCS screen and go to **Partner Engine > Status**.

Set up MSE within WCS

The Cisco MSE needs to be added to the WCS.

1. Navigate to the Mobility Tab in the WCS: **Mobility > Mobility Service Engines > Add Mobility Service Engine**.
2. Once the MSE is added in the WCS, restore the database from the 2710 (which was backed up in step 1) to the MSE. Navigate via the menu on the left-hand side of the window and go to **Maintenance > Restore**.
3. Synchronize the MSE with the existing Network Designs and the WLCs. Go to **Mobility > Synchronize Servers**.

   The Context Aware Engine for Clients comes by default with the MSE. However, the Context Aware Engine for Tags (AeroScout engine) is a separate engine that must be manually installed. If you have purchased the Context-Aware Engine for Tags, download this software directly from AeroScout.

Set up Context-Aware Engine for Tag

Setting up the system involves these steps:

1. System setup in Cisco WCS

   For example:

   - Load and calibrate map(s).
   - Position and configure devices on map(s).

   For more information refer to the Context-Aware Software Configuration Guide.

2. System setup in Cisco MSE

   For more information refer to the Context-Aware Software Configuration Guide.

3. System configuration on System Manager

- Set system parameters.
- Configure Chokepoints and TDOA Receivers IP settings.
- Verify firmware versions for TDOA Receivers and Chokepoints (update if necessary).
- Additional system configurations if applicable (Cells, Synchronization Groups, Masks, Reference Tags)
- Check device connectivity and status.

4. System functionality check
    - Start locating Tags.
5. System Testing
    - Check system synchronization (TDOA mode only).
    - Set up reference points and position Tags accordingly on site (for location enhancement purposes only).
    - Record a session and analyze it.
    - Test Chokepoints one by one.
    - Tune the system accordingly (ongoing): device placement, antenna orientation, Chokepoint ranges, etc.
6. Set up Event Manager

Use the **getserverinfo** command on the MSE to verify that the Context Aware service is operational on the MSE.

Frequently Asked Questions

Q. When the MSE is started up, how do I know that the MSE server is started or running?

A. MSE services on a new MSE out of the box will not start by default. Use this command to start the service:

```
root@mse ~]#/etc/init.d/msed start
```

The user can enable automatic startup of the MSE daemon using this command:

```
[root@mse ~]#chkconfig --add msed
```

Q. What is the best practice for time setting on clock between the MSE and controller?

A. Time setting on the clock on the wireless controller must be equal to or ahead of the clock on the MSE.

Q. If a customer has a 3000 tag or client license, what happens to the 3001’s client?

A. The 3001st tag or client will not get tracked. If one of the tracked clients/tags moves off of the system (for example, gets powered off), new tag/client will be tracked up to the 3000-license limit – or up to the capacity of the licenses installed on the MSE.

Q. What happens to the 2700-based calibration model once a customer migrates from a 2700 to an MSE? Is the calibration model reused?

A. Calibration models from the 2700 location server can be reused on the MSE for client tracking. Tag tracking uses a partner engine that cannot use the calibration from the 2700 location server.

Q. Is it possible to migrate from multiple Cisco 2700 Location Appliances to a single Cisco MSE-3350?

A. Yes, this is possible. The one caveat is that you can only backup/restore the database from one of the 2710's to the MSE. Migrating subsequent databases will overwrite the previous backup/restore.

Q. Is it possible to add client and/or tag licenses at a future date?

A. Yes.

Q. Is Location Optimized Monitor Mode (LOMM) supported when migrating from 2700 to MSE?

A. Yes, LOMM is supported for both client and tag tracking on the MSE.

Q. How do I move my existing exciter configuration from 2700 to MSE?

A. Contact AeroScout Technical Support for assistance with this operation.

Q. What data is preserved when migrating from 2700 to MSE?

A. All information that is part of network design is preserved during the migration process.

Q. Is my location fidelity going to improve when moving from 2700 to MSE?

A. Client tracking on the MSE uses the same engine as the 2700, so location fidelity should be very similar. Tag tracking is based on partner engine, so location fidelity might or might not be similar.

Q. Is the latency going to improve with the MSE?

A. Latency for client and tag tracking is equivalent or better with the MSE.

Q. For support, who should I call for support for the Context Aware Engine for Tags?

A. Call AeroScout for assistance with Context Aware Engine for Tags.

Q. Is the MSE operating system hardened?

A. Yes.

Q. What is the default root password on the MSE?

A. The default root password is "password".

Q. Will Rails and Regions work on the MSE for clients and tags?

A. Rails and Regions works on the MSE for client tracking only. For tag tracking, you need to use Cells and Masks feature in the AeroScout System Manager.

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