C H A P T E R **2**

Adding and Deleting Mobility Services Engines and Licenses

This chapter describes how to add and delete a Cisco 3300 series mobility services engine to and from the Cisco NCS.

This chapter contains the following sections:

Licensing Requirements for MSE

The MSE packages together multiple product features related to network topology, design such as NMSP, and Network Repository along with related service engines and application processes, such as the following:

- Location Service or Context-Aware Service software
- Wireless Intrusion Prevention System (wIPS)

To enable smooth management of MSE and its services, various licenses are offered.

This section contains the following topics:

MSE License Structure Matrix

Table 2-1 lists the breakup of the licenses between the high-end, low-end, and evaluation licenses for the MSE, Location services or Context-Aware Service software, and wIPS.

Table 2-1   *MSE License Structure Matrix*

	High End	Low End	Evaluation
MSE Platform	High-end appliance and infrastructure platform.	Low-end appliance and infrastructure platform.	60 days.
Location Service or Context-Aware Service Software	3000, 6000, 12,000 tags	1000 tags	60 days, 100 tags and 100 elements.
	3000, 6000, 12,000 elements	1000 elements	
wIPS	5000 access points	2000 access points	60 days, 20 access points.

Sample MSE License File

The following is a sample MSE license file:

```
FEATURE MSE cisco 1.0 permanent uncounted \

        VENDOR_STRING=UDI=udi,COUNT=1 \

        HOSTID=ANY \

        NOTICE="<LicFileID>MSELicense</LicFileID><LicLineID>0</Li cLineID> \

        <PAK>dummyPak</PAK>" \

        SIGN="0C04 1EBA BE34 F208 404F 98ED 43EC \

        45D7 F881 08F6 7FA5 4DED 43BC AF5C C359 0444 36B2 45CF 6EA6 \

        1DB1 899F 413F F543 F426 B055 4C7A D95D 2139 191F 04DE"
```

This sample file has 5 license entries. The first word of the first line of any license entry tells you what type of license it is. It can either be a Feature or Increment license. A Feature license is a static, lone-item license. There can be multiple service engines running in the MSE. An Increment license is an additive license. In the MSE, the individual service engines are treated as Increment licenses.

The second word of the first line defines the specific component to be licensed. Example: MSE. The third word defines the vendor of the license, for example: Cisco. The fourth word defines the version of the license, for example 1.0. The fifth word defines the expiration date, this can be permanent for licenses that never expire or a date in the format dd-mmm-yyyy. The last word defines whether this license is counted.

Revoking and Reusing an MSE License

You can revoke an MSE appliance license from one system and reuse it on another system. When you revoke a license, the license file is deleted from the system. If you want to reuse the license on another system, then the license needs to be rehosted.

If you want to reuse a license with an upgrade SKU on another system, then you need to have the corresponding base license SKU installed in the system to which you want to reuse the upgrade SKU. You cannot reuse the upgrade license SKU in a system if the corresponding base license SKU is deleted from it.

When you revoke a license, the MSE restarts the individual service engines to reflect the changes to the licenses. Then the service engines receives the updated capacity from MSE during startup.

For more information on licensing, see the *Cisco Prime Network Control System Configuration Guide, Release 7.0.x.*

Revoking an MSE License Using the MSE CLI

You can also revoke an MSE license from the MSE command-line interface manually without using the NCS.

To revoke an MSE license using the MSE command-line interface, follow these steps:

Step 1   Log in to an MSE using command-line interface.

Step 2   Navigate to /opt/mse/licensing/

Step 3   Delete the license file by entering the following command:

`rm /opt/mse/licensing/`*license file name*`.lic`

where *license file name* is the name of the license file.

Step 4   Restart the MSE process by entering the following command:

`/etc/init.d/msed restart`

The MSE license is revoked.

Guidelines and Limitations

Follow these guidelines when adding an MSE to the NCS and registering device and wIPS product authorization keys:

- A mobility services engine can support multiple services.
- After adding a new mobility services engine, you can synchronize network designs (campus, building, and outdoor maps), controllers, switches (Catalyst 3000 series and 4000 series only), and event groups for the mobility services engine and the NCS.
- Tag PAKs are registered with AeroScout only if AeroScout engine for tags was selected during the addition of an MSE. This procedure is not necessary if Cisco tag engine was selected as the Cisco license is shared between all devices including the tags.
- If you had changed the username and password during the automatic installation script, enter those values here while adding a mobility services engine to the NCS. If you did not change the default passwords, we recommend that you rerun the automatic installation script and change the username and password.

Adding a Mobility Services Engine to the NCS

You can add MSE using the Add Mobility Services Engine dialog box in the Mobility Service page. In this dialog box, you can add licensing files, tracking parameters, and assign maps to MSE. If you launch the wizard with an existing MSE for configuration, then the Add MSE option appears as Edit MSE Details.

Tip   To learn more about Cisco Adaptive wIPS features and functionality, go to Cisco.com to watch a multimedia presentation. Here you can find the learning modules for a variety of NCS topics. Over future releases, there will be more overview and technical presentations to enhance your learning.

Note   The NCS Release 1.0 recognizes and supports MSE 3355 appropriately.

To add a mobility services engine to the NCS, log into the NCS and follow these steps:

Step 1   Verify that you can ping the mobility services engine.

Step 2   Choose **Services > Mobility Services** to display the Mobility Services page.

Step 3   From the Select a command drop-down list, choose **Add Mobility Services Engine**. Click **Go**.

Step 4   In the Device Name text box, enter a name for the mobility services engine.

Step 5   In the IP Address text box, enter the IP address of the mobility services engine.

Step 6   (Optional) In the Contact Name text box, enter the name of the mobility services engine administrator.

Step 7   In the User Name and Password text boxes, enter the username and password for the mobility services engine.

This refers to the NCS communication username and password created during the setup process.

If you have not specified the username and password during the setup process, use the defaults.

The default username and password are both *admin*.

Note   If you changed the username and password during the automatic installation script, enter those values here. If you did not change the default passwords, we recommend that you rerun the automatic installation script and change the username and password.

Step 8   Select the **HTTP** check box to allow communication between the mobility services engine and third-party applications. By default, the NCS uses HTTPs to communicate with MSE.

Step 9   Select the **Delete synchronized service assignments** check box if you want to permanently remove all service assignments from the mobility services engine.

This option is applicable for network designs, wired switches, controllers and event definitions. The existing location history data is retained, however, you must use manual service assignments to perform any future location calculations.

Step 10   Click **Next**. The NCS automatically synchronizes the selected elements with the MSE.

After the synchronization, the MSE License Summary page appears. You can use the MSE License Summary page to install a license, add a license, remove a license, install an activation license, and install service license.The Select Mobility Service page appears.

Step 11 To enable a service on the mobility services engine, select the check box next to the service. Services include Context-Aware Service and wIPS.

You can choose CAS to track clients, rogues, interferers, wired clients, and tags.

Choose either of the following engines to track tags:

- Cisco Tag Engine

    or

- Partner Tag Engine

Step 12 Click **Save**.

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> **Note** See Chapter 3, "Synchronizing Mobility Services Engines".

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> **Note** After adding a new mobility services engine, you can synchronize network designs (campus, building, and outdoor maps), controllers, switches (Catalyst Series 3000 only), and event groups on the local mobility services engine using the NCS. You can perform this synchronization immediately after adding a new mobility services engine or at a later time. To synchronize the local and the NCS databases, see Chapter 3, "Synchronizing Mobility Services Engines".

Enabling Services on the Mobility Services Engine

Step 1 After adding the license file, the Select Mobility Service page appears.

Step 2 To enable a service on the mobility services engine, select the check box next to the service. The different type of services are as follows:

- Context Aware Service—If you select the Context Aware Service check box, then you must select a location engine to perform location calculation. You can choose **CAS to track clients**, **rogues**, **interferers**, and **tags**. You can choose either of the following engines to track tags:

    – Cisco Context-Aware Engine for Clients and Tags

    – Partner Tag Engine

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    > **Note** By default, the Context Aware Service check box and Cisco Context-Aware Engine for Clients and Tags radio button are enabled.

- Wireless Intrusion Prevention System—If you select the Wireless Intrusion Prevention System check box, it detects wireless and performance threats.

- MSAP Service—If you select the MSAP Service check box, it provides service advertisements that describe the available services for the mobile devices.

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    > **Note** With MSE 6.0 and later, you can enable multiple services (CAS and wIPS) simultaneously. Before Version 6.0, mobility services engines only supported one active service at a time.

Step 3 Click **Next** to configure the tracking parameters.

Configuring MSE Tracking and History Parameters

Step 1   After you enable services on the mobility services engine, the Select Tracking & History Parameters page appears.

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> **Note**   If you skip configuring the tracking parameters, the default values are selected.

Step 2   You can select the clients that you want to keep track of by selecting the corresponding Tracking check box(es). The various tracking parameters are as follows:

- Wired Clients
- Wireless Clients
- Rogue Access Points
    - Exclude Adhoc Rogue APs
- Rogue Clients
- Interferers
- Active RFID Tags

Step 3   You can enable the history tracking of devices by selecting the corresponding devices check box(es). The different history parameters are as follows:

- Wired Stations
- Client Stations
- Rogue Access Points
- Rogue Clients
- Interferers
- Asset Tags

Step 4   Click Next to Assign Maps to the MSE.

Assigning Maps to the MSE

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> **Note**   The Assigning Maps page is available only if you select CAS as one of the services to be enabled on the MSE.

Step 1   Once you configure MSE tracking and history parameters, the Assigning Maps page appears.

The Assign Maps page shows the following information:

- Map Name
- Type (building, floor, campus)
- Status

Step 2   You can see the required map type by selecting All, Campus, Building, Floor Area, or Outdoor Area from the Filter option available on the page.

Step 3   To synchronize a map, select the **Name** check box and click **Synchronize**.

Upon synchronization of the network designs, the appropriate controllers that have APs assigned on a particular network design are synchronized with the MSE automatically. Click **Done** to save the MSE settings.

Deleting a Mobility Services Engine from the NCS

To delete one or more mobility services engines from the NCS database, follow these steps:

Step 1 Choose **Services > Mobility Services.**

The Mobility Services page appears.

Step 2 Select the mobility services engine to be deleted by selecting the corresponding **Device Name** check box(es).

Step 3 From the Select a command drop-down list, choose **Delete Service(s)**. Click **Go**.

Step 4 Click **OK** to confirm that you want to delete the selected mobility services engine from the NCS database.

Step 5 Click **Cancel** to stop deletion.

Registering Device and wIPS Product Authorization Keys

You receive a Product Authorization Key (PAK) when you order a CAS element, wIPS, or tag license from Cisco. You must register the PAK to receive the license file for installation on the mobility services engine. License files are e-mailed to you after successfully registering a PAK.

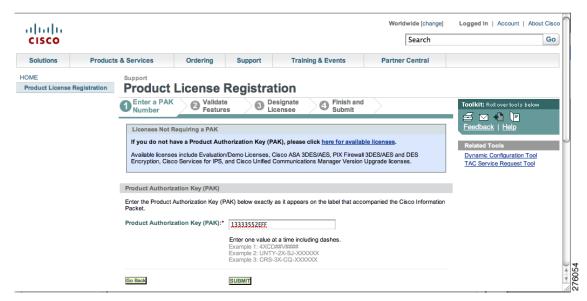Client and wIPS PAKs are registered with Cisco.

Note See the "Registering Tag PAKs" section on page 2-11 for more information.

To register a PAK to obtain a license file for installation, follow these steps:

Step 1 Open a browser page and enter the following URL:

https://tools.cisco.com/SWIFT/Licensing/PrivateRegistrationServlet

Step 2 Enter the PAK, and click **SUBMIT** (see Figure 2-1).
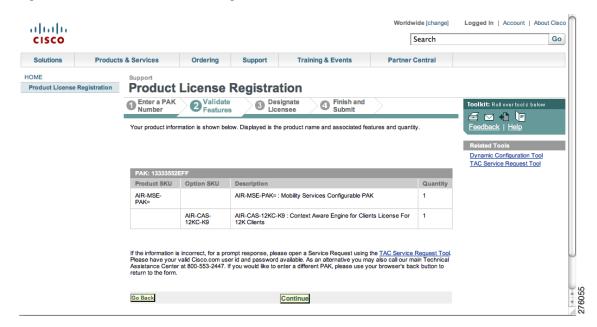
Figure 2-1   Enter PAK Number Page

Step 3   Verify the license purchase. Click **Continue** if correct (see Figure 2-2). The licensee entry page appears (see Figure 2-3).

Note   If the license is incorrect, click the **TAC Service Request Tool** URL to report the problem.

Figure 2-2   Validate Features Page

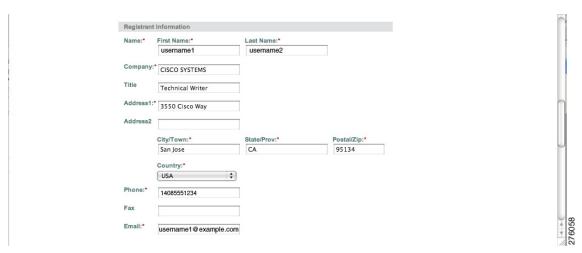*Figure 2-3*   *Designate Licensee, Page 1 of 2*

Step 4   In the Designate Licensee page, enter the UDI of the mobility services engine in the Host Id text box. This is the mobility services engine on which the license is installed.

> **Note**   UDI information for a mobility services engine is found in the General Properties at **Services** > **Mobility Services Engine** > *Device Name* > *System*.

Step 5   Select the **Agreement** check box. Registrant information appears beneath the Agreement check box (see Figure 2-4).
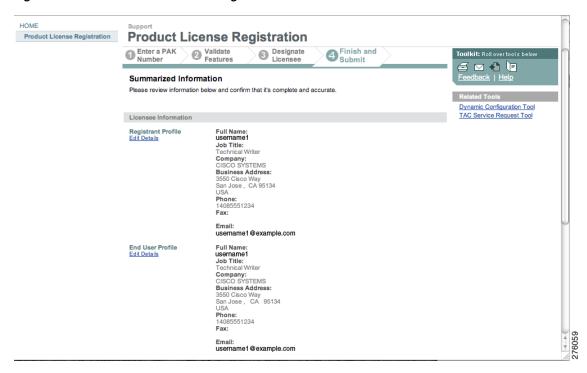
Figure 2-4   *Designate Licensee, Page 2 of 2*

Modify the information as necessary.

Step 6   If the registrant and end user are not the same person, select the **Licensee (End-User)** check box beneath registrant information and enter the information for the end user.

Step 7   Click **Continue**. A summary of entered data appears (see Figure 2-5).

Figure 2-5   Finish and Submit Page

Step 8   In the Finish and Submit page, review the registrant and end-user data. Click **Edit Details** to correct any information. Click **Submit**. A confirmation page appears (see Figure 2-6).

Figure 2-6   Registration Confirmation Page

Installing Device and wIPS License Files

You can install client and wIPS licenses from the NCS.

Note The tag license installation is separate only if the AeroScout engine was selected for tag calculation while adding the MSE.

Tag licenses are installed using the AeroScout System Manager. See the "Installing Tag Licenses" section on page 2-12 for more information.

To add a client or wIPS license to the NCS after registering the PAK, follow these steps:

Step 1 Choose **Administration > License Center**.

Figure 2-7   Administration > License Center Page

Step 2 Choose **Files** > **MSE Files** from the left sidebar menu.

Step 3 Click **Add**. The Add a License File dialog box appears.

Figure 2-8   Add a License File Dialog box

Step 4 Choose the applicable MSE name from the MSE Name drop-down list.

Note Verify that the UDI of the selected mobility services engine matches the one you entered when registering the PAK.

Step 5 Click **Choose File** to browse to and select the license file.

Step 6 Click **Upload**. The newly added license appears in the MSE license file list.

Registering Tag PAKs

To register tags at the AeroScout website, follow these steps:

Step 1 Open a browser and enter the following URL:

http://www.aeroscout.com/support

Step 2 Log in if you have an existing account, or click **Create New Account** to create a log in, username, and password.

If you created a new account, you receive a notification e-mail with your username and password.

Step 3 After logging in, click **Register Products Purchased from Cisco** on the Home tab.

To register your product, you need the following information: PAK number, MSE ID (MSE serial number (S/N)), and Installation Type.

You receive an e-mail message from AeroScout that confirms the registration.

Your PAK number is verified within two business days by e-mail. If your PAK number is found to be invalid, you must register again with a valid PAK number.

Installing Tag Licenses

After successfully registering your PAK, you receive an e-mail with your license key and instructions on how to download Context-Aware Service software and a copy of the *AeroScout Context-Aware Engine for Tags, for Cisco Mobility Services Engine Users Guide*.

See the *AeroScout Context-Aware for Tags, for Cisco Mobility Services Engine Users Guide* for details on installing your tag licenses at the following URL:

http://support.aeroscout.com