



CHAPTER 4

Configuring and Viewing System Properties

This chapter describes how to configure and view system properties on the mobility services engine.

This chapter contains the following sections:

- [Editing General Properties and Viewing Performance, page 4-1](#)
- [Modifying NMSP Parameters, page 4-5](#)
- [Viewing Active Sessions on a System, page 4-7](#)
- [Adding and Deleting Trap Destinations, page 4-7](#)
- [Viewing and Configuring Advanced Parameters, page 4-9](#)

Editing General Properties and Viewing Performance

General Properties—You can use Cisco WCS to edit the general properties of a mobility services engine such as contact name, username, password, services enabled on the system, enabling or disabling a service or enabling the mobility services engine for synchronization. Refer to the [“Editing General Properties” section on page 4-1](#).



Note

Use the general properties to modify the username and password that you defined during initial setup of the mobility services engine.

Performance—You can use Cisco WCS to view CPU and memory use for a given mobility services engine. Refer to the [“Viewing Performance Information” section on page 4-4](#).

This section contains the following topics:

- [Editing General Properties, page 4-1](#)
- [Viewing Performance Information, page 4-4](#)

Editing General Properties

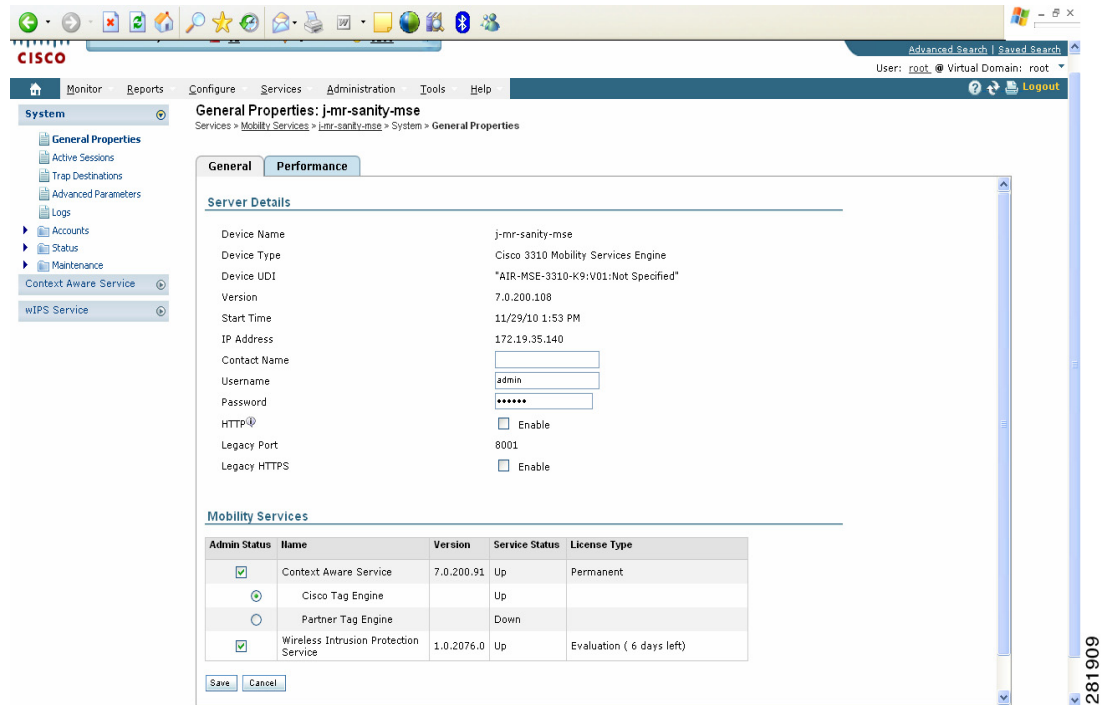
To edit the general properties of a mobility services engine, follow these steps:

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- Step 1** In WCS, choose **Services > Mobility Services** to display the Mobility Services page.
 - Step 2** Click the name of the mobility services engine you want to edit. Two tabs appear with the following headings: General and Performance (see [Figure 4-1](#)).



Note If the General Properties page does not display by default, choose **Systems > General Properties** from the left sidebar menu.

Figure 4-1 General Properties



Step 3 Modify the parameters as appropriate on the General tab. [Table 4-1](#) describes each parameter.

Table 4-1 General Properties

Parameter	Configuration Options
Contact Name	Enter a contact name for the mobility services engine.
User Name	Enter the login username for the WCS server that manages the mobility services engine.
Password	Enter the login password for the WCS server that manages the mobility services engine.
HTTP	Select the Enable check box to enable HTTP. By default, HTTPS is enabled. Note HTTP is primarily enabled to allow third-party applications to communicate with the mobility services engine. Note WCS always communicates through HTTPS.
Legacy Port	Enter the mobility services port number that supports HTTPS communication. The Legacy HTTPS option must also be enabled. Default value is 8001.
Legacy HTTPS	This parameter does not apply to mobility services engines. It applies only to location appliances.

Table 4-1 General Properties (continued)

Parameter	Configuration Options
Delete synchronized service assignments and enable synchronization	Select this check box if you want to permanently remove all service assignments from the mobility services engine. This option will show up only when the delete synchronized service assignments check box was unselected while adding an mobility services engine.
Mobility Services	<p>To enable a service on the mobility services engine, select the check box next to the service. Services include Context Aware and WIPS.</p> <p>You can choose CAS to track clients, rogues, interferers, wired clients, and tags.</p> <p>Choose either of the following engines to track tags:</p> <ul style="list-style-type: none"> • Cisco Tag Engine or • Partner Tag Engine <p>Note Once selected, the service displays as Up (active). All inactive services are noted as Down (inactive) on the selected (current) system and on the network.</p> <p>Note CAS and WIPS can operate on a mobility services engine at the same time.</p> <p>Note All mobility services engines are shipped with an evaluation license of CAS and WIPS. Evaluation copies are good for a period of 60 days (480 hours) and have preset device limits for each service. Licenses are usage-based (time is decremented by the number of days you use it rather than by the number of calendar days passed).</p> <p>Click the here link to see the number of devices that can be assigned for the current system (see Figure 4-1).</p> <p>In the License Center page (see Figure 4-2), choose the MSE left sidebar menu option to see license details for all mobility services engines on the network (see Figure 4-3).</p> <p>Note For more information on purchasing and installing licenses, refer to:</p> <p>http://www.cisco.com/en/US/prod/collateral/wireless/ps9733/ps9742/d_ata_sheet_c07-473865.html</p>

**Note**

The following TCP ports are in use on an MSE in Release 6.0 and above: tcp 22: MSE SSH port, tcp 80: MSE HTTP port, tcp 443: MSE HTTPS port, tcp 1411: AeroScout, tcp 1999: AeroScout internal port, tcp 4096: AeroScout notifications port, tcp 5900X: AeroScout (X can vary from 1 to 10), and tcp 8001: Legacy port. Used for location APIs.

**Note**

The following UDP ports are in use on an MSE in Release 6.0 and above: udp 123: NTPD port (open after NTP configuration), udp 162: AeroScout SNMP, udp/tcp 4000X: AeroScout proxy (X can vary from 1 to 5), udp 12091: AeroScout devices (TDOA Wi-Fi Receivers, chokepoints), udp 12092: AeroScout devices (TDOA Wi-Fi Receivers, chokepoints), udp 32768: Location internal port, udp 32769: AeroScout internal port, and udp 37008: AeroScout internal port.

Figure 4-2 License Summary for Selected Mobility Services Engine

The screenshot shows the Cisco Wireless Control System interface. The 'License Center' section is active, displaying the 'MSE Summary' for a selected MSE named 'mse-h'. The table below shows the license details for this MSE.

MSE Name (UDI)	Type	Limit	Count	Unlicensed Count	% Used	License Type	Status
mse-h (AIR-MSE-3310-K9-V01:Not Specified)							
	wIPS Monitor Mode APs	20	0	0	0%	Evaluation (60 days left)	Inactive
	Tag Elements	100	0	0	0%	Evaluation (59 days left)	Active
	Client Elements	100	0	0	0%	Evaluation (59 days left)	Active

Figure 4-3 License Summary for All Mobility Services Engines

The screenshot shows the Cisco Wireless Control System interface. The 'License Center' section is active, displaying the 'MSE Summary' for all Mobility Services Engines. The table below shows the license details for all MSEs.

MSE Name (UDI)	Type	Limit	Count	Unlicensed Count	% Used	License Type	Status
nikhil-high-end (AIR-MSE-3310-K9-V01:Not Specified)							
	wIPS Monitor Mode APs	20	0	0	0%	Evaluation (60 days left)	Inactive
	Tag Elements	100	0	0	0%	Evaluation (59 days left)	Active
	Client Elements	100	0	0	0%	Evaluation (59 days left)	Active
mse-h (AIR-MSE-3310-K9-V01:Not Specified)							
	wIPS Monitor Mode APs	20	0	0	0%	Evaluation (60 days left)	Inactive
	Tag Elements	100	0	0	0%	Evaluation (59 days left)	Active
	Client Elements	100	0	0	0%	Evaluation (59 days left)	Active
mse-anshu (AIR-MSE-3310-K9-V01:Not Specified)							
	wIPS Monitor Mode APs	20	0	0	0%	Evaluation (60 days left)	Inactive
	Tag Elements	500	0	0	0%	Permanent	Active
	Client Elements	1000	0	0	0%	Permanent	Active

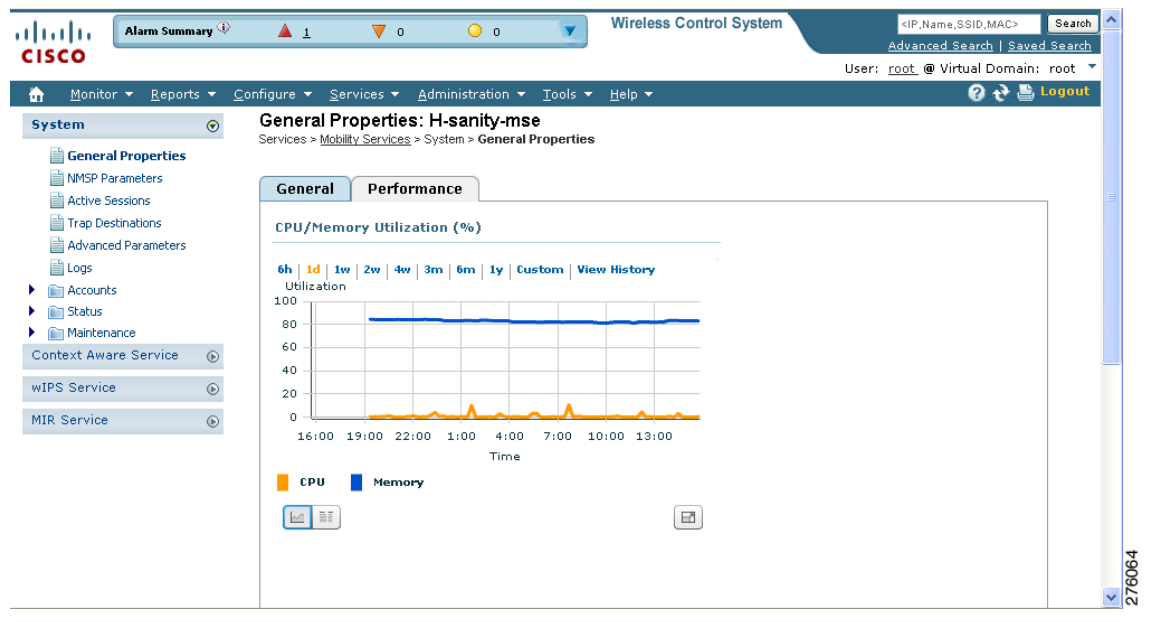
Step 4 Click **Save** to update the Cisco WCS and mobility services engine databases.

Viewing Performance Information

To view performance details, follow these steps:

- Step 1** In WCS, choose **Services > Mobility Services** to display the Mobility Services page.
- Step 2** Click the name of the mobility services engine you want to view. Two tabs appear with the following headings: General and Performance.
- Step 3** Click the **Performance** tab (see Figure 4-4).
- Click a time period (such as 1w) on the y-axis to see performance numbers for periods greater than one day.
- To view a textual summary of performance, click the second icon under CPU.
- To enlarge the screen, click the icon at the lower right.

Figure 4-4 CPU and Memory Performance



Modifying NMSP Parameters

Network Mobility Services Protocol (NMSP) is the protocol that manages communication between the mobility services engine and the controller or selected Catalyst 3000 and 4000 series switches. Transport of telemetry, emergency, and chokepoint information between the mobility services engine and the controller and Catalyst switch is managed by this protocol.



Note This menu option is only available in MSE releases prior to 7.0.105.0.



Note No change in the default parameter values is recommended unless the network is experiencing slow response or excessive latency.



Note Telemetry, emergency, and chokepoint information is only seen on controllers and WCS installed with Release 4.1 software or later.



Note The TCP port (16113) that the controller or Catalyst switch and the mobility services engine communicate over *must* be open (not blocked) on any firewall that exists between the controller or Catalyst switch and mobility services engine for NMSP to function.

To configure NMSP parameters, follow these steps:

- Step 1** In Cisco WCS, choose **Services > Mobility Services**.
- Step 2** Click the name of the mobility services engine whose properties you want to edit.
- Step 3** Choose **System > NMSP Parameters**. The configuration options appear.
- Step 4** Modify the NMSP parameters as appropriate. [Table 4-2](#) describes each parameter.

Table 4-2 NMSP Parameters

Parameter	Description
Echo Interval	How frequently an echo request is sent from a mobility services engine to a controller. The default value is 15 seconds. Allowed values range from 1 to 120 seconds. Note If a network is experiencing slow response, you can increase the values of the echo interval, neighbor dead interval and the response timeout values to limit the number of failed echo acknowledgements.
Neighbor Dead Interval	The number of seconds that the mobility services engine waits for a successful echo response from the controller before declaring the neighbor dead. This timer begins when the echo request is sent. The default values is 30 seconds. Allowed values range from 1 to 240 seconds. Note This value must be at least two times the echo interval value.
Response Timeout	How long the mobility services engine waits before considering the pending request as timed out. The default value is 1 second. Minimum value is one (1). There is no maximum value.
Retransmit Interval	Interval of time that the mobility services engine waits between notification of a response time out and initiation of a request retransmission. The default setting is 3 seconds. Allowed values range from 1 to 120 seconds.
Maximum Retransmits	The maximum number of retransmits that are sent in the absence of a response to any request. The default setting is 5. Allowed minimum value is zero (0). There is no maximum value.

- Step 5** Click **Save** to update the Cisco WCS and mobility services engine databases.

Viewing Active Sessions on a System

You can view active user sessions on the mobility services engine.

For every session, WCS displays the following information:

- Session identifier
- IP address from which the mobility services engine is accessed
- Surname of the connected user
- Date and time when the session started
- Date and time when the mobility services engine was last accessed
- How long the session was idle since it was last accessed

To view active user sessions, follow these steps:

-
- Step 1** In WCS, choose **Services > Mobility Services**.
- Step 2** Click the name of the mobility services engine on which you want to view active sessions.
- Step 3** Choose **System > Active Sessions**.
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Adding and Deleting Trap Destinations

You can specify which WCS or Cisco Security Monitoring, Analysis, and Response System (CS-MARS) network management platform is the recipient of SNMP traps generated by the mobility services engine.

When a user adds a mobility services engine using WCS, that WCS platform automatically establishes itself as the default trap destination. If a redundant WCS configuration exists, the backup WCS is not listed as the default trap destination unless the primary WCS fails and the backup system takes over. Only an active WCS is listed as a trap destination.

This section contains the following topics:

- [Adding Trap Destinations, page 4-7](#)
- [Deleting Trap Destinations, page 4-8](#)

Adding Trap Destinations

To add a trap destination, follow these steps:

-
- Step 1** In WCS, choose **Services > Mobility Services**.
- Step 2** Click the name of the mobility services engine for which you want to define a new SNMP trap destination server.
- Step 3** Choose **System > Trap Destinations**.
- Step 4** From the Select a command drop-down list, choose **Add Trap Destination**, and click **Go**.
The Add Trap Destination page appears.
- Step 5** [Table 4-3](#) lists the various fields in the New Trap Destination page.

Table 4-3 Add Trap Destination

Field	Description
IP Address	IP address for the trap destination.
Port Number	Port number for the trap destination. The default port number is 162.
Destination Type	This field is not editable and has a value Other .
SNMP Version	Select either v2c or v3.
The following fields appear only if you select v3 as the SNMP version:	
User Name	Username for the SNMP version 3.
Security Name	Security name for the SNMP version 3.
Authentication Type	Select either of the following: HMAC-MD5 HMAC-SHA
Authentication Password	Authentication password for the SNMP version 3.
Privacy Type	Select either of the following: CBC-DES CFB-AES-128 CFB-AES-192 CFB-AES-256
Privacy Password	Privacy password for the SNMP version 3.



Note All trap destinations are identified as *other* except for the automatically created *default* trap destination.

Step 6 Click **Save**.

You are returned to the Trap Destinations summary page and the newly defined trap is listed.

Deleting Trap Destinations

To delete a trap destination, follow these steps;

-
- Step 1** In WCS, choose **Services > Mobility Services**.
 - Step 2** Click the name of the mobility services engine for which you want to delete a SNMP trap destination server.
 - Step 3** Choose **System > Trap Destinations**.
 - Step 4** Select the check box next to the trap destination entry that you want to delete.

- Step 5** From the Select a command drop-down list, choose **Delete Trap Destination**, and click **Go**.
- Step 6** In the message box that appears, click **OK** to confirm deletion.
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Viewing and Configuring Advanced Parameters

In the WCS Advanced Parameters page (see [Figure 4-5](#)) you can both view general system level settings of the mobility services engine and configure monitoring parameters.

- Refer to the “[Viewing Advanced Parameters Settings](#)” section on [page 4-9](#) to view current system-level advanced parameters.
- Refer to the “[Initiating Advanced Commands](#)” section on [page 4-11](#) to modify the current system-level advanced parameters or initiate advanced commands such as system reboot, system shutdown, or clear a configuration file.

This section contains the following topics:

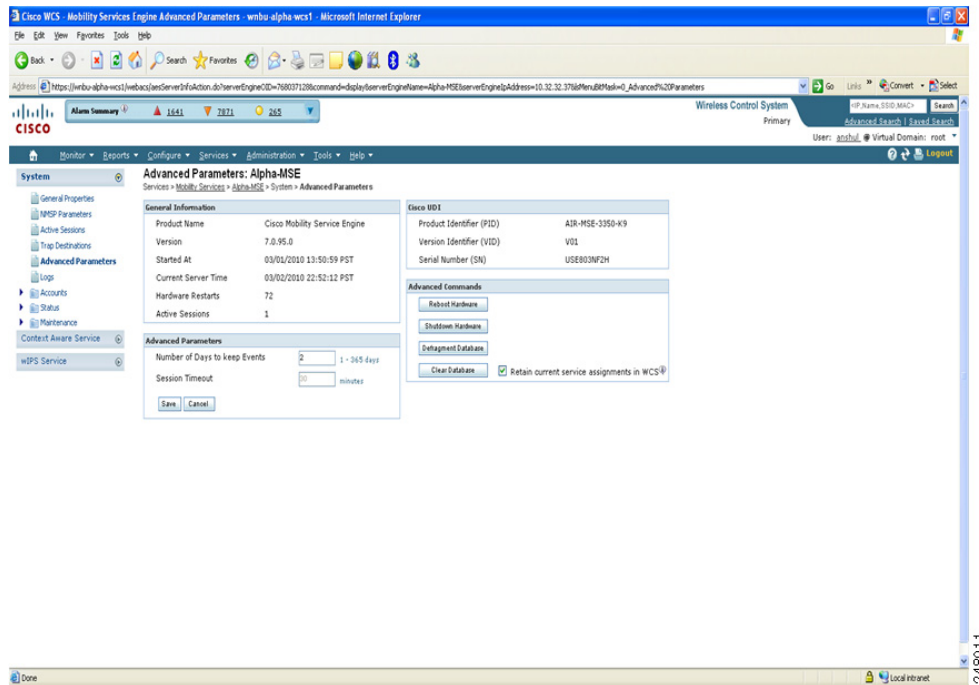
- [Viewing Advanced Parameters Settings, page 4-9](#)
- [Initiating Advanced Parameters, page 4-10](#)
- [Initiating Advanced Commands, page 4-11](#)

Viewing Advanced Parameters Settings

To view the advanced parameter settings of the mobility services engine, follow these steps:

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- Step 1** In Cisco WCS, choose **Services > Mobility Services**.
- Step 2** Click the name of a mobility services engine to view its status.
- Step 3** Choose **System > Advanced Parameters** (see [Figure 4-5](#)).

Figure 4-5 Services > Mobility Services > System > Advanced Parameters



Initiating Advanced Parameters

The Advanced Parameters section of WCS enables you to set the number of days events are kept and set session time out values. It also enables you to initiate a system reboot or shutdown, or clear the system database.



Note

You can use WCS to modify troubleshooting parameters for a mobility services engine or a location appliance.

In the Advanced Parameters page, you can use WCS as follows:

- To set how long events are kept and how long before a session times out. For more information, see [Configuring Advanced Parameters, page 4-10](#).
- To initiate a system reboot or shutdown, or clear the system database. For more information, see [Initiating Advanced Commands, page 4-11](#).

Configuring Advanced Parameters

To configure advanced parameters, follow these steps:

- Step 1** Choose **Services > Mobility Services**.
- Step 2** Click the name of the mobility service whose properties you want to edit.
- Step 3** From the left sidebar menu, choose **System > Advanced Parameters**.

Step 4 View or modify the advanced parameters as necessary.

- General Information
- Advanced Parameters



Caution Enable advanced debugging only under the guidance of Cisco TAC personnel because advanced debugging slows the mobility service down.

- Number of Days to keep Events—Enter the number of days to keep logs. Change this value as required for monitoring and troubleshooting.
- Session Timeout—Enter the number of minutes before a session times out. Change this value as required for monitoring and troubleshooting. Currently this option appears greyed out.
- Cisco UDI
 - Product Identifier (PID)—The Product ID of the mobility services engine.
 - Version Identifier (VID)—The version number of the mobility services engine.
 - Serial Number (SN)—Serial number of the mobility services engine.
- Advanced Commands
 - Reboot Hardware—Click to reboot the mobility services hardware. See [Rebooting or Shutting Down a System, page 4-11](#) for more information.
 - Shutdown Hardware—Click to turn off the mobility services hardware. See [Rebooting or Shutting Down a System, page 4-11](#) for more information.
 - Clear Database—Click to clear the mobility services database. See [Clearing the System Database, page 4-12](#) for more information. Unselect the **Retain current service assignments in WCS** check box to remove all existing services assignments from the WCS and MSE. The resources have to be reassigned in the Services > Synchronize Services page. By default this option is selected.

Step 5 Click **Save** to update the WCS and mobility services databases.

Initiating Advanced Commands

You can initiate a system reboot or shutdown, or clear the system configuration by clicking the appropriate button in the Advanced Parameters page.

This section contains the following topics:

- [Rebooting or Shutting Down a System, page 4-11](#)
- [Clearing the System Database, page 4-12](#)

Rebooting or Shutting Down a System

To reboot or shut down a mobility services engine, follow these steps:

Step 1 In WCS, choose **Services > Mobility Services**.

- Step 2** Click the name of a mobility services engine you want to reboot or shut down.
- Step 3** Choose **System > Advanced Parameters**.
- Step 4** In the Advanced Commands section of the page, click the appropriate button (**Reboot Hardware** or **Shutdown Hardware**).
- Click **OK** in the confirmation pop-up dialog box to initiate either the reboot or shutdown process. Click **Cancel** to stop the process.
-

Clearing the System Database

To clear the database of a mobility services engine, follow these steps:

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- Step 1** In WCS, click **Services > Mobility Services**.
- Step 2** Click the name of the mobility services engine you want to configure.
- Step 3** Choose **System > Advanced Parameters**.
- Step 4** In the Advanced Commands section, unselect the **Retain current service assignments in WCS** check box to remove all existing service assignments from WCS and MSE.
- The resources must be reassigned in the Services > Synchronize Services page. By default, this option is checked.
- Step 5** In the Advanced Commands area, click **Clear Database**.
- Step 6** Click **OK** to clear the mobility services engine database.
-