



## CHAPTER 4

# Configuring and Viewing System Properties

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

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# 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, and the number of remaining units on each active license. Refer to the “[Editing General Properties](#)” section on page 4-2.



## Note

You would 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 4-5.

## Editing General Properties

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

- Step 1** In Cisco WCS, choose **Services > Mobility Services** to display the Mobility Services window.
- Step 2** Click the name of the mobility services engine you want to edit. A two-tabbed panel appears with the following headings: General and Performance (see [Figure 4-1](#)).

**Figure 4-1** *Services > Mobility Services > General Properties*

The screenshot displays the Cisco WCS web interface for editing the general properties of a mobility services engine. The browser window title is "Cisco WCS: Mobility Services Engine General Properties - 172.19.35.44 - Microsoft Internet Explorer". The address bar shows the URL: "https://172.19.35.44/webco/ServerEngineGeneralAction.do?serverEngineID=104995&command=getAll&MenuId=0\_General%20Properties". The interface includes a navigation menu on the left with options like Monitor, Reports, Configure, Services, Administration, Tools, and Help. The main content area is titled "General Properties: j-sanity-mse" and has two tabs: "General" (selected) and "Performance".

**Server Details**

Device Name	j-sanity-mse
Device Type	Cisco 3310 Mobility Services Engine
Device UDI	"AIR-MSE-3310-K9-V01-QCN12160008"
Version	7.0.104.0
Start Time	4/16/10 12:06 PM
IP Address	209.165.201.225
Contact Name	<input type="text"/>
Username	admin
Password	*****
HTTP-IP	<input type="checkbox"/> Enable
Legacy Port	8001
Legacy HTTPS	<input type="checkbox"/> Enable

**Mobility Services**

Admin Status	Name	Version	Service Status	License Type
<input checked="" type="checkbox"/>	Context Aware Service	7.0.104.0	Up	Permanent
<input type="checkbox"/>	Wireless Intrusion Protection Service	1.0.2066.0	Down	Permanent

At the bottom of the configuration area, there are "Save" and "Cancel" buttons.



**Note** If the General Properties window does not appear by default, choose **System > General Properties** (left panel).

**Step 3** Modify the parameters as appropriate in the General panel. [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.
Username	Enter the login username for the Cisco WCS server that manages the mobility services engine. This replaces any previously defined username including any set during initial setup.
Password	Enter the login password for the Cisco WCS server that manages the mobility services engine. This replaces any previously defined password including any set during initial setup.
Port	<p>8001</p> <p><b>Note</b> The following ports are in use on a mobility services engine (MSE) in release 6.0:</p> <p>tcp 80: MSE HTTP port  tcp 22: MSE SSH port  tcp 443: MSE HTTPS port  tcp 8001: Legacy port. Used for location APIs. Change in Cisco WCS.  udp 123: NTPD port (open after NTP configuration)  udp 32768: Location internal port  tcp 4096: AeroScout notifications port  tcp 1411: AeroScout SM  tcp 1999: AeroScout internal port  tcp 5900X: AeroScout (X could vary from 1 to 10)  udp 32769: AeroScout internal port  udp 37008: AeroScout internal port  udp 162: AeroScout SNMP  udp 12091: AeroScout devices (TDOA Wi-Fi Receivers, chokepoints)  udp 12092: AeroScout devices (TDOA Wi-Fi Receivers, chokepoints)  udp/tcp 4000X: AeroScout proxy (X could vary from 1 to 5)</p>
HTTP	<p>Check the <b>Enable</b> check box to enable HTTP. By default, HTTPS is enabled.</p> <p><b>Note</b> HTTP is primarily enabled to allow third-party applications to communicate with the mobility services engine.</p> <p><b>Note</b> Cisco WCS always communicates through HTTPS.</p>

Table 4-1 General Properties (continued)

Parameter	Configuration Options
Legacy Port	Enter the mobility services port number that supports HTTPS communication. The Legacy HTTPS option must also be enabled.
Legacy HTTPS	This parameter does not apply to mobility services engines. It applies only to location appliances.
Mobility Services	<p>To enable a service (CAS, wIPS) on a mobility services engine, check the <b>Admin Status</b> check box next to the service you want to enable.</p> <p><b>Note</b> 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><b>Note</b> CAS and wIPS can operate on a mobility services engine at the same time.</p> <p><b>Note</b> 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 calendar days passed).</p> <p><b>Note</b> When you are applying an evaluation license to MSE, the behavior is slightly different from a permanent license. Firstly, an evaluation license for MSE will only increase the evaluation period but not the count of the licensed elements. Secondly, when an evaluation license is applied, there is no license file copied to MSE. Instead the update is made directly in the MSE database. Also, you will not see the license information under <b>License Center &gt; Files &gt; MSE</b> page.</p> <p>Click the <b>here</b> link (bottom) to see the time remaining on service licenses (evaluation or purchased) and the number of devices that can be assigned for the current system (see <a href="#">Figure 4-1</a>).</p> <p>On the license summary page (see <a href="#">Figure 4-2</a>), click <b>MSE</b> (left) to see details on licenses for all mobility services engines on the network (see <a href="#">Figure 4-3</a>).</p> <p><b>Note</b> For more information on purchasing and installing licenses, refer to:</p> <p><a href="http://www.cisco.com/en/US/prod/collateral/wireless/ps9733/ps9742/data_sheet_c07-473865.html">http://www.cisco.com/en/US/prod/collateral/wireless/ps9733/ps9742/data_sheet_c07-473865.html</a></p>

Figure 4-2 License Summary for Selected Mobility Services Engine

The screenshot shows the Cisco WCS License Center interface. The breadcrumb navigation is Administration > License Center > Summary > MSE Summary. The table displays the following data:

MSE Name (UDI)	Type	Limit	Count	Unlicensed Count	% Used	License Type	Status
Entries 1 - 1 of 1							
L 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
Entries 1 - 1 of 1							

Figure 4-3 License Summary for All Mobility Services Engines

The screenshot shows the Cisco WCS License Center interface. The breadcrumb navigation is Administration > License Center > Summary > MSE Summary. The table displays the following data:

MSE Name (UDI)	Type	Limit	Count	Unlicensed Count	% Used	License Type	Status
Entries 1 - 6 of 6							
L 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
L 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
L 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
Entries 1 - 6 of 6							

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

## Viewing Performance Information

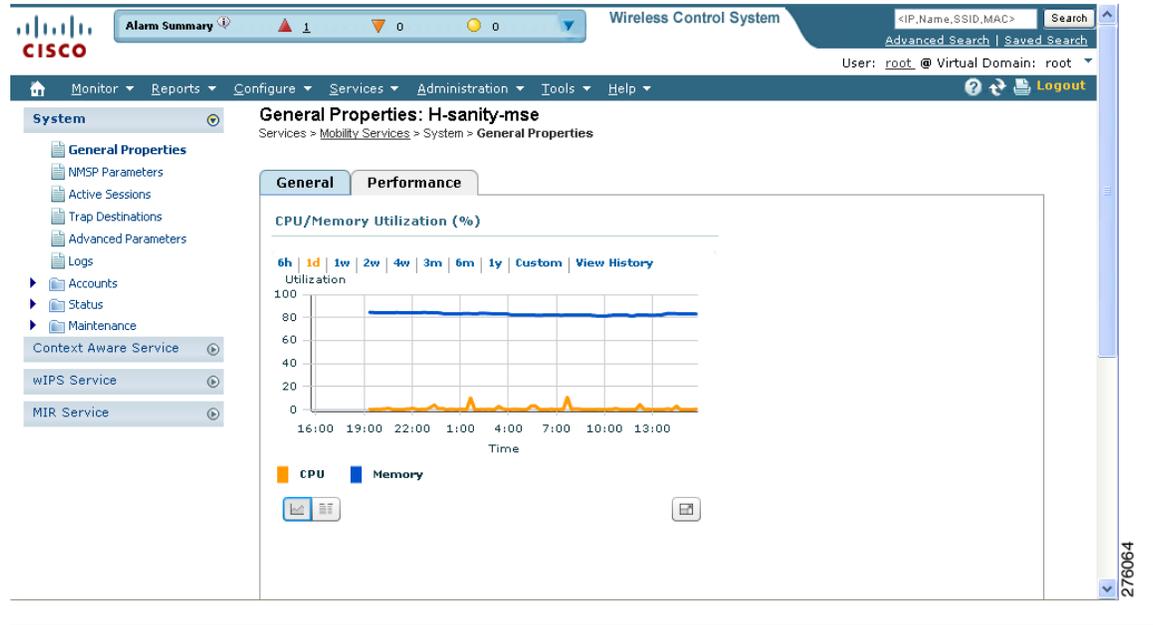
To view performance details, follow these steps:

- Step 1** In Cisco WCS, choose **Services > Mobility Services** to display the Mobility Services window.
- Step 2** Click the name of the mobility services engine you want to view. A two-tabbed panel appears with the following headings: General and Performance.
- Step 3** Click **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. Transport of telemetry, emergency, and chokepoint information between the mobility services engine and the controller is managed by this protocol.



### Note

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

- Telemetry, emergency and chokepoint information is only seen on controllers and Cisco WCS installed with release 4.1 software or later.
- The TCP port (16113) that the controller and mobility services engine communicate over **MUST** be open (not blocked) on any firewall that exists between the controller and mobility services engine.

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.  <b>Note</b> 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 value is 30 seconds. Allowed values range from 1 to 240 seconds.  <b>Note</b> 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 1. There is no maximum value.
Retransmit Interval	Interval of time that the mobility services engine waits between notification of a response timeout 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 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, Cisco WCS displays the following information:

- Session identifier
- IP address from which the mobility services engine is accessed
- Username 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 Cisco WCS, choose **Services > Mobility Services**.
  - Step 2** Click the name of the mobility services engine for which you want to view active sessions.
  - Step 3** Choose **System > Active Sessions**.
- 

## Adding and Deleting Trap Destinations

You can specify which Cisco 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 Cisco WCS, that WCS platform automatically establishes itself as the default trap destination. If a redundant Cisco 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 Cisco WCS is listed as a trap destination.

### Adding Trap Destinations

To add a trap destination, follow these steps:

- 
- Step 1** In Cisco 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** Select **Add Trap Destination** from the Select a command drop-down menu. Click **Go**.
  - Step 5** Enter IP address of destination SNMP server.
  - Step 6** Port number default of *162* is auto-populated. You can modify this as needed.
  - Step 7** Community default value of *public* is auto-populated. You can modify this as needed.
  - Step 8** Destination default value of *other* auto-populates.




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

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- Step 9** Click **Save**.
- You are returned to the trap destinations summary window and the newly defined trap is listed.
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## Deleting Trap Destinations

To delete a trap destination, follow these steps;

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- Step 1** In Cisco 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** Check the check box next to the trap destination entry that you want to delete.
  - Step 5** Select **Delete Trap Destination** from the Select a command drop-down menu. 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 Cisco WCS, at the Advanced Parameters window (see [Figure 4-5](#)) you can both view general system level settings of the mobility services engine and configure monitoring parameters.

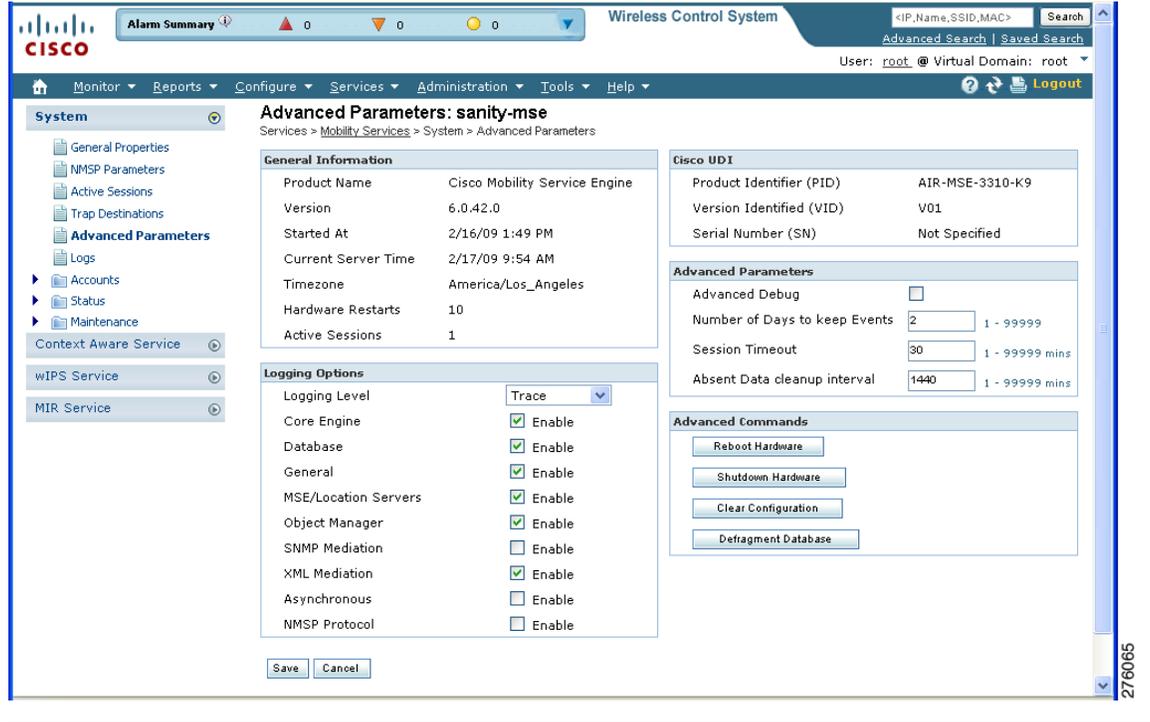
- Refer to the [“Viewing Advanced Parameters Settings”](#) section on page 4-9 to view current system-level advanced parameters.
- Refer to the [“Initiating Advanced Commands”](#) section on page 4-11 to modify the current system-level advanced parameters or initiate advanced commands such as system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

## Viewing Advanced Parameters Settings

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

- 
- 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 &gt; Mobility Services &gt; System &gt; Advanced Parameters



## Configuring Advanced Parameters

On the Advanced Parameters window, you can use Cisco WCS:

- To specify the logging level and types of messages to log.  
Refer to the [“Configuring Logging Options”](#) section on page 4-10.
- To set how long events are kept, how long before a session time-outs, and the interval between data clean ups.  
Refer to the [“Configuring Advanced Parameters”](#) section on page 4-11.
- To enable or disable advanced debug level messages in the logs.  
Refer to the [“Configuring Advanced Parameters”](#) section on page 4-11.

## Configuring Logging Options

You can use Cisco WCS to specify the logging level and types of messages to log.

To configure logging options, follow these steps:

- Step 1** In Cisco WCS, choose **Services > Mobility Services**.
- Step 2** Click the name of the mobility services engine that you want to configure.
- Step 3** Choose **System > Advanced Parameters**. The advanced parameters for the selected mobility services engine appears.

- Step 4** Scroll down to the Logging Options section and choose the appropriate option (Off, Error, Information, or Trace) from the Logging Level drop-down menu.

**Caution**

Use **Error** and **Trace** only when directed to do so by Cisco Technical Assistance Center (TAC) personnel.

- Step 5** Check the **Enabled** check box next to each item listed in that section to begin logging of its events.
- Step 6** Click **Save**.

## Configuring Advanced Parameters

To configure advanced parameters, follow these steps:

- Step 1** In Cisco WCS, choose **Services > Mobility Services**.
- Step 2** Click the name of the mobility services engine that you want to configure.
- Step 3** Choose **System > Advanced Parameters**. The advanced parameters for the selected mobility services engine appears.
- Step 4** Scroll down to the Advanced Parameters and make the appropriate changes. [Table 4-3](#) describes the parameters.

**Table 4-3** *Advanced Parameters*

Parameter	Configuration Options
Advanced debug	Check the check box to enable advanced debug. This enables reporting of advanced debug level messages to the log files.
Number of days to keep events	Enter the number of days that events are kept in the event table. Default value is 2.
Session time-out (minutes)	Enter the number of minutes a Cisco WCS or client session can remain inactive before it times out. Default value is 30.
Absent data cleanup interval (minutes)	Enter the number of minutes that data for <i>absent</i> mobile stations is kept. An <i>absent</i> mobile station is one that was discovered but does not appear in the network. Default value is 1440.

## Initiating Advanced Commands

You can initiate a system reboot or shutdown, clear the system database, or defragment a database by clicking the appropriate button from the Advanced Parameters page.

## Rebooting or Shutting Down a System

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

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- Step 1** In Cisco WCS, click **Services > Mobility Services**.
  - Step 2** Click the name of a mobility services engine you want to reboot or shutdown
  - Step 3** Click **System > Advanced Parameters** (see [Figure 4-5](#)).
  - Step 4** In the Advanced Commands section of the window (right), click the appropriate button (**Reboot Hardware** or **Shutdown Hardware**).
- Click **OK** in the confirmation pop-up window 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:

- 
- Step 1** In Cisco WCS, click **Services > Mobility Services**.
  - Step 2** Click the name of a mobility services engine whose configuration file you want to clear.
  - Step 3** Click **System > Advanced Parameters** (see [Figure 4-5](#)).
  - Step 4** In the Advanced Commands section of the window (right), click the **Clear Configuration** button.
- Click **OK** in the confirmation pop-up window to initiate the process. Click **Cancel** to stop the process.
- 

## Defragment Database

To defragment the database of a 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 whose database you want to defragment.
  - Step 3** Choose **System > Advanced Parameters** (see [Figure 4-5](#)).
  - Step 4** In the Advanced Commands section of the window (right), click the **Defragment Database** button.
- Click **OK** in the confirmation pop-up window to initiate the process. Click **Cancel** to stop the process.
-