



# CHAPTER 11

## Performing Maintenance Operations

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This chapter describes how to back up and restore mobility services engine data and how to update the mobility services engine software. It also describes other maintenance operations.

This chapter contains the following sections:

- [Guidelines and Limitations, page 11-1](#)
- [Recovering a Lost Password, page 11-1](#)
- [Recovering a Lost Root Password, page 11-2](#)
- [Backing Up and Restoring Mobility Services Engine Data, page 11-2](#)
- [Downloading Software to the Mobility Services Engines, page 11-4](#)
- [Configuring the NTP Server, page 11-6](#)
- [Resetting the System, page 11-6](#)
- [Clearing the Configuration File, page 11-6](#)

### Guidelines and Limitations

- Ensure that you remember the password and change the password only if it is absolutely necessary.
- While recovering a lost root password, the shell prompt does not appear if you set up a single-user mode password.

### Recovering a Lost Password

To recover a lost or forgotten password for a mobility services engine, follow these steps:

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- Step 1** When the GRUB page appears, press **Esc** to enter the boot menu.
  - Step 2** Press **e** to edit.
  - Step 3** Navigate to the line beginning with kernel and press **e**.  
At the end of the line, put a space, followed by the number one (**1**). Press **Enter** to save this change.
  - Step 4** Press **b** to begin boot.  
At the end of the boot sequence, a shell prompt appears.
  - Step 5** The user may change the root password by entering the **passwd** command.

- Step 6** Enter and confirm the new password.
- Step 7** Reboot the machine.
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## Recovering a Lost Root Password

To recover a lost or forgotten root password for a mobility services engine, follow these steps:

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- Step 1** When the GRUB page appears, press **Esc** to enter the boot menu.
- Step 2** Press **e** to edit.
- Step 3** Navigate to the line beginning with kernel and press **e**.  
At the end of the line, enter a space, followed by the number one (**1**). Press **Enter** to save this change.
- Step 4** Press **b** to begin boot sequence.  
At the end of the boot sequence, a shell prompt appears.



**Note** The shell prompt does not appear if you set up a single-user mode password.

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- Step 5** You can change the root password by entering the **passwd** command.
- Step 6** Enter and confirm the new password.
- Step 7** Restart the machine.



**Note** Ensure that you remember the root password and only change the password if it is absolutely necessary.

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## Backing Up and Restoring Mobility Services Engine Data

This section describes how to back up and restore mobility services engine data. It also describes how to enable automatic backup.

This section contains the following topics:

- [Guidelines and Limitations, page 11-2](#)
- [Backing Up Mobility Services Engine Historical Data, page 11-3](#)
- [Restoring Mobility Services Engine Historical Data, page 11-3](#)
- [Enabling Automatic Location Data Backup, page 11-4](#)

### Guidelines and Limitations

- Backups are stored in the FTP directory you specify during the NCS installation.

- You can run the backup process in the background while working on other mobility services engine operations in the other NCS page.

## Backing Up Mobility Services Engine Historical Data

The NCS includes functionality for backing up mobility services engine data.

To back up mobility services engine data, follow these steps:

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- Step 1** Choose **Services > Mobility Services**.
  - Step 2** Click the name of the mobility services engine that you want to back up.
  - Step 3** Choose **System > Maintenance**.
  - Step 4** Click **Backup**.
  - Step 5** Enter the name of the backup.
  - Step 6** Click **Submit** to back up the historical data to the hard drive of the server running the NCS.

The Status of the backup is visible on the page while the backup is in process. Three items appear in the page during the backup process: (1) Last Status text box that provides messages noting the status of the back up; (2) Progress text box that shows what percentage of the backup is complete; and (3) Started at text box that shows when the backup began noting date and time.



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**Note** You can run the backup process in the background while working on other mobility services engine operations in the other NCS page.

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**Note** Backups are stored in the FTP directory you specify during the NCS installation.

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## Restoring Mobility Services Engine Historical Data

You can use the NCS to historical data (from backup)

To restore mobility services engine data, follow these steps:

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- Step 1** Choose **Services > Mobility Services**.
  - Step 2** Click the name of the mobility services engine that you want to restore.
  - Step 3** Choose **System > Maintenance**.
  - Step 4** Click **Restore**.
  - Step 5** Choose the file to restore from the drop-down list.
  - Step 6** 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 7** Click **Submit** to start the restoration process.
- Step 8** Click **OK** to confirm that you want to restore the data from the Cisco NCS server hard drive. When restoration is completed, the NCS displays a message to that effect.



**Note** You should not work on other mobility services engine operations when the restore process is running.

## Enabling Automatic Location Data Backup

You can configure NCS to perform automatic backups of location data on a regular basis.

To enable automatic backup of location data on a mobility services engine, follow these steps:

- Step 1** Choose **Administration > Background Tasks**.
- Step 2** Select the **Mobility Service Backup** check box.
- Step 3** From the Select a command drop-down list, choose **Enable Task**, and click **Go**. The backups are stored in the FTP directory that you specify during the NCS installation.

## Downloading Software to the Mobility Services Engines

To download software to a mobility services engine, follow these steps:

- Step 1** Verify that you can ping the mobility services engine from the Cisco NCS server or an external FTP server, whichever you are going to use for the application code download.
- Step 2** Choose **Services > Mobility Services Engine**.
- Step 3** Click the name of the mobility services engine to which you want to download software.
- Step 4** Choose **System > Maintenance > Download Software** from the left sidebar menu.
- Step 5** To download software, do one of the following:
- To download software listed in the NCS directory, select the **Select from uploaded images to transfer into the Server** radio button. Choose a binary image from the drop-down list. NCS downloads the binary image to the FTP server directory you specified during the NCS installation.
  - To use downloaded software available locally or over the network, select the **Browse a new software image to transfer into the Server** radio button and click **Choose File**. Locate the file and click **Open**.
- Step 6** Click **Download** to send the software to the /opt/installers directory on the mobility services engine.
- Step 7** After the image is transferred to the mobility services engine, log in to the mobility services engine command-line interface.

**Step 8** Run the installer image from the `/opt/installers` directory by entering the `./bin mse image` command. This installs the software.

**Step 9** To run the software, enter the `/etc/init.d/msed start` command.



**Note** To stop the software, enter the `/etc/init.d/msed stop` command, and to check status, enter the `/etc/init.d/msed status` command.

## Manually Downloading Software

If you do not want to automatically update the mobility services engine software using the NCS, follow these steps to upgrade the software manually using a local (console) or remote (SSH) connection:

**Step 1** Transfer the new mobility services engine image onto the hard drive.

- a. Log in as root, and use the binary setting to send the image from an external FTP server root directory. The release note format is similar to the following and changes with each release: `CISCO-MSE-L-K9-x-x-x-x-64bit.bin.gz`.



**Note** The mobility services engine image is compressed at this point.



**Note** The default login name for the FTP server is `ftp-user`.

Your entries should look like the following example:

```
# cd /opt/installers
# ftp <FTP Server IP address>
Name: <login>
Password: <password>
binary
get CISCO-MSE-L-K9-x-x-x-x-64bit.bin.gz
<CTRL-Z>
#
```

- b. Verify that the image (`CISCO-MSE-L-K9-x-x-x-x-64bit.bin.gz`) is in the mobility services engine `/opt/installers` directory.
- c. To decompress (unzip) the image file, enter the following command:
 

```
gunzip CISCO-MSE-L-K9-x-x-x-x-64bit.bin.gz
```

 The decompression yields a bin file.
- d. Make sure that the `CISCO-MSE-L-K9-x-x-x-x-64bit.bin.gz` file has execute permissions for the root user. If not, enter the following command:

```
chmod 755 CISCO-MSE-L-K9-x-x-x-x.bin.
```

**Step 2** Manually stop the mobility services engine.

**Step 3** Log in as root and enter the following command:

```
/etc/init.d/mseed stop.
```

**Step 4** To install the new mobility services engine image, enter the following command:

```
/opt/installers/CISCO-MSE-L-K9-x-x-x-x.bin.
```

**Step 5** Start the new mobility services engine software by entering the following command:

```
/etc/init.d/mseed start
```



**Caution**

Only complete the next step that uninstalls the script files if the system instructs you to do so. Removing the files unnecessarily erases your historical data.

**Step 6** Enter the following command to uninstall the script files of the mobility services engine:

```
/opt/mse/uninstall
```

## Configuring the NTP Server

You can configure NTP servers to set up the time and date of the mobility services engine.



**Note**

- You are automatically prompted to enable NTP and enter NTP server IP addresses as part of the automatic installation script for the mobility services engine. For more details on the automatic installation script, see the *Cisco 3350 Mobility Services Engine Getting Started Guide* or *Cisco 3310 Mobility Services Engine Getting Started Guide* at the following URL:

[http://www.cisco.com/en/US/products/ps9742/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps9742/prod_installation_guides_list.html)

- If you need to add or change an NTP server installation after a mobility services engine install, rerun the automatic installation script. You can configure the NTP server without adjusting the other values by tabbing through the script.



**Note**

For more information on NTP server configuration, consult the Linux configuration guides.

## Resetting the System

For information on rebooting or shutting down the mobility services engine hardware, see the “[Rebooting or Shutting Down a System](#)” section on page 6-10.

## Clearing the Configuration File

For information on clearing the configuration file, see the “[Clearing the System Database](#)” section on page 6-10.