Performing Maintenance Operations

This chapter describes how to back up and restore Cisco Mobility Services Engine (MSE) data and how to update the MSE software. It also describes other maintenance operations.

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:

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**.

Step 4 At the end of the line, insert a space, followed by the number one (**1**). Press **Enter** to save this change.

Step 5 Press **b** to begin boot.

At the end of the boot sequence, a shell prompt appears.

Step 6   Enter the **passwd** command to change the root password.

Step 7   Enter and confirm the new password.

Step 8   Reboot the machine.

Recovering a Lost Root Password

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

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**.

Step 4   At the end of the line, enter a space, followed by the number one (**1**). Press **Enter** to save this change.

Step 5   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.

Step 6   Enter the **passwd** command to change the root password.

Step 7   Enter and confirm the new password.

Step 8   Restart the machine.
    Note   Ensure that you remember the root password and only change the password if it is absolutely necessary.

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:

Backing Up Mobility Services Engine Historical Data

Prime Infrastructure includes functionality for backing up mobility services engine data.

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

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 Prime Infrastructure. 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 backup; (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.

> **Note**   You can run the backup process in the background while working on other mobility services engine operations in other the Prime Infrastructure page. Backups are stored in the FTP directory you specify during the Prime Infrastructure installation.

Restoring Mobility Services Engine Historical Data

You can use Prime Infrastructure to restore backed up historical data.

To restore mobility services engine data, follow these steps:

Step 1	Choose **Services > Mobility Services**.
Step 2	Click the name of the MSE that you want to restore.
Step 3	Choose **System > Maintenance**.
Step 4	Click **Restore**. Enter the FTP server address.
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 MSE. This option is applicable for network designs, wired switches, Cisco WLCs, 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 Prime Infrastructure server hard drive. When restoration is completed, Prime Infrastructure displays a message to that effect.

> **Note**   You should not work on other MSE operations when the restore process is running.

Enabling Automatic Location Data Backup

You can configure Prime Infrastructure 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 Prime Infrastructure 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 Prime Infrastructure 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 MSE 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 Prime Infrastructure directory, select the **Select from uploaded images to transfer into the Server** radio button. Choose a binary image from the drop-down list.

  Prime Infrastructure downloads the binary image to the FTP server directory you specified during the Prime Infrastructure 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 MSE.

Step 7   After the image is transferred to the MSE, log in to the MSE 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 Prime Infrastructure, follow these steps to upgrade the software manually using a local (console) or remote (SSH) connection:

Step 1 Transfer the new MSE 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 MSE image is compressed at this point.

Note The default log in name for the FTP server is ftp-user.

Your entries should look like this 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 MSE /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 MSE.

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

```
/etc/init.d/msed stop
```

Step 4 To install the new MSE image, enter the following command:

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

Step 5 Start the new MSE software by entering the following command:

```
/etc/init.d/msed 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 MSE:

```
/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

> **Note** 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.

Clearing the Configuration File

For information on clearing the configuration file, see the Clearing the System Database.