



CHAPTER 9

Performing Maintenance Operations

This chapter describes how to back up and restore location server data and how to update the location server software. It also describes other maintenance operations.

This chapter contains the following sections:

- [“Recovering Lost Password” section on page 9-2](#)
- [“Recovering a Lost Root Password” section on page 9-2](#)
- [“Backing Up and Restoring Location Server Data” section on page 9-2](#)
- [“Downloading Software to Location Servers” section on page 9-4](#)
- [“Configuring NTP Server” section on page 9-6](#)
- [“Defragmenting the Location Server Database” section on page 9-7](#)
- [“Rebooting the Location Server Hardware” section on page 9-7](#)
- [“Shutting Down the Location Server Hardware” section on page 9-8](#)
- [“Clearing Location Server Configurations” section on page 9-8](#)
- [“Importing and Exporting Asset Information” section on page 9-9](#)

Recovering Lost Password

To recover a lost or forgotten password for a location server, follow these steps:

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- Step 1** When the GRUB screen comes up, 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.
The boot sequence will commence and at the end the user will be given a shell prompt.
 - Step 5** The user may change the root password by invoking 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 location server, follow these steps:

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- Step 1** When the GRUB screen comes up, 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 and 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 have setup a single user mode password.

- 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.
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Backing Up and Restoring Location Server Data

This information describes how to back up and restore location server data. It also describes how to enable automatic backup.

Backing Up Location Server Historical Data

Cisco WCS includes functionality for backing up location server data.

To back up location server data, follow these steps:

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- Step 1** In Cisco WCS, click **Mobility > Mobility Service Engines**.
 - Step 2** Click the name of the server that you want to back up.
 - Step 3** Click **Maintenance** (left).
 - Step 4** Click **Backup**.
 - Step 5** Enter the name of the backup.
 - Step 6** Enter the time in seconds after which the backup times out.



Note For location servers versions 2.1 or later, the timeout value is not required.



Note For location server versions 2.0 or later, the timeout indicates how long the full operation will take. The default value is 1800 seconds. For pre-2.0 versions of the location server, the timeout parameter refers only to the connection timeout value and a smaller value should be entered (120 seconds by default).

- Step 7** Click **Submit** to back up the historical data to the hard drive of the server running Cisco WCS.
Status of the backup can be seen on the screen while the backup is in process. Three items will display on the screen during the backup process: (1) Last Status field provides messages noting the status of the backup; (2) Progress field shows what percentage of the backup is complete; and (3) Started at field shows when the backup began noting date and time.



Note You can run the backup process in the background while working on other location server operations in other WCS windows.



Note Backups are stored in the FTP directory you specify during the Cisco WCS installation.

Restoring Location Server Historical Data

You can use Cisco WCS to restore backed-up historical data.

To restore location server data, follow these steps:

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- Step 1** In Cisco WCS, click **Mobility > Mobility Service Engines**.
 - Step 2** Click the name of the server that you want to restore.
 - Step 3** Click **Maintenance** (left).

- Step 4** Click **Restore**.
- Step 5** Choose the file to restore from the drop-down menu.
- Step 6** Enter the time in seconds after which restoration times out.



Note For location servers versions 2.1 or later, the timeout value is not required.



Note For location server versions 2.0 or later, the timeout represents how long the full operation will take (by default, the user interface suggest 1800 seconds). For older location servers, the timeout represents the connection timeout and you should use a small value (120 seconds by default).

- Step 7** Click **Submit** to start the restoration process.
- Step 8** Click **OK** to confirm that you want to restore location server data from the Cisco WCS server hard drive. When restoration is completed, Cisco WCS displays a message to that effect.



Note You can run the restore process in the background while working on other location server operations in other WCS windows.

Enabling Automatic Location Server Backup

You can configure Cisco WCS to perform automatic backups of location server data on a regular basis. To enable automatic location server data backup, follow these steps:

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- Step 1** In Cisco WCS, choose **Administration > Background Tasks**.
- Step 2** Check the **Location Server Backup** check box.
- Step 3** Select **Enable Task** from the Select a command drop-down menu. Click **GO**.
- The backups are stored in the FTP directory you specified during the Cisco WCS installation.
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Downloading Software to Location Servers

To download software to a location server, follow these steps:

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- Step 1** Verify that you can ping the location server from the Cisco WCS server or an external FTP server, whichever you are going to use for the application code download.
- Step 2** In Cisco WCS, click **Mobility > Mobility Service Engines**.
- Step 3** Click the name of the server to which you want to download the software.
- Step 4** Click **Maintenance** (left).

Step 5 Click **Download Software**.

Step 6 To download software, do one of the following:

- To download software listed in the WCS directory, select **Select from uploaded images to transfer into the Location Server**. Then, choose a binary image from the drop-down menu.

Cisco WCS downloads the binary images listed in the drop-down menu into the FTP server directory you have specified during the Cisco WCS installation.



Note If upgrading a location server installed with a pre-2.0 version, you must first download and decompress the file (`gzip -d imageFilename`) **before** installing the image. After decompressing the file, run the resulting *.bin installer file.



Note If you have a 2.0 or later version of the location server image already installed, the software image automatically decompresses during its download from WCS.

- To use downloaded software available locally or over the network, select the **Browse a new software image to transfer into the Location Server** and click **Browse**. Locate the file and click **Open**.

Step 7 Enter the time in seconds (between 1 and 1800) after which software download times out.

Step 8 Click **Download** to send the software to the `/opt/locserver/installers` directory on the location server.

Step 9 After the image is transferred to the location server, log into the location server CLI.

Step 10 Run the installer image from the `/opt/installers` directory by entering `./bin locserver image`. This installs the software.

Step 11 To run the software enter `/etc/init.d/locserverd start`.



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

Manually Downloading Software

If you do not want to automatically update the location server software using Cisco WCS, follow these steps to upgrade the software manually using a local (console) or remote (SSH) connection.

Step 1 Transfer the new location server software 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-AIR-LOC2700-L-K9-x-x-x-x-64bit.bin.gz`.



Note The location server software image is compressed at this point.



Note The default login 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-AIR-LOC2700-L-K9-5-1-30-0-64bit.bin.gz
<CTRL-Z>
#
```

- b. Verify that the image (*CISCO-AIR-LOC2700-L-K9-x-x-x-x-64bit.bin.gz*) is in the location server's */opt/installers* directory.
- c. To decompress (unzip) the image file enter the following command:
gunzip CISCO-AIR-LOC2700-L-K9-x-x-x-x-64bit.bin.gz
The decompression yields a *bin* file.
- d. Make sure that the *CISCO-AIR-LOC2700-L-K9-x-x-x-x.bin* file has execute permissions for the root user. If not, enter **chmod 755 CISCO-AIR-LOC2700-L-K9-x-x-x-x.bin**.

Step 2 Manually stop the location server.

- a. Log in as root and enter **/etc/init.d/locserverd stop**.

Step 3 Enter **/opt/installers/CISCO--AIR-LOC2700-L-K9-x-x-x-x.bin** to install the new location server image.

Step 4 Start the new location server software by entering the following command:

/etc/init.d/locserverd 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 5 Enter **/opt/locserver/uninstall** to uninstall the location server's script files.

Configuring NTP Server

You can configure NTP servers to set up the time and date of the 2700 and 2710 location appliances.



Note

You are automatically prompted to enable NTP and enter NTP server IP addresses as part of the automatic installation script. You can rerun the automatic script at anytime to change settings. For more details on the automatic installation script, refer to the *Cisco Wireless Location Appliance Getting Started Guide* at the following link:

http://www.cisco.com/en/US/products/ps6386/prod_installation_guides_list.html

The */etc/ntp.conf* file is the main configuration file in which you place the IP addresses or DNS names of the NTP servers you want to use (see the following example).

```
server ntp.mydomain.com # my corporate NTP
server 192.168.2.5 # my second NTP
```

To get NTP configured to start at bootup, enter the following:

```
[root@loc-server1]# chkconfig ntpd on
```

To start, stop, and restart NTP after booting, follow these examples:

```
[root@loc-server1]# service ntpd start
[root@loc-server1]# service ntpd stop
[root@loc-server1]# service ntpd restart
```

After configuring and starting NTP, make sure it is working properly. To test whether the NTP process is running, use the following command:

```
[root@loc-server1]# pgrep ntpd
```

You should get a response of plain old process ID numbers.

Enter the `ntpdate -u<serverIP>` command to force your server to become instantly synchronized with its NTP servers before starting the NTP daemon for the first time (see the following example).

```
[root@loc-server1]# service ntpd stop
[root@loc-server1]# ntpdate -u 192.168.1.100
Looking for host 192.168.1.100 and service ntp
host found: ntp1.my-site.com
12 Aug 08:03:38 ntpdate[2472]: step time server 192.168.1.100 offset 28993.084943 sec
[root@smallfry tmp]# service ntpd start
```

**Note**

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

Defragmenting the Location Server Database

Over time, the location server's database might get fragmented, which might lead to a decrease in the server's performance. To fix this problem, use Cisco WCS to defragment the database.

To defragment the location server database, follow these steps:

- Step 1** In Cisco WCS, click **Mobility > Mobility Service Engines**.
- Step 2** Click the name of the location server that you want to defragment its database.
- Step 3** Click **Advanced** (left) to display its menu options.
- Step 4** Click **Advanced Parameters**.
- Step 5** In the Advanced Commands section, click **Defragment Database**.
- Step 6** Click **OK** to confirm that you want to defragment the location server's database.

Rebooting the Location Server Hardware

If you need to restart a location appliance, follow these steps:

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- Step 1** In Cisco WCS, click **Mobility > Mobility Service Engines**.
 - Step 2** Click the name of the location server that you want to reboot.
 - Step 3** Click **Advanced** to display its menu options.
 - Step 4** Click **Advanced Parameters**.
 - Step 5** In the Advanced Commands section (right), click **Reboot Hardware**.
 - Step 6** Click **OK** to confirm that you want to reboot the location server hardware.
The rebooting process takes a few minutes to complete.
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Shutting Down the Location Server Hardware

If you need to shutdown a location appliance, follow these steps:

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- Step 1** In Cisco WCS, click **Mobility > Mobility Service Engines**.
 - Step 2** Click the name of the location server that you want to shutdown.
 - Step 3** Click **Advanced** to display its menu options.
 - Step 4** Click **Advanced Parameters**.
 - Step 5** In the Advanced Commands section (right), click **Shutdown Hardware**.
 - Step 6** Click **OK** to confirm that you want to shutdown the location server.
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Clearing Location Server Configurations

To clear a location server configuration and restore its factory defaults, follow these steps:

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- Step 1** In Cisco WCS, click **Mobility > Mobility Service Engines**.
 - Step 2** Click the name of the server you want to configure.
 - Step 3** Click **Advanced** (left) to display its menu options.
 - Step 4** Click **Advanced Parameters**.
 - Step 5** In the Advanced Commands section (right), click **Clear Configuration**.



Note Using this command also clears the server's database.

- Step 6** Click **OK** to clear the location server configurations.
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Importing and Exporting Asset Information

This section describes how to import and export asset information stored in a flat text file to minimize manual entry.

Importing Asset Information

To import asset information for the location server using Cisco WCS, follow these steps:

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- Step 1** In Cisco WCS, click **Mobility > Mobility Service Engines**.
The All Location Servers summary window appears.
- Step 2** Click the name of the server for which you want to import asset information.
- Step 3** Click **Administration** (left) to display the administrative configuration options.
- Step 4** Click **Import Asset Information**.
- Step 5** Enter the name of the text file or browse for the file name.
Information in the imported file should be in the following format:
- a. tag format: #tag, 00:00:00:00:00:00, categoryname, groupname, assetname
 - b. station format: #station, 00:00:00:00:00:00, categoryname, groupname, assetname
- Step 6** Click **Import**.
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Exporting Asset Information

To export asset information from the location server to a file using Cisco WCS, follow these steps:

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- Step 1** In Cisco WCS, click **Mobility > Mobility Service Engines**.
The All Location Servers summary window appears.
- Step 2** Click the name of the server from which you want export asset information.
- Step 3** Click **Administration** (left) to display the administrative configuration options.
- Step 4** Click **Export Asset Information**.
- Step 5** Click **Export**.
You are prompted to **Open** (display to screen) or **Save** (to external PC or server) the asset file or to **Cancel** the request.



Note If you select **Save**, you are asked to select the asset file destination and name. The file is named “assets.out” by default. Click **Close** from the dialog box when download is complete.
