



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.

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Recovering Lost Password

If you lose or forget the root password for the location appliance, you can recover the password by doing the following:

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- Step 1** Once 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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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, choose **Location > Location Servers**.
 - 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:

- Step 1** In Cisco WCS, choose **Location > Location Servers**.
- 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, choose **Location > Location Servers**.
 - Step 3** Click the name of the server that you want to download the software to.
 - 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.

**Note**

After the image has been transferred to the location server, follow the instructions on the screen. Log in to the location server's CLI, stop the server, and run the installer image from the `/opt/locserver/installers` directory.

Configuring an 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. For more details on the automatic installation script, refer to the *Cisco 2700 Series Wireless Location Appliance Installation and Configuration 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: ntpl.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:

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- Step 1** In Cisco WCS, choose **Location > Location Servers**.
 - 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** Click **Defragment Database**.
 - Step 6** Click **OK** to confirm that you want to defragment the location server's database.
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Running Java GC on the Location Server Memory

Cisco WCS enables you to run a Java General Cleanup (Java GC) program to free up memory on a location server.

To run the Java GC on a location server, follow these steps:

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- Step 1** In Cisco WCS, choose **Location > Location Servers**.
 - Step 2** Click the name of the location server whose database you want to defragment.
 - Step 3** Click **Advanced** (left) to display its menu options.
 - Step 4** Click **Advanced Parameters**.
 - Step 5** In the Memory Information section, click **Run Java GC**.
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Rebooting the Location Server Hardware

If you need to restart the location appliance, use Cisco WCS to reboot the hardware on which the location server is running.

To reboot the location server hardware, follow these steps:

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- Step 1** In Cisco WCS, choose **Location > Location Servers**.
 - 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 (bottom 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.

Clearing Location Server Configurations

To clear the location server configuration and restore the factory defaults using Cisco WCS, follow these steps:

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- Step 1** In Cisco WCS, choose **Location > Location Servers**.
 - 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, 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, choose **Location > Location Servers**.
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 stored 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, choose **Location > Location Servers**.
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.
