Maintaining WCS

This chapter provides routine procedures for maintaining WCS. It contains these sections:

Checking the Status of WCS

This section provides instructions for checking the status of WCS on either a Windows or Linux server.

Checking the Status of WCS on Windows

Follow these steps to check the status of WCS when it is installed as a Windows application or Windows service. You can check the status at any time.

Step 1   Log into the system as administrator.

Step 2   Perform one of the following:

- From the Windows Start menu, click **Programs** > **Wireless Control System> WCSStatus**.
- From the command prompt, navigate to the WCS installation directory (C:\Program Files\WCS32\bin) and enter **WCSAdmin status**.

The WCSAdmin window appears and displays messages indicating the status of WCS.

Step 3   Close the WCSAdmin window when the Close button becomes active.

Checking the Status of WCS on Linux

Follow these steps to check the status of WCS when it is installed as a Linux application or Linux service. You can check the status at any time.

Step 1   Log into the system as **root**.

Step 2   Using the Linux CLI, perform one of the following:

- Navigate to the /opt/WCS32 directory (or the directory chosen during installation) and enter **./WCSStatus**.
- Navigate to the /opt/WCS32/bin directory and enter **WCSAdmin status**.

The CLI displays messages indicating the status of WCS.

Stopping WCS

This section provides instructions for stopping WCS on either a Windows or Linux server.

Stopping WCS on Windows

Follow these steps to stop WCS when it is installed as a Windows application or Windows service. You can stop WCS at any time.

Note If any users are logged in when you stop WCS, their WCS sessions stop functioning.

Step 1 Log into the system as administrator.

Step 2 Perform one of the following:

- From the Windows Start menu, click **Programs** > **Wireless Control System > StopWCS**.
- From the command prompt, navigate to the WCS installation directory (C:\Program Files\WCS32\bin) and enter **WCSAdmin stop**.

The WCSAdmin window appears and displays messages indicating that WCS is stopping.

Note If WCS is installed as a service, messages also appear to indicate that the Nms_Server service is stopping.

Step 3 Close the WCSAdmin window when the Close button becomes active.

Stopping WCS on Linux

Follow these steps to stop WCS when it is installed as a Linux application or Linux service. You can stop WCS at any time.

Note If any users are logged in when you stop WCS, their WCS sessions stop functioning.

Step 1 Log into the system as root.

Note To see which version of WCS you currently have installed, enter **nmsadmin.sh version**.

Step 2 Using the Linux CLI, perform one of the following:

- Navigate to the /opt/WCS4.0 directory (or the directory chosen during installation) and enter **./StopWCS**.
- Navigate to the /opt/WCS4.0/bin directory and enter **WCSAdmin stop**.

The CLI displays messages indicating that WCS is stopping.

Backing Up the WCS Database

This section provides instructions for backing up the WCS database. You can schedule regular backups through the WCS user interface or manually initiate a backup on either a Windows or Linux server.

Scheduling Automatic Backups

Follow these steps to schedule automatic backups of the WCS database.

Step 1   Log into the WCS user interface.

Step 2   Click **Administration > Scheduled Tasks** to display the Scheduled Tasks page.

Step 3   Click **WCS Server Backup** to display the Task > WCS Server Backup page.

Step 4   Check the **Admin Status: Enabled** check box.

Step 5   In the Max Backups to Keep field, enter the maximum number of backup files to be saved on the server.

Range: 7 to 50

Default: 7

> **Note**   To prevent the WCS platform from running out of disk space, the server automatically deletes old backup files when the number of files exceeds the value entered for this field.

Step 6   In the Interval (Days) field, enter a number representing the number of days between each backup. For example, 1 = a daily backup, 2 = a backup every other day, 7 = a weekly backup, and so on.

Range: 1 to 360

Default: 7

Step 7   In the Time of Day field, enter the time when you want the backup to start. It must be in this format: *hh*:*mm* AM/PM (for example: 03:00 AM).

> **Note**   Backing up a large database affects the performance of the WCS server. Therefore, Cisco recommends that you schedule backups to run when the WCS server is idle (for example, in the middle of the night).

Step 8   Click **Submit** to save your settings. The backup file is saved as a .zip file in the *ftp-install-dir*/ftp-server/root/WCSBackup directory using this format: *dd-mmm-yy_ hh-mm-ss*.zip (for example, 11-Nov-05_10-30-00.zip).

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Performing a Manual Backup

This section provides instructions for backing up the WCS database on either a Windows or Linux server.

Backing Up the WCS Database (for Windows)

Follow these steps to back up the WCS database on a Windows server.

Step 1   Log into the system as administrator.

Step 2   Create a backup directory for the WCS database with no spaces in the name, such as C:\WCS32_Backup.

✎
Note   Make sure that the directory name does not contain spaces. Spaces can generate errors.

Step 3   Perform one of the following:

- Follow these steps from the Windows Start menu:

    a. Click **Programs** > **Wireless Control System> Backup**. The Enter Information window appears.

    b. Browse to the backup directory that you created and choose the filename or enter the full path of the backup directory that you created and a name for the backup file (such as C:\WCS32_Backup\Nov11) and click **OK**.

- Follow these steps from the command prompt:

    a. Navigate to the WCS installation directory (C:\Program Files\WCS32\bin).

    b. Enter **DBAdmin backup** *backup-filename*, where *backup-filename* is the full path of the backup directory that you created plus a name for the backup file (such as C:\WCS32_Backup\Nov11).

    The DBAdmin window appears and displays messages indicating the status of the backup.

Step 4   Close the DBAdmin window when the Close button becomes active.

✎
Note   In the example above, the backup file would appear in the C:\WCS32_Backup directory as Nov11.nmsbackup.

Backing Up the WCS Database (for Linux)

Follow these steps to back up the WCS database on a Linux server.

Step 1   Log into the system as root.

Step 2   Using the Linux CLI, navigate to the /opt/WCS4.0 directory (or any other directory).

Step 3   Create a backup directory for the WCS database with no spaces in the name (for example, **mkdir WCS4.0_Backup**).

✎
Note   Make sure that the directory name does not contain spaces. Spaces can generate errors.

Step 4 Perform one of the following:

- Navigate to the /opt/WCS4.0 directory (or the directory chosen during installation) and enter **./Backup**. Enter a name for the backup file when prompted (such as WCS4.0_Backup/Nov11).

- Navigate to the /opt/WCS4.0/bin directory and enter **DBAdmin backup** *backup-filename*, where *backup-filename* is the full path of the backup directory that you created plus a name for the backup file (such as WCS4.0_Backup/Nov11).

- Using KDE or X-Windows, enter **DBAdmin - gui backup**, browse to the backup directory, and choose the file.

The CLI displays messages indicating the status of the backup.

> **Note** In the example above, the backup file would appear in the WCS4.0_Backup directory as Nov11.nmsbackup.

Restoring the WCS Database

This section provides instructions for restoring the WCS database on either a Windows or Linux server.

Restoring the WCS Database (for Windows)

Follow these steps to restore the WCS database from a backup file on a Windows server.

Step 1 Log into the system as administrator.

Step 2 Perform one of the following:

- Follow these steps from the Windows Start menu:

  a. Click **Start > Programs > Wireless Control System> Restore**. The DBAdmin and Enter Information window appears.

  b. Browse to the backup directory that you created and choose the filename or enter the full path and filename of the backup file (such as C:\WCS4.0_Backup\Nov11.nmsbackup) and click **OK**.

- Follow these steps from the command prompt:

  a. Navigate to the WCS installation directory (C:\Program Files\WCS4.0\bin).

  b. Enter **DBAdmin restore** *backup-filename*, where *backup-filename* is the full path and filename of the backup file (for example, C:\WCS4.0_Backup\Nov11.nmsbackup).

> **Note** If you are restoring from a WCS version prior to 3.2, you must enter a directory rather than a backup file because tar/gzip did not exist prior to 3.2. Enter **DBAdmin restore** *directory*, where *directory* is the backup directory that you created.

> **Note** If you are restoring from WCS version 4.0.96.0, some previous client data may not be collected.

Step 3 Click **Yes** if a message appears indicating that WCS is running and needs to be shut down.

Step 4 The DBAdmin window appears and displays messages indicating that WCS is shutting down (if applicable) and the WCS database is being restored. Close the DBAdmin window when the Close button becomes active.

> **Note** If the restore process shuts down WCS, a restart is attempted after a successful restore.

Restoring the WCS Database (for Linux)

Follow these steps to restore the WCS database from a backup file on a Linux server.

Step 1 If possible, stop all WCS user interfaces to stabilize the database.

Step 2 Log into the system as root.

Step 3 Using the Linux CLI, perform one of the following:

- Navigate to the /opt/WCS4.0 directory (or the directory chosen during installation) and enter **./Restore** to start the restoration process. Enter the backup filename when prompted (such as WCS4.0_Backup/Nov11.nmsbackup).

- Navigate to the /opt/WCS4.0/bin directory and enter **DBAdmin restore** *backup-filename*, where *backup-filename* is the full path and filename of the backup file (such as WCS4.0_Backup/Nov11.nmsbackup).

> **Note** If you are restoring from a WCS version prior to 3.2, you must enter a directory rather than a backup file because tar/gzip did not exist prior to 3.2. Enter **DBAdmin restore** *directory*, where *directory* is the backup directory that you created.

Step 4 Click **Yes** if a message appears indicating that WCS is running and needs to be shut down.

Step 5 The DBAdmin window appears and displays messages indicating that WCS is shutting down (if applicable) and the WCS database is being restored. Close the DBAdmin window when the Close button becomes active.

> **Note** If the restore process shuts down WCS, a restart is attempted after a successful restore.

The CLI displays messages indicating that the WCS database is being restored.

Importing the Location Appliance into WCS

Cisco 2700 series location appliances operate within the Cisco Wireless LAN Solution infrastructure. Location appliances compute, collect, and store historical location data using Cisco wireless LAN controllers and access points to track the physical location of wireless devices.

■ Importing the Location Appliance into WCS

Up to 2,500 laptop clients, palmtop clients, VoIP telephone clients, active Radio Frequency Identifier (RFID) asset tags, rogue access points, and clients can be tracked.

✎ **Note**   Even though all clients are loaded in the map, the display has a limit of 250 clients per floor to prevent overcrowding. You can do an advanced search of the map to see the items of interest.

To import a location appliance into WCS, follow the steps below.

Step 1   Navigate to **Location > Location Servers**. Choose **Add Server** from the drop-down menu and click **Go**.

Step 2   Enter any name for the appliance, its IP address, and a contact name on the Import window (see Figure 11-1). Keep the username, password, port, and HTTPS fields unaltered and click **Save**.

Figure 11-1   General Properties

Step 3   After you import the new location appliance, a pop-up window reminds you that WCS contains data that needs to be transported to the location appliance. Those controllers and network diagrams that are available to be synchronized are listed. From the Select a command drop-down menu, choose **Synchronize Servers.**.

The Synchronize WCS and Location Servers window appears (see Figure 11-2).

✎ **Note**   Existing network diagrams, controllers, and event groups must be synchronized with the appropriate location appliance to provide accurate location information. Synchronization is generally recommended after any network design change. You can limit areas that the location appliance tracks by synchronizing only areas that you want to actively track. Limiting synchronization to specific areas provides optimal performance of the location appliance.

Figure 11-2   Synchronizing WCS and Location Servers

Step 4   Select the **Network Designs** option from the Synchronize drop-down menu. Click the **Assign** hyperlink (far-right) of the appropriate network.

Step 5   In the **Assign to Servers** pop up window that appears, check the box next to the appropriate server (location appliance). Click **OK**.

Step 6   Click the check box next to the new location appliance and click **OK**.

Step 7   Click **Synchronize**.

Step 8   If the network diagram is properly synchronized, two green arrows appear under the Sync. Status column for each diagram. After synchronizing with the network diagram, all floor maps and access point placements associated with that diagram are copied to the location appliance; therefore, when the location appliance is set to synchronize with the diagram's controllers, it can find them.

Step 9   To set up controller synchronization, choose **Controllers** from the Synchronize drop-down menu.

Step 10   Each controller managed by WCS appears in a drop-down menu. Assign each controller to a specific location appliance by choosing the name of the location appliance with which the controllers will synchronize and click **Synchronize**.

Step 11   After the location appliance is properly synchronized with controllers, green arrows appear next to each controller under the Sync. Status column.

> **Note**   After synchronizing network designs and controllers, ensure that the location appliance polling parameters (**Location Server > Administration >Polling Parameters**) are enabled so that the location of the elements gets calculated.

> **Note**   After all relevant network designs and controllers are assigned to a new location appliance and initial synchronization is complete, you can configure the location appliance to automatically synchronize with WCS. For more details, see the "Auto-Synchronizing Location Appliances" section on page 11-11.

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:

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:

- tag format: #tag, 00:00:00:00:00:00, categoryname, groupname, assetname
- station format: #station, 00:00:00:00:00:00, categoryname, groupname, assetname

Step 6 Click **Import**.

Exporting Asset Information

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

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.

Auto-Synchronizing Location Appliances

After all relevant network designs and controllers are assigned to a new location appliance and initial synchronization is complete, you can configure the location appliance to automatically synchronize with WCS by enabling the **Location Server Auto-Synchronization** feature.

Enabling Auto-Synchronization ensures that all future map modifications such as adding access points, changing access point positions or orientations, and any resizings are accurately reflected in the map in case a manual synchronization (Location > Synchronize Servers) is not performed after element changes. You can configure the frequency (minimum of 24 hours) and time of day that the automatic synchronization occurs.

Step 1   Choose **Administration > Background Tasks**.

The Background Tasks summary window appears (see Figure 11-3).

Figure 11-3   Administration > Background Tasks

Step 2   Select the **Location Server Synchronization** link.

Step 3   In the window that appears (Figure 11-4), check the **Enabled** box next to the **Auto Synchronization** option.

Figure 11-4   Location Server Synchronization Page
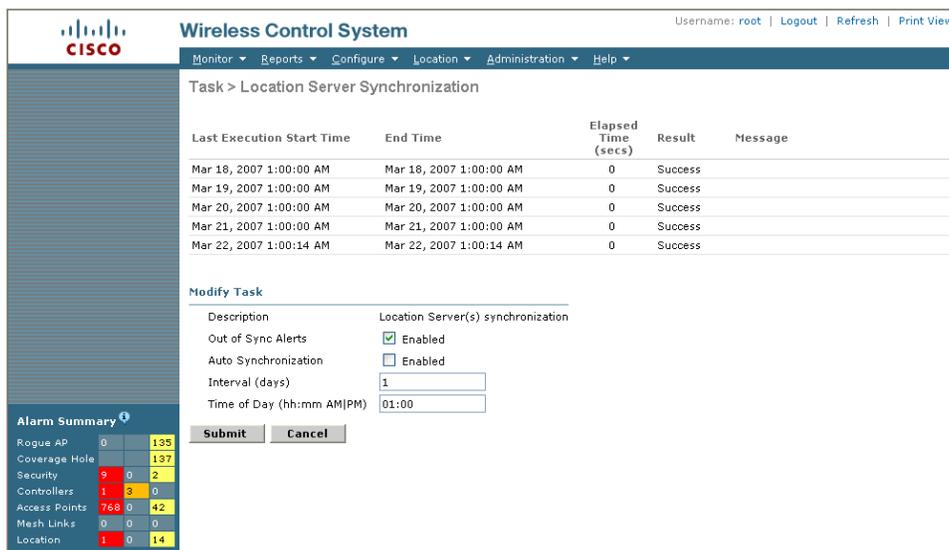
Step 4   Enter the frequency of the automatic synchronization in the **Interval (days)** field.

The value entered represents number of days. One (1) day is the minimum value.

Step 5   Enter the Time of Day (hh:mm AM | PM) that you want the synchronization to occur.

Step 6   Click **Submit**.

You are returned to the Scheduled Tasks Summary window.

> **Note**   To disable the Auto-Synchronization, uncheck the **Enabled** box for that feature.

> **Note**   You may also want to enable the **Out of Sync Alerts** option if it is not already active. When enabled, this option generates alerts for the location appliance when elements such as network designs or controllers are not assigned to a location appliance. Modifications to elements without subsequent synchronization generate location appliance alerts as well.

Backing Up Location Appliance Data

You can configure the Cisco WCS to regularly back up the data stored on the location appliance. You can specify the frequency and the time-of-day of the backups and the number of previous backups you want to save.

> **Note**   Back-up data is saved on the FTP server specified during WCS installation.

To back up the data stored on a location appliance, follow the steps below.

Step 1   Choose **Administration > Background Tasks**.

The window shown in Figure 11-5 appears.

Figure 11-5   Administration > Background Tasks

Step 2   Check the box next to the **Location Server Backup** link and then select the link. The Location Server Backup configuration window appears (see Figure 11-6).

Figure 11-6   Location Server Backup Configuration Page

Step 3   Check the **Enabled** box, if not already checked from the previous step. Generally, when you check the box at the Administration > Scheduled Tasks window, the check box auto-populates.

Step 4   Enter the number of **Maximum Backups to Keep**.

Step 5   Enter the **Interval** (in days) between backups.

Step 6   Enter the Time of Day (hh:mm AM | PM) to run the backups.

Step 7   Click **Submit**.

The Scheduled Tasks window reappears noting the location server backup as enabled along with the interval and time-of-day settings.

Uninstalling WCS

This section provides instructions for uninstalling WCS on either a Windows or Linux server. You can uninstall WCS at any time, even while WCS is running.

Uninstalling WCS on Windows

Follow these steps to uninstall WCS on a Windows server.

Step 1   Log into the system as administrator.

Step 2   From the Windows Start menu, click **Programs > Wireless Control System> Uninstall WCS**.

Step 3   When the Uninstall Wireless Control System window appears, click **Uninstall**.

Step 4   Follow the instructions on the window to continue the uninstall process.

Step 5   When the WCS Uninstaller window indicates that the program is uninstalled, click **Finish** to close the window.

> **Note**   If any part of the C:\Program Files\WCS32 folder remains on the hard drive, manually delete the folder and all of its contents. If you fail to delete the previous WCS installation, this error message appears when you attempt to reinstall WCS: "Cisco WCS already installed. Please uninstall the older version before installing this version."

Uninstalling WCS on Linux

Follow these steps to uninstall WCS on a Linux server.

Step 1   Stop WCS.

Step 2   Log into the system as root through an X terminal session.

Step 3   Using the Linux CLI, navigate to the /opt/WCS4.0 directory (or the directory chosen during installation).

Step 4   Enter **./UninstallWCS**.

Step 5   Click **Yes** to continue the uninstall process.

Step 6   Click **Finish** when the uninstall process is complete.

> **Note**   If any part of the /opt/WCS4.0 directory remains on the hard drive, manually delete the directory and all of its contents. If you fail to delete the previous WCS installation, this error message appears when you attempt to reinstall WCS: "Cisco WCS already installed. Please uninstall the older version before installing this version."

Upgrading WCS

This section provides instructions for upgrading WCS on either a Windows or Linux server.

> **Note**   Scheduled task settings are not preserved when you upgrade from WCS 4.0 or earlier releases. Make sure to record your settings manually if you wish to retain them or go to Administration > Background Tasks after starting WCS to check or change the settings as necessary.

> **Note**   If you upgrade to a WCS software release later than 4.0.87.0 from a release prior to 4.0.87.0, the users, user groups, tasks, and user passwords do not migrate. Upgrading to 4.0.87.0 before upgrading to a later release migrates the users, user groups, tasks, and user passwords.

Upgrading WCS on Windows

Follow these steps to upgrade WCS on a Windows server.

> **Note**   When upgrading from software release 4.096.0 to 4.1.82.0, only one "from" email address is restored for the alarm email filters. If you have multiple "from" email addresses defined in the alarm email filters, they will be lost. The single "from" email address is configured in Administration > Settings > Mail Server (refer to the "Mail Server" section on page 15-19).

Step 1   If possible, stop all WCS user interfaces to stabilize the database.

Step 2   Back up the WCS database by following the instructions in the "Backing Up the WCS Database (for Windows)" section on page 11-5.

Step 3   Uninstall the WCS application by following the instructions in the "Uninstalling WCS on Windows" section on page 11-14.

Step 4   Install the new version of WCS by following the instructions in the "Installing WCS for Windows" section on page 2-4.

Step 5   Restore the WCS database by following the instructions in the "Restoring the WCS Database (for Windows)" section on page 11-6.

Upgrading WCS on Linux

Follow these steps to upgrade WCS on a Linux server.

Step 1 If possible, stop all WCS user interfaces to stabilize the database.

Step 2 Back up the WCS database by following the instructions in the "Backing Up the WCS Database (for Linux)" section on page 11-5.

Step 3 Uninstall the WCS application by following the instructions in the "Uninstalling WCS on Linux" section on page 11-14.

Step 4 Install the new version of WCS by following the instructions in the "Installing WCS for Linux" section on page 2-9.

Step 5 Restore the WCS database by following the instructions in the "Restoring the WCS Database (for Linux)" section on page 11-7.

Upgrading the Network

Network upgrades must follow a recommended procedure so that databases can remain synchronized with each other. You cannot for instance upgrade the controller portion of the network to a newer release but maintain the current WCS version and not upgrade it. The supported order of upgrade is WCS first, followed by the controller, and then any additional devices.

Recovering the WCS Password

You can change the WCS application root user or FTP user password. This option provides a safeguard if you lose the root password. An executable was added to the installer /bin directory (passwd.bat for Windows and passwd.sh for Linux). Follow these steps to recover the passwords and regain access to WCS. For password recovery on a wireless location device, refer to chapters 8 or 9 of the Cisco 2700 Series Location Appliance Configuration Guide.

Note If you are a Linux user, you must be the root user to run the command.

Step 1 Change to the WCS bin folder.

Step 2 Perform one of the following:

Enter **passwd root-user <newpassword>** to change the WCS root password. The *newpassword* is the root login password you choose.

or

Enter **passwd location-ftp-user <newuser> <newpassword>** to change the FTP user and password. The *newuser* and *newpassword* are the FTP user and password you choose.

Step 3 The following options are available with these commands:

- -q — to quiet the output
- -pause — to pause before exiting
- -gui — to switch to the graphical user interface

- -force — to skip prompting for configuration

Step 4   Start WCS.