Synchronizing Cisco WCS and Location Servers

This chapter describes how to synchronize Cisco WCS and locations servers. This chapter contains the following sections:

Keeping Cisco WCS and Location Servers Synchronized

This section describes how to synchronize WCS and location servers manually and automatically.

Synchronizing Network Designs and Location Servers

After adding a location server to the WCS database, you can add (synchronize) network designs (campus, building, and outdoor maps) to the location server database. After the network designs are stored in the Cisco WCS and location server databases, you can re-synchronize the two databases at any time.

Follow these steps to synchronize WCS network designs with location servers:

Step 1 Choose **Location > Location Servers** to display the All Location Servers page.

Step 2 From the drop-down menu (right-hand side), choose **Synchronize Servers** and click **GO**.

Cisco WCS displays the Synchronize WCS and Location Servers page.

Step 3 From the Synchronize menu, choose **Network Designs**.

Step 4 To assign a network design to one or more location servers, click its corresponding **Assign** link.

Step 5 In the "Assign to servers" dialog box, check the check box of every server that you want to assign to the network design and click **OK**.

A red asterisk (*) appears next to the Assign link. To undo assignments, click **Reset**. To go back to the All Location Servers page without making any changes, click **Cancel**.

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Note   A network design might comprise a large campus with several buildings, each monitored by a different location server. This is why you might need to assign a single network design to multiple location servers.

Step 6   Click **Synchronize** to update the Cisco WCS and location server databases.

When the Cisco WCS and location server databases are synchronized, a green two-arrow icon appears in the Sync. Status column of every synchronized network design entry.

> **Note**   To unassign a network design from a location server, uncheck the server's check box in the "Assign to servers" dialog box and click OK. Then, click **Synchronize**. A two-arrow icon with a red circle appears in the Sync. Status column.

Synchronizing Controllers and Location Servers

Before a location server can collect any data, you must associate the server with a controller and synchronize them using Cisco WCS. After the initial synchronization, you can resynchronize the controllers and location servers at any time.

Follow these steps to synchronize a location server and a controller:

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

Step 2   From the drop-down menu (right-hand side), choose **Synchronize Servers** and click **GO**.

Cisco WCS displays the Synchronize WCS and Location Servers page.

Step 3   From the Synchronize menu, choose **Controllers**.

Step 4   To assign a location server to a controller, choose the server from the corresponding drop-down menu.

Step 5   Click **Synchronize** to synchronize the controller and location server databases.

When the Cisco WCS and location server databases are synchronized, a green two-arrow icon appears in the Sync. Status column of every synchronized controller entry.

> **Note**   Controller names must be unique for synchronizing with location servers. If you have two controllers with the same name, only one will be synchronized.

> **Note**   To remove a controller from a location server, choose **-- Unassigned --** from the controller's drop-down menu and click **Synchronize**. A two-arrow icon with a red circle appears in the Sync. Status column.

Synchronizing Event Groups and Location Servers

Follow these steps to synchronize WCS event groups and location servers:

Step 1   Choose **Location > Location Servers** to display the All Location Servers page.

Step 2   From the drop-down menu (right-hand side), choose **Synchronize Servers** and click **GO**.

Cisco WCS displays the Synchronize WCS and Location Servers page.

Step 3   From the Synchronize menu, choose **Event Groups**.

Step 4   To assign one or more location servers to an event group, click its corresponding **Assign** link.

Step 5   In the "Assign to servers" dialog box, check the check box of every server that you want to assign to the event group and click **OK**.

A red asterisk (*) appears next to the Assign link.

Step 6   Click **Synchronize** to update the Cisco WCS and location server databases.

When the Cisco WCS and location server databases are synchronized, a green two-arrow icon appears in the Sync. Status column of every synchronized event group entry.

> **Note**   To unassign an event group from a location server, uncheck the server's check box in the "Assign to servers" dialog box and click **OK**. Then, click **Synchronize**. A two-arrow icon with a red circle appears in the Sync. Status column.

Configuring Automatic Location Server Synchronization

Manually synchronizing WCS and location servers keeps them in sync. However, there are cases when users make deployment changes (such as making changes to maps and access point positions), which leads to incorrect location calculations and assets not tracked until resynchronization happens. To prevent an out-of-sync condition to persist, use Cisco WCS to enable automatic synchronization. This policy will be triggered periodically and will resynchronize WCS with location servers in case of discrepancies and clear the alarm.

To configure automatic synchronization, follow these steps:

Step 1   In Cisco WCS, choose **Administration > Scheduled Tasks**.

Step 2   Click **Location Server Synchronization**.

The Location Server Synchronization page lists the latest automatic synchronization operations and displays automatic synchronization options that you can configure.

Step 3   To set the location server to send out-of-sync alerts, check the **Enabled** check box of the Out of Sync Alerts field.

Step 4   To enable automatic synchronization, check the **Auto Synchronization** check box.

> **Note**   Automatic synchronization does not apply to elements (network designs, controllers, or event groups) that have not yet been assigned to a location server. However, out-of-sync alarms will still be generated. These alarms state that these elements are not assigned to a location server. For automatic synchronization to apply to these elements, you need to manually assign them to a location server.

Step 5   Enter the time interval in minutes for performing automatic synchronization.

By default, auto-sync is disabled.

Step 6   Click **Submit**.

Out-of-Sync Alarms

Out-of-sync alarms are of Minor severity (yellow), and are raised in response to the following conditions:

- Elements have been modified in Cisco WCS (the auto-sync policy will push these elements)
- Elements have been modified in location servers (the auto-sync policy will pull these elements)
- Elements except controllers exist in the location server but not in Cisco WCS (the auto-sync policy will pull these elements)
- Elements have not been assigned to any location server (the auto-sync policy doesn't apply)

Out-of-sync alarms are cleared when the following occurs:

- Location server is deleted

> **Note** When you delete a location server, the out-of-sync alarms for that server are also deleted. In addition, if you delete the last available location server, the alarms for "elements not assigned to any location server" will also be deleted.

- Elements are synchronized manually or automatically
- User manually clears the alarms (although the alarms may reappear in the future when the scheduled task is next executed)

> **Note** By default, out-of-sync alarms are enabled. You can disable them in Cisco WCS by choosing **Administration > Scheduled Tasks**, clicking **Location Server Synchronization**, unchecking the **Auto Synchronization** check box, and clicking **Submit**.

Viewing Synchronization Information

This section describes how to view location server synchronization status and history.

Viewing Location Server Synchronization Status

You can use the Synchronize Servers command in Cisco WCS to view the status of network design, controller, and event group synchronization with location servers.

To view synchronization status, follow these steps:

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

Step 2 From the **Synchronize** drop-down menu, choose **Network Designs**, **Controllers**, or **Event Groups**.

Depending on the command you have chosen, Cisco WCS displays a list of elements (network designs, controllers, or event groups). In the list, the Sync. Status column shows the synchronization status. A green two-arrow icon indicates that its corresponding element is synchronized with the specified location server. A gray two-arrow icon with a red circle indicates that its corresponding item is not synchronized with the location server.

Viewing Location Server Synchronization History

You can use the Synchronization History command in Cisco WCS to view the location server synchronization history for the last 30 days. This is especially useful when automatic synchronization is enabled. In this case, out-sync alarms are automatically cleared and you won't know what happened unless you look at the synchronization history or the log files.

To view synchronization history, follow these steps:

Step 1   In Cisco WCS, choose **Location > Synchronization History**.

Step 2   Click the column headers to sort the entries.

In the Synchronization History page, the Sync Direction column indicates whether information is pushed into the location server or pulled by the location server. The Generated By column indicates whether the synchronization was manual or automatic.