



## Line Group Configuration

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A line group allows you to designate the order in which directory numbers are chosen. Cisco Unified CallManager distributes a call to idle or available members of a line group based on a call distribution algorithm and on the Ring No Answer Reversion (RNAR) Timeout setting.

Use the following topics to add or delete a line group or to add directory numbers to or to remove directory numbers from a line group:

- [Finding a Line Group, page 35-1](#)
- [Configuring a Line Group, page 35-2](#)
- [Line Group Configuration Settings, page 35-3](#)
- [Adding Members to a Line Group, page 35-8](#)
- [Removing Members from a Line Group, page 35-9](#)
- [Deleting a Line Group, page 35-9](#)

## Finding a Line Group

Because you may have several line groups in your network, Cisco Unified CallManager lets you locate specific line groups based on specific criteria. Use the following procedure to locate line groups.



### Note

During your work in a browser session, Cisco Unified CallManager Administration retains your line group search preferences. If you navigate to other menu items and return to this menu item, Cisco Unified CallManager Administration retains your line group search preferences until you modify your search or close the browser.

### Procedure

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- Step 1** Choose **Call Routing > Route/Hunt > Line Group**.
- The Find and List Line Groups window displays.
- Step 2** From the drop-down list box, choose one of the following criteria:
- begins with
  - contains
  - is exactly

- ends with
- is empty
- is not empty

**Step 3** Specify the appropriate search text, if applicable, and click **Find**. You can also specify how many items per page to display.



**Note** To find all line groups registered in the database, click **Find** without entering any search text.

A list of discovered line groups displays by line group name.



**Tip** To search for line groups within the search results, click the **Search Within Results** check box and enter your search criteria as described in this step.



**Note** You can delete multiple line groups from the Find and List Line Groups window by checking the check boxes next to the appropriate line groups and clicking **Delete Selected**. You can delete all of the line groups in the window by clicking **Select All** and clicking **Delete Selected**.

**Step 4** From the list of records, click the line group that matches your search criteria.  
The window displays the line group that you choose.

#### Additional Information

See the [“Related Topics” section on page 35-10](#).

## Configuring a Line Group

The following procedure describes how to configure a line group.

#### Before You Begin

You must define one or more directory numbers before performing this procedure.

#### Procedure

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- Step 1** Choose **Call Routing > Route/Hunt > Line Group**.
- Step 2** Perform one of the following tasks:
- To copy an existing line group, locate the appropriate line group as described in the [“Finding a Line Group” section on page 35-1](#), click the **Copy** button next to the line group that you want to copy, and continue with [Step 3](#).
  - To add a new line group, click the **Add New** button, and continue with [Step 3](#).
  - To update an existing line group, locate the appropriate line group as described in the [“Finding a Line Group” section on page 35-1](#), and continue with [Step 3](#).

- Step 3** In the Line Group Configuration window that displays, enter a name in the Line Group Name field. The name can contain up to 50 alphanumeric characters and can contain any combination of spaces, periods (.), hyphens (-), and underscore characters (\_). Ensure that each line group name is unique to the route plan.

**Timesaver**

Use concise and descriptive names for your line groups. The CompanynameLocationGroup format usually provides a sufficient level of detail and is short enough to enable you to quickly and easily identify a line group. For example, CiscoDallasAA1 identifies a Cisco Access Analog line group for the Cisco office in Dallas.

- Step 4** Choose the appropriate settings as described in [Table 35-1](#).

- Step 5** To add or update this line group, click **Save**.

**Additional Information**

See the [“Related Topics”](#) section on page 35-10.

## Line Group Configuration Settings

[Table 35-1](#) describes the line group configuration settings.

**Table 35-1** Line Group Configuration Settings

| Field                         | Description                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Line Group Information</b> |                                                                                                                                                                                                                                                                                                                                                                                     |
| Line Group Name               | Enter a name for this line group. The name can comprise up to 50 alphanumeric characters and can contain any combination of spaces, periods (.), hyphens (-), and underscore characters (_). Ensure that each line group name is unique to the route plan.                                                                                                                          |
| RNA Reversion Timeout         | Enter a time, in seconds, after which Cisco Unified CallManager will distribute a call to the next available or idle member of this line group or to the next line group if the call is not answered and if the first hunt option, <i>Try next member; then, try next group in Hunt List</i> , is chosen. The RNA Reversion Timeout applies at the line-group level to all members. |

**Table 35-1**      **Line Group Configuration Settings (continued)**

| Field                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Distribution Algorithm | <p>Choose a distribution algorithm, which applies at the line-group level, from the options in the drop-down list box:</p> <ul style="list-style-type: none"> <li>• <b>Top Down</b>—If you choose this distribution algorithm, Cisco Unified CallManager distributes a call to idle or available members starting from the first idle or available member of a line group to the last idle or available member.</li> <li>• <b>Circular</b>—If you choose this distribution algorithm, Cisco Unified CallManager distributes a call to idle or available members starting from the <math>(n+1)^{\text{th}}</math> member of a line group, where the <math>n^{\text{th}}</math> member is the member to which Cisco Unified CallManager most recently extended a call. If the <math>n^{\text{th}}</math> member is the last member of a line group, Cisco Unified CallManager distributes a call starting from the top of the line group.</li> <li>• <b>Longest Idle Time</b>—If you choose this distribution algorithm, Cisco Unified CallManager only distributes a call to idle members, starting from the longest idle member to the least idle member of a line group.</li> <li>• <b>Broadcast</b>—If you choose this distribution algorithm, Cisco Unified CallManager distributes a call to all idle or available members of a line group simultaneously. See the Note in the description of the <a href="#">Selected DN/Route Partition</a> field for additional limitations in using the Broadcast distribution algorithm.</li> </ul> <p>The default value specifies <i>Longest Idle Time</i>.</p> |

**Table 35-1**      **Line Group Configuration Settings (continued)**

| Field               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hunt Options</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| No Answer           | <p>For a given distribution algorithm, choose a hunt option for Cisco Unified CallManager to use if a call is distributed to a member of a line group that does not answer. This option gets applied at the member level. Choose from the options in the drop-down list box:</p> <ul style="list-style-type: none"><li>• Try next member; then, try next group in Hunt List—If you choose this hunt option, Cisco Unified CallManager distributes a call to idle or available members starting from the first idle or available member of a line group to the last idle or available member. If unsuccessful, Cisco Unified CallManager then tries the next line group in a hunt list.</li><li>• Try next member, but do not go to next group—If you choose this hunt option, Cisco Unified CallManager distributes a call to idle or available members starting from the first idle or available member of a line group to the last idle or available member. Cisco Unified CallManager stops trying upon reaching the last member of the current line group.</li><li>• Skip remaining members, and go directly to next group—If you choose this hunt option, Cisco Unified CallManager skips the remaining members of this line group when the RNA reversion timeout value elapses for the first member. Cisco Unified CallManager then proceeds directly to the next line group in a hunt list.</li><li>• Stop hunting—If you choose this hunt option, Cisco Unified CallManager stops hunting after trying to distribute a call to the first member of this line group and the member does not answer the call.</li></ul> |

**Table 35-1**      **Line Group Configuration Settings (continued)**

| Field | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Busy  | <p>For a given distribution algorithm, choose a hunt option for Cisco Unified CallManager to use if a call is distributed to a member of a line group that is busy. Choose from the options in the drop-down list box:</p> <ul style="list-style-type: none"> <li>• Try next member; then, try next group in Hunt List—If you choose this hunt option, Cisco Unified CallManager distributes a call to idle or available members starting from the first idle or available member of a line group to the last idle or available member. If unsuccessful, Cisco Unified CallManager then tries the next line group in a hunt list.</li> <li>• Try next member, but do not go to next group—If you choose this hunt option, Cisco Unified CallManager distributes a call to idle or available members starting from the first idle or available member of a line group to the last idle or available member. Cisco Unified CallManager stops trying upon reaching the last member of the current line group.</li> <li>• Skip remaining members, and go directly to next group—If you choose this hunt option, Cisco Unified CallManager skips the remaining members of this line group upon encountering a busy member. Cisco Unified CallManager proceeds directly to the next line group in a hunt list.</li> <li>• Stop hunting—If you choose this hunt option, Cisco Unified CallManager stops hunting after trying to distribute a call to the first busy member of this line group.</li> </ul> |

**Table 35-1**      **Line Group Configuration Settings (continued)**

| Field                                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Not Available                                      | <p>For a given distribution algorithm, choose a hunt option for Cisco Unified CallManager to use if a call is distributed to a member of a line group that is not available. The Not Available condition occurs when none of the phones that are associated with the DN in question are registered. Not Available also occurs when Extension Mobility is in use and the DN/user is not logged in. Choose from the options in the drop-down list box:</p> <ul style="list-style-type: none"> <li>• Try next member; then, try next group in Hunt List—If you choose this hunt option, Cisco Unified CallManager distributes a call to idle or available members starting from the first idle or available member of a line group to the last idle or available member. If unsuccessful, Cisco Unified CallManager then tries the next line group in a hunt list.</li> <li>• Try next member, but do not go to next group—If you choose this hunt option, Cisco Unified CallManager distributes a call to idle or available members starting from the first idle or available member of a line group to the last idle or available member. Cisco Unified CallManager stops trying upon reaching the last member of the current line group.</li> <li>• Skip remaining members, and go directly to next group—If you choose this hunt option, Cisco Unified CallManager skips the remaining members of this line group upon encountering the first unavailable member. Cisco Unified CallManager proceeds directly to the next line group in a hunt list.</li> <li>• Stop hunting—If you choose this hunt option, Cisco Unified CallManager stops hunting after trying to distribute a call to the first unavailable member of this line group.</li> </ul> |
| <b>Line Group Member Information</b>               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Find Directory Numbers to Add to Line Group</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Partition                                          | <p>Choose a route partition for this line group from the drop-down list box. The default value specifies <i>&lt;None&gt;</i>.</p> <p>If you click <b>Find</b>, the Available DN/Route Partition list box displays all DNs that belong to the chosen partition.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Directory Number Contains                          | Enter the character(s) that are found in the directory number that you are seeking and click the <b>Find</b> button. Directory numbers that match the character(s) that you entered display in the Available DN/Route Partition box.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Available DN/Route Partition                       | Choose a directory number in the Available DN/Route Partition list box and add it to the Selected DN/Route Partition list box by clicking <b>Add to Line Group</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

Table 35-1 Line Group Configuration Settings (continued)

| Field                                                                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Current Line Group Members</b>                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Selected DN/Route Partition                                                    | <p>To change the priority of a directory number, choose a directory number in the Selected DN/Route Partition list box. Move the directory number up or down in the list by clicking the arrows on the right side of the list box.</p> <p>To reverse the priority order of the directory numbers in the Selected DN/Route Partition list box, click <b>Reverse Order of Selected DNs/Route Partitions</b>.</p> <p>For more information about the order of directory numbers in a line group, see <a href="#">“Route Plan Overview”</a> in the <i>Cisco Unified CallManager System Guide</i>.</p> <p><b>Note</b> Do not put DNs that are shared lines in a line group that uses the Broadcast distribution algorithm. Cisco Unified CallManager cannot display all DNs that are shared lines on devices where the DNs are configured as shared lines if the DNs are members of a line group that uses the Broadcast distribution algorithm.</p> |
| Removed DN/Route Partition (to be removed from Line Group when you click Save) | Choose a directory number in the Selected DN/Route Partition list box and add it to the Removed DN/Route Partition list box by clicking the down arrow between the two list boxes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Directory Numbers</b>                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| (list of DNs that currently belong to this line group)                         | Click on a directory number in this list to go to the Directory Number Configuration window for the specified directory number.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Additional Information**

See the [“Related Topics”](#) section on page 35-10.

# Adding Members to a Line Group

You can add members to a new line group or to an existing line group. The following procedure describes adding a member to an existing line group.

**Before You Begin**

You must define one or more directory numbers before performing this procedure.

**Procedure**

- Step 1

Choose **Call Routing > Route/Hunt > Line Group**.
- Step 2

Locate the line group to which you want to add a member. See the [“Finding a Line Group”](#) section on page 35-1.

- Step 3** If you need to locate a directory number, choose a route partition from the Partition drop-down list box, enter a search string in the Directory Number Contains field, and click **Find**. To find all directory numbers that belong to a partition, leave the Directory Number Contains field blank and click **Find**.  
A list of matching directory numbers displays in the Available DN/Route Partition list box.
- Step 4** In the Available DN/Route Partition list box, choose a directory number to add and click **Add to Line Group** to move it to the Selected DN/Route Partition list box. Repeat this step for each member that you want to add to this line group.
- Step 5** In the Selected DN/Route Partition list box, choose the order in which the new directory number(s) is to be accessed in this line group. To change the order, click on a directory number and use the Up and Down arrows to the right of the list box to change the order of directory numbers.
- Step 6** Click **Save** to add the new directory numbers and to update the directory number order for this line group.
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#### Additional Information

See the [“Related Topics” section on page 35-10](#).

## Removing Members from a Line Group

You can remove members from a new line group or from an existing line group. The following procedure describes removing a directory number from an existing line group.

#### Procedure

- Step 1** Choose **Call Routing > Route/Hunt > Line Group**.
- Step 2** Locate the line group from which you want to remove a directory number. See the [“Finding a Line Group” section on page 35-1](#).
- Step 3** In the Selected DN/Route Partition list box, choose a directory number to be deleted and click the down arrow below the list box to move the directory number to the Removed DN/Route Partition list box. Repeat this step for each member that you want to remove from this line group.
- Step 4** To remove the members, click **Save**.
- 

#### Additional Information

See the [“Related Topics” section on page 35-10](#).

## Deleting a Line Group

The following procedure describes how to delete a line group.

#### Before You Begin

You cannot delete a line group that one or more route/hunt lists references. To find out which hunt lists are using the line group, in the Line Group Configuration window, choose **Dependency Records** from the Related Links drop-down list box and click **Go**. If the dependency records are not enabled for the

system, the Dependency Records Summary window displays a message. For more information about dependency records, see the [“Accessing Dependency Records” section on page A-2](#). If you try to delete a line group that is in use, Cisco Unified CallManager displays an error message. Before deleting a line group that is currently in use, you must perform the following task:

- Remove the line group from all hunt lists to which it belongs before deleting the line group. See the [“Removing Route Groups from a Route List” section on page 33-5](#).

**Tip**

To delete line groups and hunt pilots; first, delete the hunt pilot; second, delete the hunt list; and finally, delete the line group.

**Procedure**

- Step 1** Choose **Call Routing > Route/Hunt > Line Group**.
- Step 2** Locate the line group that you want to delete. See the [“Finding a Line Group” section on page 35-1](#).
- Step 3** Check the check box next to the line group that you want to delete and click **Delete Selected**.  
A dialog box displays to warn you that you cannot undo deletion of line groups.
- Step 4** To delete the line group, click **OK** or to cancel the action, click **Cancel**. If you click **OK**, the Cisco Unified CallManager removes the line group.

**Note**

You can delete multiple line groups from the Find and List Line Groups window by checking the check boxes next to the appropriate line groups and clicking **Delete Selected**. You can delete all the line groups in the window by clicking **Select All** and clicking **Delete Selected**.

**Additional Information**

See the [“Related Topics” section on page 35-10](#).

## Related Topics

**Line Groups**

- [Finding a Line Group, page 35-1](#)
- [Configuring a Line Group, page 35-2](#)
- [Line Group Configuration Settings, page 35-3](#)
- [Adding Members to a Line Group, page 35-8](#)
- [Removing Members from a Line Group, page 35-9](#)
- [Deleting a Line Group, page 35-9](#)

**Route Lists and Route Groups**

- [Adding a Route List, page 33-3](#)
- [Adding Route Groups to a Route List, page 33-4](#)
- [Understanding Route Plans, Cisco Unified CallManager System Guide](#)