



Configuring Route Filters

Route filters, along with route patterns, use dialed-digit strings to determine how a call is handled.

Route filters can only be used with North American Numbering Plan (NANP) route patterns; that is, route patterns that use an at symbol (@) wildcard. Route filters allow you to determine which route patterns your users can dial, for example, whether your users can manually select a long distance carrier (by dialing 101 plus a carrier access code).



Tips

Always add and define the route filter first, and then add the route filter to the route pattern.

Use the following procedures to add, update, copy, or delete a route filter:

- Adding a Route Filter, page 23-5
- Updating a Route Filter, page 23-7
- Copying a Route Filter, page 23-7
- Adding Route Filter Clauses, page 23-9
- Removing Route Filter Clauses, page 23-10
- Deleting a Route Filter, page 23-11

Understanding Route Filter Tags

The tag is the core component of a route filter. A tag applies a name to a subset of the dialed-digit string. For example, the NANP number 972-555-1234 comprises LOCAL-AREA-CODE (972), OFFICE-CODE (555), and SUBSCRIBER (1234) route filter tags.

Route filter tags require operators, and can require additional values to decide which calls are filtered.

The values for route filter tag fields can contain the wildcard characters X, *, #, [,], -, ^, and the numbers 0 through 9. The descriptions in Table 23-1 use the notations [2-9] and XXXX to represent actual digits. In this notation, [2-9] represents any single digit in the range 2 through 9, and X represents any single digit in the range 0 through 9. Therefore, the description “The three-digit area code in the form [2-9]XX” means you can enter the actual digits 200 through 999, or all wildcards, or any mixture of actual digits and wildcards that results in a pattern with that range.

Table 23-1 Route Filter Tags

| Tag | Description |
|----------------------|--|
| AREA-CODE | The three-digit area code in the form [2-9]XX. This entry identifies the area code for long distance calls. |
| COUNTRY CODE | The one-, two-, or three-digit code used to specify the destination country for international calls. |
| END-OF-DIALING | A single character used to identify the end of the dialed-digit string. The # character is used as the end-of-dialing signal for international numbers dialed within the NANP. |
| INTERNATIONAL-ACCESS | The two-digit access code used for international dialing. This code is 01 for calls originating in the U.S. |

Table 23-1 *Route Filter Tags (continued)*

| Tag | Description |
|---------------------------|---|
| INTERNATIONAL-DIRECT-DIAL | The one-digit code identifying a direct dialed international call. This code is 1 for calls originating in the U.S. |
| INTERNATIONAL-OPERATOR | The one-digit code identifying an operator-assisted international call. This code is 0 for calls originating in the U.S. |
| LOCAL-AREA-CODE | The three-digit local area code in the form [2-9]XX. This entry identifies the local area code for 10-digit local calls. |
| LOCAL-DIRECT-DIAL | The one-digit code identifying a direct dialed local call. This code is 1 for NANP calls. |
| LOCAL-OPERATOR | The one-digit code identifying an operator-assisted local call. This code is 0 for NANP calls. |
| LONG-DISTANCE-DIRECT-DIAL | The one-digit code identifying a direct dialed long distance call. This code is 1 for NANP calls. |
| LONG-DISTANCE-OPERATOR | The one- or two-digit code identifying an operator-assisted long distance call within the NANP. This code is 0 for operator-assisted calls, or 00 for direct operator access. |
| NATIONAL-NUMBER | The nation-specific part of the digit string for an international call. |
| OFFICE-CODE | The first three digits of a seven-digit directory number in the form [2-9]XX. |
| SATELLITE-SERVICE | The one-digit code that provides access to satellite connections for international calls. |
| SERVICE | A three-digit code such as 911 for emergency, 611 for repair service, and 411 for information. |

Table 23-1 Route Filter Tags (continued)

| Tag | Description |
|------------------------|--|
| SUBSCRIBER | The last four digits of a seven-digit directory number in the form XXXX. |
| TRANSIT-NETWORK | The four-digit value that identifies a long distance carrier. <i>Do not include the leading 101 carrier access code prefix in the TRANSIT-NETWORK value. Refer to TRANSIT-NETWORK-ESCAPE for more information.</i> |
| TRANSIT-NETWORK-ESCAPE | The three-digit value that precedes the long distance carrier identifier. The value for this field is 101. Do not include the four-digit carrier identification code in the TRANSIT-NETWORK-ESCAPE value. Refer to TRANSIT-NETWORK for more information. |

Route filter tag operators determine if a call is filtered based on the existence, and sometimes the contents, of the dialed-digit string associated with that tag. The operators EXISTS and DOES-NOT-EXIST simply check for the existence of that part of the dialed-digit string. The operator == matches the actual dialed-digits with the specified value or pattern. Table 23-2 describes the operators that can be used with route filter tags.

Table 23-2 Route Filter Operators

| Operator | Description |
|--------------|--|
| NOT-SELECTED | Do not filter calls based on the dialed-digit string associated with this tag. |
| EXISTS | Filter calls when the dialed-digit string associated with this tag is found. |

Table 23-2 *Route Filter Operators (continued)*

| Operator | Description |
|----------------|---|
| DOES-NOT-EXIST | Filter calls when the dialed-digit string associated with this tag is not found. |
| == | Filter calls when the dialed-digit string associated with this tag matches the specified value. |

**Caution**

Do not enter route filter tag values for tags using the operators EXISTS, DOES-NOT-EXIST, or NOT-SELECTED.

Examples

Example 1: A route filter that uses AREA-CODE and the operator DOES-NOT-EXIST, selects all dialed-digit strings that do not include an area code.

Example 2: A route filter that uses AREA-CODE, the operator ==, and the entry 515, selects all dialed-digit strings that include the 515 area code.

Example 3: A route filter that uses AREA-CODE, the operator ==, and the entry 5[2-9]X, selects all dialed-digit strings that include area codes in the range of 520 through 599.

Example 4: A route filter that uses TRANSIT-NETWORK, the operator ==, and the entry 0288, along with TRANSIT-NETWORK-ESCAPE, the operator ==, and the entry 101, selects all dialed-digit strings with the carrier access code 1010288.

Adding a Route Filter

The following procedure describes how to add a route filter.

Procedure

- Step 1** Open Cisco CallManager Administration.
- Step 2** Select **Route Plan > Route Filter** in the menu bar.
- Step 3** Select North American Numbering Plan in the Dial Plan drop-down list box.

- Step 4** Enter a name in the Route Filter Name field. The name can consist of up to 50 alphanumeric characters, and can contain any combination of spaces, periods (.), hyphens (-), and underscore characters (_). Each route filter name must be unique to the route plan.

**Timesaver**

Use concise and descriptive names for your route filters. The CompanynameLocationCalltype format usually provides a sufficient level of detail and is short enough to enable you to quickly and easily identify a route filter. For example, CiscoDallasMetro identifies a route filter for toll free inter-LATA (Local Access and Transport Area) calls from the Cisco office in Dallas.

- Step 5** Click **Continue**.
- Step 6** Select the route filter tags and operators and enter data, where appropriate, to create a clause for this route filter.



Note For help with entering data for route filter tags and operators, refer to the “Understanding Route Filter Tags” section on page 23-2.

- Step 7** Click **Insert** to add the filter. The new route filter name is added to the route filter list on the left side of the page and the message “Status: Insert completed” is displayed.
- Step 8** To add more route filters, click **New** and repeat Steps 3 through 7.
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Related Topics

- Understanding Route Filter Tags, page 23-2
- Route Plan Overview, page 6-1
- Understanding Route Pattern Wildcards and Special Characters, page 6-7
- Updating a Route Filter, page 23-7

Updating a Route Filter

The following procedure describes how to update a route filter.

Procedure

- Step 1** Open Cisco CallManager Administration.
 - Step 2** Select **Route Plan > Route Filter** in the menu bar.
 - Step 3** Select North American Numbering Plan in the Dial Plan drop-down list box.
 - Step 4** Select a name from the route filter list on the left side of the page.
 - Step 5** When the Route Filter Configuration page displays the tags for the route filter, update the appropriate operators and values and click **Update**.
 - Step 6** Repeat Step 5 to update other route filter tags. Repeat Steps 4 and 5 to update other route filters.
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Related Topics

- Understanding Route Filter Tags, page 23-2
- Route Plan Overview, page 6-1
- Understanding Route Pattern Wildcards and Special Characters, page 6-7
- Adding a Route Filter, page 23-5
- Copying a Route Filter, page 23-7

Copying a Route Filter

The following procedure describes how to copy a route filter.

Procedure

- Step 1** Open Cisco CallManager Administration.
- Step 2** Select **Route Plan > Route Filter** in the menu bar.

- Step 3** Select North American Numbering Plan in the Dial Plan drop-down list box.
- Step 4** Select a name from the route filter list on the left side of the page.
- Step 5** Click **Copy**. The Route Filter Configuration page displays the new route filter with a Copy Of... name in the Route Filter Name field.
- Step 6** Enter the name for this route filter in the Route Filter Name field.
- Step 7** Modify operators, add or change values, and add or remove clauses as appropriate to customize the new route filter.
- Step 8** Click **Insert** to add the filter. The new route filter name is added to the route filter list on the left side of the page and the message “Status: Insert completed” is displayed.
- Step 9** To build another route filter that is similar to the current route filter, click **Copy**, enter a new route filter name, and repeat Steps 7 and 8.
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Related Topics

- Understanding Route Filter Tags, page 23-2
- Route Plan Overview, page 6-1
- Understanding Route Pattern Wildcards and Special Characters, page 6-7
- Adding Route Filter Clauses, page 23-9
- Removing Route Filter Clauses, page 23-10

Adding Route Filter Clauses

Adding route filter clauses allows you to expand upon an existing route filter by incorporating additional operators and entries for existing tags using a logical OR. You can add route filter clauses either when initially adding a new route filter or when updating an existing route filter. This procedure describes adding a route filter clause to an existing route filter.

Procedure

- Step 1** Open Cisco CallManager Administration.
- Step 2** Select **Route Plan > Route Filter** in the menu bar.
- Step 3** Select North American Numbering Plan in the Dial Plan drop-down list box.
- Step 4** Select a name from the route filter list on the left side of the page.
- Step 5** Click **Add Clause** to display a new route filter clause data entry page. All the operator fields for this new clause are set to NOT-SELECTED.
- Step 6** Select the route filter tags and operators and enter data, where appropriate, to create an additional clause for this route filter.



Note For help with entering data for route filter tags and operators, refer to the “Understanding Route Filter Tags” section on page 23-2.

- Step 7** Click **Insert** to add the clause. The new clause is added to the route filter and the message “Status: Insert completed” is displayed.



Note The new clause is displayed below the existing clauses on the page. (You might need to scroll down to view the new information.)

- Step 8** To add more clauses to the same filter, click **Add Clause** and repeat Steps 6 and 7. To add clauses to another route filter, repeat Steps 4 through 7.
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Related Topics

- Understanding Route Filter Tags, page 23-2
- Route Plan Overview, page 6-1
- Understanding Route Pattern Wildcards and Special Characters, page 6-7
- Removing Route Filter Clauses, page 23-10

Removing Route Filter Clauses

You can remove route filter clauses either when setting up a new route filter or when updating an existing route filter. This procedure describes removing a route filter clause from an existing route filter.

Procedure

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- Step 1** Open Cisco CallManager Administration.
 - Step 2** Select **Route Plan > Route Filter** in the menu bar.
 - Step 3** Select North American Numbering Plan in the Dial Plan drop-down list box.
 - Step 4** Select a name from the route filter list on the left side of the page.
 - Step 5** Scroll down to the top of the clause you want to remove and click **Remove Clause**. A dialog box appears warning you that removing this route filter clause cannot be undone.

**Caution**

Each Remove Clause button is linked to the clause immediately below the button. Check carefully to ensure that you are removing the correct clause before initiating this action. If a clause is accidentally removed it cannot be recovered, and must be rebuilt.

- Step 6** Click **OK** to remove the clause, or click **Cancel** to cancel the action. If you click **OK**, the clause is removed from the route filter and the message “Status: Ready” is displayed.

- Step 7** To remove more clauses from the same filter, scroll to the appropriate clause, click **Remove Clause** for that clause and repeat Step 6. To remove clauses from another route filter, repeat Steps 4 through 6.
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Related Topics

- Understanding Route Filter Tags, page 23-2
- Route Plan Overview, page 6-1
- Understanding Route Pattern Wildcards and Special Characters, page 6-7
- Deleting a Route Filter, page 23-11

Deleting a Route Filter

The following procedure describes how to delete a route filter.



Note

You cannot delete route filters that are being used in route patterns or translation patterns.

Procedure

- Step 1** Open Cisco CallManager Administration.
- Step 2** Select **Route Plan > Route Filter** in the menu bar.
- Step 3** Select North American Numbering Plan in the Dial Plan drop-down list box.
- Step 4** Select a name from the route filter list on the left side of the page.
- Step 5** Click **Delete**. A dialog box appears warning you that deleting this route filter cannot be undone.



Caution

Check carefully to ensure that you are deleting the correct route filter before initiating this action. Deleted route filters cannot be recovered. If a route filter is accidentally deleted, it must be rebuilt.

- Step 6** Click **OK** to delete the route filter, or click **Cancel** to cancel the action. If you click **OK**, the route filter is deleted and the message “Status: Ready” is displayed.
- Step 7** Repeat Steps 4 through 6 to delete other route filters.
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