



Understanding Route Plans

The Route Plan drop-down list on the menu bar allows you to configure Cisco CallManager route plans using route patterns, route filters, route lists, and route groups.

This section contains descriptions of the following route plan concepts:

- Route Plan Overview, page 6-1
- Understanding Route Pattern Wildcards and Special Characters, page 6-7
- Understanding Closest-Match Routing, page 6-11
- Understanding Discard Digits Instructions, page 6-12
- Understanding the External Route Plan Wizard, page 6-25

Route Plan Overview

The Cisco CallManager uses the route plan to route both internal calls and external (Public Switched Telephone Network [PSTN]) calls.

Route patterns, route filters, route lists, and route groups provide flexibility in network design. Route patterns work in conjunction with route filters to direct calls to specific devices and to include or exclude specific digit patterns. (Use route patterns to include and exclude digit patterns. Use route filters primarily to include digit patterns.) Route lists control the selection order of the route groups. Route groups set the selection order of the gateway devices.

Route patterns can be assigned to gateways, or to route lists and route groups.

**Note**

After adding or changing route pattern information, you must reset the gateway for the new or updated information to be recognized.

Route groups determine the order of preference for gateway and port usage. Route groups allow overflows from busy or failed devices to alternate devices.

Route lists determine the order of preference for route group usage. If a route list is configured, at least one route group must be configured. One or more route lists can point to one or more route groups.

Route filters permit or restrict access to routing patterns. Tags are the core component of route filters. A tag applies a name to a portion of the dialed digits. For example, the North American Numbering Plan (NANP) number 972-555-1234 contains the LOCAL-AREA-CODE (972), OFFICE-CODE (555), and SUBSCRIBER (1234) tags.

**Note**

The NANP is the numbering plan for the PSTN in the United States and its territories, Canada, Bermuda, and many Caribbean nations. It includes any number that can be dialed and is recognized in North America.

Route patterns represent all valid digit strings. When you assign a directory number to a Cisco IP Phone, you are assigning it a route pattern (the directory number is the route pattern). Cisco Access Analog Trunk Gateways, Cisco Access Digital Trunk Gateways, Cisco MGCP gateways, and H.323-compliant gateways also use route patterns. Cisco gateways can route ranges of numbers with complex restrictions and manipulate directory numbers before the Cisco CallManager passes them on to an adjacent system. The adjacent system can be a central office (CO), a private branch exchange (PBX), or a gateway on another Cisco CallManager system.

A route pattern can be assigned directly to a Cisco Access Gateway, or it can be assigned to a route list for more flexibility. For example, in Figure 6-1 Cisco Access Digital Gateway 1 is designated as the first-choice for routing outgoing calls to the PSTN.

**Tips**

If a gateway does not have a route pattern, it cannot place calls to the PSTN or to a PBX. To assign a route pattern to an individual port on a gateway, you must assign a route list and a route group to that port.

Figure 6-1 shows the effects of using route patterns with Cisco Access Digital Gateways. In this example, the route pattern is assigned to a route list, and that route list is associated with a single route group. The route group supports a list of devices that are selected based on availability. If all ports on the first-choice gateway are busy or out of service, the call is routed to the second-choice gateway.

Figure 6-1 Route Plan Summary Diagram for Cisco Access Digital Gateways

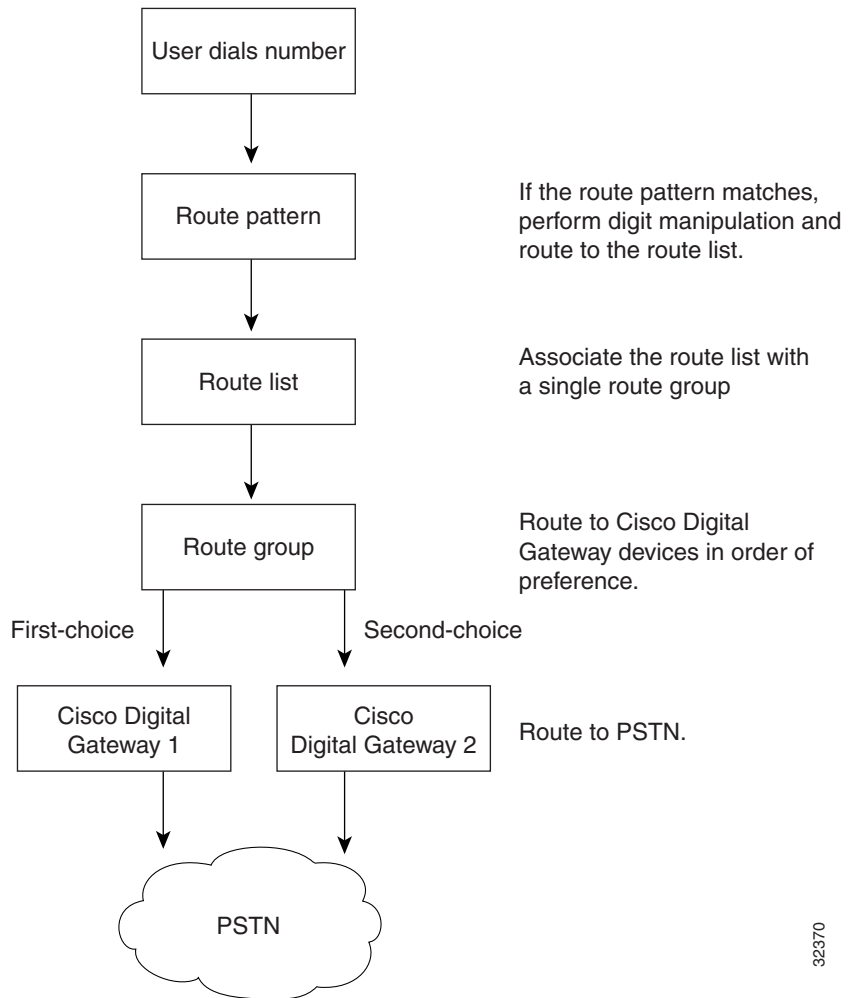
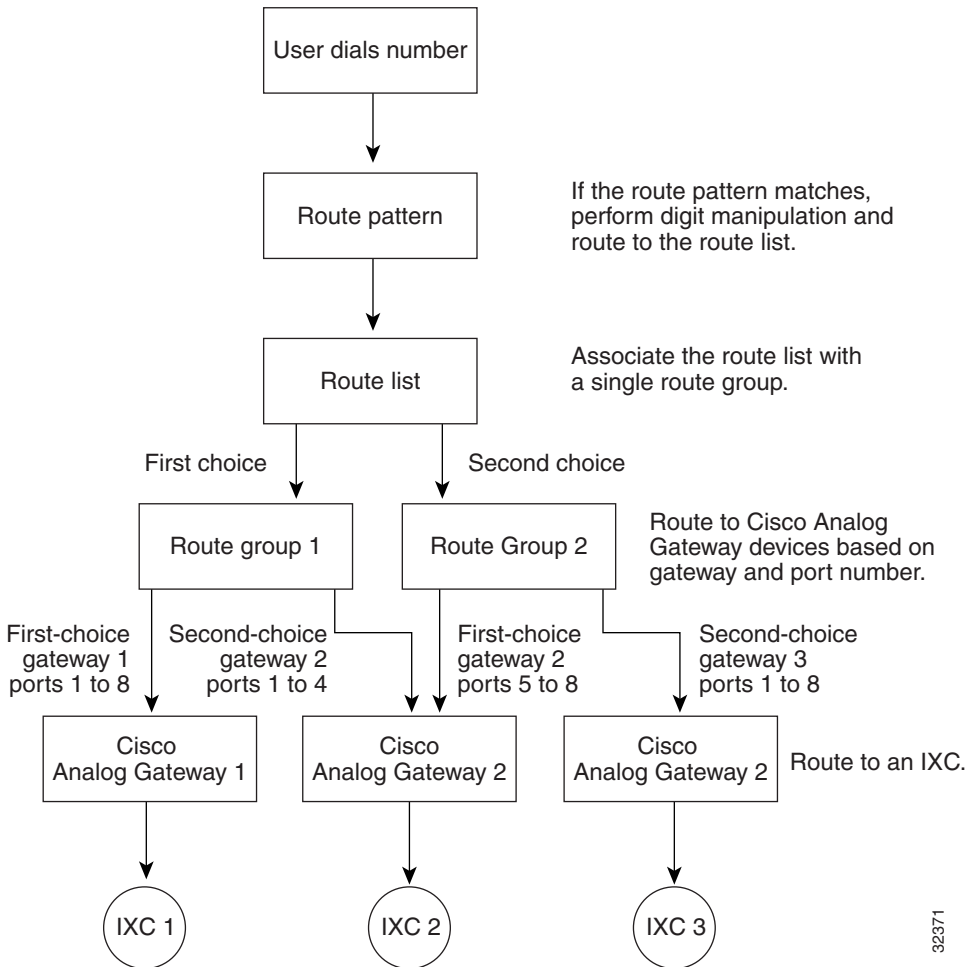


Figure 6-2 shows the effects of using route patterns with Cisco Access Analog Gateways. In this example, the route pattern is assigned to a route list, and that route list is associated with two route groups. Route group 1 is associated with ports 1 through 8 on gateway 1, which route all calls to interexchange carrier 1 (IXC 1). Route group 1 is also associated with ports 1 through 4 on gateway 2. Route group 2 is associated with ports 5 through 8 on gateway 2 and all ports on gateway 3.

Each route group supports a list of devices that are selected based on availability. For route group 1, if ports 1 through 8 on the first-choice gateway are busy or out of service, calls are routed to ports 1 through 4 on the second-choice gateway. If all routes in route group 1 are unavailable, calls are routed to route group 2. For route group 2, if ports 5 through 8 on the first-choice gateway are busy or out of service, calls are routed to ports 1 through 8 on the second-choice gateway. If no ports on any gateway in either route group are available, the call is routed to an all trunks busy tone.

Figure 6-2 Route Plan Summary Diagram for Cisco Access Analog Gateways



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Related Procedures

- Adding a Route Filter, page 23-5
- Adding a Route Group, page 24-2
- Adding a Route Pattern, page 26-1
- Adding a Route List, page 25-6

Table 6-1 Wildcards and Special Characters (continued)

Character	Description	Examples
.	<p>The dot (.) character is used as a delimiter to separate the Cisco CallManager access code from the directory number.</p> <p>This special character can be used, with the discard digits instructions, to strip off the Cisco CallManager access code before sending the number to an adjacent system.</p> <p>Only one . character is allowed in each route pattern.</p>	The route pattern 9.@ identifies the initial 9 as the Cisco CallManager access code in an NANP call.
*	The asterisk (*) character is available as an extra digit for special dialed numbers.	The route pattern *411 can be configured to provide access to the internal operator for directory assistance.
#	<p>The octothorpe (#) character is generally used to identify the end of the dialing sequence.</p> <p>The # character must be the last character in the pattern.</p>	The route pattern 901181910555# routes or blocks an international number dialed from within the NANP. The # character after the last 5 identifies this as the last digit in the sequence.

Table 6-2 lists Cisco CallManager Administration fields that require route patterns and shows the valid entries for each field.

Table 6-2 Field Entries

Field	Valid entries
Call Park Number/Range	[^ 0 1 2 3 4 5 6 7 8 9 -] X * #
Calling Party Transform Mask	0 1 2 3 4 5 6 7 8 9 X * #
Called Party Transform Mask	0 1 2 3 4 5 6 7 8 9 X * #

Table 6-2 Field Entries (continued)

Field	Valid entries
Caller ID DN (Gateways)	0 1 2 3 4 5 6 7 8 9 X * #
Directory Number	[^ 0 1 2 3 4 5 6 7 8 9 -] + ? ! X * # +
Directory Number (Call Pickup Group)	0 1 2 3 4 5 6 7 8 9
External Phone Number Mask	0 1 2 3 4 5 6 7 8 9 X * #
Forward All	0 1 2 3 4 5 6 7 8 9 * #
Forward Busy	0 1 2 3 4 5 6 7 8 9 * #
Forward No Answer	0 1 2 3 4 5 6 7 8 9 * #
Meet-Me Conference number	[^ 0 1 2 3 4 5 6 7 8 9 -] + ? ! X * # +
Prefix Digits	0 1 2 3 4 5 6 7 8 9 * #
Prefix DN (Gateways)	0 1 2 3 4 5 6 7 8 9 * #
Route Filter tag values	[^ 0 1 2 3 4 5 6 7 8 9 -] X * #
Route Pattern	[^ 0 1 2 3 4 5 6 7 8 9 -] + ? ! X * # + . @
Translation Pattern	[^ 0 1 2 3 4 5 6 7 8 9 -] + ? ! X * # + . @

Understanding Closest-Match Routing

Closest-match routing is the process of routing a call using the route pattern that most closely matches the dialed number. When the Cisco CallManager encounters a dialed number that matches multiple route patterns, it uses closest-match routing to determine which route pattern matches the number most closely and directs the call using that route pattern.

When two configured route patterns match exactly the same number of addresses in different partitions, Cisco CallManager chooses the route pattern based on order in which the partitions are listed in the calling search space. (Cisco CallManager chooses the route pattern from the partition that appears first in the calling search space.)

If two configured route patterns match exactly the same number of addresses in a partition, the Cisco CallManager arbitrarily chooses one. The following paragraphs explain why such exact matches are an unusual occurrence.

It is possible to configure several route patterns that match a single number. For instance, the number 8912 matches all of the following route patterns: 8912, 89XX, and 8XXX.

In this example, the route pattern 8912 matches exactly one address. The route pattern 89XX matches 8912 plus 99 other addresses, and the route pattern 8XXX matches 8912 plus 999 other addresses.

If the user dials 8913, the call routes differently. Using the preceding example, this address matches only the routing patterns 89XX and 8XXX. Since 89XX matches a narrower range of addresses than 8XXX, the Cisco CallManager delivers the call to the device assigned the routing pattern 89XX.

Using the @ wildcard character in a route pattern requires additional consideration.

The number 92578912 matches both of the following route patterns: 9.@ and 9.XXXXXXXX. Even though both of these route patterns seem to equally match the address, the 9.@ route pattern actually provides the closest match. The @ wildcard character encompasses many different route patterns, and one of those route patterns is [2-9]XXXXXXX. Since the number 2578912 more closely matches [2-9]XXXXXXX than it does XXXXXXXX, the 9.@ route pattern provides the closest match for routing.

Understanding Discard Digits Instructions

A discard digits instruction (DDI) removes a portion of the dialed digit string before passing the number on to the adjacent system. Portions of the digit string must be removed, for example, when an external access code is needed to route the call to the PSTN, but that access code is not expected by the PSTN switch.

Table 6-3 lists DDIs and describes the effects of applying each DDI to a dialed number.

Table 6-3 Discard Digits Instructions

DDI	Effect	Example
10-10-Dialing	This DDI removes: <ul style="list-style-type: none"> IXC access code 	Route pattern: 9.@ Dialed digit string: 910102889728135000 After applying DDI: 99728135000
10-10-Dialing Trailing-#	This DDI removes: <ul style="list-style-type: none"> IXC access code end-of-dialing character for international calls 	Route pattern: 9.@ Dialed digit string: 9101028801181910555# After applying DDI: 901181910555
11/10D->7D	This DDI removes: <ul style="list-style-type: none"> long distance direct dialing code long distance operator assisted dialing code IXC access code area code local area code This DDI creates a 7-digit local number from an 11- or 10-digit dialed number.	Route pattern: 9.@ Dialed digit string: 919728135000 or 99728135000 After applying DDI: 98135000

Table 6-3 Discard Digits Instructions (continued)

DDI	Effect	Example
11/10D->7D Trailing-#	This DDI removes: <ul style="list-style-type: none"> • long distance direct dialing code • long distance operator assisted dialing code • IXC access code • area code • local area code • end-of-dialing character for international calls This DDI creates a 7-digit local number from an 11- or 10-digit dialed number	Route pattern: 9.@ Dialed digit string: 919728135000 or 99728135000 After applying DDI: 98135000
11D->10D	This DDI removes: <ul style="list-style-type: none"> • long distance direct dialing code • long distance operator assisted dialing code • IXC access code 	Route pattern: 9.@ Dialed digit string: 919728135000 After applying DDI: 99728135000
11D->10D Trailing-#	This DDI removes: <ul style="list-style-type: none"> • long distance direct dialing code • long distance operator assisted dialing code • end-of-dialing character for international calls • IXC access code 	Route pattern: 9.@ Dialed digit string: 919728135000 After applying DDI: 99728135000

Table 6-3 Discard Digits Instructions (continued)

DDI	Effect	Example
Intl TollBypass	This DDI removes: <ul style="list-style-type: none"> • international access code • international direct dialing code • country code • IXC access code • international operator assisted dialing code 	Route pattern: 9.@ Dialed digit string: 901181910555 After applying DDI: 9910555
Intl TollBypass Trailing-#	This DDI removes: <ul style="list-style-type: none"> • international access code • international direct dialing code • country code • IXC access code • international operator assisted dialing code • end-of-dialing character 	Route pattern: 9.@ Dialed digit string: 901181910555# After applying DDI: 9910555
NoDigits	This DDI removes no digits.	Route pattern: 9.@ Dialed digit string: 919728135000 After applying DDI: 919728135000
Trailing-#	This DDI removes: <ul style="list-style-type: none"> • end-of-dialing character for international calls 	Route pattern: 9.@ Dialed digit string: 901181910555# After applying DDI: 901181910555

Table 6-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreAt	This DDI removes all digits prior to the NANP portion of the route pattern, including: <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code 	Route pattern: 8.9@ Dialed digit string: 899728135000 After applying DDI: 9728135000
PreAt Trailing-#	This DDI removes all digits prior to the NANP portion of the route pattern, including: <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • end-of-dialing character for international calls 	Route pattern: 8.9@ Dialed digit string: 8901181910555# After applying DDI: 01181910555
PreAt 10-10-Dialing	This DDI removes all digits prior to the NANP portion of the route pattern, including: <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • IXC access code 	Route pattern: 8.9@ Dialed digit string: 8910102889728135000 After applying DDI: 9728135000

Table 6-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreAt 10-10-Dialing Trailing-#	<p>This DDI removes all digits prior to the NANP portion of the route pattern, including:</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • IXC access code • end-of-dialing character for international calls 	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 89101028801181910555#</p> <p>After applying DDI: 01181910555</p>
PreAt 11/10D->7D	<p>This DDI removes all digits prior to the NANP portion of the route pattern, including:</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • long distance direct dialing code • long distance operator assisted dialing code • IXC access code • area code • local area code <p>This DDI creates a 7-digit local number from an 11- or 10-digit dialed number.</p>	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8919728135000 or 899728135000</p> <p>After applying DDI: 8135000</p>

Table 6-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreAt 11/10D->7D Trailing-#	<p>This DDI removes all digits prior to the NANP portion of the route pattern, including:</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • long distance direct dialing code • long distance operator assisted dialing code • IXC access code • area code • local area code • end-of-dialing character for international calls <p>This DDI creates a 7-digit local number from an 11- or 10-digit dialed number.</p>	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8919728135000 or 899728135000</p> <p>After applying DDI: 8135000</p>

Table 6-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreAt 11D->10D	<p>This DDI removes all digits prior to the NANP portion of the route pattern, including:</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • long distance direct dialing code • long distance operator assisted dialing code • IXC access code 	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8919728135000</p> <p>After applying DDI: 9728135000</p>
PreAt 11D->10D Trailing-#	<p>This DDI removes all digits prior to the NANP portion of the route pattern, including:</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • long distance direct dialing code • long distance operator assisted dialing code • IXC access code • end-of-dialing character for international calls 	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8919728135000</p> <p>After applying DDI: 9728135000</p>

Table 6-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreAt Intl TollBypass	<p>This DDI removes all digits prior to the NANP portion of the route pattern, including:</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • international access code • international direct dialing code • country code • IXC access code • international operator assisted dialing code 	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8901181910555</p> <p>After applying DDI: 910555</p>
PreAt Intl TollBypass Trailing-#	<p>This DDI removes all digits prior to the NANP portion of the route pattern, including:</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • PBX external access code • international access code • international direct dialing code • country code • IXC access code • international operator assisted dialing code • end-of-dialing character 	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8901181910555#</p> <p>After applying DDI: 910555</p>

Table 6-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreDot	This DDI removes: <ul style="list-style-type: none"> • Cisco CallManager external access code 	Route pattern: 8.9@ Dialed digit string: 899728135000 After applying DDI: 99728135000
PreDot Trailing-#	This DDI removes: <ul style="list-style-type: none"> • Cisco CallManager external access code • end-of-dialing character for international calls 	Route pattern: 8.9@ Dialed digit string: 8901181910555# After applying DDI: 901181910555
PreDot 10-10-Dialing	This DDI removes: <ul style="list-style-type: none"> • Cisco CallManager external access code • IXC access code 	Route pattern: 8.9@ Dialed digit string: 8910102889728135000 After applying DDI: 99728135000
PreDot 10-10-Dialing Trailing-#	This DDI removes: <ul style="list-style-type: none"> • Cisco CallManager external access code • IXC access code • end-of-dialing character for international calls 	Route pattern: 8.9@ Dialed digit string: 89101028801181910555# After applying DDI: 901181910555

Table 6-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreDot 11/10D->7D	<p>This DDI removes:</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • long distance direct dialing code • long distance operator assisted dialing code • IXC access code • area code • local area code <p>This DDI creates a 7-digit local number from an 11- or 10-digit dialed number.</p>	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8919728135000 or 899728135000</p> <p>After applying DDI: 98135000</p>
PreDot 11/10D->7D Trailing-#	<p>This DDI removes:</p> <ul style="list-style-type: none"> • Cisco CallManager external access code • long distance direct dialing code • long distance operator assisted dialing code • IXC access code • area code • local area code • end-of-dialing character for international calls <p>This DDI creates a 7-digit local number from an 11- or 10-digit dialed number.</p>	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8919728135000 or 899728135000</p> <p>After applying DDI: 98135000</p>

Table 6-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreDot 11D->10D	This DDI removes: <ul style="list-style-type: none"> • Cisco CallManager external access code • long distance direct dialing code • long distance operator assisted dialing code • IXC access code 	Route pattern: 8.9@ Dialed digit string: 8919728135000 After applying DDI: 99728135000
PreDot 11D->10D Trailing-#	This DDI removes: <ul style="list-style-type: none"> • Cisco CallManager external access code • long distance direct dialing code • long distance operator assisted dialing code • IXC access code • end-of-dialing character for international calls 	Route pattern: 8.9@ Dialed digit string: 8919728135000 After applying DDI: 99728135000

Table 6-3 Discard Digits Instructions (continued)

DDI	Effect	Example
PreDot Intl TollBypass	This DDI removes: <ul style="list-style-type: none"> • Cisco CallManager external access code • international access code • international direct dialing code • country code • IXC access code • international operator assisted dialing code 	Route pattern: 8.9@ Dialed digit string: 8901181910555 After applying DDI: 9910555
PreDot Intl TollBypass Trailing-#	This DDI removes: <ul style="list-style-type: none"> • Cisco CallManager external access code • international access code • international direct dialing code • country code • IXC access code • international operator assisted dialing code • end-of-dialing character 	Route pattern: 8.9@ Dialed digit string: 8901181910555# After applying DDI: 9910555

Understanding Route Patterns

Cisco CallManager uses route patterns to route or block both internal and external calls. A directory number is a type of specific route pattern that is applied to a Cisco IP Phone. Gateways and Cisco IP Phones can also use more complex route patterns that can contain wildcards. Gateways can route ranges of numbers and manipulate directory numbers before the Cisco CallManager passes them onto an adjacent system such as a central office (CO) or private branch exchange (PBX).

**Caution**

If a gateway has no route pattern associated with it, or it doesn't belong to a route group, it cannot route/block any calls.

**Tips**

You must reset gateways in order for new or updated routing information to be recognized. Resetting the gateway may result in a dropped call.

The simplest route pattern is just a set of one or more digits. For example, the number 8912 is a route pattern. When assigned to a Cisco Access gateway or a route list, the Cisco CallManager directs any calls to 8912 to the assigned device. If called party transformations are configured, the Cisco CallManager manipulates the dialed address before passing the call to the route list or gateway.

Considerations for Using Route Patterns

- If the route pattern contains an at symbol (@), the Discard Digits field can specify any of the PreAt discard digits instructions (DDIs).
- When @ is used in a routing pattern, the octothorpe (#) is automatically recognized as an end-of-dialing character for international calls. For routing patterns that don't use @, you must include the # in the routing pattern to be able to use the # character to signal the end-of-dialing.

Related Topics

The following list contains additional information related to this section:

- Route Plan Overview, page 6-1
- Understanding Route Pattern Wildcards and Special Characters, page 6-7
- Understanding Closest-Match Routing, page 6-11

- Adding a Route Pattern, page 26-1
- Updating a Route Pattern, page 26-4
- Copying a Route Pattern, page 26-5
- Deleting a Route Pattern, page 26-6

Understanding the External Route Plan Wizard

The external route plan wizard generates a single tenant, multi-location, partitioned route plan for the North American Numbering Plan (NANP) area using information provided by the administrator through a series of prompts.

The route plan generated by the external route plan wizard includes the following elements:

- route filters
- route groups
- route lists
- route patterns
- partitions
- calling search spaces
- calling party digit translations and transformations
- access code manipulation

The following topics describe the basic concepts used when you generate route plans with the external route plan wizard:

- Generated Route Filters, page 6-26
- Generated Route Groups, page 6-27
- Generated Route Lists, page 6-27
- Generated Route Patterns, page 6-29

Generated Route Filters

A generated route filter permits or restricts access through a route list using route patterns. The external route plan wizard associates each route list with a particular route filter. It names route filters using the TenantLocationCalltype convention, and appends the suffix RF to each route filter for easy identification.

Table 6-4 shows the seven types of route lists that use route filters. The examples shown in this table use specific route filter names and actual access and area codes for better readability.

Table 6-4 Route lists and associated route filters

Route list type	Route filter name and content examples
911 calls	Name: CiscoDallas911RF Content: 9.@ where (SERVICE == 911)
Local calls with metro (7- and 10-digit) dialing	Name: CiscoDallasLocalRF Content: 9.@ where (LOCAL-AREA-CODE == 972) OR (LOCAL-AREA-CODE == 214)
Local calls with 10-digit dialing	Name: CiscoDallasLocal10DCallRF Content: 9.@ where (LOCAL-AREA-CODE == 972) OR (LOCAL-AREA-CODE == 214)
Local calls with 7-digit dialing	Name: CiscoDallasLocal7DCallRF Content: 9.@ where (AREA-CODE DOES_NOT_EXIST)(LOCAL-AREA-CODE DOES_NOT_EXIST)
Toll bypass calls	Name: CiscoTollByPassToDallasRF Content: 9.@ where (AREA-CODE == 972) OR (AREA-CODE == 214)
Long distance calls	Name: CiscoDallasLongDistanceRF Content: 9.@ where (AREA-CODE EXISTS)
International calls	Name: CiscoDallasIntlRF Content: 9.@ where (INTERNATIONAL-ACCESS EXISTS)

Generated Route Groups

A generated route group sets the order of preference for gateway and port usage. The external route plan wizard assigns one gateway to each generated route group. The wizard uses all ports on the gateways. It does not support using partial resources for generated external route plans.

The external route plan wizard names route filters using the TenantLocationGatewaytypeNumber convention for easy identification. The gateway type is abbreviated as shown in the following list:

- AA: analog access
- DA: digital access
- HT: H.323 trunk
- MS: MGCP station
- MT: MGCP trunk

The external route plan wizard identifies route groups associated with multiple gateways of the same type by attaching a number suffix to all route groups. For example, if there are three MGCP trunk gateways at the Cisco Dallas location, the external route plan wizard names the associated route groups CiscoDallasMT1, CiscoDallasMT2, and CiscoDallasMT3.

If a route list includes more than one route group and more than one gateway (with one gateway for each route group), the order in which the external route plan wizard lists the route groups is arbitrary. The only order imposed is that route groups associated with the local gateways are listed before the route groups associated with remote gateways. If needed, change the order manually after the route plan is generated.

**Note**

All gateways belonging to a location are shared resources for that location.

Generated Route Lists

A generated route list sets the order of preference for route group usage and defines the route filters applied to those route groups. The external route plan wizard creates between five and seven route lists for each location depending on

the types of local dialing choices available. Therefore, the total number of route lists depends on the local dialing scheme and the number of locations served by the route plan.

The external route plan wizard names route lists using the TenantLocationCalltype convention, and appends the suffix RL to each route list for easy identification.

Table 6-5 shows the eight types of route lists. The example shown in this table use specific route list names for better readability.

Table 6-5 Route list types

Route list type	Example route list name and usage
911 calls	Name: CiscoDallas911RL Use: This route list type is used for 911 emergency calls.
Enterprise calls	Name: CiscoDallasEnterpriseRL Use: This route list type is used for route plans that include Cisco CallManager to adjacent PBX calls. If the route plan does not include routing to an adjacent PBX, the wizard does not generate this route list type.
Local calls with metro dialing	Name: CiscoDallasLocalRL Use: This route list type is used for route plans that encompass both 7- and 10-digit dialing areas. This route list type generates two route lists: one for 7-digit dialing and another for 10-digit dialing. If you chose to generate a route plan using metro route lists, you cannot also choose 7- or 10-digit dialing route lists.
Local calls with 10-digit dialing	Name: CiscoDallasLocal10DCallRL Use: This route list type is used for route plans that use 10-digit dialing. This route list type generates one route list for 10-digit dialing. If you chose to generate a route plan using a 10-digit dialing route list, you cannot also choose 7-digit or metro dialing route lists.

Table 6-5 Route list types

Route list type	Example route list name and usage
Local calls with 7-digit dialing	Name: CiscoDallasLocal7DCallRL Use: This route list type is used for route plans that use 7-digit dialing. This route list type generates one route list for 7-digit dialing. If you chose to generate a route plan using a 7-digit dialing route list, you cannot also choose 10-digit or metro dialing route lists.
Toll bypass calls	Name: CiscoTollByPassToDallasRL Use: This route list type is used for intracluster calls that originate from a remote location, and get routed out the local gateway as local calls.
Long distance calls	Name: CiscoDallasLongDistanceRL Use: This route list type is used for long distance toll calls.
International calls	Name: CiscoDallasIntIRL Use: This route list type is used for international toll calls.

Generated Route Patterns

A generated route pattern directs calls to specific devices and either includes or excludes specific dialed-digit strings. The external route plan wizard only generates route patterns that require an access code prefix. The typical route pattern for routing a call to the PSTN has the prefix construction 9.@. The typical route pattern for routing a call to the PBX has the prefix construction 9.9@.

The external route plan wizard associates a route list, a route filter, and a partition with each route pattern. The route pattern provides the appropriate calling party transform mask, called party transform mask, digit discard instructions, and prefix digits for the associated route list.

The wizard bases route patterns for calls to an adjacent PBX on the access code and the range of directory numbers served by that PBX. For example, if the access code used to direct calls to the adjacent PBX is 9 and the range of directory numbers served by that PBX is 1000 through 1999, then the external route plan wizard generates the route pattern 9.1XXX for enterprise calls.