



Special Characters and Settings

Cisco CallManager Administration allows you to use special characters and settings to perform the following tasks:

- Allowing a single route pattern to match a range of numbers
- Removing a portion of the dialed digit string
- Manipulating the appearance of the calling party number for outgoing calls
- Manipulating the dialed digits, or called party number, for outgoing calls

For more information on how to use special characters and settings, see the following topics:

- [Route Pattern Wildcards and Special Characters, page 20-1](#)
- [Discard Digits Instructions, page 20-5](#)
- [Calling Party Transformations Settings, page 20-19](#)
- [Called Party Transformations Settings, page 20-21](#)

Route Pattern Wildcards and Special Characters

Route pattern wildcards and special characters allow a single route pattern to match a range of numbers (addresses). Use these wildcards and special characters also to build instructions that enable the Cisco CallManager to manipulate a number before sending it to an adjacent system.

[Table 20-1](#) describes the wildcards and special characters supported by Cisco CallManager.

Table 20-1 Wildcards and Special Characters (continued)

Character	Description	Examples
-	The hyphen (-) character, used with the square brackets, denotes a range of values.	The route pattern 813510[0-5] routes or blocks all numbers in the range 8135100 through 8135105.
^	The circumflex (^) character, used with the square brackets, negates a range of values. It must be the first character following the opening bracket (I). Each route pattern can have only one ^ character.	The route pattern 813510[^0-5] routes or blocks all numbers in the range 8135106 through 8135109.
.	The dot (.) character is used as a delimiter to separate the Cisco CallManager access code from the directory number. Use this special character, with the discard digits instructions, to strip off the Cisco CallManager access code before sending the number to an adjacent system. Each route pattern can have only one . character.	The route pattern 9.@ identifies the initial 9 as the Cisco CallManager access code in a NANP call.

Table 20-1 Wildcards and Special Characters (continued)

Character	Description	Examples
*	The asterisk (*) character can provide an extra digit for special dialed numbers.	You can configure the route pattern *411 to provide access to the internal operator for directory assistance.
#	The octothorpe (#) character generally identifies the end of the dialing sequence. The # character must be the last character in the pattern.	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 20-2 lists Cisco CallManager Administration fields that require route patterns and shows the valid entries for each field.

Table 20-2 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 * #
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 * #

Table 20-2 Field Entries (continued)

Field	Valid entries
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*#+. @

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. A DDI must remove portions of the digit string, for example, when an external access code is needed to route the call to the PSTN, but the PSTN switch does not expect that access code.

[Table 20-3](#) lists DDIs and describes the effects of applying each DDI to a dialed number.

Table 20-3 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

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
11/10D->7D	<p>This DDI removes</p> <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 <p>This DDI creates a 7-digit local number from an 11- or 10-digit dialed number.</p>	<p>Route pattern: 9.@</p> <p>Dialed digit string: 919728135000 or 99728135000</p> <p>After applying DDI: 98135000</p>
11/10D->7D Trailing-#	<p>This DDI removes</p> <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 <p>This DDI creates a 7-digit local number from an 11- or 10-digit dialed number</p>	<p>Route pattern: 9.@</p> <p>Dialed digit string: 919728135000 or 99728135000</p> <p>After applying DDI: 98135000</p>

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
11D->10D	<p>This DDI removes</p> <ul style="list-style-type: none"> • Long-distance direct-dialing code • Long-distance operator-assisted dialing code • IXC access code 	<p>Route pattern: 9.@</p> <p>Dialed digit string: 919728135000</p> <p>After applying DDI: 99728135000</p>
11D->10D Trailing-#	<p>This DDI removes</p> <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 	<p>Route pattern: 9.@</p> <p>Dialed digit string: 919728135000</p> <p>After applying DDI: 99728135000</p>
Intl TollBypass	<p>This DDI removes</p> <ul style="list-style-type: none"> • International access code • International direct-dialing code • Country code • IXC access code • International operator-assisted dialing code 	<p>Route pattern: 9.@</p> <p>Dialed digit string: 901181910555</p> <p>After applying DDI: 9910555</p>

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
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
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

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
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
PreAt 10-10-Dialing 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 • IXC access code • End-of-dialing character for international calls 	Route pattern: 8.9@ Dialed digit string: 89101028801181910555# After applying DDI: 01181910555

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
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 20-3 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 20-3 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 20-3 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>

Table 20-3 Discard Digits Instructions (continued)

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

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
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
PreDot 11/10D->7D	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 • Area code • Local area code This DDI creates a 7-digit local number from an 11- or 10-digit dialed number.	Route pattern: 8.9@ Dialed digit string: 8919728135000 or 899728135000 After applying DDI: 98135000

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
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>
PreDot 11D->10D	<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 	<p>Route pattern: 8.9@</p> <p>Dialed digit string: 8919728135000</p> <p>After applying DDI: 99728135000</p>

Table 20-3 Discard Digits Instructions (continued)

DDI	Effect	Example
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 20-3 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

Calling Party Transformations Settings

Calling party transformations settings allow you to manipulate the appearance of the calling party number for outgoing calls. The Cisco CallManager uses the calling party number for calling line identification (CLID). During an outgoing call, the CLID passes to each private branch exchange (PBX), central office (CO), and interexchange carrier (IXC) as the call progresses. The calling party receives the CLID when the call completes.

The assignment of the calling party transformations settings used in route lists goes to the individual route groups comprising the list, rather than the route list as a whole. The calling party transformations settings assigned to the route groups in a route list override any calling party transformations settings assigned to a route pattern associated with that route list.

[Table 20-4](#) describes the fields, options, and values used to specify calling party transformation for a route group.

Table 20-4 *Calling Party Transformations Settings*

Field Name	Description
Use Calling Party's External Phone Number Mask	<p>This field determines whether the full, external phone number is used for CLID on outgoing calls. The options for this field include Default, Off, and On:</p> <ul style="list-style-type: none"> • Default: This setting indicates that the route group does not govern the calling party external phone number and calling party transform masks. If a calling party external phone number mask or transform mask is chosen for the route pattern, calls that are routed through this route group use those masks. • Off: This setting indicates that the calling party external phone number is not used for CLID. If no transform mask is entered for this route group, calls that are routed through this group donot get associated with a CLID. • On: This setting indicates that the calling party full, external number is used for CLID.
Calling Party Transform Mask	<p>This field specifies the calling party transform mask for all calls routed through this route group. Valid values for this field range from 0 through 9, and the wildcard character X. You can also leave this field blank. If it is blank and the preceding field is set to Off, this means that no calling party number is available for CLID.</p> <p>The calling party transform mask can contain up to 50 digits.</p>

Related Topics

- [Route Pattern Wildcards and Special Characters, page 20-1](#)
- [Understanding Route Plans, Cisco CallManager System Guide](#)

Called Party Transformations Settings

Called party transformations settings allow you to manipulate the dialed digits, or called party number, for outgoing calls. Examples of manipulating called numbers include appending or removing prefix digits (outgoing calls), appending area codes to calls dialed as seven-digit numbers, appending area codes and office codes to interoffice calls dialed as four- or five-digit extensions, and suppressing carrier access codes for equal access calls.

The assignment of the called party transformations settings used in route lists goes to the individual route groups comprising the list, rather than the route list as a whole. The called party transformations settings assigned to the route groups in a route list override any called party transformations settings assigned to a route pattern associated with that route list.

[Table 20-5](#) describes the fields, options, and values used to specify called party transformations for a route group.

Table 20-5 *Called Party Transformations Settings*

Field Name	Description
Dial Plan	<p>This field determines which dialing plan is used. If it is not already chosen, change this field to North American Numbering Plan.</p> <p>Note The Dial Plan field only appears when a route group is inserted in a route list. Once the route group is inserted, you cannot modify this field.</p>
Discard Digits	<p>This field contains a list of discard patterns that control the discard digit instructions. For example, in a system where users must dial 9 to make a call to the public switched telephone network (PSTN), the PreDot discard pattern causes the 9 to be stripped from the dialed digit string. See the “Discard Digits Instructions” section on page 20-5 for more information.</p>

Table 20-5 *Called Party Transformations Settings (continued)*

Field Name	Description
Called Party Transform Mask	<p>This field specifies the called party transform mask for all calls routed through this route group. Valid values for this field range from 0 through 9, and the wildcard character X. You can also leave this field blank. If this field is blank, no transformation takes place; Cisco CallManager sends the dialed digits exactly as dialed.</p> <p>The calling party transform mask can contain up to 50 digits.</p>
Prefix Digits (Outgoing Calls)	<p>This field contains a prefix digit or a set of Prefix Digits (Outgoing Calls) that are appended to the called party number on all calls routed through this route group. Valid values for this field range from 0 through 9 and blank. Prefix Digits (Outgoing Calls) can contain up to 50 digits.</p>

Related Topics

- [Route Pattern Wildcards and Special Characters, page 20-1](#)
- [Discard Digits Instructions, page 20-5](#)
- [Understanding Route Plans, *Cisco CallManager System Guide*](#)