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## Blocking Outgoing Calls

There are two ways that an outdial may be blocked by the translation table: by explicitly blocking some dialing strings or by failing to find a matching string.

Phone numbers can be explicitly blocked by adding the word "BLOCK" in the port group column on any entry. When a match occurs, the system rejects the request to place a call to that number because the number is blocked. International numbers, 976 numbers, or any other numbers can be blocked using this mechanism. For example, to block both international calls and calls that start with 976, add the following entries to the translation table:

From	To	PortGroup	DestType	Comment
9?011.*	0	BLOCK	GENERIC	Block all international calls.
9?976.*	0	BLOCK	GENERIC	Block all calls that start with 976 and 9 976.

**Note:** The key to blocking phone numbers is to add the lines representing blocked numbers at the top of the translation table file. If this is not done, a non-blocking entry may match the dialed number before the blocked entry is checked and the call may be allowed through.

The system also blocks the outdial request if the number does not match any entries in the translation table.

## About Answer Supervision

Positive answer supervision informs you of the time when a call is answered. Not all trunk types have positive answer supervision. In general, E&M-type trunks do and loop-start trunks do not. The control character "R" in the dialing string indicates to wait for answer supervision before giving control back to the VUI. The absence of an "R" in the dialing string means that the VUI will get control back immediately after all the digits are dialed, even if the far end has not yet answered.

For purposes of answer supervision, there are two different types of outdial requests:

- Called number will be connected to Cisco Unified MeetingPlace and prompts played.

For example, when calling many people using the blast outdial option, the system prompts the caller to join the meeting. In this case, we would like to play the prompt right when the caller answers the phone and not before (because the caller could start hearing the prompt in the middle) or after (because the caller could hear only silence before the prompt starts playing).

- Called number connected to another user through Cisco Unified MeetingPlace.

The loop-through transfer is included in this category, as well as dialing out from a meeting by pressing #3. In this case, you want to make a voice connection between the dialed number and the other user connected to Cisco Unified MeetingPlace as soon as all the digits are dialed. This allows you to hear the call progress tones independent of whether the type of trunk has positive answer supervision. In this case we do not wait for answer supervision before the connection is made.

An "R" is automatically appended to the dialing string for all non-loop transfers outdials (blast outdial), independent of the trunk type. All other type of outdials will not have an "R" at the end, such as when you press #3 while in a meeting. The port type has an impact on the digit translation table entries with respect to answer supervision, because the objective is to start playing a prompt to the caller at the moment that the caller answers, not before nor later.

If a trunk does not give positive answer supervision, the system ignores the "R" in the dialing string and immediately gives control back to the VUI. If the outdial is a non-loop through transfer, the VUI starts playing the prompts immediately. Assuming that the user takes four seconds to answer the call, the person answering the call misses the first four seconds of the prompts.

The above problem can be minimized, although never completely eliminated, by adding delays after the "R" command for all port types that do not give positive answer supervision. For example, an entry such as:

From	To	PortGroup	DestType	Comment
988....R	988....R,,	1	GENERIC	Delay before playing prompts.

tells Cisco Unified MeetingPlace to wait four seconds for all outdials that request the system to wait for an answer when using port group 1, assuming that all ports in port group 1 do not provide positive answer supervision. If port group 2 provides positive answer supervision, then the entry in the translation table would be:

From	To	PortGroup	DestType	Comment
988....R	988....R	2	GENERIC	No delays required.

## Selecting a Port When Outdialing

Calls can be made in two ways: outdialing over the same port that the user is connected to (flash transfer) and outdialing over a different port (blast outdialing or dialing #3 out of a meeting).

When outdialing over the same port, the system scans the translation table being used for an entry with the same port group as the port group to which the port belongs. If the system does not find an entry with the same port group, the system blocks the number.

When outdialing over a different port, the first step for selecting the port is to pass the phone number through the translation tables. The outcomes of the digit translation are the translated phone number and the port group number from which the outdial port should be selected.

The system selects a port in a port group by scanning for the lowest numbered port in the group that is idle, until all ports in the port group have been scanned. If the system cannot find a port (because no ports are idle or outdialing is not allowed on some ports), then the system passes the phone number through the translation tables again, starting with the next entry in the table. This process continues until the translation table entries and port groups are exhausted. If the system does not find a port, the system rejects the request.

The VUI has a retry mechanism that requests a new outdial after a configurable delay.

## Pacing While Outdialing

The system implements pacing to avoid overloading the switch (PBX or Central Office) to which Cisco Unified MeetingPlace is connected with a large number of simultaneous outdials. Overloading can manifest in several ways, such as a lack of CPU real time or running out of DTMF registers in the switch.

There are three variables that control the outdial pacing:

- Maximum number of simultaneous outdials-The maximum number of calls that can dial to the switch at the same time. (Other calls might be waiting for answer supervision.) The default is 4.
- Delay between two consecutive outdials-The delay between two consecutive port seizures from Cisco Unified MeetingPlace. The default is one second.
- Delay after an outdial error-The amount of time that the system waits after detecting an error in the outdial process. The system delays the next outdial even if there are less than the maximum number of simultaneous outdials. The default is three seconds.

The best case scenario for a 120 blast outdial meeting is approximately two minutes. The following equation

provides an estimate of how long a blast outdial may take:

$$\text{TotalDelay} = \text{NumCalls} * \text{DelayBetweenOutDials} + \text{NumErrors} * \text{DelayBetweenErrors}$$