Custom Trunk Group Access Configuration Guide

When configuring a NetVanta 7000 Series, it may be necessary to change the functionality of dialing "9" when calling an external number. This document will explain the configuration needed to dial a digit other than "9" when calling an external number on any ADTRAN IP 700 Series or ADTRAN branded Polycom phone. To see the configuration changes needed to remove the "9" and not require any digit dialing for calling an external number see the end of this document.

A summarization of the configuration steps are listed below:

- Identify the ranges of numbers currently in use for internal extensions.
- Add/Modify Voice Dial Plan Entries for new appended digit.
- Add/Modify Dial Strings for IP Phone Configurations.
- Add/Modify Trunk Groups to respect new appended digit.
- Apply DNIS Substitution on outbound trunks.

Before you begin
Save a copy of your current configuration. You can do this under Utilities on the Configuration page. Remember to put a check in the box to "Include Voice Settings".

Identifying Ranges of Numbers in Use
Before configuring, it is important to note which numbers are currently being used to avoid conflict with routing calls to users or internal services running on the NetVanta 7000 Series product. To review these, you will need to look at "User Accounts", "Ring Groups", "Voicemail Settings", and "Auto Attendants". These numbers can be easily reviewed under the respectable selections in the Voice menu in the Web Interface.

The leading digit is used to identify if the call is external. Looking at your ranges that are currently in use, a number should be decided upon that does not lead an extension or service on the NetVanta 7000 Series product. Otherwise, reconfiguration of the conflicting "User Accounts", "Ring Groups", "Voicemail Extensions", or "Auto Attendants" will be needed to change the ranges.

Adding/Modifying Voice Dial Plan Entries

Entries can be viewed and edited by using the "Dial Plan" portion of the Voice menu. Voice Dial Plan entries will be needed in order for the unit to identify that

a call is completely dialed on analog users as well as applying rules in the Classes of Service for users. It is important to remove entries with the leading "9" if dialing "9" for external numbers is not desired as this could lead to conflicts in future additions to the configuration. Below, Figure 1 shows a dial-plan that is typical to a default configuration. Figure 2 depicts the changes needed in order for users to dial seven for an external number.

Dial Plan Template	Number Type	
911	Always Permitted	Delete
9-911	Always Permitted	Delete
0	Internal Operator	Delete
MXXX	Extensions	Delete
9-NXX-XXXX	Local	Delete
9-1-NXX-NXX-XXXX	Long Distance	Delete
9-1-800-NXX-XXXX	Toll Free	Delete
9-1-888-NXX-XXXX	Toll Free	Delete
9-1-877-NXX-XXXX	Toll Free	Delete
9-1-866-NXX-XXXX	Toll Free	Delete
9-0-NXX-NXX-XXXX	Operator Assisted	Delete
9-011-$	International	Delete

Figure 1 - Typical Voice Dial Plan Entries

Dial Plan Template	Number Type	
911	Always Permitted	Delete
0	Internal Operator	Delete
MXXX	Extensions	Delete
7-911	Always Permitted	Delete
7-NXX-XXXX	Local	Delete
7-1-NXX-NXX-XXXX	Long Distance	Delete
7-1-800-NXX-XXXX	Toll Free	Delete
7-1-888-NXX-XXXX	Toll Free	Delete
7-1-877-NXX-XXXX	Toll Free	Delete
7-1-866-NXX-XXXX	Toll Free	Delete
7-0-NXX-NXX-XXXX	Operator Assisted	Delete
7-011-$	International	Delete

Figure 2 - Voice Dial Plan Configured for Dialing 7 for External Numbers

Adding/Modifying Dial Strings in IP Phone Globals

In order for SIP phones to be aware of the change, the Dial Strings in the phone configurations will need to be updated. This is done through the IP Globals menu under the Default Settings tab. In this example, the phone configuration was changed from the default of dialing "9" to "7". Figure 3 depicts the default configuration where "9" is required to dial for external numbers. Figure 4 shows the changes needed to require a "7" to dial an external number. To change an entry, click on it to select it, replace the "9" with "7" (in this case, and click

Change. Also, you will need to apply this to new and existing configurations. This is done by selecting the "New and Existing Configurations" radio button before clicking the Apply Button. This portion is showed in Figure 5.
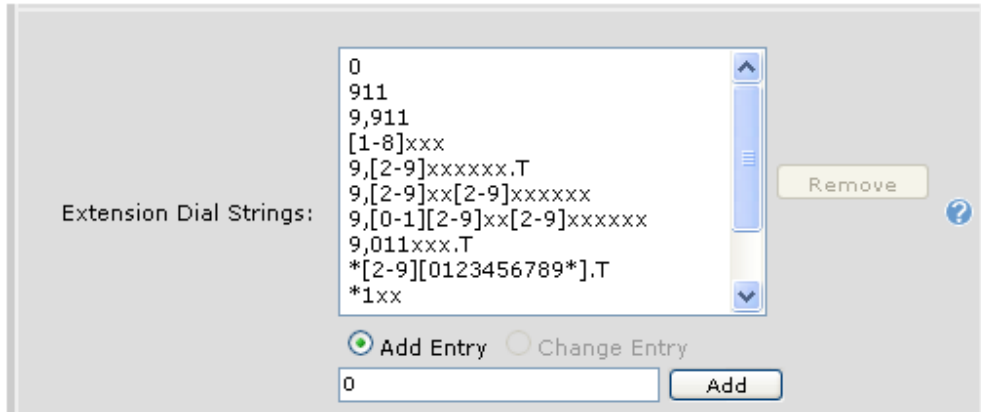

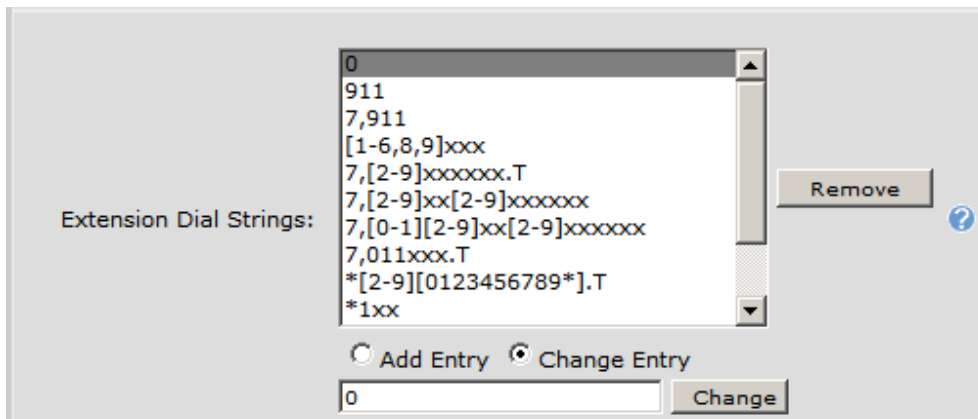Figure 3 - Default Dial String Entries

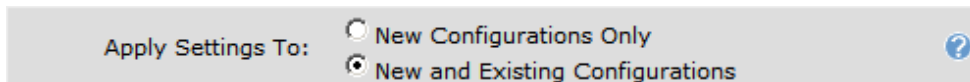Figure 4 - Modified Dial String Entries for Dialing "7" for External Numbers

Figure 5 - Applying to New and Existing Configurations

Adding/Modifying Trunk Groups

In this example, the NetVanta 7000 Series product will need to be configured to accept calls in various formats that start with seven. This is done by modifying or adding the accept templates for the desired outbound trunk. To do this, you will need to click the "Configure Advanced Templates" button at the bottom of the Trunk Group page. The button can be seen in Figure 6. Please note, this step is

not needed if you are using the wildcard $ to accept all numbers on the trunk. Figure 7 illustrates the needed configuration for accepting numbers. You may need to use different templates than what is illustrated for your call flow.
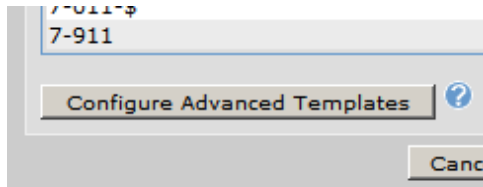

Figure 6 - Configure Advanced Templates

Figure 7 - Accept Templates Added

Applying DNIS Substitution on Outbound Trunks

Unlike a "9", any other digit will not be removed from the dialed number within the workings of the NetVanta 7000 Series products. In order for the leading digit to be stripped from the front of the dialed number, a DNIS substitution is needed to strip the leading digit. Substitutions are done on the Trunk Account configuration page under the DNIS Substitution tab. Figure 8 displays the needed configuration to remove the leading seven.

Figure 8 - DNIS Substitution

The configuration is now complete. Always save a copy of the changed configuration.

Modifying the Configuration to Remove a "9" for External Dialing

By default a "9" is needed to dial an outside number. To change this, modifications will need to be made to the dial plan entries on the phone, 7100 and accept templates in the Trunk Groups.

The Dial Strings for the IP Phone Configs will need to be modified so the "9" is removed for dialed extensions. The current dial string of [1-8]xxx for 4 digit extension dialing will need to be modified to [1-8]xxx.T and this will allow an interdigit timeout to allow more digits to be dialed.
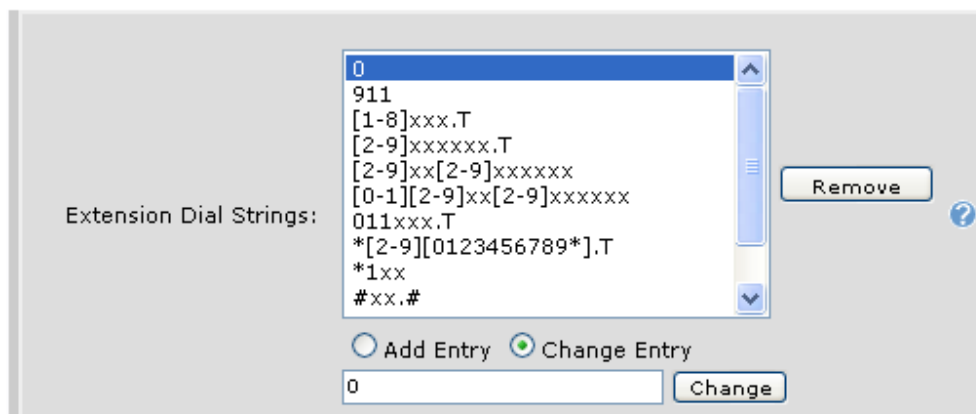

Figure 9 - Voice Dial Plan Configured for Removing 9 for External Numbers

The Dial Plan on the 7100 has to be modified to remove the "9" for local, long distance, toll free, 900, and international calls.

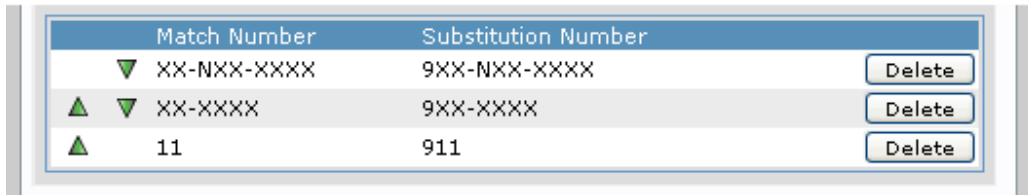| Dial Plan Template	Number Type	
911	Always Permitted	Delete
011-$	International	Delete
0	Internal Operator	Delete
MXXX	Extensions	Delete
1-900-NXX-XXXX	900	Delete
1-976-NXX-XXXX	900	Delete
976-XXXX	900	Delete
NXX-XXXX	Local	Delete
1-NXX-NXX-XXXX	Long Distance	Delete
1-800-NXX-XXXX	Toll Free	Delete
1-888-NXX-XXXX	Toll Free	Delete
1-877-NXX-XXXX	Toll Free	Delete
1-866-NXX-XXXX	Toll Free	Delete

Figure 10 - Voice Dial Plan Configured for Removing 9 for External Numbers

In the Trunk Group configuration accept templates will have to be deleted and added so the preceding "9" is removed.

Permit Template	Cost	
Long Distance Calls (1-NXX-NXX-XXXX)	Low (0)	Delete
Local Calls (NXX-NXX-XXXX)	Low (0)	Delete
Local Calls (NXX-XXXX)	Low (0)	Delete
International Calls (011-$)	Low (0)	Delete
911 Calls (911)	Low (0)	Delete

Figure 11 - Accept Templates Added

The Netvanta 7100 will alway remove a preceding "9" from any dialed number. So when trying to dial an number beginning with a "9" a DNIS substitution will have to be configured on the Trunk Account for that call. This will add the preceding "9" back as the call is routed out the voice trunk.

		Match Number	Substitution Number	
	▼	XX-NXX-XXXX	9XX-NXX-XXXX	Delete
▲	▼	XX-XXXX	9XX-XXXX	Delete
▲		11	911	Delete

Figure 12 - DNIS Substitution

The configuration is now complete. Always save a copy of the changed configuration.