



Configuration Guide

Enhanced ANI/DNIS Substitution in AOS

This configuration guide describes automatic number identification (ANI) substitution and dialed number identification service (DNIS) substitution and their uses on ADTRAN Operating System (AOS) voice products. This guide contains information about enhanced ANI substitution, enhanced DNIS substitution, and DNIS:ANI replacement. Also included in this guide are detailed configuration examples, a command line interface (CLI) command summary, and troubleshooting information.

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ANI/DNIS Substitution Technology Overview

ANI/DNIS substitution is a method of replacing the original ANI or DNIS call information with user-configured information. This feature is beneficial in controlling the call information that is sent with each call, allowing administrators to control what private party numbers are displayed on public networks. ANI/DNIS substitution is also helpful in managing calls in high-volume call centers, where the information attached to calls can be used to gather data about the call, or used to forward calls to a specific party based on the calling party's ANI and DNIS information.

The ANI information is the calling party's information, and the DNIS information is the called party's information. Both can be substituted or replaced using the AOS ANI/DNIS substitution feature.

To fully understand the benefit of the ANI/DNIS substitution feature, it is important to understand the principles behind ANI and DNIS call information.

ANI Overview

ANI is a service that provides the receiver of a telephone call with the number of the calling phone. For example, ANI is used by emergency dispatchers to quickly respond to an emergency when the caller is unable to report their location. The emergency dispatchers are able to use the two parts of ANI to locate the caller and retrieve the caller's telephone number. The two parts of ANI are its information digits and the calling party's telephone number. The information digits designate class of service (CoS) and are transmitted by dual tone multi-frequency (DTMF) tones or in-band multi-frequency (MF) signaling. This information may sound like caller ID, but it is a separate entity that is transmitted with the phone call, even if caller ID blocking is activated, allowing receivers of the information to determine the calling party's phone number and, in some cases, location.

ANI operates by causing the local switching system to send out (or outpulse) the calling customer's directory number (DN) to equipment that requires this information. This equipment could be a centralized automatic message accounting service, an operator services system, or any other office equipment that requires calling number identification. The location that receives the DN can use it for billing or call routing purposes.

DNIS Overview

DNIS is a service that provides the receiver of a telephone call with the telephone number the calling party dialed. This information is useful in determining how to route an inbound call, especially in call centers with multiple 800 or 900 lines. The DNIS information, typically 4 to 10 digits in length, can help call centers route calls to the appropriate destination based on which number was dialed by the customer.

DNIS operates by passing the DTMF or MF digits to the destination, where the information is read and processed. This information is used in call center programming, operator services systems, or other office equipment.

DNIS and ANI work together to help administrators streamline calls. For example, in a scenario with a fax machine, the DNIS information tells which fax machine is called, and the ANI information tells the fax machine where to send the fax back. If only DNIS digits were delivered, the calling party would have to enter their fax back number and the server would have to analyze the DTMF digits to know where to send the fax. Using a combination of ANI and DNIS is less complex, more efficient, and saves time over using only DNIS information.

ANI/DNIS Substitution in AOS

Enhanced ANI/DNIS substitution is available on all AOS voice products running AOS A2 or higher. A complete list of AOS voice products and the ANI substitution versions supported is located in the section [Hardware and Software Requirements and Limitations below](#).

Enhanced ANI/DNIS Substitution

Enhanced ANI substitution is configured on a per-trunk basis for outbound trunks, and affects both the number and the name (if the trunk supports ANI name information) of the calling party.

DNIS substitution is also configured on a per-trunk basis for outbound trunks. In enhanced ANI/DNIS substitution, DNIS substitution can only affect the number information of the called party.

An additional feature in the enhanced ANI/DNIS substitution is the per-trunk configuration of ANI replacement based on DNIS. This feature is a one-to-one replacement that occurs on outbound trunks that support ANI. Both the name and number of the calling party are optionally affected, but it does not affect the called party information in any way. Before any ANI or DNIS substitutions, the DNIS information is matched against the original DNIS information and then user-configured ANI information replaces the original ANI information.

Hardware and Software Requirements and Limitations

Enhanced ANI/DNIS substitution is supported in AOS voice products running AOS firmware version A2 or later. These products include the NetVanta 6000 and 7000 Series products and the Total Access 900(e) Series.



*Although the NetVanta 7000 Series supports both the traditional and enhanced versions of ANI substitution, it is important to remember that the traditional ANI substitution is configured globally on **inbound** trunks, and the enhanced ANI substitution is configured on a per-trunk basis for **outbound** trunks.*

The following trunks support ANI name substitutions: integrated services digital network (ISDN) trunks, Session Initiation Protocol (SIP) trunks, T1 loop start (LS) network trunks, and T1 ground start (GS) network trunks. DNIS name substitution is supported by SIP trunks only.

Configuring ANI/DNIS Substitution Using the CLI

The following section describes the CLI configuration for the enhanced ANI substitution, DNIS substitution, and DNIS:ANI replacement. Each feature uses a single command to create the substitution.

This configuration information assumes that all trunks, trunk groups, and other necessary network parameters have been configured. For more information about trunk configuration, refer to the configuration guide *NetVanta 7000 Series Trunk Accounts* available on the *AOS Documentation* CD or online at <http://kb.adtran.com> (article number 1541).

Enhanced ANI Substitution

Enhanced ANI substitution is enabled by using the **match ani** *<template>* **substitute** *<template>* **name** *<name>* command from the trunk's configuration mode.

The *<template>* parameter refers to the digit and wildcard information you would like to substitute and with what you would like for it to be substituted. The *<template>* parameter is defined in the same way as dial plan entries. The **name** *<name>* is an optional parameter available on trunks that support it.

Wildcards available for use are as follows:

0-9 = Match exact digit only.

M = Any digit 1 to 8

X = Any single digit (0 to 9).

N = Any digit 2 to 9.

[123] = Any digit contained in the bracketed list.

\$ = Any digit



Do not use spaces inside the brackets. Commas are implied between numbers in the brackets.

The special characters () and + are always ignored in the template. The special character - is ignored in the template unless inside brackets. The following are example template entries using wildcards:

1. 555-81XX matches 555-8100 to 555-8199.
2. 555-812[012] matches 555-8120 to 555-8122.
3. NXX-XXXX matches 7 digits local.
4. 1-NXX-NXX-XXXX matches long distance calls in North America.

The CLI also contains helpful information regarding the construction of the template and can be viewed by entering the **match ani** command followed by a question mark. For example, entering the command as follows results in the template input specifications:

```
(config)#voice trunk T04
```

```
(config-T04)#match ani ?
```

Examples and rules of use.

MATCH #	SUBST #	
1) NXX-XXXX	256-NXX-XXXX	(Format a call for 10 digit dialing)
2) 1-NXX-XXX-XXXX	NXX-XXX-XXXX	(Format LD call for 10 digit dialing)
3) 1-NXX-NXX-XXXX	10-10-220-NXX-NXX-XXXX	(Insert a LD call PIC code)
4) 411	256-555-1212	(Redirect 411 information calls)
5) \$	10\$	(Prepend a number)
6) XXXX\$	\$	(Strip leading digits)

SUBSTITUTE Number Rules -

- 1) All "," characters are ignored.
- 2) All "[" and "]" brackets must match, no nesting, no wildcards.
- 3) All "[" and "]" brackets may hold digits, commas [1239], [1,2,3,9].
- 4) All "[" and "]" brackets may contain a range [1-39], [1-3,9].
- 5) If using a "\$" wildcard, it must be at the end of the number.
- 6) "X" matches [0-9], "N" matches [2-9].
- 7) A preceding "!" will match the inverse of the template following the "!".
- 8) The "!" is only valid as the first character of a match source template.

To configure enhanced ANI substitution, enter the command at the trunk's configuration mode prompt as follows:

```
(config)#voice trunk T04
(config-T04)#match ani 555-81XX substitute 555-8000 name DepartmentA
(config-T04)#
```

In the preceding example, all numbers from 555-8100 to 555-8199 will have their ANI information replaced with **555-8000** on the ISDN trunk **T04**. The individual name information associated with each of those lines is replaced with **DepartmentA**. This might be beneficial in a situation where each department is billed separately for their calls. Rather than recording billing for each individual line, each line is redefined as the name and number for Department A for billing purposes.

Use the **no** form of this command to remove the ANI substitution for the specified template on this trunk.



An additional parameter exists with the **match** command which is not used for enhanced ANI substitution. The **add** keyword is used for adding SIP headers to outbound SIP messages on SIP trunks. For more information about adding SIP headers, refer to the *Adding SIP Headers to SIP Trunks in AOS Voice Products quick configuration guide*, available online at <http://kb.adtran.com> (article number 3408).

DNIS Substitution

DNIS substitution is configured on a per-outbound trunk basis. The original DNIS information is substituted with user-configured DNIS information in the same way as ANI substitution, using the same templates and wildcards.

DNIS substitution that is part of the traditional ANI substitution is configured using the **match dnis <template> substitute <template>** command.



The **match dnis <template> substitute <template>** command originated in firmware version A2. Previous versions of firmware use the command **match <template> substitute <template>**.

The **<template>** parameter refers to the digit and wildcard information you would like to substitute and with what you would like for it to be substituted. The **<template>** parameter is defined in the same way as dial plan entries.

Wildcards available for use are as follows:

- 0-9** = Match exact digit only.
- X** = Any single digit (0 to 9).
- N** = Any digit 2 to 9.
- [123]** = Any digit contained in the bracketed list
- \$** = Any digit



Do not use spaces inside the brackets. Commas are implied between numbers in the brackets.

The special characters () and + are always ignored in the template. The special character - is ignored in the template unless inside brackets. The following are example template entries using wildcards:

1. 555-81XX matches 555-8100 to 555-8199.
2. 555-812[012] matches 555-8120 to 555-8122.
3. NXX-XXXX matches 7 digits local.
4. 1-NXX-NXX-XXXX matches long distance calls in North America.

The CLI also contains helpful information regarding the construction of the template and can be viewed by entering the **match dnis** command followed by a question mark. For example, entering the command as follows results in the template input specifications:

```
(config)#voice trunk T03
```

```
(config-T03)#match dnis ?
```

Examples and rules of use.

MATCH #	SUBST #	
1) NXX-XXXX	256-NXX-XXXX	(Format a call for 10 digit dialing)
2) 1-NXX-XXX-XXXX	NXX-XXX-XXXX	(Format LD call for 10 digit dialing)
3) 1-NXX-NXX-XXXX	10-10-220-NXX-NXX-XXXX	(Insert a LD call PIC code)
4) 411	256-555-1212	(Redirect 411 information calls)
5) \$	10\$	(Prepend a number)
6) XXXX\$	\$	(Strip leading digits)

SUBSTITUTE Number Rules -

- 1) All "," characters are ignored.
- 2) All "[" and "]" brackets must match, no nesting, no wildcards.
- 3) All "[" and "]" brackets may hold digits, commas [1239], [1,2,3,9].
- 4) All "[" and "]" brackets may contain a range [1-39], [1-3,9].
- 5) If using a "\$" wildcard, it must be at the end of the number.
- 6) "X" matches [0-9], "N" matches [2-9].

The template rules apply to both the DNIS and substitution templates. To create a substitution for DNIS information, enter the command as follows:

```
(config)#voice trunk T03
```

```
(config-T03)#match dnis 1-334-NXX-XXXX substitute 1-800-557-4500
```

```
(config-T03)#
```

In the preceding example, the original called number (all numbers beginning with 1-334) is replaced with 1-800-557-4500. This might be beneficial in a situation where a company has a call center located in the 334 area code calling zone. The redirection of any number outside that area code (indicated by the 1) transfers the out-of-area calls to the proper 800 number, which handles out-of-area calls. Use the **no** form of this command to remove the DNIS substitution for the specified template on this trunk.

The DNIS substitution that is part of the enhanced ANI substitution operates in the same way as traditional DNIS substitution, but with the added ability to change the name information. This information is configured using the **match dnis** *<template>* **substitute** *<template>* **name** *<name>* command. The **name** parameter is optional, and only available on trunks that support DNIS name information.

To configure the DNIS name and number substitution, enter the command as follows:

```
(config)#voice trunk T03
(config-T03)#match dnis 1-334-NXX-XXXX substitute 1-800-557-4500 name OutOfArea
(config-T03)#
```

The preceding example builds on the previous example of traditional DNIS substitution by appending the name of the called party as the Out Of Area call center. Use the **no** form of this command to remove the DNIS substitution for the specified template on this trunk.

DNIS:ANI Replacement

The DNIS:ANI replacement is available only with the enhanced ANI substitution. This feature allows the matching of DNIS information to control the replacement of ANI information on a per-outbound trunk basis. The information is matched against the original DNIS information prior to any DNIS substitutions. Both ANI substitution and DNIS:ANI replacement can be configured at the same time, but the DNIS:ANI replacement will always take precedence over the ANI substitution. DNIS:ANI replacement affects the number and name (if supported) of the calling party, but does not affect the called party information.

The DNIS:ANI replacement is configured by using the **match dnis** *<template>* **replace ani** *<number>* [**name** *<name>*] command. The *<template>* parameter and the optional **name** *<name>* parameter operate the same as the ANI and DNIS substitution templates and name information. The *<number>* parameter is the ANI number to identify the calling party. Enter this number without punctuation.

To configure DNIS:ANI substitution, enter the command as follows:

```
(config)#voice trunk T05
(config-T05)#match dnis 256-XXX-XXXX replace ani 256-555-1000
(config-T05)#
```

In the preceding example, the original DNIS information is matched against the defined template (256-XXX-XXXX) and the original ANI information is replaced with 256-555-1000. This configuration can be beneficial in a situation where all calls should be returned to a primary number, rather than an individual's extension. For example, if a caller is calling from the number 334-555-1234, and is placing a call to the number 256-555-5678, their original DNIS information is 256-555-5678 and their original ANI information is 334-555-1234. The command entered in the previous example produces a DNIS match (256-555-5678 matches the DNIS template of 256-XXX-XXXX), which results in an ANI replacement. The original ANI information (334-555-1234) is replaced by 256-555-1000, which is what will appear on the call receiver's caller ID.

Use the **no** form of this command to remove the DNIS:ANI replacement for the specified numbers on this trunk.

Configuring ANI/DNIS Substitution Using the GUI

ANI/DNIS substitution configuration is also available through the Web-based graphical user interface (GUI). To access the GUI, follow these steps:

1. Open a new Web page in your Internet browser.
2. Enter your AOS product's IP address in the Internet browser's address field in the following form: **http://<ip address>** For example: **http://60.26.109.200**
3. At the prompt, enter your user name and password and select **OK**.

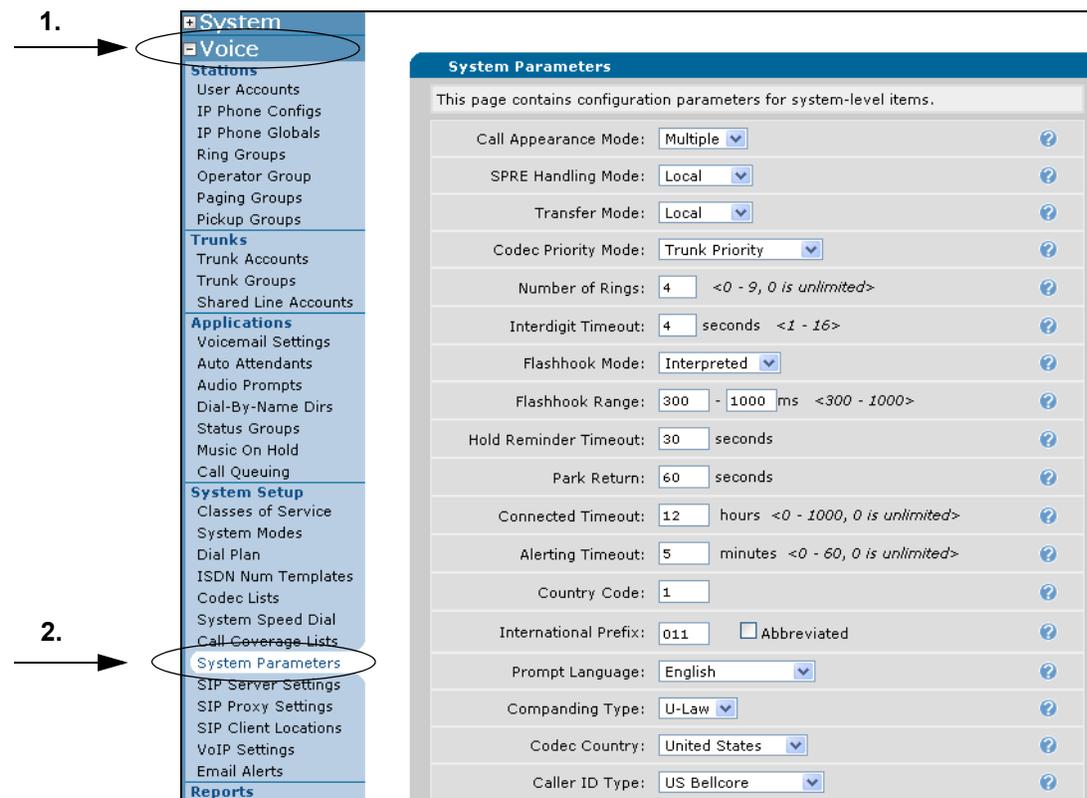


*The default user name is **admin** and the default password is **password**.*

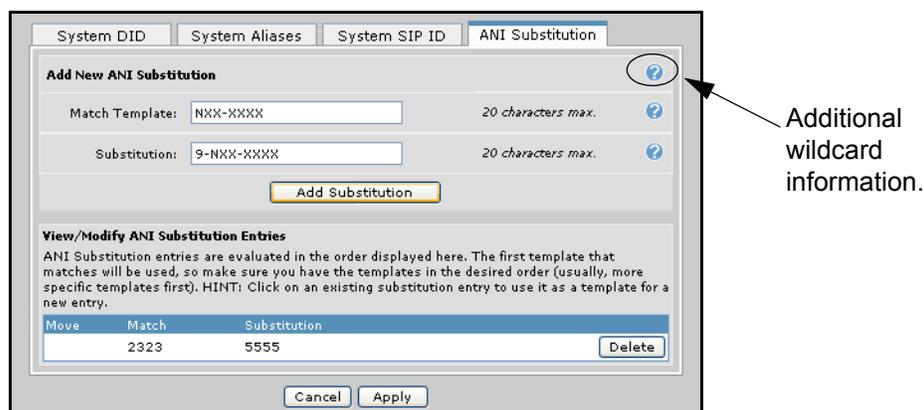
Configuring Traditional ANI Substitution

Traditional ANI substitution is configured globally for inbound trunks, and affects only the number of the calling party. To configure traditional ANI substitution, follow these steps:

1. Navigate to **Voice > System Setup > System Parameters**.

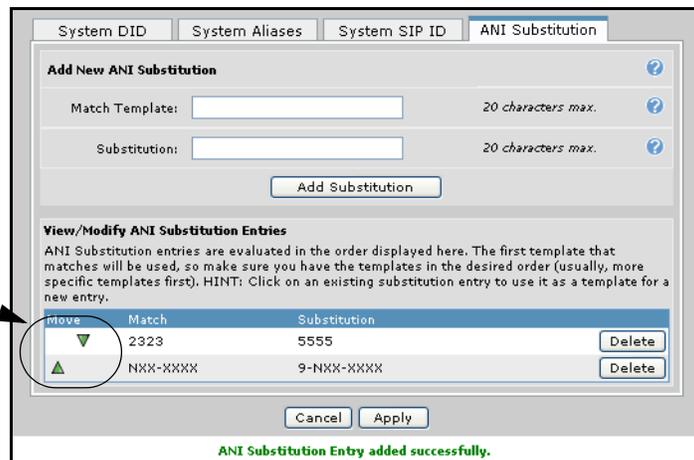


2. Select the **ANI Substitution** tab at the bottom of the **System Parameters** screen.
3. Enter the appropriate information in the **Match Template** and **Substitution** fields. Each field is limited to 20 characters, and uses the same wildcards described on [page 5](#) of this guide. Additional wildcard descriptions are available by hovering over the question mark icon.



- When both fields are complete, select the **Add Substitution** button. The new substitution appears at the bottom of the screen. If there are multiple substitutions, their order may be changed using the green arrows at the left of the menu.

Use arrows to arrange order.



- Traditional ANI substitution is now configured globally for inbound trunks. Configure as many substitutions as necessary for your network.



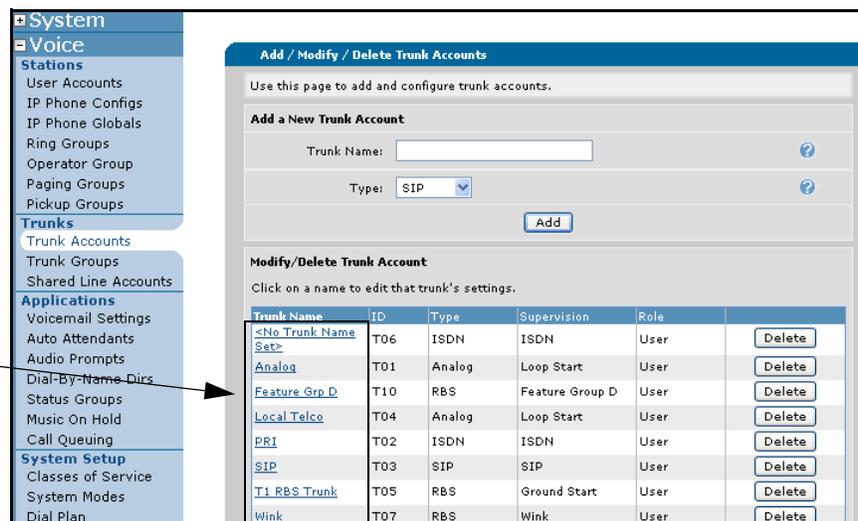
After firmware release A2, global ANI substitution for inbound trunks is only available on Netvanta 7000 Series products.

Configuring Enhanced ANI Substitution, DNIS Substitution, and DNIS:ANI Replacement

Enhanced ANI substitution, DNIS substitution, and DNIS:ANI replacement are available on a per-trunk basis. To access trunk configurations, follow these steps:

- Navigate to **Voice > Trunks > Trunk Accounts**.

Trunk name hyperlink.



2. Select the trunk that you want to configure with ANI substitution, DNIS substitution, or DNIS:ANI replacement. Trunks are selected by selecting the trunk name hyperlink. For these examples, an ISDN trunk is chosen.
3. After selecting the trunk you want to modify, the trunk's configuration parameters appear on the menu.

The screenshot displays the 'Trunk Accounts > T06' configuration page. The left sidebar shows a navigation menu with categories like System, Voice, Trunks, Applications, System Setup, Reports, Data, Monitoring, and Utilities. The main content area is divided into several sections:

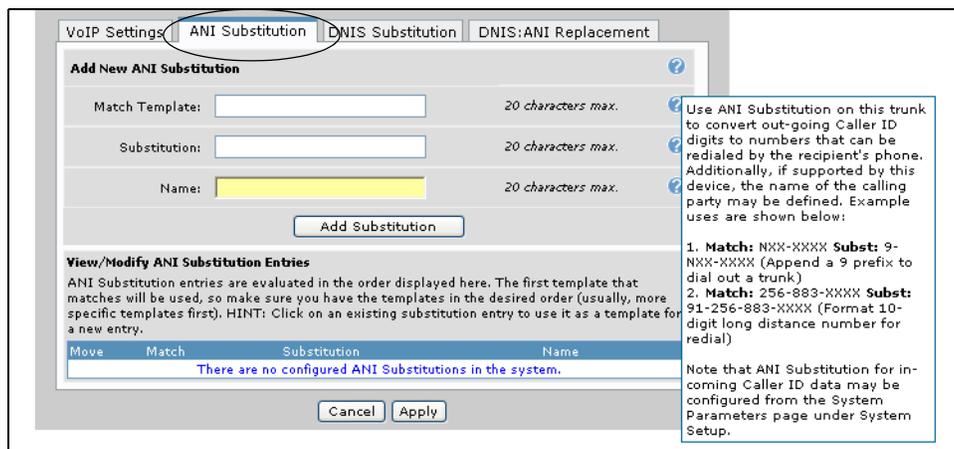
- Trunk Status:** Shows 'Operational Status: Unavailable' and 'Administrative Status: Enabled' with 'Reset' and 'Apply' buttons.
- Edit Trunk:** Contains 'Trunk Account Information' with fields for Trunk ID (T06), Type (ISDN), Supervision (ISDN), Trunk Name, Reject External (checked), Resource Selection (Circular Hunt Descending), Emergency Caller ID Override, Inbound Caller ID Override, and Inbound Caller ID Override Method (Always).
- ISDN Settings:** Includes ISDN Interface (<Not Set>), Min Needed B Channels (Not specified), and Max Needed B Channels (Not specified).
- VoIP Settings:** This section is expanded to show three tabs: 'ANI Substitution', 'DNIS Substitution', and 'DNIS:ANI Replacement'. Below the tabs are various settings:
 - Codec Group: <default> (G.711 uLaw)
 - Modem Passthrough: Disabled
 - T38: Disabled
 - VAD: Disabled
 - PLC: Enabled
 - NLS: Enabled
 - ALC: Enabled
 - Echo Cancellation: Enabled
 - RTP Settings:**
 - Frame Packetization: 20 ms
 - Packet Delay Mode: Adaptive
 - Packet Delay: Nominal (50 ms), Maximum (100 ms), Fax (50 ms)
 - DTMF Relay: NTE Value (101)
 - RTP DSCP Value: Global Default (46)

4. To access ANI substitution, DNIS substitution, or DNIS:ANI replacement, select the appropriate tab from the bottom of the **Edit Trunk** menu.

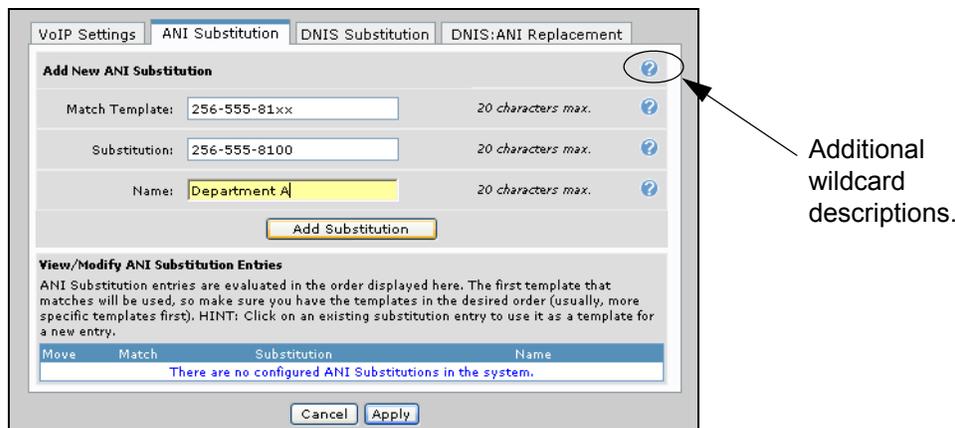
Enhanced ANI Substitution

Enhanced ANI substitution is configured on a per-trunk basis on outbound trunks, and can replace the calling party's number and name. As the online configuration help indicates (accessed by hovering over the question mark icon), ANI substitution converts outgoing caller ID digits to numbers that can be redialed by the recipient's phone. To configure enhanced ANI substitution, follow these steps:

1. Select the **ANI Substitution** tab at the bottom of the **Edit Trunk** menu.

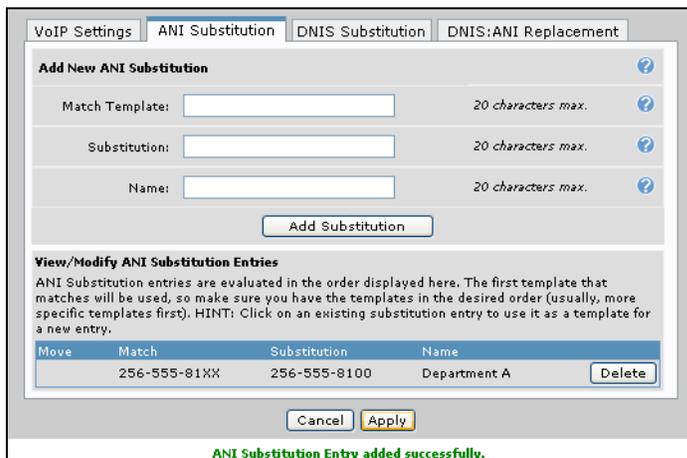


2. Enter the appropriate information in the **Match Template** and **Substitution** fields. The **Match Template** field indicates which numbers you want to match for substitution, and the **Substitution** field indicates what numbers will be substituted. Each field is limited to 20 characters, and uses the same wildcards described on [page 5](#) of this guide. Additional wildcard descriptions are available by hovering over the question mark icon. The **Name** field should also be filled in at this time, if it is supported. When all fields are completed, select the **Add Substitution** button.



NOTE *ANI substitution entries are evaluated in the order displayed. The first template that matches will be used, so make sure you have the templates in the desired order (usually, more specific templates first).*

- After selecting **Add Substitution**, the configured ANI substitution appears at the bottom of the menu. Configure as many ANI substitutions as necessary for the trunk, and select **Apply**.

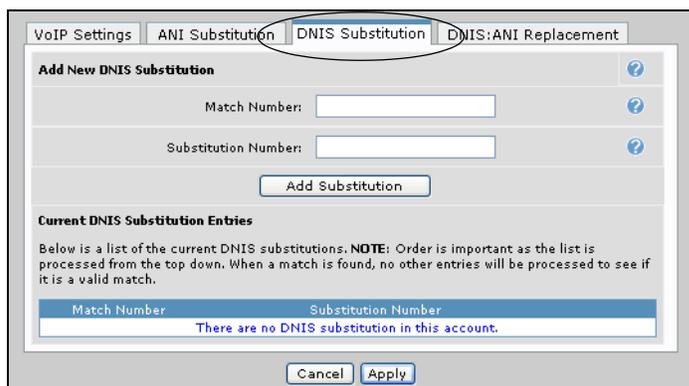


- ANI substitution is now configured for the selected trunk. Repeat these steps for each trunk necessary.

DNIS Substitution

DNIS substitution is configured on a per-outbound trunk basis. The original DNIS information is substituted with user-configured DNIS information in the same way as ANI substitution, using the same templates and wildcards. Use DNIS substitution if you want a dialed number to be replaced by another number. To configure DNIS substitution on a selected trunk, follow these steps:

- Select the **DNIS Substitution** tab at the bottom of the **Edit Trunk** menu.



2. Enter the appropriate numbers or wildcards in the **Match Number**, **Substitution Number**, and **Name** (where supported) fields, and select the **Add Substitution** button.

VoIP Settings ANI Substitution **DNIS Substitution** DNIS:ANI Replacement

Add New DNIS Substitution ?

Match Number: Nxx-xxxx ?

Substitution Number: 256-Nxx-xxxx ?

Add Substitution

Current DNIS Substitution Entries

Below is a list of the current DNIS substitutions. **NOTE:** Order is important as the list is processed from the top down. When a match is found, no other entries will be processed to see if it is a valid match.

Match Number	Substitution Number
There are no DNIS substitution in this account.	

Cancel Apply



DNIS substitution entries are evaluated in the order displayed. The first template that matches will be used, so make sure you have the templates in the desired order (usually, more specific templates first).

3. After selecting **Add Substitution**, the DNIS substitution appears at the bottom of the menu. Configure as many DNIS substitutions as necessary for the trunk, and select **Apply**

VoIP Settings ANI Substitution **DNIS Substitution** DNIS:ANI Replacement

Add New DNIS Substitution ?

Match Number: ?

Substitution Number: ?

Add Substitution

Current DNIS Substitution Entries

Below is a list of the current DNIS substitutions. **NOTE:** Order is important as the list is processed from the top down. When a match is found, no other entries will be processed to see if it is a valid match.

Match Number	Substitution Number	
NXX-XXXX	256-NXX-XXXX	Delete

Cancel Apply

DNIS Substitution number added successfully.

4. The DNIS substitution is now configured for the selected trunk. Repeat these steps for each trunk necessary.

DNIS:ANI Replacement

DNIS:ANI replacement allows the replacement of DNIS information with specified ANI information on a per-outbound trunk basis. The information is matched against the original DNIS information prior to any DNIS substitutions. Both ANI substitution and DNIS:ANI replacement can be configured on a single trunk, but the DNIS:ANI replacement will supersede the ANI substitution. DNIS:ANI replacement affects the number and name (if supported) of the calling party, but does not affect the called party's information in any way.

To configure DNIS:ANI replacement, follow these steps:

1. Select the **DNIS:ANI Replacement** tab at the bottom of the **Edit Trunk** menu.

VoIP Settings ANI Substitution DNIS Substitution **DNIS:ANI Replacement**

Add New DNIS:ANI Replacement ?

Match DNIS Template: 20 characters max. ?

ANI Replacement: 20 characters max. ?

ANI Name: 20 characters max. ?

Add Replacement

View/Modify DNIS:ANI Replacement Entries

DNIS:ANI Replacement entries are evaluated in the order displayed here. The first template that matches will be used, so make sure you have the templates in the desired order (usually, more specific templates first). HINT: Click on an existing replacement entry to use it as a template for a new entry.

Move	DNIS Match	ANI Replacement	ANI Name
There are no configured DNIS:ANI Replacements in the system.			

Cancel Apply

2. Enter the appropriate numbers or wildcards in the **Match DNIS Template** and **ANI Replacement** fields. Both fields use the same wildcards as described on [page 5](#) (also listed in the online help), and both are limited to 20 characters in length. The DNIS template information is the numbers that will be matched, and the ANI replacement is the information that replaces the original ANI information.



Enter the ANI replacement number with no punctuation.

3. Also, enter the necessary information in the **ANI Name** field to change the name of the calling party (where supported). Once all fields are completed, select the **Add Replacement** button.

VoIP Settings ANI Substitution DNIS Substitution **DNIS:ANI Replacement**

Add New DNIS:ANI Replacement ?

Match DNIS Template: 20 characters max. ?

ANI Replacement: 20 characters max. ?

ANI Name: 20 characters max. ?

Add Replacement

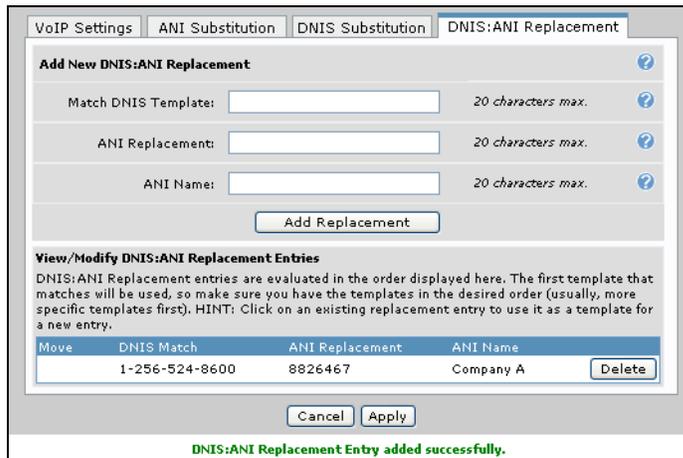
View/Modify DNIS:ANI Replacement Entries

DNIS:ANI Replacement entries are evaluated in the order displayed here. The first template that matches will be used, so make sure you have the templates in the desired order (usually, more specific templates first). HINT: Click on an existing replacement entry to use it as a template for a new entry.

Move	DNIS Match	ANI Replacement	ANI Name
There are no configured DNIS:ANI Replacements in the system.			

Cancel Apply

- After selecting **Add Replacement**, the DNIS:ANI replacement appears at the bottom of the menu. Configure as many DNIS:ANI replacements as necessary for this trunk, and select **Apply**.



VoIP Settings ANI Substitution DNIS Substitution **DNIS:ANI Replacement**

Add New DNIS:ANI Replacement ?

Match DNIS Template: 20 characters max. ?

ANI Replacement: 20 characters max. ?

ANI Name: 20 characters max. ?

View/Modify DNIS:ANI Replacement Entries

DNIS:ANI Replacement entries are evaluated in the order displayed here. The first template that matches will be used, so make sure you have the templates in the desired order (usually, more specific templates first). HINT: Click on an existing replacement entry to use it as a template for a new entry.

Move	DNIS Match	ANI Replacement	ANI Name	
	1-256-524-8600	8826467	Company A	<input type="button" value="Delete"/>

DNIS:ANI Replacement Entry added successfully.



DNIS:ANI replacement entries are evaluated in the order displayed. The first template that matches will be used, so make sure you have the templates in the desired order (usually, more specific templates first).



DNIS:ANI replacement entries supersede ANI substitution on the trunk.

- The DNIS:ANI replacement is now configured for the selected trunk. Repeat these steps for each trunk necessary.

DNIS:ANI Replacement Configuration Example

The following CLI configuration example configures a Total Access 900 so that all calls are returned to the company's primary number, and not an individual's extension. In addition, the company prefers that all callers in north Alabama call one number, all callers in central Tennessee call another number, and all callers outside both locations call a third number.

The DNIS:ANI replacement is configured on the SIP trunk, which connects to a service provider. In this configuration, any calls outbound to the network will be subject to ANI modifications if the DNIS information matches the template.

The following configuration reflects these parameters:

```
(config)#voice trunk T04
(config-T04)#match dnis 256-XXX-XXXX replace ani 256-555-1000
(config-T04)#match dnis 615-XXX-XXXX replace ani 615-555-1000
(config-T04)#match dnis $ replace ani 800-555-1000
(config-T04)#exit
```

ANI/DNIS Substitution Command Summary

The following table summarizes the commands associated with the ANI substitution feature.

Table 1. ANI Substitution Command Summary

Prompt	Command	Description
(config-Txx)#	[no] match ani <template> substitute <template> [name <name>]	Configures enhanced ANI substitution on a per-trunk basis for outbound trunks. Optionally, affects the name of the calling party if ANI names are supported on the trunk.
<i>Note: Only available on units running firmware A2 or later.</i>		
(config-Txx)#	[no] match dnis <template> substitute <template>	Configures DNIS substitution on a per-trunk basis for outbound trunks.
<i>Note: Only available on units running firmware prior to A2.</i>		
(config-Txx)#	[no] match dnis <template> substitute <template> [name <name>]	Configures DNIS substitution on a per-trunk basis for outbound trunks. Optionally, affects the name of the called party if DNIS names are supported on the trunk.
<i>Note: Only available on units running firmware A2 or later.</i>		
(config-Txx)#	[no] match dnis <template> replace ani <number> [name <name>]	Configures DNIS replacement by ANI information. Optionally, affects the name of the calling party if ANI names are supported on the trunk.
<i>Note: Only available on units running firmware A2 or later.</i>		

Troubleshooting

There are two methods to verify that ANI substitution, DNIS substitution, or DNIS:ANI replacement has been configured correctly. Both the CLI and the GUI are available for simple troubleshooting.

Troubleshooting Using the CLI

The CLI offers two commands to aid in troubleshooting ANI substitution configuration.

The first command is the **debug voice trunkaccount <Txx>** command. This command is entered from the Enable mode prompt, and displays information about a configured trunk, including the ANI substitution information. To enable debug messages about the configured trunk, enter the command as follows:

#debug voice trunkaccount T04

This command will send notification whenever an event occurs on trunk T04. This notice can be beneficial in determining how a trunk is configured, how the substitution or replacement is configured, and whether there are problems in the trunk's configuration.

The second command is the **show voice running-config trunk** command. This command displays the current configuration of voice functionality as shown in the following sample output. Enter the command as follows:

#show voice running-config trunk

Building configuration...

```
voice trunk T01 type analog supervision loop-start
  description "Analog"
  caller-id
  trunk-number 8200
  connect fxo 0/1
  rtp delay-mode adaptive
  codec-group g711_first

voice trunk T02 type isdn
  description "PRI"
  resource-selection circular descending
  match dnis "1-256-524-8600" substitute "882-6467"
  match ani "1-256-524-8600" substitute "882-6467" name "Company A"
  rtp delay-mode adaptive

voice trunk T03 type sip
  description "SIP"

voice trunk T04 type analog supervision loop-start
  description "Local Telco"
  rtp delay-mode adaptive

voice trunk T05 type t1-rbs supervision ground-start role user
  description "T1 RBS Trunk"
  rtp delay-mode adaptive
```

```
voice trunk T06 type isdn
  resource-selection circular descending
  match dnis "1-334-NXX-XXXX" substitute "1-800-557-4500"
  match ani "256-555-81XX" substitute "256-555-8100" name "Department A"
  match ani "1-334-NXX-XXXX" substitute "1-800-557-4500"
  rtp delay-mode adaptive

voice trunk T07 type t1-rbs supervision wink role user
  description "Wink"
  rtp delay-mode adaptive

voice trunk T10 type t1-rbs supervision fgd role user
  description "Feature Grp D"
  rtp delay-mode adaptive

end
```

Using this command allows you to see what ANI substitutions, DNIS substitutions, or DNIS:ANI replacements have been configured on which trunks. Viewing this information can aid in ensuring that all trunks and substitution parameters have been configured correctly.