61200740E1-29.1B
May 2010

Configuration Guide

SABR in AOS

This configuration guide describes source and automatic number identification (ANI) based routing (SABR) and its use on ADTRAN Operating System (AOS) voice products. This guide contains overview and configuration information about SABR, as well as example SABR configurations through AOS's command line interface (CLI).

This guide consists of the following sections:

SABR Overview

SABR is a feature on AOS voice products that enhances call routing services by routing calls based on either source trunk or ANI information. By routing calls based on this information, rather than the standard dialed number identification service (DNIS) information, more flexible and user-centered networks can be created. For example, using SABR allows faxes and modems to be limited to user-specified trunks for connections, as well as restricts the types of calls certain users are allowed to dial, while maintaining full access for others. SABR can allow certain users (for example, hotel guests) to be able to only dial certain numbers out a specified trunk group (for example, 911) while allowing other users (for example, front desk personnel) full access to the trunk group. In essence, SABR is a feature that can restrict the access of certain trunks (sources) and certain users (ANI) to a configured trunk group.

SABR can specify whether a specific user's call is allowed to be routed to a specific outbound trunk, basing the routing decision on either the call's originating user's ANI information, or the call's originating trunk's source information. SABR builds and improves upon the DNIS call routing system by allowing calls from an inbound trunk to be routed to an outbound trunk based on either the originating trunk information or the calling party (ANI) information. SABR also gives the option for calls to be routed to trunks outside the network, rather than only to nontrunk voice stations.

To fully understand the benefit of the SABR feature, it is important to understand the principles behind ANI and current DNIS call routing systems, as well as how SABR enhances these current systems.

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 Call Routing Systems

DNIS is currently employed for most call routing. The DNIS system routes calls either locally or through the network based on DNIS matching. In this method of call routing, calls are routed to voice stations based on whether the DNIS of the call matches a call account number, an alias to the call account, or the Session Initiation Protocol (SIP) identity of the call account. If there is a match, the call is routed to that account. DNIS call routing employs weighted DNIS matching, meaning calls with the most exact DNIS match or the lowest cost are routed first.

In DNIS call routing, the routing mode is set to either local or network routing mode. The two modes designate where the switchboard will direct calls, whether to voice stations (nontrunk clients) or to voice trunks (inbound only or inbound/outbound trunks). In the local routing mode, the switchboard handling the calls attempts to send calls to voice stations first, before considering sending calls to voice trunk groups. In the network routing mode, the switchboard varies its call routing procedure based on whether the call is internal or external. If the call is internal, the switchboard attempts to send calls to voice trunk groups before considering sending calls to voice stations. If the call is external, the switchboard attempts to send calls to voice stations before considering sending calls to voice trunk groups.

SABR and DNIS Call Routing

In addition to using the traditional DNIS method of call routing, SABR is able to rework the call routing structure by using permit or deny lists on selected trunk groups. These lists can either be lists of ANI templates and/or one or more lists of trunks. The switchboard then uses this information to narrow down the possible trunks that can accept the DNIS information, and uses the permit or deny lists as the highest match criteria for DNIS matching. Consequently, when SABR lists are applied to a trunk group, only the trunks or stations in the permit/deny lists will be considered for DNIS matching to the specified trunk group.

SABR also allows calls sent to the switchboard as external calls, and therefore destined for voice stations, to be sent to trunks instead as a preference. This feature can be useful in cases where a trunk is configured to normally ring a specified location (such as, auto attendant), but requires a backup location in cases of technical difficulty (such as, if a SIP trunk goes down, then the configured trunk is routed to a local number or station/user account).

Hardware and Software Requirements and Limitations

SABR is available on the Total Access 900(e), NetVanta 6000 Series, and NetVanta 7100 AOS voice products running firmware version A2 or later.

SABR only affects calls destined to trunks and not to other users. SABR cannot be applied using ANI information from a trunk account call that is destined for a station or user account. This means the feature does not restrict station-to-station or trunk-to-station calls, and it does not affect the voicemail and auto attendant features on the NetVanta 7000 Series products.

If the feature is to be used in a multitenant configuration, it is recommended that the trunk role be specified as **network**.

***Network** trunk roles are not currently supported by the NetVanta 7100.*

The SABR feature has a few requirements and expectations. The feature's implementation will be affected if the number of trunks to the proxy changes or if the relationship between the hidden SIP trunk and the proxy changes.

In addition, SABR only looks at calling party information and not forwarded or transferred party information.

There is no limit on the number of permit/deny lists that can be created and applied to each trunk group, nor is there a limit on the number of members that can be added to each list. However, the more lists that are applied to trunk groups, the more the runtime performance of call routing will be affected.

Configuring SABR Using the CLI

There are four main steps to SABR configuration. These are as follows:

1. Create an ANI list.
2. Create a trunk list.
3. Apply the ANI and/or trunk lists to the current trunk group configuration.
4. Optionally add the trunk routing preference.

*In order to configure SABR, voice trunks and trunk groups must already be configured. For more information about the configuration of trunks and trunk groups, 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 1544).

An ANI list cannot have the same name as a trunk list.

Creating an ANI List

To create an ANI list that will be permitted or denied on a voice trunk group, enter the **voice ani-list** <*name*> command at the Global Configuration mode prompt. The <*name*> parameter specifies the name of this particular ANI list. Using the **no** form of this command removes the specified ANI list. Enter the command as follows:

```
(config)#voice ani-list TEST1
(config-ani-list-TEST1)#
```

Entering the **voice ani-list** command also enables the configuration of the ANI list. In the ANI configuration, an ANI template can be applied to the ANI list by using the **ani** <*template*> command. The template parameter specifies the calling party number to permit or deny using either the exact number or wildcards, and operates exactly the same as dial-plan entries.

*For more information on configuring dial plans, refer to the **voice dial-plan** command in the **AOS Command Reference Guide** available on the **AOS Documentation** CD shipped with your product or online at http://kb.adtran.com* (article number 2219).

Wildcards 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.

Do not use dashes, commas, spaces, etc., inside the brackets. Commas are implied between numbers in the brackets.

The special characters **( )**, **-**, and **+** are always ignored in the template. 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.

Additional wildcards (**$** and **0** to **9**) can also be used. The CLI also contains helpful information regarding the construction of the template and can be viewed by entering the **ani** <*template*> command at the ANI list configuration prompt followed by a question mark. For example, entering the command as follows results in the template input specifications:

```
(config-ani-list-TEST1)#ani ?
<input>      The following are valid match pattern characters:
    Character                    Match Criteria
-------------------------------------------------------------------------------------------------
0-9                              Match exact digit only
X                                Match any single digit 0 to 9
N                                Match any single digit 2 to 9
M                                Match any single digit 1 to 8
$                                Match any number string dialed
[ ]                              Match any digit in the list (ex.: [1,4,6])
(),-                             Punctuation characters ignored (except for , within [ ])
```

To create an ANI template, enter the **ani** <*template*> command at the ANI list configuration prompt as follows:

```
(config-ani-list-TEST1)#ani 555-81XX
(config-ani-list-TEST1)#
```

In the preceding example, the numbers between **555-8100** and **555-8199** will be included in the ANI list, and will either be permitted or denied on the voice trunk group. Using the **no** form of this command removes the template from the ANI list.

There are no limits on the number of templates that can be added to the ANI list, and there is no limit on the number of ANI lists that can be applied to a voice trunk group. It is important to remember, however, that the ANI lists will be applied to the trunk group in the order they are listed.

Although there are no limits on the number of templates allowed in an ANI list, or the number of ANI lists applied to voice trunk groups, it is important to remember that the more lists that are applied to a trunk group, the more the runtime performance of call routing will be affected.

Once the necessary ANI lists have been created, enter **exit** at the ANI list configuration mode prompt to return to the Global Configuration mode. The ANI lists can then be applied to the desired voice trunk group, or trunk permit/deny lists can be created and both lists can be applied to the desired voice trunk group.

Creating a Trunk List

Trunk lists are created by using the **voice trunk-list** <*name*> command. These lists operate in the same manner as the ANI lists, and used to specify trunks that will be permitted or denied access on specified voice trunk groups. To create a trunk list and enter the trunk list configuration mode, enter the **voice trunk-list** command as follows:

```
(config)#voice trunk-list TEST2
(config-trunk-list-TEST2)#
```

The **no** form of this command removes the trunk list.

To add a trunk to the trunk list, use the **trunk** <*Txx*> command at the trunk list configuration prompt. The <*Txx*> parameter specifies the trunk's 2-digit identifier in the **Txx** format. Enter the command as follows:

```
(config-trunk-list-TEST2)#trunk T01
(config-trunk-list-TEST2)#
```

The **no** form of this command removes the specified trunk from the trunk list.

There are no limits on the number of trunks that can be added to the trunk list, and there is no limit on the number of trunk lists that can be applied to a voice trunk group. It is important to remember, however, that the trunk lists will be applied to the trunk group in the order they are listed.

Although there are no limits on the number of trunks allowed in a trunk list, or the number of trunk lists applied to voice trunk groups, it is important to remember that the more lists that are applied to a trunk group, the more the runtime performance of call routing will be affected.

Once the necessary trunk lists have been created, enter **exit** at the trunk list configuration mode prompt to return to the Global Configuration mode. The trunk lists can now be applied to the desired voice trunk group.

Applying ANI or Trunk Lists to a Configured Voice Trunk Group

Each ANI or trunk list must be applied to a configured voice trunk group for the permit or deny action to take effect. The lists are applied using the **permit [proxy | list]** and **deny [proxy | list]** commands from the trunk group configuration mode. To enter the trunk group's configuration mode, enter the **voice grouped-trunk** <*name*> command from the Global Configuration mode prompt as follows:

(config)**#voice grouped-trunk EXAMPLE1**
(config-EXAMPLE1)#

Once the grouped trunk configuration mode is accessed, enter the **permit** or **deny** commands as necessary. The **proxy** keyword adds the proxy to the trunk group's permit or deny policy, and the **list** keyword adds the ANI or trunk list to the trunk group's permit or deny policy. To add the example ANI list **(TEST1)** to the voice trunk group's permit policy, enter the command as follows:

(config-EXAMPLE1)**#permit list TEST1**
(config-EXAMPLE1)#

The same procedure applies for adding ANI or trunk lists to the trunk group's deny policies. To remove a list from either the permit or deny policy of a trunk group, use the **no** form of the command as follows:

(config-EXAMPLE1)**#no permit list TEST1**
(config-EXAMPLE1)#

Although there are no limits on the number of lists applied to voice trunk groups, it is important to remember that the more lists that are applied to a trunk group, the more the runtime performance of call routing will be affected.

The permit/deny lists are evaluated in the order they appear in the trunk group's configuration. When any permit/deny lists are applied to the trunk group, there is an implicit deny all added after the explicitly defined lists.

Optionally Adding Trunk Routing Preferences

Trunk routing can be specified as a preference for specific trunks, causing inbound calls received on that trunk to prefer routing to another trunk rather than relying on the internal or external nature of the call to dictate whether trunks or voice stations would be the first choice routing path. To specify that a trunk be considered first, use the **prefer trunk-routing** command from the specific trunk's configuration mode. Enter the command as follows:

(config)**#voice trunk T01**
(config-T01)**#prefer trunk-routing**
(config-T01)#

To remove the trunk from the list of trunks that are considered first for call routing, use the **no** form of the command. By default, trunks are set to no trunk routing preference, so that each trunk operates as dictated by normal call routing modes. Adding the trunk routing preference only affects how inbound calls from the specific trunk are handled.

SABR Applications and Configuration Examples

The following examples demonstrate the uses and configurations of SABR in a variety of settings with both the NetVanta 7100 and the Total Access 900. These examples are provided to give an idea of the many applications of SABR and how it can be used in a network environment, and should be treated as example configurations only.

Typical Installation

The following configuration is a typical installation with two analog trunks feeding the system. In this example, the trunk numbers on the inbound T01 line are directed to an auto attendant, and the trunk numbers on the inbound T02 line are directed to a fax machine. All system users have access to both the T01 and T02 lines, but the fax machine can only use the T02 line. *Figure 1* displays this configuration and is followed by the CLI configuration for operation.

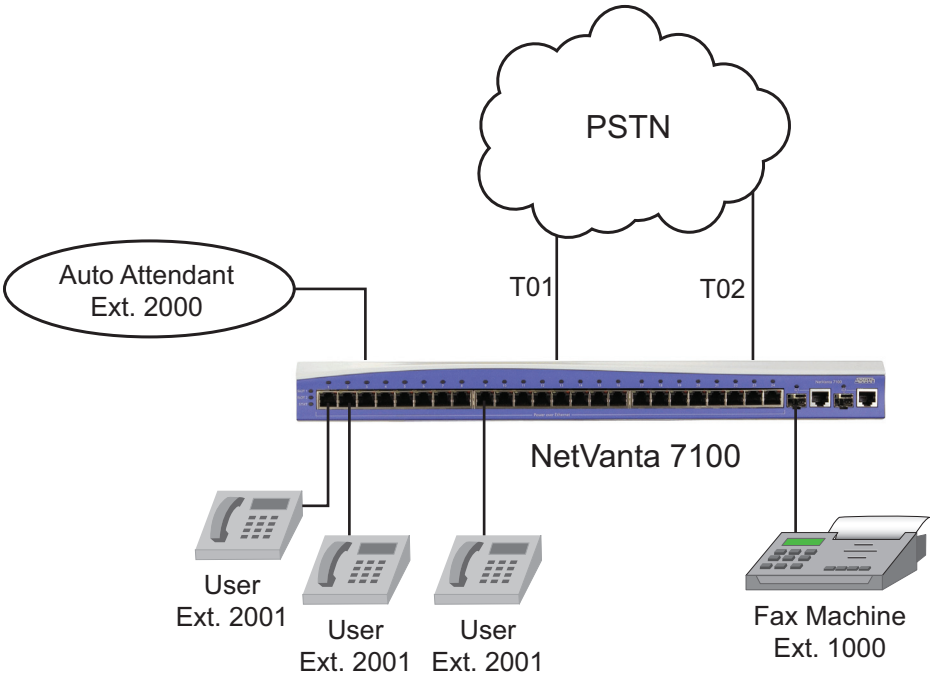

Figure 1. SABR Use in a Typical Network Installation

The following configuration example corresponds to the network described in *Figure 1*. In this configuration, the ANI and trunk lists are configured, the trunks (T01 and T02) are configured, the trunks are grouped and configured according to which users have access to the particular trunks, and then the ANI and trunk lists are applied to the appropriate trunk groups.

(config)**#voice ani-list AllUsers**
(config-ani-list-AllUsers)**#ani MXXX**
(config-ani-list-AllUsers)**#exit**
(config)**#voice ani-list FAX**
(config-ani-list-FAX)**#ani 1XXX**
(config-ani-list-FAX)**#exit**

(config)**#voice trunk-list AllTrunks**
(config-AllTrunks)**#trunk T01**
(config-AllTrunks)**#trunk T02**
(config-AllTrunks)**#exit**

(config)**#voice trunk T01 type analog supervision loop-start**
(config-T01)**#no reject-external**
(config-T01)**#caller-id**
(config-T01)**#trunk-number 2000**
(config-T01)**#connect fxo 0/1**
(config-T01)**#rtp delay-mode adaptive**
(config-T01)**#exit**

(config)**#voice trunk T02 type analog supervision loop-start**
(config-T02)**#no reject-external**
(config-T02)**#caller-id**
(config-T02)**#trunk-number 1000**
(config-T02)**#connect fxo 0/2**
(config-T02)**#rtp delay-mode adaptive**
(config-T02)**#exit**

(config)**#voice grouped-trunk ALL-USERS**
(config-ALL-USERS)**#description “The system directory”**
(config-ALL-USERS)**#trunk T01**
(config-ALL-USERS)**#trunk T02**
(config-ALL-USERS)**#accept 1-NXX-NXX-XXXX cost 0**
(config-ALL-USERS)**#accept NXX-XXXX cost 0**
(config-ALL-USERS)**#deny list FAX**
(config-ALL-USERS)**#permit list AllUsers**
(config-ALL-USERS)**#permit list AllTrunks**
(config-ALL-USERS)**#exit**

(config)**#voice grouped-trunk FAX**
(config-FAX)**#description “The system directory”**
(config-FAX)**#trunk T02**
(config-FAX)**#accept 1-NXX-NXX-XXXX cost 0**
(config-FAX)**#accept NXX-XXXX cost 0**
(config-FAX)**#permit list FAX**
(config-FAX)**#exit**

(config)**#end**
#exit

Hotel Application

In the following example, SABR is used in a hotel situation, in which all users are registered to a SIP softswitch. The SIP softswitch allows or denies calls and call types, based on the permissions for the calling user. In this application, the end user wants to allow the administration and management members of the hotel to make all calls out a local public switched telephone network (PSTN) trunk, while limiting the calls of hotel guests to local and emergency calls, when the network is in failover mode. *Figure 2* describes the hotel's network configuration and is followed by the corresponding CLI configuration.

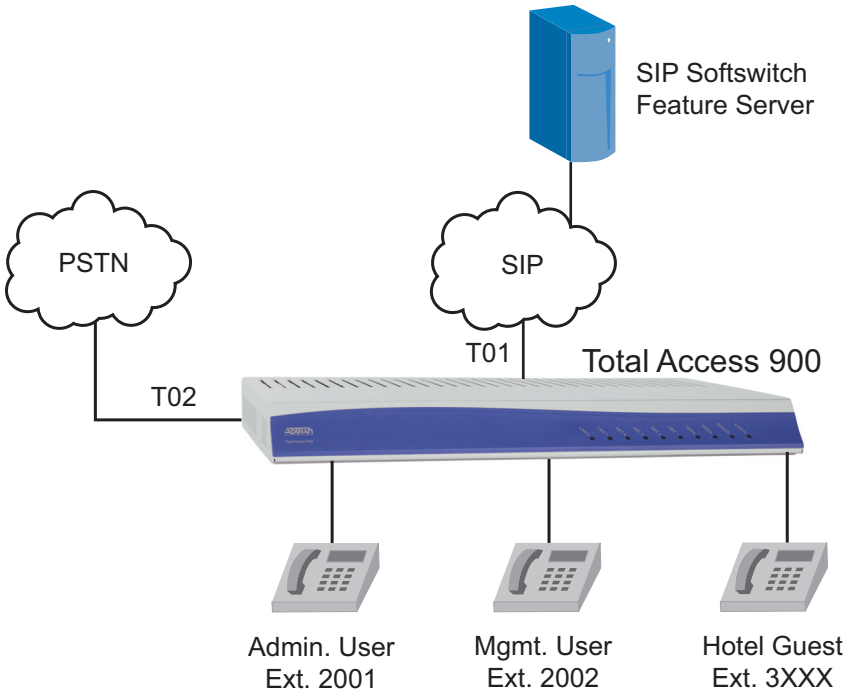

Figure 2. SABR in Hotel Network Configuration

The following configuration corresponds to the network described in *Figure 2*, and sets up the operation of the network in failover mode. In this configuration, ANI lists are defined, the trunks are configured, the trunks are grouped, and the ANI lists are applied to the trunk groups.

(config)**#voice ani-list Customers**
(config-ani-list-Customers)**#ani 3XXX**
(config-ani-list-Customers)**#exit**

(config)**#voice ani-list Admin_Mgmt**
(config-ani-list-Admin/Mgmt)**#ani 2XXX**
(config-ani-list-Admin/Mgmt)**#exit**

(config)**#voice trunk T01 type sip**
(config-T01)**#sip-server primary <SERVER IP ADDRESS OR FQDN>**
(config-T01)**#exit**

(config)**#voice trunk T02 type analog supervision loop-start**
(config-T02)**#caller-id**
(config-T02)**#trunk-number 2000**
(config-T02)**#connect fxo 0/1**
(config-T02)**#rtp delay-mode adaptive**
(config-T02)**#exit**

(config)**#voice grouped-trunk ALL_USERS**
(config-ALL-USERS)**#trunk T01**
(config-ALL-USERS)**#accept 1-NXX-NXX-XXXX cost 0**
(config-ALL-USERS)**#accept NXX-XXXX cost 0**
(config-ALL-USERS)**#accept MXXX cost 0**
(config-ALL-USERS)**#exit**

(config)**#voice grouped-trunk CUSTOMERS_PSTN**
(config-Customers)**#trunk T02**
(config-Customers)**#accept 911 cost 10**
(config-Customers)**#accept NXX-XXXX cost 200**
(config-Customers)**#permit list Customers**
(config-Customers)**#exit**

(config)**#voice grouped-trunk ADMIN_MGMT_PSTN**
(config-Admin/Mgmt)**#trunk T02**
(config-Admin/Mgmt)**#accept $ cost 200**
(config-Admin/Mgmt)**#permit list Admin_Mgmt**
(config-Admin/Mgmt)**#exit**

(config)**#end**
#exit

Multitenant Application

In this application, SABR is used to route calls from multiple tenants through a NetVanta 7100. Each group of tenants should only have access to their particular trunks, as described in *Figure 3*, and configured in the corresponding CLI configuration example.

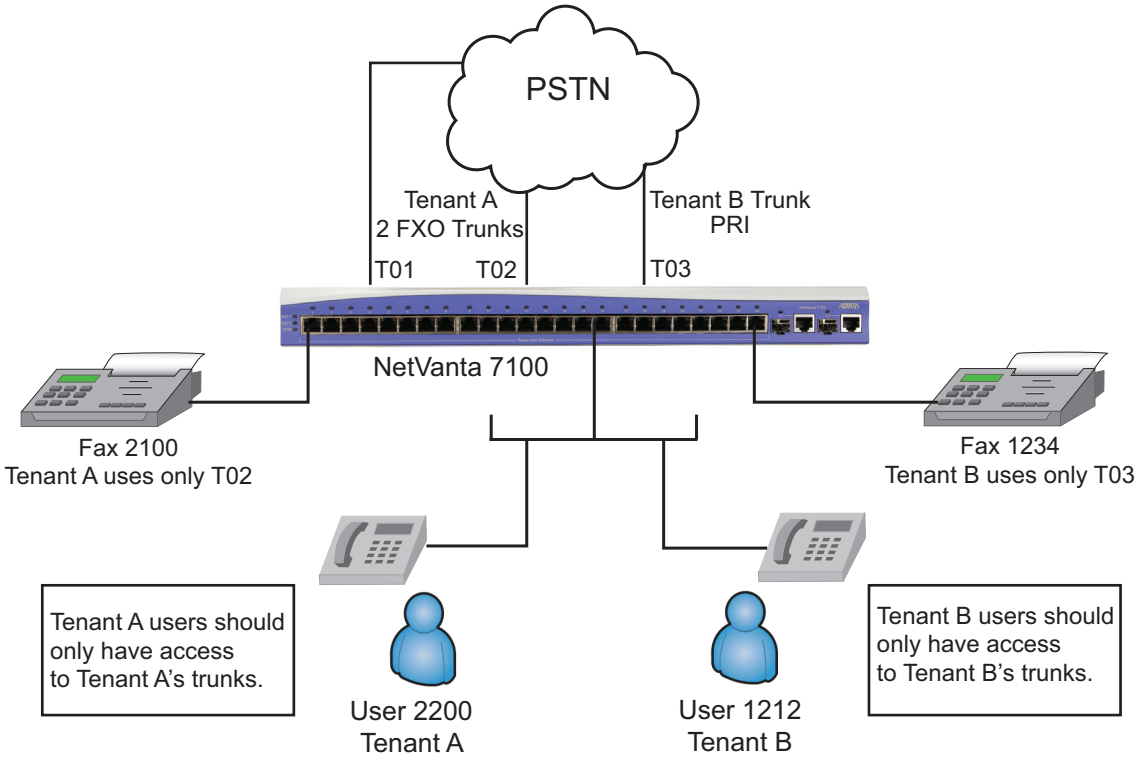

Figure 3. Multitenant SABR Application

The following configuration example configures two trunk groups on the NetVanta 7100, configures two ANI lists (one for Tenant A users and one for Tenant B users), and then applies the ANI lists to the corresponding trunk groups.

(config)**#voice ani-list TenantAUsers**
(config-ani-list-TenantAUsers)**#ani 2XXX**
(config-ani-list-TenantAUsers)**#exit**

(config)**#voice ani-list TenantAFAX**
(config-ani-list-TenantAFAX)**#ani 2100**
(config-ani-list-TenantAFAX)**#exit**

(config)**#voice ani-list TenantBUsers**
(config-ani-list-TenantBUsers)**#ani 1XXX**
(config-ani-list-TenantBUsers)**#exit**

The trunk lists are for forwarded calls.

(config)**#voice trunk-list TenantATrunks**
(config-trunk-list-TenantATrunks)**#trunk T01**
(config-trunk-list-TenantATrunks)**#trunk T02**
(config-trunk-list-TenantATrunks)**#exit**

(config)**#voice trunk-list TenantBTrunks**
(config-trunk-list-TenantBTrunks)**#trunk T03**
(config-trunk-list-TenantBTrunks)**#exit**

(config)**#voice trunk T01 type analog supervision loop-start**
(config-T01)**#no reject-external**
(config-T01)**#caller-id**
(config-T01)**#trunk-number 2000**
(config-T01)**#connect fxo 0/1**
(config-T01)**#rtp delay-mode adaptive**
(config-T01)**#exit**

(config)**#voice trunk T02 type analog supervision loop-start**
(config-T02)**#no reject-external**
(config-T02)**#caller-id**
(config-T02)**#trunk-number 2000**
(config-T02)**#connect fxo 0/2**
(config-T02)**#rtp delay-mode adaptive**
(config-T02)**#exit**

(config)**#voice trunk T03 type isdn**
(config-T03)**#no reject-external**
(config-T03)**#connect isdn-group 1**
(config-T03)**#rtp delay-mode adaptive**
(config-T03)**#exit**

(config)**#voice grouped-trunk TenantA**
(config-TenantA)**#trunk T01**
(config-TenantA)**#trunk T02**
(config-TenantA)**#accept 1-NXX-NXX-XXXX cost 0**
(config-TenantA)**#accept NXX-XXXX cost 0**
(config-TenantA)**#deny list TenantAFax**
(config-TenantA)**#permit list TenantAUsers**
(config-TenantA)**#permit list TenantATrunks**
(config-TenantA)**#exit**

(config)**#voice grouped-trunk TenantAFax**
(config-TenantAFax)**#trunk T02**
(config-TenantAFax)**#accept 1-NXX-NXX-XXXX cost 0**
(config-TenantAFax)**#accept NXX-XXXX cost 0**
(config-TenantAFax)**#permit list TenantAFax**
(config-TenantAFax)**#exit**

(config)**#voice grouped-trunk TenantB**
(config-TenantB)**#trunk T03**
(config-TenantB)**#accept 1-NXX-NXX-XXXX cost 0**
(config-TenantB)**#NXX-XXXX cost 0**
(config-TenantB)**#permit list TenantBUsers**
(config-TenantB)**#permit list TenantBTrunks**
(config-TenantB)**#exit**

(config)**#end**
#exit

SABR and Proxy User Configuration

The following configuration example describes an instance where SIP proxy users are not allowed on a SIP trunk. This configuration allows all calls from the customer private branch exchange (PBX) to go out the T01 trunk to the SIP softswitch. In this example, during a failover situation, the SIP proxy users should not route to the T01, but instead should go to the local PSTN (using T03). This network configuration is described in *Figure 4*, and the corresponding CLI configuration follows the illustration.

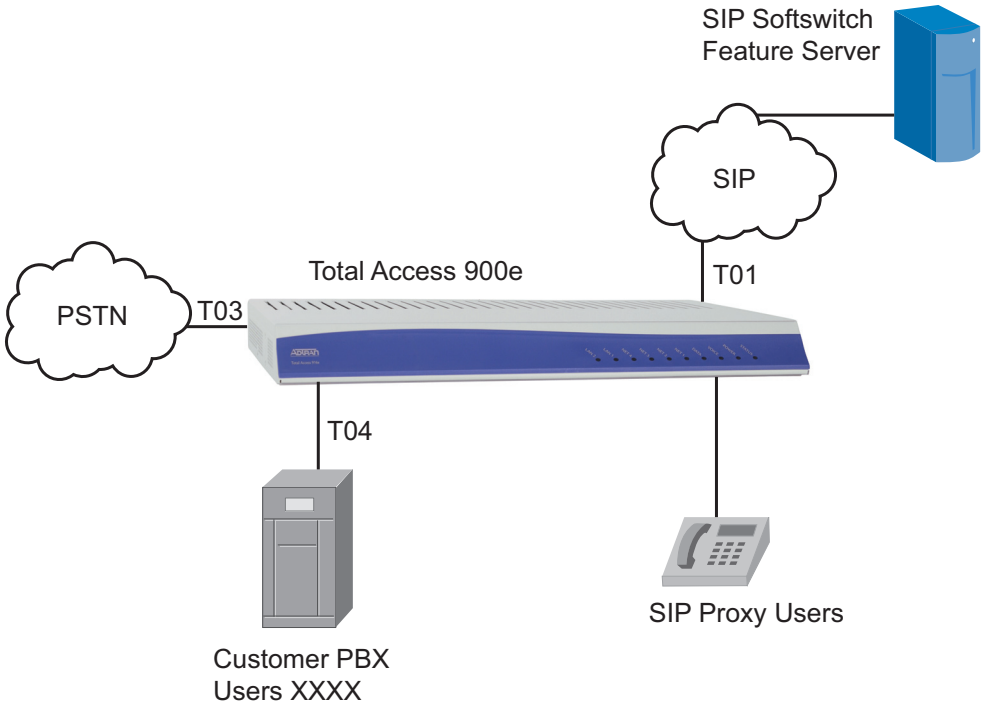

Figure 4. SABR and Proxy User Configuration

The following CLI configuration creates and defines trunk lists for the three trunks, configures the three trunks, and applies the trunk lists to the SIP trunk group and the PSTN trunk group.

(config)**#voice trunk-list SIP**
(config-trunk-list-SIP)**#trunk T01**
(config-trunk-list-SIP)**#exit**

(config)**#voice trunk-list Local**
(config-trunk-list-Local)**#trunk T03**
(config-trunk-list-Local)**#exit**

(config)**#voice trunk-list PBX**
(config-trunk-list-PBX)**#trunk T04**
(config-trunk-list-PBX)**#exit**

(config)**#voice trunk T01 type sip**
(config-T01)**#sip-server primary <SERVER IP ADDRESS OR FQDN>**
(config-T01)**#registrar primary <SERVER IP ADDRESS OR FQDN>**
(config-T01)**#exit**

(config)**#voice trunk T03 type analog supervision loop-start**
(config-T03)**#caller-id**
(config-T03)**#trunk-number 2000**
(config-T03)**#connect fxo 0/0**
(config-T03)**#rtp delay-mode adaptive**
(config-T03)**#exit**

(config)**#voice trunk T04 type isdn**
(config-T04)**#connect isdn-group 1**
(config-T04)**#rtp delay-mode adaptive**
(config-T04)**#exit**

(config)**#voice grouped-trunk NormalSIP**
(config-NormalSIP)**#trunk T01**
(config-NormalSIP)**#accept 1-NXX-NXX-XXXX cost 0**
(config-NormalSIP)**#accept NXX-XXXX cost 0**
(config-NormalSIP)**#deny proxy**
(config-NormalSIP)**#permit list PBX**
(config-NormalSIP)**#permit list SIP**
(config-NormalSIP)**#permit list Local**
(config-NormalSIP)**#exit**

(config)**#voice grouped-trunk LocalPSTN**
(config-LocalPSTN)**#trunk T03**
(config-Local PSTN)**#accept 1-NXX-NXX-XXXX cost 10**
(config-LocalPSTN)**#accept NXX-XXXX cost 10**
(config-Local PSTN)**#exit**

(config)**#voice grouped-trunk PBX**
(config-PBX)**#trunk T04**
(config-PBX)**#accept XXXX**
(config-PBX)**#exit**

(config)**#end**
#exit

SABR Command Summary

The following table summarizes the commands associated with the SABR feature.

Table 1. SABR Command Summary

Access Prompt	Command	Description
(config)#	**[no] voice ani-list** <*name*>	Creates an ANI list and enters the ANI list configuration mode.
(config-ani-list-NAME)#	**[no] ani** <*template*>	Specifies the calling party number to permit or deny using a combination of wildcards and digits.
(config)#	**[no] voice trunk-list** <*name*>	Creates a trunk list and enters the trunk list configuration mode.
(config-trunk-list-NAME)#	**[no] trunk** <*Txx*>	Specifies the trunk to be added to the permit/deny trunk list. Trunks are specified by their 2-digit identifier. For example, **T01**.
(config-TRUNKGROUPNAME)#	**[no] permit [proxy | list** <*name*>**]**	Adds the proxy, ANI list, or trunk list to the trunk group's permit policy.
(config-TRUNKGROUPNAME)#	**[no] deny [proxy | list** <*name*>**]**	Adds the proxy, ANI list, or trunk list to the trunk group's deny policy.
(config-TRUNK)#	**[no] prefer trunk-routing**	Adds the trunk to a list of trunks that are considered first for call routing, regardless of system routing mode or local configured extensions.

Troubleshooting

After SABR has been configured, two show commands are available to aid in troubleshooting. Both commands are issued from Enable mode in the CLI, and both give information about the created ANI lists and the created trunk lists.

The first show command is **show run voice ani-list [**<*name*> **| verbose]**. The optional <*name*> parameter specifies which ANI list information is displayed, and the optional **verbose** keyword specifies that all information for the ANI list is displayed. The following is sample output from the **show run voice ani-list** command:


```
#show run voice ani-list TEST1
Building configuration...
!
!
voice ani-list TEST1
     ani 555-81XX
     ani NXX-XXXX
!
end
```

The second show command is **show run voice trunk-list [**<*name*> **| verbose]**. The optional <*name*> parameter specifies which trunk list information is displayed, and the optional **verbose** keyword indicates all information for all trunk lists is displayed. The following is sample output from the **show run voice trunk-list** command:

```
#show run voice trunk-list TEST2
Building configuration...
!
!
voice trunk-list TEST2
     trunk T01
     trunk T04
!
end
```

