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Glossary
Preface

Revised: April 22, 2009, OL-8720-10

Introduction

This document provides detailed routing, translation, and dial plan information for the Cisco BTS 10200 Softswitch. It provides detailed digit manipulation, translation, and dial plan information for various routing scenarios. Additionally, this document provides dial plan configuration information.

Objective

The system administrator of a BTS 10200 can use this document to better understand how to configure the BTS 10200 dial plan.

Audience

This document is designed for engineers, technicians, and system administrators who setup and configure the BTS 10200 dial plan. This document is used while provisioning the BTS 10200 dial plan.
Organization

This Cisco BTS 10200 Dial Plan Guide contains the following chapters:

- **Digit Translations**—The BTS 10200 digit manipulation function enables manipulating either the digit string, or the nature of address (NOA), or both.
- **Routing**—Provides a basic understanding of the BTS 10200 routing types and an explanation of all routing types and explanation of how they function.
- **Local Exchange Routing Guide**—Provides a basic understanding of the BTS 10200 local exchange routing guide (LERG).
- **Electronic Number Mapping and Routing**—Describes electronic number mapping (ENUM) and the ENUM routing capability.
- **Dial Plans and Routing**—Provides detailed dial plan and routing information for the BTS 10200.
- **Command Line Interface Routing**—Provides a basic understanding of how the BTS 10200 Command Line Interface (CLI) functions with of the routing types and call types.
- **Preparing for Dial Plan Provisioning**—Describes the prerequisite tasks that need to be performed before provisioning a dial plan.
- **Provisioning Dial Plans**—Provides detailed instructions for configuring BTS 10200 configuration dial plans using the Command Line Interface (CLI) and the Cisco Extensible Provisioning and Operations Manager (EPOM).

Conventions

This document uses the following conventions:

- **Note**
  
  Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.

- **Caution**
  
  Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Updates to this Document for Release 5.0

This document has been updated for Release 5.0. The current version of this document is OL-8720-02. The document updates from version OL-8720-02 to version OL-8720-03 include incorporating operator placed call information.

The document updates from version OL-8720-03 to version OL-8720-04 include incorporating carrier table information.

The document updates from version OL-8720-04 to version OL-8720-05 include incorporating changes to the lerg2CLI script name. Changed from lergToCli to Access2LergCli.

The document updates from version OL-8720-05 to version OL-8720-06 include adding a policy_call_type note.
The document updates from version OL-8720-06 to version OL-8720-07 include adding cross references between Chapter 2, “Routing” and Chapter 3, “Local Exchange Routing Guide”.

The document updates from OL-8720-07 to version OL-8720-08 include adding Chapter 4, “Electronic Number Mapping and Routing.”

The document update from OL-8720-08 to OL-8720-09 included adding the “International WZ1 (INTL_WZ1) Preferred Carrier Routing” section on page 2-97.

The document update from OL-8720-09 to OL-8720-10 included updating the AUTO_P_A_ID token description in the “Softswitch Trunk Group Profile” section on page 2-43.

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**Cisco Technical Assistance Website**

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Opening a Technical Assistance Center Case

The online TAC Case Open Tool (http://www.cisco.com/tac/caseopen) is the fastest way to open severity 3 (S3) and severity 4 (S4) cases. (Your network is minimally impaired or you require product information). After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using these recommendations, your case will be assigned to a Cisco TAC engineer.

For severity 1 (S1) or severity 2 (S2) cases (your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to S1 and S2 cases to help keep your business operations running smoothly.

To open a case by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete listing of Cisco TAC contacts, go to this URL:

Technical Assistance Center Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

Severity 1 (S1)—Your network is “down” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.
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- Packet magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access Packet magazine at this URL:
  
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Digit Translations

Introduction

The Cisco BTS 10200 Softswitch digit manipulation or digit translation function enables manipulating or translating either the digit string, or the nature of address (NOA), or both. Digit manipulation or translation can take place at several points in call processing, as illustrated in Figure 1-1.

Figure 1-1  Digit Manipulation Locations and Stages

Pre-translations — In the pre-translations stage, the dial-plan-profile table is used to specify if automatic number identification (ANI), dialed number identification service (DNIS) or both are to be manipulated. The purpose of pre-translation stage is to normalize the digits as required during the translations stage. For example: if a region supports 7-digit dialing, you can use DNIS manipulation in the dial-plan-profile to add an home numbering plan area (HNPA) to make it a 10-digit directory number (DN).

Translations — The dial-plan table can be used to manipulate the called party number (DNIS). Simple delete and prefix functionality is supported.

Routing — The routing is performed in the analyzed info point in call (PIC). The Destination Table and/or Route Table can be used to specify digit manipulation of the ANI, the DNIS or both. The out-pulsing number can be normalized using the destination table. In addition, if special manipulation is required based on the route selected, then special manipulation can be specified for each Trunk Group within a route.
If the Called Party Number terminates within the BTS 10200, and the subscriber number points to a Trunk Group, then digit manipulation rules for the ANI, the DNIS, or both can be specified in the Trunk Group Table.

If the call is an interLATA call, or requires Carrier Routing, the ANI/DNIS digit manipulation identification (ID) specified in the Destination table is ignored and carrier based routing is performed. Figure 1-2 illustrates the provisioning relationships for the BTS 10200 dial plans, which includes the ANI/DNIS digital manipulation functions.

**Figure 1-2  Dial Plan Provisioning Relationships**

Digman Profile table

- ** digman-id
- ani-digman-id
- dnis-digman-id

Dial Plan Profile table

- ** nat-dial-plan-id
- ani-digman-id
- dnis-digman-id

Destination table

- ** dest-id
- ani-digman-id
- dnis-digman-id

Trunk Group table

- ** tgn-id (1 through 10)
- ani-digman-id
- dnis-digman-id

Route table

- ** alt-route-id
- ani-digman-id
- dnis-digman-id

Dial Plan table

- ** dial-plan-id
- del-digits
- pfx-digits

Intl Dial Plan Profile table

- ** intl-dial-plan-id
- ani-digman-id
- dnis-digman-id

Intl Dial Plan table

- ** intl-dial-plan-iddest-id
- ani-digman-id
- dnis-digman-id

Digman table(s) 1 through 20 (max)

- ** match-string
- replace-string
- match-noa
- replace-noa

Dial Plan Profile table

- ** nat-dial-plan-id
- ani-digman-id
- dnis-digman-id

Destination table

- ** dest-id
- ani-digman-id
- dnis-digman-id

Trunk Group table

- ** tgn-id (1 through 10)
- ani-digman-id
- dnis-digman-id

Route table

- ** alt-route-id
- ani-digman-id
- dnis-digman-id

Dial Plan table

- ** dial-plan-id
- del-digits
- pfx-digits

Intl Dial Plan Profile table

- ** intl-dial-plan-iddest-id
- ani-digman-id
- dnis-digman-id

Intl Dial Plan table

- ** intl-dial-plan-id
- ani-digman-id
- dnis-digman-id

Digman Profile table

- ** digman-id
- ani-digman-id
- dnis-digman-id
Digit Manipulation

Digit manipulation or digit translation is performed based on as many as twenty different digit manipulation (digman) tables as designated by the digman-id and rule number, each of which can have a unique set of match-string and replace-string tokens and/or match-NOA and replace-NOA tokens.

The match-string is compared to the input-string. If a match is found, based on the rules specified here, then the replace-string replaces the matched string in all further call processing actions.

The match-string and replace-string tokens are constructed using the characters specified in Table 1-1.

<table>
<thead>
<tr>
<th>Character(s)</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>digits 0 through 9, asterisk *, pound sign #</td>
<td>Digits found on a key-pad. Valid for use at any position in the input-string token, match-string token, and replace-string token.</td>
</tr>
<tr>
<td>Caret (^)</td>
<td>Beginning of String Character—Indicates a match to the beginning of the string. The caret character can only be the first character of the match-string. If specified by itself, the input string is prefixed by the replace-string. For examples of the caret character usage, refer to the “Caret (^) Character”.</td>
</tr>
<tr>
<td>Dollar sign ($)</td>
<td>End of String Character—The dollar sign character can be specified as only the last character of the match string. If specified by itself, the replace-string is appended to the input-string. Is used to specify the end of string. If digits at the end of the string are to be matched, the match-string is terminated by the $ character. For examples of the dollar sign character usage, refer to “Dollar Sign ($) Character”.</td>
</tr>
<tr>
<td>Dot (.)</td>
<td>If the dot character is specified as a leading character, beginning of the string is assumed. If the dot character is specified as the last character, end of string is assumed. Is used to identify the position of the match. The digits occupying the position specified by the dot character are skipped during the match operation. For examples of the dot character usage, refer to “Dot (.) Character”.</td>
</tr>
<tr>
<td>Question Mark (?)</td>
<td>The question mark character can appear anywhere but multiple question marks have to be with another question mark. The question mark character can not appear as a single character. If only one digit is to be manipulated, then the ? mark should be preceded by ^ (caret) or followed by a $ (dollar) to signify the first digit or the last digit respectively. Used as a wildcard. Matches any one character. For examples of the question mark character usage, refer to “Question Mark (?) Character”.</td>
</tr>
<tr>
<td>Note</td>
<td>The &quot;?&quot; character by itself will be treated as a request for help.</td>
</tr>
<tr>
<td>Percent sign (%)</td>
<td>Replace Character—The percent sign character can only be specified as the first character of the string. If specified by itself, the input string is replaced by the replace-string. Also used as a wildcard and when specified is used to match 0 or more characters preceding the digits specified in the match-string. For examples of the percent sign character usage, refer to “Percent (%) Character (Match and Replace)”.</td>
</tr>
</tbody>
</table>
Digit Manipulation

Match-string rules:
- Consist of digits - 0-9, *, #, dot(.), question mark (?), Percent (%) or Phrase "none".
- Caret (^) if specified, can only be 1st character of the string.
- Dollar Sign ($) if specified, can only be the last character of the string.
- Percent (%) if specified, can only be 1st character of the string.
- Phrase "none" or "NONE" can only appear by itself.

The following rules are not enforced by the parser.
- Question Mark(s) (?) if specified, can not appear in between a digit string (example: match-string=12??56; is invalid, but match-string=12????; is valid.)
- Dots (.) if specified, can appear as leading dots; trailing dots; or both. (examples: match-string=...555; match-string=555....; match-string=...555....)

Replace-string rules:
- Consist of digits - 0-9, *, #, ampersand (&) or Phrase "none".
- Ampersand (&) if specified, can appear by itself or be the last character of the string.
- Phrase "none" or "NONE" can only appear by itself.

Table 1-1  Digit Manipulation Rules Specifications (continued)

<table>
<thead>
<tr>
<th>Character(s)</th>
<th>Action</th>
</tr>
</thead>
</table>
| Ampersand (&) | Prefix Character—The ampersand character can only be specified as the last character of the string. If specified by itself, it is used to indicate that no replace function is required on the matched string, but is used to indicate if the input string matches with the match-string. If it is specified with digits preceding it, the specified digits are prefixed to the matched string. For examples of the ampersand character usage, refer to “Ampersand (&) Character”.
| None (or none) | Can only be specified by itself. Phrase "none" is used to specify NULL string. Can be used for both match-string and replace-string. Example 1:  
match-string=none; replace-string=4692550000; indicates that when input string is NULL, replace it with 4692550000.  
Example 2:  
match-string=469255; replace-string=none; indicates that if a match is found, replace the matched string with NULL. If input string is 4692551234, after the digit manipulation, the resultant string will be 1234. |
Character Function

The following subsections provide information on the BTS 10200 character function.

Caret (^) Character

The caret (^) character is used to specify beginning of a string. The caret character is used when specific leading digits are to be deleted or replaced. The caret character is also used when digits are to be prefixed to the input string.

The following examples specify the use of the caret character:

Examples:

Example 1:
input-string=0119127210112; match-string=^011; replace-string=none. In this example, the digit string 011 at the beginning of input string will be replaced with NULL. The resultant output string = 9127210112.

Example 2:
input-string=9127210112; match-string=^; replace-string=011. In this example, since the digit string 011 is prefixed to the input-string. The resultant output-string=0119127210112.

Additional examples:

Example 1:
Enter 1 to continue translations 1
Enter input string 14692551234
Match string ^1
Replace string none
MATCHED

Output string = 4692551234

Example 2:
Enter 1 to continue translations 1
Enter input string 4692551234
Match string ^469255
Replace string 5
MATCHED

Output string = 51234

Example 3:
Enter 1 to continue translations 1
Enter input string 222
Match string ^
Replace string 1
MATCHED

Output string = 1222
Dollar Sign ($) Character

The dollar sign ($) character is used to search from the end of string backwards instead of from the beginning string. The dollar sign character is also used when digits are to be appended to the end of the string, deleted or replaced from the end of the string.

If match-string=1234$, it indicates to look for last 4 digits to be 1234.

If match-string=????$, it indicates to replace last 4 digits with the replace-string.

The following examples show the use of dollar sign character.

Examples:

Example 1:

input string=4692551234; match-string=????$; replace-string=0000. In this example, digits 1234 will be replaced with 0000. The resultant output string=4692550000.

Example 2:

input string=469255; match-string=$; replace-string=0000. In this example, digits 0000 will be appended to the input-string. The resultant output string=4692550000.

Additional examples:

Example 1:

Enter 1 to continue translations 1
Enter input string 4692551234
Match string ????$
Replace string none
MATCHED

Output string = 469255

Example 2:

Enter 1 to continue translations 1
Enter input string 4692551234
Match string ????$
Replace string 0000
MATCHED

Output string = 4692550000

Example 3:

Enter 1 to continue translations 1
Enter input string 469255
Match string $
Replace string 0000
MATCHED

Output string = 4692550000
Dot (.) Character

The dot (.) character is used to indicate string position at which match operation is to be performed. If a dot character is specified as the first character of the match-string, the digits specified by each dot character are skipped until a question mark or any digit is encountered.

The dot character can also be used to check the length of the input string (see examples below).

Examples:

Example 1:

match-string="...555" indicates that 555 appear in digit position 4-6. This will match on the following input string: 4695551234.

Example 2:

“555...” Indicates that find a match on 555 where there are 4 more digits that follow 555. This will match any of the following input strings: 4695551234 or 5551234.

Additional examples:

Example 1:

Enter 1 to continue translations 1
Enter input string 4695551234
Match string ...555
Replace string &
MATCHED

Output string = 4695551234

Example 2:

Enter 1 to continue translations 1
Enter input string 4695551234
Match string ...........
#CHECK IF INPUT STRING LENGTH=10
Replace string &
MATCHED

Output string = 4695551234

Example 3:

Enter 1 to continue translations 1
Enter input string 14695551234
Match string .......... Not MATCHED

Output string = 14695551234

Example 4:

Enter 1 to continue translations 1
Enter input string 222333
Match string ...33
 Replace string none
MATCHED

Output string = 2223
Example 5:
Enter 1 to continue translations 1
Enter input string 22233
Match string ^...
Replace string none
Not MATCHED

Output string = 22233

Question Mark (?) Character

The question mark (?) character is used to specify a wild card character based on its position in the match-string. Each question mark character represents one digit character.

If a question mark is specified as a leading character in a match-string, the beginning of input string is assumed. Match-string "????555" indicates to look for any three digits followed by digits 555. The question mark character can not be specified as the only character as it conflicts with the use of "?" as a help character. So, if the first digit is to be matched, use ^? to represent first digit and ?$ to represent the last digit of a digit-string.

The following examples show the use of question mark (?) character.
Examples:
Example 1:
"???555" indicates that 555 appear in digit position 4-6. This will match the following input string: 4695551234.

Example 2:
"555????" Indicates that find a match on 555 where there are 4 more digits that follow 555. This will match any of the following input strings: 4695551234 or 5551234. Digits 5551234 will be replaced with the replace string.

Example 3:
"^?" indicates to match on the 1st digit

Example 4:
"?$" indicates to match on the last digit

Additional examples:
Example 1:
Enter 1 to continue translations 1
Enter input string 14692551234
Match string ^1???
Replace string none
MATCHED

Output string = 2551234
Example 2:
Enter 1 to continue translations 1
Enter input string 4692551234
Match string ????$
Replace string none
MATCHED

Output string = 469255

Example 3:
Enter 1 to continue translations 1
Enter input string 4695551234
Match string ????555
Replace string 5
MATCHED

Output string = 51234

Example 4:
Enter 1 to continue translations 1
Enter input string 4692551234
Match string ????555
Replace string none
Not MATCHED

Output string = 4692551234

Percent (%) Character (Match and Replace)
The percent character (%) is used to specify the match and replace function i.e. if a match occurs, replace the matched string with the replace-string. The percent character is also used as a wild card character.

If match-string=%, the whole input-string is replaced by the replace-string.

If match-string=%nn, the input-string is searched from the beginning until it matches pattern nn, and the whole string from the beginning to the end of pattern is replaced with the replace-string.

If match-string=%...nnn, the input-string is searched for pattern nnn in digit positions 4,5 and 6. If a match occurs, the digit string from the beginning including the pattern nnn is replaced with the replace-string.

The following examples show the use of the percent (%) character.

Examples:
Example 1:
%555 - indicates match on 555 and any number of digits preceding it. This will match on of the following input string: 4695551234. Digits 469555 will be replaced with the replace string.

Example 2:
% - indicates match on any number of digits.
Additional examples:

Example 1:
Enter 1 to continue translations 1
Enter input string 4692551234
Match string %
Replace string 55555
MATCHED

Output string = 55555

Example 2:
Enter 1 to continue translations 1
Enter input string 4692551234
Match string %255
Replace string 5
MATCHED

Output string = 51234

Example 3:
Enter 1 to continue translations 1
Enter input string 4692551234
Match string %...255MATCH DIGITS 255 IN DIGIT POSITIONS 4,5,6
Replace string 5
MATCHED

Output string = 51234

Example 4:
Enter 1 to continue translations 1
Enter input string 4692551234
Match string %...255?MATCH DIGITS 255 IN DIGIT POSITIONS 4,5,6 AND 1 MORE DIGIT
Replace string 55
MATCHED

Output string = 55234

Ampersand (&) Character

The ampersand character (&) is used in the replace-string to leave the matched string as is without replacing it with the replace string. If ampersand is specified by itself, the digit manipulation leaves the input string as is. If a digit string is specified followed by an ampersand, the digit string is prefixed to the matched string.

The following examples show the use of the ampersand (&) character.

Examples:

Example 1:
input-string=4695551212; match-string=555.; replace-string=&; will return an indication of match, but the output string will be unaffected.

Example 2:
input string=4695551234; match-string=???555.; replace-string=1&; In this example, if the input string is 10 digits long, and digits (4-6) 555, prefix the input string with 1. The resultant output string=14695551234.
Additional examples:

Example 1:
Enter 1 to continue translations 1
Enter input string 4692551234
Match string ???255
Replace string 1&
MATCHED

Output string = 14692551234

Example 2:
Enter 1 to continue translations 1
Enter input string 14692551234
Match string ^1..........
Replace string &
MATCHED

Output string = 14692551234

Example 3:
Enter input string 4695551212
Match string ^...555....
Replace string &
MATCHED

Output string = 4695551212

Example 4:
Enter 1 to continue translations 1
Enter input string *85#
Match string *
Replace string &
MATCHED

Output string = *85#

Example 5:
Enter 1 to continue translations 1
Enter input string *85#
Match string #
Replace string &
MATCHED

Output string = *85#
Delete Digits Function

The BTS 10200 digit manipulation function supports the following delete capabilities:

- Deletion of leading digits
- Deletion of specific leading digits
- Deletion of trailing digits
- Deletion of specific trailing digits
- Deletion of leading digits only if the length matches
- Deletion of trailing digits only if the length matches

Leading Digits Deletion

The BTS 10200 digit manipulation function supports the deletion of leading digits per the following example:

```
Add digman id=del3; match-string=???; replace-string=none; OR
Add digman id=del3; match-string=^???; replace-string=none;
******************************************************************************
Enter input string 4692551234
Match string ???
Replace string none
MATCHED

Output string = 2551234
******************************************************************************
```

Specific Leading Digits Deletion

The BTS 10200 digit manipulation function supports the deletion of specific leading digits per the following example:

```
Add digman id=del00; match-string=^00; replace-string=none;
******************************************************************************
Enter input string 0012345
Match string ^00
Replace string none
MATCHED

Output string = 12345
******************************************************************************
```

Trailing Digits Deletion

The BTS 10200 digit manipulation function supports the deletion of trailing digits per the following example:

```
Add digman id=dellast4; match-string=????$; replace-string=none;
******************************************************************************
Enter input string 4692551234
Match string ????$
Replace string none
MATCHED

Output string = 469255
******************************************************************************
```
Chapter 1      Digit Translations

Specific Trailing Digits Deletion

The BTS 10200 digit manipulation function supports deletion of specific trailing digits per the following example:

Add digman id=delx1212; match-string=1212$; replace-string=none;
**************************************************
Enter input string 4695551212
Match string 1212$
Replace string none
MATCHED
Output string = 469555
**************************************************

Leading Digits Deletion if the Length Matches

The BTS 10200 digit manipulation function supports the deletion of leading digits only if the length of input-string matches the length implied by the match-string per the following example:

Add digman id=del310; match-string=^???.......; replace-string=none; OR
Add digman id=del310; match-string=???.......; replace-string=none;
**************************************************
Enter input string 4692551234
Match string ???.......
Replace string none
MATCHED
Output string = 2551234
**************************************************

Trailing Digits Deletion if the Length Matches

The BTS 10200 digit manipulation function supports deletion of trailing digits only if the length of input-string matches the length implied by the match-string per the following example:

Add digman id=dellast4; match-string=......????; replace-string=none; OR
Add digman id=dellast4; match-string=^......????$; replace-string=none;
**************************************************
Enter input string 4692551234
Match string ......????
Replace string none
MATCHED
Output string = 469255
**************************************************

Prefix Digits Function

The BTS 10200 digit manipulation function supports the prefix of digits. The following prefix functions shall be supported:

- Prefix leading digits
- Prefixing of digits only if length matches
Leading Digits Prefix

The BTS 10200 digit manipulation function supports the prefixing of leading digits per the following example:

```
Add digman id=pfx469; match-string=^; replace-string=469;
**************************************************
Enter input string 5551234
Match string ^
Replace string 469
MATCHED
Output string = 4695551234
**************************************************
```

Digits Prefix if Length Matches

The BTS 10200 digit manipulation function supports the prefixing of digits only if length matches per the following example:

```
Add digman id=pfx469if7; match-string=^.......; replace-string=469; OR
Add digman id=pfx469if7; match-string=.......; replace-string=469;
**************************************************
Enter input string 5551234
Match string ^....... Replace string 469
MATCHED
Output string = 4695551234
**************************************************
```

Replace (Delete and Prefix) Digits Function

The BTS 10200 digit manipulation function supports the digit replacement based on matched string i.e. the matched string will be replaced with the replace-string.

- Replacement of leading digits
- Replacement of trailing digits
- Replacement of specific digits
- Replacement of leading digits only if length matches
- Replacement of specific digits in a specific digit position
- Replacement of digits in a specific digit position
- Replace only if NULL
- Replace any input string
Leading Digits Replacement

The BTS 10200 digit manipulation function supports the replacement (delete and prefix) of leading digits per the following examples:

Add digman id=del6pfx5; match-string=??????; replace-string=5; OR
Add digman id=del6pfx5; match-string=^??????; replace-string=5;
**************************************************
Enter input string 4692551234
Match string ??????
Replace string 5
MATCHED
Output string = 51234
**************************************************
Enter input string 4692551234
Match string ^??????
Replace string 5
MATCHED
Output string = 51234
**************************************************

Trailing Digits Replacement

The BTS 10200 digit manipulation function supports the replacing trailing digits per the following example:

Add digman id=del4rep0000; match-string=????$; replace-string=0000;
**************************************************
Enter input string 4692551234
Match string ????$
Replace string 0000
MATCHED
Output string = 4692550000
**************************************************

Specific Digits Replacement

The BTS 10200 digit manipulation function supports specific digits replacement only if the input string matches specific digits per the following example:

Add digman id=del469255pfx5; match-string=469255; replace-string=5;
**************************************************
Enter input string 4692551234
Match string 469255
Replace string 5
MATCHED
Output string = 51234
**************************************************
Leading Digits Replacement if Length Matches

The BTS 10200 digit manipulation function supports leading digits replacement only if the length matches per the following examples:

Add digman id=del6pfx5; match-string=469255....; replace-string=5;
**************************************************
Enter input string 4692551234
Match string 469255....
Replace string 5
MATCHED
Output string = 51234
**************************************************
Enter input string 4692550
Match string 469255....
Replace string 5
Not MATCHED
Output string = 4692550
**************************************************

Specific Digits Replacement in a Specific Digit Position

The BTS 10200 digit manipulation function supports specific digits replacement specified by position per the following example:

Add digman id=rep555; match-string=...555....; replace-string=222;
**************************************************
Enter input string 4695551234
Match string ...555....
Replace string 222
MATCHED
Output string = 4692221234
**************************************************
Enter input string 4695551234
Match string ......????
Replace string 0000
MATCHED
Output string = 4695550000
**************************************************

Digits Replacement in a Specific Digit Position

The BTS 10200 digit manipulation function supports the digits replacement in the specific digit position per the following examples:

Add digman id=rep456w222; match-string=...??....; replace-string=222;
Add digman id=replast4; match-string=......????; replace-string=0000;
**************************************************
Enter input string 4695551234
Match string ...??....
Replace string 222
MATCHED
Output string = 4692221234
**************************************************
Enter input string 4695551234
Match string ......????
Replace string 0000
MATCHED
Output string = 4695550000
**************************************************
Digis Replacement only if NULL

The BTS 10200 digit manipulation function supports digit replacement if input digit string is NULL per the following examples:

Add digman id=repifnull; match-string=none; replace-string=4692550000;
**************************************************
Enter input string none
Match string none
Replace string 4692550000
MATCHED

Output string = 4692550000
**************************************************
Enter input string 4695551234
Match string none
Replace string 4692550000
Not MATCHED

Output string = 4695551234
**************************************************

Any Input String Replacement

The BTS 10200 digit manipulation function supports the replacement of any input string with the replace-string per the following examples:

Add digman id=replace; match-string=%; replace-string=4692550000;
**************************************************
Enter input string none
Match string %
Replace string 4692550000
MATCHED

Output string = 4692550000
**************************************************
Enter input string 4695551234
Match string %
Replace string 4692550000
MATCHED

Output string = 4692550000
**************************************************
Nature of Address Manipulation

The BTS 10200 Digit Manipulation table also supports NOA manipulation.

To perform NOA manipulation only, the match-string and the replace-string should be NULL.

Add digman id=dg1; rule=1; match-noa=any; replace-noa=subscriber;

If both digit and NOA manipulation rules are defined; the digit manipulation is only performed if the NOA value specified in the match-noa matches with the input noa AND the match-string matches with the input string.

Add digman id=dg1; rule=1; match-string=%255; replace-string=5; match-noa=national; replace-noa=abbr;

<table>
<thead>
<tr>
<th>NOA</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>950</td>
<td>NOA used to specify 950 Call.</td>
</tr>
<tr>
<td>ANY</td>
<td>When specified matches any of the other NOAs. This NOA can only be specified in the MATCH-NOA field.</td>
</tr>
<tr>
<td>ABBR</td>
<td>NOA used to specify Abbreviated Number.</td>
</tr>
<tr>
<td>CUT-THRU</td>
<td>NOA used to specify no number present, Cut-Thru call.</td>
</tr>
<tr>
<td>INTL</td>
<td>NOA used to specify International Number</td>
</tr>
<tr>
<td>INTL-OPR</td>
<td>NOA used to specify International Number, Operator Requested (Valid for Called Party Number only).</td>
</tr>
<tr>
<td>INTL</td>
<td>NOA used to specify Unique International Number.</td>
</tr>
<tr>
<td>NATIONAL</td>
<td>NOA used to specify National Number.</td>
</tr>
<tr>
<td>NAT-OPR</td>
<td>NOA used to specify National Number, Operator Requested (Valid for Called Party Number only).</td>
</tr>
<tr>
<td>NETWORK</td>
<td>NOA used to specify Network.</td>
</tr>
<tr>
<td>NON-UNIQUE-INTL</td>
<td>NOA used to specify non-unique international number (valid for Calling Party number).</td>
</tr>
<tr>
<td>NON-UNIQUE-NATIONAL</td>
<td>NOA used to specify non-unique national number (valid for Calling Party number).</td>
</tr>
<tr>
<td>NON-UNIQUE-SUBSCRIBER</td>
<td>NOA used to specify non-unique subscriber number (valid for Calling Party number).</td>
</tr>
<tr>
<td>NS0</td>
<td>NOA used to specify Network specific (111 1000) Number.</td>
</tr>
<tr>
<td>NS1</td>
<td>NOA used to specify Network specific (111 1001) Number.</td>
</tr>
<tr>
<td>NS2</td>
<td>NOA used to specify Network specific (111 1010) Number.</td>
</tr>
<tr>
<td>NS3</td>
<td>NOA used to specify Network specific (111 1011) Number.</td>
</tr>
<tr>
<td>NS4</td>
<td>NOA used to specify Network specific (111 1100) Number.</td>
</tr>
<tr>
<td>NS5</td>
<td>NOA used to specify Network specific (111 1101) Number.</td>
</tr>
<tr>
<td>NS6</td>
<td>NOA used to specify Network specific (111 1110) Number.</td>
</tr>
<tr>
<td>OPERATOR</td>
<td>NOA used to specify an Operator Call.</td>
</tr>
<tr>
<td>PORTED-NUMBER-WITHOUT-RN</td>
<td>The Ported Number maybe prefixed with the network id, or may not be prefixed with anything (DN or NTWK-ID+DN), but does not include the Switch ID.</td>
</tr>
<tr>
<td>PORTED-NUMBER-WITH-RN</td>
<td>The Ported Number is prefixed with the network id and switch id (RN+DN).</td>
</tr>
</tbody>
</table>
Chapter 1      Digit Translations

Nature of Address Manipulation

Table 1-2      Nature Of Address Table (continued)

<table>
<thead>
<tr>
<th>NOA</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIVATE</td>
<td>NOA used to specify Private Numbering Plan</td>
</tr>
<tr>
<td>RESERVED</td>
<td>Reserved NOA.</td>
</tr>
<tr>
<td>SPARE0/SPARE2</td>
<td>Spare. Not Used.</td>
</tr>
<tr>
<td>SUB-OPR</td>
<td>NOA used to specify Subscriber Number, Operator Requested (Valid for Called Party Number only).</td>
</tr>
<tr>
<td>SUBSCRIBER</td>
<td>NOA used to specify Subscriber Number</td>
</tr>
<tr>
<td>TEST-LINE</td>
<td>NOA used to specify Test Line Number</td>
</tr>
<tr>
<td>UNKNOWN</td>
<td>Nature of Address is Unknown.</td>
</tr>
<tr>
<td>VSC</td>
<td>NOA used to specify Vertical Service Code.</td>
</tr>
</tbody>
</table>

Nature of Address Route Profile

The Nature of Address (NOA) Route Profile (noa-route-profile) table is used to support NOA-based routing on the Cisco BTS10200 Softswitch. This profile defines the NOA route id. The id can be assigned to a single Dial Plan Profile table or multiple Dial Plan Profile tables.

Table Name: NOA_ROUTE_PROFILE
Table Containment Area: EMS, CA

Command Types
add, audit, change, delete, help, show, sync

Caution
The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples
show noa-route-profile;
add noa-route-profile id=NoaRt;
change noa-route-profile id=NoaRt; description=noa specific route profile ID
delete noa-route-profile id=NoaRt;

Usage Guidelines
Primary Key Token(s): ID

Syntax Description
### AUTO_REFRESH
**Description:** Specifies whether to display cached data on the screen.
**CHAR(1):** Y/N (Default = Y).
Y—Queries the database for the most current data.
N—Queries the database for the most current data only if the cached data is unavailable.
**Valid for Command:** show
**Default Value:** Y
**Possible Value:** Y, N
**Parser:** BooleanParser

### DESCRIPTION
**Description:** Service provider-defined description.
**VARCHAR(64):** 1-64 ASCII characters.
**Valid for Command:** add, change, delete, show
**Possible Value:** [1_64]
**Parser:** TextParser

### DISPLAY
**Description:** Specifies what token information to display on the screen.
**VARCHAR(1024):** 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
**Valid for Command:** show
**Possible Value:** [1_1024]
**Parser:** TextParser

### ID
**Description:** Primary key. The NOA Route Profile ID.
**VARCHAR(16):** 1-16 ASCII characters.
**Valid for Command:** add, change, delete, show, audit, sync
**Mandatory:** add, change, delete
**Possible Value:** [1_16]
**Parser:** TextParser

### LIMIT
**Description:** Specifies the number of rows to display on the screen.
**INTEGER:** 1-100000000 (Default = 100000000).
**Valid for Command:** show
**Default Value:** 100000000
**Possible Value:** [1_100000000]
**Parser:** DecimalParser

### MASTER
**Valid for Command:** sync
**Mandatory:** sync
**Possible Value:** [1_10]
**Parser:** TextParser
<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
<th>Data Type</th>
<th>Permitted Values</th>
<th>Default Value</th>
<th>Possible Values</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORDER</td>
<td>Specifies whether to display data on the screen in a sorted order.</td>
<td>VARCHAR(1024)</td>
<td>1-1024 (Default = all rows are displayed)</td>
<td>1-1024</td>
<td>1_1024</td>
<td>TextParser</td>
</tr>
<tr>
<td>PLATFORM_STATE</td>
<td>Audits a shared memory database.</td>
<td>VARCHAR(7)</td>
<td>1-7 ASCII characters</td>
<td>ACTIVE (Default)</td>
<td>ACTIVE, STANDBY</td>
<td>TextParser</td>
</tr>
<tr>
<td>START_ROW</td>
<td>Specifies to begin displaying data on the screen at a row.</td>
<td>INTEGER</td>
<td>1-100000000 (Default = 1)</td>
<td>1</td>
<td>1_100000000</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>TARGET</td>
<td>Specifies the network element to receive the request.</td>
<td>VARCHAR(5)</td>
<td>1-5 ASCII characters</td>
<td>CA—Network identifier of a CA. FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. FSAIN (AIN Feature Server)—Network identifier of AIN FSs.</td>
<td>1_10</td>
<td>1_10</td>
</tr>
</tbody>
</table>
Nature of Address Route

The Nature of Address (NOA) Route (noa-route) table defines NOA-based routing on the Cisco BTS 10200 Softswitch. When the NOA-based routing is specified in the Dial Plan Profile table the Cisco BTS 10200 Softswitch uses the received NOA to index the NOA Route table and determine the destination id for further routing. The destination id can point to a specific route based on the NOA or it can point to a dial plan. When a destination id points to a dial plan, the received called party number is translated using the dial plan.

Table Name: NOA_ROUTE
Table Containment Area: EMS, CA

Command Types

add, audit, change, delete, help, show, sync

Caution

The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

show noa-route;
add noa-route id=NoaRt; noa=ported-number; dest-id=lnpDP
change noa-route id=NoaRt; noa=ported-number; dest-id=RnDp
delete noa-route id=NoaRt; noa=ported-number;

Usage Guidelines

Primary Key Token(s): ID, NOA
Foreign Key Token(s): ID references NOA_ROUTE_PROFILE (ID), DEST_ID references DESTINATION (DEST_ID)
Check Rules: Foreign Key Token(s): ID, DEST_ID
### Syntax Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Type</th>
<th>Default</th>
<th>Possible Values</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AUTO_REFRESH</strong></td>
<td>Specifies whether to display cached data on the screen. Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable.</td>
<td>CHAR(1)</td>
<td>Y</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td><strong>DEST_ID</strong></td>
<td>Foreign key: Destination table. The destination id associated with the received NOA.</td>
<td>VARCHAR(16)</td>
<td></td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td><strong>DISPLAY</strong></td>
<td>Specifies what token information to display on the screen. 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
<td>VARCHAR(1024)</td>
<td></td>
<td>[1_1024]</td>
<td>TextParser</td>
</tr>
<tr>
<td><strong>ID</strong></td>
<td>Primary key. Foreign key: NOA Route Profile table. The NOA Route Profile ID.</td>
<td>VARCHAR(16)</td>
<td></td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td><strong>LIMIT</strong></td>
<td>Specifies the number of rows to display on the screen. 1-100000000 (Default = 100000000).</td>
<td>INTEGER</td>
<td>100000000</td>
<td>[1_100000000]</td>
<td>DecimalParser</td>
</tr>
</tbody>
</table>
| **MASTER** | Valid for Command: sync  
Mandatory: sync  
Possible Value: [1_10]  
Parser: TextParser |
| --- | --- |
| **NOA** | Description: Primary key. The Nature of Address.  
VARCHAR(32): 1-32 ASCII characters. Permitted values are:  
PORTED-NUMBER-WITH-RN—The ported number is prefixed with Network ID and Switch ID (RN+DN).  
PORTED-NUMBER-WITHOUT-RN—The ported number may be prefixed with a Network ID, or may not be prefixed with anything (DN or NTWK-ID plus the DN), but does not include the switch id.  
Valid for Command: add, change, delete, show, audit, sync  
Mandatory: add, change, delete  
Possible Value: PORTED_NUMBER_WITH_RN, PORTED_NUMBER_WITHOUT_RN  
Parser: TextNoCaseParser |
| **ORDER** | Description: Specifies whether to display data on the screen in a sorted order.  
VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.  
Valid for Command: show  
Possible Value: [1_1024]  
Parser: TextParser |
| **PLATFORM_STATE** | Description: Audits a shared memory database.  
VARCHAR(7): 1-7 ASCII characters. Permitted values are:  
ACTIVE (Default) - System is currently running.  
STANDBY.  
Valid for Command: sync, audit  
Default Value: ACTIVE  
Possible Value: ACTIVE, STANDBY  
Parser: TextParser |
Chapter 1      Digit Translations

Automatic Number Identification/Dialed Number Identification Service Manipulation

The BTS 10200 supports DNIS or ANI digit manipulation, it includes digit manipulation or nature of address manipulation or both. When ANI manipulation is defined, it usually refers to the calling party number (CPN) which is normally displayed when a call is terminated to a device with calling number delivery (CND) feature.

In countries like China, there are additional requirements regarding ANI display. The requirements are to display ANI in the "dialable" format. The term dialable means the user can simply call up the display and hit the dial button to place the call based on the received ANI. This requires ANI to contain an area code or national destination code (NDC) for a long distance call while only displaying subscriber number for a local call. The rules defined above can be used to manipulate ANI digits to the desired format.

When call forwarding has occurred, the ANI manipulation is performed as follows:
- If redirecting party number is available, the redirecting party number is manipulated.
- If redirecting party number is not available, but original called number (OCN) is available, the OCN is manipulated.
- If neither redirecting party number nor OCN are available, then the calling party number is manipulated.

The following sections describe the provisioning and actions in each of the three stages in greater detail.
Pre-Translation Stage

In the pre-translations stage, the dial-plan-profile table is used to specify if ANI, DNIS, or both are to be manipulated. The purpose of the pre-translation stage is to normalize the digits, as required, during the translations stage.

In addition to manipulating the ANI/DNIS digits, the pre-translation stage can also be used to determine the NOA of the incoming digits (either ANI or DNIS or both).

The Dial Plan Profile table has been modified to allow provisioning of the ANI and DNIS digit manipulation rules.

Example 1:
In the first example, since the first character of the input string matches the specified match-string (^*), the NOA is changed to a vertical service code (VSC).

Add digman id=pretrans; rule=1; match-string=^*; replace-string=&; match-noa=any; replace-noa=vsc;

Enter input string *55#
Match string ^*
Replace string &
MATCHED

Output string = *55#

Example 2:
In the second example, since the last character of the input string matches the specified match-string (#), the NOA is changed to a VSC.

Add digman id=pretrans; rule=2; match-string=#; replace-string=&; match-noa=any; replace-noa=vsc;

Enter input string *55#
Match string #
Replace string &
MATCHED

Output string = *55#

Example 3:
In the third example there is no match, so the NOA is not changed and the output-string is the same as the input-string.

Add digman id=pretrans; rule=3; match-string=*; replace-string=&; match-noa=any; replace-noa=vsc;

Enter input string 5555
Match string *
Replace string &
Not MATCHED

Output string = 5555
Determining Nature of Address for China

The following table can be used to determine the NOA of incoming calls for China.

<table>
<thead>
<tr>
<th>Rule #</th>
<th>Match-String</th>
<th>Replace String</th>
<th>Match-NOA</th>
<th>Replace NOA</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>*</td>
<td>&amp;</td>
<td>Any</td>
<td>VSC</td>
<td>If first digit is a *, treat it as a VSC code.</td>
</tr>
<tr>
<td>2</td>
<td>#</td>
<td>&amp;</td>
<td>Any</td>
<td>VSC</td>
<td>If first digit is a #, treat it as a VSC code.</td>
</tr>
</tbody>
</table>

Digit Manipulation Profile

The Digit Manipulation Profile (digman-profile) table is used to create unique IDs for digit manipulation. This ID must be created before provisioning the Digit Manipulation table.

Table Name: DIGMAN_PROFILE
Table Containment Area: EMS, CA

Command Types

add, audit, change, delete, help, show, sync

Caution

The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

show digman-profile id=ndc10;
add digman-profile id=ndc10; description=Subscriber ANI manipulation digman id;
change digman-profile id=ndc10; description=Subscriber ANI manipulation digman id for ndc10;
delete digman-profile id=ndc10;

Usage Guidelines

Primary Key Token(s): ID

Add Rules: digman-profile id cannot exist.
Change Rules: digman-profile id must exist.
Delete Rules: digman-profile id must exist.

Syntax Description
| **AUTO_REFRESH** | Description: Specifies whether to display cached data on the screen.  
CHAR(1): Y/N (Default = Y).  
Y—Queries the database for the most current data.  
N—Queries the database for the most current data only if the cached data is unavailable.  
Valid for Command: show  
Default Value: Y  
Possible Value: Y, N  
Parser: BooleanParser |
| **DESCRIPTION** | Description: Service provider-defined description.  
VARCHAR(64): 1-64 ASCII characters.  
Valid for Command: add, change, show  
Possible Value: [1_64]  
Parser: TextParser |
| **DISPLAY** | Description: Specifies what token information to display on the screen.  
VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.  
Valid for Command: show  
Possible Value: [1_1024]  
Parser: TextParser |
| **ID** | Description: Primary key. The digit manipulation ID.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, audit, change, delete, show, sync  
Mandatory: add, change, delete  
Possible Value: [1_16]  
Parser: TextParser |
| **LIMIT** | Description: Specifies the number of rows to display on the screen.  
INTEGER: 1-100000000 (Default = 100000000).  
Valid for Command: show  
Default Value: 100000000  
Possible Value: [1_100000000]  
Parser: DecimalParser |
| **MASTER** | Valid for Command: sync  
Mandatory: sync  
Possible Value: [1_10]  
Parser: TextParser |
<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
<th>Type</th>
<th>Values</th>
<th>Valid for Command</th>
<th>Possible Value</th>
<th>Default Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORDER</td>
<td>Specifies whether to display data on the screen in a sorted order.</td>
<td>VARCHAR(1024)</td>
<td>1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
<td>show</td>
<td>[1_1024]</td>
<td></td>
<td>TextParser</td>
</tr>
<tr>
<td>PLATFORM_STATE</td>
<td>Audits a shared memory database.</td>
<td>VARCHAR(7)</td>
<td>1-7 ASCII characters. Permitted values are: ACTIVE (Default) - System is currently running. STANDBY.</td>
<td>sync, audit</td>
<td>ACTIVE, STANDBY</td>
<td>ACTIVE</td>
<td>TextParser</td>
</tr>
<tr>
<td>START_ROW</td>
<td>Specifies to begin displaying data on the screen at a row.</td>
<td>INTEGER</td>
<td>1-100000000 (Default = 1). Valid for Command: show</td>
<td>show</td>
<td>[1_100000000]</td>
<td>1</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>TARGET</td>
<td>Specifies the network element to receive the request.</td>
<td>VARCHAR(5)</td>
<td>CA—Network identifier of a CA.</td>
<td>sync</td>
<td>[1_10]</td>
<td></td>
<td>TextParser</td>
</tr>
</tbody>
</table>
Digit Manipulation

The Digit Manipulation (digman) table is used to perform digit and nature of address (NOA) manipulation.

Table Name: DIGMAN
Table Containment Area: EMS, CA

Command Types

- add, audit, change, delete, help, show, sync

Caution

The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

- show digman id=ndc10;
- add digman id=ndc10; rule=1; match-string=010; replace-string=none;
- change digman id=ndc10; rule=1; match-noa=any; replace-noa=subscriber;
- delete digman id=ndc10; rule=1;

Usage Guidelines

Primary Key Token(s): ID, RULE
Foreign Key Token(s): ID

Add Rules:
- digman profile id must exist.
- if match-string is not equal to NULL; then replace-string is not equal to NULL.
- if match-noa is not equal to NULL; then replace-noa is not equal to NULL.

Change Rules:
- id must exist.
- if match-string is not equal to NULL; then replace-string is not equal to NULL.
- if match-noa is not equal to NULL; then replace-noa is not equal to NULL.
**Syntax Description**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Type</th>
<th>Valid for Command</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO_REFRESH</td>
<td>Description: Specifies whether to display cached data on the screen. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable.</td>
<td>CHAR(1): Y/N (Default = Y).</td>
<td>show</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DESCRIPTION</td>
<td>Description: Service provider-defined description. VARCHAR(64): 1-64 ASCII characters.</td>
<td>VARCHAR(64): 1-64 ASCII characters.</td>
<td>add, change, audit, sync, show</td>
<td>[1_64]</td>
<td>TextParser</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Description: Specifies what token information to display on the screen. VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
<td>VARCHAR(1024): 1-1024 (Default = all tokens are displayed).</td>
<td>show</td>
<td>[1_1024]</td>
<td>TextParser</td>
</tr>
<tr>
<td>ID</td>
<td>Description: Primary key. Foreign key: Digman Profile table. The digit manipulation ID. Must match ID in the Digit Manipulation Profile table. VARCHAR(16): 1-16 ASCII characters.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>add, audit, change, delete, show</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td>LIMIT</td>
<td>Description: Specifies the number of rows to display on the screen. INTEGER: 1-100000000 (Default = 100000000).</td>
<td>INTEGER: 1-100000000 (Default = 100000000).</td>
<td>show</td>
<td>[1_100000000]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>MASTER</td>
<td>Valid for Command: sync</td>
<td></td>
<td>sync</td>
<td>[1_10]</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
### MATCH_NOA

**Description:** Used to match against an input NOA.

**VARCHARG(40):** 1-40 ASCII characters.

Permitted values are:

- **950—950 Call**
- **ABBR—Abbreviated number**
- **ANY—Any NOA**
- **CUT-THRU—No number present, cut-thru call**
- **INTL—International number**
- **INTL-OPR—International Number, Operator Requested (Valid for Called Party Number only)**
- **NATIONAL—Unique National Number**
- **NAT-OPR—National Number, Operator Requested (Valid for Called Party Number only)**
- **NETWORK—Network**
- **NON-UNIQUE-INTL—Non-unique international number (valid for Calling Party number).**
- **NON-UNIQUE-NATIONAL—Non-unique national number (valid for Calling Party number).**
- **NON-UNIQUE-SUBSCRIBER—Non-unique subscriber number (valid for Calling Party number).**
- **NS0—Network specific (111 1000)**
- **NS1—Network specific (111 1001)**
- **NS2—Network specific (111 1010)**
- **NS3—Network specific (111 1011)**
- **NS4—Network specific (111 1100)**
- **NS5—Network specific (111 1101)**
- **NS6—Network specific (111 1110)**
- **OPERATOR—No Number, Operator Call (Valid for Called Party Number only)**
- **PORTED-NUMBER-WITHOUT-RN—The Ported Number maybe prefixed with the network id, or may not be prefixed with anything (DN or NTWK-ID+DN), but does not include the Switch ID.**
- **PORTED-NUMBER-WITH-RN—The Ported Number is prefixed with the network id and switch id (RN+DN).**
- **PRIVATE—Private Numbering Plan**
- **RESERVED—Reserved NOA**
- **SPARE0/SPARE2—Spare. Not Used.**
- **SUB-OPR—Subscriber Number, Operator Requested (Valid for Called Party Number only)**
- **SUBSCRIBER—Unique Subscriber Number**
- **TEST-LINE—Test Line**
- **UNKNOWN—Nature of Address is Unknown.**
- **VSC—Vertical Service Code**

Valid for Command: add, audit, change, show

Possible Value: 950, ABBR, ANY, CUT-THRU, INTL, INTL-OPR, NATIONAL, NS0, NS1, NS2, NS3, NS4, NS5, NS6, OPERATOR, PRIVATE, RESERVED, SPARE0, SPARE2, SUBSCRIBER, TEST-LINE, UNKNOWN, VSC, NAT-OPR, NON-UNIQUE_INTL, NON-UNIQUE_NATIONAL, NON_UNIQUE_SUBSCRIBER, SUB_OPR, PORTED_NUMBER_WITHOUT_RN, PORTED_NUMBER_WITH_RN

Parser: TextParser
### MATCH_STRING

**Description:** Used to match against the input-string.

**VARCHAR(40):** 1-40 ASCII characters. The characters can be one of the following:

- **Digits (0-9, *, #):** Digits found on a keypad.
- **Dot (.):** Used to indicate the string position at which to perform the match operation. If a dot is specified as the 1st character of the match-string, the digits specified by each dot are skipped until a question mark or a digit is encountered. Can also be used to check the length of the input string.
- **Question mark (?):** Used to specify a wild card character based on its position in the match-string. Each question mark (?) represents 1 digit character. Multiple question marks must be used with another question mark.
- **Percent (%):** Used to specify the Match and Replace function. That is, if a match occurs, replace the matched string with the replace-string. Also used as a wild card character.
- **Caret (^):** Used to specify beginning of a string when specific leading digits are to be deleted or replaced. Also used when prefixing digits to the input string.
- **Dollar sign ($):** Used to search from the end of a string backwards instead of from the beginning. Also used when digits are to be appended to the end of the string, deleted or replaced from the end of the string.
- **NONE:** the actual word.

Valid for Command: `add`, `audit`, `change`, `show`

Possible Value: `[1_40]`

Parser: `MatchStringParser`

### ORDER

**Description:** Specifies whether to display data on the screen in a sorted order.

**VARCHAR(1024):** 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.

Valid for Command: `show`

Possible Value: `[1_1024]`

Parser: `TextParser`

### PLATFORM_STATE

**Description:** Audits a shared memory database.

**VARCHAR(7):** 1-7 ASCII characters. Permitted values are:

- **ACTIVE** (Default) - System is currently running.
- **STANDBY**.

Valid for Command: `sync`, `audit`

Default Value: `ACTIVE`

Possible Value: `ACTIVE`, `STANDBY`

Parser: `TextParser`
REPLACE_NOA

Description: If a match on NOA is found, the input NOA is replaced with the NOA specified in this token.


Permitted values are:

950—950 Call
ABBR—Abbreviated number
CUT-THRU—No number present, cut-thru call
INTL—International number
INTL-OPR—International Number, Operator Requested (Valid for Called Party Number only)
INTL—Unique International Number
NATIONAL—Unique National Number
NAT-OPR—National Number, Operator Requested (Valid for Called Party Number only)
NETWORK—Network
NON-UNIQUE-INTL—Non-unique international number (valid for Calling Party number).
NON-UNIQUE-NATIONAL—Non-unique national number (valid for Calling Party number).
NON-UNIQUE-SUBSCRIBER—Non-unique subscriber number (valid for Calling Party number).
NS0—Network specific (111 1000)
NS0—Network specific (111 1000)
NS1—Network specific (111 1001)
NS1—Network specific (111 1001)
NS2—Network specific (111 1010)
NS2—Network specific (111 1010)
NS3—Network specific (111 1011)
NS3—Network specific (111 1011)
NS4—Network specific (111 1100)
NS4—Network specific (111 1100)
NS5—Network specific (111 1101)
NS5—Network specific (111 1101)
NS6—Network specific (111 1110)
NS6—Network specific (111 1110)
OPERATOR—No Number, Operator Call (Valid for Called Party Number only)
PORTED-NUMBER-WITHOUT-RN—The Ported Number maybe prefixed with the network id, or may not be prefixed with anything (DN or NTWK-ID+DN), but does not include the Switch ID.
PORTED-NUMBER-WITH-RN—The Ported Number is prefixed with the network id and switch id (RN+DN).
PRIVATE—Private Numbering Plan
RESERVED—Reserved NOA
SPARE0/SPARE2—Spare. Not Used.
SUB-OPR—Subscriber Number, Operator Requested (Valid for Called Party Number only)
SUBSCRIBER—Unique Subscriber Number
TEST-LINE—Test Line
UNKNOWN—Nature of Address is Unknown.
VSC—Vertical Service Code

Valid for Command: add, audit, change, show

Possible Value: 950, ABBR, CUT-THRU, INTL, INTL-OPR, NATIONAL, NS0, NS1, NS2, NS3, NS4, NS5, NS6, OPERATOR, PRIVATE, RESERVED, SPARE0, SPARE2, SUBSCRIBER, TEST-LINE, UNKNOWN, VSC, NAT-OPR, NON-UNIQUE-INTL, NON-UNIQUE-NATIONAL, NON-UNIQUE-SUBSCRIBER, SUB-OPR, PORTED-NUMBER-WITH-RN, PORTED-NUMBER-WITHOUT-RN

Parser: TextParser
REPLACE_STRING  Description: If a match is found, the matched string is replaced with the replace-string.
   VARCHAR(40): 1-40 ASCII characters. The characters can be one of the following:
   Digits (A-F, 0-9, *, #)
   Ampersand (&)
   NONE (the actual word)
   Valid for Command: add, audit, change, show
   Possible Value: [1_40]
   Parser: ReplaceStringParser

RULE  Description: Primary key. A rule specifies the order in which the rules must be applied.
   INTEGER: 1-20 numeric characters.
   Valid for Command: add, audit, change, delete, show
   Mandatory: add, change, delete
   Possible Value: [1_20]
   Parser: DecimalParser

START_ROW  Description: Specifies to begin displaying data on the screen at a specific row.
   INTEGER: 1-100000000 (Default = 1).
   Valid for Command: show
   Default Value: 1
   Possible Value: [1_100000000]
   Parser: DecimalParser

TARGET  Description: Specifies the network element to receive the request.
   VARCHAR(5): 1-5 ASCII characters. Permitted values are:
   CA—Network identifier of a Call Agent.
   FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.
   FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.
   Valid for Command: sync
   Mandatory: sync
   Possible Value: [1_10]
   Parser: TextParser
Dial Plan Profile

The Dial Plan Profile (dial-plan-profile) table creates dial-plan-profile ids before they are assigned to subscribers or trunk groups. The dial-plan-profile id links digit-string entries in the Dial Plan table within a dial plan. Different dial-plan-profile ids are assigned to subscribers and trunk groups. A dial-plan-id must be created in this table before entries can be added to the Dial Plan table.

Table Name: DIAL_PLAN_PROFILE
Table Containment Area: EMS, CA

Command Types
add, audit, change, delete, help, show, sync

Caution
The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples
show dial-plan-profile id=business;
add dial-plan-profile id=business; description=dialing plan for new business users in dallas;
change dial-plan-profile id=business; description=dialing plan for new business users in northdallas;
delete dial-plan-profile id=business;

Usage Guidelines
Primary Key Token(s): ID
Foreign Key Token(s): intl-dial-plan-id, dnis-digman-id, ani-digman-id, nat-dial-plan-id, noa-route-profile-id, default-dest-id
Change Rules: dial-plan-profile id must exist.
Delete Rules:
- ID does not exist in any dial-plan::id.
- ID does not exist in any sub-profile::dial-plan-id.
- ID does not exist in any pop::lnp-dp-id.
- ID does not exist in any trunk-grp::dial-plan-id.
- ID does not exist in any carrier::dial-plan-id.
### Syntax Description

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Description</th>
<th>Data Type</th>
<th>Valid for Command</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANI_BASED_ROUTING</strong></td>
<td>Specifies whether to translate the call using the calling party number instead of the called party number.</td>
<td>CHAR(1): Y/N (Default = N).</td>
<td>add, audit, change, show, sync</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td><strong>ANI_DIGMAN_ID</strong></td>
<td>Description: Foreign key: Digman Profile table. ANI (calling party number) digit manipulation ID.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>add, audit, change, show</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td><strong>AUTO_REFRESH</strong></td>
<td>Specifies whether to display cached data on the screen.</td>
<td>CHAR(1): Y/N (Default = Y).</td>
<td>show</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td><strong>DEFAULT_DEST_ID</strong></td>
<td>Mandatory if lerg6-supp=validate-only or validate-and-call-type or skip-dial-plan=y. Foreign key: Destination table. Specifies a default destination id.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>add, audit, change, show, sync</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td><strong>DESCRIPTION</strong></td>
<td>Service provider-defined description.</td>
<td>VARCHAR(64): 1-64 ASCII characters.</td>
<td>add, audit, change, show</td>
<td>[1_64]</td>
<td>TextParser</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Specifies what token information to display on the screen.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_1024]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DNIS_DIGMAN_ID</td>
<td>Description: Foreign key: Digman Profile table. DNIS (called party number) digit manipulation ID.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, audit, change, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID</td>
<td>Description: Primary key. Specifies the dial plan profile. A dial plan id is required before a dial plan can be provisioned.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, audit, change, delete, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mandatory: add, change, delete</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTL.Dial PLAN_ID</td>
<td>Description: Foreign key: International Dial Plan Profile table. Specifies which international dial plan ID to use with the dial plan ID.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, audit, change, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LERG6_SUPP  Description: Specifies whether to validate a digit string using the LERG6 table.

If the dialed digit string is not found in the Dial Plan table, the digit string is validated using the LERG6 table. If the digit string is valid, the call is then routed using the default-dest-id. In addition to validating the dialed string, the call type information is derived using the rate center and LATA information specified in the LERG6 table.

CALL-TYPE determinations based on LERG6:

INTRA-STATE determinations: The intra/inter-state determination is based on the STATE information in the LERG6 table.

VARCHAR(32): 1-32 ASCII characters (Default = NOT-USED). Permitted values are:

NOT-USED (DEFAULT)—Do not use LERG6 to validate the dialed string. If the dialed string is not found in Dial Plan, then VACANT Code treatment is given.

VALIDATE-ONLY—Use LERG6 to validate the dialed string. If the string is valid, the call is routed using default-dest-id. Uses the call-type specified in the default-dest-id.

VALIDATE-AND-CALL-TYPE—Uses LERG6 to validate and derives the call type information from the LSA table, the rate center and the LATA information in LERG6.

Valid for Command: add, audit, change, show, sync
Default Value: NOT_USED
Possible Value: NOT_USED, VALIDATE_ONLY, VALIDATE_AND_CALL_TYPE
Parser: TextNoCaseParser

LIMIT  Description: Specifies the number of rows to display on the screen.

INTEGER: 1-100000000 (Default = 100000000).

Valid for Command: show
Default Value: 100000000
Possible Value: [1_100000000]
Parser: DecimalParser

MASTER  Valid for Command: sync
Mandatory: sync
Possible Value: [1_10]
Parser: TextParser
| **NANP_DIAL_PLAN** | Description: Specifies whether the dial plan is in North American Number Plan (NANP) format. If it is an NANP dial plan, the EMS enforces NANP rules—the digit string must be in the format NXX-NXX-XXXX.
| | CHAR(1): Y/N (Default = Y).
| | Valid for Command: add, audit, change, show
| | Default Value: Y
| | Possible Value: Y, N
| | Parser: BooleanParser |

| **NAT_DIAL_PLAN_ID** | Description: Foreign key: Dial Plan table. National dial plan ID to use to retranslate dialed digits. This token is used only if the dial plan ID is different from the dial plan profile ID.
| | VARCHAR(16): 1-16 ASCII characters (Default = dial-plan-profile-id).
| | Valid for Command: add, audit, change, show
| | Possible Value: [1_16]
| | Parser: TextParser |

| **NOA_BASED_ROUTING** | Description: Specifies whether Nature of Address based routing is required.
| | CHAR(1): Y/N (Default = N)
| | Valid for Command: add, audit, change, show, sync
| | Default Value: N
| | Possible Value: Y, N
| | Parser: BooleanParser |

| **NOA_ROUTE_PROFILE_ID** | Description: Mandatory if noa-based-routing=Y. Foreign key: NOA Route Profile table. Specifies the NOA-specific route id to use for routing. When NOA-based-routing is specified, the NOA is used to index the NOA Route table. If a NOA-specific record is found, processing continues based on the Destination ID specified in the NOA Route table. If no record is found, then the Called Number is translated in the current Dial Plan.
| | VARCHAR(16): 1-16 ASCII characters.
| | Valid for Command: add, audit, change, show, sync
| | Possible Value: [1_16]
| | Parser: TextParser |

| **ORDER** | Description: Specifies whether to display data on the screen in a sorted order.
| | VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
| | Valid for Command: show
| | Possible Value: [1_1024]
| | Parser: TextParser |
### OVERDECADIC_DIGITS_SUPP

**Description:** Controls provisioning of overdecadic digits in a dial plan. This token can only be set to Y if the nanp-dial-plan token is set to N.

**CHAR(1):** Y/N (Default = N).

**Valid for Command:** add, audit, change, show

**Default Value:** N

**Possible Value:** Y, N

**Parser:** BooleanParser

### PLATFORM_STATE

**Description:** Audits a shared memory database.

**VARCHAR(7):** 1-7 ASCII characters. Permitted values are:
- **ACTIVE** (Default) - System is currently running.
- **STANDBY**

**Valid for Command:** sync, audit

**Default Value:** ACTIVE

**Possible Value:** ACTIVE, STANDBY

**Parser:** TextParser

### SKIP_DIAL_PLAN

**Description:** Specifies whether a number is analyzed by the dial plan.

**CHAR(1):** Y/N (default = N).

- **Y**—Use dial plan to analyze the number.
- **N**—Use default route in the default-dest-id.

**Valid for Command:** add, audit, change, show, sync

**Default Value:** N

**Possible Value:** Y, N

**Parser:** BooleanParser
Chapter 1      Digit Translations

Automatic Number Identification/Dialed Number Identification Service Manipulation

The International Dial Plan Profile (intl-dial-plan-profile) table is used to create unique IDs for international dial plans. This ID must be created before provisioning the International Dial Plan table.

Table Name: INTL_DIAL_PLAN_PROFILE
Table Containment Area: EMS, CA

Command Types
add, audit, change, delete, help, show, sync

Caution
The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples
show intl-dial-plan-profile id=pop1;
add intl-dial-plan-profile id=pop1; description=default International Dialing plan for Call Agent;
change intl-dial-plan-profile id=pop1; description=International Dialing plan for POP1;
delete intl-dial-plan-profile id=pop1;

Usage Guidelines
Primary Key Token(s): ID
Delete Rules: ID does not exist in any: dial-plan::id; sub-profile::dial-plan-id; pop::lnp-dp-id; trunk-grp::dial-plan-id; or carrier::dial-plan-id.
### Syntax Description

**AUTO_REFRESH**

Description: Specifies whether to display cached data on the screen.
CHAR(1): Y/N (Default = Y).
Y—Queries the database for the most current data.
N—Queries the database for the most current data only if the cached data is unavailable.
Valid for Command: show
Default Value: Y
Possible Value: Y, N
Parser: BooleanParser

**DESCRIPTION**

Description: Service provider-defined description.
VARCHAR(64): 1-64 ASCII characters.
Valid for Command: add, audit, change, show, sync
Possible Value: [1_64]
Parser: TextParser

**DISPLAY**

Description: Specifies what token information to display on the screen. Valid only for the show command.
VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
Valid for Command: show
Possible Value: [1_1024]
Parser: TextParser

**ID**

Description: Primary key. Unique ID for this international dial plan profile.
VARCHAR(16): 1-16 ASCII characters.
Valid for Command: add, audit, change, delete, show, sync
Mandatory: add, change, delete
Possible Value: [1_16]
Parser: TextParser

**LIMIT**

Description: Specifies the number of rows to display on the screen.
INTEGER: 1-100000000 (Default = 100000000).
Valid for Command: show
Default Value: 100000000
Possible Value: [1_100000000]
Parser: DecimalParser

**MASTER**

Valid for Command: sync
Mandatory: sync
Possible Value: [1_10]
Parser: TextParser
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Type</th>
<th>Valid for Command(s)</th>
<th>Default Value</th>
<th>Possible Values</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORDER</td>
<td>Specifies whether to display data on the screen in a sorted order.</td>
<td>VARCHAR(1024)</td>
<td>show</td>
<td>all rows shown</td>
<td>[1_1024]</td>
<td>TextParser</td>
</tr>
<tr>
<td>PLATFORM_STATE</td>
<td>Audits a shared memory database.</td>
<td>VARCHAR(7)</td>
<td>sync, audit</td>
<td>ACTIVE</td>
<td>ACTIVE, STANDBY</td>
<td>TextParser</td>
</tr>
<tr>
<td>START_ROW</td>
<td>Specifies to begin displaying data on the screen at a specific row.</td>
<td>INTEGER</td>
<td>show</td>
<td>1</td>
<td>[1_100000000]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>TARGET</td>
<td>Specifies the network element to receive the request.</td>
<td>VARCHAR(5)</td>
<td>sync</td>
<td>sync</td>
<td>[1_10]</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
Translating Stage

The Dial-Plan table or International Dial-Plan table is used during the Translations stage to manipulate only the called party number. The previously existing capability of a simple delete and/or prefix digit manipulation function is supported.

Note

While the simple delete and/or prefix digit manipulation function is still supported, it is no longer necessary as the same function(s) can now be accomplished in the other two stages.

Dial Plan

Dial plans analyze, screen, and route calls based on dialed digits. The Dial Plan (dial-plan) table holds dial plan information for a specific type of call. It defines valid dialing patterns and determines call routing. All records that share a common dial-plan-profile id are considered a dial plan.

Table Name: DIAL_PLAN
Table Containment Area: EMS, CA

Command Types

add, audit, change, delete, help, show, sync

Caution

The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

show dial-plan id=sub; digit-string=972-671;
add dial-plan id=sub; digit-string=972-671; noa=national; dest-id=richardson;
change dial-plan id=sub; digit-string=972-671; noa=national; dest-id=plano;
delete dial-plan id=sub; digit-string=972-671; noa=national; dest-id=plano;

Usage Guidelines

Primary Key Token(s): ID, DIGIT_STRING, NOA
Foreign Key Token(s): id, dest-id
Add Rules: dial-plan id cannot exist.
Change Rules: dial-plan id must exist.
Delete Rules: dial-plan id must exist; NOA defaults to unknown. If NOA is other than unknown, NOA is required.
## Syntax Description

**AUTO_REFRESH**

Description: Specifies whether to display cached data on the screen.

CHAR(1): Y/N (Default = Y).
- Y—Queries the database for the most current data.
- N—Queries the database for the most current data only if the cached data is unavailable.

Valid for Command: show
Default Value: Y
Possible Value: Y, N
Parser: BooleanParser

---

**DEL_DIGITS**

Description: Specifies the number of digits to delete from the received digit string.

SMALLINT: 0-16 (Default = 0).

Valid for Command: add, audit, change, show, sync
Default Value: 0
Possible Value: [0_16]
Parser: DecimalParser

---

**DEST_ID**

Description: Foreign key: Destination table. Provides the routing information for the dialed number. ID from Destination table.

VARCHAR(16): 1-16 ASCII characters.

Valid for Command: add, audit, change, show, sync
Mandatory: add
Possible Value: [1_16]
Parser: TextParser

---

**DIGIT_STRING**

Description: Primary key. Dialed digits (what was dialed).

VARCHAR(16): 1-16 numeric characters entered as NDC-ED-DN.

Valid for Command: add, audit, change, delete, show, sync
Mandatory: add, change, delete
Possible Value: [1_14]
Parser: OverDecDNParser

---

**DISPLAY**

Description: Specifies what token information to display on the screen.

VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.

Valid for Command: show
Possible Value: [1_1024]
Parser: TextParser
### FORCED
- **Description:** Specifies whether the system bypasses the parser rules and allows a user to enter a dial plan record as a free format record (ASCII).
- **CHAR(1): Y/N (Default = N).**
  - **Y**—Allows a user to enter a dial plan record as a free format record (ASCII).
  - **N**—Does not allow a user to enter a dial plan record as a free format record (ASCII).
- **Valid for Command:** add
- **Possible Value:** Y
- **Parser:** TextParser

### ID
- **Description:** Primary key. Foreign key: Dial Plan Profile table. Dial plan ID of a subscriber, trunk group, etc. Assigned by service provider.
- **VARCHAR(16): 1-16 ASCII characters.**
- **Valid for Command:** add, audit, change, delete, show, sync
- **Mandatory:** add, change, delete
- **Possible Value:** [1_16]
- **Parser:** TextParser

### LIMIT
- **Description:** Specifies the number of rows to display on the screen.
- **INTEGER: 1-100000000 (Default = 100000000).**
- **Valid for Command:** show
- **Default Value:** 100000000
- **Possible Value:** [1_100000000]
- **Parser:** DecimalParser

### MASTER
- **Valid for Command:** sync
- **Mandatory:** sync
- **Possible Value:** [1_10]
- **Parser:** TextParser

### MAX_DIGITS
- **Description:** Maximum number of digits allowed.
- **SMALLINT: 1-64 (Default = 10).**
- **Valid for Command:** add, audit, change, show, sync
- **Mandatory:** add
- **Default Value:** 10
- **Possible Value:** [1_64]
- **Parser:** DecimalParser
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Valid for Command</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIN_DIGITS</td>
<td>Description: Minimum number of digits required for a call.</td>
<td>add, audit, change, show, sync</td>
<td>[1_64]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td></td>
<td>SMALLINT: 1-64 (Default = 10).</td>
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</tr>
<tr>
<td>NOA</td>
<td>Description: Primary key. Nature of address. Use the Variable Default table</td>
<td>add, audit, change, delete, show, sync</td>
<td>NATIONAL, SUBSCRIBER, UNKNOWN</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>to change the default value if required. Use noa=unknown for ESRN numbers.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VARCHAR(16): 1-16 ASCII characters. Permitted values are:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NATIONAL (Default)—National Number.</td>
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</tr>
<tr>
<td></td>
<td>SUBSCRIBER—Subscriber Number.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>UNKNOWN—Nature of address is unknown.</td>
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</tr>
<tr>
<td>ORDER</td>
<td>Description: Specifies whether to display data on the screen in a sorted</td>
<td>show</td>
<td>[1_1024]</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>order.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>are any valid token that can be shown for this command. Multiple tokens can</td>
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</tr>
<tr>
<td></td>
<td>be entered by separating with a comma.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PFX_DIGITS</td>
<td>Description: Specifies the digits to prefix.</td>
<td>add, audit, change, show, sync</td>
<td>[1_16]</td>
<td>DigitParser</td>
</tr>
</tbody>
</table>
| **PLATFORM_STATE** | Description: State of an active or standby system shared memory database; use to audit an active or standby system shared memory database. Valid for the audit database and audit table name commands.  
| | VARCHAR(7): 1-7 ASCII characters. Permitted values are: ACT(Active) (Default)—System is active (currently running). STANDBY—System is in standby mode. EMS—Audits the active EMS to the standby EMS. Valid for Command: sync, audit  
| | Default Value: ACTIVE  
| | Possible Value: ACTIVE, STANDBY  
| | Parser: TextParser |

| **SPLIT_NPA** | Description: Automatically provisioned when a record is added to the split-NPA table. Applies only to NANP.  
| | VARCHAR(7): 1-7 ASCII characters. Permitted values are: OLD-NPA—Dialed number is associated with the old NPA. NEW-NPA—Dialed number is associated with the new NPA. NONE (Default)—Not associated with split NPA. Valid for Command: add, audit, change, show, sync  
| | Mandatory: add  
| | Default Value: NONE  
| | Possible Value: NEW_NPA, NONE, OLD_NPA  
| | Parser: TextParser |

| **START_ROW** | Description: Specifies to begin displaying data on the screen at a specific row.  
| | INTEGER: 1-100000000 (Default = 1). Valid for Command: show  
| | Default Value: 1  
| | Possible Value: [1_100000000]  
| | Parser: DecimalParser |

| **TARGET** | Description: Specifies the network element to receive the request.  
| | VARCHAR(5): 1-5 ASCII characters. Permitted values are: CA—Network identifier of a Call Agent. FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers. Valid for Command: sync  
| | Mandatory: sync  
| | Possible Value: [1_10]  
| | Parser: TextParser |
International Dial Plan

The International Dial Plan (intl-dial-plan) table holds international dial plan information for calls to regions outside the North American Numbering Plan (NANP). It contains the country code, minimum and maximum digits, the country name, and the route-grp-id.

Table Name: INTL_DIAL_PLAN
Table Containment Area: EMS, CA

Command Types
add, audit, change, delete, help, show, sync

Caution
The `sync` command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples
show intl-dial-plan id=intldp1; cc=122;
add intl-dial-plan id=intldp1; cc=122; min-digits=7; max-digits=10;
change intl-dial-plan id=intldp1; cc=122; description=France;
delete intl-dial-plan id=intldp1; cc=122;

Usage Guidelines
Primary Key Token(s): ID, CC
Foreign Key Token(s): id, dest-id
Add Rules: intl-dial-plan-profile id must exist.
Change Rules: id must exist.
### Syntax Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Type</th>
<th>Valid for Command</th>
<th>Mandatory</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO_REFRESH</td>
<td>Specifies whether to display cached data on the screen.</td>
<td>CHAR(1): Y/N (Default = Y).</td>
<td>show</td>
<td></td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td>CC</td>
<td>Primary key. Country code digits. Country code as defined in ITU-T Recommendation E.164. Service provider must determine and enter accordingly. This information is often found in the front of some telephone directories. See Recommendation E.164.</td>
<td>VARCHAR(5): 1-5 numeric characters.</td>
<td>add, change, delete, show</td>
<td>add, change, delete</td>
<td>[1_7]</td>
<td>GenericDNParser</td>
</tr>
<tr>
<td>DESCRIPTION</td>
<td>Service provider-defined description.</td>
<td>VARCHAR(64): 1-64 ASCII characters.</td>
<td>add, change, audit, sync, show</td>
<td>add, change, audit, sync, show</td>
<td>[1_64]</td>
<td>TextParser</td>
</tr>
<tr>
<td>DEST_ID</td>
<td>Foreign key: Destination table. Used only if the service provider is also a carrier and wants to route the international call to the appropriate gateway.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>add, change, audit, sync, show</td>
<td>add</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Specifies what token information to display on the screen.</td>
<td>VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
<td>show</td>
<td></td>
<td>[1_1024]</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
### ID
**Description:** Primary key. Foreign key: International Dial Plan Profile table.
*International dial plan profile ID.*
VARCHAR(16): 1-16 ASCII characters.
Valid for Command: add, audit, change, delete, show, sync
Mandatory: add, change, delete
Possible Value: [1_16]
Parser: TextParser

### LIMIT
**Description:** Specifies the number of rows to display on the screen.
INTEGER: 1-100000000 (Default = 100000000).
Valid for Command: show
Default Value: 100000000
Possible Value: [1_100000000]
Parser: DecimalParser

### MASTER
Valid for Command: sync
Mandatory: sync
Possible Value: [1_10]
Parser: TextParser

### MAX_DIGITS
**Description:** Maximum number of digits allowed. Maximum number of digits for any phone number in the country being added.
SMALLINT: 3-64 (Default = 16).
Valid for Command: add, change, audit, sync, show
Default Value: 16
Possible Value: [3_64]
Parser: DecimalParser

### MIN_DIGITS
**Description:** Minimum number of digits required for a call to this country. Minimum number of digits for any phone number in the country being added.
SMALLINT: 3-64 (Default = 6).
Valid for Command: add, change, audit, sync, show
Default Value: 6
Possible Value: [3_64]
Parser: DecimalParser

### ORDER
**Description:** Specifies whether to display data on the screen in a sorted order. Valid only for the show command.
VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
Valid for Command: show
Possible Value: [1_1024]
Parser: TextParser
Variable Digit Dialing

Variable digit dialing is used in the Europe where the length of the dialed number can vary from seven digits to ten digits, mainly in Germany. For a given NDC or EC the DN can vary from the minimum to the maximum specified in the Exchange Code table.

Example:

ndc=349, ec=234; min-digits=7; max-digits=10; (from the Exchange Code table)

DN=3492340 could be a DN
DN=3492341234 could also be a DN belonging to ndc=349, ec=234
DN=349234222 could also be a 9 digit DN
Variable Digit Dialing Provisioning

To provision variable digit dialing according to the example given in Variable Digit Dialing section, take the following steps:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>add exchange-code ndc=349, ec=234; min-digits=7; max-digits=10;</td>
</tr>
<tr>
<td>Step 2</td>
<td>add office-code ndc=349; ec=234; dn-group=0; (For the DN=3492340)</td>
</tr>
<tr>
<td>Step 3</td>
<td>add office-code ndc=349; ec=234; dn-group=1xxx; dn-length= 10; (For the 10 digit DNs)</td>
</tr>
<tr>
<td>Step 4</td>
<td>add office-code ndc=349; ec=234; dn-group=2xx; (For the 9 digit DNs in the dn group)</td>
</tr>
<tr>
<td>Step 5</td>
<td>add office-code ndc=349; ec=234; dn-group=12x; (For the 9 digit DNs)</td>
</tr>
</tbody>
</table>

Routing Stage

The digit manipulations for an outgoing call can be performed using one of the following methods:

- Destination Table
- Route Table
- Trunk Group Table for subscriber termination

The ANI/DNIS digit manipulation specified in the Destination table is applied during the outgoing call setup. The out-pulsing number can also be normalized using the destination table. In addition, if special digit manipulation is required based on the route selected, it can be specified for each Trunk Group within a route.

If the called number terminates within the BTS 10200, and the subscriber number points to a Trunk Group, then digit manipulation rules for ANI, DNIS, or both can be specified in the Trunk Group table.

If the call is an interLATA call or requires Carrier routing (ROUTE-TYPE=CARRIER), the ANI/DNIS digit manipulation IDs specified in the destination table are ignored and carrier based routing is performed.

**Note**

Although both `pfx_digits` and `del_digits` still work in the BTS 10200 dial plan table, if the subscriber dials a 7-digit number, but local number portability (LNP) queries require a 10-digit DN, then the digman tables should be set up to add an NPA, making the called number a 10-digit DN before performing an LNP query.
Destination

The Destination (destination) table defines the call type and the routing information for the dialed digits. Multiple digit strings in the Dial Plan table can use the same destination ID.

Table Name: DESTINATION
Table Containment Area: EMS, CA

Command Types

add, audit, change, delete, help, show, sync

Caution

The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

show destination dest-id=dallasaustin;
add destination dest-id=dallasaustin; call-type=toll; route-type=route;
route-guide-id=rg10;
change destination dest-id=dallasaustin; route-guide-id=rg11;
delete destination dest-id=dallasaustin;

Usage Guidelines

Primary Key Token(s): DEST_ID

Foreign Key Token(s): dnis-digman-id, ani-digman-id, route-guide-id, route-id, dial-plan-id, carrier-id, script-id, call-type, call-subtype, annnc-id

Add Rules: If call-type=nas, then route-type=none.

Delete Rules:

• ID does not exist in any dial-plan::dest-id.
• ID does not exist in any intl-dial-plan::dest-id.
Chapter 1      Digit Translations

Automatic Number Identification/Dialed Number Identification Service Manipulation

Syntax Description

ACQ_LNP_QUERY
Description: Specifies whether an LNP Query is required. Applies only if the all-call-query token is set to Y and lnp-db-type=RN in the LNP Profile table.
VARCHAR(32): 1-32 ASCII characters. Permitted values are:
- NA (Default)—Not applicable.
- ACQ-BASED-ON-CALL-TYPE—Applies only if lnp-db-type in the LNP Profile table is ACQ. Perform an LNP Query based on definition in the Call Type Profile table. If the call type is not found in the Call Type Profile table, then an LNP Query is not performed.
- PERFORM-LNP-QUERY—Used when a call type-specific query is not required but LNP criteria is defined based on the destination ID. An LNP query is performed if the all-call-query flag in the LNP Profile table is set to Y.
- NO-LNP-QUERY—Do not perform an LNP query on this destination.
Valid for Command: add, change, audit, sync, show
Default Value: NA
Possible Value: NA, ACQ_BASED_ON_CALL_TYPE, PERFORM_LNP_QUERY, NO_LNP_QUERY
Parser: TextNoCaseParser

ANI_DIGMAN_ID
Description: Foreign key: Digman Profile table. ANI (calling party number) digit manipulation ID.
VARCHAR(16): 1-16 ASCII characters.
Valid for Command: add, audit, change, show
Possible Value: [1_16]
Parser: TextParser

ANNC_ID
Description: Mandatory only if route-type=annc or pre-completion-annc=y.
Foreign key: Announcement table. Announcement ID.
SMALLINT: 1-1000.
Valid for Command: add, change, audit, sync, show
Possible Value: [1_1000]
Parser: DecimalParser

AUTO_REFRESH
Description: Specifies whether to display cached data on the screen.
CHAR(1): Y/N (Default = Y).
Y—Queries the database for the most current data.
N—Queries the database for the most current data only if the cached data is unavailable.
Valid for Command: show
Default Value: Y
Possible Value: Y, N
Parser: BooleanParser
| **BYPASS_CARRIER_ROUTING** | Description: Bypass carrier routing. If the call-type is interLATA (PIC1) or IntraLATA (PIC2), but an onnet route exists, the carrier routing is bypassed and the call is routed onnet.

VARCHAR(16): 1-16 ASCII characters. Permitted values are:

- SUB-ONLY—Call is terminated locally only if the subscriber associated with the dialed DN is assigned on the Cisco BTS 10200 Softswitch.
- ALL-CALLS—The Cisco BTS 10200 Softswitch bypasses the carrier for all onnet calls to this destination including calls to onnet subscribers on this Cisco BTS 10200 Softswitch.
- NONE (Default)—Normal routing: use PIC1 / PIC2 to route the call.

Valid for Command: add, change, audit, sync, show
Default Value: NONE
Possible Value: NONE, SUB_ONLY, ALL_CALLS
Parser: TextNoCaseParser |
| **CALL_SUBTYPE** | Description: Foreign key: Call Type table. Specifies the subcategory of a call type for dialed digits: call-type plus call-subtype. Only one call-type/call-subtype pair is permitted per destination.

VARCHAR(16): 1-16 ASCII characters. Permitted values are:

- NONE (Default)—No associated subtype, not applicable.
- If call-type=test-call the following values are permitted:

Valid for Command: add, change, audit, sync, show
Mandatory: add
Default Value: NONE
Possible Value: [1_16]
Parser: TextNoNullCaseParser |
| **CALL_TYPE** | Description: Foreign key: Call Subtype table. Type of dialed call.

VARCHAR(16): 1-16 ASCII characters (Default = VACANT). See Appendix G, “Call Types and Subtypes” for a list of valid call types.

Valid for Command: add, change, audit, sync, show
Default Value: VACANT
Possible Value: TEST_CALL, INTL, LOCAL, TOLL, INTERLATA, TANDEM, EMG, NON_EMG, DA, DA_TOLL, REPAIR, RELAY, BUSINESS, TOLL_FREE, 900, 500, 700, 976, VACANT, NATIONAL, TW, INFO, PREMIUM, PCS, NAS, POLICE, FIRE, AMBULANCE, TIME, WEATHER, TRAFFIC, LB_TEST, OPERATOR, CUT_THRU, INTL_OPR, NAT_OPR, AIRLINES, RAILWAYS, SVC_CODE, INTL_WZ1, LRN, UAN, MOBILE, ANA
Parser: TextNoCaseParser |
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Valid for Command:</th>
<th>Default Value</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
</table>
| CARRIER_ID    | Description: Mandatory only if route-type=carrier. Foreign key: Carrier table. The call is routed to the specified carrier. Used for 900, 500 type calls. Also used to route 800 calls to Access Tandem Server if the Call Agent does not support 800 Service Control Point (SCP) queries. CHAR(4): 4 numeric characters: 0000-9999.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [4_4]  
Parser: DigitParser | add, change, audit, sync, show                                                                                                                                                    |                    | 00                                                     | [2_2]                   | HexParser               |
| CHARGE_BAND_UNIT | Valid for Command: add, audit, sync, change, show  
Default Value: 00  
Possible Value: [2_2]  
Parser: HexParser | add, change, audit, sync, show                                                                                                                                                    |                    | 00                                                     | [2_2]                   | HexParser               |
| CHARGE_TYPE   | Valid for Command: add, change, audit, sync, show  
Default Value: NONE  
Possible Value: NONE, CHARGE_BAND, CHARGE_UNIT  
Parser: TextNoCaseParser | add, change, audit, sync, show                                                                                                                                                    |                    | NONE                                                  | NONE, CHARGE_BAND, CHARGE_UNIT | TextNoCaseParser        |
| CLDPTY_CTRL_REL_ALWD | Description: Called party release control allowed indication. Indicates to the Cisco BTS 10200 Softswitch that this call requires called party control.  
CHAR(1): Y/N (Default = N).  
Valid for Command: add, change, audit, sync, show  
Default Value: N  
Possible Value: Y, N  
Parser: BooleanParser | add, change, audit, sync, show                                                                                                                                                    |                    | N                                                      | Y, N                    | BooleanParser           |
| DESCRIPTION   | Description: Described by the service provider.  
VARCHAR(64): 1-64 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [1_64]  
Parser: TextParser | add, change, audit, sync, show                                                                                                                                                    |                    | 1-64 ASCII characters                               | [1_64]                  | TextParser              |
| DEST_ID       | Description: Primary key. Destination identification.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, change, show, delete, audit, sync  
Mandatory: add, change, delete  
Possible Value: [1_16]  
Parser: TextParser | add, change, show, delete, audit, sync                                                                                                                                      |                    | 1-16 ASCII characters                               | [1_16]                  | TextParser              |
## Chapter 1  Digit Translations

### Automatic Number Identification/Dialed Number Identification Service Manipulation

<table>
<thead>
<tr>
<th>Token</th>
<th>Description</th>
<th>Data Type</th>
<th>Valid for Commands</th>
<th>Possible Values</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIAL_PLAN_ID</td>
<td>Description: Mandatory if route-type=dp. Foreign key: Dial Plan table. Valid dial plan ID from the Dial Plan table.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>add, change, audit, sync, show</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Description: Specifies what token information to display on the screen.</td>
<td>VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permit values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
<td>show</td>
<td>[1_1024]</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DNIS_DIGMAN_ID</td>
<td>Description: Foreign key: Digman Profile table. DNIS (called party number) digit manipulation ID.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>add, audit, change, show</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENUM_PROFILE_ID</td>
<td></td>
<td></td>
<td>add, change, audit, sync, show</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESRN_ROUTING</td>
<td>Description: Used to route a call based on the Emergency Services Routing Number (ESRN). Each subscriber is assigned an ESRN based on their geographic region Public Safety Answering Point (PSAP). When this token is set, the Cisco BTS 10200 Softswitch looks up the ESRN assigned to the subscriber and replaces the called party number with the ESRN.</td>
<td>CHAR(1): Y/N (Default = WHAT?).</td>
<td>add, change, audit, sync, show</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
</tbody>
</table>
### GAP_ROUTING

Description: If set, and a generic address parameter is present, check if the called number in the GAP parameter is a Call Agent PBX subscriber, based on the Office Code table.

CHAR(1): Y/N (Default = N).
- **Y**—Check called number in the GAP.
- **N**—Do not check called number in the GAP.

Valid for Command: add, change, audit, sync, show

Default Value: N
Possible Value: Y, N
Parser: BooleanParser

### INTRA_STATE

Description: Specifies if dialed digits are for an intrastate (toll) destination.

CHAR(1): Y/N (Default = Y).
- **Y**—Intrastate
- **N**—Interstate

Valid for Command: add, change, audit, sync, show

Default Value: Y
Possible Value: Y, N
Parser: BooleanParser

### LIMIT

Description: Specifies the number of rows to display on the screen.

INTEGER: 1-100000000 (Default = 100000000).

Valid for Command: show

Default Value: 100000000
Possible Value: [1, 100000000]
Parser: DecimalParser

### MASTER

Valid for Command: sync
Mandatory: sync
Possible Value: [1, 10]
Parser: TextParser
### NANP_LNP_QUERY
Description: Defines the LNP criteria requirements for USA.

**VARCHAR(16): 1-32 ASCII characters (Default = NA).** Permitted values are:

- **PERFORM-LNP-QUERY**—Perform LNP Query to this destination, even if the call is to be routed via PIC1 or PIC2.
- **NO-LNP-QUERY**—Do not perform an LNP query to this destination. With no LNP query to this destination, it is assumed that there are no ported-in DNs, thus no need to look at the DN2 Subscriber table.
- **UNCONDITIONAL-LNP-TRIGGER-QUERY**—Perform LNP query if the subscriber is in transition state. The subscriber is in transition when the subscriber is in the process of porting-in (recipient switch) or porting-out (donor switch). In this case, the Lnp-trigger token in the DN2 Subscriber table is set to Y.
- **NA (Default)—No special criteria.**

Valid for Command: add, change, audit, sync, show

Default Value: NA

Possible Value: NA, PERFORM_LNP_QUERY, NO_LNP_QUERY, UNCONDITIONAL_LNP_TRIGGER_QUERY

Parser: TextNoCaseParser

### ORDER
Description: Specifies whether to display data on the screen in a sorted order.

**VARCHAR(1024): 1-1024 (Default = all rows are displayed).** Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.

Valid for Command: show

Possible Value: \([1_{-}1024]\)

Parser: TextParser

### PERFORM_ENUM_QUERY
Valid for Command: add, change, audit, sync, show

Default Value: Y

Possible Value: Y, N

Parser: BooleanParser

### PLATFORM_STATE
Description: Audits a shared memory database.

**VARCHAR(7): 1-7 ASCII characters.** Permitted values are:

- **ACTIVE (Default) - System is currently running.**
- **STANDBY.**

Valid for Command: sync, audit

Default Value: ACTIVE

Possible Value: ACTIVE, STANDBY

Parser: TextParser
**PRE_COMPLETION_ANNNC**  
Description: Specifies whether to provide an announcement before completing a call.  
CHAR(1): Y/N (Default = N).  
Valid for Command: add, change, audit, sync, show  
Default Value: N  
Possible Value: Y, N  
Parser: BooleanParser

**ROUTE_GUIDE_ID**  
Description: Mandatory only if route-type=route. Foreign key: Route Guide table. Valid route guide ID from the Route Guide table.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [1_16]  
Parser: TextParser

**ROUTE_ID**  
Description: Mandatory only if route-type=route. Foreign key: Route table. Valid Route ID from the Route table.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [1_16]  
Parser: TextParser

**ROUTE_TYPE**  
Description: Routing type.  
VARCHAR(7): 1-7 ASCII characters. Permitted values are:  
ANNC—Use annc-id to terminate call.  
CARRIER—For SAC calls. The call is routed based on the routing specified in the Carrier table.  
DP—Use dial-plan-id to retranslate based on the new dial plan ID.  
NONE—No route required. Use for NAS application.  
RID—Use route-id for routing.  
ROUTE—Use route-guide-id for routing.  
SCRIPT—(Not supported) Use a scripting package to terminate a call.  
SUB—Subscriber termination. Use office code index and last four digits of the DN to find the subscriber.  
Valid for Command: add, change, audit, sync, show  
Mandatory: add  
Possible Value: SUB, CARRIER, ROUTE, ANNC, RID, DP, NONE  
Parser: TextNoCaseParser
START_ROW  Description: Specifies to begin displaying data on the screen at a specific row. Valid only for the show command.
   INTEGER: 1-100000000 (Default = 1).
   Valid for Command: show
   Default Value: 1
   Possible Value: [1_100000000]
   Parser: DecimalParser

TARGET  Description: Specifies the network element to receive the request.
   VARCHAR(5): 1-5 ASCII characters. Permitted values are:
   CA—Network identifier of a Call Agent.
   FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.
   FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.
   Valid for Command: sync
   Mandatory: sync
   Possible Value: [1_10]
   Parser: TextParser

ZERO_PLUS  Description: Specifies if 0+ calls are allowed.
   CHAR(1): Y/N (Default = N).
   Y—0+ calls are allowed to this destination.
   N—0+ calls are not allowed to this destination.
   Valid for Command: add, change, audit, sync, show
   Default Value: N
   Possible Value: Y, N
   Parser: BooleanParser

Route

The Route (route) table contains a list of up to ten trunk groups to route a call. If all the trunk groups are busy or not available, call processing uses the alt-route-id (if specified) to route the call. The Element Management System (EMS) provisions the Call Agent ID field based on the Trunk Group table.

This table allows the service provider to provision a list of up to 10 trunk groups (TG1 to TG10), and a parameter for selecting the priority of the TGs for routing (TG-SELECTION). The system attempts to route the call on the highest priority TG. If the call cannot be completed on the highest priority TG, the system attempts to use the next (lower priority) TG, a process known as route advance. The system attempts route advance to lower priority TGs up to five times. (Any TG in the list that is administratively out of service is not counted as an attempt.) If all five attempts fail, the call is released, and the system provides a release announcement.

Table Name: ROUTE
Table Containment Area: EMS, CA
## Command Types

add, audit, change, delete, help, show, sync

### Caution

The **sync** command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

## Examples

```plaintext
show route id=dallas1;
add route id=dallas1; tgn1-id=dallas-tg; pfx-digits1=972; del-digits1=0;
change route id=dallas1; del-digits1=3;
delete route id=dallas1;
```

## Usage Guidelines

**Primary Key Token(s):** ID

**Foreign Key Token(s):**

**Delete Rules:**

ID does not exist in any <route-guide, policy-odr, policy-region, policy-percent, policy-tod, policy-prefix, policy-oli, or policy-pop>::policy-id where policy-type = route.

## Syntax Description

<table>
<thead>
<tr>
<th>Token</th>
<th>Description</th>
<th>Type</th>
<th>Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALT_ROUTE_ID</td>
<td>Description: Foreign key: Route table. An alternate route to be used if all the trunk groups in this route are busy.</td>
<td>VARCHAR(16)</td>
<td>1-16 ASCII characters. Valid for Command: add, audit, change, show Possible Value: [1_16] Parser: TextParser</td>
</tr>
<tr>
<td>ANI_DIGMAN_ID1</td>
<td>Description: Foreign key: Digman Profile table. ANI (calling party number) digit manipulation ID.</td>
<td>VARCHAR(16)</td>
<td>1-16 ASCII characters. Valid for Command: add, audit, change, show Possible Value: [1_16] Parser: TextParser</td>
</tr>
<tr>
<td>ANI_DIGMAN_ID10</td>
<td>Description: Foreign key: Digman Profile table. ANI (calling party number) digit manipulation ID.</td>
<td>VARCHAR(16)</td>
<td>1-16 ASCII characters. Valid for Command: add, audit, change, show Possible Value: [1_16] Parser: TextParser</td>
</tr>
<tr>
<td>Description</td>
<td>Foreign key: Digman Profile table. ANI (calling party number) digit manipulation ID.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANI_DIGMAN_ID8</td>
<td>Foreign key: Digman Profile table. ANI (calling party number) digit manipulation ID.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, audit, change, show</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANI_DIGMAN_ID9</td>
<td>Foreign key: Digman Profile table. ANI (calling party number) digit manipulation ID.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, audit, change, show</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANNC_ID</td>
<td>Mandatory if next-action=annc. Foreign key: Announcement table. Announcement ID.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INTEGER: 1-1000 numeric digits.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, audit, change, show, sync</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_1000]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: DecimalParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUTO_REFRESH</td>
<td>Specifies whether to display cached data on the screen.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHAR(1): Y/N (Default = Y).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y—Queries the database for the most current data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N—Queries the database for the most current data only if the cached data is unavailable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default Value: Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: BooleanParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CALL_AGENT_ID1</td>
<td>Foreign key: Call Agent table. Valid home Call Agent ID for the dialed NPA or NPA-NXX.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VARCHAR(8): 1-8 ASCII characters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, audit, change, show</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_8]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CALL_AGENT_ID10</td>
<td>Foreign key: Call Agent table. Valid home Call Agent ID for the dialed NPA or NPA-NXX.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VARCHAR(8): 1-8 ASCII characters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, audit, change, show</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_8]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### CALL_AGENT_ID2
- **Description:** Foreign key: Call Agent table. Valid home Call Agent ID for the dialed NPA or NPA-NXX.
- **VARCHAR(8):** 1-8 ASCII characters.
- **Valid for Command:** add, audit, change, show
- **Possible Value:** [1_8]
- **Parser:** TextParser

### CALL_AGENT_ID3
- **Description:** Foreign key: Call Agent table. Valid home Call Agent ID for the dialed NPA or NPA-NXX.
- **VARCHAR(8):** 1-8 ASCII characters.
- **Valid for Command:** add, audit, change, show
- **Possible Value:** [1_8]
- **Parser:** TextParser

### CALL_AGENT_ID4
- **Description:** Foreign key: Call Agent table. Valid home Call Agent ID for the dialed NPA or NPA-NXX.
- **VARCHAR(8):** 1-8 ASCII characters.
- **Valid for Command:** add, audit, change, show
- **Possible Value:** [1_8]
- **Parser:** TextParser

### CALL_AGENT_ID5
- **Description:** Foreign key: Call Agent table. Valid home Call Agent ID for the dialed NPA or NPA-NXX.
- **VARCHAR(8):** 1-8 ASCII characters.
- **Valid for Command:** add, audit, change, show
- **Possible Value:** [1_8]
- **Parser:** TextParser

### CALL_AGENT_ID6
- **Description:** Foreign key: Call Agent table. Valid home Call Agent ID for the dialed NPA or NPA-NXX.
- **VARCHAR(8):** 1-8 ASCII characters.
- **Valid for Command:** add, audit, change, show
- **Possible Value:** [1_8]
- **Parser:** TextParser

### CALL_AGENT_ID7
- **Description:** Foreign key: Call Agent table. Valid home Call Agent ID for the dialed NPA or NPA-NXX.
- **VARCHAR(8):** 1-8 ASCII characters.
- **Valid for Command:** add, audit, change, show
- **Possible Value:** [1_8]
- **Parser:** TextParser
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Data Type</th>
<th>Valid for Command</th>
<th>Default Value</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALL_AGENT_ID8</td>
<td>Description: Foreign key: Call Agent table. Valid home Call Agent ID for the dialed NPA or NPA-NXX.</td>
<td>VARCHAR(8): 1-8 ASCII characters.</td>
<td>add, audit, change, show</td>
<td>0</td>
<td>[1_8]</td>
<td>TextParser</td>
</tr>
<tr>
<td>CALL_AGENT_ID9</td>
<td>Description: Foreign key: Call Agent table. Valid home Call Agent ID for the dialed NPA or NPA-NXX.</td>
<td>VARCHAR(8): 1-8 ASCII characters.</td>
<td>add, audit, change, show</td>
<td>0</td>
<td>[1_8]</td>
<td>TextParser</td>
</tr>
<tr>
<td>DEL_DIGITS1</td>
<td>Description: Number of digits to delete.</td>
<td>SMALLINT: 0-16 (Default = 0).</td>
<td>add, audit, change, show</td>
<td>0</td>
<td>[0_10]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>DEL_DIGITS10</td>
<td>Description: Number of digits to delete.</td>
<td>SMALLINT: 0-16 (Default = 0).</td>
<td>add, audit, change, show</td>
<td>0</td>
<td>[0_10]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>DEL_DIGITS2</td>
<td>Description: Number of digits to delete.</td>
<td>SMALLINT: 0-16 (Default = 0).</td>
<td>add, audit, change, show</td>
<td>0</td>
<td>[0_10]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>DEL_DIGITS3</td>
<td>Description: Number of digits to delete.</td>
<td>SMALLINT: 0-16 (Default = 0).</td>
<td>add, audit, change, show</td>
<td>0</td>
<td>[0_10]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>Variable</td>
<td>Description</td>
<td>Type</td>
<td>Default Value</td>
<td>Possible Value</td>
<td>Parser</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------</td>
<td>---------------</td>
<td>---------------</td>
<td>----------------</td>
<td>----------------</td>
<td></td>
</tr>
<tr>
<td>DEL_DIGITS4</td>
<td>Number of digits to delete.</td>
<td>SMALLINT</td>
<td>0</td>
<td>[0_10]</td>
<td>DecimalParser</td>
<td></td>
</tr>
<tr>
<td>DEL_DIGITS5</td>
<td>Number of digits to delete.</td>
<td>SMALLINT</td>
<td>0</td>
<td>[0_10]</td>
<td>DecimalParser</td>
<td></td>
</tr>
<tr>
<td>DEL_DIGITS6</td>
<td>Number of digits to delete.</td>
<td>SMALLINT</td>
<td>0</td>
<td>[0_10]</td>
<td>DecimalParser</td>
<td></td>
</tr>
<tr>
<td>DEL_DIGITS7</td>
<td>Number of digits to delete.</td>
<td>SMALLINT</td>
<td>0</td>
<td>[0_10]</td>
<td>DecimalParser</td>
<td></td>
</tr>
<tr>
<td>DEL_DIGITS8</td>
<td>Number of digits to delete.</td>
<td>SMALLINT</td>
<td>0</td>
<td>[0_10]</td>
<td>DecimalParser</td>
<td></td>
</tr>
<tr>
<td>DEL_DIGITS9</td>
<td>Number of digits to delete.</td>
<td>SMALLINT</td>
<td>0</td>
<td>[0_10]</td>
<td>DecimalParser</td>
<td></td>
</tr>
</tbody>
</table>
### Chapter 1      Digit Translations

#### Automatic Number Identification/Dialed Number Identification Service Manipulation

| Command            | Description                                                                 | V ARGARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.  
|                    | Valid for Command: show                                                      | Possible Value: [1_1024]  
|                    | Parser: TextParser                                                          |  
| DISPLAY            | Specifies what token information to display on the screen.                  |  

| Commander          | Description                                                                 | V ARGARCHAR(16): 1-16 ASCII characters.  
|                    | Valid for Command: add, audit, change, show                                  | Possible Value: [1_16]  
|                    | Parser: TextParser                                                          |  
| DNIS_DIGMAN_ID1    | Foreign key: Digman Profile table. DNIS (called party number) digit manipulation ID. |  
| DNIS_DIGMAN_ID10   | Foreign key: Digman Profile table. DNIS (called party number) digit manipulation ID. |  
| DNIS_DIGMAN_ID2    | Foreign key: Digman Profile table. DNIS (called party number) digit manipulation ID. |  
| DNIS_DIGMAN_ID3    | Foreign key: Digman Profile table. DNIS (called party number) digit manipulation ID. |  
| DNIS_DIGMAN_ID4    | Foreign key: Digman Profile table. DNIS (called party number) digit manipulation ID. |  


### DNIS_DIGMAN_ID5
- **Description:** Foreign key: Digman Profile table. DNIS (called party number) digit manipulation ID.
- VARCHAR(16): 1-16 ASCII characters.
- Valid for Command: add, audit, change, show
- Possible Value: [1_16]
- Parser: TextParser

### DNIS_DIGMAN_ID6
- **Description:** Foreign key: Digman Profile table. DNIS (called party number) digit manipulation ID.
- VARCHAR(16): 1-16 ASCII characters.
- Valid for Command: add, audit, change, show
- Possible Value: [1_16]
- Parser: TextParser

### DNIS_DIGMAN_ID7
- **Description:** Foreign key: Digman Profile table. DNIS (called party number) digit manipulation ID.
- VARCHAR(16): 1-16 ASCII characters.
- Valid for Command: add, audit, change, show
- Possible Value: [1_16]
- Parser: TextParser

### DNIS_DIGMAN_ID8
- **Description:** Foreign key: Digman Profile table. DNIS (called party number) digit manipulation ID.
- VARCHAR(16): 1-16 ASCII characters.
- Valid for Command: add, audit, change, show
- Possible Value: [1_16]
- Parser: TextParser

### DNIS_DIGMAN_ID9
- **Description:** Foreign key: Digman Profile table. DNIS (called party number) digit manipulation ID.
- VARCHAR(16): 1-16 ASCII characters.
- Valid for Command: add, audit, change, show
- Possible Value: [1_16]
- Parser: TextParser

### ID
- **Description:** Primary key. The route identification.
- VARCHAR(16): 1-16 ASCII characters.
- Valid for Command: add, audit, change, delete, show
- Mandatory: add, change, delete
- Possible Value: [1_16]
- Parser: TextParser
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Type</th>
<th>Possible Values</th>
<th>Default Value</th>
<th>Command(s)</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIMIT</td>
<td>Specifies the number of rows to display on the screen.</td>
<td>INTEGER</td>
<td>1-100000000 (Default = 100000000)</td>
<td>100000000</td>
<td>show</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>MASTER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>sync</td>
<td>TextParser</td>
</tr>
<tr>
<td>NEXT_ACTION</td>
<td>Specifies what action to perform after all trunk groups within a route are exhausted.</td>
<td>VARCHAR(16)</td>
<td>1-16 ASCII characters. Permitted values are: NONE (Default)—No next action. Play standard no route to destination announcement. ALT-ROUTE—Use alternate route. ANNC—Use an announcement ID. OVERFLOW-DN—Reroute the call using the overflow DN.</td>
<td>NONE</td>
<td>add, audit, change, show, sync</td>
<td>TextNoCaseParser</td>
</tr>
<tr>
<td>ORDER</td>
<td>Specifies whether to display data on the screen in a sorted order.</td>
<td>VARCHAR(1024)</td>
<td>1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
<td></td>
<td>show</td>
<td>TextParser</td>
</tr>
<tr>
<td>OVERFLOW_DN</td>
<td>Mandatory if next-action=overflow-dn. Specifies using the overflow DN to reroute a call if no trunk groups are available.</td>
<td>VARCHAR(14)</td>
<td>1-14 ASCII characters.</td>
<td></td>
<td>add, audit, change, show, sync</td>
<td>GenericDNParser</td>
</tr>
<tr>
<td>P1</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>add, audit, change, show, sync</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>Digit</td>
<td>Description</td>
<td>Default Value</td>
<td>Possible Value</td>
<td>Parser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>---------------</td>
<td>----------------</td>
<td>--------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P10</td>
<td>Valid for Command: add, audit, change, show, sync</td>
<td>0</td>
<td>[0_65535]</td>
<td>DecimalParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P2</td>
<td>Valid for Command: add, audit, change, show, sync</td>
<td>0</td>
<td>[0_65535]</td>
<td>DecimalParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P3</td>
<td>Valid for Command: add, audit, change, show, sync</td>
<td>0</td>
<td>[0_65535]</td>
<td>DecimalParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P4</td>
<td>Valid for Command: add, audit, change, show, sync</td>
<td>0</td>
<td>[0_65535]</td>
<td>DecimalParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P5</td>
<td>Valid for Command: add, audit, change, show, sync</td>
<td>0</td>
<td>[0_65535]</td>
<td>DecimalParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P6</td>
<td>Valid for Command: add, audit, change, show, sync</td>
<td>0</td>
<td>[0_65535]</td>
<td>DecimalParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P7</td>
<td>Valid for Command: add, audit, change, show, sync</td>
<td>0</td>
<td>[0_65535]</td>
<td>DecimalParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P8</td>
<td>Valid for Command: add, audit, change, show, sync</td>
<td>0</td>
<td>[0_65535]</td>
<td>DecimalParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P9</td>
<td>Valid for Command: add, audit, change, show, sync</td>
<td>0</td>
<td>[0_65535]</td>
<td>DecimalParser</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| PFX_DIGITS1 | Description: Digits to be prefixed. Digits are prefixed after the number of specified digits are deleted.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, audit, change, show  
Possible Value: [1_10]  
Parser: TextParser |
| PFX_DIGITS10 | Description: Digits to be prefixed. Digits are prefixed after the number of specified digits are deleted.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, audit, change, show  
Possible Value: [1_10]  
Parser: TextParser |
| PFX_DIGITS2 | Description: Digits to be prefixed. Digits are prefixed after the number of specified digits are deleted.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, audit, change, show  
Possible Value: [1_10]  
Parser: TextParser |
| PFX_DIGITS3 | Description: Digits to be prefixed. Digits are prefixed after the number of specified digits are deleted.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, audit, change, show  
Possible Value: [1_10]  
Parser: TextParser |
| PFX_DIGITS4 | Description: Digits to be prefixed. Digits are prefixed after the number of specified digits are deleted.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, audit, change, show  
Possible Value: [1_10]  
Parser: TextParser |
| PFX_DIGITS5 | Description: Digits to be prefixed. Digits are prefixed after the number of specified digits are deleted.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, audit, change, show  
Possible Value: [1_10]  
Parser: TextParser |
<table>
<thead>
<tr>
<th>Identifier</th>
<th>Description</th>
<th>VARCHAR</th>
<th>Valid for Command</th>
<th>Possible Value</th>
<th>Default Value</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFX_DIGITS6</td>
<td>Description: Digits to be prefixed. Digits are prefixed after the number of specified digits are deleted.</td>
<td>1-16</td>
<td>add, audit, change, show</td>
<td>[1_10]</td>
<td></td>
<td></td>
<td>TextParser</td>
</tr>
<tr>
<td>PFX_DIGITS7</td>
<td>Description: Digits to be prefixed. Digits are prefixed after the number of specified digits are deleted.</td>
<td>1-16</td>
<td>add, audit, change, show</td>
<td>[1_10]</td>
<td></td>
<td></td>
<td>TextParser</td>
</tr>
<tr>
<td>PFX_DIGITS8</td>
<td>Description: Digits to be prefixed. Digits are prefixed after the number of specified digits are deleted.</td>
<td>1-16</td>
<td>add, audit, change, show</td>
<td>[1_10]</td>
<td></td>
<td></td>
<td>TextParser</td>
</tr>
<tr>
<td>PFX_DIGITS9</td>
<td>Description: Digits to be prefixed. Digits are prefixed after the number of specified digits are deleted.</td>
<td>1-16</td>
<td>add, audit, change, show</td>
<td>[1_10]</td>
<td></td>
<td></td>
<td>TextParser</td>
</tr>
<tr>
<td>PLATFORM_STATE</td>
<td>Description: Audits a shared memory database.</td>
<td>1-7</td>
<td>sync, audit</td>
<td>ACTIVE, STANDBY</td>
<td>ACTIVE</td>
<td>ACTIVE, STANDBY</td>
<td>TextParser</td>
</tr>
<tr>
<td>START_ROW</td>
<td>Description: Specifies to begin displaying data on the screen at a specific row.</td>
<td>1-100000000</td>
<td>show</td>
<td>[1_100000000]</td>
<td>1</td>
<td></td>
<td>DecimalParser</td>
</tr>
<tr>
<td>Variable</td>
<td>Description</td>
<td>Type</td>
<td>Permitted Values</td>
<td>Valid for Commands</td>
<td>Default Value</td>
<td>Possible Values</td>
<td>Parser</td>
</tr>
<tr>
<td>----------</td>
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<td>------</td>
<td>------------------</td>
<td>--------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>--------</td>
</tr>
<tr>
<td>TARGET</td>
<td>Specifies the network element to receive the request.</td>
<td>VARCHAR(5)</td>
<td>1-5 ASCII characters. Permitted values are: CA—Network identifier of a Call Agent. FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.</td>
<td>sync</td>
<td>sync</td>
<td>[1_10]</td>
<td>TextParser</td>
</tr>
<tr>
<td>TG_SELECTION</td>
<td>Trunk group selection policy.</td>
<td>VARCHAR(3)</td>
<td>Permitted values are: LCR—Least cost routing P—Priority and weight-based routing RR—Round robin SEQ (Default)—Sequential order</td>
<td>add, audit, change, show</td>
<td>RR</td>
<td>LCR, RR, SEQ, P</td>
<td>TextParser</td>
</tr>
<tr>
<td>TG1</td>
<td>Unique key. ASCII name for the trunk group.</td>
<td>VARCHAR(20)</td>
<td>1-20 ASCII characters.</td>
<td>add, change, audit, sync, show</td>
<td></td>
<td>[1_20]</td>
<td>TextParser</td>
</tr>
<tr>
<td>TG10</td>
<td>Unique key. ASCII name for the trunk group.</td>
<td>VARCHAR(20)</td>
<td>1-20 ASCII characters.</td>
<td>add, change, audit, sync, show</td>
<td></td>
<td>[1_20]</td>
<td>TextParser</td>
</tr>
<tr>
<td>TG2</td>
<td>Unique key. ASCII name for the trunk group.</td>
<td>VARCHAR(20)</td>
<td>1-20 ASCII characters.</td>
<td>add, change, audit, sync, show</td>
<td></td>
<td>[1_20]</td>
<td>TextParser</td>
</tr>
<tr>
<td>TG3</td>
<td>Description: Unique key. ASCII name for the trunk group. VARCHAR(20): 1-20 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_20] Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TG4</td>
<td>Description: Unique key. ASCII name for the trunk group. VARCHAR(20): 1-20 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_20] Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TG5</td>
<td>Description: Unique key. ASCII name for the trunk group. VARCHAR(20): 1-20 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_20] Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TG6</td>
<td>Description: Unique key. ASCII name for the trunk group. VARCHAR(20): 1-20 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_20] Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TG7</td>
<td>Description: Unique key. ASCII name for the trunk group. VARCHAR(20): 1-20 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_20] Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TG8</td>
<td>Description: Unique key. ASCII name for the trunk group. VARCHAR(20): 1-20 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_20] Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TG9</td>
<td>Description: Unique key. ASCII name for the trunk group. VARCHAR(20): 1-20 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_20] Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TGN1_ID

**Description:** Foreign key: Trunk Group table. The first trunk group within the route. The trunk groups are searched in the order specified unless least cost routing (LCR) applies. If LCR is applied, the Call Agent reads the cost for each trunk group from the trunk-grp table and selects trunks from the least expensive trunk group to the most expensive one.

This field can also be provisioned using tg instead of tgn-id. The EMS looks up the tgn-id based on the trunk group and then provisions it.

**INTEGER:** 1-99999999.

**Valid for Command:** add, audit, change, show

**Possible Value:** [0_99999999]

**Parser:** DecimalParser

### TGN10_ID

**Description:** Foreign key: Trunk Group table. The tenth trunk group within the route. This field can also be provisioned using tg instead of tgn-id. The EMS looks up the tgn-id based on the trunk group and then provisions it.

**INTEGER:** 1-99999999.

**Valid for Command:** add, audit, change, show

**Possible Value:** [0_99999999]

**Parser:** DecimalParser

### TGN2_ID

**Description:** Foreign key: Trunk Group table. The tenth trunk group within the route. This field can also be provisioned using tg instead of tgn-id. The EMS looks up the tgn-id based on the trunk group and then provisions it.

**INTEGER:** 1-99999999.

**Valid for Command:** add, audit, change, show

**Possible Value:** [0_99999999]

**Parser:** DecimalParser

### TGN3_ID

**Description:** Foreign key: Trunk Group table. The tenth trunk group within the route. This field can also be provisioned using tg instead of tgn-id. The EMS looks up the tgn-id based on the trunk group and then provisions it.

**INTEGER:** 1-99999999.

**Valid for Command:** add, audit, change, show

**Possible Value:** [0_99999999]

**Parser:** DecimalParser

### TGN4_ID

**Description:** Foreign key: Trunk Group table. The tenth trunk group within the route. This field can also be provisioned using tg instead of tgn-id. The EMS looks up the tgn-id based on the trunk group and then provisions it.

**INTEGER:** 1-99999999.

**Valid for Command:** add, audit, change, show

**Possible Value:** [0_99999999]

**Parser:** DecimalParser
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Valid for Command</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGN5_ID</td>
<td>Foreign key: Trunk Group table. The tenth trunk group within the route. This field can also be provisioned using tg instead of tgn-id. The EMS looks up the tgn-id based on the trunk group and then provisions it.</td>
<td>add, audit, change, show</td>
<td>[0_99999999]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>TGN6_ID</td>
<td>Foreign key: Trunk Group table. The tenth trunk group within the route. This field can also be provisioned using tg instead of tgn-id. The EMS looks up the tgn-id based on the trunk group and then provisions it.</td>
<td>add, audit, change, show</td>
<td>[0_99999999]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>TGN7_ID</td>
<td>Foreign key: Trunk Group table. The tenth trunk group within the route. This field can also be provisioned using tg instead of tgn-id. The EMS looks up the tgn-id based on the trunk group and then provisions it.</td>
<td>add, audit, change, show</td>
<td>[0_99999999]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>TGN8_ID</td>
<td>Foreign key: Trunk Group table. The tenth trunk group within the route. This field can also be provisioned using tg instead of tgn-id. The EMS looks up the tgn-id based on the trunk group and then provisions it.</td>
<td>add, audit, change, show</td>
<td>[0_99999999]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>TGN9_ID</td>
<td>Foreign key: Trunk Group table. The tenth trunk group within the route. This field can also be provisioned using tg instead of tgn-id. The EMS looks up the tgn-id based on the trunk group and then provisions it.</td>
<td>add, audit, change, show</td>
<td>[0_99999999]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>TYPE</td>
<td>Id plus type = Foreign key: Policy Profile table. Type of route. VARCHAR(7): 1-7 ASCII characters. Permitted value is: ROUTE—NEED DESCRIPTION</td>
<td>show</td>
<td>ROUTE</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
| WT1 | Valid for Command: add, audit, change, show, sync  
|     | Default Value: 0  
|     | Possible Value: [0_65535]  
|     | Parser: DecimalParser |
| WT10 | Valid for Command: add, audit, change, show, sync  
|      | Default Value: 0  
|      | Possible Value: [0_65535]  
|      | Parser: DecimalParser |
| WT2  | Valid for Command: add, audit, change, show, sync  
|      | Default Value: 0  
|      | Possible Value: [0_65535]  
|      | Parser: DecimalParser |
| WT3  | Valid for Command: add, audit, change, show, sync  
|      | Default Value: 0  
|      | Possible Value: [0_65535]  
|      | Parser: DecimalParser |
| WT4  | Valid for Command: add, audit, change, show, sync  
|      | Default Value: 0  
|      | Possible Value: [0_65535]  
|      | Parser: DecimalParser |
| WT5  | Valid for Command: add, audit, change, show, sync  
|      | Default Value: 0  
|      | Possible Value: [0_65535]  
|      | Parser: DecimalParser |
| WT6  | Valid for Command: add, audit, change, show, sync  
|      | Default Value: 0  
|      | Possible Value: [0_65535]  
|      | Parser: DecimalParser |
| WT7  | Valid for Command: add, audit, change, show, sync  
|      | Default Value: 0  
|      | Possible Value: [0_65535]  
|      | Parser: DecimalParser |
| WT8 | Valid for Command: add, audit, change, show, sync  
|     | Default Value: 0  
|     | Possible Value: [0_65535]  
|     | Parser: DecimalParser |
| WT9 | Valid for Command: add, audit, change, show, sync  
|     | Default Value: 0  
|     | Possible Value: [0_65535]  
|     | Parser: DecimalParser |
Trunk Group

The Trunk Group (trunk-grp) table identifies the trunk group and maps it to the associated media gateway. Table 1-4 indicates optional tokens that are required during provisioning based on the trunk group type.

The Cisco BTS 10200 Softswitch supports the following trunk group types: announcement, CAS, ISDN, SS7 and SOFTSW. The Trunk Group table defines common information based on the trunk group type. The Cisco BTS 10200 Softswitch supports announcement, CAS, ISDN, SS7 and SOFTSW trunk group profiles.

Table Name: TRUNK_GRP
Table Containment Area: EMS, CA

<table>
<thead>
<tr>
<th>Token</th>
<th>Values</th>
<th>Required Tokens</th>
</tr>
</thead>
<tbody>
<tr>
<td>TG-TYPE</td>
<td>SOFTSW</td>
<td>SOFTSW-TSAP-ADDR, TG-PROFILE-ID, DIAL-PLAN-ID</td>
</tr>
<tr>
<td></td>
<td>ISDN</td>
<td>ID, TG-PROFILE-ID, DIAL-PLAN-ID, TG-TYPE, POP-ID, GLARE, MGCP-PKG-TYPE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For ISDN, GLARE must set to ALL and MGCP-PKG-TYPE must be set to T.</td>
</tr>
<tr>
<td></td>
<td>SS7</td>
<td>CALL-CTRL-ROUTE-ID, DPC, TG-PROFILE-ID, DIAL-PLAN-ID</td>
</tr>
<tr>
<td></td>
<td>CAS</td>
<td>TG-PROFILE-ID, DIAL-PLAN-ID</td>
</tr>
<tr>
<td></td>
<td>ANNC</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>H323</td>
<td>H323-GW-ID, TG-PROFILE-ID</td>
</tr>
</tbody>
</table>

If you specify the value H323 for the TG-TYPE token, you must provision the association between the trunk group and the H.323 gateway. However, you cannot provision the H.323 trunk group type and the H.323 gateway simultaneously. To provision an H.323 trunk group and H.323 gateway correctly, use the following sequence of commands:

Establish the trunk group type as H.323 by using the TG-TYPE token in the Trunk Group table:
```
add trunk-grp tg-type=H323;
```

Establish the association between the H.323 gateway and the trunk group by using the TGN-ID token in the H.323 Gateway table:
```
add h323-gw tgn-id=<trunk group ID from the trunk group table>;
```

Establish the association between the specified trunk group and the H.323 gateway by using the H323-GW-ID token in the Trunk Group table.
```
change trunk-grp h323-gw-id=<H.323 gateway ID from the H.323 gateway table>;
```
Digit Translations

Command Types

add, audit, change, control, delete, help, show, status, sync

Caution

The **sync** command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

```plaintext
show trunk-grp id=101;
add trunk-grp id=101; call-agent-id=CA146; tg-type=ss7; dial-plan-id=tg-dp;
dpc=101-55-103; tg-profile-id=SS71; call-ctrl-route-id=ccr1;
change trunk-grp id=101; cost=200;
delete trunk-grp id=101;
```

Usage Guidelines

Primary Key Token(s): ID

Foreign Key Token(s): call-agent-id, ani-digman-id, call-control-route-id, carrier-id, cause-code-map-id, dial-plan-id, dnis-digman-id, isdn-dchan, h323-gw-id, local-sip-hostname-id, main-sub-id, pop-id, qos-id, sp-id, ani-screening-profile-id, sip-server-group-id

Unique Key Token(s): softsw-tsap-addr+trunk-sub-grp, tg

Add Rules:
- ID exists in the carrier table; id exists in the subscriber table.
- DIAL-PLAN-ID is required except if tg-typ=ANNC or if main-sub-id is not equal to NULL.

Change Rules:
- Ensure that the id exists in the Subscriber table if entered; ensure the id exists in the Media Gateway table if entered.
- The DPC field cannot be changed.

Delete Rules:
- ID cannot exist in any subscriber::term-id; ID cannot exist in any trunk::term-id.
- ID cannot exist in any mlhg-terminal::term-id.
- Trunk group status must be OOS.
### Syntax Description

- **ALT_ROUTE_ON_CONG**
  - **Description:** Specifies whether to use an alternate route when there is traffic congestion.
  - **CHAR(1): Y/N (Default = N).**
  - **Y—SKIP**
  - **N—BLOCK**
  - **Valid for Command: add, change, audit, sync, show**
  - **Default Value: N**
  - **Possible Value: Y, N**
  - **Parser:** BooleanParser

- **ANI_BASED_ROUTING**
  - **Description:** Used when there are multiple subscribers homing on the same trunk group. The ANI is used to determine the subscriber ID associated with the call.
  - **CHAR(1): Y/N (Default = N).**
  - **Y—Determine subscriber ID based on the ANI.**
  - **N—Use normal routing.**
  - **Valid for Command: add, change, audit, sync, show**
  - **Default Value: N**
  - **Possible Value: Y, N**
  - **Parser:** BooleanParser

- **ANI_DIGMAN_ID**
  - **Description:** Foreign key: Digman Profile table. ANI (calling party number) digit manipulation ID.
  - **VARCHAR(16): 1-16 ASCII characters.**
  - **Valid for Command: add, audit, change, show**
  - **Possible Value: [1_16]**
  - **Parser:** TextParser

- **ANI_SCREENING**
  - **Description:** Specifies whether to screen the call against the ANI if set.
  - **CHAR(1): Y/N (Default = N).**
  - **N—Perform normal routing.**
  - **Y—Determine the subscriber ID based on the ANI Screening table.**
  - **Valid for Command: add, change, audit, sync, show**
  - **Mandatory: add**
  - **Default Value: N**
  - **Possible Value: Y, N**
  - **Parser:** BooleanParser
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Data Type</th>
<th>Valid for Commands</th>
<th>Possible Value</th>
<th>Default Value</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANI_SCREENING_PROFILE_ID</td>
<td>Mandatory if ani-screening=y. Foreign key: ANI Screening Profile table. ANI screening profile id.</td>
<td>VARCHAR(16)</td>
<td>add, change, show, audit</td>
<td>[1-16]</td>
<td></td>
<td></td>
<td>TextParser</td>
</tr>
<tr>
<td>AUTO_REFRESH</td>
<td>Specifies whether to display cached data on the screen.</td>
<td>CHAR(1)</td>
<td>show</td>
<td>Y/N (Y = Default)</td>
<td></td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td>CALL_AGENT_ID</td>
<td>Foreign key: Call Agent table. Call Agent ID. Same as ID in Call Agent table.</td>
<td>VARCHAR(8)</td>
<td>add, change, audit, sync, show</td>
<td>[1-8]</td>
<td></td>
<td></td>
<td>TextParser</td>
</tr>
<tr>
<td>CALL_CTRL_ROUTE_ID</td>
<td>Mandatory if tg-type=ss7. Foreign key: Call Control Route table. The Call Control Route ID.</td>
<td>VARCHAR(16)</td>
<td>add, audit, sync, show</td>
<td>[1-16]</td>
<td></td>
<td></td>
<td>TextParser</td>
</tr>
<tr>
<td>CARRIER_ID</td>
<td>Foreign key: Carrier table. Carrier ID if direct trunk group to a carrier. Used during incoming call processing. Same as carrier-id in Carrier table.</td>
<td>CHAR(4)</td>
<td>add, change, audit, sync, show</td>
<td>[1-4]</td>
<td></td>
<td></td>
<td>TextParser</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
<td>Validation Details</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COST</td>
<td>Description: Default charge number.</td>
<td>VARCHAR(16): 1-16 numeric digits. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEFAULT_ROUTING</td>
<td>Description: Used if ANI routing fails because the ANI was not found in the DN2 Subscriber table.</td>
<td>CHAR(1): Y/N (Default=N). Y—Use main-subscriber-id if provisioned, else use the trunk group properties. N—Use normal routing. Valid for Command: add, change, show, audit, sync Default Value: N Possible Value: Y, N Parser: BooleanParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEL_DIGITS</td>
<td>Description: Specifies the number of digits to delete.</td>
<td>SMALLINT: 0-14 numeric characters. (Default = 0). Valid for Command: add, change, audit, sync, show Default Value: 0 Possible Value: [0_14] Parser: DecimalParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DESCRIPTION</td>
<td>Description: Described by the service provider.</td>
<td>VARCHAR(64): 1-64 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_64] Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
<td>Type</td>
<td>Valid for Command:</td>
<td>Possible Value</td>
<td>Parser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>DIAL_PLAN_ID</td>
<td>Description: Foreign key: Dial Plan table. Specifies which dial plan ID to use. For trunk groups with a main subscriber id (CAS, ISDN), the Call Agent uses the dial-plan-id assigned to the trunk group (if available), else it uses the dial-plan-id assigned to the subscriber profile.</td>
<td>VARCHAR(16)</td>
<td>add, change, audit, sync, show</td>
<td>[1_16]</td>
<td>TextParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIRECTION</td>
<td>Description: Direction of the trunk group. Can be incoming only, outgoing only, or both incoming and outgoing. If bothway, the glare parameter is required.</td>
<td>VARCHAR(4)</td>
<td>add, change, audit, sync, show</td>
<td>BOTH, OUT, IN</td>
<td>TextParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Description: Specifies what token information to display on the screen.</td>
<td>VARCHAR(1024)</td>
<td>show</td>
<td>[1_1024]</td>
<td>TextParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DNIS_DIGMAN_ID</td>
<td>Description: Foreign key: Digman Profile table. DNIS (called party number) digit manipulation ID.</td>
<td>VARCHAR(16)</td>
<td>add, audit, change, show</td>
<td>[1_16]</td>
<td>TextParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPC</td>
<td>Description: Not provisionable. Mandatory if tg-type=SS7. Destination Point Code if SS7. The DPC is automatically provisioned from the call-ctrl-route-id.</td>
<td>VARCHAR(16)</td>
<td>audit, sync, show</td>
<td>[1_16]</td>
<td>PointCodeParser</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### EARLY_BKWD_MSG_TMR
- **Description:** Specifies the amount of time, in seconds, for the Early Backward Message timer. Applies only if send-early-bkwd-msg=Y.
- **DataType:** INTEGER: 0-30 (Default = 5).
- **Valid for Command:** add, change, audit, sync, show
- **Default Value:** 5
- **Possible Value:** [0_30]
- **Parser:** DecimalParser

### EGRESS_ROUTING
- **Description:** Specifies whether to route normally or by an egress trunk group.
- **DataType:** CHAR(1): Y/N (Default=N).
  - Y—Use User Part as an egress trunk group.
  - N—Use normal routing.
- **Valid for Command:** add, change, show, audit, sync
- **Default Value:** N
- **Possible Value:** Y, N
- **Parser:** BooleanParser

### EMERGENCY_TRUNK_GROUP
- **Description:** Specifies whether to set a critical alarm when a trunk group is out of service.
- **DataType:** CHAR(1): Y/N (Default=N).
  - Y—Generate a critical alarm.
  - N—Do not generate a critical alarm.
- **Valid for Command:** add, change, audit, sync, show
- **Default Value:** N
- **Possible Value:** Y, N
- **Parser:** BooleanParser

### ENABLE_ROUTE_HEADER
- **Description:** Specifies whether to enable Route Header on a SIP trunk group. Used only for outboard calls. Allowed only if tg-type=softsw.
- **DataType:** CHAR(1): Y/N (Default=N).
  - Y—Enable Route Header.
  - N—Do not enable Route Header.
- **Valid for Command:** add, change, audit, sync, show
- **Default Value:** N
- **Possible Value:** Y, N
- **Parser:** BooleanParser
### GLARE
**Description:** Used in bothway trunks. Defines how to resolve a glare condition—a bothway (simultaneous) trunk seizure. For example, an incoming and an outgoing call on the same endpoint.

For ISDN trunk groups, glare must be set to ALL. Setting glare to SLAVE can cause CIC/trunk instability.

**VARCHAR(5):** 1-5 ASCII characters. Permitted values are:
- SLAVE (Default)—This trunk group yields any trunk in glare condition.
- ALL—This trunk group is master of all trunks.
- EVEN—This trunk group is master of even numbered trunks.
- ODD—This trunk group is master of odd numbered trunks.
- PC—Not used. Point code driven. In the absence of an overriding control assignment (such as all or none), the SPCS with the higher assigned signaling point code controls the even numbered circuits, and the SPCS with the lower signaling point code controls the odd-numbered circuits.

Valid for Command: add, change, audit, sync, show

Default Value: SLAVE

Possible Value: ALL, SLAVE, ODD, EVEN, PC

Parser: TextParser

### H323_GW_ID
**Description:** Mandatory if tg-type=h323. Foreign key: H.323 Gateway table. Specifies the gateway id for this trunk group.

**VARCHAR(16):** 1-16 ASCII characters.

Valid for Command: add, change, audit, sync, show

Possible Value: [1_16]

Parser: TextParser

### ID
**Description:** Primary key. Trunk group number.

**INTEGER:** 1-99999999.

Valid for Command: add, change, show, delete, audit, sync, control, status

Mandatory: add, change, delete, control, status

Possible Value: [1_99999999]

Parser: DecimalParser

### IGNORE_INBOUND_LNP
**Description:** Specifies whether to ignore inbound LNP information and reset the information as if LNP was never performed.

**CHAR(1):** Y/N (Default=N).

Y—Ignore inbound LNP information.

N—Analyze based on LNP information.

Valid for Command: add, change, audit, sync, show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISDN_DCHAN_ID</td>
<td>Description: Foreign key: ISDN D-Channel table. The ISDN D-channel id.</td>
</tr>
<tr>
<td></td>
<td>The isdn-dchan-id + dchan primary must exist in the ISDN D-Channel table.</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
<tr>
<td>LIMIT</td>
<td>Description: Specifies the number of rows to display on the screen.</td>
</tr>
<tr>
<td></td>
<td>INTEGER: 1-100000000 (Default = 100000000).</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
</tr>
<tr>
<td></td>
<td>Default Value: 100000000</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_100000000]</td>
</tr>
<tr>
<td></td>
<td>Parser: DecimalParser</td>
</tr>
<tr>
<td>LOCAL_SIP_HOSTNAME_ID</td>
<td>Description: Foreign key: Local SIP Hostname table. Specifies whether to</td>
</tr>
<tr>
<td></td>
<td>use the hostnames defined in the Local SIP Hostname table to fill in the</td>
</tr>
<tr>
<td></td>
<td>VIA, CONTACT, FROM and PAID hostnames. Allowed only if tg-type=softsw.</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
</tr>
<tr>
<td></td>
<td>NULL—use the default (globally) defined values.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, show, audit, sync</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
</tr>
<tr>
<td></td>
<td>Parser: DomainParser</td>
</tr>
<tr>
<td>MAIN_SUB_ID</td>
<td>Description: Foreign key: Subscriber table. Used for PBX subscribers.</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(30): 1-30 ASCII characters.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_30]</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
<tr>
<td>MASTER</td>
<td>Valid for Command: sync</td>
</tr>
<tr>
<td></td>
<td>Mandatory: sync</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_10]</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
<tr>
<td>MDII_ENABLE</td>
<td>Valid for Command: add, change, show, audit, sync</td>
</tr>
<tr>
<td></td>
<td>Default Value: Y</td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
</tr>
<tr>
<td></td>
<td>Parser: BooleanParser</td>
</tr>
<tr>
<td>Variable</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MGCP_PKG_TYPE</td>
<td>Determines the MGCP Package type for the announcement server.</td>
</tr>
<tr>
<td></td>
<td>NA—For SIP and H.323 trunk groups.</td>
</tr>
<tr>
<td></td>
<td>ANNC-CABLE-LABS—Announcement signaling type based on the Cable Labs package.</td>
</tr>
<tr>
<td></td>
<td>AUTO—EAOSS signaling. The package is dynamically determined based on the call type (can be MO, MS, MD). Used when sig-type in CAS Trunk Group Profile table is EAOSS. For inbound calls, always use the MS package. (Not supported).</td>
</tr>
<tr>
<td></td>
<td>DT—DTMF package.</td>
</tr>
<tr>
<td></td>
<td>IT—ISUP trunk package.</td>
</tr>
<tr>
<td></td>
<td>LINE—Line package used for Test Line Access.</td>
</tr>
<tr>
<td></td>
<td>MD—MF FGD package (Not supported).</td>
</tr>
<tr>
<td></td>
<td>MS—MF package.</td>
</tr>
<tr>
<td></td>
<td>MT—MF terminating package.</td>
</tr>
<tr>
<td>TCL-CISCO (Default)—Announcement signaling type for the Cisco AS5350/AS5400.</td>
<td>TCL-CISCO (Default)—Announcement signaling type for the Cisco AS5350/AS5400.</td>
</tr>
<tr>
<td></td>
<td>Default Value: NA</td>
</tr>
<tr>
<td></td>
<td>Possible Value: T, IT, DT, MS, MT, MO, TCL_CISCO, ANNC_CABLE_LABS, NA, LINE</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser.toUpperCase()</td>
</tr>
<tr>
<td>MODE</td>
<td>Specifies the information returned by the command.</td>
</tr>
<tr>
<td></td>
<td>BRIEF</td>
</tr>
<tr>
<td></td>
<td>VERBOSE</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: control</td>
</tr>
<tr>
<td></td>
<td>Mandatory: control</td>
</tr>
<tr>
<td></td>
<td>Possible Value: FORCED, GRACEFUL</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
<tr>
<td>Variable</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>NUM_OF_TRUNKS</td>
<td>Description: Not provisionable. EMS provisions this field when trunks are provisioned for this trunk group.</td>
</tr>
<tr>
<td>ORDER</td>
<td>Description: Specifies whether to display data on the screen in a sorted order.</td>
</tr>
<tr>
<td>OUTPULSE_CASUAL_AS_DIALED</td>
<td>Description: Specifies whether to outpulse casual (dial around) calls as dialed.</td>
</tr>
<tr>
<td>OUTPULSE_INTL_AS_DIALED</td>
<td>Description: Specifies whether to outpulse international calls as dialed.</td>
</tr>
<tr>
<td>OUTPULSE_INTL_OPR_AS_DIALED</td>
<td>Description: Specifies whether to outpulse international operator assisted calls as dialed.</td>
</tr>
</tbody>
</table>
### OUTPULSE_OPERATOR_AS_DIALED
**Description:** Specifies whether to outpulse operator or operator assisted calls as dialed.

- **CHAR(1):** Y/N (Default=N).
- **Valid for Command:** add, change, show, audit, sync
- **Default Value:** N
- **Possible Value:** Y, N
- **Parser:** BooleanParser

### OUTPULSE_PREFIX1_AS_DIALED
**Description:** Specifies whether to outpulse prefix-1 calls as dialed.

- **CHAR(1):** Y/N (Default=N).
- **Valid for Command:** add, change, show, audit, sync
- **Default Value:** N
- **Possible Value:** Y, N
- **Parser:** BooleanParser

### PERFORM_LNP_QUERY
**Description:** Specifies whether to perform an LNP query. This token applies only to incoming calls (for ITU local LNP, when the LNP Profile lnp-db-type is RN).

- **CHAR(1):** Y/N (Default = N).

  - **Y**—Perform an LNP Query if required based on the LNP Profile table and the acq-lnp-query token in the Destination table. This applies to both LNP Types: ACQ and QOR. Set this token to Y when the remote switch is not LNP-capable.
  - **N**—An LNP query is not required as originating switch is LNP-capable or LNP is not required.

- **Valid for Command:** add, change, audit, sync, show
- **Default Value:** N
- **Possible Value:** Y, N
- **Parser:** BooleanParser

### PFX_DIGITS
**Description:** Specifies what digits to prefix. Digits are prefixed after the specified number of digits are deleted.

- **VARCHAR(10):** 1-10 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [1_10]
- **Parser:** GenericDNParser
<table>
<thead>
<tr>
<th><strong>Field</strong></th>
<th><strong>Description</strong></th>
<th><strong>Type</strong></th>
<th><strong>Permitted Values</strong></th>
<th><strong>Valid for</strong></th>
<th><strong>Default Value</strong></th>
<th><strong>Possible Values</strong></th>
<th><strong>Parser</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PLATFORM_STATE</strong></td>
<td>Description: Audits a shared memory database.</td>
<td>VARCHAR(7)</td>
<td>1-7 ASCII characters. Permitted values are:</td>
<td>STANDBY</td>
<td>DEFAULT</td>
<td>ACTIVE, STANDBY</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACTIVE (Default) - System is currently running.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STANDBY.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Valid for Command: sync, audit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Default Value: ACTIVE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Possible Value: ACTIVE, STANDBY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>POI</strong></td>
<td>Description: Specifies the point of interface (interconnect) to a far end switch.</td>
<td>VARCHAR(16)</td>
<td>1-16 ASCII characters. (Default = INTER-ENDOFFICE).</td>
<td>STANDBY</td>
<td>DEFAULT</td>
<td>INTER-ENDOFFICE, INTRA_CLUSTER</td>
<td>TextNoCaseParser</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Permitted values are:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>INTER-ENDOFFICE—Connect to interoffice end office.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>INTRA-CLUSTER—Connect to another CMS within a cluster.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Default Value: INTER-ENDOFFICE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Possible Value: INTER-ENDOFFICE, INTRA_CLUSTER</td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Parser: TextNoCaseParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>POP_ID</strong></td>
<td>Description: Foreign key: POP table. Defines the number of POPs in a Call Agent; used for incoming trunk groups.</td>
<td>VARCHAR(16)</td>
<td>1-16 ASCII characters.</td>
<td>STANDBY</td>
<td>DEFAULT</td>
<td>[1_16]</td>
<td>TextNoNullParser</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mandatory: add</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Possible Value: [1_16]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Parser: TextNoNullParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>QOS_ID</strong></td>
<td>Description: Foreign key: QOS table. Specifies whether or not to use QOS index for codec selection.</td>
<td>VARCHAR(16)</td>
<td>1-16 ASCII characters.</td>
<td>STANDBY</td>
<td>DEFAULT</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Possible Value: [1_16]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>REGION</strong></td>
<td>Description: Region of the incoming trunk group.</td>
<td>VARCHAR(16)</td>
<td>1-16 ASCII characters.</td>
<td>STANDBY</td>
<td>DEFAULT</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Possible Value: [1_16]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Chapter 1 Digit Translations

#### Automatic Number Identification/Dialed Number Identification Service Manipulation

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Type</th>
<th>Validation</th>
<th>Command</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>REMOTE_SWITCH_LRN</td>
<td>LRN of the previous switch used for billing.</td>
<td>VARCHAR(10)</td>
<td>1-10 numeric digits, in the format NPA-NXX-XXXX. (Default = 0).</td>
<td>add, change, audit, sync, show</td>
<td>[3_10]</td>
<td>NPAParser</td>
</tr>
<tr>
<td>REQURI_HOSTNAME</td>
<td>Specifies the hostname to send in the Req-URI. Does not apply to subscriber routing.</td>
<td>VARCHAR(64)</td>
<td>1-64 ASCII characters.</td>
<td>add, change, show, audit, sync</td>
<td>[1_64]</td>
<td>DomainParser</td>
</tr>
<tr>
<td>ROUTE_HEADER_HOSTNAME_PART</td>
<td>Mandatory if enable-route-header=y. Specifies the hostname part of the Route Header. Allowed only if tg-type=softsw.</td>
<td>VARCHAR(64)</td>
<td>1-64 ASCII characters.</td>
<td>add, change, show, audit, sync</td>
<td>[1_64]</td>
<td>DomainParser</td>
</tr>
<tr>
<td>ROUTE_HEADER_TRANSPORT_TYPE</td>
<td>Specifies the transport type used to convey the Route Header. Allowed only if tg-type=softsw.</td>
<td>VARCHAR(8)</td>
<td>1-8 ASCII characters (Default = UDP). Permitted values are:</td>
<td>add, change, show, audit, sync</td>
<td>UDP, TCP</td>
<td>TextParser</td>
</tr>
<tr>
<td>ROUTE_HEADER_USER_PART</td>
<td>Specifies the USER part of the Route Header. If an application uses the same trunk group to route the call, then the Route Header specified in the SIP-TRIGGER table is used. Allowed only if tg-type=softsw.</td>
<td>VARCHAR(64)</td>
<td>1-64 ASCII characters.</td>
<td>add, change, show, audit, sync</td>
<td>[1_64]</td>
<td>DomainParser</td>
</tr>
<tr>
<td><strong>SCRIPT_SUPP</strong></td>
<td>Description: Specifies whether the script package is supported by the trunk group. Used for prepaid service.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHAR(1): Y/N (Default = N).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default Value: N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: BooleanParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>SEL_POLICY</strong></th>
<th>Description: Trunk selection policy. Control the Call Agent out-of-service, then in-service, after changing the selection policy. Then verify that the selection policy is changed.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VARCHAR(4): 1-4 ASCII characters (Default = ASC). Permitted values are:</td>
</tr>
<tr>
<td></td>
<td>ASC—Select trunks in ascending order. When trunks are released, they are released at the top of the queue. When a new trunk is selected, the lower number trunk (CIC) is selected.</td>
</tr>
<tr>
<td></td>
<td>CASC—Cyclic ascending. Select trunks in ascending order. When trunks are released, they are released at the end of the list, so when a new trunk is selected, the next higher trunk (CIC) is selected.</td>
</tr>
<tr>
<td></td>
<td>CDSC—Cyclic descending. Select trunks in descending order. When trunks are released, they are released at the end of the list, so when a new trunk is selected, the next lower trunk (CIC) is selected.</td>
</tr>
<tr>
<td></td>
<td>DSC—Select trunks in descending order. When trunks are released, they are released at the top of the queue. When a new trunk is selected, the higher number trunk (CIC) is selected.</td>
</tr>
<tr>
<td></td>
<td>EVEN—Select the least recently used even-numbered trunks.</td>
</tr>
<tr>
<td></td>
<td>LRU—Select the least recently used trunk.</td>
</tr>
<tr>
<td></td>
<td>MRU—Not used. Select the most recently used trunk.</td>
</tr>
<tr>
<td></td>
<td>ODD—Select the least recently used odd-numbered trunks.</td>
</tr>
<tr>
<td></td>
<td>RAND—Not used. Select a trunk randomly.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
</tr>
<tr>
<td></td>
<td>Default Value: ASC</td>
</tr>
<tr>
<td></td>
<td>Possible Value: ODD, DSC, LRU, ASC, EVEN, MRU, CASC, CDSC</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>SEND_CPNCHN_NONGE9O</strong></th>
<th>Description: Specifies whether to send the calling party and charge number information for non-geographic calls (tollfree) if CPN and CHN are different.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CHAR(1): Y/N (Default = N).</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, show, audit, sync</td>
</tr>
<tr>
<td></td>
<td>Default Value: N</td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
</tr>
<tr>
<td></td>
<td>Parser: BooleanParser</td>
</tr>
</tbody>
</table>
### SEND_EARLY_BKWD_MSG

**Description:** Specifies whether to start the Early Backward Message timer.

**CHAR(1):** Y/N (Default = N).

- **Y:** Start early backward message timer. An early message is sent when it expires.
- **N:** Do not start early backward message timer.

**Valid for Command:** add, change, audit, sync, show

**Mandatory:** add

**Default Value:** N

**Possible Value:** Y, N

**Parser:** BooleanParser

### SEND_RDN_AS_CPN

**Description:** Use when a call is forwarded and call routing is to the PSTN where Calling Party Number Screening is performed. If redirecting number information is available, the Cisco BTS 10200 Softswitch overwrites the calling party number with RDN. Otherwise, if Original Called number information is available, the Cisco BTS 10200 Softswitch overwrites the calling party number with the OCN.

**CHAR(1):** Y/N (Default = N).

**Valid for Command:** add, change, audit, sync, show

**Mandatory:** add

**Default Value:** N

**Possible Value:** Y, N

**Parser:** BooleanParser

### SIGNAL_PORTED_NUMBER

**Description:** Used for local number portability (LNP) when the next switch does not support LNP. The local routing number (LRN) from the called party number is removed and the called party number parameter is filled with the called party number from GAP. The translated bit (M-bit) is also reset.

**CHAR(1):** Y/N (Default = N).

- **Y:** Send IAM without GAP.
- **N:** Send GAP.

**Valid for Command:** add, change, audit, sync, show

**Default Value:** N

**Possible Value:** Y, N

**Parser:** BooleanParser
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Automatic Number Identification/Dialed Number Identification Service Manipulation

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Valid Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIP_SERVER_</td>
<td>Description: Foreign key: SIP Server Group table. Use to route a call to a</td>
<td></td>
</tr>
<tr>
<td>GROUP_ID</td>
<td>server group. A SIP server group is a collection of other server groups or SIP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elements. A SIP Element points to a TSAP address. If a server contains 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TSAP addresses, the two addresses can be defined as server group. Use the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Failover Policy table to define overflow action. For example, if a 503 is</td>
<td></td>
</tr>
<tr>
<td></td>
<td>received from one of the SIP Elements of a server group, it is not necessary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>to resend the INVITE to the next element within the server group. Instead,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the server group can be skipped and another server group can be selected as</td>
<td></td>
</tr>
<tr>
<td></td>
<td>an alternate choice.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VARCHAR(64): 1-64 ASCII characters.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_64]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
</tr>
<tr>
<td>SOFTSW_TSAP_-</td>
<td>Description: Mandatory if tg-type=softsw. Unique key between</td>
<td></td>
</tr>
<tr>
<td>ADDR</td>
<td>softsw-tsap-addr + trunk-sub-grp. TSAP address of the softswitch if</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tg-type=softsw. Use different ports if multiple trunk groups to the same</td>
<td></td>
</tr>
<tr>
<td></td>
<td>softswitch are supported.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VARCHAR(64): 1-64 ASCII characters. Domain names cannot begin with a number.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_64]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: DomainParser</td>
<td></td>
</tr>
<tr>
<td>SOURCE</td>
<td>Description: Source of the infraction—name in the Users table. Source is</td>
<td></td>
</tr>
<tr>
<td></td>
<td>actually the username. If you enter source without a start-time or end-time,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>all infractions are shown.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: status</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mandatory: status</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default Value: AGENT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: EMS, AGENT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
</tr>
<tr>
<td>SP_ID</td>
<td>Description: Foreign key: Service Provider table. The service provider ID.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
</tr>
</tbody>
</table>
| START_ROW | Description: Specifies to begin displaying data on the screen at a specific row.  
  INTEGER: 1-100000000 (Default = 1).  
  Valid for Command: show  
  Default Value: 1  
  Possible Value: [1_100000000]  
  Parser: DecimalParser |
| --- | --- |
| STATUS | Description: Status of the trunk group. Valid only for the show command. Can be updated using the Call Agent commands in  
  Cisco BTS 10200 Softswitch Command Line Interface Guide - OAM  
  , Chapter 10.  
  Valid for Command: audit, sync, show  
  Default Value: OOS  
  Possible Value: OOS, INS, MAINT, OOS_PENDING, MAINT_PENDING  
  Parser: TextParser |
| TARGET | Description: Specifies the network element to receive the request.  
  VARCHAR(5): 1-5 ASCII characters. Permitted values are:  
  CA—Network identifier of a Call Agent.  
  FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.  
  FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.  
  Valid for Command: sync  
  Mandatory: sync  
  Possible Value: [1_10]  
  Parser: TextParser |
| TARGET_STATE | Description: The state (active or standby) of the Call Agent or Feature Server.  
  VARCHAR(7): 1-7 ASCII characters. Permitted values are:  
  ACTIVE (Default)—Call Agent or Feature Server is in active state.  
  STANDBY—Call Agent or Feature Server is in standby state.  
  Valid for Command: control  
  Mandatory: control  
  Possible Value: INS, OOS  
  Parser: TextParser |
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Data Type</th>
<th>Valid for Command</th>
<th>Mandatory</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>TG</td>
<td>Unique key. ASCII name for the trunk group.</td>
<td>VARCHAR(20)</td>
<td>add, change, audit, sync, show</td>
<td></td>
<td>[1_20]</td>
<td>TextParser</td>
</tr>
<tr>
<td>TG_PROFILE_ID</td>
<td>Mandatory if tg-type=annc. The trunk group profile ID.</td>
<td>VARCHAR(16)</td>
<td>add, change, audit, sync, show</td>
<td>add</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td>TG_TYPE</td>
<td>Trunk group type.</td>
<td>VARCHAR(6)</td>
<td>add, audit, sync, show</td>
<td>add</td>
<td>ANNC, SOFTSW, CAS, ISDN, SS7, H323</td>
<td>TextParser</td>
</tr>
<tr>
<td>THROTTLE</td>
<td></td>
<td></td>
<td>status</td>
<td>status</td>
<td>Y, N</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
| **TRAFFIC_TYPE** | **Description:** Specifies the type of traffic carried over this trunk group. It is required for incoming and bothway trunk groups. If it is not specified, the Call Agent defaults to local.  
VARCHAR(8): 1-8 ASCII characters. Permitted values are:  
LOCAL (Default)—Local incoming trunk group.  
PBX—Not used. Incoming PBX trunk group (for ISDN and CAS), DAL, and so forth.  
TANDEM—Incoming local/tandem trunk group. Calls are allowed to a tandem trunk.  
USER—Cisco BTS 10200 acts as a user side (PBX) toward the network.  
Valid for Command: add, change, audit, sync, show  
Default Value: LOCAL  
Possible Value: LOCAL, TANDEM, PBX, USER  
Parser: TextParser |
| **TRUNK_SUB_GRP** | **Description:** Unique key: softsw-tsap-addr+trunk-sub-grp. Identifies a specific trunk group when multiple trunk groups exist between a Cisco BTS 10200 Softswitch and another softswitch.  
VARCHAR(64): 1-64 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [1_64]  
Parser: TextParser |
| **VOICE_INFO_TRANSFER_CAP** | **Description:** Information sent in the forward direction indicating the type of transmission medium required for the connection.  
VARCHAR(16): 1-16 ASCII characters (Default = AUTO). Permitted values are:  
AUTO—Same as configured or received for the incoming leg/  
SPEECH—If voice call, override with Speech.  
3POINT1KHZ-AUDIO—If voice call, override with 3.1 KHz audio.  
Valid for Command: add, show, change, audit, sync  
Default Value: AUTO  
Possible Value: AUTO, SPEECH, 3POINT1KHZ_AUDIO  
Parser: TextNoCaseParser |
Chapter 1      Digit Translations

Automatic Number Identification/Dialed Number Identification Service Manipulation

The Policy NXX (policy-nxx) table is used when a number services call results in a translated number, carrier ID, translated number and a carrier ID, or a route ID.

**Note**

As of Release 5.0, the original call type is preserved in billing when the routing number is changed using the Policy NXX table

Table Name: POLICY_NXX
Table Containment Area: EMS, CA, FSAIN

### Command Types

- add, audit, change, delete, help, show, sync

### Caution

The `sync` command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

### Examples

- `show policy-nxx id=normalroute;`
- `add policy-nxx id=normalroute;`
- `change policy-nxx id=normalroute; carrier=1234;`
- `delete policy-nxx id=normalroute;`

---

VOICE_LAYER1_USERINFO

**Description:** Specifies the voice encoding codec to use for a call.

**VARCHAR(16):** 1-16 ASCII characters (Default = AUTO). Permitted values are:

- **AUTO**—Same as configured or received for incoming leg.
- **G711-ULAW**—Use the G711 Law codec.
- **G711-ALAW**—Use the A-Law codec.

Valid for Command: add, show, change, audit, sync

Default Value: AUTO

Possible Value: AUTO, G711_ULAW, G711_ALAW

Parser: TextNoCaseParser

---

WAIT

**Valid for Command:** status, control

**Mandatory:** status, control

Default Value: N

Possible Value: Y, N

Parser: BooleanParser
Usage Guidelines

Primary Key Token(s): ID

Foreign Key Token(s): ID, TYPE, ROUTE, ROUTE_POLICY_TYPE

Add Rules: ID plus type must exist in the Policy Profile table.

Note

Both the carrier and the translated-dn can be entered; however, if route is entered, neither the carrier-id nor the translated-dn can be entered.

Syntax Description

**AUTO_REFRESH**

Description: Specifies whether to display cached data on the screen.

CHAR(1): Y/N (Default = Y).

Y—Queries the database for the most current data.

N—Queries the database for the most current data only if the cached data is unavailable.

Valid for Command: show

Default Value: Y

Possible Value: Y, N

Parser: BooleanParser

**CARRIER**

Description: Carrier identification code (CIC). Used for routing a call.

CHAR(4): 0000-9999.

Valid for Command: add, change, audit, sync, show

Possible Value: [4_4]

Parser: DigitParser

**DISPLAY**

Description: Specifies what token information to display on the screen.

VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.

Valid for Command: show

Possible Value: [1_1024]

Parser: TextParser

**ID**

Description: Primary key. Policy-nxx identification field.

VARCHAR(16): 1-16 ASCII characters.

Valid for Command: add, change, show, delete, audit, sync

Mandatory: add, change, delete

Possible Value: [1_16]

Parser: TextParser
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Type</th>
<th>Default Value</th>
<th>Possible Values</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIMIT</td>
<td>Specifies the number of rows to display on the screen.</td>
<td>INTEGER</td>
<td>100000000</td>
<td>[1_100000000]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>MASTER</td>
<td>Valid for Command: <code>sync</code></td>
<td></td>
<td></td>
<td>[1_10]</td>
<td>TextParser</td>
</tr>
<tr>
<td>ORDER</td>
<td>Specifies whether to display data on the screen in a sorted order.</td>
<td>VARCHAR</td>
<td>1024</td>
<td>[1_1024]</td>
<td>TextParser</td>
</tr>
<tr>
<td>PLATFORM STATE</td>
<td>Audits a shared memory database.</td>
<td>VARCHAR</td>
<td>ACTIVE</td>
<td>ACTIVE, STANDBY</td>
<td>TextParser</td>
</tr>
<tr>
<td>ROUTE</td>
<td>Defines a list of trunk groups.</td>
<td>VARCHAR</td>
<td>16</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td>START_ROW</td>
<td>Specifies to begin displaying data on the screen at a specific row.</td>
<td>INTEGER</td>
<td>1</td>
<td>[1_100000000]</td>
<td>DecimalParser</td>
</tr>
</tbody>
</table>
Call Type Profile

The Call Type Profile (call-type-profile) table defines the Call Type properties supported by the Cisco BTS 10200 Softswitch. Provision this table if the ALL-CALL-QUERY flag in the LNP-PROFILE table is set to Y and the ACQ-LNP-QUERY token in the Destination table is set to ACQ-BASED-ON-CALL-TYPE.

Table Name: CALL_TYPE_PROFILE
Table Containment Area: EMS, CA

Command Types
add, audit, change, delete, help, show, sync

Caution
The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.
Examples

show call-type-profile;
add call-type-profile call-type=mobile; lnp-query=y;
change call-type-profile call-type=mobile; lnp-query=n;
delete call-type-profile call-type=mobile;

Usage Guidelines
Primary Key Token(s): CALL_TYPE

Syntax Description

AUTO_REFRESH
Description: Specifies whether to display cached data on the screen.
CHAR(1): Y/N (Default = Y).
Y—Queries the database for the most current data.
N—Queries the database for the most current data only if the cached data is unavailable.
Valid for Command: show
Default Value: Y
Possible Value: Y, N
Parser: BooleanParser

CALL_TYPE
Description: Primary key. Foreign key: Call Type table. The call type. Valid call types are defined in the Call Type table.
VARCHAR(16): 1-16 ASCII characters.
Valid for Command: add, change, delete, show, audit, sync
Mandatory: add, change, delete
Possible Value: [1_16]
Parser: TextNoCaseParser

DISPLAY
Description: Specifies what token information to display on the screen.
VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
Valid for Command: show
Possible Value: [1_1024]
Parser: TextParser

LIMIT
Description: Specifies the number of rows to display on the screen.
INTEGER: 1-100000000 (Default = 100000000).
Valid for Command: show
Default Value: 100000000
Possible Value: [1_100000000]
Parser: DecimalParser
### LNP_QUERY
Description: Specifies whether to perform an LNP query on the call type. Applies only if the all-call-query token in the LNP Profile table is set to Y and the acq-lnp-query token in the Destination table is set to acq-based-on-call-type.
CHAR(1): Y/N (Default = Y)
Y—Perform an LNP query.
N—Do not perform an LNP query.
Valid for Command: add, change, show, audit, sync
Default Value: Y
Possible Value: Y, N
Parser: BooleanParser

### MASTER
Valid for Command: sync
Mandatory: sync
Possible Value: [1_10]
Parser: TextParser

### ORDER
Description: Specifies whether to display data on the screen in a sorted order.
VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
Valid for Command: show
Possible Value: [1_1024]
Parser: TextParser

### PLATFORM_STATE
Description: Audits a shared memory database.
VARCHAR(7): 1-7 ASCII characters. Permitted values are:
ACTIVE (Default) - System is currently running.
STANDBY.
Valid for Command: sync, audit
Default Value: ACTIVE
Possible Value: ACTIVE, STANDBY
Parser: TextParser
| **START_ROW** | Description: Specifies to begin displaying data on the screen at a specific row.  
INTEGER: 1-100000000 (Default = 1).  
Valid for Command: show  
Default Value: 1  
Possible Value: [1_100000000]  
Parser: DecimalParser |
| **TARGET** | Description: Specifies the network element to receive the request.  
VARCHAR(5): 1-5 ASCII characters. Permitted values are:  
CA—Network identifier of a Call Agent.  
FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.  
FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.  
Valid for Command: sync  
Mandatory: sync  
Possible Value: [1_10]  
Parser: TextParser |
Sample Provisioning

This section provides a sample provisioning script for the implementation of the digman functionality.

**Figure 1-3 Sample Provisioning**

Add `digman id=pretrans; rule=1; match_string=8007654321; replace_string=8881234;`  
match_noa=any; replace_noa=unknown;

Add `dial-plan-profile ID=cdp20; description=china dial plan profile;`  
nanp-dial-plan=N; ani-digman-id=ani_20; dnis-digman-id=pretrans;

Add `route id=rt_h323_id; lcr=n; tgn1-id=4092; del-digits1=0; del-digits2=0;`  
`del-digits3=0; del-digits4=0; del-digits5=0; del-digits6=0; del-digits7=0;`  
`del-digits8=0; del-digits9=0; del-digits10=0; tg-selection=seq;`  
`ani-digman-id1=dm_ani_add_0; dnis-digman-id1=dm_dnis_remove_0;`

Caller A, using `dial-plan-id=cdp20`, dials 8007654321. The call hits the dial-plan-profile table (1) and uses the pretrans entry (2 and 3). It matches on the 800 number (4) and replaces it with 8881234 (5).

Feature Interaction

When a call is terminated to a subscriber with Call Forwarding activated, a feature interaction occurs when calls are forwarded out of the BTS 10200. In China, the BTS 10200 uses H323 signaling to route calls to the PSTN; however, this scenario applies to any call which is forwarded over a non-SS7 signaling interface.

The H323 protocol and other non-SS7 signaling protocols do not support the Charge Number parameter, Original Called Party Number, or Redirecting Party Number. When Call Forwarding occurs, the ANI manipulation is performed on the redirecting party number if it is available. The DN of the forwarding party should also be sent as ANI digits and, as such in a forwarding scenario, the called number of the forwarding party should also be manipulated for the call.
Introduction

This chapter provides a basic understanding of the Cisco BTS 10200 Softswitch routing types and an explanation of all routing types and explanation of how they function. Additionally examples of the routing types are provided. This chapter is divided into the following sections:

- Routing Types
- Call Types
- Policy Based Flexible Routing

Routing Types

For call routing to occur there is some basic information needed to process the call route. That information is obtained from either the subscriber table or the trunk group table. The information gathered from the subscriber table or the trunk group table provides the initial starting point for routing a call. Additional information must be gathered from the dial-plan profile table and dial-plan identification (ID) tables. These are the main tables which determine call routing and are instrumental in determining other information needed to route a call, such as call type and destination.

This section provides the BTS 10200 routing type information. The following topics are covered in this section:

- Basic Subscriber Routing—This is the BTS 10200 routing type which is based on subscriber needs. Basic Subscriber Routing can be used for both line and trunk routing.
- Basic Trunk Routing—This is the BTS 10200 routing type which is used for basic trunk routing. Basic Trunk Routing can only be used for trunk routing.
- Service Provider Routing—This is the BTS 10200 routing type which is used in the wholesale network environment where the network operator owns the facility and provides transport facilities to carry voice calls on behalf of smaller service providers. Service Provided Routing can only be used for trunk routing.
- Carrier Based Routing—This is the BTS 10200 routing type which is based on specific carrier needs. Carrier Based Routing can be utilized for both line and trunk routing.
- **Basic Dial Plan Routing**—This is the BTS 10200 default routing type. Basic Dial Plan Routing can be utilized for both line and trunk routing.

- **Automatic Number Identification Based Routing**—This is the BTS 10200 routing type based on automatic number identification (ANI) as it comes in on a trunk on a hosted private branch exchange (PBX) configuration. ANI Based Routing can only be utilized for trunk routing.

- **Nature of Address Routing (ITU Local Number Portability)**—Nature of address (NOA) routing is used to select separate dial plans for directory number (DN) and routing number (RN). The ISDN user part (ISUP) initial address message (IAM) called party number (CdPN) parameter contains a NOA value. The NOA value distinguishes the format of the digits, i.e., DN only vs. RN+DN. In some countries, DN prefixes may be the same as some RNs. In these cases, NOA routing allows using different dial plans for DN routing and RN routing.

- **Cluster Routing**—A cluster is defined as two or more Cable Management Servers (CMSs) along with Media Gateway Controllers (MGCs) (or combined CMS/MGCs) deployed within a network. The cluster appears as one logical CMS/MGC looking towards the Public Switched Telephony Network (PSTN).

- **On-Net Routing and LNP for Inter-CMS Routing**—On-Net Routing and LNP for Inter-CMS routing provides ANSI LNP query support for carrier calls, LNP query for on-net routing (inter-CMS routing), on-net route bypass of carrier route, removal of LNP query result data when Carrier LNP-QUERY= N, and ignore inbound LNP information.

- **International WZ1 (INTL_WZ1) Preferred Carrier Routing**—Enhances the flexibility of preferred carrier routing for INTL_WZ1 calls.

### Basic Subscriber Routing

This section provides a detailed description of the BTS 10200 basic subscriber routing. Refer to Figure 2-1 for visual representation of basic subscriber routing flow while reviewing the following detailed step-by-step basic subscriber routing flow.

**Step 1** Subscriber incoming received or placed.

**Step 2** Get the subscriber table (sub-profile ID).

**Step 3** Get the subscriber-profile table (dial-plan identification (DP-ID)).

**Step 4** Go to the dial-plan (based on DP-ID).

**Step 5** Go to destination table and get the call type and destination.

**Step 6** Determine the call type. If the call type is toll free, 900, or 500, proceed to Step 7. If the call type is casual, proceed to Step 8. If the call type is via a presubscribed interexchange carrier (PIC), proceed to Step 9.

**Step 7** If the call type is toll free, 900, or 500, the BTS 10200 will use the dial plan to select the call route and to route the call.

**Step 8** If the call type is casual, the BTS 10200 will use the carrier routing information to select the call route and to route the call.

**Step 9** If the call type is via a PIC, the BTS 10200 will use the PIC carrier routing information to select the call route and to route the call.
Figure 2-1  Basic Subscriber Routing

1. Subscriber Incoming Call
2. Get Subscriber Table (Sub-profileid)
3. Get subscriber-profile Table (dial-plan-id)
4. Go to Dial-plan (based on DP-ID)
5. Go to Destination Table (get call type and destination)

Sub-Type

Yes

No

CALLTYPE TOLLFREE 900 500

Yes

No

CASUAL

Yes

No

PIC(1:3)

Yes

No

DP_Routing (SUB->DP)

Carrier_Routing (CASUAL)

Carrier_Routing (PIC(1:3))

Select Route

NOT FOUND

Yes

No
Basic Trunk Routing

This section provides a detailed description of the BTS 10200 basic trunk routing. Refer to Figure 2-2 for visual representation of basic trunk routing flow while reviewing the following detailed step-by-step basic trunk routing flow.

Step 1  Trunk group (TG) call received or placed.

Step 2  Get the DP-ID from the TG.

Step 3  Go to the dial-plan and get the destination based on the digits and DP-ID.

Step 4  Go to the destination table and get the call type and the route.

Step 5  Determine the call type. If the call type is toll free, 900, or 500, proceed to Step 6. If the call type is local traffic, proceed to Step 7. If the call type is casual service provider (SP), proceed to Step 8. If the call type is transit network selection (TNS), proceed to Step 9. If the call type is TG carrier, proceed to Step 10. If the call type is TG SP, proceed to Step 11.

Step 6  If the call type is toll free, 900, or 500, the BTS 10200 will use the dial plan to select the call route and to route the call.

Step 7  If the call type is local traffic, the BTS 10200 will use the dial plan to select the call route and to route the call.

Step 8  If the call type is casual SP, the BTS 10200 will use the SP routing to select the call route and to route the call. If the SP routing is not found, the BTS 10200 will use the dial plan to select the call route and to route the call.

Step 9  If the call type is TNS, the BTS 10200 will use the carrier routing to select the call route and to route the call. If the carrier routing is not found, the BTS 10200 will use the dial plan to select the call route and to route the call.

Step 10  If the call type is TG carrier, the BTS 10200 will use the carrier routing to select the call route and to route the call. If the carrier routing is not found, the BTS 10200 will use the dial plan to select the call route and to route the call.

Step 11  If the call type is TG SP, the BTS 10200 will use the SP routing to select the call route and to route the call. If the SP routing is not found, the BTS 10200 will use the dial plan to select the call route and to route the call.
Chapter 2  Routing

Routing Types

Figure 2-2  Basic Trunk Routing

TG Incoming Call

From Trunk Group get dial-plan id

Go to dial-plan and get destination based on digits and dp-id

Go to destination table and get call type and route

CALLTYPE TOLLFREE
900
500

Yes
No

LOCAL TRAFFIC

No
Yes

Casual SP

Yes
No

TNS

Carrier_Routing
(TNS->CARRIER)

No

TG CARRIER

Yes
No

TG SP

Carrier_Routing
(TG->CARRIER)

Select Route

NOT FOUND

DP_Routing
(TG->DP)

Yes
No

Yes
No

SP_Routing
(casual SP)

SP_Routing
(TG->SP)
Service Provider Routing

This section provides a detailed description of the BTS 10200 service provider routing. Refer to Figure 2-3 for visual representation of service provider routing flow while reviewing the following detailed step-by-step service provider routing flow.

**Step 1** Service provider call received.

**Step 2** Determine if service provider routing is available. If service provider routing is available, proceed to Step 3. If service provider routing is not available, proceed to Step 4.

**Step 3** If service provider routing is available, the BTS 10200 will use the service provider dial plan to select the call route and to route the call. If the service provider dial plan cannot be found, proceed to Step 4.

**Step 4** If service provider routing is not available or if the service provider dial plan cannot be found, the BTS 10200 will query the service provider dial plan to use. If a trunk group dial plan is available, proceed to Step 5. If a trunk group dial plan is not available, proceed to Step 6.

**Step 5** If a trunk group dial plan is available, the BTS 10200 will use the trunk group dial plan to select the call route and to route the call.

**Step 6** If a trunk group dial plan is not available, the BTS 10200 will query the service provider route guide index to select the call route and to route the call.

---

**Figure 2-3 Service Provider Routing**

[Diagram showing the service provider routing flow]

---
Carrier Based Routing

This section provides a detailed description of the BTS 10200 carrier based routing. Refer to Figure 2-4 for visual representation of carrier based routing flow while reviewing the following detailed step-by-step carrier based routing flow.

**Step 1** Carrier based routing call is received.

**Step 2** Determine if the carrier is being screened. If the carrier is being screened, proceed to Step 3. If the carrier is not being screened, proceed to Step 4.

**Step 3** If the carrier is being screened, the BTS 10200 will determine if the carrier call processing is being remotely blocked (RTM_CP_BLOCK). If the carrier call processing is being remotely blocked, the call can not be completed and will be dropped.

**Step 4** If the carrier is not being screened, the BTS 10200 will determine if the carrier is a recognized service provider. If the carrier is a recognized service provider, proceed to Step 5. If the carrier is not a recognized service provider, proceed to Step 6.

**Step 5** If the carrier is a recognized service provider, the BTS 10200 will use the service provider routing to select the call route and to route the call.

**Step 6** If the carrier is not a recognized service provider, the BTS 10200 will determine if a carrier dial plan is configured. If a carrier dial plan is configured, proceed to Step 7. If a carrier dial plan is not configured, proceed to Step 8.

**Step 7** If a carrier dial plan is configured, the BTS 10200 will use the carrier dial plan to select the call route and to route the call.

**Step 8** If a carrier dial plan is not configured, the BTS 10200 will determine if a carrier remote call processing to local exchange carrier operations support system is available (RTM_CP_CARRIER_2_LECOSS). If the RTM_CP_CARRIER_2_LECOSS is available, proceed to Step 9. If the RTM_CP_CARRIER_2_LECOSS is not available, proceed to Step 10.

**Note** Step 8 is skipped for toll traffic. If the traffic is toll traffic, proceed to Step 10.

**Step 9** If the RTM_CP_CARRIER_2_LECOSS is available and if the traffic is not toll traffic, the BTS 10200 will use the RTM_CP_CARRIER_2_LECOSS to select the call route and to route the call.

**Step 10** If the RTM_CP_CARRIER_2_LECOSS is not available, the BTS 10200 will use the carrier guide index to select the call route and to route the call.
Figure 2-4  Carrier Based Routing

Carrier_Routing (CARRIER)

- CARRIER SCREENING
  - Yes: RTM_CP_BLOCK
  - No
- CARRIER->SP
  - Yes: SP_Routing (CARRIER->SP)
  - No
- CARRIER->USE_DP
  - Yes: Dial-Plan Routing
  - No: RTM_CP_CARRIER_2_LECOSS
  - CARRIER->route_guide_idx

Skip this for toll traffic.
Basic Dial Plan Routing

This section provides a detailed description of the BTS 10200 basic dial plan routing. Refer to Figure 2-5 for visual representation of basic dial plan routing flow while reviewing the following detailed step-by-step basic dial plan routing flow.

---

**Step 1** Basic dial plan routing call received.

**Step 2** Determine if the NOA for the received call is an international call. If the call is an international call, the BTS 10200 will use the international dial plan to select the call route and to route the call. If the call is not an international call, proceed to Step 3.

**Step 3** Determine if the call destination is found. If the call destination is not found, the BTS 10200 will return a destination not found response (NOT FOUND) and will drop the call. If the call destination is found, proceed to the Step 4.

**Step 4** Determine if a call destination subscriber is found. If a call destination subscriber is found, the BTS 10200 will return a subscriber (SUB) response and will use the subscriber information to select the call route and to route the call. If a call destination subscriber is not found, proceed to Step 5.

**Step 5** Determine if a call destination route is found. If a call destination route is found, the BTS 10200 will return a destination (DEST) response and will use the route guide index to select the call route and to route the call. If a call destination route is not found, proceed to Step 6.

**Step 6** Determine if a call destination route identification (RID) is found. If a call destination RID is found, the BTS 10200 will return a DEST response and will use the route index to select the call route and to route the call. If a call destination RID is not found, proceed to Step 7.

**Step 7** Determine if a destination carrier is found. If a destination carrier is found, proceed to the Step 8. If a destination carrier is not found, the BTS 10200 will return an error and will drop the call.

**Step 8** Determine the call type. If the call type is toll free, 900, or 500, the BTS 10200 will select the call route and to route the call using the destination carrier routing. If the call type is not toll free, 900, or 500, the BTS 10200 will return an error and will drop the call.

---
Routing Types

Figure 2-5  Basic Dial Plan Routing

DP_Routing (DP Digits)

NOA

Yes

INTL DIAL PLAN

If (dp1->idp)
  default_idp = dp1->idp
else
  default-idp = ca_config->idp

No

DESTINATION FOUND

No

Return NOT_FOUND

Yes

DESTINATION SUB

Yes

Return SUB

No

DESTINATION ROUTE

Yes

Return DEST->route_guide_idx

No

DESTINATION RID

Yes

Return DEST->route_idx

No

DESTINATION CARRIER

No

Return ERROR

Yes

CALLTYPE TOLLFREE

Yes

Carrier_Routing (DEST->CARRIER)

900

500

No
Automatic Number Identification Based Routing

This section provides a detailed description of the BTS 10200 ANI based routing. Refer to Figure 2-6 for visual representation of ANI based routing flow while reviewing the following detailed step-by-step ANI based routing flow.

**Step 1**  
A TG incoming call is received.

**Step 2**  
Get the dial plan ID from the TG.

**Step 3**  
Go to the dial plan and get the call destination based on the digits and the dial plan ID.

**Step 4**  
Go to the destination table and get the call type and call route.

**Step 5**  
Check for the ANI based routing flag. If the ANI based routing flag is available, the BTS 10200 will use the ANI to determine the subscriber characteristics and then will route the call based on those characteristics. If the ANI based routing flag is not available, the BTS 10200 will select the call route and will route the call using normal TG routing.

---

**Figure 2-6 Automatic Number Identification Based Routing**

Diagram showing the flow of automatic number identification based routing with decision points for checking the ANI based routing flag and routing based on the ANI characteristics.

---

Using the ANI determine the subscribers characteristics and then route based on those characteristics.
Nature of Address Routing (ITU Local Number Portability)

NOA routing is used to select separate dial plans for DN and RN. The ISUP IAM CdPN parameter contains a NOA value. The NOA value distinguishes the format of the digits, i.e., DN only vs. RN+DN. In some countries, DN prefixes may be the same as some RNs. In these cases, NOA routing allows using different dial plans for DN routing and RN routing.

For a call where the CdPN is a normal DN, the NOA is set to the ITU Q.769 value of 3, meaning national (significant) number. After a local number portability (LNP) query for a ported number, the CdPN consists of the RN and DN concatenated together. The ITU Q.769 NoA value of 8 is used to indicate that the CdPN is in the RN + DN format.

Routing Number

A RN, also known as network routing number, is used to route the call to a ported number after an LNP query to the recipient network or switch. In some countries, the RN consists of a network ID plus an equipment ID. For example, in some countries, the RN consists of a two digit operator code plus a two digit equipment code. Together, the operator code and equipment code, combined as the RN, can be used to route to any possible recipient switch. In some countries, for example, Sweden, the RN contains only the network ID. The call is routed to the recipient, and then another LNP query is required to obtain an RN that identifies the specific recipient switch.

Switch Types

In LNP call scenarios, the BTS can be considered to be one of the following switch types:

- **Originating Switch**—Subscriber origination. An originating switch is the end office where a subscriber dials a ported directory number (DN). A switch that initiates call forwarding (CFU/CFB/CFNA) is considered the originating switch with respect to the forwarded leg of the call.
- **Transit Switch**—An incoming trunk call is routed out to another switch. Also known as an intermediate switch.
- **Donor Switch**—Processes a call originating from a subscriber or trunk to a called directory number (DN) of a subscriber ported out of the given BTS 10200 donor switch to a recipient switch. In some cases, the donor switch may also be the originating or intermediate switch.
- **Recipient Switch**—Receives a call originating from a subscriber or trunk and has a called DN of a subscriber ported in to the given BTS 10200 Softswitch. In some cases, the recipient switch may also be the originating switch.
Query Types

The BTS 10200 performs queries of the LNP database in order to route a call. It may also be configured to perform queries for another backward switch that is not capable of LNP queries.

ITU LNP supports the following query types:

- **All Calls Query (ACQ)**—An LNP query is performed by the BTS 10200 on all originating calls by BTS subscribers. In some cases, the BTS performs an ACQ for another switch that does not have the capability. This method is efficient for networks with many ported subscribers.

- **Query On Release (QOR)**—A call is routed without a query. When it reaches the donor switch, the call is released backward with the QOR cause code of OOR: Ported Number (14). The originating switch receives the REL with QOR, performs the LNP query, and routes the call on to the recipient switch. This method is efficient for networks with few ported subscribers.

- **Onward Donor Based Routing (ODBR)**, also known as Onward Call Routing (OCR)—LNP queries are only performed in a donor switch when it is determined that the called party is ported-out of the switch. The donor switch performs the query and routes the call onward to the recipient switch. This method is efficient for networks with very few ported subscribers.

### All Calls Query (ACQ)

All Calls Query (ACQ), shown in Figure 1, usually applies to a subscriber origination (originating switch). A subscriber is ported out of the donor switch and ported in to the recipient switch. The ACQ query is performed on the originating switch before routing the call directly to the recipient switch. The originating switch queries the LNP database for the routing number of the ported switch.

**Figure 2-7 All Calls Query**

1. Query
2. RN=4003
3. IAM
4. RN: 40 03

- ACQ returns RN of recipient switch
- IAM CdPN: NOA=8, 4003 7034841000
- Call routed to ported-in subscriber

ACQ might also be performed by an intermediate or donor switch for another switch or network.
Intermediate or Donor Switch Performs ACQ for Another Switch or Network

The BTS 10200 may be required to perform ACQ for another switch that does not have that capability. For example, an international gateway exchange may not have access to the local country LNP database, so the ACQ is performed at the point of interconnect (POI) by the intermediate switch.

To configure the BTS to perform ACQ on incoming calls from a particular trunk group, set the ALL-CALL-QUERY=Y in the LNP Profile table and the token PERFORM-LNP-QUERY=Y in the incoming Trunk Group table.

A query will then be performed on each call received from that trunk group unless not allowed by the destination used for a particular call. For more information, see the Destination Table ACQ Controls section.

Destination Table ACQ Controls

- **ACQ-LNP-QUERY=NA** in the Destination table is used when an ACQ is not applicable, for example, when the country does not support LNP or ACQ or when the operator does not want the Destination table to have any affect on LNP queries as configured in the LNP Profile and Trunk Group tables.

- **ACQ-LNP-QUERY=LNP-QUERY-BASED-ON-CALL-TYPE** in the Destination table is provided to allow or prevent ACQ queries for certain call types. For example, LNP queries should not be performed for emergency calls. When ACQ-LNP-QUERY=LNP-QUERY-BASED-ON-CALL-TYPE, in the Destination table, the value of the LNP-QUERY token in the Call Type Profile table determines whether a query will be allowed for a given call type (and the value of the PERFORM-LNP-QUERY in the Trunk Group table, if the call is an incoming trunk group).

Note For call types EMG, FIRE, POLICE, or AMBULANCE an ACQ query will not be performed under any circumstances.

- **ACQ-LNP-QUERY=PERFORM-LNP-QUERY** and **ACQ-LNP-QUERY=NO-LNP-QUERY**—ACQ queries are performed for a subset of calls based on the called number prefix. To support this requirement, ALL-CALLS-QUERY=Y in the LNP Profile table. In addition, calls to the specific prefixes requiring ACQ have dial-plan entries pointing to destinations with ACQ-LNP-QUERY, in the Destination table, set to PERFORM-LNP-QUERY. For calls to these ACQ destinations, if the call originates on a trunk, then the Trunk Group table PERFORM-LNP-QUERY also must be set to 'Y' for a query to be performed.

- **ACQ-LNP-QUERY=NO-LNP-QUERY**—There is a requirement to block queries on outgoing carrier calls. The value ACQ-LNP-QUERY=NO-LNP-QUERY, in the Destination table, indicates that a query will not be performed on any call to this destination.

ACQ and Call Forwarding

A call to a BTS subscriber may be forwarded to another number, for example, in the case of CFU, CFB, or CFNA. For the purposes of LNP, the forwarded call is considered a new subscriber origination, and the switch where the forwarding occurs is the originating switch. If ACQ is configured, a query is performed on the forwarding leg using the forwarded-to DN.
ACQ Matrix

Table 2-1 and Table 2-2 illustrate which token combinations result in a query. In general, a query must be allowed at all applicable levels for a query to be performed. For each row in the table, the particular combination of LNP-Profile table ALL-QUERY=Y/N, Destination table ACQ-LNP-QUERY value, plus Call Type Profile value, where applicable, result in a BTS ACQ query being performed or not performed.

Table 2-1  Subscriber Origination ACQ Matrix

<table>
<thead>
<tr>
<th>LNP Profile ALL-CALL-QUERY</th>
<th>Destination ACQ-LNP-QUERY = NA</th>
<th>Destination ACQ-LNP-QUERY = PERFORM-LNP-QUERY</th>
<th>Destination ACQ-LNP-QUERY = NO-LNP-QUERY</th>
<th>Destination (ACQ-LNP-QUERY = ACQ-BASED-ON-CALL-TYPE) and (Call-Type-Profile for call type LNP-QUERY = Y)</th>
<th>Destination (ACQ-LNP-QUERY = ACQ-BASED-ON-CALL-TYPE) and (Call-Type-Profile for call type not present or LNP-QUERY = N)</th>
<th>BTS ACQ Query Performed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>X</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Y</td>
<td>X</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
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<td>N</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>X</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>
### Table 2-2  Trunk Origination ACQ Matrix

<table>
<thead>
<tr>
<th>LNP Profile</th>
<th>Incoming Trunk Grp</th>
<th>Destination ACQ-LNP-QUERY = NA</th>
<th>Destination ACQ-LNP-QUERY = PERFORM-LNP-QUERY</th>
<th>Destination ACQ-LNP-QUERY = NO-LNP-QUERY</th>
<th>Destination (ACQ-LNP-QUERY = ACQ-BASED-ON-CALL-TYPE) and (Call-Type-Profile for call type LNP-QUERY = Y)</th>
<th>Destination (ACQ-LNP-QUERY = ACQ-BASED-ON-CALL-TYPE) and (Call-Type-Profile for call type LNP-QUERY = N)</th>
<th>BTS ACQ Query Performed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL-CALL-QUERY</td>
<td>PERFORM-LNP-QUERY</td>
<td>Y</td>
<td>X</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>ALL-CALL-QUERY</td>
<td>PERFORM-LNP-QUERY</td>
<td>Y</td>
<td>X</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>ALL-CALL-QUERY</td>
<td>PERFORM-LNP-QUERY</td>
<td>Y</td>
<td>X</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>ALL-CALL-QUERY</td>
<td>PERFORM-LNP-QUERY</td>
<td>Y</td>
<td>X</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>ALL-CALL-QUERY</td>
<td>PERFORM-LNP-QUERY</td>
<td>Y</td>
<td>X</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>ALL-CALL-QUERY</td>
<td>PERFORM-LNP-QUERY</td>
<td>Y</td>
<td>X</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>ALL-CALL-QUERY</td>
<td>PERFORM-LNP-QUERY</td>
<td>Y</td>
<td>X</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>ALL-CALL-QUERY</td>
<td>PERFORM-LNP-QUERY</td>
<td>Y</td>
<td>X</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>ALL-CALL-QUERY</td>
<td>PERFORM-LNP-QUERY</td>
<td>Y</td>
<td>X</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
Query On Release (QOR)

For Query on Release (QOR), illustrated in Figure 2-8, calls are routed normally, with no LNP query, until a call is received for a ported-out subscriber at the donor switch. The donor switch supporting QOR clears the call and sends backward release (REL) with the QOR cause code specified by the network, cause value QOR: Ported Number (14) in ITU/ETSI networks. Each intermediate/transit switch in turn clears backward with the same QOR release cause until finally the originating switch receives the backward REL. This originating switch performs the QOR query and re-routes the call onward towards the recipient switch.

Figure 2-8   Query On Release

A BTS is configured for QOR when the LNP Profile Table’s QUERY-ON-RELEASE token is set to Y.

For a call attempting to terminate to a ported-out subscriber (donor switch), ODBR will take precedence over QOR. For a subscriber origination (originating switch), ACQ takes precedence over QOR, so the call will be initially correctly routed to the recipient switch, and no REL with cause value QOR: Ported Number (14) will be received (other than for a network routing error).

The BTS performs one of the following functions for QoR:

- Donor Switch
- Intermediate or Transit Switch
- Originating Switch
Donor Switch

- Normal case—When the BTS receives a call to a DN with a DN2subscriber record, if the STATUS has a value of PORTED-OUT, and if the LNP Profile table indicates QUERY-ON-RELEASE=Y, then a backward release (REL) is sent with the QOR ported number release cause defined in the LNP Profile table (defaults to cause value QOR: Ported Number (14)).

- QOR not supported by backward switch—For a trunk originated call to a ported-out subscriber, the incoming trunk group may indicate that QOR is not supported by the previous switch or network and that the BTS is expected to perform the QOR query (LNP Profile table QUERY-ON-RELEASE=Y and Trunk Group table PERFORM-LNP-QUERY =Y). In this case, a QOR query is performed by the BTS and the call is re-routed onward to the recipient switch.

- Misrouted call or configuration error—If the dn2subscriber record STATUS has a value of PORTED-OUT, but the LNP Profile table QUERY-ON-RELEASE=N and ONWARD-CALL-ROUTING=N, a network routing error has occurred (for example, the CRD LNP database is incorrect, the originating switch performing ACQ misrouted the call, or the BTS DN2subscriber or LNP Profile flags are incorrect). For a misrouted call where the CdPN contained a regular non-ported DN, the BTS will clear the call with a non-LNP release cause indicating an unallocated number; otherwise, if the CdPN contained the ported NOA as a result of the incoming trunk call or subscriber origination on this switch, then the cause misrouted ported number is used.

Intermediate or Transit Switch

- Normal case—When the BTS receives a backward REL with the QOR ported number release cause, the BTS clears the call and sends a backward REL with the same release cause.

- QOR not supported by backward switch—If the incoming trunk group indicates that QOR is not supported by the previous switch or network and that the BTS is expected to perform the QOR query (LNP Profile table QUERY-ON-RELEASE=Y and Trunk Group table PERFORM-LNP-QUERY=Y), a QOR query is performed by the BTS and the call is re-routed onward to the recipient switch.

Originating Switch

- Normal case—When the BTS receives a backward REL with the QOR ported number release cause, if the LNP Profile table QUERY-ON-RELEASE=Y, a query is preformed. The call is then re-routed onward to the recipient switch.

- When the BTS receives a backward REL with cause QOR: Ported Number (14), if the LNP Profile table QUERY-ON-RELEASE=N, this cause value is not defined as a QOR ported number cause value.

- When the BTS receives a backward REL with the QoR ported number release cause, and the LNP Profile table QUERY-ON-RELEASE=Y, if the BTS determines that a query was done previously (ACQ) which did not find an RN and the call was routed with the DN, the call is cleared with a cause unallocated number.

- When the BTS receives a backward REL with the QOR Ported Number release cause, if the BTS determines that a query was done previously (ACQ) that returned an RN, and the call was routed using the RN and NOA for ported number, then the call is cleared with a cause 31 unspecified. This case is normally not expected to occur. If the BTS is the donor switch in this case and receives a called party number with ported NOA, then REL with cause unallocated number is sent back to the originating switch. Cause QoR: Ported Number (14) is not used for an incoming call containing a ported number NOA.
Intermediate or Donor Switch Performing QoR for Another Switch or Network

For QoR, the LNP query is only done on the originating switch, unless the BTS is required to perform the QoR query for another switch that does not have that capability. For example, an international gateway exchange may not have access to the local country-specific LNP database, so the query is performed by the intermediate switch.

QoR and Call Forwarding

A call terminating to a BTS subscriber may be forwarded to another number, for example, in the case of CFU, CFB, or CFNA. In the case of LNP, the forwarded call is considered a new subscriber. If a backward REL with the ported number release cause is received, and QoR is configured, a query is performed to route the forwarding leg to the new recipient switch.

Onward Donor Based Routing (ODBR)

For ODBR, also known as Onward Call Routing (OCR), LNP queries are performed in a donor switch. The called party number is used to access the DN2subscriber table and, if the STATUS=PORTED-OUT or LNP-TRIGGER=Y, an LNP query is performed. After the query, the donor switch routes the call onward to the recipient switch.

ODBR is illustrated in Figure 2-9.

Figure 2-9  ODBR Routing
Subscriber Based LNP Trigger on a Donor Switch

The LNP-TRIGGER token in the DN2subscriber table is an alternative to porting by changing the DN2subscriber STATUS token to PORTED-OUT. It allows a seamless transition on a donor switch. However, it is not recommended if porting procedures normally require provisioning changes at the time the porting becomes effective.

During the transition period of a local subscriber porting out, the DN2subscriber record LNP-TRIGGER token may be set to Y, which forces an LNP query to determine whether the LNP database indicates the subscriber’s DN is ported out or not.

If the LNP query returns an RN for a different switch, then the subscriber has ported out. In this case, if the switch performs ODBR queries, then the call is routed onward to the recipient switch; otherwise, if the switch is configured for QoR queries, then the donor switch sends backward REL with the QoR cause code.

If the LNP query does not find an RN, or returns the RN of this switch, then the subscriber is not ported yet (or has ported out and back in again), so the call is routed to the subscriber.

The subscriber-based LNP trigger makes it easy for the operator because configuring of the subscriber ported status is not required to be synchronized with the porting window. The operator sets the subscriber query (LNP-TRIGGER) flag in advance of the porting time window and can set the subscriber STATUS to PORTED-OUT sometime later, after the porting.

Note

The LNP-TRIGGER flag is not applicable for ACQ.

Example 1: QoR Donor Transition Period

Figure 2-10 and Figure 2-11 illustrate a call scenario for a QoR donor transition period. In Figure 2-10, the subscriber is ported out, the LNP-TRIGGER token has been set to Y, and the local database has no entry.
Figure 2-10  Before Subscriber Porting

1. The originating switch sends an IAM to the donor switch with NOA=3 and DN=7034841000.
2. In the DN2subscriber table on the donor switch, STATUS=ASSIGNED and LNP-TRIGGER=Y. Since the LNP-TRIGGER=Y, the donor switch performs a query.
3. The query does not return a RN to the donor switch, indicating that the subscriber is not yet ported out.
4. The donor switch routes the call to the local subscriber.
Example 2: QOR Donor Transition Period

In Figure 2-11, it is after the start of the porting window. The subscriber is ported out, and the LNP-TRIGGER token has been set to Y. The local database now shows the subscriber as ported out (contains an RN for the subscriber).

Figure 2-11 After Subscriber Porting

1. The originating switch sends an IAM to the donor switch with NOA=3 and DN=7034841000.
2. In the DN2subscriber table on the donor switch, STATUS=ASSIGNED and LNP-TRIGGER=Y. Since the LNP-TRIGGER=Y, the donor switch performs a query.
3. The query returns RN=4003.
4. The donor switch sends REL cause QoR: Ported Number (14) to the originating switch.
5. The originating switch performs an LNP query of it’s local database.
6. The query returns RN of the recipient switch.
7. The originating switch sends an IAM to the recipient switch.
**Precedence of Query Types**

Operators can choose different options among ACQ, ODBR, QoR, or a combination of these. Countries starting with only ODBR or QoR may eventually transition to ACQ as more numbers become ported. Therefore, during the transition, a given network or switch may be a combination of ACQ plus QoR or ACQ plus ODBR.

The BTS LNP Profile tokens for ALL-CALLS-QUERY (ACQ), ONWARD-CALL-ROUTING (ODBR), and QUERY-ON-RELEASE (QoR) give the operator complete flexibility to configure the BTS for any possible combination in a mixed network by simply changing the LNP Profile tokens.

In general, ACQ takes precedence over ODBR, which takes precedence over QoR, and finally LNP-TRIGGER. Note that a query due to ODBR or QoR requires the called DN status, in the dn2subscriber table, to be PORTED-OUT. Note that for a query to result from LNP-TRIGGER=Y, the dn2subscriber status cannot be PORTED-OUT (and either the ONWARD-CALL-ROUTING or QUERY-ON-RELEASE must be Y).

Table 2-3 illustrates query type precedence. The first five columns indicate configuration values, and the last four columns indicate whether a query is performed or another action, such as sending a REL for QoR, on the respective originating, intermediate, donor, and recipient switches. Note the following for Table 2-3:

- N values (for example, LNP Profile table ALL-CALL-QUERY=N) is shown as a blank cell in the table, to improve readability.
- ODBR indicates an all call query is performed, and the call is routed onward to the recipient switch.
- REL indicates the donor switch detects that the subscriber is ported-out, so the call is cleared (REL with cause QoR: Ported Number (14)).
- REL QOR indicates the originating switch receives REL with cause QoR: Ported Number (14), does a query, and routes the call onward to the recipient switch.
### Table 2-3 Precedence of Query Matrix

<table>
<thead>
<tr>
<th>LNP Profile ALL-CALL-QUERY</th>
<th>LNP Profile ONWARD-CALL-Routing</th>
<th>LNP Profile QUERY-ON-RELEASE</th>
<th>DN2SUBSCRIBER status PORTED-OUT</th>
<th>DN2SUBSCRIBER LNP-TRIGGER (and not PORTED-OUT)</th>
<th>Trunk Grp PERFORM-LNP-QUERY</th>
<th>Originating Switch Query?</th>
<th>Intermedia te Switch Query?</th>
<th>Donor Switch Query?</th>
<th>Recipient Switch Query?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Y</td>
<td>Y</td>
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<td>Y</td>
<td>Y</td>
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<td>Y</td>
<td>Y</td>
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<tr>
<td>Y</td>
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<td>Y</td>
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<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1: case A: Donor switch dn2subscriber LNP-TRIGGER=Y and dn2subscriber STATUS=PORTED-OUT with ONWARD-CALL-ROUTING=Y: ODBR query. If query result returns an RN, then the if the RN is for another switch the call routed onward to the recipient switch; otherwise, the call cannot be routed to the ported-out subscriber, so the call fails with unallocated number cause.

Note 2: case A: Donor switch dn2subscriber LNP-TRIGGER=Y, but not ODBR or QoR. Route call to subscriber with no query.
Dial Plan and Nature of Address Routing

In some countries, there may be an overlap between the RNs and the leading digits of a DN, that is, the beginning digits of an RN and DN may be the same. The NOA is used to distinguish a DN from a concatenated RN + DN combination. A new capability, NOA routing, is added to the BTS 10200 for LNP in order to associate different dial plans for DN routing and RN routing.

Normal dial plans for subscriber and trunk originations are used to route to DNs. The new NOA Route table contains ported NOA values and destination IDs which point to RN dial plans.

Examples illustrating NOA routing are provided below. For the dial plan used for the subscriber or trunk origination, the dial-plan-profile table new NOA-ROUTING field is set to ‘Y’, with an associated NOA-ROUTE-PROFILE-ID. The new NOA Route table associated with the NOA Route Profile table has entries for the ported NOA. The NOA Route ITU Q.769 value ‘8’, specified as PORTED-NUMBER-WITH-RN in the NOA Route table entry). If a matching NOA is found in the NOA ROUTING table, then the destination in the NOA Routing entry is used to route the call, and possibly point to a new dial plan for routing based on the RN. The following call scenarios show how this works:

Normal routing for Called Party Number with a Non-Ported Nature of Address with Directory Number

An incoming trunk call is received with the Called Party Number containing the NOA associated with a DN. There will be no matching entry in the NOA Route entry. The normal dial-plan associated with the incoming trunk group is used to route the call.

Routing Number Routing for Called Party Number With Ported Nature of Number and Routing Number + Directory Number

An incoming trunk call is received with the Called Party Number containing the NOA associated with a ported DN. There will be a matching entry in the NOA Route entry and a destination ID. That is, the NOA Route entry with NOA of PORTED-NUMBER-WITH-RN (which is the value associated with NOA ITU Q.769 value 8). This destination ID may then contain a dial-plan ID for a dial plan for RN routing.

Local Number Portability Query Returns Routing Number for Ported Directory Number

When the BTS 10200 performs an LNP query and finds an RN for a ported number that is not in this switch, the call is routed onward. The dial-plan-profile associated with the originating subscriber or trunk has NOA-ROUTING=Y, and the NOA Route Profile ID of the NOA Route that contains a destination ID. Note that for a country such as France, which uses an RN prefix but with a standard NOA (3, National), after an LNP query on the BTS 10200, digit manipulation must be used to replace the NOA value ported-number with RN value to national.
Cluster Routing

A cluster is defined as two or more Cable Management Servers (CMSs) along with Media Gateway Controllers (MGCs) (or combined CMS/MGCs) deployed within a network. The cluster appears as one logical CMS/MGC looking towards the Public Switched Telephony Network (PSTN). The following assumptions are made:

- Each CMS, MGC, or combined CMS/MGC has its own SS7 Point Code.
- A Trunk Group cannot be split across multiple MGCs.
- All CMSs within a cluster share a common Location Routing Number (LRN) (referred as Cluster LRN)
- The npa-nxx of the ported-in numbers is not split across multiple CMSs (unless there is a NRS in the network)
- The subscriber DNs cannot be ported-out within a cluster.

A Cluster LRN is a shared LRN across multiple CMS/MGCs within a cluster.

When a call with cluster LRN is received by one of the CMSs (or MGCs) within a Cluster, the call is routed to the terminating CMS by a SIP route proxy with ENUM querying capability or by the npa-nxx of the called number.

For Automatic Recall (AR) and Automatic Callback (AC) feature support, the ITP will performs 6-digit GTT (npa-nxx) to route AR or AC requests to the appropriate CMS.

The CLRN is treated as admin-DN for purposes of NRUF reporting.

Figure 2-12 illustrates the cluster routing scenarios.
Subscriber Originated Call at CMS

When a subscriber originates a call and the dialed DN is not within the CMS, the call processing logic performs an LNP query if required. Here are the call processing steps:

**Step 1** If dialed DN exists in the Dn2Subscriber table and unconditional LNP Trigger is not set and status not equal to ported-out, then complete the call locally to the dialed DN. If status is not equal to assigned, then provide necessary treatment (e.g. changed number, disconnect number, etc.).

**Step 2** If dialed DN exists in the Dn2Subscriber table with unconditional LNP Trigger set (LNP-TRIGGER=Y), then perform LNP query.
- If received LRN is MY-LRN or CLRN, then complete the call locally to the dialed DN else route the calls based on the LRN.
- If no LRN is returned and route-type=SUB in the Destination table, then complete the call locally to the dialed DN else route the call based on the Dialed DN.

**Step 3** If dialed DN exists in Dn2Subscriber table and status = ported-out, then perform LNP query. The call is routed based on the received LRN. If My-LRN or CLRN is received, treat it as an error condition.

**Step 4** If dialed DN does not exist in the BTS (after an LNP query is completed), the LRN Type is MY-LRN and the call is rejected.

**Step 5** If dialed the DN does not exist in the BTS and the ROUTE-TYPE=SUB in the Destination table, then provide unallocated number treatment.
**Routing Types**

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**Step 6** If dialed DN does not exist in BTS and LRN Type is CLRN, then call is routed based on the dialed DN and not the CLRN. If Cluster Dial Plan ID is provisioned, then retranslate the call based on npa-nxx of the dialed number using Cluster Dial Plan ID. Otherwise route the calls based on the original Dial Plan ID.

**Note** If a SIP route proxy is included in the cluster, then Cluster Dial Plan ID is not required. The subscriber dial plan ID should point all outgoing calls towards the SIP route proxy.

**Note** In any case, the call should be routed with LNP information (M-bit, GAP, RN).

**Step 7** If the dialed DN does not exist in BTS and,
- If the received LRN is not MY-LRN or CLRN, then the call is routed based on the received LRN.
- If and LNP query is performed, but no LRN is received, then the call is routed based on the dialed number.
- If no LNP query is performed, then the call is routed based on the dialed number

**Note** For information on CMS-to-MGC routing, see the “LERG, TNS, and Additional SIP Extensions for CMS-MGC Separation” section on page 3-25.

**Call Processing at Terminating CMS/MGC**

Here are the call processing steps at the terminating CMS (or combined CMS/MGC):

**Step 1** When an inbound call is received over an intra-cluster TG and the LRN Type is MY-LRN or CLRN, and DN appears in the DN2Subscriber table, then complete the call locally.

**Step 2** When an inbound call is received over an intra-cluster TG and LRN Type is MY-LRN or CLRN and DN does not appear in the DN2Subscriber table, and the ROUTE-TYPE does not equal SUB, then return cause code (26), misrouted ported number.

**Step 3** When an inbound call is received over an intra-cluster TG with MY-LRN or CLRN, and DN does not appear in the DN2Subscriber table, and the ROUTE-TYPE equals SUB, then return cause code (1), unallocated number.

**Step 4** When an inbound call is received over an intra-cluster TG and LRN Type is NOT MY-LRN or CLRN, then route the call based on the Called Party Number (CdPN).

**Step 5** When an inbound call is received over an offnet TG and LNP query has not been performed by the originating CMS, then the MGC performs an LNP query if required. The calls are routed as specified in the Inbound Call Processing at MGC from PSTN section.
Inbound Call Processing at MGC from PSTN

Note

IntraCluster TG flag is NOT set here.

Inbound Call Processing at MGC from PSTN

The call processing steps at an MGC are very similar to those for the originating CMS. The call routing is configured based on the origin of the call. If the call originates from PSTN, configure the BTS as follows:

Step 1 If CLRN is received and the dialed DN (GAP number) exists in the DN2Subscriber table, then terminate the call locally.

Step 2 If CLRN is received, route the call based on the npa-nxx of the dialed DN (GAP number) using Cluster Dial Plan ID if exists or the original dial plan ID assigned to the inbound TG.

Step 3 If an MY-LRN is received, then the dialed DN must belong to the BTS. Terminate the call to the dialed DN within the BTS (existing processing).

Step 4 If no LRN is received, route the call based on the npa-nxx of the CdPN.

Step 5 If an inbound call is received from PSTN and LNP query has not been performed, the MGC performs an LNP query if required. The calls are routed as follows:

- If CLRN is received, then see Steps 1 and 2.
- If MY-LRN is received, see Step 3.
- If no-LRN is received, see Step 4.
- If LRN TYPE is NOT MY-LRN or CLRN, the call is routed based on the received LRN.

Note

If the digits could not be found in the cluster dial plan or the default dial plan, the call is torn down.

Support for ietf Trunk Group Draft

The BTS is enhanced to support standards-based TGID for SIP trunks without affecting the existing proprietary TGID feature. The draft-ietf-iptel-trunk-group-08.txt specifies support for both originating and terminating trunk groups. Only originating trunk groups are supported in BTS Release 5.0. The originating trunk group is specified in the trunk group parameter in a SIP contact header.

Define DN as a Cluster LRN

A the DN status = CLRN is defined in the Dn2Subscriber table. The CLRN indicates to call processing that this is a cluster LRN (CLRN).
DN2Subscriber

The Element Management System (EMS) automatically generates this table. A user can show data or change the Status field to VACANT if it is in the disconnected (DISC) or connected (CN) state. The DN2Subscriber table determines the subscriber ID of a DN during termination processing. The table is populated when a subscriber DN is added to the Subscriber table. The table is queried when the called number is translated using the dial plan and the type of subscriber field indicates Subscriber, that is, it takes a DN and maps it to a subscriber. The DN2Subscriber table also consists of the administrative status of the DN. The DN can be in one of the states described in Table 2-4.

Table 2-4  DN States

<table>
<thead>
<tr>
<th>State</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>VACANT</td>
<td>The DN is unassigned. An Unassigned DN announcement is played. A typical announcement is “The number you dialed is not in service. Please check the number and try again.” The cause code for this state is #1.</td>
</tr>
<tr>
<td>ASSIGNED</td>
<td>The DN is assigned to a subscriber.</td>
</tr>
<tr>
<td>CN</td>
<td>The DN status is marked as changed number (CN) when the subscriber requests a new number. A Changed Number announcement is played in this state. A typical announcement is “The called number has changed, the new number is ….” The cause code for this state is #22.</td>
</tr>
<tr>
<td>DISC</td>
<td>The DN is disconnected. A Disconnected Number announcement plays. A typical announcement is “We’re sorry, you have reached a number that has been disconnected or is no longer in service…” The cause code for this state is #27.</td>
</tr>
<tr>
<td>LRN</td>
<td>The DN has been reserved as an Location Routing Number (LRN) on this Call Agent.</td>
</tr>
<tr>
<td>RACF-DN</td>
<td>The DN has been reserved for remote activation of call forwarding (RACF) feature.</td>
</tr>
<tr>
<td>TEST-LINE</td>
<td>The DN has been assigned to a test line.</td>
</tr>
<tr>
<td>ANNC</td>
<td>The DN points to an announcement (ANNC) ID.</td>
</tr>
<tr>
<td>PORTED-OUT</td>
<td>The subscriber ported (moved) out of the Call Agent and chose to keep their DN (local number portability).</td>
</tr>
</tbody>
</table>

Table Name: DN2SUBSCRIBER
Table Containment Area: EMS, CA, FSPTC

Command Types

add, audit, change, delete, help, show, sync

Caution

The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.
Examples

For the following commands, enter all 10 digits of the subscriber DN. While the DN token in this table uses only the last four digits for DN purposes, the first six are converted for the office-code-index.

```plaintext
show dn2subscriber office-code-index=6; dn=2355;
show dn2subscriber start-time=yyyy-mm-dd; end-time=yyyy-mm-dd; (shows all records with the specified date or earlier)
add dn2subscriber office-code-index=6; dn=2355; status=annc; annc-id=250;
change dn2subscriber office-code-index=6; dn=2355; status=vacant;
delete dn2subscriber office-code-index=6; dn=2355;
delete dn2subscriber status=disc; start-time=yyyy-mm-dd; end-time=yyyy-mm-dd; (deletes all records within the specified range)
```

Usage Guidelines

Primary Key Token(s): office-code-index, dn
Foreign Key Token(s): office-code-index, annc-id, sub-id
Add Rules: ported-out status only if npa-nxx appears in the ported-office-code table.
Delete Rules: office-code-index must exist.
Range Provisioning Rules:

<table>
<thead>
<tr>
<th>STATUS</th>
<th>VACANT</th>
<th>The SUB-ID must be NULL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unassigned DN.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ASSIGNED (System Generated)</td>
<td>SUB-ID is NOT NULL</td>
</tr>
<tr>
<td></td>
<td>DN is assigned; check the subscriber data to see the status.</td>
<td></td>
</tr>
<tr>
<td>CN</td>
<td>Changed Number.</td>
<td>The SUB-ID must be NULL</td>
</tr>
<tr>
<td>DISC</td>
<td>Disconnected number.</td>
<td>The SUB-ID must be NULL</td>
</tr>
<tr>
<td>LRN</td>
<td>Location Routing Number. If DN is assigned as an LRN, use the GAP parameter to complete call.</td>
<td>The SUB-ID must be NULL</td>
</tr>
<tr>
<td>CLRN</td>
<td>Cluster LRN.</td>
<td>The SUB-ID must be NULL</td>
</tr>
<tr>
<td>RACF-DN</td>
<td>DN for remote activation of Call Forwarding.</td>
<td>The SUB-ID must be NOT NULL</td>
</tr>
<tr>
<td>TEST-LINE</td>
<td>DN assigned to test lines.</td>
<td>The SUB-ID must be NULL</td>
</tr>
</tbody>
</table>
### Chapter 2      Routing

#### Routing Types

**ANNC**
- The SUB-ID must be NULL
- DN points to an announcement.
- ANNC-ID is NOT NULL

**PORTED-OUT**
- The SUB-ID must be NULL
- The DN has ported out of the Call Agent.
- Ported-out status occurs only if NPA-NXX appears in the ported-office-code table.

**Note**

PBX-DID Provisioning
To provision PBX-DID subscribers, the DN2Subscriber table must be manually provisioned. The DN2Subscriber table can support groups of 10, 100, 1000, or 10,000 directory numbers. The format of the DN is nnnn where n = 0–9. To provide a range of DNs, replace n with a lowercase x. If the last digit is replaced with an x, it represents a group of 10 DNs. An xx represents 100 DNs, xxx represents 1000 DNs, and xxxx represents 10,000 DNs.

**Examples:**

- `add dn2subscriber office-code-index=1; DN=xxxx; sub-id=pbx1@ca1.cisco.com;` (10,000 DNs)
- `add dn2subscriber office-code-index=1; DN=2xxx; sub-id=pbx1@ca1.cisco.com;` (1,000 DNs)
- `add dn2subscriber office-code-index=1; DN=23xx; sub-id=pbx1@ca1.cisco.com;` (100 DNs)
- `add dn2subscriber office-code-index=1; DN=235x; sub-id=pbx1@ca1.cisco.com;` (10 DNs)

- **PORTED-OUT**
- The DN has ported out of the Call Agent.
- Ported-out status occurs only if NPA-NXX appears in the ported-office-code table.
### Syntax Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADMIN_DN</strong></td>
<td>Specifies an administrative DN. This token is set if the subscriber category is IVR or RACF; if set, it is considered an administrative DN and used for Number Resource Utilization and Forecast (NRUF) reporting. This token can also be set if the DN is assigned as a virtual number for the Multiple Directory Number (MDN) feature. DNs whose status in the DN2 Subscriber table is one of the following are considered administrative DNs: LRN—Location Routing Number. DN is assigned as an LRN. TEST-LINE—DN is assigned to a test line. ANNC—DN is assigned to an announcement.</td>
<td>CHAR(1): Y/N (Default = N). Valid for Command: show Default Value: N Possible Value: Y, N Parser: BooleanParser</td>
</tr>
<tr>
<td><strong>ANNNC_ID</strong></td>
<td>Mandatory if status = annc. Foreign key: Announcement table. Announcement ID associated with the dialed DN. Must match ID in the Announcement table. If status = annc then annc-id cannot be null—else it must be null.</td>
<td>SMALLINT: 1-1000. Valid for Command: add, change, show Possible Value: [1_1000] Parser: DecimalParser</td>
</tr>
<tr>
<td><strong>AUTO_REFRESH</strong></td>
<td>Specifies whether to display cached data on the screen. Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable.</td>
<td>CHAR(1): Y/N (Default = Y). Valid for Command: show Default Value: Y Possible Value: Y, N Parser: BooleanParser</td>
</tr>
<tr>
<td><strong>CWT_TYPE</strong></td>
<td>Call Waiting Tone type. For Multiple DN (MDN) feature, a different Call Waiting Tone Type can be assigned to each DN.</td>
<td>VARCHAR(8): WT1, WT2, WT3, WT4 (Default = WT1). Valid for Command: add, change, show, sync, audit Default Value: WT1 Possible Value: WT1, WT2, WT3, WT4 Parser: TextParser</td>
</tr>
<tr>
<td>Token</td>
<td>Description</td>
<td>Type</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>------</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Specifies what token information to display on the screen. VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
<td>VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Possible values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
</tr>
<tr>
<td>DN</td>
<td>Mandatory if from-dn, to-dn or fdn is not specified. Primary key. Last one to four digits of the directory number assigned to a subscriber in the Subscriber table. These become the DNs for that particular Call Agent. CHAR(4): 1-4 characters in one of the following formats: For one digit: n or x. For two digits: nn, nx, or xx. For three digits: nnn, nnx, nxx, or xxx. For four digits: nnnn, nnxx, nxxx, or nxxx. Where n = numeric digit 0-9, and x (x is lowercase) is used as a wildcard representing a group of 10, 100, or 1000 DNs.</td>
<td>CHAR(4): 1-4 characters in one of the following formats: For one digit: n or x. For two digits: nn, nx, or xx. For three digits: nnn, nnx, nxx, or xxx. For four digits: nnnn, nnxx, nxxx, or nxxx.</td>
</tr>
<tr>
<td>END_TIME</td>
<td>Valid only for show and delete commands. Used to show or delete a range of records that were created or modified based on the LAST-CHANGED token. DATE: YYYY-MM-DD</td>
<td>DATE: YYYY-MM-DD</td>
</tr>
<tr>
<td>FROM_DN</td>
<td>The from DN. Used with the to-dn token to provision a range of DNs. VARCHAR(16): 1-16 numeric digits.</td>
<td>VARCHAR(16): 1-16 numeric digits.</td>
</tr>
</tbody>
</table>
### LIMIT
Description: Specifies the number of rows to display on the screen.

INTEGER: 1-100000000 (Default = 100000000).

Valid for Command: show
Default Value: 100000000
Possible Value: [1_100000000]
Parser: DecimalParser

### LNP_TRIGGER
Description: If set (Y), perform LNP query. The Lnp-trigger is also called an unconditional LNP trigger. When this token is set, the Cisco BTS 10200 Softswitch unconditionally performs an LNP query. The call is routed based on the LNP response. The Lnp-trigger is used during the transition period when a DN is in-transition to be ported-in or ported-out.

CHAR(1): Y/N (Default = N).

Valid for Command: change, show
Default Value: N
Possible Value: Y, N
Parser: BooleanParser

### MASTER
Valid for Command: sync
Mandatory: sync
Possible Value: [1_10]
Parser: TextParser

### NP_RESERVED
Description: Supports LNP and Number Pooling. If a call is received with the switch LRN and the GAP parameter containing an NP-reserved number, the switch provides the following treatments:

CHAR(1): Y/N (Default = N).

Valid for Command: add, change, audit, sync, show
Default Value: N
Possible Value: Y, N
Parser: BooleanParser

### OFFICE_CODE_INDEX
Description: Primary key. Foreign key: Office Code table. First six digits of the DN are converted to office-code-index.

SMALLINT: 1-65535.

Valid for Command: show, change, add, delete
Possible Value: [1_65535]
Parser: DecimalParser
### ORDER

**Description:** Specifies whether to display data on the screen in a sorted order.

VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.

Valid for Command: show

Possible Value: [1_1024]

Parser: TextParser

### PLATFORM_STATE

**Description:** Audits a shared memory database.

VARCHAR(7): 1-7 ASCII characters. Permitted values are:

- ACTIVE (Default) - System is currently running.
- STANDBY.

Valid for Command: sync, audit

Default Value: ACTIVE

Possible Value: ACTIVE, STANDBY

Parser: TextParser

### PORTED_IN

**Description:** Automatically provisioned when the subscriber is provisioned as ported-in=Y. Not provisionable in this table.

CHAR(1): Y/N (Default = N).

Valid for Command: show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser

### RING_TYPE

**Description:** Specifies the ring type based on the dialed DN.

CHAR(1): R1-R8 (Default = R1).

Values are:

- R1—2 seconds ringing, 4 seconds off
- R2—.5 seconds ringing,.5 seconds ringing, 4 seconds off
- R3—.5 seconds ringing,.5s ringing,.5 seconds ringing, 4 seconds off
- R4—.3 seconds ringing,.2 seconds ringing,.3 seconds ringing,4 seconds off
- R5—.5 seconds ringing, 6 seconds off
- R6—.5 seconds ringing, 1 second ringing,.5 seconds ringing, 4 seconds off
- R7—.5 seconds ringing, 6 seconds off

Valid for Command: add, change, show, sync, audit

Default Value: R1

Possible Value: R0, R1, R2, R3, R4, R5, R6, R7

Parser: TextParser
### START_ROW

**Description:** Specifies to begin displaying data on the screen at a specific row.

- **INTEGER:** 1-100000000 (Default = 1).
- **Valid for Command:** show
- **Default Value:** 1
- **Possible Value:** [1_100000000]
- **Parser:** DecimalParser

### START_TIME

**Description:** Valid only for show and delete commands. Delete command is valid only if status = CN | DISC. Used to show or delete a range of records that were created or modified based on the LAST-CHANGED token.

- **DATE:** YYYY-MM-DD.
- **Valid for Command:** show, delete
- **Possible Value:** [10_10]
- **Parser:** DateParser

### STATUS

**Description:** Status can only be changed to vacant (unassigned). The rest of the values are system-generated by the EMS. Changing a status to unassigned links it to an announcement.

The following tokens can be added, changed, or deleted:

- **VARCHAR(11):** 1-11 ASCII characters. Permitted values are:
  - **VACANT**—Unassigned DN.
  - **ASSIGNED** (System generated)—DN is assigned; check the subscriber data to see the status.
  - **CLRN**—Cluster LRN. If CLRN, the dialed DN can be on this Cisco BTS 10200 Softswitch or any other CMS within the Cluster.
  - **CN**—Changed number.
  - **DISC**—Disconnected number.
  - **LRN**—Location Routing Number. If DN is assigned as an LRN, use GAP parameter to complete the call.
  - **TEST-LINE**—DN assigned to test lines.
  - **ANNC**—DN points to an announcement.
  - **PORTED-OUT**—DN has ported out of the Call Agent. Ported-out status occurs only if NPA-NXX appears in the ported-office-code table.

- **Valid for Command:** add, change, show
- **Mandatory:** add
- **Default Value:** ASSIGNED
- **Possible Value:** VACANT, ASSIGNED, CN, DISC, LRN, TEST_LINE, ANNC, PORTED_OUT, CLRN
- **Parser:** TextParser
### Routing Types

**SUB_ID**

| Description: Mandatory if status = assigned. Foreign key: Subscriber table. Subscriber ID of the calling DN. |
| VARCHAR(30): 1-30 ASCII characters. Valid for Command: change, add, show |
| Possible Value: [1_30] Parser: TextParser |

**TARGET**

| Description: Specifies the network element to receive the request. |
| VARCHAR(5): 1-5 ASCII characters. Permitted values are: |
| CA—Network identifier of a Call Agent. |
| FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. |

**TO_DN**

| Description: The to DN. Used with the from-dn token to provision a range of DNs. |

**VIRTUAL_DN**

| Description: Virtual directory number. Set if the DN is assigned as a virtual number for the Multiple Directory Number (MDN) feature. |

### Define Cluster Dial Plan ID

When the dialed number is recognized as an intracluster DN (based on the returned LRN), the call is routed within the cluster by translating the npa-nxx of the dialed DN by means of the cluster Dial Plan ID. The cluster Dial Plan ID is defined in the CA_CONFIG table.
Call Agent Configuration

The Call Agent Configuration (ca-config) table defines the values a service provider is allowed to change. The Call Agent Configuration Base defines the defaults for each Call Agent and is used unless the Call Agent Configuration table is added with a different value. See Appendix A, “Call Agent and Feature Server Configurable Parameters” for the values that can be changed.

Table Name: CA_CONFIG
Table Containment Area: EMS, CA, FSPTC, FSAIN

Examples

show ca-config type=susp-tmr;
add ca-config type=susp-tmr; datatype=integer; value=250;
change ca-config type=susp-tmr; datatype=integer; value=200;
change ca-config type=batch-mode-supp; value=Y;
change ca-config type=batch-latency; value=240;
delete ca-config type=susp-tmr;

Usage Guidelines

Primary Key Token(s): TYPE

Syntax Description

AUTO_REFRESH Description: Specifies whether to display cached data on the screen.
CHAR(1): Y/N (Default = Y).
Y—Queries the database for the most current data.
N—Queries the database for the most current data only if the cached data is unavailable.
Valid for Command: show
Default Value: Y
Possible Value: Y, N
Parser: BooleanParser

DATATYPE Valid for Command: add, show, change, audit, sync
Possible Value: BOOLEAN, INTEGER, STRING, DIGITS
Parser: TextParser.toUpperCase()

DISPLAY Description: Specifies what token information to display on the screen.
VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
Valid for Command: show
Possible Value: [1_1024]
Parser: TextParser
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Type</th>
<th>Default Value</th>
<th>Possible Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIMIT</td>
<td>Specifies the number of rows to display on the screen.</td>
<td>INTEGER: 1-100000000 (Default = 100000000)</td>
<td>100000000</td>
<td>[1_100000000]</td>
</tr>
<tr>
<td>MASTER</td>
<td>Valid for Command: sync</td>
<td></td>
<td>sync</td>
<td>[1_10]</td>
</tr>
<tr>
<td>ORDER</td>
<td>Specifies whether to display data on the screen in a sorted order.</td>
<td>VARCHAR(51200): 1-51200 (Default = all rows are displayed)</td>
<td></td>
<td>[1_1024]</td>
</tr>
<tr>
<td>PLATFORM_STATE</td>
<td>Audits a shared memory database.</td>
<td>VARCHAR(7): 1-7 ASCII characters.</td>
<td>ACTIVE</td>
<td>ACTIVE, STANDBY</td>
</tr>
<tr>
<td>START_ROW</td>
<td>Specifies to begin displaying data on the screen at a specific row.</td>
<td>INTEGER: 1-100000000 (Default = 1)</td>
<td>1</td>
<td>[1_100000000]</td>
</tr>
</tbody>
</table>
| TARGET   | Description: Specifies the network element to receive the request.  
|          | VARCHAR(5): 1-5 ASCII characters. Permitted values are:  
|          | CA—Network identifier of a Call Agent.  
|          | FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.  
|          | FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.  
|          | Valid for Command: sync  
|          | Mandatory: sync  
|          | Possible Value: [1_10]  
<p>|          | Parser: TextParser |</p>
<table>
<thead>
<tr>
<th>TYPE</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Description: Mandatory for the change command. Specifies what measurements the traffic subsystem supports.</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(10): 1-10 ASCII characters. Permitted values are:</td>
</tr>
<tr>
<td></td>
<td>AIN-SVC—Advanced Intelligent Network server</td>
</tr>
<tr>
<td></td>
<td>AIN-TOOLS—Advanced Intelligent Network tools</td>
</tr>
<tr>
<td></td>
<td>ANM—Announcement Module</td>
</tr>
<tr>
<td></td>
<td>AUDIT—Audit BILLING—Billing</td>
</tr>
<tr>
<td></td>
<td>CALLP—Call Processing</td>
</tr>
<tr>
<td></td>
<td>CALL-TOOLS—Call tools</td>
</tr>
<tr>
<td></td>
<td>CPU—Computer Processor Unit</td>
</tr>
<tr>
<td></td>
<td>DISK—Disk drive DISK_IO—Disk drive input/output</td>
</tr>
<tr>
<td></td>
<td>DQOS—Dynamic Quality of Service</td>
</tr>
<tr>
<td></td>
<td>EM—Event Messaging (Billing)</td>
</tr>
<tr>
<td></td>
<td>H323—H.323</td>
</tr>
<tr>
<td></td>
<td>INAP—Intelligent Network Application Protocol</td>
</tr>
<tr>
<td></td>
<td>ISDN—Integrated Services Digital Network</td>
</tr>
<tr>
<td></td>
<td>ISUP—ISDN User Part (SS7)</td>
</tr>
<tr>
<td></td>
<td>M3UA—M3UA signaling protocol</td>
</tr>
<tr>
<td></td>
<td>MEMORY—System memory</td>
</tr>
<tr>
<td></td>
<td>MGCP—Media Gateway Control Protocol</td>
</tr>
<tr>
<td></td>
<td>NETWORK_IO—Network input/output</td>
</tr>
<tr>
<td></td>
<td>PCT-TOOLS—PCT tools</td>
</tr>
<tr>
<td></td>
<td>POTS-FS—POTS Feature Server</td>
</tr>
<tr>
<td></td>
<td>SCCP—Signaling Connection Control Part protocol</td>
</tr>
<tr>
<td></td>
<td>SCTP—SCTP signaling protocol</td>
</tr>
<tr>
<td></td>
<td>SIA—SIP interface adapter</td>
</tr>
<tr>
<td></td>
<td>SIM—Service Interaction Manager</td>
</tr>
<tr>
<td></td>
<td>SNMP—Signaling Network Management Protocol</td>
</tr>
<tr>
<td></td>
<td>SUA—SUA signaling protocol</td>
</tr>
<tr>
<td></td>
<td>SYSTEM—System TCAP—Transaction Control Protocol</td>
</tr>
<tr>
<td></td>
<td>TG-USG—Trunk Group usage TSA—TCAP Signaling Adapter (TSA) application</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, show, change, delete, audit, sync</td>
</tr>
<tr>
<td></td>
<td>Mandatory: add, change, delete</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_50]</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser.toUpperCase()</td>
</tr>
</tbody>
</table>
Chapter 2  Routing

Routing Types

Define Intra-cluster TG Flag

The intracluster TG flag is defined in the Trunk Group table. When this flag is set, and calls with MY-LRN or CLRN are received over this TG, the BTS should not reroute the calls to another BTS or to SIP Route Proxy if the DN is not found. Instead, it should return a cause code 1 or 26. For Trunk Group table details, refer to the “Trunk Group” section on page 1-82.

Softswitch Trunk Group Profile Table

The SEND-STD-TRK-GRP-URI token is used to indicate if the trunk group parameters defined by draft-ietf-iptell-trunk-group should be used when an INVITE request and the trunk_sub_grp_type field is set to TGID. The default value is N.

Softswitch Trunk Group Profile

The Softswitch Trunk Group Profile (softsw-tg-profile) table holds all the information specific to a Softswitch trunk, such as id, protocol, indicators and echo suppression. The softsw-tg-profile record can be shared by multiple softswitch trunk groups. An ID must be created in this table before entries can be added to the Softswitch Trunk Group table.

Table Name: SOFTSW_TG_PROFILE
Table Containment Area: EMS, CA

Command Types

add, audit, change, delete, help, show, sync

Caution

The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

show softsw-tg-profile id=softprf1;
add softsw-tg-profile id=softprf1; protocol-type=sip-t;
change softsw-tg-profile id=softprf1; send-cpn=n;
delete softsw-tg-profile id=softprf1;

<table>
<thead>
<tr>
<th>VALUE</th>
<th>Description: The value associated with the datatype.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid for Command: add, show, change, audit, sync</td>
<td></td>
</tr>
<tr>
<td>Mandatory: add, change</td>
<td></td>
</tr>
<tr>
<td>Possible Value: [1_32]</td>
<td></td>
</tr>
<tr>
<td>Parser: TextParser</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 2      Routing

Usage Guidelines

Primary Key Token(s): ID

Add Rules:

- If protocol-type=sip-t; then sipt-isup-ver must be specified.
- The sipt-isup-ver token must be defined in the SIPT ISUP Version Base table.

Delete Rules: ID cannot exist in any trunk-grp::tg-profile-id where tg-type=softsw.

Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
<th>CHAR(1): Y/N (Default = N)</th>
<th>Valid for Command:</th>
<th>Default Value:</th>
<th>Possible Value:</th>
<th>Parser:</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPLY_USER_PRIVACY</td>
<td>Specifies whether to apply user privacy.</td>
<td>Y—If the originator requested privacy, aspects of the calling party information (such as the calling name and number in the From: header) in the initial outbound SIP INVITE is hidden. Privacy is requested when either the calling party name or number have presentation restrictions. N—User level privacy is not applied.</td>
<td>add, change, audit, sync, show</td>
<td>N</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td>AUTO_P_A_ID</td>
<td>Preliminary (proposed) Asserted Identity.</td>
<td>Y—Use PAID if received, else treat FROM header as PAID.</td>
<td>add, change, audit, sync, show</td>
<td>N</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td>AUTO_REFRESH</td>
<td>Specifies whether to display cached data on the screen.</td>
<td>Y—Queries the database for the most current data.</td>
<td>show</td>
<td>Y</td>
<td>Y</td>
<td>BooleanParser</td>
</tr>
</tbody>
</table>

Note: If the USE_PAI_HDR_FOR_ANI token is set to y, the AUTO_P_A_ID=n setting is over-ridden, and PAID value is used.
<table>
<thead>
<tr>
<th>NAME</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
<th>VALIDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>Description: Described by the service provider.</td>
<td>VARCHAR(64)</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(64): 1-64 ASCII characters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_64]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Description: Specifies what token information to display on the screen.</td>
<td>VARCHAR(1024)</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_1024]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIVERSION_HEADER_SUPP</td>
<td>Description: Specifies whether SIP Diversion Header is supported or not. This header conveys diversion information from other SIP user agents and proxies to the called user agent. This information can be used for enhanced features, including Unified Messaging, Third-Party voice mail, and Automatic Call Distribution (ACD). The most common use of the Diversion Header in the Cisco BTS 10200 Softswitch is for call forwarding features.</td>
<td>CHAR(1): Y/N (Default = N).</td>
<td>BooleanParser</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default Value: Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: BooleanParser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTMF_RELAY_METHOD</td>
<td>Description: Specifies which way to send an out-of-band DTMF Relay.</td>
<td>VARCHAR(8)</td>
<td>TextNoCaseParser</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(8): 1-8 ASCII characters. Permitted values are:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NONE (Default)—Unsolicited DTMF Relay - Not supported.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NOTIFY—DTMF Relay supported based on Subscribe/Notify Method.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>INFO—DTMF Relay supported based on INFO Method.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, audit, change, show, sync</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default Value: NONE</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: NONE, NOTIFY, INFO</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextNoCaseParser</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| ENABLE_CPC_PARAM | Description: Specifies whether to enable or disable processing of a calling party category (CPC) extension that is optionally added to the user part of a P-Asserted-ID header. The use-pai-hdr-for-ani token must be enabled for the enable-cpc-param token to be valid. If the use-pai-hdr-for-ani token is set to N, then the enable-cpc-param is ignored.  
VARCHAR(16): 1-16 ASCII characters. Permitted values are:  
SEND-ONLY—Send CPC in an outgoing INVITE message.  
RECV-ONLY—Process CPC from incoming INVITE messages.  
SEND-RECV—Send CPC in outgoing INVITE messages and process CPC on incoming INVITE messages.  
IGNORE (Default)—Disable CPC send and process.  
Valid for Command: add, change, audit, sync, show  
Default Value: IGNORE  
Possible Value: SENDONLY, RECVONLY, SEND_RECV, IGNORE  
Parser: TextNoCaseParser |
| ENABLE_CT_PARAM | Description: Specifies whether to enable or disable the processing of a call type (CT) extension that is optionally added to the user part of the SIP Request URI.  
VARCHAR(16): 1-16 ASCII characters. Permitted values are:  
SEND-ONLY—Send CT in outgoing INVITE message.  
RECV-ONLY—Process CT from incoming INVITE messages.  
SEND-RECV—Send CT in outgoing INVITE messages and process CT on incoming INVITE messages.  
IGNORE (Default)—Disable CT send and process.  
Valid for Command: add, change, audit, sync, show  
Default Value: IGNORE  
Possible Value: SENDONLY, RECVONLY, SEND_RECV, IGNORE  
Parser: TextNoCaseParser |
| ENABLE_DAI_PARAM | Description: Specifies whether to enable or disable the processing of the dial around indicator (DAI) extension that is optionally added to the user part of the SIP Request URI. Please note however that in a Packetcable environment, CMSS 1.5 makes it mandatory to process DAI. | VARCHAR(16): 1-16 ASCII characters. Permitted values are: SEND-ONLY—Send DAI in outgoing INVITE messages. RECV-ONLY—Process DAI from incoming INVITE messages. SEND-RECV—Send DAI in outgoing INVITE messages and process DAI on incoming INVITE messages. IGNORE (Default)—Disable DAI send and process. Valid for Command: add, change, audit, sync, show Default Value: IGNORE Possible Value: SEND_ONLY, RECV_ONLY, SEND_RECV, IGNORE Parser: TextNoCaseParser |
| ENABLE_ES_EVENTS | Description: Specifies whether to send or suppress additional Electronic Surveillance messages towards a DF server for calls that are traversing through a softswitch trunk group. CHAR(1): Y/N (Default = N). Valid for Command: add, change, audit, sync, show Default Value: N Possible Value: Y, N Parser: BooleanParser |
### Routing Types

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Data Type</th>
<th>Default Value</th>
<th>Possible Values</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENABLE_NOA_PARAM</strong></td>
<td>Specifies whether to enable or disable processing of the Nature of Address (NOA) extension that is optionally added to the user part of a SIP Request URI.</td>
<td>VARCHAR(16): 1-16 ASCII characters. Permitted values are: SEND-ONLY—Send NOA in outgoing INVITE messages. RECV-ONLY—Process NOA from incoming INVITE messages. SEND-RECV—Send NOA in outgoing INVITE messages and process NOA on incoming INVITE messages. IGNORE (Default)—Disable NOA send and process.</td>
<td>SEND ONLY, RECV ONLY, SEND_RECV, IGNORE</td>
<td>TextNoCaseParser</td>
<td></td>
</tr>
<tr>
<td><strong>ENABLE_P_DCS_BILLING_INFO_HDR</strong></td>
<td>Specifies whether to enable PacketCable Distributed Call Signaling (DCS) billing in a SIP information header.</td>
<td>CHAR(1): Y/N (Default = N).</td>
<td>N</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td><strong>ENABLE_P_DCS_LAES_HEADER</strong></td>
<td>Specifies whether to send surveillance information as defined in Section 8 of RFC 3603 if required, when it cannot be performed on the switch. Requires that the remote SIP entity interfacing with the SIP trunk support surveillance procedures.</td>
<td>CHAR(1): Y/N (Default = N).</td>
<td>N</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
</tbody>
</table>
| **ENABLE_P_DCS_OSPS_HEADER** | Description: Specifies whether to enable PacketCable DCS Operator Services Position System (OSPS) associated call support on a softswitch trunk group. If supported, calls include: busy line verification, emergency interrupt, and 911 operator ringback.

When this flag is set and an OSPS related request is made, If this flag is not set, BTS will not send outgoing SIP requests or accept incoming SIP requests that are OSPS related.

CHAR(1): Y / N (Default = N).

Y—Include a P-DCS OSPS header in the outgoing INVITE or UPDATE messages as defined in RFC-3603 for an OSPS related request.

N—Do not include outgoing SIP requests or accept incoming SIP requests that are OSPS related.

Valid for Command: add, change, audit, sync, show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser |
| **ENABLE_SIP_TRIGGER** | Description: Specifies whether to enable SIP triggers on a SIP trunk group.

CHAR(1): Y / N (Default = N).

Y—Send outgoing calls to the Application server and incoming calls from the Application server are treated as SIP trigger calls.

N—Outgoing calls are not sent to the Application server and incoming calls from the Application server are treated as regular calls (non-SIP-trigger calls).

Valid for Command: add, change, audit, sync, show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser |
| **GTD_MODE** | Description: Specifies whether to use the compact (default) or verbose mode to encode messages for the SIP-T/GTD trunk group.

VARCHAR(8): 1-8 ASCII characters. Permitted values are:

COMPACT (Default)

VERBOSE

Valid for Command: add, change, audit, sync, show

Default Value: COMPACT

Possible Value: COMPACT, VERBOSE

Parser: TextParser |
### GTD_PARMS
Description: Mandatory if protocol-type=sip-gtd. Specifies a comma-separated list of Generic Transparency Descriptor (GTD) parameters enabled for this profile. The parameters are parsed against a static table, called the GTD Parameter Values table, which lists all the valid GTD parameters, including the special case parameter ALL. In the DBM of the Call Agent, this comma-separated string is converted into a series of boolean flags, one for each GTD parameter. The Call Agent accesses each individual flag as it builds a GTD attachment.

**VARCHAR(500):** 3-500 ASCII characters. For example:

- ALL—use all GTD parameters (or)
- CPN, CGN, CIC, CPC, BCI (comma-separated list)

Valid for Command: add, change, audit, sync, show

Default Value: ALL

Possible Value: [1_500]
Parser: TextNoCaseParser

### HOP_COUNTER_MAX
Description: Applies only to received SIP Invite messages that are not SIP-T and contain a max-forwards value in which the max-forwards is scaled down to build the hop counter. If the hop counter derived from the max-forwards is greater than this value, it is set to this value. This value acts as a ceiling for the derived hop counter value.

**INTEGER:** 10-20 (Default = 20).

Valid for Command: add, change, audit, sync, show

Default Value: 20

Possible Value: [10_20]
Parser: DecimalParser

### HOP_COUNTER_SUPP
Description: Used for received SIP Invite messages that are not SIP-T and contain a max-forwards value. The default sets the hop counter based on the received max-forwards value. If this flag is set to N, the hop counter field is not populated using the max-forwards value.

**CHAR(1):** Y/N (Default = Y).

Valid for Command: add, change, audit, sync, show

Default Value: Y

Possible Value: Y, N
Parser: BooleanParser

### ID
Description: Primary key. Unique ID for this trunk group profile.

**VARCHAR(16):** 1-16 ASCII characters.

Valid for Command: add, change, show, delete, audit, sync

Mandatory: add, change, delete

Possible Value: [1_16]
Parser: TextParser
<table>
<thead>
<tr>
<th>INBAND_TONE_AVAILABLE</th>
<th>Description: Send release or provide tone/announcement.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CHAR(1): Y/N (Default = Y).</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
</tr>
<tr>
<td></td>
<td>Default Value: Y</td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
</tr>
<tr>
<td></td>
<td>Parser: BooleanParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIMIT</th>
<th>Description: Specifies the number of rows to display on the screen.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>INTEGER: 1-1000000000 (Default = 100000000).</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
</tr>
<tr>
<td></td>
<td>Default Value: 100000000</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_100000000]</td>
</tr>
<tr>
<td></td>
<td>Parser: DecimalParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MASTER</th>
<th>Valid for Command: sync</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mandatory: sync</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_10]</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MAX_FORWARDS</th>
<th>Description: Specifies when an outbound SIP Invite message requires an initial maximum forwards value.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>INTEGER: 10-80 (Default = 70).</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
</tr>
<tr>
<td></td>
<td>Default Value: 70</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [4_80]</td>
</tr>
<tr>
<td></td>
<td>Parser: DecimalParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ORDER</th>
<th>Description: Specifies whether to display data on the screen in a sorted order.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_1024]</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PLATFORM_STATE</th>
<th>Description: Audits a shared memory database.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VARCHAR(7): 1-7 ASCII characters. Permitted values are:</td>
</tr>
<tr>
<td></td>
<td>ACTIVE (Default) - System is currently running.</td>
</tr>
<tr>
<td></td>
<td>STANDBY.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: sync, audit</td>
</tr>
<tr>
<td></td>
<td>Default Value: ACTIVE</td>
</tr>
<tr>
<td></td>
<td>Possible Value: ACTIVE, STANDBY</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
<tr>
<td>Token</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PRACK_FLAG</td>
<td>Specifies if an Invite messages sent on this trunk group require reliable provisional responses. If yes, provisional responses like alerting are delivered. Used with SIP-T.</td>
</tr>
<tr>
<td>PROTOCOL_TYPE</td>
<td>Specifies the type of signaling for this trunk group. It controls the message type sent between two Cisco BTS 10200 Softswitches. For example, if the protocol-type is SIP-T, then the Cisco BTS 10200 Softswitch sends a SIP-T message, which is a normal SIP ASCII message plus an ISUP MIME attachment. In this case, the origination type can be ISDN, SS7, CAS, MGCP, and so forth. The origination type does not matter. However, if the protocol-type is SIP, then the Cisco BTS 10200 Softswitch sends only an ASCII SIP message without an ISUP MIME attachment. VARCHAR(9): 1-9 ASCII characters. Permitted values are: SIP—Signaling via the Session Initiation Protocol (SIP) multimedia sessions across the Internet. SIP-T—Signaling using SIP-T protocol. SIP-T is an inter Call Agent protocol; SIP-GTD protocol is a normalized inter Call Agent protocol. SIP-T—Signaling using both the SIP-T and SIP-GTD protocol types. SIP-T is an inter Call Agent protocol; SIP-GTD protocol is a normalized inter Call Agent protocol. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: SIP, SIP_T</td>
</tr>
<tr>
<td>RECV_3XX_USE_CF_METHOD</td>
<td>Specifies how a received 3xx response is handled. Applies only to 3xx responses received with a contact header containing a different number than the called party number in the request, where the domain name identifies the Cisco BTS 10200 Softswitch that sent the request. Feature provisioning is required before enabling this token. CHAR(1): Y/N (Default = Y). Y—Handle as a network-based reroute. N—Handle as a call forwarding request from the switch sending the 3xx. Valid for Command: add, change, audit, sync, show Default Value: Y Possible Value: Y, N Parser: BooleanParser</td>
</tr>
</tbody>
</table>
## REDIRECT_SUPPORTED

**Description:** Specifies if the Cisco BTS 10200 Softswitch honors a 3xx class, such as a redirection response for an Invite message sent by the Cisco BTS 10200 Softswitch.

`VARCHAR(32):` 1-32 ASCII characters. Permitted values are:

- **VALID-DOMAINS-ONLY** (Default) — If the host name field in the SIP URI of a 3XX contact used for call redirection does not represent this Cisco BTS 10200 Softswitch or a Cisco BTS 10200 Softswitch SIP trunk, then the call is redirected using the SIP trunk used on the previous call redirection. If there was not a previous call redirection, then the SIP trunk that sent the initial Invite is used. If the profile of the selected SIP trunk restricts redirection to only valid domains, then this redirection is blocked and the next contact is tried. Otherwise, it is redirected and the contact URI is used as the request URI of the redirected call.
- **ALL-DOMAINS** — Redirects to any allowed domain.
- **NONE** — No redirects allowed.

Valid for Command: add, audit, change, show, sync

Mandatory: add

Default Value: **VALID-DOMAINS-ONLY**

Possible Value: ALL_DOMAINS, NONE, VALID_DOMAINS_ONLY

Parser: TextParser

## REFER_ALLOWED

**Description:** Call Transfer allowed on an SS trunk.

`CHAR(1):` Y / N (Default = N).

Valid for Command: add, change, audit, sync, show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser

## REFERRED_BY_REQD_ONREFER

**Description:** Specifies whether a “referred-by” header is required on REFER messages.

`CHAR(1):` Y / N (Default = N).

Valid for Command: add, change, audit, sync, show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser
### REPLACES_ALLOWED

**Description:** Specifies whether to accept or reject received INVITE messages with a “replaces” header. Refer to RFC 3891 for more information.

- **CHAR(1): Y / N (Default = N).**
  - **Y**—Accept received INVITE messages with a “replaces” header.
  - **N**—Reject received INVITE messages with a “replaces” header.

**Valid for Command:** add, change, audit, sync, show

- **Default Value:** N
- **Possible Value:** Y, N
- **Parser:** BooleanParser

### SCALE_FACTOR

**Description:** Used for conversions between hop counter and max-forwards values; allows no-conversion, one-half, one-third, and one-quarter conversion factors. The default provides a scale relative to the maximum values: if the hop counter is 20, a scale factor of 4 converts to a max-forwards value of 80. Using the default means no conversion.

- **INTEGER: 1-4 (Default = 1).**

**Valid for Command:** add, change, audit, sync, show

- **Default Value:** 1
- **Possible Value:** [1, 4]
- **Parser:** DecimalParser

### SEND_302_ON_CF

**Description:** Specifies whether “Send 302 on Call Forwarding” is supported.

- **CHAR(1): Y/N (Default = N).**

**Valid for Command:** add, change, audit, sync, show

- **Default Value:** N
- **Possible Value:** Y, N
- **Parser:** BooleanParser

### SEND_3XX_DOMAIN_NAME

**Description:** Specifies whether to apply the domain name in the contact header when sending a 3XX response. Applies only if send-302-on-cf is enabled and “call forwarding unavailable” is locally invoked and configured to send a 3XX SIP response. This token does not apply if the Cisco BTS 10200 Softswitch proxies a received 3XX response. For proxies, the domain name in the contact header of the 3XX received is preserved.

- **VARCHAR(64): 1-64 ASCII characters.**

**Valid for Command:** add, change, audit, sync, show

- **Possible Value:** [1, 64]
- **Parser:** DomainParser
**SEND_CIC_PARAM**

**Description:** Specifies whether the CIC parameter is included in the request URL for outbound SIP calls.

CHAR(1): Y/N (Default = Y)

Valid for Command: add, change, audit, sync, show

Default Value: Y

Possible Value: Y, N

Parser: BooleanParser

**SEND_FULL_E164**

**Description:** When enabled, all SIP phone numbers contained in SIP messages sent from the Cisco BTS 10200 Softswitch that have an NOA of national significance are represented as fully qualified E.164 numbers prefixed with the local country code and plus sign. This conforms to IETF RFC 3398 Section 12.1. When disabled, national numbers are sent without a country code and plus sign prefix. Numbers of international significance are always sent with a plus sign and country code regardless of this token setting. The Home Country code is defined in the Call Agent Configuration table.

CHAR(1): Y/N (Default = N).

Valid for Command: add, change, audit, sync, show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser

**SEND_LAES_IN_RESPONSE**

**Description:** Specifies whether the Cisco BTS 10200 Softswitch can include a Lawfully Authorized Electronic Surveillance (LAES) in a 183 Alerting message if a PacketCable call content Internet Access Point (IAP) for Real-Time Transport Protocol (RTP) duplication is not found.

CHAR(1): Y/N (Default = N).

Valid for Command: add, change, audit, sync, show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser

**SEND_PHONECONTEXT_PARM**

**Description:** Specifies whether to tag the local telephone number with a telephone context parameter. If send-full-e164 is set, this token is significant for number that cannot be represented in an E.164 format, such as 911.

CHAR(1): Y/N (Default = N).

Valid for Command: add, change, audit, sync, show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser
| **SEND_SIP_181_RESP** | Description: Specifies whether the Cisco BTS 10200 Softswitch transmits a 181 response message to a UAC when the terminating side of the Cisco BTS 10200 Softswitch forwarded the call.
CHAR(1): Y/N (Default = N)
Valid for Command: add, change, audit, sync, show
Default Value: N
Possible Value: Y, N
Parser: BooleanParser |
| **SEND_STD_TRK_GRP_URI** | Description: Specifies whether to use draft IETF IP Telephony (iptel) Trunk Group (draft-ietf-iptel-trunk-group) defined trunk group parameters when an INVITE request is received and the trunk-sub-grp-type=TGID.
CHAR(1): Y/N (Default = N).
Valid for Command: add, change, audit, sync, show
Default Value: N
Possible Value: Y, N
Parser: BooleanParser |
| **SESSION_TIMER_ALLOWED** | Description: Specifies whether a session timer is allowed.
CHAR(1): Y / N (Default = N).
Valid for Command: add, audit, change, show, sync
Default Value: N
Possible Value: Y, N
Parser: BooleanParser |
| **SIP_TIMER_PROFILE_ID** | Description: Foreign key: Softswitch Trunk Group Profile table. Specifies the Timer Profile ID for the Softswitch Trunk Group Profile.
VARCHAR(16): 1-16 ASCII characters.
Valid for Command: add, change, show, audit, sync
Possible Value: [1_16]
Parser: TextParser |
| **SIPT_ISUP_BASE** | Description: Not configurable. Mandatory if use-sipt-isup-base=Y. The SIP-T ISUP base version. This field is populated from the SIPT ISUP Version Base table.
VARCHAR(32): 1-32 ASCII characters
Valid for Command: show, audit, sync
Possible Value: [1_32]
Parser: TextParser |
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Type</th>
<th>Valid for Command</th>
<th>Mandatory</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIPT_ISUP_VER</td>
<td>Mandatory if protocol-type=SIP-T. Defines the SIP-T or SIP-GTD version. Used only if protocol-type=SIP-T. Defined in the SIPT ISUP Version Base table. This token is only used when the protocol-type=SIPT-T. Only the GR317 version of SIP-T is supported. If the value defined in the SIPT ISUP Version Base table has a base value of sip-gtd, then the version is a SIP-GTD type. Otherwise, the version is a SIP-T type. VARCHAR(32): 1-32 ASCII characters. Permitted value is: GR317.</td>
<td>VARCHAR(32)</td>
<td>add, change, audit, sync, show</td>
<td></td>
<td>[1_32]</td>
<td>TextNoCaseParser</td>
</tr>
<tr>
<td>START_ROW</td>
<td>Specifies to begin displaying data on the screen at a specific row.</td>
<td>INTEGER</td>
<td>show</td>
<td></td>
<td>[1_100000000]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>TARGET</td>
<td>Specifies the network element to receive the request.</td>
<td>VARCHAR(5)</td>
<td>sync</td>
<td>sync</td>
<td>[1_10]</td>
<td>TextParser</td>
</tr>
<tr>
<td>TRUNK_SUB_GRP_TYPE</td>
<td></td>
<td></td>
<td>add, change, audit, sync, show</td>
<td></td>
<td>NONE, BGID, TGID</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
### ROUTING TYPES

#### Sip-Inbound-Policy-Profile Table

The SIP-INBOUND-POLICY-PROFILE table has two new POLICY-TYPE values: CONTACT-TGRP and CONTACT-TRUNK-CONTEXT. The Action field is also split into two different files MISSING-ACTION and NOMATCH-ACTION.

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Description</th>
<th>Command(s)</th>
<th>Default</th>
<th>Possible Values</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>USE_PA_HDR_FOR_ANI</td>
<td>Controls the p-asserted-id (PAI) header used to send and receive calling party information.</td>
<td>add, change, audit, sync, show</td>
<td>Y</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td>USE_SIPT_ISUP_BASE</td>
<td>Mandatory if the protocol-type is SIP_T and the sipt-isup-ver is a SIP-T type. If the version selected is a GTD type, this flag is ignored. GTD does not use the base parameter. Specifies whether the SIP-T ISUP base version is included in the MIME header of the SIP-T message.</td>
<td>add, change, , audit, sync, show</td>
<td>Y</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td>VOICE_MAIL_TRUNK_GRP</td>
<td>Specifies whether the Softswitch trunk group is used for the voice-mail application.</td>
<td>add, change, audit, sync, show</td>
<td>N</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
</tbody>
</table>

**USE_PA_HDR_FOR_ANI**

Description: Controls the p-asserted-id (PAI) header used to send and receive calling party information.

CHAR(1): Y/N (Default = N).

Y—Calling party information is derived exclusively from the PAI header on inbound calls. For outbound calls, a PAI header is sent with the calling party information if provided.

N—Calling party information is sent or received using the From: header.

Valid for Command: add, change, audit, sync, show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser

**USE_SIPT_ISUP_BASE**

Description: Mandatory if the protocol-type is SIP_T and the sipt-isup-ver is a SIP-T type. If the version selected is a GTD type, this flag is ignored. GTD does not use the base parameter. Specifies whether the SIP-T ISUP base version is included in the MIME header of the SIP-T message.

CHAR(1): Y/N (Default = Y).

Y—SIP-T ISUP base version is included in the MIME header of the SIP-T message.

N—SIP-T ISUP base version is not included in the MIME header of the SIP-T message.

Valid for Command: add, change, , audit, sync, show

Default Value: Y

Possible Value: Y, N

Parser: BooleanParser

**VOICE_MAIL_TRUNK_GRP**

Description: Specifies whether the Softswitch trunk group is used for the voice-mail application.

CHAR(1): Y/N (Default = N).

Valid for Command: add, change, audit, sync, show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser
**SIP Inbound Policy Profile**

The SIP Inbound Policy Profile (sip-inbound-policy-profile) table determines the inbound trunk group based on various SIP headers and parameters.

**Table Name:** SIP_INBOUND_POLICY_PROFILE

**Table Containment Area:** EMS, CA

### Command Types

- add, audit, change, delete, help, show, sync

#### Caution

The `sync` command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

### Examples

```plaintext
show sip-inbound-policy-profile;
add sip-inbound-policy-profile id=via-address;policy-type=VIA-TSAP-ADDR;
show sip-inbound-policy-profile;
change sip-inbound-policy-profile id=via-address;nomatch-action=REJECT;
delete sip-inbound-policy-profile id=via-address;
```

### Usage Guidelines

- **Primary Key Token(s):** ID
- **Foreign Key Token(s):** policy-default-id, tgn-id.

**Add Rules:** FK constraints.

**Change Rules:** FK constraints.

### Syntax Description

**AUTO_REFRESH**

- **Description:** Specifies whether to display cached data on the screen.
- **CHAR(1):** Y/N (Default = Y).
  - **Y**—Queries the database for the most current data.
  - **N**—Queries the database for the most current data only if the cached data is unavailable.
- **Valid for Command:** show
- **Default Value:** Y
- **Possible Value:** Y, N
- **Parser:** BooleanParser

**DEFAULT_POLICY_ID**

- **Description:** Mandatory if action=use-default-policy. Foreign key: SIP Policy table. Specifies using the default policy ID as the next policy if the record is not found in the sip-inbound-policy table.
- **VARCHAR(16):** 1 - 16 ASCII characters.
- **Valid for Command:** add, change, show, audit, sync
- **Possible Value:** [1_16]
- **Parser:** TextParser
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Type</th>
<th>Valid for Command</th>
<th>Default Value</th>
<th>Possible Values</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>Description: Described by the service provider.</td>
<td>VARCHAR(64): 1-64 ASCII characters.</td>
<td>add, change, show</td>
<td></td>
<td>[1_64]</td>
<td>TextParser</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Description: Specifies what token information to display on the screen.</td>
<td>VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
<td>show</td>
<td></td>
<td>[1_1024]</td>
<td>TextParser</td>
</tr>
<tr>
<td>ID</td>
<td>Description: Primary key. SIP Inbound Policy Profile Policy ID.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>add, change, show, delete, audit, sync</td>
<td></td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td>LIMIT</td>
<td>Description: Specifies the number of rows to display on the screen.</td>
<td>INTEGER: 1-100000000 (Default = 100000000).</td>
<td>show</td>
<td></td>
<td>100000000</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>MISSING_ACTION</td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td>None</td>
<td></td>
<td></td>
<td>REJECT, USE_DEFAULT_POLICY, USE_TRUNK_GRP, NONE</td>
<td>TextNoCaseParser</td>
</tr>
<tr>
<td>NOMATCH_ACTION</td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td>None</td>
<td></td>
<td></td>
<td>REJECT, USE_DEFAULT_POLICY, USE_TRUNK_GRP, NONE</td>
<td>TextNoCaseParser</td>
</tr>
</tbody>
</table>
| ORDER          | Description: Specifies whether to display data on the screen in a sorted order.  
|               | VARCHAR(51200): 1-51200 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.  
|               | Valid for Command: show  
|               | Possible Value: [1_1024]  
|               | Parser: TextParser |
| POLICY_TYPE   | Description: The SIP Inbound Policy type.  
|               | VARCHAR(32): 1-32 ASCII characters. Permitted values are:  
|               | REQ-URI-HOSTNAME—Use REQURI to identify the next policy or Trunk Group.  
|               | TGID—Use TGID parameter in the ReqURI to identify the next policy or Trunk Group.  
|               | PAID-HOSTNAME—Use PAID header hostname part to identify the trunk group.  
|               | ROUTE-HEADER-HOSTNAME—Use Hostname of the ROUTE-HEADER to determine the inbound Trunk Group.  
|               | ROUTE-HEADER-USER—Use USER part of the route header to determine the inbound Trunk Group.  
|               | VIA-TSAP-ADDR—Use VIA TSAP Address to determine the inbound Trunk Group.  
|               | Valid for Command: add, change, audit, sync, show  
|               | Mandatory: add  
|               | Possible Value: REQ_URI_HOSTNAME, TGID, PAID_HOSTNAME, ROUTE_HEADER_HOSTNAME, ROUTE_HEADER_USER, VIA_TSAP_ADDR, CONTACT_TGRP, CONTACT_TRUNK_CONTEXT  
|               | Parser: TextNoCaseParser |
| START_ROW     | Description: Specifies to begin displaying data on the screen at a specific row.  
|               | INTEGER: 1-100000000 (Default = 1).  
|               | Valid for Command: show  
|               | Default Value: 1  
|               | Possible Value: [1_100000000]  
|               | Parser: DecimalParser |
On-Net Routing and LNP for Inter-CMS Routing

On-Net Routing and LNP for Inter-CMS routing provides the following capabilities:

- **ANSI LNP Query Support for Carrier Calls**—Conditionally allow LNP queries on carrier calls, as determined by the Carrier LNP-QUERY flag

- **LNP Query for On-net Routing, Inter CMS Routing**—Provide control of LNP queries based on the dialed digit-string prefix and Destination. The operator is given flexibility to allow or deny LNP queries for different calls and routing scenarios. For example, queries should be unconditionally blocked for some CMS originations, and for some MGC cases queries should be performed. When a BTS 10200 is acting as both CMS and MGC, the query should be prevented on the subscriber origination towards the NRS, but performed when a call terminates to the MGC on a SIP or PSTN trunk. For traditional BTS 10200 on-net routing scenarios, a query might be desired on subscriber originations to DNs potentially on the same switch (SUB-ONLY), or on other on-net switches (ALL-CALLS).

- **On-net Route Bypass of Carrier Route**—For interlata or toll calls, allow an "on-net route", as defined in the Destination table, to override the carrier routing. "On-net" refers to facilities owned by an operator which includes one or more BTS 10200es (or other switches). SUB-ONLY allows carrier bypass to route the call to a local subscriber on the same BTS 10200. ALL-CALLS allows carrier bypass for all calls which have a valid on-net route. LNP query results are taken into account in the routing decision.

- **Remove LNP Query result data when Carrier LNP-QUERY= N**—For an outgoing carrier call with Carrier LNP-QUERY = N, remove the LNP query result data, if present. The LRN, FCI, and GAP are destroyed as if a query were not performed.

- **Ignore Inbound LNP information**—For an incoming trunk call with LNP data including forward call indicators, etc. When forward call indicators (FCI) bit-M indication "number translated" and Location Routing Number (LRN) and Generic Address Parameter (GAP) are included, the LNP data is ignored, resulting in call delivery based on the called DN (from the GAP).
On-Net Routing

Figure 2-13 shows On-net Routing in a multi-BTS 10200 environment for ALL-CALLS. The goal for the operator is to route all calls which will eventually terminate within the operator's network totally within the network. That is, carrier routing is bypassed in favor of the on-net route. So, the Destination BYPASS-CARRIER-ROUTING is set to ALL-CALLS. In this scenario, LNP queries are performed on the originating switch (if ported office code and other criteria indicate a query should be performed). Therefore, the destination NANP-LNP-QUERY value PERFORM-LNP-QUERY is used.

**Figure 2-13 On-net Routing ALL-CALLS Scenarios**

On-net Routing in Multi-BTS Environment: ALL-CALLS A calls B*

- Destination: call-type INTERLATA (PIC1) or TOLL (PIC2)
- BYPASS-CARRIER-ROUTING is ALL-CALLS
- NANP-LNP-QUERY is PERFORM-LNP-QUERY

1. LRN is off-net (ported-out of BTS-1): route via Carrier
2. Otherwise, LRN-x has on-net route to BTS-2, route via destination route to DN B2
3. Otherwise, LRN-y does not have on-net route to BTS-2 or no LRN (route-type Not SUB), route via Carrier to DN B3
4. Otherwise, no LRN (route-type SUB), or my LRN (ported-in), route to local sub DN B4

Figure 2-14 shows On-net Routing in a Multi-BTS 10200 environment for calls which terminate in the same BTS 10200 that originated the call, for which no LNP query is needed. That is, the operator can avoid carrier routing for calls that terminate on the same switch. For this scenario, the operator is willing to make a trade-off for DNs during the porting transition. That is, in order to avoid extra LNP queries, any DN in the porting transition phase (marked Dn2subscriber status ASSIGNED and LNP-TRIGGER = Y) is routed to the carrier. The carrier performs the LNP query, and if necessary, routes the call back. The trade-off is fewer LNP queries versus unnecessary carrier routing in some cases.
Figure 2-14  On-net Routing SUB-ONLY (Not Ported Subs Only) Scenarios

On-net Routing: SUB-ONLY (not ported subs only)  A calls B*

Destination: call-type INTERLATA (PIC1) or TOLL (PIC2)
BYPASS-CARRIER-ROUTING is SUB-ONLY
NANP-LNP-QUERY is NO_LNP-QUERY
1. If dn2subscriber not found in BTS-1, route to Carrier
   A. DN B1a Off-net, or
   B. DN B1b On-net, but in other BTS
2. Otherwise, if dn2subscriber ported-out!
   route to Carrier (carrier will do query)
3. Otherwise, if dn2subscriber ln-p-trigger=Y (transition DN),
   A. DN B3a is not ported from or is ported-in to BTS-1
       carrier will route back with no LRN or my LRN
   B. DN B3b currently owned/ported-in to other switch
4. Otherwise, use on-net-routing (route to local Sub)
   DN B4 in BTS-1

Figure 2-15 shows On-net Routing in a multi-BTS 10200 environment for calls which terminate in the same BTS 10200 that originated the call, for which the originating BTS 10200 does an LNP query for transition DNs. The operator can avoid carrier routing for calls that terminate on the same switch. In this case, the operator is willing to accept additional LNP queries to be sure to avoid carrier routing for all cases of local subscribers. For any carrier call to the DN which is in the porting transition on this switch (Dn2subscriber status ASSIGNED and LNP-TRIGGER = Y), an LNP query is done. This is determined by the Destination NANP-LNP-QUERY UNCONDITIONAL-LNP-TRIGGER-QUERY value. After the query, the call is routed to the local subscriber, or to the carrier, depending on the query result.
Figure 2-15  On-net Routing SUB-ONLY (BTS 10200 Queries for Transition Subs) Scenarios

On-net Routing: SUB-ONLY (BTS queries for transition subs)  A calls B*

Destination: call-type INTERLATA (PIC1) or TOLL (PIC2), BYPASS-CARRIER-ROUTING is SUB-ONLY, NANP-LNP-QUERY is UNCONDITIONAL-LNP-TRIGGER-QUERY

1. If dn2subscriber not found in BTS-1, route to Carrier
   A. DN B1a Off-net, or
   B. DN B1b On-net, but in other BTS

2. Otherwise, if dn2subscriber ported-out route to Carrier (carrier will do query)

3. Otherwise, if dn2subscriber lnp-trigger=Y (transition DN), BTS does query:
   A. My LRN or no LRN: route on-net to DN B3a
   B. Other LRN: DN B3b route to Carrier

4. Otherwise, use on-net-routing (route to local Sub) DN B4 in BTS-1

The above illustrations and descriptions give an overview of some of the LNP query and routing scenarios. For a detailed itemization of the various use cases, please see Table 2-6 on page 2-76.

Inter-CMS Routing

Descriptions of all the possible configurations for inter-CMS routing are not included here. In principle, the scenarios shown in the “On-Net Routing” section on page 2-63 can be applied to an individual CMS or MGC in an inter-CMS configuration. An overview is provided below.

Figure 2-16 illustrates an inter-CMS configuration with an NRS and separated CMS and MGC. CMS refers to a PacketCable Cable Management Server, which serves cable subscribers. The MGC refers to the Media Gateway Controller, which in PacketCable terminology refers to the node that interfaces with the PSTN. An MGC can also serve as the PSTN interface for SIP endpoints behind an NRS and Service Engine (SE), and Edge Proxy (EP).

The originating CMS, e.g., CMS-1, routes the call to the NRS without an LNP query. So subscriber dial plans on CMS-1 will have Destinations for which NANP-LNP-QUERY is NO-LNP-QUERY. The NRS can then route the call to either the MGC or CMS-2. MGC and CMS-2 incoming trunk dial plans might have destinations which allow LNP queries. So these destinations may have NANP-LNP-QUERY values of NA or PERFORM-LNP-QUERY.
Figure 2-16  Inter-CMS Routing: Separated CMS/MGC

Inter-CMS Routing with NRS: Separated CMS/MGC

Figure 2-17 illustrates an inter-CMS configuration with an NRS and a single BTS 10200 acting as both a CMS and MGC. In principle, there is nothing different from the instance above where the CMS and MGC are separated. But this configuration drove the requirement to be able to control LNP queries by the NANP-LNP-QUERY field based on subscriber dial plan separately from trunk dial plans on a per destination basis.

Figure 2-17  Inter-CMS Routing: CMS and MGC on Same BTS 10200

Inter-CMS Routing with NRS: CMS and MGC on same BTS 10200

Table 2-5 shows destination NANP-LNP-QUERY and BYPASS-CARRIER-ROUTING settings for the various configurations.
ANSI LNP Query Support for Carrier Calls

LNP queries are now to be conditionally allowed on interlata and intralata (toll) carrier calls. When carrier routing applies (for either casual dialing, or presubscribed Preferred Interexchange Carrier (PIC), Carrier LNP-QUERY = Y/N is used to indicate whether an LNP query is allowed. This capability exists for ITU LNP, and is added for ANSI/North America.

Note

LNP query capability is supported for interlata (PIC1) and toll (PIC2) calls; however, queries are not supported in international (call-type INTL, PIC3) calls, because number portability is not supported for international calls.

For an interlata/toll or casual carrier call, there is an interaction of the carrier LNP-QUERY flag and the NANP-LNP-QUERY flag:

- Carrier LNP-QUERY is applicable only when Carrier USE-DIAL-PLAN=N
- Carrier LNP-QUERY is applicable only when Destination NANP-LNP-QUERY = NA. When NANP-LNP-QUERY = NA:
  - If Carrier LNP-QUERY = N, then there is no query.
  - If Carrier LNP-QUERY = Y and NANP-LNP-QUERY value NA, then there may be a query depending on Ported Office Code and other criteria. For example, if a Ported Office Match is not found, or Dn2subscriber data criteria do not allow a query, then there is no query.
  - If BOTH Carrier LNP-QUERY = Y, and NANP-LNP-QUERY criteria allow a query, then there is a query.

Within the LNP query criteria decision checks, carrier routing is detected by any of the following conditions:

- Presence of a Carrier Identification Code (CIC), for example as a result of casual dialing, or from ISUP Transit Network Selection (TNS) parameter.
- Call-type TOLL, appropriate Nature of Dial (NOD) value and Origination with valid subscriber data
- PIC2 Call-type INTERLATA, appropriate Nature of Dial (NOD) value and origination with valid subscriber data PIC1

After satisfying any of the above checks for a valid carrier, if the carrier database record has USE-DIAL-PLAN = Y, then by default the route from the destination is used, rather than routing specified in the carrier record. USE-DIAL-PLAN = Y implies that the BTS 10200 operator is itself the acting carrier for the call.

So, for carrier USE-DIAL-PLAN = Y, the normal LNP query decision criteria are used. For example, according to the preexisting LNP criteria logic, queries are still not allowed on a carrier call when any of the following apply:

- Operator (carrier) call
- When a ported-office-code match is not found
- When a dn2subscriber record is not found and the destination route-type is SUB
- When dn2subscriber status is not PORTED-OUT and LNP-TRIGGER=N
Otherwise, when Carrier LNP-QUERY = Y and USE-DIAL-PLAN=N, existing LNP query criteria allow queries on carrier calls when a ported-office-code match is found, and any of the following are true:

- Called DN does not appear in the office-code table.
- dn2subscriber entry for the DN is not found and either:
  - Destination entry is not found.
  - Or, Destination ROUTE-TYPE is not SUB.
- Dn2subscriber entry has status PORTED-OUT, or LNP-TRIGGER = Y

LNP Query for On-net Routing, Inter CMS Routing

LNP and ported-in and ported-out subscribers must be taken into account for BTS 10200 On-net Routing, inter-CMS Routing. This requirement provides precise control of LNP queries based on the dialed digit-string prefix and destination. The operator is given flexibility to allow or deny LNP queries for different calls and routing scenarios.

A new Destination schema field, NANP-LNP-QUERY is added with values:

- NA: support preexisting BTS 10200 LNP query capability (Release 4.5), with two additions:
  - Conditionally allow LNP queries on Carrier calls, in conjunction with the Carrier LNP-QUERY field
  - Queries are now allowed on World Zone 1 calls (to Canada, Hawaii, Alaska, etc), that is, when call-type is INTL-WZ1
- NO-LNP-QUERY: unconditionally prevents an LNP query on any call reaching this Destination. This is useful for Inter CMS Routing, or for any case where the originating CMS subscriber dial-plan prevents queries (because the query is performed by the NRS, MGC, terminating CMS, or Carrier).
- PERFORM-LNP-QUERY: Similar to NA value, except that the Carrier LNP-QUERY field is ignored, and a query can be allowed on any call-type. Prior to Release 5.0 the BTS 10200 allowed queries only for call-type LOCAL, INTERLATA, or TOLL. This value can be used in an on-net routing or inter-CMS scenario where a given CMS/MGC should perform LNP queries, especially prior to on-net routing.
- UNCONDITIONAL-LNP-TRIGGER-QUERY: Conditionally allows an LNP query for DNs during the porting in or out transition (Dn2subscriber LNP-TRIGGER=Y). This value is useful for an on-net routing scenario where carrier bypass is allowed for DNs assigned on the originating BTS 10200 (BYPASS-CARRIER-ROUTING SUB-ONLY). This value will allow a query regardless of the calltype.

Table 2-5 shows routing scenarios and suggested provisioning values.
For more examples of provisioning combinations, and LNP query results and routing results, see Table 2-6.

**Carrier Calls**

See the “On-net Route Bypass of Carrier Route” section on page 2-72 and Destination NANP-LNP-QUERY value NA below.

Destination NANP-LNP-QUERY value NA:

This value is similar to previous Release 4.5 LNP query criteria, except that a query can be allowed for carrier calls. For value NA, there will be an LNP query if the following conditions are satisfied:

- An LNP query has not been done already by this BTS 10200 or another switch on the call.
- “Nature of Dial” (derived from nature of address), is one of the following:
  - 7-digit National, 10-digit National, 7-digit Local, 10-digit National, Casual-7-digit National, Casual 10-digit National, Casual 7-digit Local, Casual 10-digit Local, Network Specific 1, Network Specific 2, Network Specific 3, Network Specific 4, Network Specific 5, Network Specific 6, or Network Specific 7.
- Destination call-type:
  - Value is either LOCAL, INTERLATA, TOLL, TOLL-FREE, or INTL-WZ1
  - Or, for a different call-type value, a matching entry is found in the Call Type Profile with LNP-QUERY = Y.

---

**Table 2-5 Routing Scenarios and Suggested Provisioning**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>BYPASS-CARRIER-ROUTING</th>
<th>NANP-LNP-QUERY</th>
<th>Carrier LNP-QUERY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal like Release 4.5.</td>
<td>NONE</td>
<td>—</td>
<td>N</td>
</tr>
<tr>
<td>Like Release 4.5, but queries are also to be allowed depending on the Carrier LNP-QUERY value.</td>
<td>NONE</td>
<td>—</td>
<td>Y</td>
</tr>
<tr>
<td>Carrier bypass (on-net route) only for local calls terminating on this switch which don't need an LNP query.</td>
<td>SUB-ONLY</td>
<td>NO-LNP-QUERY</td>
<td>—</td>
</tr>
<tr>
<td>Carrier bypass (on-net route) only for local calls terminating on this switch with queries allowed for DNs during porting transition.</td>
<td>SUB-ONLY</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>—</td>
</tr>
<tr>
<td>Multi-BTS 10200—Carrier bypass (on-net route) to all on-net switches.</td>
<td>ALL-CALLS</td>
<td>PERFORM-LNP-QUERY</td>
<td>—</td>
</tr>
<tr>
<td>Inter-CMS no NRS.</td>
<td>ALL-CALLS</td>
<td>PERFORM-LNP-QUERY</td>
<td>—</td>
</tr>
<tr>
<td>Inter-CMS with NRS.</td>
<td>SUB-ONLY</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>—</td>
</tr>
</tbody>
</table>
• If Carrier Identification Code (CIC) is present, and one of the following is true:
  – Carrier USE-DIAL-PLAN=Y, or Carrier LNP-QUERY=Y
  – Or, call-type TOLL,
    – The subscriber’s Pop supports intraLATA toll pre-subscription (ITP=Y), and either PIC2 Carrier USE-DIAL-PLAN=Y or Carrier LNP-QUERY=Y,
    – Or, if the subscriber’s Pop does not support intraLATA toll pre-subscription (ITP=N), then the Destination has route-type CARRIER, then if Carrier USE-DIAL-PLAN=Y, or Carrier LNP-QUERY=Y
  – Or call-type Interlata

If PIC1 Carrier USE-DIAL-PLAN=Y, or Carrier LNP-QUERY=Y.

• Ported Office Code match found on either 10, 9, 8, 7, 6, or 3 digit prefix (longest match), and either:
  – Office Code match not found
  – Or Dn2subscriber record found and status is PORTED-OUT, or LNP-TRIGGER=Y
  – Or Dn2subscriber record not found, and either
    – Destination not found (this case might not actually be possible).
    – Or Destination route-type is not SUB.

**Destination NANP-LNP-QUERY Value NO-LNP-QUERY**

When digit translation results in reaching a Destination with value NO-LNP-QUERY, then there is no LNP query in any case.

**Destination NANP-LNP-QUERY Value PERFORM-LNP-QUERY**

This value works exactly the same as value NA, except for these exceptions:

• PERFORM-LNP-QUERY allows a query on any call-type (rather than just for call-types LOCAL, INTERLATA, TOLL, and TOLL-FREE as for NA). The Call Type Profile is not checked.

• For carrier calls, PERFORM-LNP-QUERY allows a query without checking the Carrier LNP-QUERY value. So, even if LNP-QUERY=N, a query can be performed.

**Destination NANP-LNP-QUERY Value UNCONDITIONAL-LNP-TRIGGER-QUERY**

For value UNCONDITIONAL-LNP-TRIGGER-QUERY, there WILL be an LNP query if the following conditions are satisfied:

• An LNP query has not been done already by this BTS 10200 or another switch on the call.
• "Nature of Dial" (derived from nature of address), is one of the following:
  – 7-digit National, 10-digit National, 7-digit Local, 10-digit National, Casual-7-digit National, Casual 10-digit National, Casual 7-digit Local, Casual 10-digit Local, Network Specific 1, Network Specific 2, Network Specific 3, Network Specific 4, Network Specific 5, Network Specific 6, Network Specific 7
• Dn2subscriber record is found, and status is ASSIGNED, and LNP-TRIGGER=Y.
Retranslation After an LNP Query

After an LNP query, there might be a new translation based on the SCP result. Routing scenarios after an LNP query result are as follows:

- SCP returns no LRN: in this case, the original translation applies, and the call is routed appropriately.
- SCP returns an LRN:
  - LRN is off-net: the call is routed to the appropriate switch, using the routing specified by the new Destination reached through translation, and if applicable, the Carrier.
  - LRN is "my LRN" and carrier routing not applicable: The LRN is considered to be "my LRN" if either the LRN digits have a Dn2subscriber record with status = LRN, or the calling party’s Pop contains MY-LRN digits which match the LRN from the SCP. In either case, the original called party digits (from GAP parameter received from the AIN Feature Server) are used to find the dn2subscriber entry, and the call is routed to the subscriber. This is also the case when the Destination has route-type not SUB; the Destination routing is overridden and the call is offered to the subscriber on the BTS 10200.
  - For a carrier call for which there is an on-net route and the LRN is on-net:
    - "My LRN" and the Dn2subscriber record exist with status ASSIGNED (LNP-TRIGGER=Y): route to the local subscriber, and ignore (bypass) carrier routing, and ignore the routing specified in the original Destination.
    - On-net LRN of another on-net switch: bypass carrier routing, and use the on-net route specified in the destination.

Call-type After Multiple Digit Translations

Normally after a digit translation, the call-type is retrieved from the resulting destination. It is possible that further digit translations will occur, for example, the retranslation on the LRN after an LNP query. Normally the call-type from the original translation is used after subsequent translations. So the call-type in the destination resulting from the LRN translation is ignored, in favor of the original call-type resulting from the original called DN translation.

An exception is that the call-type can change from a translation for policy-nxx. For example, dialed digits 611 translate to a destination with call-type REPAIR, which has a route-guide containing policy-type=NXX, with a policy-nxx containing a new "translated-dn". In this case, a new translation on the translated-dn occurs, and the new destination call-type is used subsequently during the call. This is necessary to prevent problems related to a possible NXX (800 toll-free) translation.

On-net routing is not supported for ITU LNP.

Removal of Ported Office Code IN-CALL-AGENT Field

As part of this feature, all checking of the Ported Office Code IN-CALL-AGENT flag is removed. Essentially within all logic for which there is a Ported Office Code match, the logic functions as if the IN-CALL-AGENT = Y.
Non-carrier call Routing to Ported-in DNs

Prior to Release 5.0, implicit routing was allowed for calls to ported-in subscribers. The DN of a ported-in subscriber is owned by another switch, so the dial-plan for the DN prefix goes to a destination which has a route to the donor switch (owning the DN block). During the BTS 10200 routing and translation, prior to routing using the destination route to the donor switch, if it is determined that the DN is for an assigned subscriber in the BTS 10200, and the DN or prefix has a Ported Office Code match, then the destination route is ignored, and the call is routed directly to the local subscriber.

In Release 5.0, the above routing logic is still applicable for destination NANP-LNP-QUERY values NA, PERFORM-LNP-QUERY, and UNCONDITIONAL-LNP-TRIGGER-QUERY.

However, destination NANP-LNP-QUERY value NO-LNP-QUERY has been added to block queries for network configurations where it is desirable for all CMS originations to route to an NRS. For such a configuration, the operator might want the explicit route from the dial plan and destination to be honored, even for ported-in subscribers. With this in mind, specifically for cases where the destination specifies NO-LNP-QUERY and the route-type is not SUB, the call is routed via the destination. This is the case for calls which do not have call-type INTERLATA or TOLL; for Interlata and Toll carrier calls, the Destination BYPASS-CARRIER-ROUTING field determines whether carrier routing (value NONE) or routing to the local subscriber is desired (values SUB-ONLY or ALL-CALLS).

On-net Route Bypass of Carrier Route

Provide the capability to selectively override, or bypass, carrier routing if an "on-net route" exists to a subscriber on the same switch, or on another "on-net" switch within the same operator's network.

Specifically, for InterLATA and IntraLATA calls, that is, calls with destination call-type of INTERLATA or TOLL, carrier routing is normally bypassed in favor of the destination routing when:

- Destination BYPASS-CARRIER-ROUTING is ALL-CALLS, or
- Destination BYPASS-CARRIER-ROUTING is SUB-ONLY and a dn2subscriber record exists.

In addition to carrier bypass for the above scenarios, under certain conditions, carrier routing is allowed instead of routing to a local subscriber. For example, even if the subscriber appears to be ported-in to the CMS (Destination BYPASS-CARRIER-ROUTING=NONE and ROUTE-TYPE not SUB, dn2subscriber status ASSIGNED and LNP-TRIGGER=Y, and the query result contains "my LRN" of the same BTS 10200), carrier routing is used instead of routing directly to the local subscriber.

The operator owning the BTS 10200 may itself be a carrier, as defined by a carrier route with Carrier USE-DIAL-PLAN = Y. Essentially this is the same as On-net Routing, as the dial plan and destination routing are used for the call. Checks for On-net Routing carrier bypass only apply for carriers which do not use the dial plan routing (USE-DIAL-PLAN = N).

On-net routing does not apply to operator calls, and is also not supported for casual carrier calls.

Some sample values of the new Destination BYPASS-CARRIER-ROUTING field are shown in Table 2-5.
Carrier Bypass in favor of an On-net Route applies under the following conditions:

- A PIC1 or PIC2 Carrier Identification Code (CIC) is present.
- Destination call-type is INTERLATA or TOLL.
- It is not an operator call.
- Carrier USE-DIAL-PLAN = N (see description of this below).
- Destination route-type is Not CARRIER.
- It is not a casual carrier call (based on Nature of Dial, NOD).
- Dn2subscriber record for the DN does not exist, and the Destination BYPASS-CARRIER-ROUTING is ALL-CALLS.
- Dn2subscriber record exists, BYPASS-CARRIER-ROUTING is SUB-ONLY or ALL-CALLS, and any of the following are true:
  - Dn2subscriber status is PORTED-OUT and an LNP query was done. This condition implies that the SCP either returned no LRN, or "my LRN" (LRN matching either Dn2subscriber record with status LRN, or Pop MY-LRN). This is an error case, because our switch has marked the subscriber as PORTED-OUT, but the SCP has returned my LRN. There is no chance to complete this call, so we bypass carrier and route on-net, and the call fails. During the porting transition, our BTS 10200 has probably already marked the DN as ported-out, but the SCP has not updated the database with the correct LRN of the recipient switch.
  - Dn2subscriber status ASSIGNED, and LNP-TRIGGER = N: this is the normal case for carrier bypass to an on-net subscriber of this switch, for which LNP porting has not occurred.
  - Dn2subscriber status ASSIGNED, LNP-TRIGGER = Y, LNP query was done, and route-type is SUB (donor transition case): We bypass carrier and route on-net, because our subscriber is in transition to being ported-out, but the SCP does not yet have the LRN of the recipient switch.
  - Dn2subscriber status ASSIGNED, LNP-TRIGGER = Y, LNP query was done, and route-type is Not SUB, and the SCP returned my LRN (recipient transition case): We bypass carrier and route on-net, because this DN is in transition to being ported-in to this switch, and the SCP has provided our LRN, indicating that the porting-in transition is complete.

Note: If the SCP query results in no LRN provided, then we must assume that the porting-in transition has not completed, so we do not bypass carrier, because carrier routing is required to route the call to the switch owning the DN block range of the called DN.

- Dn2subscriber status not PORTED-OUT and not ASSIGNED, LNP query was done, and route-type is SUB: There is no chance to route this call. Because route-type is SUB, we know the DN’s DN block (e.g., NPA-NXX) is owned by this switch. Perhaps somebody has dialed a disconnected or vacant number, or accidentally dialed LRN. In any case, we bypass the carrier and route locally for the call to fail.
In a few cases, we do not bypass carrier routing because a necessary LNP query was not done, or for other reasons we may not be able to correctly route the call. For example:

- Dn2subscriber record exists, BYPASS-CARRIER-ROUTING is SUB-ONLY or ALL-CALLS, Dn2subscriber status is PORTED-OUT, and an LNP query was NOT done. For status PORTED-OUT, an LNP query is needed to route the call. Probably there is a provisioning discrepancy, for example, in a switch with a ported-out DN, a destination which specifies BYPASS-CARRIER-ROUTING of either SUB-ONLY or ALL-CALLS should have the NANP-LNP-QUERY set to NA or PERFORM-LNP-QUERY. Also, the Ported Office Code might be missing. In any case, the carrier bypass without an LNP query prevents the call from completing to the DN on the recipient switch, so the call is routed to the carrier, who is expected to do the query and complete the call to the recipient switch.

- Dn2subscriber record exists, BYPASS-CARRIER-ROUTING is SUB-ONLY or ALL-CALLS, Dn2subscriber status is ASSIGNED, LNP-TRIGGER = Y, and an LNP query was not done. For status ASSIGNED with LNP-TRIGGER = Y, an LNP query is expected in order to determine whether the DN during the porting transition is still on our switch or not. Probably there is a provisioning discrepancy, for example, in a switch with a DN in porting transition, a Destination which specifies BYPASS-CARRIER-ROUTING of either SUB-ONLY or ALL-CALLS should have the NANP-LNP-QUERY set to NA, PERFORM-LNP-QUERY, or UNCONDITIONAL-LNP-TRIGGER-QUERY. Also, the Ported Office Code might be missing. In any case, the carrier bypass without an LNP query routes the call to the subscriber on this switch, which may be incorrect. So carrier bypass is not allowed, and we let the carrier take care of routing the call properly.

- Dn2subscriber record exists, BYPASS-CARRIER-ROUTING is SUB-ONLY or ALL-CALLS, Dn2subscriber status is Not ASSIGNED, LNP-TRIGGER = N, route-type is Not SUB. This is an unusual case, because we have a dn2subscriber record, but the Destination route-type is Not SUB. Possibly a DN ported-in to this switch, but maybe has since been marked as Vacant, Disconnected, etc. Since we don't own the NPA-NXX DN block (implied by route-type not SUB), we allow carrier routing to route the call to the number block owner.

**Remove LNP Query Result Data When Carrier LNP-QUERY= N**

For an outgoing carrier call after an LNP query in the same switch, with Carrier LNP-QUERY = N, remove the LNP query result data, if present. The LRN, FCI, and GAP are destroyed as if a query were not performed. That is, outgoing IAM Forward Call Indicators (FCI) bit-M is set to "not translated", and if Generic Address Parameter (GAP) is present, then the Called Party Number (CdPN) digits are set to the (ported) called DN from the Generic Address Parameter (GAP), the GAP parameter is destroyed.

Existing BTS 10200 operators might have agreements with their carriers that the carrier does the LNP query. Prior to this feature, the BTS 10200 did not allow an LNP query on carrier calls. Now, as a result of this feature, LNP queries might be required in order to determine whether an on-net route exists. If a query is needed but then it is determined that the call needs to be routed to the carrier, and the carrier expects to perform queries (Carrier LNP-QUERY=N), the LNP data is removed. This ensures that the carrier's expectation that it can do the query is met, and the carrier is not aware that a query was already done.

The LNP data will be removed only if the LNP query occurred on the same switch. This ensures that valid LNP data as a result of a query that was done by any switch prior to routing to this BTS 10200 will not be removed.
Removing the LNP data affects only the outgoing signaling message (i.e., SS7 ISUP IAM). The LNP data is retained in the BTS 10200, so billing and other functions are not affected by removal of the LNP data from the signaling message. The LNP data is removed if all of the following conditions are met:

- An ANSI LNP query was performed in this switch.
- The outgoing signaling message contains the Transit Network Selection (TNS) parameter, which has a Carrier Identification Code (Carrier ID, or CIC).
- Carrier record (accessed by Carrier ID from the TNS) has LNP-QUERY = N.
- Carrier record has USE-DIAL-PLAN = N.

Note that an alternative method to remove the LNP data is pre-existing. That is, if the outgoing trunk group SIGNAL-PORTED-NUMBER = Y, then the LNP data is removed in the same way as described above.

Ignore Inbound LNP Information

When an incoming trunk call is received on a trunk group with IGNORE-INBOUND-LNP = Y, ignore any received LNP data as if it were not received. Specifically, the FCI bit-M is set to "number not translated", and if the GAP and LRN are present, the GAP digits are placed in the Called Party Number digits, and the GAP and LRN are destroyed.

"LNP data" received on an incoming call as the result of an LNP query on another switch might consist of:

- ANSI ISUP forward call indicators (FCI) bit-M set indicating "translated number", and is present if an LNP query was performed.
- LRN and GAP, present if provided by the SCP as a result of an LNP query when the DN is ported; not present if the DN is not ported:
  - The Generic Address Parameter (GAP) may contain the original called party digits (GAP type of address indicates ported dialed number), and
  - The Called Party Number (CdPN) parameter may contain the Location Routing Number (LRN) which addresses the recipient switch.

This requirement adds the capability to ignore this LNP information and process the call as if the called party digits were dialed without an LNP query.

When a call is received on a trunk group and the trunk group IGNORE-INBOUND-LNP = Y, then if the FCI indicates translated number and a GAP is present, then the GAP (original called party) digits are copied into the CdPN digits (destroying the LRN), then the GAP parameter is destroyed, and the FCI is reset to indicate that the number is not translated. Then the call is allowed to proceed.

Note that this requirement has the following side effects on other existing LNP functionality:

1. The billing record does not show the LRN and GAP.
2. If the call fails, LNP-specific measurements and notifications (performs as if the LRN and GAP were not received.)
Warning

 IGNORE-INBOUND-LNP = Y should be used with care, and is not recommended for normal routing scenarios. Clearing the FCI could minimally result in extra, unneeded queries, and at worst, result in routing loops during porting transitions. For example, if a DN is ported twice, and different switches/operators use different SCPs, which don’t have LRNs exactly synchronized, then each switch will query their SCP and route the call to the other. Such a routing loop ("shoelaces") would continue until one of the hops expires or all available trunks are exhausted. Once the hop count expires or all trunks are seized, then everything immediately clears. Nevertheless, such routing loops are a reason for concern, and the normal FCI checks with IGNORE-INBOUND-LNP = N will prevent them from occurring.

If IGNORE-INBOUND-LNP = Y is used, we recommend that you tailor the appropriate trunk group profile(s) (e.g., ss7-ansi-tg-profile) hop-counter to a reasonable (small) value such that a routing loop, should it occur, does not busy out too many trunk circuits.

On-net Routing Use Case Matrix

Table 2-6 provides a matrix of on-net routing use cases.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NO-LNP-QUERY</td>
<td>N</td>
<td>DC</td>
<td>DC</td>
<td>DC</td>
<td>DC</td>
<td>N</td>
<td></td>
<td>Normal call routing.</td>
</tr>
<tr>
<td>2</td>
<td>NO-LNP-QUERY</td>
<td>N</td>
<td>DC</td>
<td>DC</td>
<td>DC</td>
<td>1</td>
<td>Y</td>
<td>N</td>
<td>Normal call routing.</td>
</tr>
<tr>
<td>3</td>
<td>NO-LNP-QUERY</td>
<td>N</td>
<td>DC</td>
<td>DC</td>
<td>DC</td>
<td>1</td>
<td>Y</td>
<td>N</td>
<td>Normal call routing.</td>
</tr>
<tr>
<td>4</td>
<td>NO-LNP-QUERY</td>
<td>N</td>
<td>DC</td>
<td>DC</td>
<td>Y</td>
<td>1</td>
<td>N</td>
<td>N</td>
<td>Destination routing.</td>
</tr>
<tr>
<td>5</td>
<td>NO-LNP-QUERY</td>
<td>N</td>
<td>DC</td>
<td>DC</td>
<td>N</td>
<td>1</td>
<td>Y</td>
<td>N</td>
<td>Error case.</td>
</tr>
<tr>
<td>6</td>
<td>NO-LNP-QUERY</td>
<td>N</td>
<td>DC</td>
<td>DC</td>
<td>Y</td>
<td>1</td>
<td>Y</td>
<td>N</td>
<td>Destination routing.</td>
</tr>
<tr>
<td>7</td>
<td>NO-LNP-QUERY</td>
<td>Y</td>
<td>DC (N)</td>
<td>NONE</td>
<td>DC (Y)</td>
<td>N</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>8</td>
<td>NO-LNP-QUERY</td>
<td>Y</td>
<td>DC (Y)</td>
<td>NONE</td>
<td>DC (Y)</td>
<td>DC (N)</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>9</td>
<td>NO-LNP-QUERY</td>
<td>Y</td>
<td>DC (Y)</td>
<td>NONE</td>
<td>DC</td>
<td>DC (Y)</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
</tbody>
</table>
### Table 2-6  On-net Routing Use Case Matrix (continued)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>NO-LNP-QUERY</td>
<td>Y (PIC2)</td>
<td>DC (Y)</td>
<td>NONE</td>
<td>DC</td>
<td>DC (Y)</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>11</td>
<td>NO-LNP-QUERY</td>
<td>Y</td>
<td>DC (Y)</td>
<td>NONE</td>
<td>DC</td>
<td>DC (Y)</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>12</td>
<td>NO-LNP-QUERY</td>
<td>Y</td>
<td>DC (Y)</td>
<td>N</td>
<td>DC</td>
<td>Y</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>13</td>
<td>NO-LNP-QUERY</td>
<td>DC (Y)</td>
<td>SUB-ONLY</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td></td>
<td>Bypass carrier and route on-net to local sub.</td>
</tr>
<tr>
<td>14</td>
<td>NO-LNP-QUERY</td>
<td>Y</td>
<td>DC (Y/N)</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>15</td>
<td>NO-LNP-QUERY</td>
<td>Y</td>
<td>DC (Y/N)</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>16</td>
<td>NO-LNP-QUERY</td>
<td>Y</td>
<td>DC (Y/N)</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>17</td>
<td>NO-LNP-QUERY</td>
<td>Y</td>
<td>DC (Y)</td>
<td>ALL-CALLS</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td></td>
<td>Bypass carrier and route on-net to local sub.</td>
</tr>
<tr>
<td>18</td>
<td>NO-LNP-QUERY</td>
<td>Y</td>
<td>DC (Y/N)</td>
<td>ALL-CALLS</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td></td>
<td>Bad provisioning.</td>
</tr>
<tr>
<td>19</td>
<td>NO-LNP-QUERY</td>
<td>Y</td>
<td>DC (Y/N)</td>
<td>ALL-CALLS</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td></td>
<td>Bypass carrier.</td>
</tr>
<tr>
<td>101</td>
<td>NA</td>
<td>N</td>
<td>DC</td>
<td>DC</td>
<td>Y</td>
<td>N</td>
<td>Y/N</td>
<td></td>
<td>Normal call routing.</td>
</tr>
<tr>
<td>102</td>
<td>NA</td>
<td>N</td>
<td>DC</td>
<td>DC</td>
<td>Y</td>
<td>N</td>
<td>Y/N</td>
<td></td>
<td>Normal call routing.</td>
</tr>
<tr>
<td>103</td>
<td>NA</td>
<td>N</td>
<td>DC</td>
<td>DC</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>DC</td>
<td>Normal call routing.</td>
</tr>
<tr>
<td>100</td>
<td>NA</td>
<td>N</td>
<td>DC (N)</td>
<td>DC</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Any LRN</td>
<td>Retranslate on received LRN.</td>
</tr>
<tr>
<td>100a</td>
<td>A²</td>
<td>Local</td>
<td>DC</td>
<td></td>
<td>My LRN</td>
<td>Same destination after query.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100b</td>
<td>B³</td>
<td>Local</td>
<td>DC</td>
<td></td>
<td>On-net LRN</td>
<td>Route on-net via LRN destination.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100c</td>
<td>C⁴</td>
<td>Local</td>
<td>DC</td>
<td></td>
<td>Off-net LRN</td>
<td>Route via LRN destination.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 2-6  On-net Routing Use Case Matrix (continued)

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>104</td>
<td>NA</td>
<td>Y</td>
<td>Y</td>
<td>NONE</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>No LRN</td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>105</td>
<td>NA</td>
<td>Y</td>
<td>Y</td>
<td>NONE</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>No LRN</td>
<td>Carrier routing after LNP query</td>
</tr>
<tr>
<td>106</td>
<td>NA</td>
<td>Y</td>
<td>Y</td>
<td>NONE</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Any LRN</td>
<td>Carrier allows LNP QUERY—retranslate on received LRN.</td>
</tr>
<tr>
<td>106a</td>
<td>A</td>
<td>Carrier</td>
<td>NONE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>My LRN</td>
<td>Error case.</td>
</tr>
<tr>
<td>106b</td>
<td>B</td>
<td>Carrier</td>
<td>ALL-CALLS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>On-net LRN</td>
<td>After LRN translation, make new routing decision based on new destination.</td>
</tr>
<tr>
<td>106c</td>
<td>C</td>
<td>Carrier</td>
<td>NONE OR SUB-ONLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Off-net LRN</td>
<td>New destination after LRN translation. Route to Carrier.</td>
</tr>
<tr>
<td>107</td>
<td>NA</td>
<td>Y</td>
<td>Y (PIC2)</td>
<td>NONE</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>No LRN</td>
<td>Carrier routing after LNP query.</td>
</tr>
<tr>
<td>108</td>
<td>NA</td>
<td>Y</td>
<td>Y</td>
<td>NONE</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Any LRN</td>
<td>Carrier allows LNP QUERY—retranslate on received LRN.</td>
</tr>
<tr>
<td>108a</td>
<td>A</td>
<td>Carrier</td>
<td>NONE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>My LRN</td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>108b</td>
<td>B</td>
<td>Carrier</td>
<td>ALL-CALLS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>On-net LRN</td>
<td>New destination after LRN translation.</td>
</tr>
<tr>
<td>108c</td>
<td>C</td>
<td>Carrier</td>
<td>NONE OR SUB-ONLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Off-net LRN</td>
<td>New destination after LRN translation.</td>
</tr>
</tbody>
</table>
### Table 2-6  On-net Routing Use Case Matrix (continued)

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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>109</td>
<td>NA</td>
<td>Y</td>
<td>DC (Y)</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td></td>
<td>Route on-net (carrier bypass) to local sub.</td>
</tr>
<tr>
<td>110</td>
<td>NA</td>
<td>Y</td>
<td>DC (Y)</td>
<td>SUB-ONLY</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td></td>
<td>Route on-net (carrier bypass) to local sub.</td>
</tr>
<tr>
<td>111a</td>
<td>NA</td>
<td>Y</td>
<td>Y</td>
<td>SUB-ONLY</td>
<td>DC (Y)</td>
<td>N</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>111b</td>
<td>NA</td>
<td>Y</td>
<td>N</td>
<td>SUB-ONLY</td>
<td>DC (Y)</td>
<td>N</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>111c</td>
<td>NA</td>
<td>Y</td>
<td>Y</td>
<td>SUB-ONLY</td>
<td>DC (Y)</td>
<td>N</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>112</td>
<td>NA</td>
<td>Y</td>
<td>Y</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>113</td>
<td>NA</td>
<td>Y</td>
<td>Y</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>114</td>
<td>NA</td>
<td>Y</td>
<td>Y</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>No LRN</td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>115</td>
<td>NA</td>
<td>Y</td>
<td>N</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>116</td>
<td>NA</td>
<td>Y (PIC2)</td>
<td>N</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td></td>
<td>Carrier routing.</td>
</tr>
<tr>
<td>117</td>
<td>NA</td>
<td>Y</td>
<td>Y</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>No LRN</td>
<td>Route on-net (carrier bypass).</td>
</tr>
<tr>
<td>118</td>
<td>NA</td>
<td>Y (PIC2)</td>
<td>Y</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>No LRN</td>
<td>Route on-net (carrier bypass).</td>
</tr>
<tr>
<td>119</td>
<td>NA</td>
<td>Y (PIC2)</td>
<td>Y</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>No LRN</td>
<td>Route to carrier.</td>
</tr>
<tr>
<td>120</td>
<td>NA</td>
<td>Y</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Any LRN</td>
<td>Carrier allows LNP QUERY—retran slate on received LRN.</td>
</tr>
<tr>
<td>120a</td>
<td>A</td>
<td>Carrier</td>
<td>SUB-ONLY</td>
<td></td>
<td>My LRN</td>
<td></td>
<td></td>
<td>On-net route to local sub.</td>
<td></td>
</tr>
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<td>Carrier</td>
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<td>Y</td>
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<td>Any</td>
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</tr>
<tr>
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<td>ALL-CALLS</td>
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<tr>
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<td>LRN</td>
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<tr>
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<td>Y</td>
<td>No LRN</td>
<td>On-net routing to local sub.</td>
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### Table 2-6  On-net Routing Use Case Matrix (continued)

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</tr>
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<td>ALL-CALLS</td>
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<td>Y</td>
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<td>Y</td>
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<tr>
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<tr>
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<td>Carrier</td>
<td>ALL-CALLS</td>
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<tr>
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<td>Y</td>
<td>DC</td>
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<td>DC (Y)</td>
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<td>DC (N)</td>
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<td>Re-translate on received LRN.</td>
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## Table 2-6  On-net Routing Use Case Matrix (continued)

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<td>Off-net LRN</td>
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<td>Y</td>
<td>DC</td>
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<td>No LNR</td>
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<td>DC</td>
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<td>Y</td>
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<td>ALL-CALLS</td>
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<td>NONE OR SUB-ONLY</td>
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<td>N</td>
<td>Route on-net (carrier bypass) to local sub.</td>
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### Table 2-6 On-net Routing Use Case Matrix (continued)

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<tr>
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<td>Error case.</td>
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<td>Carrier</td>
<td>ALL-CALLS</td>
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<td>On-net LRN</td>
<td>After LRN translation, make new routing decision based on new destination.</td>
</tr>
<tr>
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<td>NONE OR SUB-ONLY</td>
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<td>Off-net LRN</td>
<td>Retranslate on LRN—after LRN translation, make new routing decision based on new destination.</td>
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<td>Same destination after query.</td>
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<tr>
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<td>On-net LRN</td>
<td>After LRN translation, make new routing decision based on new destination.</td>
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Table 2-6  On-net Routing Use Case Matrix (continued)

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<td>ALL-CALLS</td>
<td>N N N</td>
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<td>Case 1: If dn2sub does exist, but is not assigned, route to the carrier. Case 2: If dn2sub does not exist, on-net route (carrier bypass), using route from destination.</td>
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<td>ALL-CALLS</td>
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<td>If dn2sub does exist, but is not assigned, route to the carrier.</td>
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<td>Error case.</td>
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<td>ALL-CALLS</td>
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<td></td>
<td>On-net LRN After LRN translation, make new routing decision based on new destination.</td>
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<tr>
<td>219c</td>
<td>C</td>
<td>Carrier</td>
<td>NONE OR SUB-ONLY</td>
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<td></td>
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<td>Error case.</td>
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<td>ALL-CALLS</td>
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<td>After LRN translation, make new routing decision based on new destination.</td>
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<td>Y/N</td>
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<td>N</td>
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<td>DC (N)</td>
<td>DC</td>
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<td>Y</td>
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<td>Route call to local ported-in sub.</td>
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<td>DC</td>
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<td>Route via LRN destination.</td>
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<td>Route via LRN destination.</td>
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<tr>
<td>307</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y</td>
<td>DC (Y)</td>
<td>NONE</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Carrier routing.</td>
<td></td>
</tr>
<tr>
<td>308</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y (Interlata)</td>
<td>DC (Y)</td>
<td>NONE</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Retranslate on received LRN.</td>
<td></td>
</tr>
<tr>
<td>308a</td>
<td>A</td>
<td>Carrier</td>
<td>NONE</td>
<td></td>
<td></td>
<td></td>
<td>My LRN</td>
<td>Carrier routing.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 2-6  On-net Routing Use Case Matrix (continued)

<table>
<thead>
<tr>
<th>Use Case No.</th>
<th>NANP-LNP-QUERY</th>
<th>Carrier Call? (Interlata or Toll, use dial-plan=N)</th>
<th>Carrier LNP-QUERY</th>
<th>BYPASS-CARRIER</th>
<th>Ported-Office-Code Match?</th>
<th>LNP-TRIGGER or PORTED-OUT</th>
<th>LNP Query LRN?</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>308b</td>
<td>B</td>
<td>Carrier</td>
<td>ALL-CALLS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>On-net LRN; translation, make new routing decision based on new destination.</td>
</tr>
<tr>
<td>308c</td>
<td>C</td>
<td>Carrier</td>
<td>NONE or SUB-ONLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Off-net LRN; translation, make new routing decision based on new destination.</td>
</tr>
<tr>
<td>309</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y</td>
<td>DC (Y)</td>
<td>NONE</td>
<td>DC</td>
<td>Y</td>
<td>Y</td>
<td>No LRN; Carrier routing.</td>
</tr>
<tr>
<td>310</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y</td>
<td>DC (Y)</td>
<td>NONE</td>
<td>DC</td>
<td>Y</td>
<td>Y</td>
<td>Any LRN; Retranslate on received LRN.</td>
</tr>
<tr>
<td>310a</td>
<td>A</td>
<td>Carrier</td>
<td>NONE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>My LRN; Carrier routing.</td>
</tr>
<tr>
<td>310b</td>
<td>B</td>
<td>Carrier</td>
<td>ALL-CALLS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>On-net LRN; After LRN translation, make new routing decision based on new destination.</td>
</tr>
<tr>
<td>310c</td>
<td>C</td>
<td>Carrier</td>
<td>NONE or SUB-ONLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Off-net LRN; After LRN translation, make new routing decision based on new destination.</td>
</tr>
</tbody>
</table>
### Table 2-6 On-net Routing Use Case Matrix (continued)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>311</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y</td>
<td>DC (Y)</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>Terminate call locally (bypass carrier) if my subscriber (status=assigned), else normal carrier routing.</td>
<td></td>
</tr>
<tr>
<td>312</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y</td>
<td>DC (Y)</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Normal carrier routing.</td>
<td></td>
</tr>
<tr>
<td>313</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y (Interlata)</td>
<td>DC (Y)</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>no LRN</td>
<td>Bypass carrier; route on-net to local not ported (yet) subscriber.</td>
</tr>
<tr>
<td>314</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y</td>
<td>DC (Y)</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>any LRN</td>
<td>Retranslate on received LRN.</td>
</tr>
<tr>
<td>314a</td>
<td>A</td>
<td>Carrier</td>
<td>SUB-ONLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>My LRN</td>
<td>Bypass carrier, and route on-net to not ported local sub.</td>
</tr>
<tr>
<td>314b</td>
<td>B</td>
<td>Carrier</td>
<td>ALL-CALLS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>On-net LRN</td>
<td>After LRN translation, make new routing decision based on new destination.</td>
</tr>
<tr>
<td>314c</td>
<td>C</td>
<td>Carrier</td>
<td>NONE or SUB-ONLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Off-net LRN</td>
<td>After LRN translation, make new routing decision based on new destination.</td>
</tr>
</tbody>
</table>
### Table 2-6 On-net Routing Use Case Matrix (continued)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>315</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y</td>
<td>DC (Y/N)</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>No LRN</td>
</tr>
<tr>
<td>316</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y</td>
<td>DC (Y)</td>
<td>SUB-ONLY</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Any LRN</td>
</tr>
<tr>
<td>316a</td>
<td>A</td>
<td>Carrier</td>
<td>SUB-ONLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>My LRN</td>
</tr>
<tr>
<td>316b</td>
<td>B</td>
<td>Carrier</td>
<td>ALL-CALLS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>On-net LRN</td>
</tr>
<tr>
<td>316c</td>
<td>C</td>
<td>Carrier</td>
<td>NONE or SUB-ONLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Off-net LRN</td>
</tr>
<tr>
<td>317</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y</td>
<td>DC (Y)</td>
<td>ALL-CALLS</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>318</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y</td>
<td>DC (Y/N)</td>
<td>ALL-CALLS</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
</tbody>
</table>
**Table 2-6 On-net Routing Use Case Matrix (continued)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>319</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y</td>
<td>DC (Y/N)</td>
<td>ALL-CALLS</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>No LRN</td>
<td>Bypass carrier; route on-net to local not ported (yet) subscriber.</td>
</tr>
<tr>
<td>320</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y</td>
<td>DC (Y/N)</td>
<td>ALL-CALLS</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>No LRN</td>
<td>Bypass carrier; route on-net to switch owning the DN block.</td>
</tr>
<tr>
<td>321</td>
<td>UNCONDITIONAL-LNP-TRIGGER-QUERY</td>
<td>Y</td>
<td>DC (Y/N)</td>
<td>ALL-CALLS</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Any LRN</td>
<td>Retranslate on received LRN.</td>
</tr>
<tr>
<td>321a</td>
<td>A</td>
<td>Carrier</td>
<td>ALL-CALLS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>My LRN</td>
<td>Bypass carrier, and route on-net to ported in local sub.</td>
</tr>
<tr>
<td>321b</td>
<td>B</td>
<td>Carrier</td>
<td>ALL-CALLS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>On-net LRN</td>
<td>After LRN translation, make new routing decision based on new destination.</td>
</tr>
<tr>
<td>321c</td>
<td>C</td>
<td>Carrier</td>
<td>NONE or SUB-ONLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Off-net LRN</td>
<td>After LRN translation, make new routing decision based on new destination.</td>
</tr>
</tbody>
</table>

1. DC = Don’t care
2. A. (Result of Translated LRN)
3. B. (Result of Translated LRN)
4. C. (Result of Translated LRN)
Feature Interactions

There are no new, modified, or deleted feature interactions related to the BTS 10200 On-Net Routing and LNP for Inter-CMS Routing feature described in this document. In principle, it should not matter whether or not an LNP query or carrier bypass occurs on the forwarding leg of a forwarded call (e.g., for CFU, CFB, and CFNA). Likewise, it should not matter whether the query is on a second leg of a multi-party call, such as for CT or TWC.

It is possible that an 8xx toll free service query and LNP query occur on the same call. For example, an 8xx number may be dialed which initially needs an 8xx query, and perhaps also an LNP query. The 8xx query is performed first, and then retranslation on the returned number (if present) occurs, and LNP checks are performed again, resulting in the following scenarios:

- The 8xx query returned a carrier and translated DN. As for a normal call, the carrier checks occur first:
  - If the translated DN has a dial plan entry and destination, the LNP checks look at the carrier + translated DN, as applicable
  - If the translated DN does not have a dial plan entry and destination, the original destination is used during the LNP checks on carrier (if present) and translated DN.

Again, for the above scenarios, there is nothing different from normal LNP criteria checks, and likewise the logic for checking the translated LRN, and for the carrier routing after the second translation.

Configuring

This section explains how to perform the following tasks:

- Configuring LNP Queries
- Configuring an LNP Query on a Carrier Call
- Configuring Carrier Bypass (On-net Route)—No LNP Queries
- Configuring Carrier Bypass (On-net Route)—LNP Queries
- Configuring Carrier Bypass (On-net Route)—Multi-BTS 10200 Softswitches
- Configuring Inter-CMS —Subscriber Origination (If No NRS), or Trunk Origination on MGC or Terminating CMS (ALL-CALLS + LNP Query)
- Configuring Inter-CMS with NRS—Same BTS 10200 Acting as CMS and MGC
- Selectively Configuring LNP Queries (Allow or Disallow) for a Particular Call Type
Configuring LNP Queries

For all Destinations resulting from dial plan translations for which an LNP query may be allowed, use the Destination NANP-LNP-QUERY default value NA. For all Carrier entries, use LNP-QUERY default value N.

Specify the NANP-LNP-QUERY value either implicitly using add destination without specifying NANP-LNP-QUERY parameter, or explicitly set it.

For example:

change destination dest-id=local_call; nanp-lnp-query=NA;

Specify Carrier LNP-QUERY = N implicitly by omitting the LNP-QUERY parameter, or explicitly.

For example:

change carrier id=0333; lnp-query=N;

Configuring an LNP Query on a Carrier Call

For all destinations resulting from dial plan translations which could result in Carrier routing (e.g., Destination call-type INTERLATA, TOLL, or CARRIER), the destination NANP-LNP-QUERY should have value PERFORM-LNP-QUERY or NA. If value NA is used, then the appropriate Carrier entry should have either USE-DIAL-PLAN=Y or LNP-QUERY = Y.

For example,

Either:

add destination dest-id=dest_carrier; call-type=INTERLATA; route-type=ROUTE;
route-guide-id=carrier_rg; nanp-lnp-query=PERFORM-LNP-QUERY; description=Allow LNP query on Carrier calls;

Or

add destination dest-id=dest_carrier; call-type=INTERLATA; route-type=ROUTE;
route-guide-id=carrier_rg; description=nanp-lnp-query has default value NA!;

add carrier id=0333; inter=Y; intra=Y; intl=Y; use-dial-plan=N; route-guide-id=dpc1-rg;
cut-thru=N; status=INS; lnp-query=Y; description=Allow an LNP query on calls to this carrier;

add ported-office-code digit-string=703-484;

add dial-plan id=dp_nanp_sub; digit-string=703-484; min-digits=10; max-digits=10;
dest-id=dest_carrier;
Configuring Carrier Bypass (On-net Route)—No LNP Queries

The BTS 10200 will route this call to the carrier unless the called DN is a subscriber assigned on this switch and not in a porting transition state. For this scenario, the operator wants carrier bypass for local subscribers, but does not want to incur the overhead of LNP queries for DNs which are in the process of porting in or porting out (LNP-TRIGGER=Y). The operator might know that either A) there are no transition DNs in this switch (or perhaps all are ported-out), or B) there are very few, and the operator would prefer that the Carrier do the LNP query, and route calls back to our switch for a very few calls.

The destination has call-type INTERLATA for Carrier routing, SUB-ONLY to allow carrier bypass for local subs, and NO-LNP-QUERY to force calls needing a query to go to the carrier.

For example:

```
add destination dest-id=carrier_or_sub; call-type=INTERLATA; route-type=SUB;
bypass-carrier-routing=SUB-ONLY; nanp-lnp-query=NO-LNP-QUERY; description=Carrier route unless SUB assigned (no query);
```

Configuring Carrier Bypass (On-net Route)—LNP Queries

The BTS 10200 routes this call to the carrier unless the called DN is a subscriber assigned on this switch. This includes DNs which are in the process of either porting in or porting out. For these transition DNs requiring an "unconditional" (ATIS document terminology), which are marked with Dn2subscriber LNP-TRIGGER=Y, will get an LNP query before the routing decision is made. For the transition DNs for which there is an LNP query, the LNP query results determine whether the call is routed to the Carrier or bypasses the carrier if the subscriber is in this switch.

The Destination has call-type INTERLATA for Carrier routing, SUB-ONLY to allow carrier bypass for local subs, and UNCONDITIONAL-LNP-TRIGGER-QUERY to allow a query for DNs during the transition period.

For example:

```
add destination dest-id=carr_or_sub_lnp; call-type=INTERLATA; route-type=SUB;
bypass-carrier-routing=SUB-ONLY; nanp-lnp-query=UNCONDITIONAL-LNP-TRIGGER-QUERY; description=Carrier unless local SUB (query DNs during porting transition);
```

# Mark DN 703-765-4449 as a 'transition DN" in the process of porting in or porting out
```
change dn2subscriber office-code-index=1; dn=4449; lnp-trigger=Y;
```
Configuring Carrier Bypass (On-net Route)—Multi-BTS 10200 Softswitches

For an operator with multiple BTS 10200 softswitches all interconnected over an IP network, it is more efficient for an operator to route calls on-net and avoid routing a call to a carrier, which will only be routed back to another on-net switch. This is the scenario for which the On-net Routing feature was requested. However, to gain the advantage of all-IP on-net routing, there is the cost of additional LNP queries. LNP queries might be required before on-net routing to make sure that the called DN has not ported out of the network.

The Destination NANP-LNP-QUERY PERFORM-LNP-QUERY value is used to ensure that an LNP query is done before on-net routing. Of course, this query is still conditional, depending on whether the Ported Office Code entry exists and other related criteria. The destination call-type is either INTERLATA or TOLL, and the BYPASS-CARRIER-ROUTING value is ALL-CALLS. Three routing scenarios are possible:

1. Route to carrier for off-net call.
2. Route using destination for on-net call to another on-net switch.
3. Route on-net to subscriber in the same switch. Ignore carrier and destination routes.

For example:

```
add destination dest-id=carrier_or_bypass; call-type=INTERLATA; route-type=ROUTE; 
route-guide-id=on_net_rg; nanp-lnp-query=PERFORM-LNP-QUERY; 
bypass-carrier-routing=ALL-CALLS; description=LNP query, and route to carrier, or on-net;
```

Configuring Inter-CMS —Subscriber Origination (If No NRS), or Trunk Origination on MGC or Terminating CMS (ALL-CALLS + LNP Query)

There are various Inter-CMS scenarios where a BTS 10200, upon receiving an incoming trunk call, should perform an LNP query, and if an on-net route exists, bypass carrier routing. Or for an Inter-CMS network with no NRS, it might be desirable to do LNP queries on the originating CMS.

For example:

- MGC, acting as a PSTN gateway:
  - Call originated from a CMS, within the network—MGC can do an LNP query, and either route off-net or on-net.
  - Incoming call from the PSTN—Normally, the LNP query is done by the PSTN; however, if that does not happen, then the MGC can do an LNP query before routing the call within the network.
- Terminating CMS—For a call originated on-net from a CMS, the call can be routed directly to the terminating CMS, where perhaps an LNP query is needed.
- Originating CMS, e.g., without NRS—It may be desirable to do an LNP query on the originating CMS, in order to route calls to a terminating CMS directly, and avoid routing through the MGC (or Carrier). In particular, doing the LNP query and on-net routing from the originating CMS can be helpful in an Inter-CMS network configuration without an NRS.

The provisioning for this scenario is exactly the same as for Multi-BTS 10200—Carrier bypass, above.
Configuring Inter-CMS with NRS—Same BTS 10200 Acting as CMS and MGC

Intermediate phases of inter-CMS routing can have a single BTS 10200 acting as the CMS for NCS subscribers, and also acting as an MGC PSTN interface. Essentially this is a combination of cases already shown above. For subscriber originations (CMS), the subscriber dial plans should not allow a query, and ensure that the call is routed on-net to the NRS (if applicable). Incoming trunks calls can be routed from the NRS to this BTS 10200 in case the final destination is a CMS subscriber or PSTN subscriber.

The key to understanding this configuration is realizing that for a subscriber origination, the subscriber dial plan will result in a Destination which does not allow an LNP query and may have an on-net route to the NRS. But for a trunk origination on the same BTS 10200, the incoming trunk dial plan, for the same DN, has a different destination, which will allow an LNP query, and will not bypass the Carrier for calls to the PSTN.

For example:

# Subscriber Destination and Dial Plan; 703-484 is on-net, 301-444 is off-net;
# 703-484 may have DNs ported-out (needs queries).
# 301-444 (off-net) has no ported-in DNs BTS 10200, and does not need dial-plan entry (always carrier routing)

add destination dest-id=cms_sub_nrs; call-type=INTERLATA; route-type=ROUTE; route-guide-id=nrs_rg; bypass-carrier-routing=ALL-CALLS; nanp-lnp-query=NO-LNP-QUERY; description=Route all sub originations to NRS with no LNP query;

add dial-plan id=dp_nanp_sub; digit-string=703-484; min-digits=7; max-digits=10; dest-id=cms_sub_nrs;

# Incoming Trunk Group Destination and Dial Plan:

add destination dest-id=carrier_or_bypass; call-type=INTERLATA; route-type=ROUTE; route-guide-id=on_net_rg; nanp-lnp-query=PERFORM-LNP-QUERY; bypass-carrier-routing=ALL-CALLS; description=LNP query, and route to carrier, or on-net;

add destination dest-id=dest_carrier; call-type=INTERLATA; route-type=ROUTE; route-guide-id=on_net_rg; nanp-lnp-query=NO-LNP-QUERY; bypass-carrier-routing=ALL-CALLS; description=Carrier will do LNP query;

add ported-office-code digit-string=703-484

add dial-plan id=dp_nanp_sub; digit-string=703-484; min-digits=7; max-digits=10; dest-id=carrier_or_bypass;

add dial-plan id=dp_nanp_sub; digit-string=301-444; min-digits=7; max-digits=10; dest-id=dest_carrier;
Selectively Configuring LNP Queries (Allow or Disallow) for a Particular Call Type

A Call Type Profile entry with LNP-QUERY = Y can be added to allow an LNP query for a particular call-type, for example, WEATHER. However, by changing destination LNP criteria, it is possible to allow a query for some weather calls, but not others.

For example:

### Allow a query on Weather DN 703-569-2198

```plaintext
add call-type-profile call-type=WEATHER; lnp-query=Y;
add destination dest-id=weather_query; call-type=WEATHER; route-type=ROUTE;
    route-guide-id=dpc2-rg; nanp-lnp-query=NA;
add dial-plan id=dp-1; digit-string=703-569-2198; min-digits=10; max-digits=10;
    dest-id=weather_query;
add ported-office-code digit-string=703-569-2198;
```

### Do Not Allow a query on Weather DN 703-569-2197

```plaintext
add destination dest-id=weather_no_query; call-type=WEATHER; route-type=ROUTE;
    route-guide-id=dpc2-rg; nanp-lnp-query=NO-LNP-QUERY;
add dial-plan id=dp-1; digit-string=703-569-2197; min-digits=10; max-digits=10;
    dest-id=weather_no_query;
```

Destination

The NANP-LNP-QUERY token used to define LNP criteria requirements for the USA. For complete Destination table details, refer to the “Destination” section on page 1-55.

Carrier Existing LNP-QUERY=Y/N

Previously used for ITU LNP only, now activated for ANSI:

- Allows an LNP query before routing outbound to a carrier, based on the Carrier LNP-QUERY value

When the call is routed to the outbound carrier, if the Carrier LNP-QUERY = N, indicating that the carrier does not expect a query prior to carrier routing, but a query is done anyway on this switch, then the LNP information (LRN, FCI, and GAP) is destroyed.
Call Type Profile

EXISTING table for ITU LNP, now activated for ANSI/North America LNP:

- Prior to this feature, an LNP query was allowed only for calltypes LOCAL, INTERLATA, TOLL, and TOLL-FREE. Now, for NANP-LNP-QUERY values PERFORM-LNP-QUERY and UNCONDITIONAL-LNP-TRIGGER-QUERY, a query may be performed for any call-type. For these NANP-LNP-QUERY values, the Call Type Profile is not checked.

- For NANP-LNP-QUERY value NA, a query is allowed for the existing call-types, (LOCAL, INTERLATA, TOLL, and TOLL-FREE), and now also INTL-WZ1 (World Zone 1). However, it is possible now to selectively allow an LNP query for other call-types by adding a Call Type Profile entry for the call-type, and setting the Call Type Profile LNP-QUERY = Y. Of course, other criteria, such as Ported Office Code match, are still required in order for a query to be performed.

- For NANP-LNP-QUERY value NA, for call-types other than LOCAL, INTERLATA, TOLL, TOLL-FREE and INTL-WZ1, if a Call Type Profile entry for the given call-type (for example, NATIONAL) is not present, or the Call Type Profile entry has LNP-QUERY = N, a query will not be performed.

LNP-QUERY

This flag is used if the ALL-CALL-QUERY flag in the LNP-PROFILE table is set to Y and the ACQ-LNP-QUERY token in the Destination table is set to ACQ-BASED-ON-CALL-TYPE.

International WZ1 (INTL_WZ1) Preferred Carrier Routing

This section describes the preferred carrier (PIC) routing for an international world zone 1 call. In the past releases, the BTS 10200 supported preferred carrier (PIC) routing based on the routing application defined for the North America PSTN environment. Table 2-7 lists the general preferred carrier routing behavior in prior releases of the BTS 10200.

Table 2-7 General Preferred Routing

<table>
<thead>
<tr>
<th>CALL TYPE</th>
<th>PIC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALLTYPE_INTERLATA</td>
<td>PIC1</td>
<td>Uses SUBSCRIBER.PIC1 to route the call. If PIC1 is not provisioned then route the call to POP.LECOSS.</td>
</tr>
<tr>
<td>CALLTYPE_INTL_WZ1</td>
<td>PIC1</td>
<td>Uses SUBSCRIBER.PIC1 to route the call. If PIC1 is not provisioned then route the call to POP.LECOSS.</td>
</tr>
<tr>
<td>CALLTYPE_TOLL</td>
<td>PIC2</td>
<td>If POP.ITP is set to Y then uses SUBSCRIBER.PIC2 to route the call. Otherwise, route the call according to the provisioning defined in DIAL_PLAN.</td>
</tr>
<tr>
<td>CALLTYPE_INTL</td>
<td>PIC3/PIC1</td>
<td>Uses SUBSCRIBER.PIC3 to route the call if PIC3 is provisioned. If PIC3 is not provisioned then use SUBSCRIBER.PIC1 to route the call. If neither PIC1 nor PIC3 is provisioned then route the call to POP.LECOSS.</td>
</tr>
</tbody>
</table>

Because different customers have different needs regarding the routing for INTL_WZ1 calls, the flexibility of preferred carrier routing for INTL_WZ1 calls has been enhanced as shown in Table 2-8.
There is no change to CALLTYPE_INTERLLATA, CALLTYPE_TOLL, and CALLTYPE_INTL. The CALLTYPE_INTL_WZ1 has two different flavors of preferred carrier routing controlled by the CA-CONFIG:INTL_WZ1_USE_PIC3 flag.

For operator assisted calls, there are minor differences between PIC2 and PIC1/PIC3. A call associated with PIC1 or PIC3 is routed to the PIC1/PIC3 carrier if the SUB_PROFILE.EA_USE_PIC1 is set to Y, otherwise the call is routed to POP.LECOSS. A associated with PIC2 is routed to the PIC2 carrier.

**Note**

When a call is routed to any PICx carrier but the specific carrier does not support it (CARRIER.OP-SERVICES=N), the will be rerouted to POP.LECOSS.

Casual calls are routed to PICx carrier according to the call type if the specified carrier supports casual calls (CARRIER.CASUAL=N), otherwise the call is blocked.

<table>
<thead>
<tr>
<th>CALL TYPE</th>
<th>PIC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALLTYPE_INTERLLATA</td>
<td>PIC1</td>
<td>Uses SUBSCRIBER.PIC1 to route the call. If PIC1 is not provisioned then route the call to POP.LECOSS. Filter: CARRIER: INTER</td>
</tr>
<tr>
<td>CALLTYPE_INTL_WZ1</td>
<td>PIC1</td>
<td>CA-CONFIG:INTL_WZ1_USE_PIC3 = N&lt;br&gt;Uses SUBSCRIBER.PIC1 to route the call. If PIC1 is not provisioned then route the call to POP.LECOSS. Filter: CARRIER: INTER or CARRIER: INTL (Allow call goes through if either one set to Y)</td>
</tr>
<tr>
<td></td>
<td>PIC3/PIC1</td>
<td>CA-CONFIG:INTL_WZ1_USE_PIC3 = Y&lt;br&gt;Uses SUBSCRIBER.PIC3 to route the call if PIC3 is provisioned. If PIC3 is not provisioned then use SUBSCRIBER.PIC1 to route the call. If neither PIC1 nor PIC3 is provisioned then route the call to POP.LECOSS. Filter: CARRIER: INTER or CARRIER: INTL (Allow call goes through if either one set to Y)</td>
</tr>
<tr>
<td>CALLTYPE_TOLL</td>
<td>PIC2</td>
<td>If POP.ITP is set to Y then uses SUBSCRIBER.PIC2 to route the call. Otherwise, route the call according to the provisioning defined in DIAL_PLAN. Filter: CARRIER: INTRA</td>
</tr>
<tr>
<td>CALLTYPE_INTL</td>
<td>PIC3/PIC1</td>
<td>Uses SUBSCRIBER.PIC3 to route the call if PIC3 is provisioned. If PIC3 is not provisioned then use SUBSCRIBER.PIC1 to route the call. If neither PIC1 nor PIC3 is provisioned then route the call to POP.LECOSS. Filter: CARRIER: INTL</td>
</tr>
</tbody>
</table>
Enhanced preferred routing affects the entire system for CALL TYPE INTL_WZ1 routing. All subscriber originated CALL TYPE INTL_WZ1 calls use preferred carrier routing. In another words, the BTS 10200 does not allow one subscriber to use PIC1 while other subscribers use PIC3 for CALL TYPE INTL_WZ1 calls.

Call Types

This section provides detailed information on the BTS 10200 call types. Information on the following call types is provided:

- 1+ Interlata Call
- 1+ Intralata Call
- 0+ Interlata Call
- 0+ Intralata Call
- Ported-In Call Processing
- Operator Services
1+ Interlata Call

This section provides a detailed description of the BTS 10200 routing and call flow for 1+ interlata calls. Refer to Figure 2-18 for visual representation of the 1+ interlata call routing flow while reviewing the following detailed step-by-step 1+ interlata call routing flow.

**Step 1**
A 1+ interlata call is received.

**Step 2**
Determine if a 101XXXX number has been dialed. If a 101XXXX number has been dialed, the BTS 10200 will select the call route and route the call based on the carrier access code (CAC). If a 101XXXX number has not been dialed, proceed to Step 3.

**Step 3**
Check the subscriber table to determine if a PIC is defined. If a PIC is defined, the BTS 10200 will select the call route and route the call based on the PIC information. If a PIC is not defined, proceed to Step 4.

**Step 4**
Check the point of presence (POP) table and verify if a block-eawopic is configured. If the a block-eawopic is configured, the BTS 10200 will block the call. If a block-eawopic is not configured, proceed to Step 5.

**Step 5**
Determine if a local exchange carrier operations support system (LECOSS) is defined in the POP table. If a LECOSS is defined in the POP table, the BTS 10200 will select route the call via the LECOSS. If a LECOSS is not defined in the POP table, the BTS 10200 will block the call.

---

**Figure 2-18 1+ Interlata Call**

![Diagram of 1+ Interlata Call]

1+ interLATA call

Route based on CAC

Yes

101XXXX dialed

No

Check Subscriber table (PIC1 Defined)

Yes

Route based on PIC

No

Check POP table (block-eawopic)

Yes

Block call

No

Route through LECOSS

Yes

LECOSS defined in POP table

No

Block call

---

1+ Intralata Call

This section provides a detailed description of the BTS 10200 routing and call flow for 1+ intralata calls. Refer to Figure 2-19 for visual representation of the 1+ intralata call routing flow while reviewing the following detailed step-by-step 1+ intralata call routing flow.
Step 1  An 1+ intralata call is received.

Step 2  Determine if 101XXXX number has been dialed. If a 101XXXX number has been dialed proceed to Step 3. If a 101XXXX number has not been dialed, proceed to Step 4.

Step 3  Check the carrier table for a carrier access code (CAC). If a CAC is available, the BTS 10200 will select the call route and route the call based on the CAC. If a CAC is not available, proceed to Step 3a.

a. Determine if a LECOSS is defined in the POP table. If a LECOSS is defined in the POP table, the BTS 10200 will select the call route and route the call via the LECOSS. If a LECOSS is not defined in the POP table, the BTS 10200 will block the call.

Step 4  Check the POP table for a configured IP transfer point (ITP). If an ITP is configured, proceed to Step 4a. If an ITP is not configured, the BTS 10200 will route the call via dial plan routing.

a. Check the subscriber table for a specified PIC. If a PIC is specified, proceed to Step 4b. If a PIC is not specified, the BTS 10200 will route the call to the announcement server and will check the POP table for a specified PIC. If a PIC is not specified, the BTS 10200 will block the call or if a dial plan is available, the BTS 10200 will select the call route and route the call according to the dial plan routing information.

b. Check the intra carrier table for a specified PIC. If a PIC is specified in the intra carrier table, the BTS 10200 will select the call route and route the call based on the PIC information. If a PIC is not specified in the intra carrier table, proceed to Step 4c.

c. Determine if a LECOSS is defined in the POP table. If a LECOSS is defined in the POP table, the BTS 10200 will select the call route and route the call via the LECOSS. If a LECOSS is not defined in the POP table, the BTS 10200 will block the call.
Figure 2-19  1+ Intralata Call

1+ intrALATA call

- Check Carrier table (Intra)
  - Yes: Route based on CAC
  - No: Check 101XXXX dialed

101XXXX dialed

- No: Check POP table (ITP)
  - Yes: Check Subscriber table for PIC2
    - PIC2 Specified
      - Yes: Block call
      - No: Check POP table (PIC2 required)
        - Yes: Block call
        - No: Route through LECOSS defined in POP table
          - No: Block call
          - Yes: Route based on PIC2

- Yes: Route to announcement
  - No PIC: Check Carrier table (Intra)
    - Yes: Check Carrier table (Intra)
      - No: Block call
      - Yes: Route based on PIC2
    - No: Dial plan routing
0+ Interlata Call

This section provides a detailed description of the BTS 10200 routing and call flow for 0+ interlata calls. Refer to Figure 2-20 for visual representation of the 0+ interlata call routing flow while reviewing the following detailed step-by-step 0+ interlata call routing flow.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A 0+ interlata call is received.</td>
</tr>
<tr>
<td>2</td>
<td>Determine if a 101XXXX number has been dialed. If a 101XXXX number has been dialed proceed to Step 3. If a 101XXXX number has not been dialed proceed to Step 5.</td>
</tr>
<tr>
<td>3</td>
<td>Check the carrier table for a CAC. If a CAC is available, the BTS 10200 will select the call route and route the call based on the CAC. If a CAC is not available, proceed to Step 4.</td>
</tr>
<tr>
<td>4</td>
<td>Check the POP table for a defined LECOSS. If a LECOSS is defined in the POP table, the BTS 10200 will route the call via the LECOSS. If a LECOSS is not defined in the POP table, the BTS 10200 will block the call.</td>
</tr>
<tr>
<td>5</td>
<td>Check the subscriber table for a defined PIC. If a PIC is defined in the subscriber table, proceed to Step 6. If a PIC is not defined in the subscriber table, proceed to Step 7.</td>
</tr>
<tr>
<td>6</td>
<td>Check the subscriber profile for ea-use-pic entry. If the subscriber profile contains an ea-use-pic entry, the BTS 10200 will select the call route and route the call based on the PIC information. If the subscriber profile does not contain an ea-use-pic entry, return to Step 4.</td>
</tr>
<tr>
<td>7</td>
<td>Check the POP table for a block-eawopic entry. If the POP table contains a block-eawopic entry, the BTS 10200 will block the call. If the POP table does not contain a block-eawopic entry, return to Step 4.</td>
</tr>
</tbody>
</table>

**Figure 2-20  0+ Interlata Call**
0+ Intralata Call

This section provides a detailed description of the BTS 10200 routing and call flow for 0+ intralata calls. Refer to Figure 2-21 for visual representation of the 0+ intralata call routing flow while reviewing the following detailed step-by-step 0+ intralata call routing flow.

---

**Step 1**
A 0+ intralata call is received.

**Step 2**
Determine if a 101XXXX number was dialed. If a 101XXXX number was dialed, proceed to Step 3. If a 101XXXX number was not dialed, proceed to Step 5.

**Step 3**
Check the carrier table for a CAC. If a CAC is available, the BTS 10200 will select the call route and route the call based on the CAC. If a CAC is not available, proceed to Step 4.

**Step 4**
Check the POP table for a defined LECOSS. If a LECOSS is defined in the POP table, the BTS 10200 will route the call via the LECOSS. If a LECOSS is not defined in the POP table, the BTS 10200 will block the call.

**Step 5**
Check the POP table for a configured ITP. If an ITP is configured, proceed to Step 6. If an ITP is not configured return to Step 4.

**Step 6**
Check the subscriber table for a specified PIC. If a PIC is specified, proceed to Step 7. If a PIC is not specified, the BTS 10200 will route the call to the announcement server. Additionally, if a PIC is not specified in the subscriber table, the BTS 10200 will check the POP table for a specified PIC. If a PIC is specified in the POP table, the BTS 10200 will block the call. If a PIC is not specified in the POP table, return to Step 4.

**Step 7**
Check the intra carrier table for the specified PIC. If the specified PIC is included in the intra carrier table, the BTS 10200 will select the call route and route the call based on the PIC information. If the specified PIC is not included in the intra carrier table, return to Step 4.

---
Figure 2-21  0+ Intralata Call

1+ intraLATA call

Yes

101XXXX dialed

No

Check POP table (ITP)

Yes

Check Subscriber table for PIC2

PIC2 Specified

No

Route to announcement

No PIC

Route based on PIC2

Yes

Check Carrier table (Intra)

Block call

No

Route based on CAC

Check Carrier table (op-services)

Yes

Route through LECOSS

Yes

LECOSS defined in POP table

No

Block call

Op services
Ported-In Call Processing

This section provides a detailed description of the BTS 10200 routing and call flow for ported-in call processing calls. Refer to Figure 2-22 for visual representation of the ported-in call processing call routing flow while reviewing the following detailed step-by-step ported-in call processing call routing flow. Note that in Figure 2-22 the call flow logic applies to American National Standards Institute (ANSI)/North America; for International Telecommunication Union (ITU) local number portability (LNP), the logic is different. For a complete explanation of the call processing logic for ITU LNP, refer to the ITU Local Number Portability Feature Module.

| Step 1 | A ported-in call is received. |
| Step 2 | The office code is not assigned to the BTS 10200. |
| Step 3 | Determine if the office code is in the ported-in office code table. If the office code is in the ported-in office code table, proceed to Step 4. If the office code is not in the ported-in office code table, perform normal call processing. |
| Step 4 | Determine if the in-call agent flag is set. If the in-call agent flag is set, proceed to Step 5. If the in-call agent flag is not set, the BTS 10200 will perform an LNP query. |
| Step 5 | Determine if the subscriber is included in the dn2subscriber table. If the subscriber is included in the dn2subscriber table, proceed to Step 6. If the subscriber is not included in the dn2subscriber table, proceed to Step 7. |
| Step 6 | Determine if the LNP trigger flag is set. If the LNP trigger flag is set, the BTS 10200 will perform an LNP query and port out the call. If the LNP trigger flag is not set, the BTS 10200 will check the status field to determine if a LNP trigger has been assigned and will port out the call or terminate the call to the subscriber. Alternately, if dn2subscriber status = PORTED-OUT, or LNP-TRIGGER = Y an LNP query is performed, and depending upon the result of the query (whether or not an local routing number (LRN)/RN is found), the call may be routed to a ported-in DN, routed out to a DN ported-in to another switch, routed in or out if the DN is not ported at all, or the call may fail if routing is not possible. |
| Step 7 | Check the destination table for the subscriber information. Based on the destination table information, the BTS 10200 will route the call or issue a subscriber terminator, release the call, and play the released call announcement. As part of routing the call, the BTS 10200 will perform an LNP query and, if necessary, port out the call. |
Figure 2-22 Ported-In Call Processing

1. **Office code is not assigned to switch**
   - Yes: Is the office code in Ported Office Code table?
   - No: Perform normal call processing

2. **Is the in-call-agent flag set?**
   - Yes: Do LNP query
   - No: Do LNP query

3. **Check the Destination table**
   - No: Is sub in dn2subscriber table?
   - Yes: Is the LNP-trigger flag set?
     - No: Check the Status field
     - Yes: Check the Status field

4. **Subscriber terminator**
   - Route
   - Do LNP query
   - Ported out
   - Assigned

   Play announcement and release the call

   Terminate to subscriber
Operator Services

The Operator Services feature allows routing of operator calls to a Feature Group D Operator Trunk (FGD OS) using the CAS MF Operator Package (MO). The following operator calls are included:

- 0-
- 0+
- 00
- 01+CC+NN
- 10XXXXX + 0-
- 10XXXXX + 0+
- 10XXXXX + 00
- 10XXXXX + 01+CC+NN

The operator call is routed to a CAS MO trunk group by sending the called number followed by information digits (I or II) and the calling number (ANI). All these digits are out pulsed to the CAS MO trunk group using multifrequency (MF) signaling. The information digits and ANI can be delivered in any one of these formats (configurable on a per terminating trunk basis):

- I + 7 digit ANI
- I + 10 digit ANI
- II + 7 digit ANI
- II + 10 digit ANI

Prerequisites

The Dial Plan table must be provisioned with a dial plan for operator calls.
An operator CAS MO terminating trunk group must be provisioned.
Supported Interfaces

Table 2-9 shows the interface support between call origination and termination.

<table>
<thead>
<tr>
<th></th>
<th>RGW termination</th>
<th>CAS termination</th>
<th>SS7 termination</th>
<th>ISDN termination</th>
<th>SIP termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>RGW origination</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS origination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS7 origination</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISDN origination</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>SIP origination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Note: These calls can be terminated to another type of trunk group such as ISDN, SS7, and SIP, but in these cases the calls are treated as regular calls.

Provisioning Operator Services

To provision operator services, perform the following steps:

**Step 1** Add the CAS trunk group profile and the operator trunk group.

```
add cas-tg-profile id=cas-OPS0; type=MO-10II; oss-sig=y; test-line=n;
add trunk-grp id=1500; tg-type=CAS; dial-plan-id=dpcas; sel-policy=LRU;
direction=outgoing; glare=ODD; tg-profile-id=cas-OPS0; call-agent-id=CA166; status=oos;
```

**Step 2** Add the operator trunk terminations to the Termination Prefix table.

```
add termination prefix=cas/ops/mo/; mgw-id=224.14:2434; type=TRUNK; mgcp-pkg-type=MO;
port-start=1; port-end=24;
add trunk cic-start=5; cic-end=8; tgn-id=1500; termination-prefix=cas/ops/mo/;
mgw-id=224.14:2434; termination-port-start=5; termination-port-end=8;
```

**Step 3** Add the operator routes.

```
add route id=ops1500; tgn1-id=1500; lcr=y;
add route-guide id=ops1500; policy-type=route; policy-id=ops1500;
```

**Step 4** Add the carrier ID and put the carrier in service.

```
add carrier id=0510; intray; int1y; route-guide-id=ops1500; use-dial-plan=y;
change carrier id=0510; status=ins;
```
Policy Based Flexible Routing

The BTS 10200 policy based flexible routing use policy based routing tree decisions to select the call route and to route the call. Flexible routing allows service providers to provision policy based flexible routing by configuring the route guide table using the policy variables. Please note that the order of the policies is provisionable and one or more policies may be assigned. Figure 2-23 illustrates the BTS 10200 flexible routing tree structure. This section includes information describing each of the BTS 10200 policy types.

Step 5  Add the destination IDs.

add destination dest-id=ops-toll; call-type=toll; route-type=ROUTE;
route-guide-id=ops1502; zero-plus=y;

add destination dest-id=ops-interlata; call-type=interlata; route-type=ROUTE;
route-guide-id=ops1501; zero-plus=y;

add destination dest-id=ops-intl; call-type=intl; route-type=ROUTE;
route-guide-id=ops1503; zero-plus=y;
add dial-plan id=dpcas; digit-string=817-313; reqd-digits=10; dest-id=ops-toll;

Step 6  Add the dial plan and international dial plan.

add dial-plan id=dpcas; digit-string=404-313; reqd-digits=10; dest-id=ops-interlata;

add intl-dial-plan cc=42; min-digits=6; max-digits=16; dest-id=ops-intl;
Each of the following policies are described:

- **Policy Day of Year, Day of Week, and Time of Day**
- **Policy Origin Dependent Routing**
- **Policy Originating Line Information**
- **Policy NXX**
- **Policy Percent**
- **Policy Point of Presence**
- **Policy Prefix**
- **Region Profile**
- **Policy Region**
- **Policy Call Type**
- **Policy Circuit Code**
- **Policy Server**
Policy Day of Year, Day of Week, and Time of Day

The Policy Day of Year, Day of Week, and Time of Day enables the flexible routing of calls via the BTS 10200 by day of year (DOY), day of week (DOW), time of day (TOD). The Policy Time of Day (policy-tod) table provides routing information based on the following values, in order of preference (highest preference to lowest):

- day of year
- day of week
- time of day

Table Name: POLICY_TOD

Command Types

- add, audit, change, delete, help, show, sync

Caution

The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

- show policy-tod id=basictime;
- add policy-tod id=basictime; doy1=03-01; doy1-policy-type=route;
  doy1-policy-id=dallasaustin; start-dow1=mon; stop-dow1=fri; start-time1=07:00;
  stop-time1=17:00; policy-type1=per;
  policy-id1=texaspercent; default-policy-id=dallasaustin;
- change policy-tod id=basictime; doy2=07-04;
- delete policy-tod id=basictime;

Usage Guidelines

- Primary Key Token(s): ID
- Foreign Key Token(s): doy n-policy-type plus the doy n-policy-id, policy-type n plus the policy-id n
- Add Rules: ID exists in the Policy Profile table.
- Change Rules: POLICY_ID exists in policy-<policy-type>::id if entered.
<table>
<thead>
<tr>
<th><strong>Syntax Description</strong></th>
<th><strong>AUTO_REFRESH</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Specifies whether to display cached data on the screen.</td>
</tr>
<tr>
<td><strong>CHAR(1):</strong></td>
<td>Y/N (Default = Y).</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td>Queries the database for the most current data.</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>Queries the database for the most current data only if the cached data is unavailable.</td>
</tr>
<tr>
<td><strong>Valid for Command:</strong></td>
<td>show</td>
</tr>
<tr>
<td><strong>Default Value:</strong></td>
<td>Y</td>
</tr>
<tr>
<td><strong>Possible Value:</strong></td>
<td>Y, N</td>
</tr>
<tr>
<td><strong>Parser:</strong></td>
<td>BooleanParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>DEFAULT_POLICY_ID</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Use default policy ID when there is no match with the above schedule. Assigned by service provider.</td>
</tr>
<tr>
<td><strong>VARCHAR(16):</strong></td>
<td>1-16 ASCII characters.</td>
</tr>
<tr>
<td><strong>Valid for Command:</strong></td>
<td>audit, sync, show</td>
</tr>
<tr>
<td><strong>Possible Value:</strong></td>
<td>[1_16]</td>
</tr>
<tr>
<td><strong>Parser:</strong></td>
<td>TextParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>DEFAULT_POLICY_TYPE</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Points to the default policy type to use if the next route is not found in the Policy table. Policy routing continues until policy-type=route or policy-nxx is reached. All policy types except Route point to the Policy Type table where type = ctypel odr</td>
</tr>
<tr>
<td><strong>VARCHAR(7):</strong></td>
<td>1-7 ASCII characters. Permitted values are:</td>
</tr>
<tr>
<td><strong>CC</strong></td>
<td>Circuit code based routing.</td>
</tr>
<tr>
<td><strong>CTYPE</strong></td>
<td>Call type based routing.</td>
</tr>
<tr>
<td><strong>NXX</strong></td>
<td>Use translated DN.</td>
</tr>
<tr>
<td><strong>ODR</strong></td>
<td>Origin dependent routing.</td>
</tr>
<tr>
<td><strong>OLI</strong></td>
<td>Originating line information.</td>
</tr>
<tr>
<td><strong>POP</strong></td>
<td>Point of presence.</td>
</tr>
<tr>
<td><strong>PERCENT</strong></td>
<td>Percentage based routing.</td>
</tr>
<tr>
<td><strong>PREFIX</strong></td>
<td>Prefix-based Routing.</td>
</tr>
<tr>
<td><strong>REGION</strong></td>
<td>Region based Routing</td>
</tr>
<tr>
<td><strong>ROUTE</strong></td>
<td>Go to Route table.</td>
</tr>
<tr>
<td><strong>TOD</strong></td>
<td>Time of day routing.</td>
</tr>
<tr>
<td><strong>Valid for Command:</strong></td>
<td>audit, sync, show</td>
</tr>
<tr>
<td><strong>Possible Value:</strong></td>
<td>CC, CTYPE, ODR, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION, TOD</td>
</tr>
<tr>
<td><strong>Parser:</strong></td>
<td>TextParser</td>
</tr>
</tbody>
</table>
**DISPLAY**

**Description:** Specifies what token information to display on the screen.

**VARCHAR(1024):** 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.

Valid for Command: show

Possible Value: [1_1024]

Parser: TextParser

---

**DOY1**

**Description:** Month and day (day of year provisioning).

**CHAR(5):** 5 characters in the format mm-dd.

Valid for Command: add, change, audit, sync, show

Possible Value: [5_5]

Parser: DateParse

---

**DOY1_POLICY_ID**

**Description:** ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. Points to the next policy type table to be used in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be.

Examples:

If policy-type=tod, then policy-tod table is indexed with policy-id.

If policy-type=route, then Route table is indexed with policy-id.

**VARCHAR(16):** 1-16 ASCII characters.

Valid for Command: add, change, audit, sync, show

Possible Value: [1_16]

Parser: TextParser
**DOY1_POLICY_TYPE**  
Description: Foreign key: doyn-policy-type plus the doyn-policy-id to Policy Profile table. Points to the next policy type table to be used in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the policy-\$type table where \$type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be.

Examples:

If policy-type=tod, then policy-tod table is indexed with policy-id.
If policy-type=route, then Route table is indexed with policy-id.

VARCHAR(7): 1-7 ASCII characters. Permitted values are:
- CC—Circuit Code based routing.
- CTYPE—Call Type based routing.
- NXX—Use translated DN.
- ODR—Origin Dependent Routing.
- OLI—Originating line information.
- PERCENT—Percentage based routing.
- POP—Point of presence.
- PREFIX—Prefix-based routing.
- REGION—Region-based routing.
- ROUTE—Go to Route table.
- TOD—Time-of-day routing.

Valid for Command: add, change, audit, sync, show
Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION
Parser: TextParser

**DOY10**  
Description: Month and day (day of year provisioning).
CHAR(5): 5 characters in the format mm-dd.

Valid for Command: add, change, audit, sync, show
Possible Value: [5_5]
Parser: DateParser

**DOY10_POLICY_ID**  
Description: See DOY1-POLICY-ID.

VARCHAR(16): 1-16 ASCII characters.

Valid for Command: add, change, audit, sync, show
Possible Value: [1_16]
Parser: TextParser
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Format</th>
<th>Valid for Command</th>
<th>Possible Values</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOY10 POLICY TYPE</td>
<td>Description: See DOY1-POLICY-TYPE.</td>
<td>VARCHAR(7)</td>
<td>add, change, audit, sync, show</td>
<td>CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOY2</td>
<td>Description: Month and day (day of year provisioning).</td>
<td>CHAR(5)</td>
<td>add, change, audit, sync, show</td>
<td>[5_5]</td>
<td>DateParser</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [5_5]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: DateParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOY2 POLICY ID</td>
<td>Description: See DOY1-POLICY-ID.</td>
<td>VARCHAR(16)</td>
<td>add, change, audit, sync, show</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOY3</td>
<td>Description: Month and day (day of year provisioning).</td>
<td>CHAR(5)</td>
<td>add, change, audit, sync, show</td>
<td>[5_5]</td>
<td>DateParser</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [5_5]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: DateParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOY3 POLICY ID</td>
<td>Description: See DOY1-POLICY-ID.</td>
<td>VARCHAR(16)</td>
<td>add, change, audit, sync, show</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOY3 POLICY TYPE</td>
<td>Description: See DOY1-POLICY-TYPE.</td>
<td>VARCHAR(7)</td>
<td>add, change, audit, sync, show</td>
<td>CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### DOY4
- **Description:** Month and day (day of year provisioning).
- **CHAR(5):** 5 characters in the format mm-dd.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [5_5]
- **Parser:** DateParser

### DOY4_POLICY_ID
- **Description:** See DOY1-POLICY-ID.
- **VARCHAR(16):** 1-16 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [1_16]
- **Parser:** TextParser

### DOY4_POLICY_TYPE
- **Description:** See DOY1-POLICY-TYPE.
- **VARCHAR(7):** 1-7 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION
- **Parser:** TextParser

### DOY5
- **Description:** Month and day (day of year provisioning).
- **CHAR(5):** 5 characters in the format mm-dd.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [5_5]
- **Parser:** DateParser

### DOY5_POLICY_ID
- **Description:** See DOY1-POLICY-ID.
- **VARCHAR(16):** 1-16 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [1_16]
- **Parser:** TextParser

### DOY5_POLICY_TYPE
- **Description:** See DOY1-POLICY-TYPE.
- **VARCHAR(7):** 1-7 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION
- **Parser:** TextParser

### DOY6
- **Description:** Month and day (day of year provisioning).
- **CHAR(5):** 5 characters in the format mm-dd.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [5_5]
- **Parser:** DateParser
### Policy Based Flexible Routing

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Type</th>
<th>Valid for Command</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOY6_POLICY_ID</td>
<td>Description: See DOY1-POLICY-ID.</td>
<td>VARCHAR(16)</td>
<td>add, change, audit, sync, show</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>DESCRIPTION: 1-16 ASCII characters.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOY6_POLICY_TYPE</td>
<td>Description: See DOY1-POLICY-TYPE.</td>
<td>VARCHAR(7)</td>
<td>add, change, audit, sync, show</td>
<td>CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>DESCRIPTION: 1-7 ASCII characters.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOY7</td>
<td>Description: Month and day (day of year provisioning).</td>
<td>CHAR(5)</td>
<td>add, change, audit, sync, show</td>
<td>[5_5]</td>
<td>DateParser</td>
</tr>
<tr>
<td></td>
<td>DESCRIPTION: 5 characters in the format mm-dd.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [5_5]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: DateParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOY7_POLICY_ID</td>
<td>Description: See DOY1-POLICY-ID.</td>
<td>VARCHAR(16)</td>
<td>add, change, audit, sync, show</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>DESCRIPTION: 1-16 ASCII characters.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOY7_POLICY_TYPE</td>
<td>Description: See DOY1-POLICY-TYPE.</td>
<td>VARCHAR(7)</td>
<td>add, change, audit, sync, show</td>
<td>CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>DESCRIPTION: 1-7 ASCII characters.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOY8</td>
<td>Description: Month and day (day of year provisioning).</td>
<td>CHAR(5)</td>
<td>add, change, audit, sync, show</td>
<td>[5_5]</td>
<td>DateParser</td>
</tr>
<tr>
<td></td>
<td>DESCRIPTION: 5 characters in the format mm-dd.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Possible Value: [5_5]</td>
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</tr>
<tr>
<td></td>
<td>Parser: DateParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOY8_POLICY_ID</td>
<td>Description: See DOY1-POLICY-ID.</td>
<td>VARCHAR(16)</td>
<td>add, change, audit, sync, show</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>DESCRIPTION: 1-16 ASCII characters.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
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</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
<td>Type</td>
<td>Valid for Command</td>
<td>Possible Value</td>
<td>Parser</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>-------------------------</td>
<td>-----------------------------</td>
<td>----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>DOY8_POLICY_TYPE</td>
<td>Description: See DOY1-POLICY-TYPE.</td>
<td>VARCHAR(7): 1-7 ASCII characters.</td>
<td>add, change, audit, sync, show</td>
<td>CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION</td>
<td>TextParser</td>
</tr>
<tr>
<td>DOY9</td>
<td>Description: Month and day (day of year provisioning).</td>
<td>CHAR(5): 5 characters in the format mm-dd.</td>
<td>add, change, audit, sync, show</td>
<td>[5_5]</td>
<td>DateParser</td>
</tr>
<tr>
<td>DOY9_POLICY_ID</td>
<td>Description: See DOY1-POLICY-ID.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>add, change, audit, sync, show</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td>DOY9_POLICY_TYPE</td>
<td>Description: See DOY1-POLICY-TYPE.</td>
<td>VARCHAR(7): 1-7 ASCII characters.</td>
<td>add, change, audit, sync, show</td>
<td>CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION</td>
<td>TextParser</td>
</tr>
<tr>
<td>ID</td>
<td>Description: Primary key. Unique identifier for this policy-tod. Assigned by service provider.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>add, change, show, delete, audit, sync</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td>LIMIT</td>
<td>Description: Specifies the number of rows to display on the screen.</td>
<td>INTEGER: 1-100000000 (Default = 100000000).</td>
<td>show</td>
<td>[1_100000000]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>MASTER</td>
<td>Valid for Command: sync</td>
<td></td>
<td>sync</td>
<td>[1_10]</td>
<td>TextParser</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>Type/Default</td>
<td>Permitted Values</td>
<td>Valid for Command</td>
<td>Possible Value</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------</td>
<td>--------------</td>
<td>------------------</td>
<td>------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>ORDER</td>
<td>Specifies whether to display data on the screen in a sorted order.</td>
<td>VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
<td>[1_1024]</td>
<td>show</td>
<td>[1_1024]</td>
</tr>
<tr>
<td>PLATFORM_STATE</td>
<td>Audits a shared memory database.</td>
<td>VARCHAR(7): 1-7 ASCII characters. Permitted values are: ACTIVE (Default) - System is currently running. STANDBY.</td>
<td>ACTIVE, STANDBY</td>
<td>sync, audit</td>
<td>ACTIVE, STANDBY</td>
</tr>
<tr>
<td>POLICY_ID1</td>
<td>ID of the Policy or Route table that matches the policy type. Indexes the ID to the type.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>[1_16]</td>
<td>add, change, audit, sync, show</td>
<td>[1_16]</td>
</tr>
<tr>
<td>POLICY_ID10</td>
<td>ID of the Policy or Route table that matches the policy type. Indexes the ID to the type.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>[1_16]</td>
<td>add, change, audit, sync, show</td>
<td>[1_16]</td>
</tr>
<tr>
<td>POLICY_ID2</td>
<td>ID of the Policy or Route table that matches the policy type. Indexes the ID to the type.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>[1_16]</td>
<td>add, change, audit, sync, show</td>
<td>[1_16]</td>
</tr>
<tr>
<td>POLICY_ID3</td>
<td>ID of the Policy or Route table that matches the policy type. Indexes the ID to the type.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>[1_16]</td>
<td>add, change, audit, sync, show</td>
<td>[1_16]</td>
</tr>
<tr>
<td>POLICY_ID</td>
<td>Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td>Possible Value: [1_16]</td>
<td>Parser: TextParser</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------------------------------------------------------------------------------------</td>
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<td>-----------------------------------------------</td>
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</tr>
<tr>
<td>POLICY_ID4</td>
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<tr>
<td>POLICY_ID5</td>
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<td>POLICY_ID6</td>
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<td>POLICY_ID7</td>
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<tr>
<td>POLICY_ID8</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>POLICY_ID9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**POLICY_TYPE1**  
**Description:** Foreign key: policy-typen plus the policy-idn to Policy Profile table. Points to the next policy type table to be used in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the policy-Statpe table where Stype = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be.

**Examples:**
- If policy-type=tod, then policy-tod table is indexed with policy-id.
- If policy-type=route, then Route table is indexed with policy-id.

**VARCHAR(7):** 1-7 ASCII characters.

Valid for Command: add, change, audit, sync, show

Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION

Parser: TextParser

**POLICY_TYPE10**  
**Description:** See POLICY-TYPE1.

**VARCHAR(7):** 1-7 ASCII characters.

Valid for Command: add, change, audit, sync, show

Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION

Parser: TextParser

**POLICY_TYPE2**  
**Description:** See POLICY-TYPE1.

**VARCHAR(7):** 1-7 ASCII characters.

Valid for Command: add, change, audit, sync, show

Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION

Parser: TextParser

**POLICY_TYPE3**  
**Description:** See POLICY-TYPE1.

**VARCHAR(7):** 1-7 ASCII characters.

Valid for Command: add, change, audit, sync, show

Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION

Parser: TextParser

**POLICY_TYPE4**  
**Description:** See POLICY-TYPE1.

**VARCHAR(7):** 1-7 ASCII characters.

Valid for Command: add, change, audit, sync, show

Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION

Parser: TextParser
| POLICY_TYPE5 | Description: See POLICY-TYPE1. | VARCHAR(7): 1-7 ASCII characters. | Valid for Command: add, change, audit, sync, show | Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION | Parser: TextParser |
| POLICY_TYPE6 | Description: See POLICY-TYPE1. | VARCHAR(7): 1-7 ASCII characters. | Valid for Command: add, change, audit, sync, show | Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION | Parser: TextParser |
| POLICY_TYPE7 | Description: See POLICY-TYPE1. | VARCHAR(7): 1-7 ASCII characters. | Valid for Command: add, change, audit, sync, show | Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION | Parser: TextParser |
| POLICY_TYPE8 | Description: See POLICY-TYPE1. | VARCHAR(7): 1-7 ASCII characters. | Valid for Command: add, change, audit, sync, show | Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION | Parser: TextParser |
| POLICY_TYPE9 | Description: See POLICY-TYPE1. | VARCHAR(7): 1-7 ASCII characters. | Valid for Command: add, change, audit, sync, show | Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION | Parser: TextParser |
| **START_DOW1** | Description: Day of week that this policy begins (day of week provisioning). Start-dow1 and stop-dow1 define a range of days. The DOW begins on MON and ends on SUN, such as when specifying range, START-DOWn = STOP-DOWn. CHAR(3). Permitted values are:  
MON—Monday  
TUE—Tuesday  
WED—Wednesday  
THU—Thursday  
FRI—Friday  
SAT—Saturday  
SUN—Sunday  
Examples:  
START-DOW1=MON; STOP-DOW1=FRI; is valid.  
START-DOW1=FRI; STOP-DOW1=MON; is invalid.  
Valid for Command: add, change, audit, sync, show  
Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT  
Parser: TextParser |
| **START_DOW10** | Description: See START-DOW1. Valid for Command: add, change, audit, sync, show  
Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT  
Parser: TextParser |
| **START_DOW2** | Description: See START-DOW1. Valid for Command: add, change, audit, sync, show  
Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT  
Parser: TextParser |
| **START_DOW3** | Description: See START-DOW1. Valid for Command: add, change, audit, sync, show  
Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT  
Parser: TextParser |
| **START_DOW4** | Description: See START-DOW1. Valid for Command: add, change, audit, sync, show  
Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT  
Parser: TextParser |
| **START_DOW5** | Description: See START-DOW1. Valid for Command: add, change, audit, sync, show  
Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT  
Parser: TextParser |
| START_DOW6 | Description: See START-DOW1.  
Valid for Command: add, change, audit, sync, show  
Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT  
Parser: TextParser |
|------------|-------------------------------------------------|
| START_DOW7 | Description: See START-DOW1.  
Valid for Command: add, change, audit, sync, show  
Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT  
Parser: TextParser |
| START_DOW8 | Description: See START-DOW1.  
Valid for Command: add, change, audit, sync, show  
Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT  
Parser: TextParser |
| START_DOW9 | Description: See START-DOW1.  
Valid for Command: add, change, audit, sync, show  
Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT  
Parser: TextParser |
| START_ROW  | Description: Specifies to begin displaying data on the screen at a specific row. Valid only for the show command.  
INTEGER: 1-100000000 (Default = 1).  
Valid for Command: show  
Default Value: 1  
Possible Value: [1_100000000]  
Parser: DecimalParser |
| START_TIME1 | Description: The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning).  
CHAR(5): HH:MM.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [5_5]  
Parser: TimeParser |
| START_TIME10 | Description: The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning).  
CHAR(5): HH:MM.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [5_5]  
Parser: TimeParser |
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Command Validity</th>
<th>Possible Value</th>
<th>Value Range</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>START_TIME2</td>
<td>The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning).</td>
<td>add, change, audit, sync, show</td>
<td>[5_5]</td>
<td>[5_5]</td>
<td>TimeParser</td>
</tr>
<tr>
<td>START_TIME3</td>
<td>The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning).</td>
<td>add, change, audit, sync, show</td>
<td>[5_5]</td>
<td>[5_5]</td>
<td>TimeParser</td>
</tr>
<tr>
<td>START_TIME4</td>
<td>The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning).</td>
<td>add, change, audit, sync, show</td>
<td>[5_5]</td>
<td>[5_5]</td>
<td>TimeParser</td>
</tr>
<tr>
<td>START_TIME5</td>
<td>The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning).</td>
<td>add, change, audit, sync, show</td>
<td>[5_5]</td>
<td>[5_5]</td>
<td>TimeParser</td>
</tr>
<tr>
<td>START_TIME6</td>
<td>The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning).</td>
<td>add, change, audit, sync, show</td>
<td>[5_5]</td>
<td>[5_5]</td>
<td>TimeParser</td>
</tr>
<tr>
<td>START_TIME7</td>
<td>The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning).</td>
<td>add, change, audit, sync, show</td>
<td>[5_5]</td>
<td>[5_5]</td>
<td>TimeParser</td>
</tr>
<tr>
<td>Variable</td>
<td>Description</td>
<td>Format</td>
<td>Valid for Commands</td>
<td>Possible Values</td>
<td>Parser</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------------------------------------------------------</td>
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<td>-----------------------------------------------------------------------------------</td>
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<td>----------</td>
</tr>
<tr>
<td>START_TIME8</td>
<td>The time in hours and minutes (24-hour clock) that this policy starts</td>
<td>CHAR(5): HH:MM.</td>
<td>add, change, audit, sync, show</td>
<td>[5_5]</td>
<td>TimeParser</td>
</tr>
<tr>
<td></td>
<td>(time of day provisioning).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>START_TIME9</td>
<td>The time in hours and minutes (24-hour clock) that this policy starts</td>
<td>CHAR(5): HH:MM.</td>
<td>add, change, audit, sync, show</td>
<td>[5_5]</td>
<td>TimeParser</td>
</tr>
<tr>
<td></td>
<td>(time of day provisioning).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STOP_DOW1</td>
<td>Day of week that this policy ends. Start-dow1 and stop-dow1 define a range</td>
<td>CHAR(3).</td>
<td>add, change, audit, sync, show</td>
<td>SUN, MON, TUE, WED, THU, FRI, SAT</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>of days. The DOW begins on MON and ends on SUN, such as when specifying</td>
<td>Permitted</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>range, START-DOWn = STOP-DOWn.</td>
<td>values are:</td>
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<tr>
<td></td>
<td>MON—Monday</td>
<td>MON—Monday</td>
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<tr>
<td></td>
<td>TUE—Tuesday</td>
<td>TUE—Tuesday</td>
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<tr>
<td></td>
<td>WED—Wednesday</td>
<td>WED—Wednesday</td>
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<tr>
<td></td>
<td>THU—Thursday</td>
<td>THU—Thursday</td>
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<tr>
<td></td>
<td>FRI—Friday</td>
<td>FRI—Friday</td>
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<tr>
<td></td>
<td>SAT—Saturday</td>
<td>SAT—Saturday</td>
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<tr>
<td></td>
<td>SUN—Sunday</td>
<td>SUN—Sunday</td>
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</tr>
<tr>
<td></td>
<td>Examples:</td>
<td></td>
<td>START-DOW1=MON; STOP-DOW1=FRI; is valid.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>START-DOW1=FRI; STOP-DOW1=MON; is invalid.</td>
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<td></td>
<td></td>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
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<td></td>
<td></td>
<td></td>
<td>Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT</td>
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<td></td>
<td></td>
<td></td>
<td>Parser: TextParser</td>
<td></td>
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</tr>
<tr>
<td>STOP_DOW10</td>
<td>See STOP-DOW1.</td>
<td></td>
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<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT</td>
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<tr>
<td></td>
<td>Parser: TextParser</td>
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</tr>
<tr>
<td>STOP_DOW2</td>
<td>See STOP-DOW1.</td>
<td></td>
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<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
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<tr>
<td></td>
<td>Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT</td>
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<td></td>
<td>Parser: TextParser</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Variable</td>
<td>Description</td>
<td>Valid for Commands</td>
<td>Possible Values</td>
<td>Parser</td>
<td></td>
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<tr>
<td>--------------</td>
<td>------------------------------------------------------------------------------</td>
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<td></td>
</tr>
<tr>
<td>STOP_DOW3</td>
<td>Description: See STOP-DOW1.</td>
<td>add, change, audit, sync, show</td>
<td>SUN, MON, TUE, WED, THU, FRI, SAT</td>
<td>TextParser</td>
<td></td>
</tr>
<tr>
<td>STOP_DOW4</td>
<td>Description: See STOP-DOW1.</td>
<td>add, change, audit, sync, show</td>
<td>SUN, MON, TUE, WED, THU, FRI, SAT</td>
<td>TextParser</td>
<td></td>
</tr>
<tr>
<td>STOP_DOW5</td>
<td>Description: See STOP-DOW1.</td>
<td>add, change, audit, sync, show</td>
<td>SUN, MON, TUE, WED, THU, FRI, SAT</td>
<td>TextParser</td>
<td></td>
</tr>
<tr>
<td>STOP_DOW6</td>
<td>Description: See STOP-DOW1.</td>
<td>add, change, audit, sync, show</td>
<td>SUN, MON, TUE, WED, THU, FRI, SAT</td>
<td>TextParser</td>
<td></td>
</tr>
<tr>
<td>STOP_DOW7</td>
<td>Description: See STOP-DOW1.</td>
<td>add, change, audit, sync, show</td>
<td>SUN, MON, TUE, WED, THU, FRI, SAT</td>
<td>TextParser</td>
<td></td>
</tr>
<tr>
<td>STOP_DOW8</td>
<td>Description: See STOP-DOW1.</td>
<td>add, change, audit, sync, show</td>
<td>SUN, MON, TUE, WED, THU, FRI, SAT</td>
<td>TextParser</td>
<td></td>
</tr>
<tr>
<td>STOP_DOW9</td>
<td>Description: See STOP-DOW1.</td>
<td>add, change, audit, sync, show</td>
<td>SUN, MON, TUE, WED, THU, FRI, SAT</td>
<td>TextParser</td>
<td></td>
</tr>
<tr>
<td>STOP_TIME1</td>
<td>Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning). CHAR(5): HH:MM</td>
<td>add, change, audit, sync, show</td>
<td>[5_5]</td>
<td>TimeParser</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STOP_TIME10</td>
<td>Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning).</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>-------------</td>
<td>----------------------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td></td>
<td>CHAR(5): HH:MM</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [5_5]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TimeParser</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STOP_TIME2</th>
<th>Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CHAR(5): HH:MM</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [5_5]</td>
</tr>
<tr>
<td></td>
<td>Parser: TimeParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STOP_TIME3</th>
<th>Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CHAR(5): HH:MM</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
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<tr>
<td></td>
<td>Possible Value: [5_5]</td>
</tr>
<tr>
<td></td>
<td>Parser: TimeParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STOP_TIME4</th>
<th>Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CHAR(5): HH:MM</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [5_5]</td>
</tr>
<tr>
<td></td>
<td>Parser: TimeParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STOP_TIME5</th>
<th>Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CHAR(5): HH:MM</td>
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<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [5_5]</td>
</tr>
<tr>
<td></td>
<td>Parser: TimeParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STOP_TIME6</th>
<th>Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CHAR(5): HH:MM</td>
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<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
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<td></td>
<td>Possible Value: [5_5]</td>
</tr>
<tr>
<td></td>
<td>Parser: TimeParser</td>
</tr>
</tbody>
</table>
### STOP_TIME7
- **Description:** The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning).
- **CHAR(5): HH:MM**
- Valid for Command: add, change, audit, sync, show
- Possible Value: [5_5]
- Parser: TimeParser

### STOP_TIME8
- **Description:** The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning).
- **CHAR(5): HH:MM**
- Valid for Command: add, change, audit, sync, show
- Possible Value: [5_5]
- Parser: TimeParser

### STOP_TIME9
- **Description:** The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning).
- **CHAR(5): HH:MM**
- Valid for Command: add, change, audit, sync, show
- Possible Value: [5_5]
- Parser: TimeParser

### TARGET
- **Description:** Specifies the network element to receive the request.
- **VARCHAR(5):** 1-5 ASCII characters. Permitted values are:
  - CA—Network identifier of a Call Agent.
  - FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.
  - FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.
- Valid for Command: sync
- Mandatory: sync
- Possible Value: [1_10]
- Parser: TextParser

### TYPE
- **Description:** Type of audit. Valid for the audit database command.
- **VARCHAR(10):** 1-10 ASCII characters. Permitted values are:
  - FULL (Default)—Audits the entire table.
  - ROW-COUNT—Audits the table by row count.
- Valid for Command: show
- Possible Value: TOD
- Parser: TextParser
Policy Origin Dependent Routing

The Policy Origin Dependent Routing (policy-odr) table is used for origin-dependent routing. The NPA (or NPA-NXX) of the calling party number selects a route. If no match is found based on the calling party number, the route marked as default routes the call.

Table Name: POLICY_ODR
Table Containment Area: EMS, CA, FSAIN

Command Types

- add, audit, change, delete, help, show, sync

Caution

The `sync` command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

- `show policy-odr id=ca200; digit-string=512;`
- `add policy-odr id=ca200; digit-string=512; policy-type=tod; policy-id=tod101;`
- `change policy-odr id=ca200; digit-string=512; policy-type=tod; policy-id=tod102;`
- `delete policy-odr id=ca200; digit-string=512;`

Usage Guidelines

Primary Key Token(s): ID, DIGIT_STRING

Add Rules: policy-id exists in policy-<policy-type>::id if entered.

Change Rules: policy-id exists in policy-<policy-type>::id if entered.

Delete Rules: id does not exist in any <route-guide, policy-region, policy-percent, policy-tod, policy-prefix, policy-oli, or policy-pop>::policy-id where policy-type = odr.
<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description: Specifies whether to display cached data on the screen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO_REFRESH</td>
<td>Description: Specifies whether to display cached data on the screen.</td>
</tr>
<tr>
<td></td>
<td>CHAR(1): Y/N (Default = Y).</td>
</tr>
<tr>
<td></td>
<td>Y—Queries the database for the most current data.</td>
</tr>
<tr>
<td></td>
<td>N—Queries the database for the most current data only if the cached data is unavailable.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
</tr>
<tr>
<td></td>
<td>Default Value: Y</td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
</tr>
<tr>
<td></td>
<td>Parser: BooleanParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIGIT_STRING</th>
<th>Description: Primary key. Longest match based on the calling party number.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The calling party number can be specified as the NDC, NDC+EC or the full DN.</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(10): 1-10 ASCII characters.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, show, delete, audit, sync</td>
</tr>
<tr>
<td></td>
<td>Mandatory: add, change, delete</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_14]</td>
</tr>
<tr>
<td></td>
<td>Parser: GenericDNWithDefaultParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DISPLAY</th>
<th>Description: Specifies what token information to display on the screen.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_1024]</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ID</th>
<th>Description: Primary key. Policy-odr identification field. Assigned by service provider.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, show, delete, audit, sync</td>
</tr>
<tr>
<td></td>
<td>Mandatory: add, change, delete</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIMIT</th>
<th>Description: Specifies the number of rows to display on the screen.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>INTEGER: 1-100000000 (Default = 100000000).</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
</tr>
<tr>
<td></td>
<td>Default Value: 100000000</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_100000000]</td>
</tr>
<tr>
<td></td>
<td>Parser: DecimalParser</td>
</tr>
<tr>
<td>Master</td>
<td>Valid for Command: sync</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Mandatory</td>
<td>sync</td>
</tr>
<tr>
<td>Possible Value</td>
<td>[1_10]</td>
</tr>
<tr>
<td>Parser</td>
<td>TextParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Order</th>
<th>Description: Specifies whether to display data on the screen in a sorted order.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VARCHAR(1024)</td>
<td>1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
</tr>
<tr>
<td>Valid for Command</td>
<td>show</td>
</tr>
<tr>
<td>Possible Value</td>
<td>[1_1024]</td>
</tr>
<tr>
<td>Parser</td>
<td>TextParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Platform State</th>
<th>Description: Audits a shared memory database.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VARCHAR(7)</td>
<td>1-7 ASCII characters. Permitted values are: ACTIVE (Default) - System is currently running. STANDBY.</td>
</tr>
<tr>
<td>Valid for Command</td>
<td>sync, audit</td>
</tr>
<tr>
<td>Default Value</td>
<td>ACTIVE</td>
</tr>
<tr>
<td>Possible Value</td>
<td>ACTIVE, STANDBY</td>
</tr>
<tr>
<td>Parser</td>
<td>TextParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy_ID</th>
<th>Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VARCHAR(16)</td>
<td>1-16 ASCII characters.</td>
</tr>
<tr>
<td>Valid for Command</td>
<td>add, change, audit, sync, show</td>
</tr>
<tr>
<td>Mandatory</td>
<td>add</td>
</tr>
<tr>
<td>Possible Value</td>
<td>[1_16]</td>
</tr>
<tr>
<td>Parser</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
### POLICY_TYPE

**Description:** Points to the next policy type table to use in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the Policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be.

VARCHAR(7): 1-7 ASCII characters. Permitted values are:
- CC—Circuit Code based routing
- CTYPE—Call Type based routing
- NXX—Use translated DN.
- ODR—Origin Dependent Routing.
- OLI—Originating line information.
- PERCENT—Percentage based routing
- POP—Point of presence.
- PREFIX—Prefix-based routing.
- REGION—Region-based routing.
- ROUTE—Go to Route table.
- TOD—Time-of-day routing.

Valid for Command: add, change, audit, sync, show
Mandatory: add
Possible Value: CC, CTYPE, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION, ODR
Parser: TextParser

### START_ROW

**Description:** Specifies to begin displaying data on the screen at a specific row.

INTEGER: 1-100000000 (Default = 1).

Valid for Command: show
Default Value: 1
Possible Value: [1_100000000]
Parser: DecimalParser
| TARGET | Description: Specifies the network element to receive the request. VARCHAR(5): 1-5 ASCII characters. Permitted values are:  
|        | CA—Network identifier of a Call Agent.  
|        | FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.  
|        | FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.  
|        | Valid for Command: sync  
|        | Mandatory: sync  
|        | Possible Value: [1_10]  
|        | Parser: TextParser |
Policy Originating Line Information

The Policy Originating Line Information enables the flexible routing of calls via the BTS 10200 by the use of originating line information (OLI). The Policy Originating Line Information performs routing based on the originating line information of the calling party number.

Table Name: POLICY_OLI
Table Containment Area: EMS, CA, FSAIN

Command Types

add, audit, change, delete, help, show, sync

Caution

The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

show policy-oli id=normalroute; oli=00;
add policy-oli id=normalroute; oli=00; policy-type=tod; policy-id=holiday;
change policy-oli id=normalroute; oli=00; policy-type=tod; policy-id=regular;
delete policy-oli id=normalroute; oli=00;

Usage Guidelines

Primary Key Token(s): ID, OLI

Add Rules: policy-id exists in policy-<policy-type>::id if entered.
Change Rules: policy-id exists in policy-<policy-type>::id if entered.
Delete Rules: id does not exist in any <route-guide, policy-odr, policy-region, policy-percent, policy-tod, policy-prefix, or policy-pop>::policy-id where policy-type = oli.
<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description: Specifies whether to display cached data on the screen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO_REFRESH</td>
<td>AUTO_REFRESH: Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable. Valid for Command: show</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description: Specifies what token information to display on the screen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISPLAY</td>
<td>DISPLAY: VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description: Primary key. Originating line information identification field. Assigned by service provider.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description: Specifies the number of rows to display on the screen.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description: Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORDER</td>
<td>Description: Specifies whether to display data on the screen in a sorted order. VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser</td>
</tr>
<tr>
<td>PLATFORM_STATE</td>
<td>Description: Audits a shared memory database. VARCHAR(7): 1-7 ASCII characters. Permitted values are: ACTIVE (Default) - System is currently running. STANDBY. Valid for Command: sync, audit Default Value: ACTIVE Possible Value: ACTIVE, STANDBY Parser: TextParser</td>
</tr>
<tr>
<td>POLICY_ID</td>
<td>Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: [1_16] Parser: TextParser</td>
</tr>
</tbody>
</table>
POLICY_TYPE

Description: Points to the next policy type table to be used in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the Policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be.

Examples:

If policy-type=tod, then the policy-tod table is indexed with policy-id.
If policy-type=route, then the route table is indexed with policy-id.

VARCHARS(7): 1-7 ASCII characters. Permitted values are:
CC—Circuit Code based routing.
CTYPE—Call Type based routing.
NXX—Use translated DN.
ODR—Origin Dependent Routing.
OLI—Originating line information.
PERCENT—Percentage based routing.
POP—Point of presence.
PREFIX—Prefix-based routing.
REGION—Region-based routing.
ROUTE—Go to Route table.
TOD—Time-of-day routing.

Valid for Command: add, audit, change, show, sync
Mandatory: add
Possible Value: CC, CTYPE, NXX, ODR, OLI, POP, PERCENT, PREFIX, REGION, ROUTE, TOD
Parser: TextParser

START_ROW

Description: Specifies to begin displaying data on the screen at a specific row.

INTEGER: 1-100000000 (Default = 1).

Valid for Command: show
Default Value: 1
Possible Value: [1_100000000]
Parser: DecimalParser
| TARGET                        | Description: Specifies the network element to receive the request. VARCHAR(5): 1-5 ASCII characters. Permitted values are: CA—Network identifier of a Call Agent. FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers. Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser |
Policy NXX

The Policy NXX (policy-nxx) table is used when a number services call results in a translated number, carrier ID, translated number and a carrier ID, or a route ID.

**Note**
As of Release 5.0, the original call type is preserved in billing when the routing number is changed using the Policy NXX table.

Table Name: POLICY_NXX
Table Containment Area: EMS, CA, FSAIN

**Command Types**
add, audit, change, delete, help, show, sync

**Caution**
The `sync` command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

**Examples**

```plaintext
show policy-nxx id=normalroute;
add policy-nxx id=normalroute;
change policy-nxx id=normalroute; carrier=1234;
delete policy-nxx id=normalroute;
```

**Usage Guidelines**
Primary Key Token(s): ID
Add Rules: id plus type must exist in the Policy Profile table.

**Note**
Both the carrier and the translated-dn can be entered; however, if route is entered, neither the carrier-id nor the translated-dn can be entered.

**Syntax Description**
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Type</th>
<th>Default Value</th>
<th>Possible Values</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO_REFRESH</td>
<td>Specifies whether to display cached data on the screen.</td>
<td>CHAR(1): Y/N</td>
<td>Y (default)</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td></td>
<td>Y — Queries the database for the most current data.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N — Queries the database for the most current data only if the cached data is unavailable.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default Value: Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: BooleanParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [4_4]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: DigitParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Specifies what token information to display on the screen.</td>
<td>VARCHAR(1024): 1-1024</td>
<td></td>
<td>[1_1024]</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_1024]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, show, delete, audit, sync</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mandatory: add, change, delete</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_16]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIMIT</td>
<td>Specifies the number of rows to display on the screen.</td>
<td>INTEGER: 1-100000000</td>
<td>100000000 (default)</td>
<td>[1_100000000]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default Value: 100000000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_100000000]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MASTER</td>
<td>Valid for Command: sync</td>
<td></td>
<td></td>
<td></td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>Mandatory: sync</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_10]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Command</td>
<td>Description</td>
<td>Type</td>
<td>Default Value</td>
<td>Possible Value</td>
<td>Parameters</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>---------------</td>
<td>-------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>ORDER</td>
<td>Specifies whether to display data on the screen in a sorted order.</td>
<td>VARCHAR(1024)</td>
<td>1-1024</td>
<td>[1_1024]</td>
<td>show</td>
</tr>
<tr>
<td>PLATFORM_STATE</td>
<td>Audits a shared memory database.</td>
<td>VARCHAR(7)</td>
<td>ACTIVE</td>
<td>ACTIVE, STANDBY</td>
<td>sync, audit</td>
</tr>
<tr>
<td>ROUTE</td>
<td>Defines a list of trunk groups.</td>
<td>VARCHAR(16)</td>
<td>1-16</td>
<td>[1_16]</td>
<td>add, change, audit, sync, show</td>
</tr>
<tr>
<td>START_ROW</td>
<td>Specifies to begin displaying data on the screen at a specific row.</td>
<td>INTEGER</td>
<td>1-1000000000</td>
<td>[1_100000000]</td>
<td>show</td>
</tr>
<tr>
<td>TARGET</td>
<td>Specifies the network element to receive the request.</td>
<td>VARCHAR(5)</td>
<td>1-5</td>
<td>[1_10]</td>
<td>sync</td>
</tr>
</tbody>
</table>

Parser: TextParser
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANSLATED_DN</td>
<td>Description: The call is routed to the translated DN.</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(14): 1-14 numeric digits.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_14]</td>
</tr>
<tr>
<td></td>
<td>Parser: GenericDNParser</td>
</tr>
<tr>
<td>TYPE</td>
<td>Description: Id plus type = Foreign key: Policy Profile table. Type of policy.</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(7): 1-7 ASCII characters.</td>
</tr>
<tr>
<td></td>
<td>Permitted value is: NXX—NEED DESCRIPTION</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
</tr>
<tr>
<td></td>
<td>Possible Value: NXX</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
</tbody>
</table>
Policy Percent

The Policy Percent (policy-percent) table distributes traffic based on percent allocation. This type of traffic distribution is used primarily for local 8XX routing and Tandem applications.

Table Name: POLICY_PERCENT
Table Containment Area: EMS, CA, FSAIN

Command Types

add, audit, change, delete, help, show, sync

Caution

The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

show policy-percent id=texaspercent;
add policy-percent id=texaspercent; begin-range1=1; end-range1=90; policy-type1=tod;
policy-id1=tod001;
change policy-percent id=texaspercent; begin-range2=91; end-range2=100; policy-type1=tod;
policy-id1=tod002;
delete policy-percent id=texaspercent;

Usage Guidelines

Primary Key Token(s): ID

Add Rules: policy-id exists in policy-<policy-type>::id if entered.
Change Rules: policy-id exists in policy-<policy-type>::id if entered.
Delete Rules: id does not exist in any <route-guide, policy-odr, policy-region, policy-tod, policy-prefix, policy-oli, or policy-pop>::policy-id where policy-type = percent.
### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
</table>
| AUTO_REFRESH  | **Description:** Specifies whether to display cached data on the screen.  
CHAR(1): Y/N (Default = Y).  
Y—Queries the database for the most current data.  
N—Queries the database for the most current data only if the cached data is unavailable.  
Valid for Command: show  
Default Value: Y  
Possible Value: Y, N  
Parser: BooleanParser |
| BEGIN_RANGE1  | **Description:** At least one range must be specified. Defines the beginning percent range (beginning and ending percents) for the first destination.  
SMALLINT: 1-100.  
Valid for Command: add, change, audit, sync, show  
Mandatory: add  
Possible Value: [1_100]  
Parser: DecimalParser |
| BEGIN_RANGE2  | **Description:** Defines the beginning percent range (beginning and ending percents) for the second destination.  
SMALLINT: 1-100.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [1_100]  
Parser: DecimalParser |
| BEGIN_RANGE3  | **Description:** Defines the beginning percent range (beginning and ending percents) for the third destination.  
SMALLINT: 1-100.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [1_100]  
Parser: DecimalParser |
| BEGIN_RANGE4  | **Description:** Defines the beginning percent range (beginning and ending percents) for the fourth destination.  
SMALLINT: 1-100.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [1_100]  
Parser: DecimalParser |
BEGIN_RANGE5

- **Description:** Defines the beginning percent range (beginning and ending percents) for the fifth destination.

  - **SMALLINT:** 1-100.
  - **Valid for Command:** add, change, audit, sync, show
  - **Possible Value:** [1_100]
  - **Parser:** DecimalParser

DEFAULT_POLICY_ID

- **Description:** ID of a Policy or Route table matching the policy type. Indexes the ID to the type. Assigned by service provider.

  - **VARCHAR(16):** 1-16 ASCII characters.
  - **Valid for Command:** audit, sync, show
  - **Possible Value:** [1_16]
  - **Parser:** TextParser

DEFAULT_POLICY_TYPE

- **Description:** Points to the default policy type to use if the next route is not found in the Policy table. Policy routing continues until policy-type=route or policy-nxx is reached. All policy types except Route point to the Policy Type table where type = ctype | odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id is used to index to the Policy or Route table. Some examples are: If policy-type=tod, then the Policy TOD table is indexed with policy-id. If policy-type=route, then the Route table is indexed with policy-id.

  - **VARCHAR(7):** 1-7 ASCII characters. Permitted values are:
    - CC—Circuit code based routing.
    - CTYPE—Call type based routing.
    - NXX—Use translated DN.
    - ODR—Origin dependent routing.
    - OLI—Originating line information.
    - POP—Point of presence.
    - PERCENT—Percentage based routing.
    - PREFIX—Prefix-based Routing.
    - REGION—Region based Routing
    - ROUTE—Go to Route table.
    - TOD—Time of day routing.
  - **Valid for Command:** audit, sync, show
  - **Possible Value:** CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION
  - **Parser:** TextParser
### DISPLAY

**Description:** Specifies what token information to display on the screen.

VARCHARMAX(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.

Valid for Command: show

Possible Value: [1_1024]

Parser: TextParser

### END_RANGE1

**Description:** Defines the end of the percent range (beginning and ending percents) for the first destination.

SMALLINT: 1-100.

Valid for Command: add, change, audit, sync, show

Mandatory: add

Possible Value: [1_100]

Parser: DecimalParser

### END_RANGE2

**Description:** Defines the end of the percent range (beginning and ending percents) for the second destination.

SMALLINT: 1-100.

Valid for Command: add, change, audit, sync, show

Possible Value: [1_100]

Parser: DecimalParser

### END_RANGE3

**Description:** Defines the end of the percent range (beginning and ending percents) for the third destination.

SMALLINT: 1-100.

Valid for Command: add, change, audit, sync, show

Possible Value: [1_100]

Parser: DecimalParser

### END_RANGE4

**Description:** Defines the end of the percent range (beginning and ending percents) for the fourth destination.

SMALLINT: 1-100.

Valid for Command: add, change, audit, sync, show

Possible Value: [1_100]

Parser: DecimalParser

### END_RANGE5

**Description:** Defines the end of the percent range (beginning and ending percents) for the fifth destination.

SMALLINT: 1-100.

Valid for Command: add, change, audit, sync, show

Possible Value: [1_100]

Parser: DecimalParser
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Type</th>
<th>Valid for Command</th>
<th>Default Value</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>ID: Primary key. Unique identifier for this policy. Assign by service provider.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>add, change, show, delete, audit, sync</td>
<td></td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td>LIMIT</td>
<td>LIMIT: Specifies the number of rows to display on the screen.</td>
<td>INTEGER: 1-100000000 (Default = 100000000)</td>
<td>show</td>
<td>100000000</td>
<td>[1_100000000]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>ORDER</td>
<td>ORDER: Specifies whether to display data on the screen in a sorted order.</td>
<td>VARCHAR(1024): 1-1024 (Default = all rows are displayed)</td>
<td>show</td>
<td></td>
<td>[1_1024]</td>
<td>TextParser</td>
</tr>
<tr>
<td>PLATFORM_STATE</td>
<td>PLATFORM_STATE: Audits a shared memory database.</td>
<td>VARCHAR(7): 1-7 ASCII characters.</td>
<td>sync, audit</td>
<td></td>
<td>ACTIVE, STANDBY</td>
<td>TextParser</td>
</tr>
<tr>
<td>POLICY_ID1</td>
<td>POLICY_ID1: ID of the Policy or Route table matching the policy type.</td>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td>add, change, audit, sync, show</td>
<td></td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
| POLICY_ID2 | Description: See policy-id1.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [1_16]  
Parser: TextParser |
| POLICY_ID3 | Description: See policy-id1.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [1_16]  
Parser: TextParser |
| POLICY_ID4 | Description: See policy-id1.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [1_16]  
Parser: TextParser |
| POLICY_ID5 | Description: See policy-id1.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [1_16]  
Parser: TextParser |
### POLICY_TYPE1

**Description:** Points to the next policy type table to be used in the sequence. Policy routing continues until policy-type=route or Policy-nxx is reached. All policy-types except route point to the Policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be.

**Examples:**
- If policy-type=tod, then the policy-tod table is indexed with policy-id.
- If policy-type=route, then the route table is indexed with policy-id.

**VARCHAR(7):** 1-7 ASCII characters. Permitted values are:
- **CC**—Circuit Code based routing.
- **CTYPE**—Call Type based routing.
- **NXX**—Use translated DN.
- **ODR**—Origin Dependent Routing.
- **OLI**—Originating line information.
- **PERCENT**—Percentage based routing
- **POP**—Point of presence.
- **PREFIX**—Prefix-based routing.
- **REGION**—Region-based routing.
- **ROUTE**—Go to Route table.
- **TOD**—Time-of-day routing.

Valid for Command: add, change, audit, sync, show

Mandatory: add

Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION

Parser: TextParser

### POLICY_TYPE2

**Description:** See policy-type1.

**VARCHAR(7):** 1-7 ASCII characters.

Valid for Command: add, change, audit, sync, show

Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION

Parser: TextParser

### POLICY_TYPE3

**Description:** See policy-type1.

**VARCHAR(7):** 1-7 ASCII characters.

Valid for Command: add, change, audit, sync, show

Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION

Parser: TextParser
### POLICY_TYPE4
Description: See policy-type1.

*VARCHAR(7): 1-7 ASCII characters.*

Valid for Command: add, change, audit, sync, show

Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OL, POP, ROUTE, NXX, REGION

Parser: TextParser

### POLICY_TYPE5
Description: See policy-type1.

*VARCHAR(7): 1-7 ASCII characters.*

Valid for Command: add, change, audit, sync, show

Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OL, POP, ROUTE, NXX, REGION

Parser: TextParser

### START_ROW
Description: Specifies to begin displaying data on the screen at a specific row.

*INTEGER: 1-100000000 (Default = 1).*

Valid for Command: show

Default Value: 1

Possible Value: [1_100000000]

Parser: DecimalParser

### TARGET
Description: Specifies the network element to receive the request.

*VARCHAR(5): 1-5 ASCII characters. Permitted values are:*

CA—Network identifier of a Call Agent.

FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.

FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.

Valid for Command: sync

Mandatory: sync

Possible Value: [1_10]

Parser: TextParser

### TYPE
Description: Id plus type = Foreign key: Policy Profile table. Type of policy.

*VARCHAR(7): 1-7 ASCII characters. Permitted value is:*

NXX—NEED DESCRIPTION

Valid for Command: show

Possible Value: NXX

Parser: TextParser
Policy Point of Presence

The Policy Point of Presence enables the flexible routing of calls via the BTS 10200 based on the point of presence (POP). The POP based policy routing routes a call to the nearest trunk group when there are multiple trunk groups. There are several situations where a policy POP can be used. If a Call Agent serves several POPs, each POP can have its own announcement server. A POP-specific announcement server can be more efficient than a centralized announcement server. InterLATA carriers also have a point of presence in each POP. Route interLATA or international calls to the nearest carrier location using policy POP routing.

Table Name: POLICY_POP
Table Containment Area: EMS, CA, FSAIN

Command Types

| add, audit, change, delete, help, show, sync |

Caution

The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

| show policy-pop id=car9999; pop-id=dallaspop; |
| add policy-pop id=car9999; pop-id=dallaspop; policy-type=tod; policy-id=tod101; |
| change policy-pop id=car9999; pop-id=dallaspop; policy-type=oli; policy-id=tod101; |
| delete policy-pop id=car9999; |

Usage Guidelines

Primary Key Token(s): ID, POP_ID
Add Rules: policy-id exists in policy-<policy-type>::id if entered.
Change Rules: policy-id exists in policy-<policy-type>::id if entered.
Delete Rules: id does not exist in any <route-guide, policy-odr, policy-region, policy-percent, policy-tod, policy-prefix, or policy-oli>::policy-id where policy-type = pop.

Syntax Description
| AUTO_REFRESH | Description: Specifies whether to display cached data on the screen.  
CHAR(1): Y/N (Default = Y).  
Y—Queries the database for the most current data.  
N—Queries the database for the most current data only if the cached data is unavailable.  
Valid for Command: show  
Default Value: Y  
Possible Value: Y, N  
Parser: BooleanParser |
| --- | --- |
| DISPLAY | Description: Specifies what token information to display on the screen.  
VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.  
Valid for Command: show  
Possible Value: \[1_{-1024}\]  
Parser: TextParser |
| ID | Description: Primary key. Policy POP identifier.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, change, show, delete, audit, sync  
Mandatory: add, change, delete  
Possible Value: \[1_{-16}\]  
Parser: TextParser |
| LIMIT | Description: Specifies the number of rows to display on the screen.  
INTEGER: 1-100000000 (Default = 100000000).  
Valid for Command: show  
Default Value: 100000000  
Possible Value: \[1_{-100000000}\]  
Parser: DecimalParser |
| MASTER | Valid for Command: sync  
Mandatory: sync  
Possible Value: \[1_{-10}\]  
Parser: TextParser |
| ORDER | Description: Specifies whether to display data on the screen in a sorted order.  
VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.  
Valid for Command: show  
Possible Value: \[1_{-1024}\]  
Parser: TextParser |
### PLATFORM_STATE

**Description:** Audits a shared memory database.

**VARCHAR(7):** 1-7 ASCII characters. Permitted values are:

- **ACTIVE** (Default) - System is currently running.
- **STANDBY**.

Valid for Command: sync, audit

Default Value: **ACTIVE**

Possible Value: **ACTIVE, STANDBY**

Parser: TextParser

### POLICY_ID

**Description:** ID of the Policy or Route table that matches the next policy type. Indexes the ID to the type.

**VARCHAR (16):** 1-16 ASCII characters.

Valid for Command: add, change, audit, sync, show

Mandatory: add

Possible Value: [1_16]

Parser: TextParser

### POLICY_TYPE

**Description:** Points to the next policy type table to be used in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be.

Examples:

- If policy-type=tod, then the Policy TOD table is indexed with policy-id.
- If policy-type=route, then the Route table is indexed with policy-id.

**VARCHAR(7):** 1-7 ASCII characters. Permitted values are:

- **ODR**—Origin dependent routing.
- **TOD**—Time of day routing.
- **PERCENT**—Percent allocation.
- **PREFIX**—Prefix-based routing.
- **OLI**—Originating line information.
- **ROUTE**—To Route table.
- **NXX**—Use translated DN.
- **REGION**—Region-based routing.

Valid for Command: add, change, audit, sync, show

Mandatory: add

Possible Value: **CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, ROUTE, NXX, REGION, POP**

Parser: TextParser
| **POP_ID** | Description: Primary key. Foreign key: Point of Presence table. The pop-id assigned to the subscriber profile or the incoming trunk group to be used.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, change, show, delete, audit, sync  
Mandatory: add, change, delete  
Possible Value: [1_16]  
Parser: TextParser |
| **START_ROW** | Description: Specifies to begin displaying data on the screen at a specific row.  
INTEGER: 1-100000000 (Default = 1).  
Valid for Command: show  
Default Value: 1  
Possible Value: [1_100000000]  
Parser: DecimalParser |
| **TARGET** | Description: Specifies the network element to receive the request.  
VARCHAR(5): 1-5 ASCII characters. Permitted values are:  
CA—Network identifier of a Call Agent.  
FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.  
FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.  
Valid for Command: sync  
Mandatory: sync  
Possible Value: [1_10]  
Parser: TextParser |
| **TYPE** | Description: Id plus type = Foreign key: Policy Profile table. Type of policy.  
VARCHAR(7): 1-7 ASCII characters. Permitted value is:  
NXX—NEED DESCRIPTION  
Valid for Command: show  
Possible Value: NXX  
Parser: TextParser |
Policy Prefix

The Policy Prefix enables the flexible routing of calls via the BTS 10200 based on prefix (type of call). Typical call types include 1+ dialing, international calls, toll-free, and so on. The Policy Prefix is used mainly for carrier routing.

Table Name: POLICY_PREFIX
Table Containment Area: EMS, CA, FSAIN

Command Types

- add, audit, change, delete, help, show, sync

**Caution**
The *sync* command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

- show policy-prefix id=standard;
- add policy-prefix id=standard; prefix1=national; policy-type1=tod; policy-id1=tod01;
- change policy-prefix id=standard; prefix2=da; policy-type=tod; policy-id=tod99;
- delete policy-prefix id=standard;

Usage Guidelines

Primary Key Token(s): ID

Foreign Key Token(s): policy-type*n* plus policy-id*n*

Add Rules: policy-id exists in policy-<policy-type>::id if entered.

Change Rules: policy-id exists in policy-<policy-type>::id if entered.

Delete Rules: id does not exist in any <route-guide, policy-odr, policy-region, policy-percent, policy-tod, policy-oli, or policy-pop>::policy-id where policy-type = prefix.

Syntax Description
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Type</th>
<th>Valid Commands</th>
<th>Possible Values</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO_REFRESH</td>
<td>Specifies whether to display cached data on the screen.</td>
<td>CHAR(1)</td>
<td>show</td>
<td>Y/N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td></td>
<td><strong>Y</strong>—Queries the database for the most current data. <strong>N</strong>—Queries the database for the most current data only if the cached data is unavailable.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEFAULT_POLICY_ID</td>
<td>Assigned by service provider.</td>
<td>VARCHAR(16)</td>
<td>audit, sync, show</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td>DEFAULT_POLICY_TYPE</td>
<td>Points to the default policy type to use if the next route is not found in the Policy table. Policy routing continues until policy-type=route or policy-nxx is reached. All policy types except Route point to the Policy Type table where type = ctypel odr</td>
<td>VARCHAR(7)</td>
<td>audit, sync, show</td>
<td>CC, CTYPE, TOD, PERCENT, PREFIX, OLI, ROUTE, NXX, ODR, POP, REGION</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
### DISPLAY
**Description:** Specifies what token information to display on the screen.
**VARCHAR(1024):** 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.

Valid for Command: show
Possible Value: [1_1024]
Parser: TextParser

### ID
**Description:** Primary key. Unique identifier for this policy prefix.
**VARCHAR(16):** 1-16 ASCII characters.

Valid for Command: add, change, show, delete, audit, sync
Mandatory: add, change, delete
Possible Value: [1_16]
Parser: TextParser

### LIMIT
**Description:** Specifies the number of rows to display on the screen. Valid only for the show command.
**INTEGER:** 1-100000000 (Default = 100000000).

Valid for Command: show
Default Value: 100000000
Possible Value: [1_100000000]
Parser: DecimalParser

### MASTER
Valid for Command: sync
Mandatory: sync
Possible Value: [1_10]
Parser: TextParser

### ORDER
**Description:** Specifies whether to display data on the screen in a sorted order.
**VARCHAR(1024):** 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.

Valid for Command: show
Possible Value: [1_1024]
Parser: TextParser

### PLATFORM_STATE
**Description:** Audits a shared memory database.
**VARCHAR(7):** 1-7 ASCII characters. Permitted values are:
ACTIVE (Default) - System is currently running.
STANDBY.

Valid for Command: sync, audit
Default Value: ACTIVE
Possible Value: ACTIVE, STANDBY
Parser: TextParser
### POLICY_ID1
- **Description:** ID of the Policy or Route table that matches the policy type.
- **Indexes:** The ID to the type.
- **VARCHAR(16):** 1-16 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Mandatory:** add
- **Possible Value:** [1_16]
- **Parser:** TextParser

### POLICY_ID10
- **Description:** See policy-id1.
- **VARCHAR(16):** 1-16 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [1_16]
- **Parser:** TextParser

### POLICY_ID2
- **Description:** See policy-id1.
- **VARCHAR(16):** 1-16 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [1_16]
- **Parser:** TextParser

### POLICY_ID3
- **Description:** See policy-id1.
- **VARCHAR(16):** 1-16 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [1_16]
- **Parser:** TextParser

### POLICY_ID4
- **Description:** See policy-id1.
- **VARCHAR(16):** 1-16 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [1_16]
- **Parser:** TextParser

### POLICY_ID5
- **Description:** See policy-id1.
- **VARCHAR(16):** 1-16 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [1_16]
- **Parser:** TextParser

### POLICY_ID6
- **Description:** See policy-id1.
- **VARCHAR(16):** 1-16 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [1_16]
- **Parser:** TextParser
| POLICY_ID7 | Description: See policy-id1.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [1_16]  
Parser: TextParser |
| POLICY_ID8 | Description: See policy-id1.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [1_16]  
Parser: TextParser |
| POLICY_ID9 | Description: See policy-id1.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: [1_16]  
Parser: TextParser |
Policy Based Flexible Routing

**POLICY_TYPE1**

Description: Foreign key: Policy-type n plus the policy-idnto the Policy Profile table. Points to the next policy type table to be used in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the Policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be.

Examples:

If policy-type=tod, then the Policy-tod table is indexed with policy-id.

If policy-type=route, then Route table is indexed with policy-id.

VARCHAR(7): 1-7 ASCII characters. Permitted values are:

- CC—Circuit Code based routing.
- CTYPE—Call Type based routing.
- NXX—Use translated DN.
- ODR—Origin Dependent Routing.
- OLI—Originating line information.
- PERCENT—Percentage based routing
- POP—Point of presence.
- PREFIX—Prefix-based routing.
- REGION—Region-based routing.
- ROUTE—Go to Route table.
- TOD—Time-of-day routing.

Valid for Command: add, change, audit, sync, show

Mandatory: add

Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION

Parser: TextParser

**POLICY_TYPE10**

Description: See policy-type1.

VARCHAR(7): 1-7 ASCII characters.

Valid for Command: add, change, audit, sync, show

Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION

Parser: TextParser

**POLICY_TYPE2**

Description: See policy-type1.

VARCHAR(7): 1-7 ASCII characters.

Valid for Command: add, change, audit, sync, show

Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION

Parser: TextParser
| POLICY_TYPE3 | Description: See policy-type1.  
VARCHAR(7): 1-7 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION  
Parser: TextParser |
| POLICY_TYPE4 | Description: See policy-type1.  
VARCHAR(7): 1-7 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION  
Parser: TextParser |
| POLICY_TYPE5 | Description: See policy-type1.  
VARCHAR(7): 1-7 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION  
Parser: TextParser |
| POLICY_TYPE6 | Description: See policy-type1.  
VARCHAR(7): 1-7 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION  
Parser: TextParser |
| POLICY_TYPE7 | Description: See policy-type1.  
VARCHAR(7): 1-7 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION  
Parser: TextParser |
| POLICY_TYPE8 | Description: See policy-type1.  
VARCHAR(7): 1-7 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION  
Parser: TextParser |
POLICY_TYPE9
Description: See policy-type1.
VARCHAR(7): 1-7 ASCII characters.
Valid for Command: add, change, audit, sync, show
Possible Value: CC, CTYPE, ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION
Parser: TextParser

PREFIX1
Description: Type of call being provisioned.
VARCHAR(10): 1-10 ASCII characters. Permitted values are:
NATIONAL—National call (1+)
INTL—International call (011+)
OPERATOR—Operator call (0-, 00)
NAT-O PR—National operator call (0+ call)
INTL-O PR—International operator call (01+ call)
TOLL-FREE—Toll free call (8XX)
CUT-THRU—Cut-through call (101XXXX#)
DA—Directory assistance call
Valid for Command: add, change, audit, sync, show
Mandatory: add
Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA
Parser: TextParser

PREFIX10
Description: See prefix1.
VARCHAR(10): 1-10 ASCII characters.
Valid for Command: add, change, audit, sync, show
Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA
Parser: TextParser

PREFIX2
Description: See prefix1.
VARCHAR(10): 1-10 ASCII characters.
Valid for Command: add, change, audit, sync, show
Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA
Parser: TextParser

PREFIX3
Description: See prefix1.
VARCHAR(10): 1-10 ASCII characters.
Valid for Command: add, change, audit, sync, show
Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA
Parser: TextParser
| PREFIX4 | Description: See prefix1.  
VARCHAR(10): 1-10 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA  
Parser: TextParser |
| PREFIX5 | Description: See prefix1.  
VARCHAR(10): 1-10 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA  
Parser: TextParser |
| PREFIX6 | Description: See prefix1.  
VARCHAR(10): 1-10 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA  
Parser: TextParser |
| PREFIX7 | Description: See prefix1.  
VARCHAR(10): 1-10 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA  
Parser: TextParser |
| PREFIX8 | Description: See prefix1.  
VARCHAR(10): 1-10 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA  
Parser: TextParser |
| PREFIX9 | Description: See prefix1.  
VARCHAR(10): 1-10 ASCII characters.  
Valid for Command: add, change, audit, sync, show  
Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA  
Parser: TextParser |
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>START_ROW</td>
<td>Specifies to begin displaying data on the screen at a specific row.</td>
</tr>
<tr>
<td></td>
<td>INTEGER: 1-100000000 (Default = 1).</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
</tr>
<tr>
<td></td>
<td>Default Value: 1</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_100000000]</td>
</tr>
<tr>
<td></td>
<td>Parser: DecimalParser</td>
</tr>
<tr>
<td>TARGET</td>
<td>Specifies the network element to receive the request.</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(5): 1-5 ASCII characters. Permitted values are:</td>
</tr>
<tr>
<td></td>
<td>CA—Network identifier of a Call Agent.</td>
</tr>
<tr>
<td></td>
<td>FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.</td>
</tr>
<tr>
<td></td>
<td>FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: sync</td>
</tr>
<tr>
<td></td>
<td>Mandatory: sync</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_10]</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
<tr>
<td>TYPE</td>
<td>Id plus type = Foreign key: Policy Profile table. Type of policy.</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(7): 1-7 ASCII characters. Permitted value is:</td>
</tr>
<tr>
<td></td>
<td>NXX—NEED DESCRIPTION</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
</tr>
<tr>
<td></td>
<td>Possible Value: NXX</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
</tbody>
</table>
Region Profile

The Region Profile (region-profile) table groups North American Numbering Plan (NANP) digits to an originating region. There can be many ID and digit-string combinations for a given region. In this conceptual relationship, a number of digit patterns (digit-string) can belong to a given region and a number of originating regions comprise a region profile (id). Use the value specified in the ca-config record as the default region where type=default-region.

Table Name: REGION_PROFILE
Table Containment Area: EMS, CA, FSAIN

### Command Types

| Command Types | add, audit, change, delete, help, show, sync |

⚠️ **Caution**

The **sync** command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

### Examples

- `show region-profile id=e911; digit-string=210-470;`
- `add region-profile id=e911; digit-string=210-470; region=sanantonio;`
- `change region-profile id=e911; digit-string=210-470; region=sanantonio;`
- `delete region-profile id=e911; digit-string=210-470;`

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO_REFRESH</td>
<td>Specifies whether to display cached data on the screen.</td>
</tr>
<tr>
<td></td>
<td>CHAR(1): Y/N (Default = Y).</td>
</tr>
<tr>
<td></td>
<td>Y—Queries the database for the most current data.</td>
</tr>
<tr>
<td></td>
<td>N—Queries the database for the most current data only if the cached data is unavailable.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
</tr>
<tr>
<td></td>
<td>Default Value: Y</td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
</tr>
<tr>
<td></td>
<td>Parser: BooleanParser</td>
</tr>
<tr>
<td>DIGIT_STRING</td>
<td>Description: Primary key. NDC-EC-XXXX to be assigned to a region.</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(14): 1-14 numeric characters.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, show, delete, audit, sync</td>
</tr>
<tr>
<td></td>
<td>Mandatory: add, change, delete</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_14]</td>
</tr>
<tr>
<td></td>
<td>Parser: GenericDNPParser</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Specifies what token information to display on the screen.</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted</td>
</tr>
<tr>
<td></td>
<td>values are any valid token that can be shown for this command. Multiple</td>
</tr>
<tr>
<td></td>
<td>tokens can be entered by separating with a comma.</td>
</tr>
<tr>
<td>LIMIT</td>
<td>Specifies the number of rows to display on the screen.</td>
</tr>
<tr>
<td></td>
<td>INTEGER: 1-100000000 (Default = 100000000).</td>
</tr>
<tr>
<td>ID</td>
<td>Primary key. Region profile ID.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, show, delete, audit, sync</td>
</tr>
<tr>
<td>PLATFORM_STATE</td>
<td>Audits a shared memory database.</td>
</tr>
<tr>
<td>ORDER</td>
<td>Specifies whether to display data on the screen in a sorted order.</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted</td>
</tr>
<tr>
<td></td>
<td>values are any valid token that can be shown for this command. Multiple</td>
</tr>
<tr>
<td></td>
<td>tokens can be entered by separating with a comma.</td>
</tr>
</tbody>
</table>

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| **REGION** | Description: Region assigned to the calling party number.  
VARCHAR(16): 1-16 ASCII characters.  
Valid for Command: add, change, show, delete, audit, sync  
Mandatory: add  
Possible Value: [1_16]  
Parser: TextParser |
| **START_ROW** | Description: Specifies to begin displaying data on the screen at a specific row.  
INTEGER: 1-100000000 (Default = 1).  
Valid for Command: show  
Default Value: 1  
Possible Value: [1_100000000]  
Parser: DecimalParser |
| **TARGET** | Description: Specifies the network element to receive the request.  
VARCHAR(5): 1-5 ASCII characters. Permitted values are:  
CA—Network identifier of a Call Agent.  
FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.  
FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.  
Valid for Command: sync  
Mandatory: sync  
Possible Value: [1_10]  
Parser: TextParser |
Policy Region

The Policy Region enables the flexible routing of calls via the BTS 10200 based on the call region. The region is derived using the Region Profile table from the Route Guide table and the calling party number ANI. If ANI is not available or the Region Profile table is not provisioned, the region assigned to the trunk group is used for trunk origination. If a record cannot be found based on the region, the record with region=default (if provisioned) is used for routing.

Table Name: POLICY_REGION
Table Containment Area: EMS, CA, FSAIN

Command Types

add, audit, change, delete, help, show, sync

Caution

The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

show policy-region id=ca200; region=sanantonio;
add policy-region id=ca200; region=sanantonio; policy-type=tod; policy-id=tod101;
change policy-region id=ca200; region=sanantonio; policy-type=tod; policy-id=tod102;
delete policy-region id=ca200; region=sanantonio;

Usage Guidelines

Primary Key Token(s): ID, REGION

Foreign Key Token(s): policy-type plus policy-idn

Add Rules: region-profile id must exist; policy-id exists in policy-<policy-type>::id if entered.

Change Rules: id must exist; policy-id exists in policy-<policy-type>::id if entered.

Delete Rules: id does not exist in any <route-guide, policy-odr, policy-percent, policy-tod, policy-prefix, policy-oli, or policy-pop>::policy-id where policy-type = region.
<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>AUTO_REFRESH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description: Specifies whether to display cached data on the screen. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable. Valid for Command: show Default Value: Y Possible Value: Y, N Parser: BooleanParser</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description: Specifies what token information to display on the screen. VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description: Primary key. Identifier of the policy region. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [1_16] Parser: TextParser</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description: Specifies the number of rows to display on the screen. INTEGER: 1-100000000 (Default = 100000000). Valid for Command: show Default Value: 100000000 Possible Value: [1_100000000] Parser: DecimalParser</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>MASTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>ORDER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description: Specifies whether to display data on the screen in a sorted order. VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser</td>
<td></td>
</tr>
</tbody>
</table>
### PLATFORM_STATE

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audits a shared memory database.</td>
<td></td>
</tr>
<tr>
<td>VARCHAR(7): 1-7 ASCII characters. Permitted values are:</td>
<td></td>
</tr>
<tr>
<td>ACTIVE (Default) - System is currently running.</td>
<td></td>
</tr>
<tr>
<td>STANDBY.</td>
<td></td>
</tr>
<tr>
<td>Valid for Command: sync, audit</td>
<td></td>
</tr>
<tr>
<td>Default Value: ACTIVE</td>
<td></td>
</tr>
<tr>
<td>Possible Value: ACTIVE, STANDBY</td>
<td></td>
</tr>
</tbody>
</table>

### POLICY_ID

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID of the Policy or Route table that matches the policy type. Indexes the ID to the type.</td>
<td></td>
</tr>
<tr>
<td>VARCHAR(16): 1-16 ASCII characters.</td>
<td></td>
</tr>
<tr>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
</tr>
<tr>
<td>Mandatory: add</td>
<td></td>
</tr>
<tr>
<td>Possible Value: [1_16]</td>
<td></td>
</tr>
</tbody>
</table>

Parser: TextParser
### POLICY_TYPE

Description: Foreign key: Policy-type n plus the policy-id n to the Policy Profile table. Points to the next policy type table to be used in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the Policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be.

Examples:

- If policy-type=tod, then the Policy TOD table is indexed with the policy-id.
- If policy-type=route, then the Route table is indexed with the policy-id.

VARCHAR(7): 1-7 ASCII characters. Permitted values are:

- CC—Circuit Code based routing.
- CTYPE—Call Type based routing.
- NXX—Use translated DN.
- ODR—Origin Dependent Routing.
- OLI—Originating line information.
- PERCENT—Percentage based routing
- POP—Point of presence.
- PREFIX—Prefix-based routing.
- REGION—Region-based routing.
- ROUTE—Go to Route table.
- TOD—Time-of-day routing.

Valid for Command: add, change, audit, sync, show

Mandatory: add

Possible Value: CC, CTYPE, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, ODR, REGION

Parser: TextParser
| **REGION** | Description: Primary key. Region is derived from the Region Profile table based on the ANI. If the region cannot be derived from the region-profile, use the region assigned to the incoming trunk group. If a region is not available, use the default region to route the call.  
VARCHAR(16): 1-16 ASCII characters. 
The character string default defines the default route for the specified ID. If a record based on the region based on the calling party number or incoming trunk group is not found, the Call Agent searches for the default record.  
Valid for Command: add, change, show, delete, audit, sync  
Mandatory: add, change, delete  
Possible Value: [1_16]  
Parser: TextParser |
|---|---|
| **START_ROW** | Description: Specifies to begin displaying data on the screen at a specific row.  
INTEGER: 1-100000000 (Default = 1).  
Valid for Command: show  
Default Value: 1  
Possible Value: [1_100000000]  
Parser: DecimalParser |
| **TARGET** | Description: Specifies the network element to receive the request.  
VARCHAR(5): 1-5 ASCII characters. Permitted values are:  
CA—Network identifier of a Call Agent.  
FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.  
FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.  
Valid for Command: sync  
Mandatory: sync  
Possible Value: [1_10]  
Parser: TextParser |
| **TYPE** | Description: Id plus type = Foreign key: Policy Profile table. Type of policy.  
VARCHAR(7): 1–7 ASCII characters. Permitted value is:  
NXX—NEED DESCRIPTION  
Valid for Command: show  
Possible Value: NXX  
Parser: TextParser |
## Policy Call Type

The Policy Call Type (policy-call-type) table defines a route based on the call type.

**Table Name:** POLICY-CALL-TYPE  
**Table Containment Area:** EMS, CA

### Command Types

- add, audit, change, delete, help, show, sync

**Caution**  
The `sync` command is a restricted command and is intended for repairing data only. Improper use may corrupt database and disrupt call processing. Use with caution.

### Usage Guidelines

Primary Key Token(s): id, ctype

### Syntax Description

**AUTO_REFRESH**  
**Description:** Specifies whether to display cached data on the screen.  
**CHAR(1):** Y/N (Default = Y).  
Y—Queries the database for the most current data.  
N—Queries the database for the most current data only if the cached data is unavailable.  
**Valid for Command:** show  
**Default Value:** Y  
**Possible Value:** Y, N  
**Parser:** BooleanParser

**CALL_TYPE**  
**Valid for Command:** add, audit, change, delete, show, sync  
**Mandatory:** add, change, delete  
**Possible Value:** [1_16]  
**Parser:** TextNoCaseParser

**DISPLAY**  
**Description:** Specifies what token information to display on the screen.  
**VARCHAR(1024):** 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.  
**Valid for Command:** show  
**Possible Value:** [1_1024]  
**Parser:** TextParser

**ID**  
**Valid for Command:** add, audit, change, delete, show, sync  
**Mandatory:** add, change, delete  
**Possible Value:** [1_16]  
**Parser:** TextParser
### LIMIT
- **Description:** Specifies the number of rows to display on the screen.
- **INTEGER:** 1-100000000 (Default = 100000000).
- **Valid for Command:** show
- **Default Value:** 100000000
- **Possible Value:** [1_100000000]
- **Parser:** DecimalParser

### MASTER
- **Valid for Command:** sync
- **Possible Value:** [1_10]
- **Parser:** TextParser

### ORDER
- **Description:** Specifies whether to display data on the screen in a sorted order.
- **VARCHAR(51200):** 1-51200 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
- **Valid for Command:** show
- **Possible Value:** [1_1024]
- **Parser:** TextParser

### POLICY_ID
- **Valid for Command:** add, audit, change, show, sync
- **Mandatory:** add
- **Possible Value:** [1_16]
- **Parser:** TextParser

### POLICY_TYPE
- **Valid for Command:** add, audit, change, show, sync
- **Mandatory:** add
- **Possible Value:** CC, NXX, ODR, OLI, POP, PERCENT, PREFIX, REGION, ROUTE, TOD
- **Parser:** TextParser
### START_ROW

**Description:** Specifies to begin displaying data on the screen at a row.
**INTEGER:** 1-100000000 (Default = 1).
**Valid for Command:** show
**Default Value:** 1
**Possible Value:** [1_100000000]
**Parser:** DecimalParser

### TARGET

**Description:** Specifies the network element to receive the request.
**VARCHAR(5):** 1-5 ASCII characters. Permitted values are:
- CA—Network identifier of a CA.
- FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.
- FSAIN (AIN Feature Server)—Network identifier of AIN FSs.
**Valid for Command:** sync
**Possible Value:** [1_10]
**Parser:** TextParser
Policy Circuit Code

The Policy Circuit Code (policy-circuit-code) table defines a route based on the Circuit Code received in the TNS parameter.

Table Name: POLICY-CIRCUIT-CODE
Table Containment Area: Call Agent

Command Types

add, audit, change, delete, help, show, sync

⚠️ Caution

The `sync` command is a restricted command and is intended for repairing data only. Improper use may corrupt database and disrupt call processing. Use with caution.

Usage Guidelines

Primary Key Token(s): id; cc

Syntax Description

<table>
<thead>
<tr>
<th>Token</th>
<th>Valid for Command:</th>
<th>Description:</th>
<th>Character</th>
<th>Possible Value:</th>
<th>Parser:</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO_REFRESH</td>
<td>add, audit, change, delete, show, sync</td>
<td>Specifies whether to display cached data on the screen.</td>
<td>CHAR(1): Y/N (Default = Y).</td>
<td>Y/N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td>CC</td>
<td>add, audit, change, delete, show, sync</td>
<td>Valid for Command:</td>
<td>[0_15]</td>
<td>DecimalParser</td>
<td></td>
</tr>
<tr>
<td>DISPLAY</td>
<td>add, audit, change, delete, show, sync</td>
<td>Specifies what token information to display on the screen.</td>
<td>VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
<td>[1_1024]</td>
<td>TextParser</td>
</tr>
<tr>
<td>ID</td>
<td>add, audit, change, delete, show, sync</td>
<td>Valid for Command:</td>
<td>[1_16]</td>
<td>TextParser</td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>Description</td>
<td>Valid for Command</td>
<td>Mandatory</td>
<td>Possible Value</td>
<td>Parser</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>-----------</td>
<td>-------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>LIMIT</td>
<td>Specifies the number of rows to display on the screen.</td>
<td>show</td>
<td></td>
<td>[1_100000000]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td></td>
<td>INTEGER: 1-100000000 (Default = 100000000).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ORDER</td>
<td>Specifies whether to display data on the screen in a sorted order.</td>
<td>show</td>
<td></td>
<td>[1_1024]</td>
<td>TextParser</td>
</tr>
<tr>
<td></td>
<td>VARCHAR(51200): 1-51200 (Default = all rows are displayed). Permitted</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>values are any valid token that can be shown for this command. Multiple</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>tokens can be entered by separating with a comma.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POLICY_ID</td>
<td>Valid for Command: add, audit, change, show, sync</td>
<td>add, audit, change, show, sync</td>
<td>add</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td>POLICY_TYPE</td>
<td>Valid for Command: add, audit, change, show, sync</td>
<td>add, audit, change, show, sync</td>
<td>add</td>
<td>CTYPE, NXX, ODR, OLI, POP, PERCENT, PREFIX, REGION, ROUTE, TOD</td>
<td>TextParser</td>
</tr>
<tr>
<td>START_ROW</td>
<td>Specifies to begin displaying data on the screen at a row.</td>
<td>show</td>
<td></td>
<td>[1_100000000]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td></td>
<td>INTEGER: 1-100000000 (Default = 1).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TYPE</td>
<td>Valid for Command: show</td>
<td>show</td>
<td></td>
<td>CC</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
Policy Server

The Policy Server (policy-server) table defines a route based on the Circuit Code received in the TNS parameter.

Table Name: AGGR
Table Containment Area: Call Agent, EMS

Command Types

- add, audit, change, control, delete, help, reset, show, status, sync

Caution

The `sync` command is a restricted command and is intended for repairing data only. Improper use may corrupt database and disrupt call processing. Use with caution.

Examples

- `show policy-server id=er1;`
- `add policy-server id=er1; tsap-addr=190.101.100.123;`
- `change policy-server id=er1; dqos-supp=y;`
- `delete policy-server id=er1;`

Usage Guidelines

- Primary Key: ID
- Foreign Key: (AGGR_PROFILE_ID) references AGGR_PROFILE ( ID )
- Add Rules: es-event-supp=y only if es-supp=y;
- Change Rules: No change allowed on tsap-addr, es-event-supp=y only if es-supp=y;
- Delete Rules: policy-server-id cannot exist in POP table.

Syntax Description

<table>
<thead>
<tr>
<th>AGGR_PROFILE_ID</th>
<th>Valid for Command: add, audit, change, show, sync</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible Value: [1_16]</td>
<td></td>
</tr>
<tr>
<td>Parser: TextParser</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>Valid for Command: add, audit, change, show, sync</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible Value: [1_64]</td>
<td></td>
</tr>
<tr>
<td>Parser: TextParser</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ID</th>
<th>Valid for Command: add, audit, change, delete, show, status, sync, control, reset</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandatory: add, change, delete, status, control, reset</td>
<td></td>
</tr>
<tr>
<td>Possible Value: [1_16]</td>
<td></td>
</tr>
<tr>
<td>Parser: TextParser</td>
<td></td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>IKE_CS</td>
<td>Valid for Command: add, audit, change, show, sync</td>
</tr>
<tr>
<td>IKE_GROUP</td>
<td>Valid for Command: add, audit, change, show, sync</td>
</tr>
<tr>
<td>IKE_KEY</td>
<td>Valid for Command: add, audit, change, show, sync</td>
</tr>
<tr>
<td>IKE_SA_LIFETIME</td>
<td>Valid for Command: add, audit, change, show, sync</td>
</tr>
<tr>
<td>IPSEC_SA_ESP_CS</td>
<td>Valid for Command: add, audit, change, show, sync</td>
</tr>
<tr>
<td>IPSEC_SA_GRACE_PERIOD</td>
<td>Valid for Command: add, audit, change, show, sync</td>
</tr>
<tr>
<td>IPSEC_SA_LIFETIME</td>
<td>Valid for Command: add, audit, change, show, sync</td>
</tr>
<tr>
<td>IPSEC_ULP_NAME</td>
<td>Valid for Command: add, audit, change, show, sync</td>
</tr>
<tr>
<td>Variable</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MASTER</td>
<td>Valid for Command: sync</td>
</tr>
<tr>
<td></td>
<td>Mandatory: sync</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_10]</td>
</tr>
<tr>
<td>MODE</td>
<td>Valid for Command: control</td>
</tr>
<tr>
<td>PLATFORM_STATE</td>
<td>Description: Audits a shared memory database.</td>
</tr>
<tr>
<td>STATUS</td>
<td>Valid for Command: audit, sync, show</td>
</tr>
<tr>
<td>TARGET</td>
<td>Description: Specifies the network element to receive the request.</td>
</tr>
<tr>
<td>TARGET_STATE</td>
<td>Description: State of CA or FS.</td>
</tr>
<tr>
<td>Attribute</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| **TSAP_ADDR** | Valid for Command: add, audit, change, show, sync  
Mandatory: add  
Possible Value: [1_64]  
Parser: DomainParser |
| **TYPE** | Valid for Command: audit, show, sync  
Default Value: POLICY_SERVER  
Possible Value: POLICY_SERVER  
Parser: TextParser |
| **WAIT** | Description: Stops status, control, or equip commands from executing until pending provisioning commands complete.  
CHAR(1): Y/N (Default = N).  
Y - Checks for pending provisioning requests; allows provisioning commands to execute first.  
N - Does not check for pending provisioning requests; commands execute according to their order.  
Valid for Command: status  
Mandatory: status  
Default Value: N  
Possible Value: Y, N  
Parser: BooleanParser |
Local Exchange Routing Guide

Introduction

This chapter provides a basic understanding of the Cisco BTS 10200 Softswitch local exchange routing guide (LERG). This chapter is divided into the following sections:

- Local Exchange Routing Guide Support
- LERG, TNS, and Additional SIP Extensions for CMS-MGC Separation

Local Exchange Routing Guide Support

Local Exchange Routing Guide Support enables you to utilize the routing data from the LERG files, and it allows you to view, add, delete, and change the data stored in the LERG tables. Also, it provides the means to schedule future LERG updates. A new set of commands and a script have been added to provision the LERG data. More information on these commands and on the mechanism for provisioning the LERG data are presented in the subsequent sections.

The BTS 10200 operations and maintenance (OAM) application allows users to configure the LERG data from the LERG6INS.DAT and LERG6.DAT files. The LERG6.DAT contains the data which needs to be configured on the BTS 10200 once at any given point in time. The LERG6INS.DAT contains the data which needs to be configured on a specific date in the future. The following two mechanisms are provided on the BTS 10200 OAM application:

- A single command to generate BTS 10200-specific LERG commands from the input LERG6.DAT. This command parses the LERG6.DAT and creates a file containing the BTS 10200-specific command list. This command file is then loaded by the means of the ftpAdapter and applied to a corresponding table in the BTS 10200 OAMP application. The command file is also sent to the Call Agent.

- A single command to generate the BTS 10200 specific LERG commands from the input LERG6INS.DAT file. This command parses the LERG6INS.DAT file and creates a file containing the BTS 10200-specific command list with appropriate start times. This command file is then loaded by means of the ftpAdapter and applied to the corresponding table in the BTS 10200 OAMP application. The command file is also sent to the Call Agent at the specified start time.
LERG6 Update

This section describes the LERG6 file update process. Refer to Figure 3-1 while reviewing the step-by-step LERG6 file update process.

**Figure 3-1   LERG6 Update Process Flow**

---

**Step 1**
The first step in the LERG6 update involves the creation of a BTS 10200-specific command file using the Access2LergCli script, which is available in the /opt/ems/bin directory. The LERG6.DAT file is provided as an argument to the *lergToCLI* command along with the output file name. The syntax of the *lergToCLI* command is *lergToCLI* <<LERG INPUT DATA>> <<OUTPUT FILE>>.

Example:
The command string `/opt/ems/bin/lergToCLI LERG6.DAT /opt/ems/ftp/deposit/lergCmds` generates the output file lergCmds in the /opt/ems/ftp/deposit directory.

**Step 2**
The output file generated by the *lergToCLI* command contains the BTS 10200-specific command line interface (CLI) commands. The output file is copied to the /opt/ems/ftp/deposit directory.

**Note**
Verify that the generated file has the expected owner. If the file does not have the expected owner, change the owner, using the unix *chown* command.

**Step 3**
The DirLoop thread, which is polling the deposit directory, reads the CLI commands contained in the output file.
Step 4 The CLI commands are then parsed and validated by the Command Processing Infrastructure (CPI) module.

Step 5 The CLI commands are then added into the Oracle database by the Request Manager component of the Command Processing Module (CPM). The Request Manager also creates a transaction request statement and makes an entry into the Transaction Queue.

Step 6 The result of the CLI command execution is contained in a transaction report.

Step 7 The Queuing and Audit Manager (QAM) process reads the transaction request statement from the Transaction Queue.

Step 8 The QAM then forwards the transaction request statement to the Call Agent. Upon receiving the reply from the Call Agent, the OAM deletes the corresponding transaction request statement from the transaction queue.

LERG6INS Update

This section describes the LERG6INS file update process. Refer to Figure 3-2 while reviewing the step-by-step LERG6INS file update process.

Figure 3-2 LERG6INS Update Process Flow
Step 1  The first step in the LERG6INS update involves the creation of a BTS 10200-specific command file using the Access2LergCli script, which is available in the /opt/ems/bin directory. The LERG6INS.DAT file is provided as an argument to the lergToCLI command along with the output file name. The syntax of the lergToCLI command is lergToCLI <<LERG INPUT DATA>> <<OUTPUT FILE>>.

Example:
The command string /opt/ems/bin/lergToCLI LERG6INS.DAT /opt/ems/ftp/deposit/lergCmds will generate the output file lergCmds in the /opt/ems/ftp/deposit directory.

Step 2  The output file generated by lergToCLI command will contain the BTS 10200 specific CLI commands. The output file is copied to the /opt/ems/ftp/deposit directory.

Note  Verify that the generated file has the expected owner. If the file does not have the expected owner, change the owner using the unix chown command.

Step 3  The DirLoop thread, which is polling the deposit directory, reads the CLI commands contained in the output file.

Step 4  The CLI commands are then parsed and validated by the CPI module.

Step 5  The Request Manager component of CPM distinguishes the regular LERG6 update from scheduled LERG6INS based on the noun. It creates a scheduled job and adds it into SCHEDULED_COMMAND and SCHEDULED_PARAM_TABLE.

Step 6  The result of the CLI command execution is contained in a transaction report.

a. During the start up of the File Transfer Protocol (FTP) Adapter (DLP process), a thread called LERG Scheduler is created to handle the periodic LERG6INS updates.

b. This thread wakes up once a day to check the SCHEDULED_COMMAND table for any pending LERG-specific jobs.

You can configure the duration of this check by changing the LERGDuration parameter in bts.properties file. We recommend that users not change this parameter. Improper tuning of this parameter might affect the performance of the DLP process.

Note  Modification of the bts.properties file should not be attempted without Cisco TAC support or supervision.

c. If the LERG Scheduler finds any LERG-related jobs in the SCHEDULED_COMMAND, it creates a corresponding LERG6 request and hands it over to CPM. The Request Manager component of CPM updates the LERG6 table in Oracle and creates an entry in the Transaction Queue.

Step 7  The QAM process reads the transaction request statement from the Transaction Queue.

Step 8  The QAM then forwards the transaction request statement to the Call Agent. Upon receiving the reply from the Call Agent, OAM deletes the corresponding transaction from the transaction queue.
LERG6INS Time Schedule

The LERG6INS scheduler is part of the FTP adapter process (DLP process). This scheduler is driven by the java timer and timer class architecture. The scheduler schedules the task for a specified duration. This duration is specified in the bts.properties file.

**Note**

We recommend that you not change the duration specified in the bts.properties file.

**Note**

Modification of the bts.properties file should not be attempted without Cisco TAC support or supervision.

The task is scheduled to run every day at midnight (12:00 a.m.). The task reads all the LERG6INS updates that need to be executed with a date prior to the current date and provision them. For example, assume that the today's date is 12-10-2005, and we add three lerg6_ins entries. The first one has a start time of 10-02-2005, the second has a start time of 12-10-2005, and the third has a start time of 12-15-2005. The task scheduled for today, which starts at 12-10-2005 at 12:00 a.m., checks the database with the entries loaded before or equal to the date 12-10-2005. The task fetches the two entries with the start times of 10-02-2005 and 12-10-2005 but ignores the entry with the start time of 12-15-2005. Hence, LERG6 is provisioned for the two entries with the start time of 10-02-2005 and 12-10-2005 but not for the entry with a start time of 12-15-2005.

System Context for LERG Support

Figure 3-3 illustrates the BTS 10200 context provisioning for LERG support.

**Figure 3-3 BTS 10200 Context Diagram of LERG Provisioning**

Configuring

The BTS 10200 LERG Support in OAMP feature configuration utilizes the `lergToCLI` script command to configure the system to create BTS 10200 specific CLI commands from the input LERG6.DAT or LER6INS.DAT file. This script is available in the /opt/ems/bin directory.
Operator Interfaces

There are four types of operator interfaces available for LERG provisioning:

- The operator can provision the LERG data on the Call Agent using the one-time configuring mechanism which utilizes the lergToCLI command script.
- The operator can schedule provisioning of the LERG data on the Call Agent on a specific date in future using the lergToCLI command script.
- The operator can use CLI commands to add, change, delete, show, or audit the entries in the LERG table.
- The operator can use show or delete CLI commands to display or delete the currently scheduled LERG data which has not yet been sent to the Call Agent.

CLI Commands

The BTS 10200 LERG Support in OAMP feature is developed to be used by the lergToCLI script command. The CLI option is provided for the sake of troubleshooting and debugging activities. The direct CLI commands using the CLI interface need to be used with discretion as simultaneous operations using the script and CLI interface might lead to complications.

You can use the show command to display the LERG6 data.

Examples:

```
show lerg6
show lerg6;ndc=469;ec=255;thousand_block =1
```

Users can use the add command to add the LERG6 data.

Example:

```
add lerg6 ndc=201;ec=007;lata=224;lata_name=NORTH JERSEY NJ;
thousand_block=A;coc_type=ATC;ssc=N;dind=Y;term_digits_ixc2eo=NA;term_digits_ixc2at=7;portable=N;aocn=7228;ocn=7229;locality=XXXXXXXXXX;state=NJ;rc=XXXXXXXXXX;line_range_from=0000;line_range_to=9999;switch_clli_code=NBWKNJ17DS1;sha=00;test_line_num=9921;thousand_block_pooling=N; lata_loc=224
```

The required attributes for add lerg6 are:

- aocn
- dind
- thousand_block
- thousand_block_pooling
- ec
- portable
- term_digits_ixc2eo
- term_digits_ixc2at
- ocn
- ndc
- switch_clli_code
You can use the delete command to delete the LERG6 data.

Example:
```
delete lerg6;ndc=469;ec=255
```

The required attributes for delete lerg6 are:
- ec
- ndc
- thousand_block

You can use the show command to display the currently scheduled LERG6INS data.

Examples:
```
show lerg6-ins
show lerg6-ins;start-time=2005-08-08 00:00:00
show lerg6-ins;id=20060808010100
```

You can use the delete command to delete the currently scheduled LERG6INS data.

Example:
```
delete lerg6-ins;id=2006010101000
```

The mandatory attributes for delete is “id”.

You can schedule the LERG6INS data update from the CLI using the add command.

Example:
```
add lerg6_ins noun=lerg6;verb=add; ndc=201;ec=252; start_time=2006-07-07 00:00
:lata=224;lata_name=NORTH JERSEY NJ; thousand_block=3; coc_type=EOC; ssc=N; dind=Y;
term_digits_ixc2eo=NA;
term_digits_ixc2at=NA;portable=Y;aocn=4051;ocn=0558;locality=CRAGMERE;state=NJ;rc=CRAGMERE
;line_range_from=3000;line_range_to=3999;switch_clli_code=HCKNNJGRDS0;sha=01;test_line_num=6299;thousand_block_pooling=Y; lata_loc=224
```

The mandatory attributes for add are “ec” and “start time”.

To clear all the LERG data, the following clear command can be used.

Examples:
```
clear lerg6

clear lerg6-ins
```
LGER6 Table

The Local Exchange Routing Guide (LGER) supports the current local exchange network within the NANP and shows planned changes in the network.

Table Name: LGER6
Table Containment Area: EMS, CA

Command Types

<table>
<thead>
<tr>
<th>Command Types</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>add, audit, change, clear, delete, help, show, sync</td>
<td></td>
</tr>
</tbody>
</table>

Caution: The **sync** command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Usage Guidelines

Primary Key Token(s): DIGIT_STRING
Unique Key (Token(s): NDC, EC, THOUSAND_BLOCK

Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AOCN</td>
<td>Description: Mandatory for the add command. The Administrative Operating Company Number that identifies the company responsible for maintaining a particular record in the database underlying the Telcordia LGER Routing Guide. VARCHAR(4): 1-4 ASCII characters. Valid for Command: add, change Mandatory: add Possible Value: [1_4] Parser: AlphaNumericParser</td>
</tr>
<tr>
<td>AUTO_REFRESH</td>
<td>Description: Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable. Valid for Command: show Default Value: Y Possible Value: Y, N Parser: BooleanParser</td>
</tr>
<tr>
<td>Variable</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td>COUNTY</td>
<td>Description: Two character abbreviation of the county where the associated record resides. This is completed only when more than one record using the same identifying keys exists within a state.</td>
</tr>
<tr>
<td>DIND</td>
<td>Description: Specifies whether a code is dialable by the customer or operator.</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Description: Specifies what token information to display on the screen.</td>
</tr>
<tr>
<td>EC</td>
<td>Description: Exchange code.</td>
</tr>
</tbody>
</table>
### LATA
**Description:** The three-digit number representing the geographical Local Access and Transport Area (LATA), or LATA-like code, in which the record is located. For example, 120 for Maine. There are five spaces for entering the LATA code—the last two digits are for the LATA sub-zone: full 5-digit LATA numbers are used only in Florida and represent Equal Access Exchange Areas (EAEAs).

**INTEGER:** 100-99999 (Default = 99999) (3-5 numeric digits).
Valid for Command: add, change
Possible Value: [100_99999]
Parser: DecimalParser

### LATA_LOC
Valid for Command: add, change
Possible Value: [1_5]
Parser: TextParser

### LATA_NAME
**Description:** The name of the LATA, or LATA-like code. For example, Maine.

**VARCHAR(20):** 1-20 ASCII characters.
Valid for Command: add, change
Possible Value: [1_20]
Parser: TextParser

### LIMIT
**Description:** Specifies the number of rows to display on the screen.

**INTEGER:** 1-100000000 (Default = 100000000).
Valid for Command: show
Default Value: 100000000
Possible Value: [1_100000000]
Parser: DecimalParser

### LINE_RANGE_FROM
**Description:** The first four digits represent the starting number in this block of numbers.

**INTEGER(4):** 1-4 numeric characters.
Valid for Command: add, change
Possible Value: [1_4]
Parser: DigitParser

### LINE_RANGE_TO
**Description:** The last four digits represent the last number in this block of numbers.

**INTEGER(4):** 1-4 numeric characters.
Valid for Command: add, change
Possible Value: [1_4]
Parser: DigitParser
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Type</th>
<th>Valid for Command:</th>
<th>Mandatory:</th>
<th>Possible Value:</th>
<th>Parser:</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCALITY</td>
<td>Name of the locality served by this NXX code.</td>
<td>VARCHAR(10)</td>
<td>add, change</td>
<td></td>
<td>[1_10]</td>
<td>TextParser</td>
</tr>
<tr>
<td>MASTER</td>
<td>Valid for Command: sync</td>
<td></td>
<td>sync</td>
<td>sync</td>
<td>[1_10]</td>
<td>TextParser</td>
</tr>
<tr>
<td>NDC</td>
<td>Unique key: ndc, ec, dn-group. Foreign key: ndc+ec+office-code-index to the Exchange Code.</td>
<td>VARCHAR(6)</td>
<td>add, delete, change, show, audit</td>
<td>add, delete, change</td>
<td>[1_3]</td>
<td>DigitParser</td>
</tr>
<tr>
<td>OCN</td>
<td>Operating Company Number (OCN). Identifies an NPA-NXX code-holder, switching entity company, or non-facility-based service providers such as resellers, billing service providers, and so forth.</td>
<td>VARCHAR(4)</td>
<td>add, change</td>
<td>add</td>
<td>[1_4]</td>
<td>AlphaNumericParser</td>
</tr>
<tr>
<td>ORDER</td>
<td>Specifies whether to display data on the screen in a sorted order.</td>
<td>VARCHAR(51200)</td>
<td>show</td>
<td></td>
<td>[1_1024]</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
### PORTABLE
**Description:** Mandatory for the `add` command. Specifies whether to port at least one line number in the NPA NXX.

- **CHAR(1):** Y/N.
  - **Y:** Port at least one line number in the NPA NXX due to thousands-block-number pooling and/or service provider LNP.
  - **N:** Do not port any numbers in the NPA NXX.

**Valid for Command:** `add, change`

**Mandatory:** `add`

**Possible Value:** Y, N

**Parser:** BooleanParser

### RC
**Description:** Rate Center (RC). An RC is the approximate midpoint within a uniquely defined a Rate Exchange Area (REA) (although an RC can designate a geographic area as well), from which mileage measurements are determined.

- **VARCHAR(10):** 1-10 ASCII characters.

**Valid for Command:** `add, change`

**Possible Value:** [1_10]

**Parser:** TextParser

### RC_TYPE
**Description:** Identifies Rate Centers requiring special identification. The following are examples of types identifying a particular Rate Center:

- **CHAR(1):** U, S, Z. U—Unrestricted. An RC providing a range of telecommunications services that is not restricted to a specific function.
- **S:** Suburban Zone: defines large exchange areas. Suburban zones apply to large metropolitan areas and can include just the area around a city (for example, Pittsburgh suburban zones) or the city and its surrounding area (for example, Wheeling suburban zones). The exchange area must be large enough to warrant a subdivision of two or more suburban zones. Suburban zones are assigned a vertical and horizontal coordinate for use in measurements between RCs, suburban zones or zoned cities, in the same manner as RC vertical and horizontal coordinates.
- **Z:** Zoned City: defines a large exchange area usually encompassing a city (for example, New York City). Each zoned city is assigned a vertical and horizontal coordinate (identified as the Major Zone). In addition, the zoned city is sub-divided into two or more city zones. Vertical and horizontal coordinates are assigned to each city zone to use in the same manner as suburban zone vertical and horizontal coordinates.

**Valid for Command:** `add, change`

**Possible Value:** S, Z

**Parser:** TextParser
SHA
Description: Switch Homing Arrangement (SHA) Indicator identifies the “homing” arrangement to be used for the NPA/NXX, relative to the entered 11-character switch. If populated with a value between 01 and 99 the combination of the 11 character switch identified and the 2 digit SHA indicator represent an alternative homing arrangement that must be previously established as an SH2 record within the routing database.
INTEGER(2): 1-2 numeric characters.
Valid for Command: add, change
Possible Value: [1_2]
Parser: DigitParser

SSC
Description: Special Service Code used in addition to the COC token identify special services provided by a Destination Code record.
VARCHAR(5): 1-5 ASCII characters.
Valid for Command: add, change
Possible Value: [1_5]
Parser: TextParser

START_ROW
Description: Specifies to begin displaying data on the screen at a specific row.
INTEGER: 1-100000000 (Default = 1).
Valid for Command: show
Default Value: 1
Possible Value: [1_100000000]
Parser: DecimalParser

STATE
Description: This is the two-letter abbreviation that identifies a state, territory or province.
VARCHAR(2): 1-2 ASCII characters.
Valid for Command: add, change
Possible Value: [1_2]
Parser: TextParser

SWITCH_CLLI_CODE
Description: An 11-character descriptor of the switch provided by the owning Local Exchange Company for the purpose of routing calls. In most cases, this is the Common Language Location Identifier (CLLI) of the switch. For NXXs in the Caribbean and Bermuda NPAs, the SW IDENT this token is populated with SWCHxxUNKNO, where xx identifies one of the countries or territories in the Caribbean or Bermuda.
VARCHAR(11): 1-11 ASCII characters.
Valid for Command: add, change
Mandatory: add
Possible Value: [11_11]
Parser: TextNoNullParser
### TARGET

**Description:** Specifies the network element to receive the request.

**VARACTHAR(5):** 1-5 ASCII characters. Permitted values are:

- **CA**—Network identifier of a Call Agent.
- **FSPTC** (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.
- **FSAIN** (AIN Feature Server)—Network identifier of AIN Feature Servers.

Valid for Command: **sync**

Mandatory: **sync**

Possible Value: [1_10]

Parser: **TextParser**

### TERM_DIGITS_IXC2AT

**Description:** Specifies the number of terminating digits required to route a call using a primary Access Tandem (AT) associated per LERG7SHA, LERG9 with a specified end office. This token is populated with either a 7 or 10. Seven terminating digits (NXX + line number) are needed if the terminating NPA-NXX is the same as the home NPA of the AT, where the AT serves a single NPA.

Ten terminating digits (NPA + NXX + line number) are needed if the terminating NPA is different from the home NPA of the AT, where the AT serves two or more NPAs. The three-digit terminating NPA resolves the ambiguity between an NXX that is assigned in two or more NPAs served by a single Access Tandem.

**VARACTHAR(2):** 1-2 ASCII characters. Permitted values are:

- NA, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

Valid for Command: **add, change**

Mandatory: **add**

Possible Value: NA, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

Parser: **TextNoNullParser**

### TERM_DIGITS_IXC2EO

**Description:** Specifies the number of terminating digits required to route a call direct to the EO where the NPA NXX resides. Both the EO token and the AT token must be provisioned. Blank entries are not allowed. An “NA” in either the EO or AT field means that the LSP provides for no direct trunking to the switching entity or point of termination (POT) in the LATA.

**VARACTHAR(2):** 1-2 ASCII characters. Permitted values are:

- NA, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

Valid for Command: **add, change**

Mandatory: **add**

Possible Value: NA, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

Parser: **TextNoNullParser**
<table>
<thead>
<tr>
<th>TEST_LINE_NUM</th>
<th>Description: Specifies a test line that identifies the line number component of an NPA NXX (NPA-NXX = test line number).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Valid for Command: add, change</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_4]</td>
</tr>
<tr>
<td></td>
<td>Parser: DigitParser</td>
</tr>
</tbody>
</table>
| **THOUSAND_BLOCK** | Description: Mandatory for add, change and delete. Specifies NPA NXX assignments and block ids. In LERG6 files, contains an “A” for NPA NXX records that are assigned to the Code Holder. In addition to the “A” record, NPA NXXs can have one or more numeric block ids (0-9) identified, as per the Thousands Block Pooling Administrative Guidelines. In the case of numeric block ids, this correlates to the 1000 line numbers that begin with the block id “1000.” (e.g. BLOCK ID 3 correlates to a range of 3000-3999). VARCHAR(3): 1_1.
| 1—1000-1999 block ids
| 2—2000-2999 block ids
| 3—3000-3999 block ids
| 4—4000-4999 block ids
| 5—5000-5999 block ids
| 6—6000-6999 block ids
| 7—7000-7999 block ids
| 8—8000-8999 block ids
| 9—9000-9999 block ids
| Valid for Command: add, delete, change, show
| Mandatory: add, delete, change
| Possible Value: [1_1]
| Parser: TextParser |

| **THOUSAND_BLOCK_POOLING** | Description: Thousand (1000) Block Pooling indicator. CHAR(1): Y, N, S, I.
| Y— The NPA NXX is part of a pool of NXXs, within a given NPA, that are assigned 1000 lines at a time by the Pool Administrator (currently only applicable to the United States) to potentially different companies.
| N—The NXX is not publicly pooled and there is no information below the NXX level.
| S—The NXX is not publicly pooled, but seven digit routing is applied (for purposes of Intra Service Provider (SP) Pooling or other reason) to show the fully assigned NXX as “split” at the thousands block level. This can apply to any NPA within the NANP.
| I—Same as “S” with the addition of BIRRDS system controls regarding the “split” of the NXX into thousands blocks. The Code Holder must request this from the Pool Administrator. This applies only to NPAs that are in the Pool Administrator’s inventory in FCC regulated areas (U.S. and U.S. Territories).
| Valid for Command: add, change
| Mandatory: add
| Possible Value: Y, N, S, I
| Parser: TextParser |
LERG6-INS Table

LERG6-ins commands update the Lerg6 table on a monthly basis with LERG information from Telcordia. LERG6-ins (in service) commands use the same tokens as the Lerg6 table. LERG6-ins reports display changes made since the previous month's LERG. Use the add command to schedule a LERG6INS data update.

Table Name: LERG6_INS

Table Containment Area: EMS, CA

**Command Types**

add, change, clear, delete, help, show

**Syntax Description**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Valid for Command</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>AOCN</td>
<td>Mandatory for the add command. The Administrative Operating Company Number that identifies the company responsible for maintaining a particular record in the database underlying the Telcordia LERG Routing Guide.</td>
<td>add, change</td>
<td>[1_4]</td>
<td>AlphaNumericParser</td>
</tr>
<tr>
<td>COUNTY</td>
<td>Two character abbreviation of the county where the associated record resides. This is completed only when more than one record using the same identifying keys exists within a state.</td>
<td>add, change</td>
<td>[1_2]</td>
<td>DigitParser</td>
</tr>
<tr>
<td>DIND</td>
<td>Specifies whether a code is dialable by the customer or operator.</td>
<td>add, change</td>
<td>[1_1]</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
### EC
Description: Mandatory for add and delete. Foreign key: Exchange Code and National Destination Code tables. Exchange Code. Also referred as a COC. 
VARCHAR(6): 1-6 numeric characters. 
Valid for Command: add, change, show 
Mandatory: add 
Possible Value: [1_3] 
Parser: DigitParser

### ID
Description: Primary key. Unique id for this ISDN D-channel profile. Assigned by a service provider. 
VARCHAR(16): 1-16 ASCII characters. 
Valid for Command: show, change, delete 
Mandatory: change, delete 
Possible Value: [1_20] 
Parser: DigitParser

### LATA
Description: The three-digit number representing the geographical Local Access and Transport Area (LATA), or LATA-like code, in which the record is located. For example, 120 for Maine. There are five spaces for entering the LATA code—the last two digits are for the LATA sub-zone: full 5-digit LATA numbers are used only in Florida and represent Equal Access Exchange Areas (EAEAs). 
INTEGER: 100-99999 (Default = 99999) (3-5 numeric digits). 
Valid for Command: add, change 
Possible Value: [000_99999] 
Parser: DecimalParser

### LATA_LOC
Valid for Command: add, change 
Possible Value: [1_5] 
Parser: TextParser

### LATA_NAME
Description: The name of the LATA, or LATA-like code. For example, Maine. 
VARCHAR(20): 1-20 ASCII characters. 
Valid for Command: add, change 
Possible Value: [1_20] 
Parser: TextParser

### LINE_RANGE_FROM
Description: The first four digits represent the starting number in this block of numbers. 
Valid for Command: add, change 
Possible Value: [1_4] 
Parser: DigitParser
### LINE_RANGE_TO
Description: The last four digits represent the last number in this block of numbers.
- Valid for Command: add, change
- Possible Value: [1_4]
- Parser: DigitParser

### LOCALITY
Description: Name of the locality served by this NXX code.
- VARCHAR(10): 1-10 ASCII characters.
- Valid for Command: add, change
- Possible Value: [1_10]
- Parser: TextParser

### NDC
Description: Foreign key: Exchange Code and National Destination Code (NDC) tables. The NDC, which consists of the number plan area code (NPA) (first 3 digits of the destination code) combined with the COC.
- VARCHAR(6): 1-6 ASCII characters.
- Valid for Command: add, change, show
- Mandatory: add
- Possible Value: [1_3]
- Parser: DigitParser

### NOUN
Description: Mandatory for add command. CLI noun.
- VARCHAR(64): 1-64 ASCII characters; any valid command noun.
- Valid for Command: add, change, show
- Mandatory: add
- Default Value: LERG6
- Possible Value: LERG6
- Parser: TextNoNullParser

### OCN
Description: Operating Company Number (OCN). Identifies an NPA-NXX code-holder, switching entity company, or non-facility-based service providers such as resellers, billing service providers, and so forth.
- VARCHAR(4): 1-4 ASCII characters.
- Valid for Command: add, change
- Possible Value: [1_4]
- Parser: AlphaNumericParser
<table>
<thead>
<tr>
<th><strong>PORTABLE</strong></th>
<th>Description: Mandatory for the add command. Specifies whether to port at least one line number in the NPA NXX.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CHAR(1): Y/N.</td>
</tr>
<tr>
<td></td>
<td>Y—Port at least one line number in the NPA NXX due to thousands-block-number pooling and/or service provider LNP.</td>
</tr>
<tr>
<td></td>
<td>N—Do not port any numbers in the NPA NXX.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change</td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
</tr>
<tr>
<td></td>
<td>Parser: BooleanParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>RC</strong></th>
<th>Description: Rate Center (RC). An RC is the approximate midpoint within a uniquely defined a Rate Exchange Area (REA) (although an RC can designate a geographic area as well), from which mileage measurements are determined.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VARCHAR(10): 1-10 ASCII characters.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_10]</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>RC_TYPE</strong></th>
<th>Description: Identifies Rate Centers requiring special identification. The following are examples of types identifying a particular Rate Center:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CHAR(1): U, S, Z.</td>
</tr>
<tr>
<td></td>
<td>U—Unrestricted. An RC providing a range of telecommunications services that is not restricted to a specific function.</td>
</tr>
<tr>
<td></td>
<td>S—Suburban Zone: defines large exchange areas. Suburban zones apply to large metropolitan areas and can include just the area around a city (for example, Pittsburgh suburban zones) or the city and its surrounding area (for example, Wheeling suburban zones). The exchange area must be large enough to warrant a subdivision of two or more suburban zones. Suburban zones are assigned a vertical and horizontal coordinate for use in measurements between RCs, suburban zones or zoned cities, in the same manner as RC vertical and horizontal coordinates.</td>
</tr>
<tr>
<td></td>
<td>Z—Zoned City: defines a large exchange area usually encompassing a city (for example, New York City). Each zoned city is assigned a vertical and horizontal coordinate (identified as the Major Zone). In addition, the zoned city is sub-divided into two or more city zones. Vertical and horizontal coordinates are assigned to each city zone to use in the same manner as suburban zone vertical and horizontal coordinates.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change</td>
</tr>
<tr>
<td></td>
<td>Possible Value: S, Z</td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
</tr>
</tbody>
</table>
SHA | Description: Switch Homing Arrangement (SHA) Indicator identifies the “homing” arrangement to be used for the NPA/NXX, relative to the entered 11-character switch. If populated with a value between 01 and 99 the combination of the 11 character switch identified and the 2 digit SHA indicator represent an alternative homing arrangement that must be previously established as an SH2 record within the routing database.

INTEGER(2): 1-2 numeric characters.
Valid for Command: add, change
Possible Value: [1_2]
Parser: DigitParser

SSC | Description: Special Service Code used in addition to the COC token identify special services provided by a Destination Code record.

VARCHAR(5): 1-5 ASCII characters.
Valid for Command: add, change
Possible Value: [1_5]
Parser: TextParser

START_TIME | Description: Starting time for measurements summary. Enter all 19 ASCII characters as shown. Start-time must occur before end-time. Measurement items are available for the current and previous calendar days only (up to a maximum of 48 hours of events).

DATE and TIME: YYYY-MM-DD HH:MM:SS.
Valid for Command: add, change, show
Mandatory: add
Possible Value: [14_19]
Parser: DateTimeParser

STATE | Description: This is the two-letter abbreviation that identifies a state, territory or province.

VARCHAR(2): 1-2 ASCII characters.
Valid for Command: add, change
Possible Value: [1_2]
Parser: TextParser

SWITCH_CLLI_CODE | Description: An 11-character descriptor of the switch provided by the owning Local Exchange Company for the purpose of routing calls. In most cases, this is the Common Language Location Identifier (CLLI) of the switch. For NXXs in the Caribbean and Bermuda NPAs, the SW IDENT this token is populated with SWCHxxUNKNO, where xx identifies one of the countries or territories in the Caribbean or Bermuda.

VARCHAR(11): 1-11 ASCII characters.
Valid for Command: add, change
Possible Value: [11_11]
Parser: TextNoNullParser
### TERM_DIGITS_IXC2AT

**Description:** Specifies the number of terminating digits required to route a call using a primary Access Tandem (AT) associated per LERG7SHA, LERG9 with a specified end office. This token is populated with either a 7 or 10. Seven terminating digits (NXX + line number) are needed if the terminating NPA-NXX is the same as the home NPA of the AT, where the AT serves a single NPA.

Ten terminating digits (NPA + NXX + line number) are needed if the terminating NPA is different from the home NPA of the AT, where the AT serves two or more NPAs. The three-digit terminating NPA resolves the ambiguity between an NXX that is assigned in two or more NPAs served by a single Access Tandem.

**VARCHAR(2):** 1-2 ASCII characters. Permitted values are: NA, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

- **Valid for Command:** add, change
- **Possible Value:** NA, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
- **Parser:** TextNoNullParser

### TERM_DIGITS_IXC2EO

**Description:** Specifies the number of terminating digits required to route a call direct to the EO where the NPA NXX resides. Both the EO token and the AT token must be provisioned. Blank entries are not allowed. An “NA” in either the EO or AT field means that the LSP provides for no direct trunking to the switching entity or point of termination (POT) in the LATA.

**VARCHAR(2):** 1-2 ASCII characters. Permitted values are: NA, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

- **Valid for Command:** add, change
- **Possible Value:** NA, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
- **Parser:** TextNoNullParser

### TEST_LINE_NUM

**Description:** Specifies a test line that identifies the line number component of an NPA NXX (NPA-NXX = test line number).

**INTEGER(4):** 1-4 numeric characters.

- **Valid for Command:** add, change
- **Possible Value:** [1_4]
- **Parser:** DigitParser
THOUSAND_BLOCK  Description: Mandatory for add, change and delete. Specifies NPA NXX assignments and block ids. In LERG6 files, contains an “A” for NPA NXX records that are assigned to the Code Holder. In addition to the “A” record, NPA NXXs can have one or more numeric block ids (0-9) identified, as per the Thousands Block Pooling Administrative Guidelines. In the case of numeric block ids, this correlates to the 1000 line numbers that begin with the block id “1000.” (e.g. BLOCK ID 3 correlates to a range of 3000-3999).

VARNCHAR(3): 1_1.
1—1000-1999 block ids
2—2000-2999 block ids
3—3000-3999 block ids
4—4000-4999 block ids
5—5000-5999 block ids
6—6000-6999 block ids
7—7000-7999 block ids
8—8000-8999 block ids
9—9000-9999 block ids

Valid for Command: add, change, show
Mandatory: add
Possible Value: [1_1]
Parser: TextParser
### THOUSAND_BLOCK_POOLING

**Description:** Thousand (1000) Block Pooling indicator.

**CHAR(1):** Y, N, S, I.

- **Y**—The NPA NXX is part of a pool of NXXs, within a given NPA, that are assigned 1000 lines at a time by the Pool Administrator (currently only applicable to the United States) to potentially different companies.

- **N**—The NXX is not publicly pooled and there is no information below the NXX level.

- **S**—The NXX is not publicly pooled, but seven digit routing is applied (for purposes of Intra Service Provider (SP) Pooling or other reason) to show the fully assigned NXX as “split” at the thousands block level. This can apply to any NPA within the NANP.

- **I**—Same as “S” with the addition of BIRRDS system controls regarding the “split” of the NXX into thousands blocks. The Code Holder must request this from the Pool Administrator. This applies only to NPAs that are in the Pool Administrator’s inventory in FCC regulated areas (U.S. and U.S. Territories).

- **Valid for Command:** add, change
- **Possible Value:** Y, N, S, I
- **Parser:** TextParser

### VERB

**Description:** Mandatory for add command. Command-line interface (CLI) verb.

**VARCHAR(64):** 1-64 ASCII characters; any valid command verb.

- **Valid for Command:** add, change, show
- **Mandatory:** add
- **Possible Value:** ADD, CHANGE, DELETE
- **Parser:** TextNoNullParser
LERG, TNS, and Additional SIP Extensions for CMS-MGC Separation

This section provides an overview of the LERG and TNS functionality.

LERG

The LERG database, provided by Telecordia, contains comprehensive data of all switches and their serving NPANXX numbers. If a switch’s provisioning does not yield a route to a destination using normal Called Party Number analysis through the DIAL-PLAN, it should use LERG to figure out the remote switch that serves the NPANXX and route to the remote switch.

Note

LERG data provisioning is applicable only to ANSI/North America market.

This feature is intended to provide routing based on the LERG data supplied by Telecordia. If a called party number analysis does not yield a routing solution, LERG data is looked up to find a remote switch id and the call is routed based on the remote switch id.

There are two options to route to a remote switch from the BTS 10200. The first option is to provision a route to every remote switch in the dial-plan. The second option is to always route to a default destination/route.

The first option entails provisioning an entry in the routing data (dial-plan, destination, route, etc) for each of the remote switches in the country. That will yield a lot of entries in the routing data table of the BTS 10200 and complicates provisioning. The first option does not require any changes to the BTS 10200. The existing routing schema can be used to provision routes to remote switches.

The second approach would be to simply route to a default destination/route and put the onus on the adjoining switches.

The LERG implementation in the BTS 10200 uses the second option, the default routing approach. Also, the LERG data is looked up for digit validation and for finding call_type, but the remote_switch id is ignored. Whether to look up LERG data or not for validating digits and to find call_type is configurable. Configuration of default route and configuration of LERG data lookup is included in the dial-plan-profile. In the dial-plan-profile the default route is configured via the default_dest field and the LERG lookup is configured via the lerg_supp field. Both of the field can be configured independently.

The independent configuration of LERG and default route configuration in dial-plan-profile enables one to provision the default route with or without LERG lookup. This allows the default route to be configured in international markets where LERG data is not relevant. Additionally, the default route can be used in any routing scenario.

In addition a new call_type policy is added to enable routing based on the call_type.

Figure 3-4 and Figure 3-5 depict high-level views of routing calls originated from the trunk group and subscriber, respectively. Figure 3-6, depicts change needed to implement default_routing dial-plan routing. Here default_routing refers to both LERG lookup and looking up the default_dest from dial-plan-profile.
**Figure 3-4  Routing of an Incoming Trunk Call**

TG incoming call

- From trunk group get dial-plan ID
- Goto dial-plan and get destination based on digits and dp-id
- Go to Destination table and get calltype and route

CALLTYPE TOLLFREE
- 900
- 500
- Yes
- No

DP_Routing (TG->DP)

- Select route
- NOT FOUND

TOLL FREE
- 900
- 500
- Yes
- No

Local traffic
- Yes
- No

Casual SP
- Yes
- No

Carrier_Routing (TNS->CARRIER)

TNS
- Yes
- No

TG carrier
- Yes
- No

Carrier_Routing (TG->CARRIER)

TG SP
- Yes
- No

Carrier_Routing (TG->SP)

SP_Routing (casual SP)
**Figure 3-5**  Routing on an Incoming Subscriber Call

- Subcriber incoming call
- Get subscriber table (sub-profileid)
- Get subscriber-profile table(dial-plan-id)
- Go to dial-plan (based on DP-ID)
- Go to destination table (get calltype and destination)

- CALLTYPE TOLLFREE
  - 900
  - 500
- DP_Routing (SUB->DP)
- Carrier_Routing (Casual)
- Carrier_Routing (PIC(1:3))

- Select route

- NOT FOUND
Figure 3-6  Default-Routing Dial-Plan Routing

DP_Routing (DP digits)

- **NOA INTL**
  - Yes: INTL dial plan
  - No:
    - Destination found
      - No: Default_Routing
      - Yes: Return SUB
    - Destination route
      - Yes: Return DEST->route_guide_idx
      - No:
        - Destination RID
          - Yes: Return DEST->route_idx
          - No:
            - Destination carrier
              - No: Return ERROR
              - Yes:
                - CALLTYPE
                  - TOLLFREE
                    - 900
                    - 500
                    - Yes: Carrier_Routing (DEST->CARRIER)
TNS Routing Modifications

This section describes the TNS routing modifications.

Current TNS Routing Implementation

The current implementation of the BTS 10200 supports carrier based routing when it receives a TNS parameter in an IAM from PSTN network. In the current implementation, the carrier routing involves three steps: 1) find an entry in the dial-plan with Called Party digits, 2) find call_type based on the destination pointed to by the dial-plan entry, and 3) route using the carrier_id. Step 1 and 2 are mandatory. If an entry is not found in Step 1, the call is failed.

Modified TNS Routing Implementation

The modified TNS routing implementation, stemming from CMS and MGC separation, requires that the MGC routing analysis shall included call_type and carrier_id passed in INVITE from the NRS. With changes to TNS implementation derived from the MGC routing analysis requirement, the three basic carrier routing steps remain same. But, with the addition of default routing, the provisioning of the dial-plan will be easier. Per the requirement, a default_dest field is added to the dial-plan-profile table so that if no dial-plan entry is found the default_dest in dial-plan-profile is used. With this, one needs to provide only one default_dest, no entries in the dial-plan are needed. As shown in the call_flow in Figure 3-7, the CMS will pass the call_type and carrier_id from its route analysis; and the NRS, in turn, will pass it to the MGC.

One TG could be provisioned from the NRS to the MGC so that the NRS will channel all calls with call_type and carrier_id on that TG. Then on MGC, the dial-plan-profile is provisioned with the default_dest and no dial-plan entries are needed. The basic need of having a destination is still there, but the provisioning aspect is simplified with the introduction of default routing.

The change is applicable to all calls coming from either PSTN or NRS. However, call_type is expected only on the NRS to MGC trunk and Access Tandem trunk.
In the current design of the BCM, as shown in Figure 3-8, every incoming call from the TG flows through the dial-plan and the TNS based routing is accomplished after a destination is found.

The TNS routing is modified to account for the call_type in the setup from NRS. The call_type in Call Data field is initialized with call_type from the Setup field. In addition, a new policy Circuit Code policy is added to route based on the Circuit Code.
Figure 3-8  TNS Routing and Modifications to the General Routing Flow

TG incoming call

From trunk group get dial-plan ID

Goto dial-plan and get destination based on digits and dp-id

Go to Destination table and get calltype and route

CALLTYPE TOLLFREE 900 500

Yes

No

Local traffic

Yes

No

Casual SP

Yes

No

SP_Routing (casual SP)

TNS

Yes

No

Carrier_Routing (TNS->CARRIER)

TG carrier

Yes

No

Carrier_Routing (TG->CARRIER)

TG SP

Yes

No

SP_Routing (TG->SP)

DP_Routing (TG->DP)

NOT FOUND

Select route

Yes

No
TNS and LERG Feature Use

The routing changes can be summarized as follows:

1. Validating and finding call type using LERG data
2. Route using default route
3. Call_type Policy
4. Circuit Code Policy
5. TNS routing modifications

The first item is only applicable to the North American Market.

The first three items in the list are relevant to both MGC and CMS deployments. The last two items on the list above are relevant only to a MGC deployment.

Each one of the above items can be configured independent of the others in the list. For example, default-routing can be provisioned without LERG data and call_type policy can be provisioned without TNS routing, etc. This independence enables to use default routing in any scenario. And also, use of Call Type and Circuit Code policies in any scenario.

Data Model Changes to Policy Routing Tables

A new default_policy concept and a new policy_profile table are introduced with the introduction of the call_type and circuit code policies.

The new policy_profile table has an 0 to M relationship with all policy tables. So, for every entry in a policy table there is an entry in the policy_profile table, but not vice-versa.

The policy_profile table serves two purposes:

1. It provides foreign key relationship to the route_guide table. In prior releases, policy associations with route guides was not explicitly enforced. With the introduction of this table, the route_guide entry is associated with the policy_profile entry. Every policy profile entry has an entry in the policy table associated with the policy_type. So, when policy is added to the route_guide, the database checks for its existence in policy_profile.

2. It also provides a place holder for the default policy and default policy types. This enables taking default course of action, if the policy table pointed to by the TYPE field in policy_profile doesn't have an entry. In the current design, only policy_call_type and policy_circuit_code will use this feature. For example, in the case of policy_call_type, for every policy, there can be multiple entries with different call_types. It is possible that we may not find an entry for the call_type of the call being routed. In that instance, the default_policy_type and default_policy_id fields from the policy_profile entry are used to route the call.

Note

Prior to adding policy_call_type entry there must be an entry in policy_profile with type=CTYPE.

Cluster Routing

A cluster is a group of CMS and MGC nodes that appear as a single logical CMS/MGC to the PSTN. For information on this feature, see the “Cluster Routing” section on page 2-26.
Inter-Process Interface (SIA)

In support of CMS/MGC separation in the Packetcable network, several optional extensions are to be added to SIP INVITE request messages. These extensions carry between the CMS and an MGC, information that is significant to the PSTN. Prior to release 5.0 some of these types of extensions have been added to the BTS, including: cic, rn, and npdi. The new extensions for Release 5.0 include:

- “ct” – Call Type
- “noa” – Nature of Address
- “cpc” – Calling Party Category
- “dai” – Dial Around Indicator

It should be noted that the values that are being assigned to these new extensions are currently only for the ANSI/North American market. In the future the parameter values can be expanded to include values necessary for other world markets.

Also note that these extensions are generally added/encoded on the CMS and decoded on the MGC. This is because the MGC can utilize the extra information for routing and it interfaces to the PSTN, which may utilize the extra information provided in these headers. Because of this, the general rule of thumb when provisioning the associated softsw-tg-profile flags for CMS/MGC separation is for these parameters to be set to send_only on the CMS and recv_only on the MGC.

Call Type, Nature of Address, and Dial Around Indicator are extensions to the user part of the Request URI of a SIP INVITE message. The Calling Party Category extension is added to the user part of the PAID header. These extensions will only be added to the initial SIP INVITE request.

Call Type

The possible values for call type are as follows:

"sac-500" / "sac-700" / "sac-900" / "svc-976" / "airlines" / "ambulance" / "ana" / "blv" / "business" / "cut-thru" / "national-opr" / "da" / " da-toll" / "emergency" / "fire" / "info" / "inter-lata" / "international" / "international-opr" / "international-wz1" / "lb-test" / "local" / "lnr" / "mobile" / "national-opr" / "non-emergency" / " opr " / "sip-trigger" / "police" / " premium" / "railways" / "relay" / "repair" / "svc-code" / "tandem" / "test" / "tool" / "toll-free" / "traffic" / "wakeupt" / "weather" / "unknown" / "token"

In the decode direction the MGC BTS 10200 will receive incoming SIP INVITE messages with the call type parameter from an NRS. Note that the NRS does not know about this parameter and just blindly passes it through when it receives it from a CMS BTS 10200.

Nature Of Address

Nature of Address extension corresponds to the directory number in the Request URI. It is defined in PSTN call signaling protocols to classify the dialed number. It is used in conjunction with Call Type to classify the called party. Its possible values are:


There is a special scenario for operator calls when the NOA=operator, the BCM will send the call information with an empty called party number. For the operator scenario which are routed via SIP, there should be a digman associated with the route to append "0" for NOA=operator.

Also, if you specify MATCH-STRING=^$; then it will prefix “0” only if there are no digits.
Calling Party Category

The Calling Party Category (CPC) characterizes the type of user (or caller) who originates a call. It is used in the PSTN for call routing and call screening purposes. All of the possible CPC values are as follows:

- “ordinary”
- “prison”
- “police”
- “test”
- “operator”
- “payphone”
- “unknown”
- “hospital”
- “cellular”
- “cellular-roaming”
- “non-coin-toll-free”
- “coin-toll-free”
- “genvalue”

The CPC extension values only refer to the common values defined in the ANSI/North America market. In ANSI ISUP, this information pertains to the OLI (Originating Line Information) parameter.

Dial Around Indicator

The dial-around-indicator (DAI) is added to the user part of the SIP Request URI of the first outgoing INVITE message. The dial-around indicator is added to indicate how the carrier ID code was derived. The DAI has the following values:

- “presub” - the CIC contains the caller's pre-subscribed carrier
- “presub-da” - the CIC contains the caller's dialed carrier-identification-code; the caller has a pre-subscribed carrier. The dialed value is the same as the subscriber's carrier.
- “presub-daUnkwn” - the CIC may contain either a caller dialed carrier-identification-code or the caller’s pre-subscribed carrier
- “da” - the CIC contains the caller's dialed carrier-identification-code; the caller does not have a pre-subscribed carrier
- “CIC-chrgPty” - the CIC is the preferred carrier of the charged party
- “altCIC-chrgPty” - the CIC is the alternate carrier of the charged party
- “verbal-clgPty” - the CIC was delivered verbally by the calling party
- “verbal-chrgPty” - the CIC was delivered verbally by the charged party
- “emergency” - this is an emergency call
- “operator” - the carrier was selected by a network operator
EMS Changes

The Translate Trunk command is enhanced to add three additional parameters, call_type, circuit_code and carrier_id to translate calls coming with carrier_id, circuit_code and call_type. All three parameters are optional.

Examples:

```plaintext
translate trunk; tgn-id=2; call_type=local; called_dn=7034841301; circuit_code=1
translate trunk; tgn-id=2; carrier_id=288; call_type=local; circuit_code=1
translate trunk; tgn-id=2; carrier_id=288;
```

TNS Routing Modification

TNS routing is modified is to enable the setting of call_type in the call_data. If setup.ind has a valid call_type the calldata.call_type is set to the value derived from setup.ind.

The Circuit Code Policy has been added to enable routing based on the circuit code. Additionally, the Call Type Policy has been added to enable routing based on the call type. Both policies can be configured and chained together.

Figure 3-9 and Figure 3-10 illustrate the two possible the carrier code policy can be configured. Figure 3-9 shows configuration of Circuit Code Policy that enables routing to a different route based on the Circuit Code. In Figure 3-10, the Call Type policy precedes the Circuit Code policy.

**Figure 3-9  Circuit Code Policy**
Default Routing

Default routing is accomplished by using the new data field DEFAULT-DEST-ID in dial-plan-profile. Use the following command to provide a default route.

Example:
```
change/add dia-plan-profile default_dest_id=dest1
```
This command routes a call to default_dest “dest1”.

Validation Digits and Finding Call Type with LERG Data

The LERG data from Telecordia is used to validate the called party digits and to find call type based on the new dial-plan profile field LERG_SUPP values. If the value is VALDIATE_AND_CALLTYPE, the LERG data is used to validate the Called Party digits and call type evaluated based on the LERG entry. If the value is USE-TO-VALIDATE-ONLY, the LERG data is used to validate Called Party digits and call type is derived from the default-destination. If the value is NONE, the LERG table is not looked at. The NANP-STATE table is used to determine if the call_type is INTL_WZ1 based on the state of the called party.

Figure 3-11 shows the validation of digits using LERG. Figure 3-12 shows the analysis of the call type using LERG.
Figure 3-11  Validating Digits Using LERG Data

Validate and find call type with LERG

Yes

call_data.call_type=Null

Yes

No

Error=Y
Action=Continue

No

In LERG
dpp.lerg_supp=NOT_USED

No

No

Yes

Valid digits=No
CALL_TYPE=dpp.defaultdest.call_type

CALL_TYPE=get_call_type_from_lerg

dpp.lerg_supp=use_to_validate_only

CALL_TYPE=dpp.defaultdest.call_type
Circuit Code Policy Routing

Circuit code policy routing enables route selection based on the Circuit Code from the TNS parameter.

Call Type Policy Routing

Call type policy routing enable the BTS 10200 to route calls based on the call type in scenarios like LNP and TOLL_FREE calls. In the case of TOLL_FREE or LNP query scenarios, the call type obtained before the query must be preserved by the BCM. The preserved pre-query call type and the new CALLTYPE policy is used to route the call. This enables the service provider to route the translated call to different trunk group based on the pre-query call type. Figure 3-13 and Figure 3-14 illustrate the processing and routing of LNP and TOLL_FREE calls, respectively.
Figure 3-13  Routing of an LNP Call

1. Incoming call
2. Get dial-plan-id from sub-profile/TG
3. If Valid_dig_find_dest_calltype is Yes, found dest via dial-plan
4. Need LNP trigger
5. Move to analyze
6. Preserve calltype in analyze_info
7. Route the call as it is done today
8. Resp from FS continue?
9. Move to analyze
10. Existing code
11. Route with default route
12. No LERG lookup again as calltype is known
13. Get_dest Yes
14. Route with new dest
15. Calltype is from pre-LNP lookup

Figure 3-14  Routing of a TOLL_FREE Call

1. Incoming call
2. Get dial-plan-id from sub-profile/TG
3. If Valid_dig_find_dest_calltype is Yes, found dest via dial-plan
4. Need 800 trigger
5. Move to collected_info
6. Preserve calltype in analyze_info
7. Route the call as it is done today
8. Resp from FS continue?
9. Move to analyze
10. Existing code
11. Route with default route
12. No LERG lookup again as calltype is known
13. get_dest Yes
14. Route with new dest
15. Calltype is from pre-LNP lookup
TNS Routing Modifications

No new provisioning is needed. To optimize routing, configure the following to circumvent looking up the dial-plan. For example, when a local call is routed from one CMS to another CMS, then the TG can be configured with a default_dest_id and default_dest_id is configured with Route_TYPE=SUB.

Example:
change/add dial-plan-profile id=dp69; default_dest_id=dest1

Setting Up LERG Validation and Call_Type

Use the following command to enable LERG data based called party digit validation and call_type.

Example:
change/add dial-plan-profile
LERG6_SUPP=NOT_USED/USED_TO_VALIDATE_ONLY/VALIDATE_AND_CALLTYPE

Setting Up Call_Type Policy

Use the following examples to configure the call_type policy.

Example:
To add a policy_profile:
add policy-profile id=carrier0288; type=ct; default-policy-type=route;
default-policy-id=rt1

Example:
To provision a policy_call_type:
add policy-call-type id=carrier0288; type=ct; call_type=local; policy_type=cc;
policy_id=CircuteCodePolicy1
add policy-call-type id=carrier0288; type=ct; call_type=INTL; policy_type=ROUTE;
policy_id=rt3

Note
Prior to adding policy_call_type entry there must be an entry in policy_profile with type=CTYPE.

Example:
To associate a policy_profile with a route_guide:
add route-guide id=rtguide1; policy_type=ct; policy_id=carrier0288
Setting Up Circuit_Code Policy

Use the following examples to configure circuit_code policy.

Example:
To add a policy_profile:
add policy-profile id=carrier0288; type=cc; default-policy-type=route;
default-policy-id=rt1

Example:
To provision a policy_call_type:
add policy-call-type id=carrier0288; type=cc; call_type=LOCAL; policy_type=cc;
policy_id=CircuitCodePolicy1
add policy_call_type id=carrier0288; type=CC; call_type=INTL; policy_type=ROUTE;
policy_id=rt3

Note
Prior to adding policy_call_type entry there must be an entry in policy_profile with type=CTYPE.

Example:
To associate a policy_profile with a route_guide:
Add route_guide id=rtguide1; policy_type=cc; policy_id=Carrier0288

Softswitch Trunk Group Profile Table

The Softswitch Trunk Group Profile (softsw-tg-profile) table holds all the information specific to a Softswitch trunk, such as id, protocol, indicators and echo suppression. The softsw-tg-profile record can be shared by multiple softswitch trunk groups. An ID must be created in this table before entries can be added to the Softswitch Trunk Group table.

Table Name: SOFTSW_TGPROFILE
Table Containment: EMS, CA

Command Types
add, audit, change, delete, help, show, sync

Caution
The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples
add softsw-tg-profile id=softprf1; protocol-type=sip-t;
change softsw-tg-profile id=softprf1; send-cpn=n;
delete softsw-tg-profile id=softprf1;
show softsw-tg-profile id=softprf1;
Usage Guidelines

Primary Key: ID

Foreign Key: (SIP_TIMER_PROFILE_ID) references SIP_TIMER_PROFILE (ID)

Check Rule:
Add Rules: If protocol-type=sip-t; then sipt-isup-ver must be specified.
Add Rules: The sipt-isup-ver token must be defined in the SIPT ISUP Version Base table.
Delete Rules: ID cannot exist in any trunk-grp::tg-profile-id where tg-type=softsw.

Syntax Description

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
<th>CHAR(1): Y/N (Default = N).</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPLY_USER_PRIVACY</td>
<td>Specifies whether to apply user privacy.</td>
<td>Y—If the originator requested privacy, aspects of the calling party information (such as the calling name and number in the From:header) in the initial outbound SIP INVITE is hidden. Privacy is requested when either the calling party name or number have presentation restrictions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N—User level privacy is not applied.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td>Default Value: N</td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
<td>Parser: BooleanParser</td>
</tr>
<tr>
<td>AUTO_P_A_ID</td>
<td>Preliminary (proposed) Asserted Identity.</td>
<td>Y—Use PAID if received, else treat FROM header as PAID.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N—Treat FROM header as PAID.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td>Default Value: N</td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
<td>Parser: BooleanParser</td>
</tr>
<tr>
<td>AUTO_REFRESH</td>
<td>Specifies whether to display cached data on the screen.</td>
<td>Y—Queries the database for the most current data.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N—Queries the database for the most current data only if the cached data is unavailable.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
<td>Default Value: Y</td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
<td>Parser: BooleanParser</td>
</tr>
<tr>
<td>Property</td>
<td>Description</td>
<td>Type</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>DESCRIPTION</td>
<td>Description: Described by the service provider.</td>
<td>VARCHAR(64)</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_64]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Description: Specifies what token information to display on the screen.</td>
<td>VARCHAR(1024)</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_1024]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextParser</td>
<td></td>
</tr>
<tr>
<td>DIVERSION_HEADER_SUPP</td>
<td>Description: Specifies whether SIP Diversion Header is supported or not.</td>
<td>CHAR(1)</td>
</tr>
<tr>
<td></td>
<td>This header conveys diversion information from other SIP user agents and proxies to the called user agent. This information can be used for enhanced features, including Unified Messaging, Third-Party voice mail, and Automatic Call Distribution (ACD). The most common use of the Diversion Header in the Cisco BTS 10200 Softswitch is for call forwarding features.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default Value: Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: BooleanParser</td>
<td></td>
</tr>
<tr>
<td>DTMF_RELAY_METHOD</td>
<td>Description: Specifies which way to send an out-of-band DTMF Relay.</td>
<td>VARCHAR(8)</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, audit, change, show, sync</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default Value: NONE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible Value: NONE, NOTIFY, INFO</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Parser: TextNoCaseParser</td>
<td></td>
</tr>
</tbody>
</table>
**ENABLE_CPC_PARAM**

Description: Specifies whether to enable or disable processing of a calling party category (CPC) extension that is optionally added to the user part of a P-Asserted-ID header. The use-pai-hdr-for-ani token must be enabled for the enable-cpc-param token to be valid. If the use-pai-hdr-for-ani token is set to N, then the enable-cpc-param is ignored.

VARCHAR(16): 1-16 ASCII characters. Permitted values are:
SEND-ONLY—Send CPC in an outgoing INVITE message.
RECV-ONLY—Process CPC from incoming INVITE messages.
SEND-RECV—Send CPC in outgoing INVITE messages and process CPC on incoming INVITE messages.
IGNORE (Default)—Disable CPC send and process.

Valid for Command: add, change, audit, sync, show
Default Value: IGNORE
Possible Value: SEND_ONLY, RECV_ONLY, SEND_RECV, IGNORE
Parser: TextNoCaseParser

**ENABLE_CT_PARAM**

Description: Specifies whether to enable or disable the processing of a call type (CT) extension that is optionally added to the user part of the SIP Request URI.

VARCHAR(16): 1-16 ASCII characters. Permitted values are:
SEND-ONLY—Send CT in outgoing INVITE message.
RECV-ONLY—Process CT from incoming INVITE messages.
SEND-RECV—Send CT in outgoing INVITE messages and process CT on incoming INVITE messages.
IGNORE (Default)—Disable CT send and process.

Valid for Command: add, change, audit, sync, show
Default Value: IGNORE
Possible Value: SEND_ONLY, RECV_ONLY, SEND_RECV, IGNORE
Parser: TextNoCaseParser
<table>
<thead>
<tr>
<th>Configuration</th>
<th>Description</th>
<th>Value</th>
<th>Default</th>
<th>Possible Values</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENABLE_DAI_PARAM</strong></td>
<td>Specifies whether to enable or disable the processing of the dial around indicator (DAI) extension that is optionally added to the user part of the SIP Request URI. Please note however that in a Packetcable environment, CMSS 1.5 makes it mandatory to process DAI.</td>
<td>VARCHAR(16): 1-16 ASCII characters. Permitted values are:</td>
<td>SEND-ONLY — Send DAI in outgoing INVITE messages.</td>
<td>SEND-ONLY, RECV-ONLY, SEND_RECV, IGNORE</td>
<td>TextNoCaseParser</td>
</tr>
<tr>
<td><strong>ENABLE_EM_EVENTS</strong></td>
<td>Specifies whether to generate a Billing Correlation ID (BCID).</td>
<td>CHAR(1): Y/N (Default = N).</td>
<td>Y — Generate BCID if em-events-enabled=Y.</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td><strong>ENABLE_ES_EVENTS</strong></td>
<td>Specifies whether to send or suppress additional Electronic Surveillance messages towards a DF server for calls that are traversing through a softswitch trunk group.</td>
<td>CHAR(1): Y/N (Default = N).</td>
<td>Valid for Command: add, change, audit, sync, show</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
</tbody>
</table>
**ENABLE_NOA_PARAM**

| Description | VARCHAR(16): 1-16 ASCII characters. Permitted values are:
| SEND-ONLY—Send NOA in outgoing INVITE messages.
| RECV-ONLY—Process NOA from incoming INVITE messages.
| SEND-RECV—Send NOA in outgoing INVITE messages and process NOA on incoming INVITE messages.
| IGNORE (Default)—Disable NOA send and process.
| Valid for Command: add, change, audit, sync, show
| Default Value: IGNORE
| Possible Value: SEND_ONLY, RECV_ONLY, SEND_RECV, IGNORE
| Parser: TextNoCaseParser

**ENABLE_P_DCS_BILLING_INFO_HDR**

| Description | Specifies whether to enable PacketCable Distributed Call Signaling (DCS) billing in a SIP information header.
| CHAR(1): Y/N (Default = N).
| Valid for Command: add, change, audit, sync, show
| Default Value: N
| Possible Value: Y, N
| Parser: BooleanParser

**ENABLE_P_DCS_LAES_HEADER**

| Description | Specifies whether to send surveillance information as defined in Section 8 of RFC 3603 if required, when it cannot be performed on the switch. Requires that the remote SIP entity interfacing with the SIP trunk support surveillance procedures.
| CHAR(1): Y/N (Default = N).
| N—Do not send surveillance information.
| Y—Send surveillance information.
| Valid for Command: add, change, audit, sync, show
| Default Value: N
| Possible Value: Y, N
| Parser: BooleanParser
### ENABLE_P_DCS_OSPS_HEADER

**Description:** Specifies whether to enable PacketCable DCS Operator Services Position System (OSPS) associated call support on a softswitch trunk group. If supported, calls include: busy line verification, emergency interrupt, and 911 operator ringback.

When this flag is set and an OSPS related request is made, if this flag is not set, BTS will not send outgoing SIP requests or accept incoming SIP requests that are OSPS related.

**CHAR(1):** Y / N (Default = N).

- **Y:** Include a P-DCS OSPS header in the outgoing INVITE or UPDATE messages as defined in RFC-3603 for an OSPS related request.
- **N:** Do not include outgoing SIP requests or accept incoming SIP requests that are OSPS related.

Valid for Command: add, change, audit, sync, show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser

### ENABLE_SIP_TRIGGER

**Description:** Specifies whether to enable SIP triggers on a SIP trunk group.

**CHAR(1):** Y / N (Default = N).

- **Y:** Send outgoing calls to the Application server and incoming calls from the Application server are treated as SIP trigger calls.
- **N:** Outgoing calls are not sent to the Application server and incoming calls from the Application server are treated as regular calls (non-SIP-trigger calls).

Valid for Command: add, change, audit, sync, show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser

### GTD_MODE

**Description:** Specifies whether to use the compact (default) or verbose mode to encode messages for the SIP-T/GTD trunk group.

**VARCHAR(8):** 1-8 ASCII characters. Permitted values are:

- **COMPACT** (Default)
- **VERBOSE**

Valid for Command: add, change, audit, sync, show

Default Value: COMPACT

Possible Value: COMPACT, VERBOSE

Parser: TextParser
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Type</th>
<th>Valid for Command:</th>
<th>Default Value:</th>
<th>Possible Value:</th>
<th>Parser:</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTD_PARMS</td>
<td>Description: Mandatory if protocol-type=sip-gtd. Specifies a comma-separated list of Generic Transparency Descriptor (GTD) parameters enabled for this profile. The parameters are parsed against a static table, called the GTD Parameter Values table, which lists all the valid GTD parameters, including the special case parameter ALL. In the DBM of the Call Agent, this comma-separated string is converted into a series of boolean flags, one for each GTD parameter. The Call Agent accesses each individual flag as it builds a GTD attachment.</td>
<td>VARCHAR(500): 3-500 ASCII characters. For example: ALL—use all GTD parameters (or) CPN, CGN, CIC, CPC, BCI (comma-separated list)</td>
<td>add, change, audit, sync, show</td>
<td>ALL</td>
<td>[1_500]</td>
<td>TextNoCaseParser</td>
</tr>
<tr>
<td>HOP_COUNTER_MAX</td>
<td>Description: Applies only to received SIP Invite messages that are not SIP-T and contain a max-forwards value in which the max-forwards is scaled down to build the hop counter. If the hop counter derived from the max-forwards is greater than this value, it is set to this value. This value acts as a ceiling for the derived hop counter value.</td>
<td>INTEGER: 10-20 (Default = 20).</td>
<td>add, change, audit, sync, show</td>
<td>20</td>
<td>[10_20]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>HOP_COUNTER_SUPP</td>
<td>Description: Used for received SIP Invite messages that are not SIP-T and contain a max-forwards value. The default sets the hop counter based on the received max-forwards value. If this flag is set to N, the hop counter field is not populated using the max-forwards value.</td>
<td>CHAR(1): Y/N (Default = Y).</td>
<td>add, change, audit, sync, show</td>
<td>Y</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
</tbody>
</table>
| ID               | Description: Primary key. Unique ID for this trunk group profile.           | VARCHAR(16): 1-16 ASCII characters. | add, change, show, delete, audit, sync |                | [1_16]               | TextParser
<table>
<thead>
<tr>
<th><strong>Variable</strong></th>
<th>Description</th>
<th>Type</th>
<th>Default Value</th>
<th>Possible Values</th>
<th>Command(s)</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>INBAND_TONE_AVAILABLE</td>
<td>Description: Send release or provide tone/announcement.</td>
<td>CHAR(1): Y/N (Default = Y).</td>
<td>Y</td>
<td>Y, N</td>
<td>add, change, audit, sync, show</td>
<td>BooleanParser</td>
</tr>
<tr>
<td>LIMIT</td>
<td>Description: Specifies the number of rows to display on the screen.</td>
<td>INTEGER: 1-1000000000 (Default = 100000000).</td>
<td>100000000</td>
<td>[1_100000000]</td>
<td>show</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>MASTER</td>
<td>Valid for Command: sync</td>
<td></td>
<td></td>
<td></td>
<td>sync</td>
<td>TextParser</td>
</tr>
<tr>
<td>MAX_FORWARDS</td>
<td>Description: Specifies when an outbound SIP Invite message requires an initial maximum forwards value.</td>
<td>INTEGER: 10-80 (Default = 70).</td>
<td>70</td>
<td>[4_80]</td>
<td>add, change, audit, sync, show</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>ORDER</td>
<td>Description: Specifies whether to display data on the screen in a sorted order.</td>
<td>VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
<td></td>
<td>[1_1024]</td>
<td>show</td>
<td>TextParser</td>
</tr>
<tr>
<td>PLATFORM_STATE</td>
<td>Description: Audits a shared memory database.</td>
<td>VARCHAR(7): 1-7 ASCII characters. Permitted values are: ACTIVE (Default) - System is currently running. STANDBY.</td>
<td>ACTIVE</td>
<td>ACTIVE, STANDBY</td>
<td>sync, audit</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
### PRACK_FLAG

**Description:** Specifies if an Invite messages sent on this trunk group require reliable provisional responses. If yes, provisional responses like alerting are delivered. Used with SIP-T.

**CHAR(1): Y/N (Default = N).**

**Valid for Command:** add, change, audit, sync, show

**Default Value:** N

**Possible Value:** Y, N

**Parser:** BooleanParser

### PROTOCOL_TYPE

**Description:** Specifies the type of signaling for this trunk group. It controls the message type sent between two Cisco BTS 10200 Softswitches. For example, if the protocol-type is SIP-T, then the Cisco BTS 10200 Softswitch sends a SIP-T message, which is a normal SIP ASCII message plus an ISUP MIME attachment. In this case, the origination type can be ISDN, SS7, CAS, MGCP, and so forth. The origination type does not matter. However, if the protocol-type is SIP, then the Cisco BTS 10200 Softswitch sends only an ASCII SIP message without an ISUP MIME attachment.

**VARCHAR(9): 1-9 ASCII characters. Permitted values are:**

- **SIP**—Signaling via the Session Initiation Protocol (SIP) multimedia sessions across the Internet.
- **SIP-T**—Signaling using SIP-T protocol. SIP-T is an inter Call Agent protocol; SIP-GTD protocol is a normalized inter Call Agent protocol.
- **SIP-T**—Signaling using both the SIP-T and SIP-GTD protocol types. SIP-T is an inter Call Agent protocol; SIP-GTD protocol is a normalized inter Call Agent protocol.

**Valid for Command:** add, change, audit, sync, show

**Mandatory:** add

**Possible Value:** SIP, SIP_T

**Parser:** TextParser

### RECV_3XX_USE_CF_METHOD

**Description:** Specifies how a received 3xx response is handled. Applies only to 3xx responses received with a contact header containing a different number than the called party number in the request, where the domain name identifies the Cisco BTS 10200 Softswitch that sent the request. Feature provisioning is required before enabling this token.

**CHAR(1): Y/N (Default = Y).**

- **Y**—Handle as a network-based reroute.
- **N**—Handle as a call forwarding request from the switch sending the 3xx.

**Valid for Command:** add, change, audit, sync, show

**Default Value:** Y

**Possible Value:** Y, N

**Parser:** BooleanParser
| REDIRECT_SUPPORTED | Description: Specifies if the Cisco BTS 10200 Softswitch honors a 3xx class, such as a redirection response for an Invite message sent by the Cisco BTS 10200 Softswitch. 
  VARCHAR(32): 1-32 ASCII characters. Permitted values are:
  VALID-DOMAINS-ONLY (Default)—If the host name field in the SIP URI of a 3XX contact used for call redirection does not represent this Cisco BTS 10200 Softswitch or a Cisco BTS 10200 Softswitch SIP trunk, then the call is redirected using the SIP trunk used on the previous call redirection. If there was not a previous call redirection, then the SIP trunk that sent the initial Invite is used. If the profile of the selected SIP trunk restricts redirection to only valid domains, then this redirection is blocked and the next contact is tried. Otherwise, it is redirected and the contact URI is used as the request URI of the redirected call.
  ALL-DOMAINS—Redirects to any allowed domain.
  NONE—No redirects allowed.
  Valid for Command: add, audit, change, show, sync
  Mandatory: add
  Default Value: VALID-DOMAINS_ONLY
  Possible Value: ALL_DOMAINS, NONE, VALID_DOMAINS_ONLY
  Parser: TextParser |
| REFER_ALLOWED | Description: Call Transfer allowed on an SS trunk. 
  CHAR(1): Y / N (Default = N).
  Valid for Command: add, change, audit, sync, show
  Default Value: N
  Possible Value: Y, N
  Parser: BooleanParser |
| REFERRED_BY_REQD_ON_REFER | Description: Specifies whether a “referred-by” header is required on REFER messages.
  CHAR(1): Y / N (Default = N).
  Valid for Command: add, change, audit, sync, show
  Default Value: N
  Possible Value: Y, N
  Parser: BooleanParser |
<table>
<thead>
<tr>
<th>Token</th>
<th>Description</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>REPLACES_ALLOWED</td>
<td>Specifies whether to accept or reject received INVITE messages with a “replaces” header.</td>
<td>CHAR(1): Y / N (Default = N). Y—Accept; N—Reject. Valid for add, change, audit, sync, show. Default Value: N. Possible Value: Y, N. Parser: BooleanParser</td>
</tr>
<tr>
<td>SCALE_FACTOR</td>
<td>Used for conversions between hop counter and max-forwards values; allows no-conversion, one-half, one-third, and one-quarter conversion factors.</td>
<td>INTEGER: 1-4 (Default = 1). Valid for Command: add, change, audit, sync, show. Default Value: 1. Possible Value: [1_4]. Parser: DecimalParser</td>
</tr>
<tr>
<td>SEND_302_ON_CF</td>
<td>Specifies whether “Send 302 on Call Forwarding” is supported.</td>
<td>CHAR(1): Y/N (Default = N). Valid for Command: add, change, audit, sync, show. Default Value: N. Possible Value: Y, N. Parser: BooleanParser</td>
</tr>
<tr>
<td>SEND_3XX_DOMAIN_NAME</td>
<td>Specifies whether to apply the domain name in the contact header when sending a 3XX response. Applies only if send-302-on-cf is enabled and “call forwarding unavailable” is locally invoked and configured to send a 3XX SIP response. This token does not apply if the Cisco BTS 10200 Softswitch proxies a received 3XX response. For proxies, the domain name in the contact header of the 3XX received is preserved.</td>
<td>VARCHAR(64): 1-64 ASCII characters. Valid for Command: add, change, audit, sync, show. Possible Value: [1_64]. Parser: DomainParser</td>
</tr>
</tbody>
</table>
### SEND_CIC_PARAM
Description: Specifies whether the CIC parameter is included in the request URL for outbound SIP calls.
CHAR(1): Y/N (Default = Y)
Valid for Command: add, change, audit, sync, show
Default Value: Y
Possible Value: Y, N
Parser: BooleanParser

### SEND_FULL_E164
Description: When enabled, all SIP phone numbers contained in SIP messages sent from the Cisco BTS 10200 Softswitch that have an NOA of national significance are represented as fully qualified E.164 numbers prefixed with the local country code and plus sign. This conforms to IETF RFC 3398 Section 12.1. When disabled, national numbers are sent without a country code and plus sign prefix. Numbers of international significance are always sent with a plus sign and country code regardless of this token setting. The Home Country code is defined in the Call Agent Configuration table.
CHAR(1): Y/N (Default = N).
Valid for Command: add, change, audit, sync, show
Default Value: N
Possible Value: Y, N
Parser: BooleanParser

### SEND_LAES_IN_RESPONSE
Description: Specifies whether the Cisco BTS 10200 Softswitch can include a Lawfully Authorized Electronic Surveillance (LAES) in a 183 Alerting message if a PacketCable call content Internet Access Point (IAP) for Real-Time Transport Protocol (RTP) duplication is not found.
CHAR(1): Y/N (Default = N).
Valid for Command: add, change, audit, sync, show
Default Value: N
Possible Value: Y, N
Parser: BooleanParser

### SEND_PHONE_CONTEXT_PARM
Description: Specifies whether to tag the local telephone number with a telephone context parameter. If send-full-e164 is set, this token is significant for number that cannot be represented in an E.164 format, such as 911.
CHAR(1): Y/N (Default = N).
Valid for Command: add, change, audit, sync, show
Default Value: N
Possible Value: Y, N
Parser: BooleanParser
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>CHAR(1): Y/N (Default = N)</th>
<th>Valid for Command:</th>
<th>Default Value:</th>
<th>Possible Value:</th>
<th>Parser:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SEND_SIP_181_RESP</strong></td>
<td>Specifies whether the Cisco BTS 10200 Softswitch transmits a 181 response message to a UAC when the terminating side of the Cisco BTS 10200 Softswitch forwarded the call.</td>
<td>Y/N (Default = N)</td>
<td>add, change, audit, sync, show</td>
<td>N</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td><strong>SEND_STD_TRK_GRP_URI</strong></td>
<td>Specifies whether to use draft IETF IP Telephony (iptel) Trunk Group (draft-ietf-iptel-trunk-group) defined trunk group parameters when an INVITE request is received and the trunk-sub-grp-type=TGID.</td>
<td>Y/N (Default = N)</td>
<td>add, change, audit, sync, show</td>
<td>N</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td><strong>SESSION_TIMER_ALLOWED</strong></td>
<td>Specifies whether a session timer is allowed.</td>
<td>Y / N (Default = N).</td>
<td>add, audit, change, show, sync</td>
<td>N</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td><strong>SIP_TIMER_PROFILE_ID</strong></td>
<td>Foreign key: Softswitch Trunk Group Profile table. Specifies the Timer Profile ID for the Softswitch Trunk Group Profile.</td>
<td>1-16 ASCII characters.</td>
<td>add, change, show, audit, sync</td>
<td>[1_16]</td>
<td>[1_16]</td>
<td>TextParser</td>
</tr>
<tr>
<td><strong>SIPT_ISUP_BASE</strong></td>
<td>Not configurable. Mandatory if use-sipt-isup-base=Y. The SIP-T ISUP base version. This field is populated from the SIPT ISUP Version Base table.</td>
<td>1-32 ASCII characters.</td>
<td>show, audit, sync</td>
<td>[1_32]</td>
<td>[1_32]</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
### SIPT_ISUP_VER
- **Description:** Mandatory if protocol-type=SIP-T. Defines the SIP-T or SIP-GTD version. Used only if protocol-type=SIP-T. Defined in the SIPT ISUP Version Base table. This token is only used when the protocol-type=SIPT-T. Only the GR317 version of SIP-T is supported. If the value defined in the SIPT ISUP Version Base table has a base value of sip-gtd, then the version is a SIP-GTD type. Otherwise, the version is a SIP-T type.
- **VARCHAR(32):** 1-32 ASCII characters. Permitted value is: GR317.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [1_32]
- **Parser:** TextNoCaseParser

### START_ROW
- **Description:** Specifies to begin displaying data on the screen at a specific row.
- **INTEGER:** 1-100000000 (Default = 1).
- **Valid for Command:** show
- **Default Value:** 1
- **Possible Value:** [1_100000000]
- **Parser:** DecimalParser

### TARGET
- **Description:** Specifies the network element to receive the request.
- **VARCHAR(5):** 1-5 ASCII characters. Permitted values are:
  - CA—Network identifier of a Call Agent.
  - FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.
  - FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.
- **Valid for Command:** sync
- **Mandatory:** sync
- **Possible Value:** [1_10]
- **Parser:** TextParser

### TRUNK_SUB_GRP_TYPE
- **Valid for Command:** add, change, audit, sync, show
- **Default Value:** NONE
- **Possible Value:** NONE, BGID, TGID
- **Parser:** TextParser
**USE_PAI_HDR_FOR_ANI**

Description: Controls the p-asserted-id (PAI) header used to send and receive calling party information.

CHAR(1): Y/N (Default = N).

Y—Calling party information is derived exclusively from the PAI header on inbound calls. For outbound calls, a PAI header is sent with the calling party information if provided.

N—Calling party information is sent or received using the From: header.

Valid for Command: add, change, audit, sync, show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser

**USE_SIPT_ISUP_BASE**

Description: Mandatory if the protocol-type is SIP_T and the sipt-isup-ver is a SIP-T type. If the version selected is a GTD type, this flag is ignored. GTD does not use the base parameter. Specifies whether the SIP-T ISUP base version is included in the MIME header of the SIP-T message.

CHAR(1): Y/N (Default = Y).

Y—SIP-T ISUP base version is included in the MIME header of the SIP-T message.

N—SIP-T ISUP base version is not included in the MIME header of the SIP-T message.

Valid for Command: add, change, audit, sync, show

Default Value: Y

Possible Value: Y, N

Parser: BooleanParser

**VOICE_MAIL_TRUNK_GRP**

Description: Specifies whether the Softswitch trunk group is used for the voice-mail application.

CHAR(1): Y/N (Default = N).

Valid for Command: add, change, audit, sync, show

Default Value: N

Possible Value: Y, N

Parser: BooleanParser
North American Numbering Plan Administration State Table

The NANP-STATE table is used to define the states that are INTL-WZ1 states. The North American Numbering Plan Administration (NANPA) State (nanpa-state) table.

**Note**
As of Release 5.0, the original call type is preserved in billing when the routing number is changed using the Policy NXX table.

Table Name: NANP_STATE
Table Containment Area: EMS, CA

**Command Types**
add, audit, change, delete, help, show, sync

**Caution**
The *sync* command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

**Examples**
```
add nanp-state state-abbr=ak; state=alaska; country=usa;
change nanp-state state-abbr=ak; intl-wz1=y;
show nanp-state;
```

**Usage Guidelines**
Primary Key Token(s): STATE_ABBR

**Syntax Description**

<table>
<thead>
<tr>
<th>Token</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO_REFRESH</td>
<td>Description: Specifies whether to display cached data on the screen.</td>
</tr>
<tr>
<td></td>
<td>CHAR(1): Y/N (Default = Y).</td>
</tr>
<tr>
<td></td>
<td>Y—Queries the database for the most current data.</td>
</tr>
<tr>
<td></td>
<td>N—Queries the database for the most current data only if the cached data is unavailable.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: show</td>
</tr>
<tr>
<td></td>
<td>Default Value: Y</td>
</tr>
<tr>
<td></td>
<td>Possible Value: Y, N</td>
</tr>
<tr>
<td></td>
<td>Parser: BooleanParser</td>
</tr>
<tr>
<td>COUNTRY</td>
<td>Description: Country. See Table 3-1 for valid state and country combinations.</td>
</tr>
<tr>
<td></td>
<td>Valid for Command: add, change, show</td>
</tr>
<tr>
<td></td>
<td>Possible Value: [1_32]</td>
</tr>
<tr>
<td></td>
<td>Parser: TextNoCaseParser</td>
</tr>
</tbody>
</table>
DISPLAY  

Description: Specifies what token information to display on the screen.

VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.

Valid for Command: show
Possible Value: [1_1024]
Parser: TextParser

INTL_WZ1  

Description: Specifies the World Zone 1 location. See Table 3-1 for valid state and country combinations.

CHAR(1): Y/N (Default = N).

Valid for Command: add, audit, change, show, sync
Default Value: N
Possible Value: N, Y
Parser: BooleanParser

LIMIT  

Description: Specifies the number of rows to display on the screen.

INTEGER: 1-1000000000 (Default = 1000000000).

Valid for Command: show
Default Value: 1000000000
Possible Value: [1_1000000000]
Parser: DecimalParser

ORDER  

Description: Specifies whether to display data on the screen in a sorted order.

VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.

Valid for Command: show
Possible Value: [1_1024]
Parser: TextParser

START_ROW  

Description: Specifies to begin displaying data on the screen at a specific row.

INTEGER: 1-1000000000 (Default = 1).

Valid for Command: show
Default Value: 1
Possible Value: [1_1000000000]
Parser: DecimalParser
Table 3-1 lists the valid state and country combinations for the North American Numbering Plan Administration State table.

### Table 3-1: Valid State and Country Combinations

<table>
<thead>
<tr>
<th>STATE-ABBR</th>
<th>State</th>
<th>Country</th>
<th>INTL-WZ1</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL</td>
<td>Alabama</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>AK</td>
<td>Alaska</td>
<td>USA</td>
<td>Y</td>
</tr>
<tr>
<td>AZ</td>
<td>Arizona</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>AR</td>
<td>Arkansas</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>CA</td>
<td>California</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>CO</td>
<td>Colorado</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>CT</td>
<td>Connecticut</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>DE</td>
<td>Delaware</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>DC</td>
<td>District of Columbia</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>FL</td>
<td>Florida</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>GA</td>
<td>Georgia</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>HI</td>
<td>Hawaii</td>
<td>USA</td>
<td>Y</td>
</tr>
<tr>
<td>ID</td>
<td>Idaho</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>IL</td>
<td>Illinois</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>IN</td>
<td>Indiana</td>
<td>USA</td>
<td>N</td>
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<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>KS</td>
<td>Kansas</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>KY</td>
<td>Kentucky</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>LA</td>
<td>Louisiana</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>ME</td>
<td>Maine</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>MD</td>
<td>Maryland</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>STATE-ABBR</td>
<td>State</td>
<td>Country</td>
<td>INTL-WZ1</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------</td>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>MA</td>
<td>Massachusetts</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>MI</td>
<td>Michigan</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>MN</td>
<td>Minnesota</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>MS</td>
<td>Mississippi</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>MO</td>
<td>Missouri</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>MT</td>
<td>Montana</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>NE</td>
<td>Nebraska</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>NV</td>
<td>Nevada</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>NH</td>
<td>New Hampshire</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>NJ</td>
<td>New Jersey</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>NM</td>
<td>New Mexico</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>NY</td>
<td>New York</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>NC</td>
<td>North Carolina</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>ND</td>
<td>North Dakota</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>OH</td>
<td>Ohio</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>OK</td>
<td>Oklahoma</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>OR</td>
<td>Oregon</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>PA</td>
<td>Pennsylvania</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>RI</td>
<td>Rhode Island</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>SC</td>
<td>South Carolina</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>SD</td>
<td>South Dakota</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>TN</td>
<td>Tennessee</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>TX</td>
<td>Texas</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>UT</td>
<td>Utah</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>VT</td>
<td>Vermont</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>VA</td>
<td>Virginia</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>WA</td>
<td>Washington</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>WV</td>
<td>West Virginia</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>WI</td>
<td>Wisconsin</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>WY</td>
<td>Wyoming</td>
<td>USA</td>
<td>N</td>
</tr>
<tr>
<td>AB</td>
<td>Alberta</td>
<td>CANADA</td>
<td>Y</td>
</tr>
<tr>
<td>BC</td>
<td>British Columbia</td>
<td>CANADA</td>
<td>Y</td>
</tr>
<tr>
<td>MB</td>
<td>Manitoba</td>
<td>CANADA</td>
<td>Y</td>
</tr>
<tr>
<td>NB</td>
<td>New Brunswick</td>
<td>CANADA</td>
<td>Y</td>
</tr>
<tr>
<td>NF</td>
<td>Newfoundland</td>
<td>CANADA</td>
<td>Y</td>
</tr>
<tr>
<td>NT</td>
<td>Northwest Territory</td>
<td>CANADA</td>
<td>Y</td>
</tr>
</tbody>
</table>
### Table 3-1  Valid State and Country Combinations (continued)

<table>
<thead>
<tr>
<th>STATE-ABBR</th>
<th>State</th>
<th>Country</th>
<th>INTL-WZ1</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS</td>
<td>Nova Scotia</td>
<td>CANADA</td>
<td>Y</td>
</tr>
<tr>
<td>VU</td>
<td>Nunavut Territory</td>
<td>CANADA</td>
<td>Y</td>
</tr>
<tr>
<td>ON</td>
<td>Ontario</td>
<td>CANADA</td>
<td>Y</td>
</tr>
<tr>
<td>PE</td>
<td>Prince Edward Island</td>
<td>CANADA</td>
<td>Y</td>
</tr>
<tr>
<td>PQ</td>
<td>Quebec</td>
<td>CANADA</td>
<td>Y</td>
</tr>
<tr>
<td>SK</td>
<td>Saskatchewan</td>
<td>CANADA</td>
<td>Y</td>
</tr>
<tr>
<td>YT</td>
<td>Yukon Territory</td>
<td>CANADA</td>
<td>Y</td>
</tr>
<tr>
<td>MX</td>
<td>Mexico</td>
<td>Mexico</td>
<td>Y</td>
</tr>
<tr>
<td>AS</td>
<td>American Samoa</td>
<td>American Samoa</td>
<td>Y</td>
</tr>
<tr>
<td>AI</td>
<td>Anguilla</td>
<td>Anguilla</td>
<td>Y</td>
</tr>
<tr>
<td>AN</td>
<td>Antigua</td>
<td>Antigua</td>
<td>Y</td>
</tr>
<tr>
<td>BA</td>
<td>Bahamas</td>
<td>Bahamas</td>
<td>Y</td>
</tr>
<tr>
<td>BD</td>
<td>Barbados</td>
<td>Barbados</td>
<td>Y</td>
</tr>
<tr>
<td>BM</td>
<td>Bermuda</td>
<td>Bermuda</td>
<td>Y</td>
</tr>
<tr>
<td>BV</td>
<td>British Virgin Islands</td>
<td>British Virgin Islands</td>
<td>Y</td>
</tr>
<tr>
<td>CQ</td>
<td>Cayman Islands</td>
<td>Cayman Islands</td>
<td>Y</td>
</tr>
<tr>
<td>NN</td>
<td>CNMI (N. Marianas)</td>
<td>CNMI (N. Marianas)</td>
<td>Y</td>
</tr>
<tr>
<td>DM</td>
<td>Dominica</td>
<td>Dominica</td>
<td>Y</td>
</tr>
<tr>
<td>DR</td>
<td>Dominican Republic</td>
<td>Dominican Republic</td>
<td>Y</td>
</tr>
<tr>
<td>GN</td>
<td>Grenada</td>
<td>Grenada</td>
<td>Y</td>
</tr>
<tr>
<td>GU</td>
<td>Guam</td>
<td>Guam</td>
<td>Y</td>
</tr>
<tr>
<td>JM</td>
<td>Jamaica</td>
<td>Jamaica</td>
<td>Y</td>
</tr>
<tr>
<td>RT</td>
<td>Montserrat</td>
<td>Montserrat</td>
<td>Y</td>
</tr>
<tr>
<td>PR</td>
<td>Puerto Rico</td>
<td>Puerto Rico</td>
<td>Y</td>
</tr>
<tr>
<td>KA</td>
<td>St. Kitts &amp; Nevis</td>
<td>St. Kitts &amp; Nevis</td>
<td>Y</td>
</tr>
<tr>
<td>SA</td>
<td>St. Lucia</td>
<td>St. Lucia</td>
<td>Y</td>
</tr>
<tr>
<td>ZF</td>
<td>St. Vincent</td>
<td>St. Vincent</td>
<td>Y</td>
</tr>
<tr>
<td>TR</td>
<td>Trinidad &amp; Tobago</td>
<td>Trinidad &amp; Tobago</td>
<td>Y</td>
</tr>
<tr>
<td>TC</td>
<td>Turks &amp; Caicos</td>
<td>Turks &amp; Caicos</td>
<td>Y</td>
</tr>
<tr>
<td>VI</td>
<td>US Virgin Islands</td>
<td>US Virgin Islands</td>
<td>Y</td>
</tr>
</tbody>
</table>

### LERG6 Table

The LERG6 table is used to define the LERG6 tokens and values. For complete LERG6 table details, refer to the “LERG6 Table” section on page 3-8.
Policy Circuit Code Table

The Policy Circuit Code table is used to define the Policy_Circuit_Code tokens and values.
Table Name: POLICY_CIRCUIT_CODE
Containment Area: EMS, CA

Command Types
add, audit, change, delete, help, show, sync

⚠️ Caution
The `sync` command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Usage Guidelines
Primary Key Token(s): ID, CC

Syntax Description

**AUTO_REFRESH**
Description: Specifies whether to display cached data on the screen.
CHAR(1): Y/N (Default = Y).
Y—Queries the database for the most current data.
N—Queries the database for the most current data only if the cached data is unavailable.
Valid for Command: show
Default Value: Y
Possible Value: Y, N
Parser: BooleanParser

**CC**
Description: Primary key. Country code digits. Country code as defined in ITU-T Recommendation E.164. Service provider must determine and enter accordingly. This information is often found in the front of some telephone directories. See Recommendation E.164.
VARCHAR(5): 1-5 numeric characters.
Valid for Command: add, audit, change, delete, show, sync
Mandatory: add, change, delete
Possible Value: [0_15]
Parser: DecimalParser

**DISPLAY**
Description: Specifies what token information to display on the screen.
VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
Valid for Command: show
Possible Value: [1_1024]
Parser: TextParser
| LIMIT       | Description: Specifies the number of rows to display on the screen. INTEGER: 1-100000000 (Default = 100000000). | Valid for Command: show | Default Value: 100000000 | Possible Value: [1_100000000] | Parser: DecimalParser |
| ORDER       | Description: Specifies whether to display data on the screen in a sorted order. VARCHAR(51200): 1-51200 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. | Valid for Command: show | Possible Value: [1_1024] | Parser: TextParser |
| POLICY_ID   | Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. | Valid for Command: add, audit, change, show, sync | Mandatory: add | Possible Value: [1_16] | Parser: TextParser |
| POLICY_TYPE | Description: Points to the next policy type table to be used in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the Policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be. Examples: If policy-type=tod, then the policy-tod table is indexed with policy-id. If policy-type=route, then the route table is indexed with policy-id.  
VARCHAR(7): 1-7 ASCII characters. Permitted values are:  
CC—Circuit Code based routing.  
CTYPE—Call Type based routing.  
NXX—Use translated DN.  
ODR—Origin Dependent Routing.
OLI—Originating line information.  
PERCENT—Percentage based routing.  
POP—Point of presence.  
PREFIX—Prefix-based routing.  
REGION—Region-based routing.  
ROUTE—Go to Route table.  
TOD—Time-of-day routing.  
Valid for Command: add, audit, change, show, sync  
Mandatory: add  
Possible Value: CTYPE, NXX, ODR, OLI, POP, PERCENT, PREFIX, REGION, ROUTE, TOD  
Parser: TextParser |
| **START_ROW** | Description: Specifies to begin displaying data on the screen at a specific row.  
INTEGER: 1-100000000 (Default = 1).  
Valid for Command: show  
Default Value: 1  
Possible Value: [1_100000000]  
Parser: DecimalParser |
| **TYPE** | Description: Primary key. Points to the next policy type table to use in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except Route point to the Policy Type table where type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id is used to index to either the Policy or Route table. Some examples are: If policy-type=tod, then the Policy Time of Day table is indexed with the policy-id. If policy-type=route, then the Route table is indexed with the policy-id.  
VARCHAR(7): 1-7 ASCII characters. Permitted values are:  
CC—Circuit Code based routing.  
CTYPE—Call type based routing.  
NXX—Use translated DN.  
ODR—Origin dependent routing.  
OLI—Originating line information.  
POP—Point of presence.  
PERCENT—Percentage based routing.  
PREFIX—Prefix-based routing.  
REGION—Region based routing.  
ROUTE (NOT PROVISIONABLE)—Go to the Route table.  
TOD—Time of day routing.  
Valid for Command: show  
Possible Value: CC  
Parser: TextParser |
Policy Profile Table

The Policy-Profile Table is used to define ids for Policy Routing. This table also defines the default policy to apply if the next policy to be applied in a sequence is not returned by the Policy Routing table.

Table Name: POLICY_PROFILE
Containment Area: EMS, CA, FSAIN

Command Types
add, audit, change, delete, help, show, sync

Caution
The `sync` command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples
- `show policy-profile id=carrier0288; type=cc;`
- `add policy-profile id=carrier0288; type=cc; default-policy-type=route; default-policy-id=rt1;`
- `change policy-profile id=carrier0288; type=cc; default-policy-type=route; default-policy-id=default-rt;`
- `delete policy-profile id=carrier0288; type=cc;`

Usage Guidelines
Primary Key Token(s): ID, TYPE
Check Rule:
Delete Rules: FK constraints;

Syntax Description

| AUTO_REFRESH | Description: Specifies whether to display cached data on the screen. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable. Valid for Command: show Default Value: Y Possible Value: Y, N Parser: BooleanParser |
| DEFAULT_POLICY_ID | Description: The id of the Policy or Route table that matches the policy type. Indexes the id to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, audit, change, show, sync Possible Value: [1_16] Parser: TextParser |
### DEFAULT_POLICY_TYPE

Description: Points to the default policy type to use if the next route is not found in the Policy table. Policy routing continues until policy-type=route or policy-nxx is reached. All policy types except Route point to the Policy Type table where type = ctype | odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id is used to index to the Policy or Route table. Some examples are:

- If policy-type=tod, then the Policy TOD table is indexed with policy-id.
- If policy-type=route, then the Route table is indexed with policy-id.

**VARCHAR(7):** 1-7 ASCII characters. Permitted values are:
- CC—Circuit code based routing.
- CTYPE—Call type based routing.
- NXX—Use translated DN.
- ODR—Origin dependent routing.
- OLI—Originating line information.
- POP—Point of presence.
- PERCENT—Percentage based routing.
- PREFIX—Prefix-based Routing.
- REGION—Region based Routing
- ROUTE—Go to Route table.
- TOD—Time of day routing.

Valid for Command: add, audit, change, show, sync

Possible Value: CC, CTYPE, NXX, ODR, OLI, POP, PERCENT, PREFIX, REGION, ROUTE, TOD

Parser: TextParser

### DESCRIPTION

Description: Service provider-defined description.

**VARCHAR(64):** 1-64 ASCII characters.

Valid for Command: add, change, audit, sync, show

Possible Value: [1_64]

Parser: TextParser

### DISPLAY

Description: Specifies what token information to display on the screen.

**VARCHAR(1024):** 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.

Valid for Command: show

Possible Value: [1_1024]

Parser: TextParser
### ID
- **Description**: Primary key. Policy id.
- **VARCHAR(16)**: 1-16 ASCII characters.
- **Valid for Command**: add, audit, change, delete, show, sync
- **Mandatory**: add, change, delete
- **Possible Value**: [1_16]
- **Parser**: TextParser

### LIMIT
- **Description**: Specifies the number of rows to display on the screen.
- **INTEGER**: 1-100000000 (Default = 100000000).
- **Valid for Command**: show
- **Default Value**: 100000000
- **Possible Value**: [1_100000000]
- **Parser**: DecimalParser

### MASTER
- **Valid for Command**: sync
- **Mandatory**: sync
- **Possible Value**: [1_10]
- **Parser**: TextParser

### ORDER
- **Description**: Specifies whether to display data on the screen in a sorted order.
- **VARCHAR(51200)**: 1-51200 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
- **Valid for Command**: show
- **Possible Value**: [1_1024]
- **Parser**: TextParser

### START_ROW
- **Description**: Specifies to begin displaying data on the screen at a specific row.
- **INTEGER**: 1-100000000 (Default = 1).
- **Valid for Command**: show
- **Default Value**: 1
- **Possible Value**: [1_100000000]
- **Parser**: DecimalParser
TARGET

Description: Specifies the network element to receive the request.

VARCHAR(5): 1-5 ASCII characters. Permitted values are:

CA—Network identifier of a Call Agent.
FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.
FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.

Valid for Command: sync
Mandatory: sync
Possible Value: [1_10]
Parser: TextParser

TYPE

Description: Primary key. Points to the next policy type table to use in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except Route point to the Policy Type table where type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id is used to index to either the Policy or Route table. Some examples are:

If policy-type=tod, then the Policy Time of Day table is indexed with the policy-id.
If policy-type=route, then the Route table is indexed with the policy-id.

VARCHAR(7): 1-7 ASCII characters. Permitted values are:
CC—Circuit Code based routing.
CTYPE—Call type based routing.
NXX—Use translated DN.
ODR—Origin dependent routing.
OLI—Originating line information.
POP—Point of presence.
PERCENT—Percentage based routing.
PREFIX—Prefix-based routing.
REGION—Region based routing.
ROUTE (NOT PROVISIONABLE)—Go to the Route table.
TOD—Time of day routing.

Valid for Command: add, audit, change, delete, show, sync
Mandatory: add, change, delete
Possible Value: CC, CTYPE, NXX, ODR, OLI, POP, PERCENT, PREFIX, REGION, ROUTE, TOD
Parser: TextParser
Policy Call Type Table

The Policy Call Type table is used to define the Policy Call Type tokens and values.

Table Name: POLICY_CALL_TYPE
Containment Area: EMS, CA

Command Types
add, audit, change, delete, help, show, sync

⚠️ Caution
The *sync* command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Usage Guidelines
Primary Key Token(s): ID, CALL_TYPE

Syntax Description

<table>
<thead>
<tr>
<th>AUTO_REFRESH</th>
<th>Description: Specifies whether to display cached data on the screen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAR(1): Y/N (Default = Y).</td>
<td>------- Queries the database for the most current data.</td>
</tr>
<tr>
<td>Y—Queries the database for the most current data.</td>
<td></td>
</tr>
<tr>
<td>N—Queries the database for the most current data only if the cached data is unavailable.</td>
<td></td>
</tr>
<tr>
<td>Valid for Command: show</td>
<td></td>
</tr>
<tr>
<td>Default Value: Y</td>
<td></td>
</tr>
<tr>
<td>Possible Value: Y, N</td>
<td></td>
</tr>
<tr>
<td>Parser: BooleanParser</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CALL_TYPE</th>
<th>Description: Call type based on the dialed number.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VARCHAR(9): 1-9 ASCII characters. Permitted values are:</td>
<td></td>
</tr>
<tr>
<td>DA—NPA-555-1212 calls.</td>
<td></td>
</tr>
<tr>
<td>DA-TOLL—1+NPA-555-1212 calls.</td>
<td></td>
</tr>
<tr>
<td>976—Information services calls.</td>
<td></td>
</tr>
<tr>
<td>INFO—Information services calls.</td>
<td></td>
</tr>
<tr>
<td>TW—Time and temperature service.</td>
<td></td>
</tr>
<tr>
<td>Valid for Command: add, audit, change, delete, show, sync</td>
<td></td>
</tr>
<tr>
<td>Mandatory: add, change, delete</td>
<td></td>
</tr>
<tr>
<td>Possible Value: [1_16]</td>
<td></td>
</tr>
<tr>
<td>Parser: TextNoCaseParser</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>Specifies what token information to display on the screen.</td>
</tr>
<tr>
<td></td>
<td>values that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
</tr>
<tr>
<td>ID</td>
<td>Primary key. Unique call control route identifier.</td>
</tr>
<tr>
<td>LIMIT</td>
<td>Specifies the number of rows to display on the screen.</td>
</tr>
<tr>
<td>ORDER</td>
<td>Specifies whether to display data on the screen in a sorted order.</td>
</tr>
<tr>
<td></td>
<td>tokens that can be shown for this command. Multiple tokens can be entered by separating with a comma.</td>
</tr>
<tr>
<td>POLICY_ID</td>
<td>ID of the Policy or Route table that matches the policy type. Indexes the ID to the type.</td>
</tr>
</tbody>
</table>
POLICY_TYPE

Description: Points to the next policy type table to use in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the Policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be.

VARCHAR(7): 1-7 ASCII characters. Permitted values are:

CC—Circuit Code based routing
CTYPE—Call Type based routing
NXX—Use translated DN.
ODR—Origin Dependent Routing.
OLI—Originating line information.
PERCENT—Percentage based routing
POP—Point of presence.
PREFIX—Prefix-based routing.
REGION—Region-based routing.
ROUTE—Go to Route table.
TOD—Time-of-day routing

Valid for Command: add, audit, change, show, sync

Mandatory: add

Possible Value: CC, NXX, ODR, OLI, POP, PERCENT, PREFIX, REGION, ROUTE, TOD

Parser: TextParser
As indicated in the description of the SKIP-DIAL-PLAN flag, if set, the number will not be analyzed in the dial-plan. It seems as though the functionality can be achieved by not provisioning any dial-plan entries. However, within the implementation, table is looked at several times to attempt to find the longest match. To skip this process, Skip-dial-plan is used. For additional information on the Dial Plan Profile table, refer to the “Dial Plan Profile” section on page 1-36.
Introduction

This chapter describes electronic number mapping (ENUM) and the ENUM routing capability.

ENUM Capability

This section describes the Cisco BTS 10200 Softswitch ENUM capability feature introduced in Release MR1. This section specifies the feature functions and operations, and contains the following:

- ENUM Support for Routing
- ENUM Routing Use Cases
- BTS 10200 Routing Operations
- Operational Recommendations for Porting Procedures
- ENUM Clients Operation
- Planning

Feature Description

ENUM provides a simple query-based mechanism for applications to retrieve data associated with a particular E.164 address. The Cisco BTS 10200 Softswitch supports ENUM queries for on-net routing and LNP data. The following sections describe how the Cisco BTS supports ENUM for SIP routing and LNP queries.

ENUM Support for Routing

The ENUM Capability feature maps the called DN to the Uniform Resource Identifier (URI) to determine the switch on which the called DN resides. It then routes the call on-net. In order to use this feature, the service provider must deploy private or carrier ENUM servers that hold E.164-to-URI mapping for all DNs owned by the service provider.
Performing the ENUM Query

When receiving a call from a subscriber or from another network element, the BTS 10200 determines if it is the final destination of the call. If the BTS 10200 is not the final destination, it performs an ENUM query to determine the destination and obtains the URI to route the call.

The following rules apply to the BTS 10200 ENUM capability feature:

- The BTS 10200 launches the ENUM query after it receives the TCAP LNP query results, unless the same ENUM server is configured as LNP capable.
- The BTS 10200 does not perform ENUM queries for operator calls and casual calls.
- If the service provider does not want to perform ENUM lookup for an NPA-Nxx or wants to use different top-level domains for the ENUM queries based on a different NPA-Nxx, the BTS 10200 can be controlled on a configuration basis at the destination table level.

Routing Upon Receipt of the ENUM Response

This section describes the BTS 10200 routing operation that is based on the response from the ENUM server. In general, responses from the ENUM servers fall into two categories for routing operations:

- The BTS 10200 receives a URI indicating the final destination of the E.164 number.
- The BTS 10200 does not receive any URI information.

Call Routing Based on the Received URI

If the called DN is an on-net subscriber (that is, if it is in the VoIP domain), the ENUM server returns the URI associated with the DN, indicating the address of the destination switch that can terminate the call to the subscriber. The BTS 10200 uses the domain portion of the received URI to determine the on-net path where the call should be routed.

The BTS 10200 retrieves the domain portion from the returned URI and attempts to find the on-net route configured on the BTS 10200 (in the domain2route table). For example, if the ENUM query is launched for DN1 and the ENUM response is DN2@btsX.sp.net, the BTS 10200 ignores the DN2 and uses domain btsX.sp.net to route the call. The BTS 10200 also uses the same domain in the Req-URI field of the outgoing INVITE message (for this example, Req-URI is set to DN1@btsX.sp.net).

Because the BTS 10200 performs a longest match for the received domain with configured routes, service providers may configure only substrings in the domain2route table to keep the number of routing entries to a minimum. For example, the user can configure the BTS 10200 to use one on-net route for bts10.region1.sp.com and another for region1.sp.com (that is, all BTS 10200 nodes in region1 except BTS10).

The BTS 10200 can also specify different policy-based routing features for each domain returned from the ENUM server. For example, Percentage Based Routing and Time of Day Routing can be applied against the domain by specifying \texttt{ROUTE-TYPE = ROUTE-GUIDE}.

The user can also specify multiple routes (that is, multiple softswitch trunks) against the received domain and use the BTS 10200 Route Advance feature to select an alternate on-net route in case the first on-net route cannot be used to route the call to its final destination.

The BTS 10200 can use a destination-based route (typically pointing to the PSTN interface, such as an SS7 or SIP trunk group, toward the MGC) for a particular domain received from the ENUM server. This capability can be used in various situations, such as:

- The ENUM server returns the domain of a switch for which a direct IP route does not exist.
There are no business arrangements for routing the call on-net between two VOIP service providers. Finally, the BTS10200 can block the call based on the received domain. By specifying \texttt{ROUTE-TYPE=NO-ROUTE} in the domain2route table, this feature can be used in cases where information received from the ENUM server points to the domain of the BTS that launched the ENUM query.

### Call Routing If the BTS Does Not Receive a URI or Receives a No Response message

If the called DN is not an on-net subscriber (is not in the VoIP domain), the ENUM server does not return a URI. The BTS 10200 performs the existing routing operation and chooses the route specified against the destination (for example, the SS7 route or the SIP route toward the MGC) to send the call towards the terminating switch.

The same behavior applies in the following situations when the BTS 10200 might not have a URI available to route the call on-net:

- There is no response from the ENUM server within the configured time-limit.
- No match is found for the route specified for the domain returned from the ENUM server.
- The internal BTS10200 resources are not available to perform the ENUM query.

### ENUM Routing Use Cases

#### Selecting Inter-CMS Trunks

Figure 4-1 shows a typical BTS 10200 configuration for deployment to a network without a SIP route proxy. The service provider can create an inter-CMS trunk group and specify the routing policy for a particular route based on the domain portion of the return URI.
ENUM Capability

Chapter 4      Electronic Number Mapping and Routing

Figure 4-1  Inter-CMS Trunks: Network Without SIP Route Proxy

Selecting a SIP Trunk to a Route Proxy

Figure 4-2 shows a typical BTS 10200 configuration for deployment to a network with a SIP route proxy. The service provider can create one trunk group to go toward the SIP proxy and specify the routing logic for choosing the route, regardless of the domain of the returned URI. The domain portion of the returned URI is used in the Request URI for the outgoing SIP INVITE. The SIP proxy can direct the calls as appropriate based on this value.
Selecting a SIP Trunk to an SBC

Figure 4-3 shows a typical configuration for routing calls for on-net subscribers in a different service provider domain when a peering arrangement to route on-net calls is established. A service provider typically uses a session border controller to route calls to or receive calls from a different service provider.

The service provider can direct one trunk group toward its own Session Border Controller (SBC) and specify the routing logic so it chooses a particular route, regardless of the domain in the returned URI. The domain portion of the returned URI is used in the Request URI for the outgoing SIP INVITE. The SBC can direct the calls as appropriate.
ENUM Support for LNP Data

The Call Management Server (CMS) typically retrieves LNP information by sending a TCAP query toward a Signaling Control Point (SCP) database. RFC 4769 specifies another approach in which similar information can be specified in the ENUM server (E2U+PSTN NAPTR records) and retrieved through an ENUM query rather than a TCAP query. The BTS 10200 allows the user to disable the TCAP query mechanism and retrieve LNP information using the ENUM query mechanism.

The BTS 10200 retrieves the E2U+PSTN records from the ENUM server when LNP criteria match and LNP information is required.

Note

The BTS 10200 will not use the domain portion specified against the rn field in the E2U+PSTN record for on-net routing described above. The BTS 10200 retrieves only the npdi flag (if available) and the user part of the rn field in the E2U+PSTN record.

BTS 10200 Routing Operations

The BTS 10200 uses the Local Routing Number (LRN) as well as the URI to make routing decisions. The following subsections describe the BTS 10200 routing. That behavior depends on information received by the BTS 10200 from the ENUM server.
BTS 10200 Receives the NPDI Indicator and LRN Information

The following table specifies the conditions that occur when the BTS 10200 receives the Number Portability Dip Indicator (NPDI) and LRN information:

<table>
<thead>
<tr>
<th>If...</th>
<th>...Then</th>
</tr>
</thead>
<tbody>
<tr>
<td>The URI is not available to the BTS 10200,</td>
<td>The BTS 10200 performs the routing operation based on the LRN. In addition, the BTS 10200 includes the NPDI indicator and LRN in the outgoing IAM/INVITE message.</td>
</tr>
<tr>
<td>The received LRN is for the same switch,</td>
<td>The BTS 10200 attempts to terminate the call to the subscriber.</td>
</tr>
<tr>
<td>The received LRN is a cluster LRN,</td>
<td>The BTS 10200 attempts to use the cluster dial plan routing to route the call.</td>
</tr>
</tbody>
</table>

BTS 10200 Receives Only Npdi Indicator

The BTS 10200 performs the routing operation based on the URI (if available) or the destination table. In addition, the BTS 10200 includes the NPDI indicator in the outgoing IAM/INVITE message to indicate that the LNP query is already performed.

BTS 10200 Receives the NPDI Indicator, LRN and URI

The BTS 10200 always attempts to select SIP routes against the domain portion of the returned URI. However, if no routing policy is specified for the returned domain or the call cannot be routed on-net due to network conditions, the BTS 10200 tries to route the call based on the LRN information it received.

The user can also configure the BTS 10200 to use the ENUM functionality to retrieve LNP data but not perform domain-based routing. To do that, the user does not specify a domain-based routing policy.

Operational Recommendations for Porting Procedures

The following sections specify how customers should configure their server when a DN is ported into a VoIP network or ported out from a VoIP network.

Porting In a DN

A DN from a different network, such as a PSTN network, is ported in to the service provider network. During the transition phase

- No update is required in the LNP database.
- No update is required in the on-net routing database.

After porting is complete, the customer should do the following:

- Specify the E2U+SIP records for the ported-in number so all the switches within the VoIP network can use the on-net routing functionality.
- Update the LNP database with the LRN or cluster LRN of the destination switch to which the subscriber is ported. This information is typically used by nodes outside the VoIP domain to route the call.
Porting Out a DN

A DN from the service provider network is ported out on a switch in a different network, such as a PSTN network. During the transition phase

- No update is required in the LNP database.
- No update is required in the on-net routing database.

After porting is complete, the customer should do the following:

- Update the LNP database with the LRN or cluster LRN from the destination switch to which the subscriber is ported out.
- Remove the E2U+SIP records in the ENUM server so all VoIP nodes can use the LRN-based routing functionality.

Porting a DN to a Different Node

If a DN is moved from Node A to Node B within the same service provider network, modifying the E2U+SIP record in the ENUM server is sufficient as long as both nodes share the same LRN or cluster LRN. If the nodes have different LRNs or cluster LRNs, we recommend updating the LNP database so calls that originate in the PSTN network are efficiently routed.

ENUM Clients Operation

This section describes the processing rules for ENUM.

Launching the ENUM query

The BTS 10200 launches the ENUM query using the E.164 number of another server. The user can specify the top-level domain and predefined digits used for the query before the BTS 10200 launches the query. Use the following steps to launch the ENUM query.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Delete from the digit string as many leading digits as specified by DEL-DIGITS in the ENUM profile, ignoring any leading or intermediate nondigit characters. For example:</td>
</tr>
<tr>
<td>digit string = 954048</td>
<td>DEL-DIGITS = 1</td>
</tr>
<tr>
<td>Step 2</td>
<td>Prefix the digits specified by PFX-DIGITS in the ENUM profile to the transformed digit string after any leading nondigits or characters.</td>
</tr>
<tr>
<td>digit string = 54048</td>
<td>PFX-DIGITS = 1-469-25</td>
</tr>
<tr>
<td>Step 3</td>
<td>Remove all nondigit characters from the transformed digit string.</td>
</tr>
<tr>
<td>digit string = 1-469-255-4048</td>
<td>Result = 14692554048</td>
</tr>
<tr>
<td>Step 4</td>
<td>Insert dots (‘.’) between the digits of the transformed digit string.</td>
</tr>
</tbody>
</table>
digit string = 14692554048
Result = 1.4.6.9.2.5.5.4.0.4.8

Step 5
Reverse the transformed digit string.
digit string = 1.4.6.9.2.5.5.4.0.4.8
Result = 8.4.0.4.5.5.2.9.6.4.1

Step 6
Append the ENUM domain root specified by the TOP_LEVEL_DOMAIN of the ENUM profile to the transformed digit string.
After processing is complete, the BTS 10200 sends the query to the ENUM server specified in the profile. The BTS 10200 ENUM client provides the nonblocking querying behavior to the applications.

Filtering the Response

After receiving the response from the ENUM server, the BTS 10200 extracts the URI used for on-net routing, according to the specifications in RFC 3761. The following steps describe how the BTS 10200 automatically filters the response.

Step 1
All NAPTR records in which the service field does not match the requested service are ignored.
Step 2
All nonterminal NAPTR records (those records in which the flags field is not u) are ignored.
Step 3
The remaining NAPTR records are sorted based on the order field (in decreasing order) and the preference field (in increasing order).
Step 4
All NAPTR records in which the regexp field contains malformed regular expressions are ignored.
Step 5
The NAPTR record at the top of the list sorted in Xref_Colorparanum is selected.
Step 6
The regular expression rules specified in the regexp field are applied to the digit string to obtain a URI.
Step 7
The required information is extracted from the URI. Any malformed URIs are ignored.
Step 8
One of the following occurs:
• If multiple URIs are present, the first in the list is used. Because the list has been sorted, the first in the list has priority.
• If only one URI is present, it is used for on-net routing.
• If no URIs are present, the DN is considered off-net and the call is routed using other routing rules.

Supporting Multiple Roots

The BTS 10200 can launch multiple ENUM queries toward the same set of ENUM servers or to a different set for the same call using different top-level domains. You can use this function when information for on-net subscribers is located in multiple ENUM servers, as when there is a carrier ENUM in addition to a private ENUM.

Figure 4-4 shows how the BTS 10200 supports multiple roots. In this example, it is configured to send an ENUM query to a private ENUM server farm. The private ENUM server farm responds with “no record found.” With the appropriate configuration, the BTS 10200 launches the query to the carrier ENUM server farm with a different top-level domain configured against the ENUM profile of carrier ENUM servers.
Supporting Multiple ENUM Servers

The BTS 10200 can interface with multiple ENUM servers or server farms from which it retrieves data from the SRV records. It can also distribute the ENUM queries with a round-robin or priority order policy. Refer to “Configuring the DNS” section in the BTS 10200 Softswitch Provisioning Guide for additional details about the selection policy. The following procedure describes how the BTS 10200 retrieves data from the SRV records.

**Step 1** Send an SRV query to the default DNS server for the logical service name obtained from the ENUM_SERVER.DOMAIN field specified in the ENUM profile table.

**Step 2** Obtain and compile a list of servers from the target field of each SRV record returned by the query.

**Step 3** Send an A query to the default DNS server for each server obtained in the previous steps.

**Step 4** Obtain and compile a list of ENUM server IP addresses associated with each server in the A records returned by the query.

The cached IP addresses are recached at predefined intervals specified in the ENUM_SERVER.DOMAIN.TTL field in the ENUM profile. The query retrieves all changes in network configuration or query distribution policy.
Monitoring ENUM servers and Measuring Latency

The BTS10200 uses the actual ENUM queries and test queries to monitor the status of each ENUM server. The BTS10200 sends a test query to an ENUM server if no actual ENUM queries are sent to that server during the period specified by the TEST-QUERY-INTERVAL parameter in the ENUM profile table. The test query used to monitor the status of an ENUM server is an NAPTR query.

The BTS10200 uses the following logic to update the ENUM server availability status.

- If three consecutive queries (including test queries) time-out or indicate the server is unavailable, the BTS10200 marks that ENUM server as unavailable.
- If it receives three consecutive test query responses from an ENUM server that has been marked as unavailable, the BTS10200 marks that ENUM server as available.

The BTS10200 calculates the round-trip delay for each ENUM and test query to determine the average latency associated with the ENUM server.

The BTS10200 uses the latency and availability parameters to select the ENUM server to which the next ENUM query should be sent.

Planning

This section provides information on prerequisites applicable to this feature.

Prerequisites

The service provider must deploy a private or carrier ENUM server to make use of ENUM functionality on the BTS 10200. In addition, if the ENUM LNP feature is used, the same ENUM server must be configured with E2U+PSTN records for all ported DNs.
CHAPTER 5

Dial Plans and Routing

Revised: April 22, 2009, OL-8720-10

Introduction

This chapter provides detailed dial plan and routing information for the Cisco BTS 10200 Softswitch. The following subjects are discussed in this chapter:

- Originating Basic Call State Machine (CS2 Call Model)
- BTS 10200 Feature Server Strategy
- Point of Presence
- Network Configuration
- Subscriber Types
- Digit Collection
- Dial Plans
- Digit Manipulation
- Digit Analysis
- Class of Service Screening
- Routing
- Trunk Group Types
- Generic Address Parameter Based Routing
- Generic Address Parameter Based Routing
- Tandem Provisioning
- Local Toll-Free Service Provisioning
- Carriers/Service Providers
- Carrier Based Routing
- Call Processing Flow
Originating Basic Call State Machine (CS2 Call Model)

This section provides detailed information on the partial originating basic call state machine (OBCSM). Refer to Figure 5-1 while reviewing the following detailed step-by-step explanation of the CS2+ call model.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>0 null - Off hook condition – Call setup begins.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Origination attempt decision point. Hot line feature information and denied origination information is obtained from the feature server.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Authorize origination attempt.</td>
</tr>
<tr>
<td>Step 4</td>
<td>Origination attempt authorized decision point. Provide dial tone and request digits.</td>
</tr>
<tr>
<td>Step 5</td>
<td>Collect information. Digits information or timeout information is provided.</td>
</tr>
<tr>
<td>Step 6</td>
<td>Collected information decision point. Warm line feature information and speed calling information is obtained from the feature server.</td>
</tr>
<tr>
<td>Step 7</td>
<td>Analyze information. Public dial plan only information, prefix analysis information, no “A” determination information, and destination identified information is obtained from the translation server.</td>
</tr>
<tr>
<td>Step 8</td>
<td>Analyzed information decision point. Local number portability information and 800 service information is obtained from the feature server. The service control point provides the vertical services, class of service (COS) screening, and customized dialing plan information.</td>
</tr>
<tr>
<td>Step 9</td>
<td>Select route. The carrier-based information and routing address information is provided by the routing server.</td>
</tr>
<tr>
<td>Step 10</td>
<td>Authorize call setup.</td>
</tr>
</tbody>
</table>
Chapter 5  Dial Plans and Routing

Originating Basic Call State Machine (CS2 Call Model)

**Figure 5-1  Originating Basic Call State Machine (CS2 Call Model)**

Setup (Off-hook) → O_Null

- Origination_Attempt
  - Authorize_Origination_Attempt
    - Collect_Information
      - SCP
        - COS Screening
        - Customized Dialing Plan
    - Translations Server
      - Feature Server
        - Hot Line Feature
          - Denied Origination

- Provide Dial Tone
  - RQNT (Request Digits)
    - Collect_Information
      - SCP
        - COS Screening
        - Customized Dialing Plan
    - Translations Server
      - Feature Server
        - Warm Line Feature
          - Speed Calling

- Digits/Timeout
  - Collect_Information
    - Analyze_Information
      - Select_Route
        - Routing Server
          - 800 Service
            - Local Number Portability
          - Carrier-based Routing Address

143827
BTS 10200 Feature Server Strategy

Figure 5-2 provides an illustrated example of the BTS 10200 feature service strategy.

Figure 5-2  BTS 10200 Feature Server Strategy
Point of Presence

Figure 5-3 provides an illustrated example of the BTS 10200 ability to process and route calls between multiple points of presence (POPs).
Network Configuration

Figure 5-4 provides an illustrated example of a typical BTS 10200 network configuration.

Subscriber Types

This section describes the BTS 10200 subscriber types. The following subjects are discussed:

- Individual
- Centrex
- Interactive Voice Response
- Multi-line Hunt Group
- Private Branch Exchange
- Remote Activation of Call Forwarding

Individual

Individual is the BTS 10200 default subscriber type. The individual subscriber type is assigned to individual subscribers.
**Centrex**

The Centrex (CTX) subscriber type is assigned to the main subscriber ID of a Centrex group. Additionally, Centrex subscribers types include CTXG-INDIVIDUAL subscribers, CTXG-MLHG subscribers, and CTXG-TG subscribers. CTXG-INDIVIDUAL subscriber type is assigned to a Centrex subscriber. CTXG-MLHG subscriber type is assigned to a Centrex Multi-line Hunt Group (MLHG) (for example, attendant). CTXG-TG subscriber type is assigned to a Centrex trunk group.

**Interactive Voice Response**

Interactive voice response (IVR) subscriber type is assigned access to a DN for IVR.

**Multi-line Hunt Group**

The MLHG subscriber type is assigned to the main subscriber ID of a MLHG. Additionally, MLHG subscribers types include MLHG-INDIVIDUAL subscribers and MLHG-PREF-INDIV subscribers. MLHG-INDIVIDUAL subscriber type is assigned to a subscriber within an MLHG. MLHG-PREF-INDIV subscriber type is assigned to the main subscriber ID of a preferential hunt list.

**Private Branch Exchange**

The private branch exchange (PBX) subscriber type is assigned to the main subscriber ID of a PBX.

**Remote Activation of Call Forwarding**

The remote activation of call forwarding (RACF) subscriber type is assigned access to a DN for remote activation of call forwarding.

**Digit Collection**

The Digit Map (digit-map) table tells a media gateway (MGW) how to collect and report dialed digits. The Call Agent uses a default digit-map id for normal digit collection unless a specific digit map ID is assigned to the subscriber. There are two types of subscribers:

- Plain old telephone service (POTS) (individual/residential)
- Centrex (business group)

POTS subscribers use a public dialing plan. Centrex subscribers use a customized dialing plan.

Example:

```
add digit-map id=default;
```

Table 5-1 describes the components of a digit map that is created by issuing the add digit-map command.
Table 5-1  Component Breakdown of Add Digit Map Command

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td># 0T</td>
<td>Operator call (0-)</td>
</tr>
<tr>
<td># 00</td>
<td>Carrier operator (00)</td>
</tr>
<tr>
<td># [2-9]11</td>
<td>N11 dialing</td>
</tr>
<tr>
<td># 0[2-9]11</td>
<td>0+N11 dialing (0+911)</td>
</tr>
<tr>
<td># [2-9]11</td>
<td>1+N11 dialing (1+911, 1+411)</td>
</tr>
<tr>
<td># [2-9]xx[2-9]xxxxxx</td>
<td>10-digit Local in home numbering plan area (HNPA) (972, 973)</td>
</tr>
<tr>
<td># 0[2-9]xx[2-9]xxxxxx</td>
<td>0+ 10 digit</td>
</tr>
<tr>
<td># 011xxxxx.T</td>
<td>International direct dial domestic (IDDD), minimum 6 digits</td>
</tr>
<tr>
<td># 01xxxxx.T</td>
<td>Operator-assisted IDDD, minimum 6 digits</td>
</tr>
<tr>
<td># 101xxxx</td>
<td>Casual dialing</td>
</tr>
<tr>
<td># &quot;#&quot;</td>
<td>End of dialing or cut-through</td>
</tr>
<tr>
<td># *xx</td>
<td>Vertical service code</td>
</tr>
<tr>
<td># xxxxxxxxxxxxxxxxxxxx</td>
<td>Maximum digit string (19 digits = 011+16 digits for international call)</td>
</tr>
</tbody>
</table>

Digit-pattern = 0T

T starts 4-second timing. But if digits are dialed within that 4 seconds, that digit pattern is skipped. If no digits are dialed within 4 seconds, or the pound sign (#) is pressed, then end-of-dial is assumed and a match occurs with the specified digit pattern. The collected digits are reported to the Call Agent. Example: 0T indicates that match occurs only if user only dials digit 0 (with 4-second time out) or user dials 0#. A # indicates to cancel 4-second timing and report digits immediately.

Digit-pattern = x.T

In this table, T also starts 4-second timing. The dot represents any number of digits. The gateway keeps collecting digits until either 4 seconds elapses between digits or until the pound sign (#) is pressed.

Caution

The Cisco BTS 2200 does not check the syntax for digit maps. Therefore, before you deploy a new or modified digit-map table, ensure that you first test its operability in a non-production environment.

Specifically, you must not attempt to implement a digit pattern in which a bracket is left unbound. For example, in the syntax [1-9] xxxxx, the closing bracket is unbound. This syntax error can cause a media gateway to fail when it receives a RQNT message in which a digit pattern was incorrectly specified.

For additional digit collection information, refer to the Cisco BTS 10200 Softswitch Command Line Interface Reference Guide.
Dial Plans

The following topics are discussed in this section:

- National Dial Plan
- International Dial Plan
- Custom Dial Plan

National Dial Plan

The national dial plan analyzes, screens, and routes calls based on dialed digits. The National Dial Plan table holds dial plan information for a specific type of call. It defines valid dialing patterns and determines call routing. All records that share a common dial-plan-profile id are considered a dial plan.

International Dial Plan

The International Dial Plan (intl-dial-plan) table holds international dial plan information for calls to regions outside the NANP. It contains the country code, minimum and maximum digits, the country name, and the route-grp-id.

Variable Digit Dialing

Variable digit dialing is used in the Europe where the length of the dialed number can vary from seven digits to ten digits, mainly in Germany. For a given NDC or EC the DN can vary from the minimum to the maximum specified in the Exchange Code table.

Example:
ndc=349, ec=234; min-digits=7; max-digits=10; (from the Exchange Code table)
DN=3492340 could be a DN
DN=3492341234 could also be a DN belonging to ndc=349, ec=234
DN=349234222 could also be a 9 digit DN

Variable Digit Dialing Provisioning

To provision variable digit dialing according to the example given in Variable Digit Dialing section, take the following steps:
add exchange-code ndc=349, ec=234; min-digits=7; max-digits=10;
add office-code ndc=349; ec=234; dn-group=0; (For the DN=3492340)
add office-code ndc=349; ec=234; dn-group=1xxx; dn-length= 10; (For the 10 digit DNs)
add office-code ndc=349; ec=234; dn-group=2xx; (For the 9 digit DNs in the dn group)
add office-code ndc=349; ec=234; dn-group=12x; (For the 9 digit DNs)
Custom Dial Plan

The Custom Dial Plan (custom-dial-plan) table translates Centrex calls. If the result of a custom dial plan (CDP) is a POTS access code, call processing uses the POTS Dial Plan table to translate the digits dialed after the POTS access code. Speed call codes are provisioned in this table as nod=speed-call and fname = SC1D (or SC2D). Screening does not apply to speed dialing.

Digit Manipulation

The Digit Manipulation (digman) table is used to perform digit and NOA manipulation. Examples of digit manipulation are:
- Blind delete and prefix capability (delete 3, prefix 972)
- Based on string comparison (replace ^972 with NULL)
- Based on string length (if 7 digits, prefix with 972)
- Pattern matching (if 469255, replace with 5)
- Nature of address (if NOA=subscriber, prefix with 972)

Digit Analysis

This section contains information related to the dialed digit analysis. The dialed digit analysis determines the destination and routing of the placed call. The following topics are discussed:
- Destination
- Local Serving Area

Destination

This section contains related the placed call destination determination. The following topics are discussed:
- Call Type
- Route Guide
- Route
- Carrier

Call Type

The Call Type (call-type) table contains the valid call types supported by the Call Agent. It is not provisionable.

Route Guide

The Route Guide (route-guide) table holds routing information based on policy-type.
Route

The Route (route) table contains a list of up to ten trunk groups to route a call. If all the trunk groups are busy or not available, call processing uses the alt-route-id (if specified) to route the call. The Element Management System (EMS) provisions the Call Agent ID field based on the Trunk Group table.

---

Note

This table allows the service provider to provision a list of up to 10 trunk groups (TG1 to TG10), and a parameter for selecting the priority of the TGs for routing (TG-SELECTION). The system attempts to route the call on the highest priority TG. If the call cannot be completed on the highest priority TG, the system attempts to use the next (lower priority) TG, a process known as route advance. The system attempts route advance to lower priority TGs up to five times. (Any TG in the list that is administratively out of service is not counted as an attempt.) If all five attempts fail, the call is released, and the system provides a release announcement.

Carrier

The Carrier (carrier) table defines the characteristics and capabilities supported by interLATA carriers, intraLATA carriers, international carriers, and provides routing information.

The following conditions apply when route-guide-id in the carrier table is configured for a toll-free call:

- When a subscriber makes the call, the route-guide-id in the carrier table will be used to route call if SCP returns a carrier ID.
- When SS7 makes toll-free call, the route-guide-id in the carrier table will work only when traffic-type=tandem if SCP returns a carrier id. This is because that toll free call query normally happens at either a local switch made by a local user or at a tandem switch where the traffic type should be set to TANDEM.

---

Note

LATA stands for local access transport area. It is predefined by geographical area.

---

Table Name: Carrier

Containment Area: EMS, CA

Command Types

add, audit, change, delete, help, show, sync

Caution

The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt database and disrupt call processing. Use with caution.

Examples

show carrier id=2042;
add carrier id=2042;
change carrier id=0288; inter=n;
delete carrier id=2042;
### Usage Guidelines

Primary Key Token(s): ID  
Foreign Key Token(s): route-guide-id, sp-id  
Add Rules: Carrier id cannot exist.  
Change Rules: Carrier id must exist.  
Delete Rules: Carrier id must exist.

### Syntax Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Type</th>
<th>Valid for Command</th>
<th>Default Value</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO_REFRESH</td>
<td>Specifies whether to display cached data on the screen.</td>
<td>CHAR(1): Y/N</td>
<td>show</td>
<td>Y</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td>CASUAL</td>
<td>Specifies whether the carrier supports 101XXXX calls. Carrier provides.</td>
<td>CHAR(1): Y/N</td>
<td>add, change, audit, sync, show</td>
<td>Y</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td>CUT_THRU</td>
<td>Specifies whether the carrier supports 101XXX# calls. With this type of call, the called number is not dialed. Carrier provides.</td>
<td>CHAR(1): Y/N</td>
<td>add, change, audit, sync, show</td>
<td>Y</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
<tr>
<td>DESCRIPTION</td>
<td>Service provider-defined description.</td>
<td>VARCHAR(64)</td>
<td>add, change, audit, sync, show</td>
<td></td>
<td>[1_64]</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
| **DISPLAY** | Description: Specifies what token information to display on the screen.  
VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.  
Valid for Command: show  
Possible Value: [1_1024]  
Parser: TextParser |
|---|---|
| **ID** | Description: Primary key. Carrier identification number.  
CHAR(4): 4 numeric characters: XXXX.  
Valid for Command: add, change, show, delete, audit, sync  
Mandatory: add, change, delete  
Possible Value: [4_4]  
Parser: DigitParser |
| **INTER** | Description: Identifies whether the carrier supports interLATA (long-distance) calls.  
CHAR(1): Y/N (Default = Y).  
Valid for Command: add, change, audit, sync, show  
Default Value: Y  
Possible Value: Y, N  
Parser: BooleanParser |
| **INTL** | Description: Specifies whether the carrier supports international calls. Carrier provides.  
CHAR(1): Y/N (Default = N).  
Valid for Command: add, change, audit, sync, show  
Default Value: N  
Possible Value: Y, N  
Parser: BooleanParser |
| **INTRA** | Description: Identifies whether the carrier supports intraLATA (toll) calls. Carrier provides.  
CHAR(1): Y/N (Default = N).  
Valid for Command: add, change, audit, sync, show  
Default Value: N  
Possible Value: Y, N  
Parser: BooleanParser |
### Digit Analysis

#### LIMIT
- **Description:** Specifies the number of rows to display on the screen.
- **INTEGER:** 1-100000000 (Default = 100000000).
- **Valid for Command:** show
- **Default Value:** 100000000
- **Possible Value:** [1_100000000]
- **Parser:** DecimalParser

#### LNP_QUERY
- **Description:** Specifies whether the BTS performs an LNP Query before routing the call using a carrier.
- **CHAR(1):** Y/N (Default = N).
- **Valid for Command:** add, audit, change, show, sync
- **Default Value:** N
- **Possible Value:** Y, N
- **Parser:** BooleanParser

#### MASTER
- **Valid for Command:** sync
- **Mandatory:** sync
- **Possible Value:** [1_10]
- **Parser:** TextParser

#### OP_SERVICES
- **Description:** Specifies whether the carrier supports operator services. Carrier provides.
- **CHAR(1):** Y/N (Default = Y).
- **Valid for Command:** add, change, audit, sync, show
- **Default Value:** Y
- **Possible Value:** Y, N
- **Parser:** BooleanParser

#### ORDER
- **Description:** Specifies whether to display data on the screen in a sorted order.
- **VARCHAR(1024):** 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
- **Valid for Command:** show
- **Possible Value:** [1_1024]
- **Parser:** TextParser
### PLATFORM_STATE

- **Description:** Audits a shared memory database.
- **VARCHAR(7):** 1-7 ASCII characters. Permitted values are:
  - **ACTIVE (Default)** - System is currently running.
  - **STANDBY.**
- **Valid for Command:** sync, audit
- **Default Value:** ACTIVE
- **Possible Value:** ACTIVE, STANDBY
- **Parser:** TextParser

### ROUTE_GUIDE_ID

- **Description:** Foreign key: Route Guide table. Defines the routing data for the carrier. Must match ID in the Route Guide table.
- **VARCHAR(16):** 1-16 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [1_16]
- **Parser:** TextParser

### SEND_CN

- **Description:** Send charge number. Specifies whether the carrier requires sending a charge number; used when the charged number is different from the calling number. For example, collect calls. Also specifies whether the type of line that is making the call (OLI: originating line information) must be sent to the carrier. Carrier provides.
- **CHAR(1):** Y/N (Default = N)
- **Valid for Command:** add, change, audit, sync, show
- **Default Value:** N
- **Possible Value:** Y, N
- **Parser:** BooleanParser

### SEND_CSP

- **Description:** Specifies whether the carrier selection parameter must be sent to the carrier. The CSP identifies how the call was dialed for that carrier—PIC, Casual, Casual-same-as-PIC.
- **CHAR(1):** Y/N (Default = N).
- **Valid for Command:** add, change, audit, sync, show
- **Default Value:** N
- **Possible Value:** Y, N
- **Parser:** BooleanParser

### SP_ID

- **Description:** Foreign key: Service Provider table. Service provider ID associated with a carrier. If the SP-ID is not null, the routing information from the service provider table is used. If the SP-ID is null, then the use-dial-plan flag is checked for routing instructions.
- **VARCHAR(16):** 1-16 ASCII characters.
- **Valid for Command:** add, audit, change, show, sync
- **Possible Value:** [1_16]
- **Parser:** TextParser
<table>
<thead>
<tr>
<th>Token</th>
<th>Description</th>
<th>Type</th>
<th>Example</th>
<th>Default Value</th>
<th>Possible Values</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>START_ROW</td>
<td>Specifies to begin displaying data on the screen at a row.</td>
<td>INTEGER</td>
<td>1-100000000</td>
<td>1</td>
<td>[1_100000000]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>STATUS</td>
<td>Status of the carrier.</td>
<td>CHAR</td>
<td>1-3 ASCII</td>
<td>OOS (Default)</td>
<td>OOS, INS</td>
<td>TextParser</td>
</tr>
<tr>
<td>TARGET</td>
<td>Specifies the network element to receive the request.</td>
<td>VARCHAR</td>
<td>1-5 ASCII</td>
<td>CA—Network identifier of a CA.</td>
<td>[1_10]</td>
<td>TextParser</td>
</tr>
<tr>
<td>USE_DIAL_PLAN</td>
<td>Specifies whether to use the route guide defined in the Dial Plan table or the route guide defined in the Carrier table. This token is used when the local service provider is also the long-distance service provider.</td>
<td>CHAR</td>
<td>1-3 ASCII</td>
<td>Y/N (Default = N)</td>
<td>Y, N</td>
<td>BooleanParser</td>
</tr>
</tbody>
</table>

START_ROW
Description: Specifies to begin displaying data on the screen at a row.
INTEGER: 1-100000000 (Default = 1).
Valid for Command: show
Default Value: 1
Possible Value: [1_100000000]
Parser: DecimalParser

STATUS
Description: Status of the carrier.
CHAR(3): 1-3 ASCII characters. Permitted values are:
OOS (Default)—Out-of-Service.
INS—In-Service.
Valid for Command: add, change, audit, sync, show
Default Value: OOS
Possible Value: OOS, INS
Parser: TextParser

TARGET
Description: Specifies the network element to receive the request.
VARCHAR(5): 1-5 ASCII characters. Permitted values are:
CA—Network identifier of a CA.
FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.
FSAIN (AIN Feature Server)—Network identifier of AIN FSs.
Valid for Command: sync
Mandatory: sync
Possible Value: [1_10]
Parser: TextParser

USE_DIAL_PLAN
Description: Specifies whether to use the route guide defined in the Dial Plan table or the route guide defined in the Carrier table. This token is used when the local service provider is also the long-distance service provider.
CHAR(1): Y/N (Default = N).
Y—Use route guide defined in the Dial Plan table.
N—Use route guide defined in the Carrier table.
Valid for Command: add, change, audit, sync, show
Default Value: N
Possible Value: Y, N
Parser: BooleanParser
Local Serving Area

The local service area (LSA) table provides extended local service. If a NANP dialed call results in an intraLATA toll or an interLATA call, and the subscriber has an LSA ID assigned, the LSA table is screened to check if the dialed digits appear in the subscriber’s LSA area. If the dialed digits are found in the Lsa table, the call is converted to a local call.

Class of Service Screening

Class of service (COS) screening allows subscribers, or a group of subscribers, to have different collections of privileges and features assigned to them.

The COS Restrict (cos-restrict) table identifies the restrictions on a subscriber’s class of service, including restrictions on the calls the subscriber can make (screening).

Call type and casual call screening are not performed for NANP and international operator calls, even though NANP or casual call restrictions are requested for a calling party.

Account codes are not collected for:

- 0+, NANP operator calls
- 01+, international operators calls
- local calls

Class of call screening examples are:

- Block based on call types (900, 411, operator)
- NANP restrictions based on call type (local, intraLATA, national, or all NANP)
- International restrictions (all CC, none, B/W list)
- Casual call restrictions (no restrictions, no casual calls, B/W list)
- Originating line information (OLI) restrictions for tandem calls
- Account codes
- Authorization codes

Routing

This section provides information relating to the routing of calls by the BTS 10200. The following topics are discussed:

- Office Code
- Ported Office Code
- Route Guide
- Route
- Trunk Group
Office Code

The Office Code (office-code) table specifies the office codes assigned to a particular Call Agent. The office codes defined in this table normally terminate to a subscriber. This table defines the office-code-index (normalized office code) that is used as an index in the DN2Subscriber table.

Ported Office Code

The Ported Office Code (ported-office-code) table specifies numbers, or ranges of numbers, that might have been ported-in to this switch. If a called number matches any of the ported numbers, or is within any of the specified ranges of numbers, the Call Agent queries the DN2Subscriber table to determine the current status of the DN.

Route Guide

The Route Guide (route-guide) table holds routing information based on policy-type.

Route

The Route (route) table contains a list of up to ten trunk groups to route a call. If all the trunk groups are busy or not available, call processing uses the alt-route-id (if specified) to route the call. The EMS provisions the Call Agent ID field based on the Trunk Group table.

Note

This table allows the service provider to provision a list of up to 10 trunk groups (TG1 to TG10), and a parameter for selecting the priority of the TGs for routing (TG-SELECTION). The system attempts to route the call on the highest priority TG. If the call cannot be completed on the highest priority TG, the system attempts to use the next (lower priority) TG, a process known as route advance. The system attempts route advance to lower priority TGs up to five times. (Any TG in the list that is administratively out of service is not counted as an attempt.) If all five attempts fail, the call is released, and the system provides a release announcement.

The route table enables:

- 10 trunk groups per route
- Digit manipulation per trunk group
- Multiple routes can be linked

Trunk Group

The Trunk Group (trunk-grp) table identifies the trunk group and maps it to the associated media gateway.
Trunk Group Types

The BTS 10200 supports the following trunk group types: announcement, channel associated signaling (CAS), Integrated Services Digital Network (ISDN), Signal System 7 (SS7), and SOFTSW (Session Initiation Protocol (SIP)). The Trunk Group table defines common information based on the trunk group type. The BTS 10200 supports announcement, CAS, ISDN, SS7 and SOFTSW trunk group profiles. The following trunk group types are discussed:

- Announcement
- Channel Associated Signaling
- Integrated Services Digital Network
- Signaling System 7
- Session Initiation Protocol

Announcement

The Announcement Trunk (annc-trunk) table is used when an announcement server is required in an Asynchronous Transfer Mode (ATM) network.

Channel Associated Signaling

The CAS Trunk Group Profile (cas-tg-profile) table holds common information on a CAS trunk group. It supports the following signaling types: dual tone multifrequency (DTMF) loop start, DTMF ground start, multifrequency (MF) im start, MF wink start, DTMF im start, DTMF wink start. A cas-tg-profile record can be shared by multiple CAS trunk groups.

Integrated Services Digital Network

The ISDN Trunk Group Profile (isdn-tg-profile) table holds common information regarding an ISDN trunk group. This table is used to configure the BTS 10200 to interact with various types of private branch exchanges (PBXs) having different configurations (such as non-facility associated signaling (NFAS), facility associated signaling (FAS), and so forth), initialization procedures (service or restart), or supporting different call control or maintenance timer values. The isdn-tg-profile record can be shared by multiple ISDN trunk groups. The table tokens configure the Call Agent to communicate with a particular PBX.

Signaling System 7

The SS7 American National Standards Institute (ANSI) Trunk Group Profile (ss7-ansi-tg-profile) table holds common information regarding an SS7 trunk group such as continuity test (COT). This table can be shared by multiple SS7 trunk groups.
Session Initiation Protocol

The Softswitch (SIP) Trunk Group Profile (softsw-tg-profile) table holds all the information specific to a Softswitch trunk, such as id, protocol, indicators and echo suppression. The softsw-tg-profile record can be shared by multiple softswitch trunk groups. An ID must be created in this table before entries can be added to the Softswitch Trunk Group table.

Generic Address Parameter Based Routing

Figure 5-5 shows an illustrated example of generic address parameter (GAP) based routing.

![Generic Address Parameter Based Routing Diagram](image-url)
Tandem Provisioning

This section provides general information on tandem provisioning. For detail information, refer to the Cisco BTS 10200 Softswitch Command Line Interface Reference Guide. The following topics are discussed:

- Automatic Number Identification
- Automatic Number Identification Screening
- Automatic Number Identification Screening Profile
- Cause Code Map
- Cause Code Map Profile
- H.323 Gateway
- H.323 Gateway to Gatekeeper
- H.323 Terminal
- H.323 Terminal Profile
- H.323 Trunk Group Profile
- H.323 Trunk Group Profile
- II White Black List
- Service Provider
- Technical Prefix Group Profile
- Technical Prefix Group
- Trunk Group Feature Data
- Trunk Group Service Profile

Automatic Number Identification

The ANI table is used for the ANI screening feature. The table keeps track of allowed/blocked status ANI. If the ANI status is blocked, the call is not allowed.

Automatic Number Identification Screening

The ANI Screening (ani-screening) table performs ANI screening on calls received over a trunk group. Normally, ANI screening is performed on calls received from a PBX (ISDN, H.323, and Session Initiation Protocol (SIP)). This table allows performing ANI-based routing in addition to ANI screening. When a record is found that matches the incoming ANI, the subscriber ID associated with the record is used for further digit analysis and routing.

Automatic Number Identification Screening Profile

The ANI Screening Profile (ani-screening-profile) table defines an id to perform ANI screening. The ID is assigned to a trunk group when ANI screening is required or when ANI-based routing is required for calls originating over a trunk group.
Cause Code Map

The Cause Code Map (cause-code-map) table processes cause codes received from an outgoing interface, and also when sending cause codes to a previous switch over an incoming interface. It also specifies why a call was released.

When used for an outgoing interface, this table serves the following purposes:

- Determines what action the BTS 10200 takes for cause codes received over an outgoing interface.
- Maps received cause codes to normalized cause codes.

When used for an incoming interface, the table maps normalized cause codes to a cause code sent over the incoming interface. If no entry is found in the table, the BTS 10200 uses the cause code as is.

Cause Code Map Profile

The Cause Code Map Profile (cause-code-map-profile) table defines cause code map IDs, defines default mappings to a standard cause code (Q.850), and defines default actions to take. These IDs must be provisioned before provisioning either the Cause Code table or the Trunk Group table.

H.323 Gateway

The H.323 Gateway (h323-gw) table defines the capabilities of each H.323 protocol gateway. There can be four instances of an H.323 gateway running on the Call Agent at any one time.

H.323 Gateway to Gatekeeper

The H.323 Gateway to Gatekeeper (h323-gw2gk) table describes gatekeeper characteristics for each gateway in an H.323 network. Multiple gateways can have the same gatekeeper, or there can be a different gatekeeper for each gateway. However, a gateway can be registered to one gatekeeper at a time. A gatekeeper identifies, controls, counts, and supervises gateway traffic, including, but not limited to, gateway registration, address resolution, bandwidth control, and admission control.

H.323 Terminal

The H.323 Terminal (h323-term) table holds information about H.323 terminals (such as H.323 audio/video phones) managed by the Call Agent and known in advance. This table is specific to H.323 subscribers.

H.323 Terminal Profile

The H.323 Terminal Profile (h323-term-profile) table defines the characteristics of group of H.323 terminals (or phones). An h323-term-profile id must be created in this table before any H.323 subscriber entries can be added. This table contains almost all the same fields as from the H.323 Trunk Group Profile table, except for some that are specific to trunk side (such as Generic Transparency Descriptor (GTD)).
**H.323 Trunk Group Profile**

The H.323 Trunk Group Profile (h323-tg-profile) table defines the characteristics of each H.323 trunk. An h323-tg-profile id must be created in this table before H.323 trunk group entries can be added.

**II White Black List**

The II White Black List (ii-wb-list) table allows or blocks calls from certain types of lines. The COS Restrict ID specifies if the list is to be used as a White List or Black List.

**Service Provider**

The Service Provider (service-provider) table is used when there are multiple service providers providing service via a single logical Call Agent.

**Technical Prefix Group Profile**

The Technical Prefix Group Profile (tech-prefix-grp-profile) table identifies the IDs used for the Technical Prefix Group table. These IDs must be created in this table before entries can be added to the Technical Prefix Group table.

**Technical Prefix Group**

The Technical Prefix Group (tech-prefix-grp) table provides a list of technical prefixes supported by a gateway. The same tech-prefix-list ID can be shared by multiple gateways. Each gateway must register the tech-prefixes supported to their respective gatekeepers.

Technical prefixes allow the inclusion of special characters in a called number. These special characters are commonly designated as a 1#, 2#, 3#, and so forth, and can be configured to prepend called number on the outgoing VoIP dial peer. The gatekeeper then checks its gateway technical prefix table for gateways registered with that particular tech prefix. Technology prefixes can also be used to identify a type, class, or pool of gateways.

The gatekeeper can be provisioned with technical prefixes in one of the following ways:

- Dynamically registered technical prefixes. The H.323 gateway registers one or more technical prefixes with the gatekeeper.
- Statically registered technical prefixes. The gatekeeper is provisioned with the technical prefixes and the gateways supporting them.
- Default technical prefixes also registered statically at the gatekeeper. If the gatekeeper does not receive a technical prefix in the admission request (ARQ), the gatekeeper uses the default technical prefixes.

A group of one or more of technical prefixes can be provisioned in BTS 10200 and this group can be associated to an H.323 gateway. The BTS 10200 H.323 gateway process instance registers the technical prefixes from its technical prefix group with its primary gatekeeper. The technical prefix is encoded in the terminal Alias field of a registration request (RRQ) message as E.164 addresses. The gatekeeper routes calls to the BTS 10200 H.323 gateway based on the technical prefixes.
Trunk Group Feature Data

The Trunk Group Feature Data (trunk-grp-feature-data) table performs COS screening for Tandem calls. If the received ANI is not found in the ANI table, and the casual-call flag is set to Y, the call is allowed. If the casual-call flag is set to N, the call is blocked. The cos-restrict-id performs the COS screening.

Trunk Group Service Profile

The Trunk Group Service Profile (trunk-grp-service-profile) table links a trunk group to services.

Local Toll-Free Service Provisioning

The purpose of toll-free services is to have the called party, rather than the calling party, charged for the call. These calls are prefixed with the 1+8XX service access codes. The seven digits following the 8XX codes are used for routing the call. For an inbound/outbound 8XX call, the BTS 10200 checks the local toll-free database first. If the corresponding DN is not found in the local toll-free database, the system sends a query to the service control point (SCP) to request the corresponding DN. All aspects of toll-free calling are transparent to the caller. A caller expects to dial 1-8XX-NXX-XXXX to reach the desired destination. The company that translates the number to a specific DN, and the company that routes the call, must appear transparent to callers. Most callers are not aware that their dialed 8XX number is changed into a specific DN. What matters to the callers is that they reach what they perceive to be the called number, and they are not billed for the call.

The following additional topics are discussed in this section:

- Local Toll-Free Database
- Service Control Point Based Toll-Free Services
- Automatic Number Identification White/Black List
- Customer Group
- DN2 Customer Group
- II Restrict List
Local Toll-Free Database

The BTS 10200 provides the ability to translate inbound/outbound 8XX numbers at the Feature Server (FS) using a local 8XX database. The 8XX service supports the following features:

- Origin-dependent routing
- Time-of-day routing
- Percentage-based routing
- Information digit-based screening
- Black/white list screening

The BTS 10200 also supports optional dialed number identification service (DNIS) service. In an 8XX DNIS service, when a call is terminated to a PBX (call center), 4 digits are outpulsed to the PBX to identify the originally dialed 8XX number. In case of custom DNIS, up to 22 digits can be outpulsed with additional information such as:

- Original 8XX number dialed
- Automatic number identification (ANI)
- Originating line information of the calling party

When a translated number (for an original 8XX call) is received, the Analyzed Info Dial Plan (DP) triggers the FS. The BTS 10200 looks up the DNIS and TG information for the call. The DNIS information is then outpulsed to the PBX. If an overflow condition is encountered, the call is routed to the overflow trunk. The overflow trunk can be a public switched telephone network (PSTN) trunk.

Service Control Point Based Toll-Free Services

The BTS 10200 communicates with an SCP-based database called the toll-free database service, which contains information for routing the call. The database service provides information about the network service provider selected to complete the call, and information for translating the toll-free number to a specific 10-digit DN. The routing of the call can vary depending on the arrangements made between the toll-free subscriber and the network service provider. These arrangements can include selective routing based on the time of day, day of week, and location from which the call originates.

Automatic Number Identification White/Black List

The ANI White Black List (ani-wb-list) table performs ANI screening on 800 calls. The Customer Group specifies if the list is to be used as a White List or a Black List. A White Black List specifies whether calls are allowed to connect (white) or not allowed to connect (black).

Customer Group

The Customer Group (cust-grp) table defines the cust-grp-id and how ANI call forwarding and call restrictions are applied.
DN2 Customer Group

The DN2 Customer Group (dn2cust-grp) table provides translation of inbound/outbound 8XX (toll free) numbers to a local number and designated carrier.

II Restrict List

The II Restrict List (II-restrict-list) table restricts certain types of originating line services for a given group. The use of the list is determined by provisioning in the Customer Group table. This is a Black List (restrict) only. It cannot be a White List.

Carriers/Service Providers

This section provides general carrier/service provider information. The following subjects are discussed:

- Carrier
- Route Guide
- Circuit Code
- Service Provider

Carrier

The Carrier (carrier) table defines the characteristics and capabilities supported by interLATA carriers, intraLATA carriers, international carriers, and provides routing information.

The following conditions apply when route-guide-id in the carrier table is configured for a toll-free call:

- When a subscriber makes the call, the route-guide-id in the carrier table will be used to route call if SCP returns a carrier ID.
- When SS7 makes toll-free call, the route-guide-id in the carrier table will work only when traffic-type=tandem if SCP returns a carrier id. This is because that toll free call query normally happens at either a local switch made by a local user or at a tandem switch where the traffic type should be set to TANDEM.

Note

LATA stands for local access transport area. It is predefined by geographical area.
Route Guide

The Route Guide (route-guide) table holds routing information based on policy-type. The Policy Prefix (policy-prefix) table provides information for call routing based on prefix (type of call). Typical call types include 1+ dialing, international calls, toll-free, and so on. This table is used mainly for carrier routing. The Policy Point of Presence (policy-pop) (POP) based policy routing routes a call to the nearest trunk group when there are multiple trunk groups. There are several situations where a policy POP can be used. If a Call Agent serves several POPs, each POP can have its own announcement server. A POP-specific announcement server can be more efficient than a centralized announcement server. InterLATA carriers also have a point of presence in each POP. Route interLATA or international calls to the nearest carrier location using policy POP routing. The Policy Origin Dependent Routing (policy-odr) table is used for origin-dependent routing. The numbering plan area (NPA) (or NPA-NXX) of the calling party number selects a route. If no match is found based on the calling party number, the route marked as default routes the call. The Policy Region (policy-region) table performs region-based routing. The region is derived using the Region Profile table from the Route Guide table and the calling party number ANI. If ANI is not available or the Region Profile table is not provisioned, the region assigned to the trunk group is used for trunk origination. If a record cannot be found based on the region, the record with region=default (if provisioned) is used for routing.

Circuit Code

The Circuit Code (circuit-code) table defines the circuit code value for the transit network selection (TNS) parameter. The circuit code value is defined based on the line, class of service, and call type. Special circuit code values are assigned to calls from coin or hotel motel lines. If special circuit code values are not required, the default circuit code values are based on the call type sent.

Service Provider

The Service Provider (service-provider) table is used when there are multiple service providers providing service via a single logical Call Agent.

Carrier Based Routing

Carrier based routing enables the routing of BTS 10200 calls based on carrier. Carrier based routing provides multiple service provider support. Additionally, carrier based routing enables matching of the carrier ID and the trunk group to individual service providers. Individual dial plans can be configured for each service provider or default routing can be enabled.

Call Processing Flow

This section describes the BTS 10200 call processing flow for calls terminating on a trunk and for calls terminating at a subscriber. The following topics are discussed:

- Trunk Termination
- Subscriber Termination
Trunk Termination

The trunk termination call flow is:
- Termination
- Subscriber
- Dial-plan
- Destination
- Route-guide
- Route
- Trunk group
- Trunk
- Termination

Subscriber Termination

The subscriber termination call flow is:
- Termination
- Subscriber
- Dial-plan
- Destination
- Office-code
- DN2Subscriber
- Subscriber
- Termination
Introduction

This chapter provides a basic understanding of how the Cisco BTS 10200 Softswitch Command Line Interface (CLI) functions with of the routing types and call types. This chapter is divided into the following sections:

- Routing Types
- Call Types
- Command Line Interface Routing Examples

Routing Types

This section provides the BTS 10200 CLI routing type information. The following topics are covered in this section:

- Basic Subscriber Routing
- Basic Trunk Routing
- Carrier Based Routing
- Basic Dial Plan Routing
- Cluster Routing
Basic Subscriber Routing

This section provides a detailed description of the BTS 10200 basic subscriber routing and provides CLI example references. For detailed information on the CLI, refer to the Cisco BTS 10200 Softswitch Command Line Interface Reference Guide. Refer to Figure 6-1 for visual representation of basic subscriber routing flow while reviewing the following detailed step-by-step basic subscriber routing flow.

---

**Step 1**  Subscriber incoming received or placed.
- Example: 
  Subscriber Test1

**Step 2**  Get the subscriber table (sub-profile identification (ID)).

**Step 3**  Get the subscriber-profile table (dial-plan-identification (DP-ID)).
- Example: 
  Subscriber and Sub-Profile

**Step 4**  Go to the dial-plan (based on DP-ID).

**Step 5**  Go to destination table and get the call type and destination.
- Example: 
  Destination

**Step 6**  Determine the call type. If the call type is toll free, 900, or 500, proceed to Step 7. If the call type is casual, proceed to Step 8. If the call type is via a presubscribed interexchange carrier (PIC), proceed to Step 9.
- Examples: 
  Destination
  Subscriber Test1

**Step 7**  If the call type is toll free, 900, or 500, the BTS 10200 will use the dial plan to select the call route and to route the call.

**Step 8**  If the call type is casual, the BTS 10200 will use the carrier routing information to select the call route and to route the call.

**Step 9**  If the call type is via a PIC, the BTS 10200 will use the PIC carrier routing information to select the call route and to route the call.
Figure 6-1  Basic Subscriber Routing

Subscribers incoming call (312-454-0001 Subscriber Test1)

Get Subscriber table (sub-profileid)
Get Subscriber-Profile table (dial-plan-id)
(Subscriber and Sub-profile)

Go to Dial-plan (based on DP-ID)
Dial-Plan dp50

Go to Destination table (get call type and destination)

CALLTYPE TOLLFREE 900 500
No
Yes

CASUAL 101XXX
No
Yes

PIC (1:3) Subscriber Test1
No
Yes

DP_Routing SUB-.DP
Carrier_Routing
Carrier_Routing

Select route

NOT FOUND
Basic Trunk Routing

This section provides a detailed description of the BTS 10200 basic trunk routing and provides CLI example references. For detailed information on the CLI, refer to the Cisco BTS 10200 Softswitch Command Line Interface Reference Guide. Refer to Figure 6-2 for visual representation of basic trunk routing flow while reviewing the following detailed step-by-step basic trunk routing flow.

Step 1  Trunk group (TG) call received or placed.
Example:
  Trunk-grp 6969

Step 2  Get the DP-ID from the TG.
Example:
  Trunk-grp 6969

Step 3  Go to the dial-plan and get the destination based on the digits and DP-ID.
Example:
  Dial-Plan

Step 4  Go to the destination table and get the call type and the route.
Example:
  Destination

Step 5  Determine the call type. If the call type is toll free, 900, or 500, proceed to Step 6. If the call type is local traffic, proceed to the Step 7. If the call type is casual service provider (SP), proceed to Step 8. If the call type is transit network selection (TNS), proceed to Step 9. If the call type is TG carrier, proceed to Step 10. If the call type is TG SP, proceed to Step 11.
Example:
  Destination

Step 6  If the call type is toll free, 900, or 500, the BTS 10200 will use the dial plan to select the call route and to route the call.
Examples:
  Dial-Plan
  DN2sub

Step 7  If the call type is local traffic, the BTS 10200 will use the dial plan to select the call route and to route the call.
Examples:
  Trunk-grp 6969
  Dial-Plan
  DN2sub

Step 8  If the call type is casual SP, the BTS 10200 will use the SP routing to select the call route and to route the call. If the SP routing is not found, the BTS 10200 will use the dial plan to select the call route and to route the call.
Examples:
  Dial-Plan
Step 9  If the call type is TNS, the BTS 10200 will use the carrier routing to select the call route and to route the call. If the carrier routing is not found, the BTS 10200 will use the dial plan to select the call route and to route the call.

Examples:
Dial-Plan
DN2sub

Step 10  If the call type is TG carrier, the BTS 10200 will use the carrier routing to select the call route and to route the call. If the carrier routing is not found, the BTS 10200 will use the dial plan to select the call route and to route the call.

Step 11  If the call type is TG SP, the BTS 10200 will use the SP routing to select the call route and to route the call. If the SP routing is not found, the BTS 10200 will use the dial plan to select the call route and to route the call.

Examples:
Dial-Plan
DN2sub
Figure 6-2  Basic Trunk Routing

TG
Incoming call
(312-454-0001
trunk-grp 6969)

From trunk group
get dial-plan id
(trunk-grp 6969)

Go to dial-plan and get
destination based on
digits and dp-id
(dial-plan)

Go to Destination
table and get
calltype and route
(destination)

CALLTYPE
TOLLFREE
900
500
(destination)

Yes

LOCAL
TRAFFIC
(trunk-grp 6969)

No

Yes

Casual SP

No

DP_Routing
(TG->DP)
(dial-plan)

TNS

Yes

Carrier_Routing
(TNS->CARRIER)

No

TG
CARRIER

Yes

Carrier_Routing
(TG->CARRIER)

No

TG
SP

Select route
(DN2sub)

Yes

No

NOT FOUND

Yes

No

SP_Routing
(casual SP)

Carrier_Routing
(TG->SP)
Carrier Based Routing

This section provides a detailed description of the BTS 10200 carrier based routing and provides CLI example references. For detailed information on the CLI, refer to the *Cisco BTS 10200 Softswitch Command Line Interface Reference Guide*. Refer to Figure 6-3 for visual representation of carrier based routing flow while reviewing the following detailed step-by-step carrier based routing flow.

Additionally, LNP-QUERY has been added to the call flow. LNP-QUERY specifies whether to perform an local number portability (LNP) query on the call type. Applies only if the ALL-CALL-QUERY flag in the LNP-PROFILE table is set to Y and the ACQ-LNP-QUERY token in the Destination table is set to ACQ-BASED-ON-CALL-TYPE. For complete LNP-QUERY details, refer to the *Cisco BTS 10200 Softswitch Command Line Interface Reference Guide* and the ITU Local Number Portability Feature Module.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Carrier based routing call is received.</td>
</tr>
<tr>
<td>2</td>
<td>Determine if the carrier is being screened. If the carrier is being screened, proceed to Step 3. If the carrier is not being screened, proceed to Step 4. Example: Carrier 9999 Use Dial-Plan “N”</td>
</tr>
<tr>
<td>3</td>
<td>If the carrier is being screened, the BTS 10200 will determine if the carrier call processing is being remotely blocked (RTM_CP_BLOCK). If the carrier call processing is being remotely blocked, the call can not be completed and will be dropped.</td>
</tr>
<tr>
<td>4</td>
<td>If the carrier is not being screened, the BTS 10200 will determine if the carrier is a recognized service provider. If the carrier is a recognized service provider, proceed to Step 5. If the carrier is not a recognized service provider, proceed to Step 6. Example: Carrier – Service-Provider</td>
</tr>
<tr>
<td>5</td>
<td>If the carrier is a recognized service provider, the BTS 10200 will use the service provider routing to select the call route and to route the call. Example: Service Provider</td>
</tr>
<tr>
<td>6</td>
<td>If the carrier is not a recognized service provider, the BTS 10200 will determine if a carrier dial plan is configured. If a carrier dial plan is configured, proceed to Step 7. If a carrier dial plan, is not configured proceed to Step 8. Example: Carrier Use Dial-Plan “Y” Carrier 9999 Use Dial-Plan “N”</td>
</tr>
<tr>
<td>7</td>
<td>If a carrier dial plan is configured, the BTS 10200 will use the carrier dial plan to select the call route and to route the call.</td>
</tr>
<tr>
<td>8</td>
<td>If a carrier dial plan is not configured, the BTS 10200 will determine if a carrier remote call processing to local exchange carrier operations support system is available (RTM_CP_CARRIER_2_LECOSS). If the RTM_CP_CARRIER_2_LECOSS is available, proceed to Step 9. If the RTM_CP_CARRIER_2_LECOSS is not available, proceed to Step 10.</td>
</tr>
</tbody>
</table>

Note: Step 8 is skipped for toll traffic. If the traffic is toll traffic, proceed to Step 10.
Step 9  If the RTM_CP_CARRIER_2_LECOSS is available and if the traffic is not toll traffic, the BTS 10200 will use the RTM_CP_CARRIER_2_LECOSS to select the call route and to route the call.

Example:
Carrier All = N

Step 10 If the RTM_CP_CARRIER_2_LECOSS is not available, the BTS 10200 will use the carrier guide index to select the call route and to route the call.

Example:
Carrier All = Y

Figure 6-3  Carrier Based Routing

```
Carrier_Routing (carrier)

CARRIER SCREENING (carrier 9999 use dial-plan n)
No

CARRIER->SP (carrier service-provider)
No

CARRIER->USE_DP (carrier use dial-plan carrier 9999 use dial-plan n)
No

RTM_CP_CARRIER_2_LECOSS (CARRIER ALL=N)

CARRIER->route_guide_idx (CARRIER ALL=Y)

Skip this for toll traffic.

Dial-plan routing

RTM_CP_BLOCK

SP_Routing (CARRIER->SP) (service-provider)
```
Basic Dial Plan Routing

This section provides a detailed description of the BTS 10200 basic dial plan routing and provides CLI example references. For detailed information on the CLI, refer to the Cisco BTS 10200 Softswitch Command Line Interface Reference Guide. Refer to Figure 6-4 for visual representation of basic dial plan routing flow while reviewing the following detailed step-by-step basic dial plan routing flow.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Basic dial plan routing call received.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Determine if the nature of address (NOA) for the received call is an international call. If the call is an international call, the BTS 10200 will use the international dial plan to select the call route and to route the call. If the call is not an international call, proceed to Step 3. Example: Dial-Plan Ca-Config</td>
</tr>
<tr>
<td>Step 3</td>
<td>Determine if the call destination is found. If the call destination is not found, the BTS 10200 will return a destination not found response (NOT FOUND) and will drop the call. If the call destination is found, proceed to Step 4. Example: Destination SUB</td>
</tr>
<tr>
<td>Step 4</td>
<td>Determine if a call destination subscriber is found. If a call destination subscriber is found, the BTS 10200 will return a subscriber (SUB) response and will use the subscriber information to select the call route and to route the call. If a call destination subscriber is not found, proceed to Step 5. Example: Destination ROUTE</td>
</tr>
<tr>
<td>Step 5</td>
<td>Determine if a call destination route is found. If a call destination route is found, the BTS 10200 will return a destination (DEST) response and will use the route guide index to select the call route and to route the call. If a call destination route is not found, proceed to Step 6. Example: Destination RID</td>
</tr>
<tr>
<td>Step 6</td>
<td>Determine if a call destination route identification (RID) is found. If a call destination RID is found, the BTS 10200 will return a DEST response and will use the route index to select the call route and to route the call. If a call destination RID is not found, proceed to Step 7. Example: Destination Carrier</td>
</tr>
<tr>
<td>Step 7</td>
<td>Determine if a destination carrier is found. If a destination carrier is found, proceed to the Step 8. If a destination carrier is not found, the BTS 10200 will return an error and will drop the call. Example: Destination Carrier</td>
</tr>
<tr>
<td>Step 8</td>
<td>Determine the call type. If the call type is toll free, 900, or 500, the BTS 10200 will select the call route and to route the call using the destination carrier routing. If the call type is not toll free, 900, or 500, the BTS 10200 will return an error and will drop the call.</td>
</tr>
</tbody>
</table>
Figure 6-4 Basic Dial Plan Routing

- **DP_Routing** (DP digits)
  - NOA INTL (dial-plan ca-config)
    - Yes
      - **INTL DIAL PLAN**
        - If (dp1->idp)
          - default_idp = dp1->idp
        - else
          - default-idp = ca_config->idp
    - No
  - **DESTINATION FOUND**
    - Yes
      - Return NOT_FOUND
    - No
  - **DESTINATION SUB** (destination SUB)
    - Yes
      - Return SUB
    - No
  - **DESTINATION ROUTED** (destination route)
    - Yes
      - Return DEST->route_guide_idx
    - No
  - **DESTINATION RID** (destination RID)
    - Yes
      - Return DEST->route_idx
    - No
  - **DESTINATION CARRIER** (destination carrier)
    - Yes
      - **CALLTYPE TOLLFREE**
        - 900
        - 500
      - Yes
        - **Carrier_Routing** (DEST->CARRIER)
      - No
        - Return ERROR
    - No
      - Return ERROR
Cluster Routing

This section provides an overview of CLI commands that would be needed to implement the Cluster Network/Routing supported by the BTS 10200 in release 5.0.

The CLI commands provided in following sections are not in any particular sequence, and could be executed in any order as long as dependencies of the table in question is already in place. The main intention of this document is to summarize the CLI commands that would be needed to implement cluster networking.

Creating a Cluster Network with Three CMS/MGCs

Figure 6-5 illustrates creating a cluster network with three CMS/MGCs.
1. Clustering requires switches to have its individual point codes and here we are assuming the existing three switches to already have point codes of OPC10, OPC11 and OPC12.

2. Have a Intra-cluster TG (SIP TG) connected between each of them as shown in the diagram (Basically each CMS/MGC is the network needs to have direct connectivity with the other switches)

   add trunk-grp id=sip_1_2 ;tg-type=sip;dial-plan-id=cluster-dial-plan;tsap-addr=CMS2;
   add trunk-grp id=sip_1_3 ;tg-type=sip;dial-plan-id=cluster-dial-plan;tsap-addr=CMS3;
   add trunk-grp id=sip_2_3 ;tg-type=sip;dial-plan-id=cluster-dial-plan;tsap-addr=CMS3;
   add trunk-grp id=sip_2_1 ;tg-type=sip;dial-plan-id=cluster-dial-plan;tsap-addr=CMS1;
   add trunk-grp id=sip_3_1 ;tg-type=sip;dial-plan-id=cluster-dial-plan;tsap-addr=CMS1;
   add trunk-grp id=sip_3_2 ;tg-type=sip;dial-plan-id=cluster-dial-plan;tsap-addr=CMS2;

   Make sure the POI flag in the trunk-grp table for each of the trunk-grp's added above is set to INTRA-CLUSTER.

3. Decide on a CLRN (assuming it to be 972-999-9999 in this case) and provision into each of the CMS/MGC. It also needs to be registered in the LNP database.

   On CMS1/CMS2/CMS3:
   add ndc digit-string=972;
   add exchange-code ndc=972;ec=999;office-code-index=1;
   add office-code ndc=972;ec=999;call-agent-id=CA146;dn-group=xxxx;
   add dn2subscriber office_code_index=1;dn=9999;status=CLRN;

4. Each CMS/MGC needs to have a separate NPA-NXX.
   This basically means each CMS needs to handle a separate NPA-NXX, so as shown in the diagram we have CMS1 handling 972-233, CMS2 handling 469-255 and CMS3 handling 214-265.

5. Provision the cluster dial plan (NPA-NXX routing) in each of the CMS/MGC to reach each other.

   On CMS1:
   add cluster-dial-plan-profile id=cdpp;
   add route id=CMS3;tgn1_id=sip_1_3;
   add route id=CMS2;tgn1_id=sip_1_2;
   add destination dest-id=CMS3;route-type=ROUTE-ID;route-id=CMS3;call-type=LOCAL;
   add destination dest-id=CMS2;route-type=ROUTE-ID;route-id=CMS2;call-type=LOCAL;
   add dial-plan id=cdpp;digit-string=214-265;dest-id=CMS3;
   add dial-plan id=cdpp;digit-string=469-255;dest-id=CMS2;
   add ca-config;cluster-dial-plan id=cdpp;
For CMS2:
add cluster-dial-plan-profile id=cdpp;
add route id=CMS1;tg1_id=sip_2_1;
add route id=CMS3;tg1_id=sip_2_3;
add destination dest-id=CMS1;route-type=ROUTE-ID;route-id=CMS1;call-type=LOCAL;
add destination dest-id=CMS3;route-type=ROUTE-ID;route-id=CMS3;call-type=LOCAL;
add dial-plan id=cdpp;digit-string=972-233;dest-id=CMS1;
add dial-plan id=cdpp;digit-string=214-265;dest-id=CMS3;
add ca-config;cluster-dial-plan id=cdpp;

For CMS3:
add cluster-dial-plan-profile id=cdpp;
add route id=CMS1;tg1_id=sip_3_1;
add route id=CMS2;tg1_id=sip_3_2;
add destination dest-id=CMS1;route-type=ROUTE-ID;route-id=CMS1;call-type=LOCAL;
add destination dest-id=CMS2;route-type=ROUTE-ID;route-id=CMS2;call-type=LOCAL;
add dial-plan id=cdpp;digit-string=972-233;dest-id=CMS1;
add dial-plan id=cdpp;digit-string=469-255;dest-id=CMS2;
add ca-config;cluster-dial-plan id=cdpp;

Ported-In Sub from PSTN into CMS1

Imagine a subscriber from PSTN (972-384-1234) ported into one of the CMS in the cluster say CMS1. If a subscriber on any of the CMS makes a call to that ported number these are the provisioning needed.

On CMS1:
add ported-office-code digit-string=972-384;
add dn2subscriber office-code-index=1;dn=1234;;status=assigned;lnp_trigger=y;

On CMS2:
add ported-office-code digit-string=972-384;
add dial-plan id=cdpp;digit-string=972-384;dest-id=CMS1;

On CMS3:
add ported-office-code digit-string=972-384;
add dial-plan id=cdpp;digit-string=972-384;dest-id=CMS1;

If the call comes in from PSTN for this ported number, it would have already come in with a CLRN number. It depends on which CMS in the cluster receives the call first, assuming CMS3 received the call since it’s a CLRN, CMS3 would look up the GAP and route the call to CMS1 as per the cluster dial plan entries.
Adding One more CMS/MGC into a Cluster Network

Figure 6-6 illustrates adding one more CMS/MGC into a cluster network.

Figure 6-6  Adding One more CMS/MGC into the Cluster Network

[Diagram showing the network setup with CMS/MGC connections, SS7, and PSTN connections.]
1. Assign separate point codes for the new CMS/MGC switch.
   add opc id=13; point-code=4-4-4; description=CMS 04 ; (On CMS4)
   add dpc id=PSTN;point-code=x-x-x; description= PSTN conn from CMS4;

2. Have a Intra-cluster TG (SIP TG) connected between each of them as shown in the diagram.
   On CMS4:
   add trunk-grp id=sip_4_1 ;tg-type=sip;dial-plan-id=cluster-dial-plan; tsap-addr=CMS1;
   add trunk-grp id=sip_4_2 ;tg-type=sip;dial-plan-id=cluster-dial-plan; tsap-addr=CMS2;
   add trunk-grp id=sip_4_3 ;tg-type=sip;dial-plan-id=cluster-dial-plan; tsap-addr=CMS3;

   On CMS1:
   add trunk-grp id=sip_1_4 ;tg-type=sip;dial-plan-id=cluster-dial-plan; tsap-addr=CMS4;

   On CMS2:
   add trunk-grp id=sip_2_4 ;tg-type=sip;dial-plan-id=cluster-dial-plan; tsap-addr=CMS4;

   On CMS3:
   add trunk-grp id=sip_3_4 ;tg-type=sip;dial-plan-id=cluster-dial-plan; tsap-addr=CMS4;

3. Add an entry in dn2sub table for the CLRN of the cluster which is 972-999-9999.
   add ndc digit-string=972;
   add exchange-code ndc=972;ec=999;office-code-index=1;
   add office-code ndc=972;ec=999;call-agent-id=CA146;dn-group=xxxx;
   add dn2subscriber office_code_index=1;dn=9999;status=CLRN;

4. Each switch needs to have its own NPA-NXX , so let's assume CMS4 handles 972-682-xxxx.

5. Provision the cluster dial plan (NPA-NXX routing) in each of the CMS/MGC switches to reach each other.
   On CMS4:
   add cluster-dial-plan-profile id=cdpp;
   add route id=CMS1;tgn1_id=sip_4_1;
   add route id=CMS2;tgn1_id=sip_4_2;
   add route id=CMS3;tgn1_id=sip_4_3;
   add destination dest-id=CMS1;route-type=ROUTE-ID;route-id=CMS1;call-type=LOCAL;
   add destination dest-id=CMS2;route-type=ROUTE-ID;route-id=CMS2;call-type=LOCAL;
   add destination dest-id=CMS3;route-type=ROUTE-ID;route-id=CMS3;call-type=LOCAL;
   add dial-plan id=cdpp;digit-string=972-233;dest-id=CMS1;
   add dial-plan id=cdpp;digit-string=469-255;dest-id=CMS2;
   add dial-plan id=cdpp;digit-string=214-265;dest-id=CMS3;
   add ca-config;cluster-dial-plan id=cdpp;

   On CMS1:
   add route id=CMS4;tgn1_id=sip_1_4;
   add destination dest-id=CMS4;route-type=ROUTE-ID;route-id=CMS4;call-type=LOCAL;
   add dial-plan id=cdpp;digit-string=972-682;dest-id=CMS4;
Call Types

This section provides detailed information on the CLI usage for the BTS 10200 call types. CLI information on the following call types is provided:

- 1+ Interlata Call
- 1+ Intralata Call
- 0+ Interlata Call
- 0+ Intralata Call
- Ported-In Call Processing

1+ Interlata Call

This section provides a detailed description of the BTS 10200 routing and call flow for 1+ interlata calls and provides CLI example references. For detailed information on the CLI, refer to the *Cisco BTS 10200 Softswitch Command Line Interface Reference Guide*. Refer to Figure 6-7 for visual representation of the 1+ interlata call routing flow while reviewing the following detailed step-by-step 1+ interlata call routing flow.

**Step 1**
A 1+ interlata call is received.

Examples:

*Subscriber Test1*

Dp50 Digit-String = 202

**Step 2**
Determine if a 101XXXX number has been dialed. If a 101XXXX number has been dialed, the BTS 10200 will select the call route and route the call based on the carrier access code (CAC). If a 101XXXX number has not been dialed, proceed to Step 3.

**Step 3**
Check the subscriber table to determine if a PIC is defined. If a PIC is defined, the BTS 10200 will select the call route and route the call based on the PIC information. If a PIC is not defined, proceed to Step 4.

Example:

*Subscriber and Sub-Profile*
**Step 4**  
Check the point of presence (POP) table and verify if a block-eawopic is configured. If the a block-eawopic is configured, the BTS 10200 will block the call. If a block-eawopic is not configured, proceed to Step 5.

Examples:

- POP 50 No Block
- POP 50 Block

**Step 5**  
Determine if a local exchange carrier operations support system (LECOSS) is defined in the POP table. If a LECOSS is defined in the POP table, the BTS 10200 will select route the call via the LECOSS. If a LECOSS is not defined in the POP table, the BTS 10200 will block the call.

Examples:

- POP LEC-OSS
- POP 50 No Block

---

**Figure 6-7  1+ Interlata Call**

This section provides a detailed description of the BTS 10200 routing and call flow for 1+ intralata calls and provides CLI example references. For detailed information on the CLI, refer to the *Cisco BTS 10200 Softswitch Command Line Interface Reference Guide*. Refer to Figure 6-8 for visual representation of the 1+ intralata call routing flow while reviewing the following detailed step-by-step 1+ intralata call routing flow.
**Step 1**  An 1+ intralata call is received.

Examples:
- **Subscriber Test1**
- **Sub DP Dest Intralata**

**Step 2**  Determine if 101XXXX number has been dialed. If a 101XXXX number has been dialed proceed to Step 3. If a 101XXXX number has not been dialed, proceed to Step 4.

**Step 3**  Check the carrier table for a CAC. If a CAC is available, the BTS 10200 will select the call route and route the call based on the CAC. If a CAC is not available, proceed to Step 3a.

Example:
- **Carrier Intra = Y**
  
  a. Determine if a LECOSS is defined in the POP table. If a LECOSS is defined in the POP table, the BTS 10200 will select the call route and route the call via the LECOSS. If a LECOSS is not defined in the POP table, the BTS 10200 will block the call.

**Step 4**  Check the POP table for a configured IP transfer point (ITP). If an ITP is configured, proceed to Step 4a. If an ITP is not configured, the BTS 10200 will route the call via dial plan routing.

Example:
- **POP ITP = Y**
  
  a. Check the subscriber table for a specified PIC. If a PIC is specified, proceed to Step 4b. If a PIC is not specified, the BTS 10200 will route the call to the announcement server and will check the POP table for a specified PIC. If a PIC is not specified, the BTS 10200 will block the call or if a dial plan is available, the BTS 10200 will select the call route and route the call according to the dial plan routing information.

Examples:
- **Subscriber Test1**
- **Sub DP Dest Intralata**

b. Check the intra carrier table for a specified PIC. If a PIC is specified in the intra carrier table, the BTS 10200 will select the call route and route the call based on the PIC information. If a PIC is not specified in the intra carrier table, proceed to Step 4c.

Example:
- **Carrier Intra = Y**
c. Determine if a LECOSS is defined in the POP table. If a LECOSS is defined in the POP table, the BTS 10200 will select the call route and route the call via the LECOSS. If a LECOSS is not defined in the POP table, the BTS 10200 will block the call.

Example:

POP LEC-OSS

---

**Figure 6-8  1+ Intralata Call**

1+ intrALATA call

1-817-433-0001
Subscriber test1
Sub DP Dest IntraLATA

Check Carrier table (Intra) (Carrier intraLATA = Y)

Yes

Route based on CAC

No

101XXXX dialed

Check POP table (ITP) (POP ITP = Y)

No

Route to annoucement

Yes

Check Subscriber table for PIC2 (Subscriber test1)

No PIC

No

LECOSS defined in POP table (POP LEC-OSS)

Yes

Route through LECOSS

No

Block Call

No

Carrier table (Intra) (Carrier intraLATA = Y)

Yes

Check POP table (PIC2 required) (POP ITP = Y)

PIC2 specified

Block call

No

Check POP table (Sub DP Dest IntraLATA)

Yes

Route based on PIC2

No

Dial plan routing (Sub DP Dest IntraLATA)
**0+ Interlata Call**

This section provides a detailed description of the BTS 10200 routing and call flow for 0+ interlata calls and provides CLI example references. For detailed information on the CLI, refer to the *Cisco BTS 10200 Softswitch Command Line Interface Reference Guide*, and provides CLI example references. Refer to Figure 6-9 for visual representation of the 0+ interlata call routing flow while reviewing the following detailed step-by-step 0+ interlata call routing flow.

---

**Step 1**  
A 0+ interlata call is received.  
Examples:  
**Subscriber Test1**  
**Sub DP Dest Interlata**

**Step 2**  
Determine if a 101XXXX number has been dialed. If a 101XXXX number has been dialed proceed to Step 3. If a 101XXXX number has not been dialed proceed to Step 5.

**Step 3**  
Check the carrier table for a CAC. If a CAC is available, the BTS 10200 will select the call route and route the call based on the CAC. If a CAC is not available, proceed to Step 4.  
Example:  
**Carrier Op-Serv = Y**

**Step 4**  
Check the POP table for a defined LECOSS. If a LECOSS is defined in the POP table, the BTS 10200 will route the call via the LECOSS. If a LECOSS is not defined in the POP table, the BTS 10200 will block the call.  
Example:  
**POP LEC-OSS**

**Step 5**  
Check the subscriber table for a defined PIC. If a PIC is defined in the subscriber table, proceed to Step 6. If a PIC is not defined in the subscriber table, proceed to Step 7.  
Example:  
**Subscriber Test1**

**Step 6**  
Check the subscriber profile for ea-use-pic entry. If the subscriber profile contains an ea-use-pic entry, the BTS 10200 will select the call route and route the call based on the PIC information. If the subscriber profile does not contained an ea-use-pic entry, return to Step 4.  
Examples:  
**Ea-Use = Y**  
**POP Ea-use = N**

**Step 7**  
Check the POP table for a block-eawopic entry. If the POP table contains a block-eawopic entry, the BTS 10200 will block the call. If the POP table does not contain a block-eawopic entry, return to Step 4.  
Examples:  
**POP Block-ea = N**  
**POP Block-ea = Y**
This section provides a detailed description of the BTS 10200 routing and call flow for 0+ intralata calls and provides CLI example references. For detailed information on the CLI, refer to the *Cisco BTS 10200 Softswitch Command Line Interface Reference Guide*. Refer to Figure 6-10 for visual representation of the 0+ intralata call routing flow while reviewing the following detailed step-by-step 0+ intralata call routing flow.

**Step 1**
A 0+ intralata call is received.
Examples:
- Subscriber Test1
- Sub DP Dest Intralata

**Step 2**
Determine if a 101XXXX number was dialed. If a 101XXXX number was dialed, proceed to Step 3. If a 101XXXX number was not dialed, proceed to Step 5.

**Step 3**
Check the carrier table for a CAC. If a CAC is available, the BTS 10200 will select the call route and route the call based on the CAC. If a CAC is not available, proceed to Step 4.
Example:
- Carrier Op-Serv = Y
**Step 4**  Check the POP table for a defined LECOSS. If a LECOSS is defined in the POP table, the BTS 10200 will route the call via the LECOSS. If a LECOSS is not defined in the POP table, the BTS 10200 will block the call.

Example:

POP LEC-OSS

**Step 5**  Check the POP table for a configured ITP. If an ITP is configured, proceed to Step 6. If an ITP is not configured return to Step 4.

Example:

POP ITP = Y

**Step 6**  Check the subscriber table for a specified PIC. If a PIC is specified, proceed to Step 7. If a PIC is not specified, the BTS 10200 will route the call to the announcement server. Additionally, if a PIC is not specified in the subscriber table, the BTS 10200 will check the POP table for a specified PIC. If a PIC is specified in the POP table, the BTS 10200 will block the call. If a PIC is not specified in the POP table, return to Step 4.

Examples:

Subscriber Test1

POP LEC-OSS

**Step 7**  Check the intra carrier table for the specified PIC. If the specified PIC is included in the intra carrier table, the BTS 10200 will select the call route and route the call based on the PIC information. If the specified PIC is not included in the intra carrier table, return to Step 4.

Example:

Carrier Intra = Y
Figure 6-10  0+ Intralata Call

1+ intraLATA call
0-817-454-0001
Subscriber test1
Sub DP Dest IntraLATA

Yes

101XXXX dialed

No

Check POP table (ITP)
(POP ITP=Y)

Yes

Check Subscriber table for PIC2
(Subscriber test1)

PIC2 specified

No

Route to announcement

No PIC

Route based on PIC2

Yes

Check Carrier table (Intra)
(carrier intra=y)

No

Route through LECOSS

Yes

LECOSS defined in POP table
(POP LEC-OSS)

No

Block call

Check Carrier table (Op-services)
(carrier op-serv=y)

Yes

Route based on CAC

No

Check POP table (PIC2 required)
(POP LEC-OSS)

Yes

Block call

No

Check POP table (PIC2 required)
(POP LEC-OSS)

Yes
Ported-In Call Processing

This section provides a detailed description of the BTS 10200 routing and call flow for ported-in call processing calls and provides CLI example references. For detailed information on the CLI, refer to the Cisco BTS 10200 Softswitch Command Line Interface Reference Guide. Refer to Figure 6-11 for visual representation of the ported-in call processing call routing flow while reviewing the following detailed step-by-step ported-in call processing call routing flow.

**Step 1**  A ported-in call is received.

**Step 2**  The office code is not assigned to the BTS 10200.

**Step 3**  Determine if the office code is in the ported-in office code table. If the office code is in the ported-in office code table, proceed to Step 4. If the office code is not in the ported-in office code table, perform normal call processing.

Example:

Ported-Office-Code in CA

**Step 4**  Determine if the in-call agent flag is set. If the in-call agent flag is set, proceed to Step 5. If the in-call agent flag is not set, the BTS 10200 will perform an local number portability (LNP) query.

Examples:

Ported-Office-Code in CA = N

**Step 5**  Determine if the subscriber is included the dn2subscriber table. If the subscriber is included in the dn2subscriber table, proceed to Step 6. If the subscriber is not included in dn2subscriber table, proceed to Step 7.

Examples:

In DN2Sub

Not in DN2Sub

**Step 6**  Determine if the LNP trigger flag is set. If the LNP trigger flag is set, the BTS 10200 will perform an LNP query and port out the call. If the LNP trigger flag is not set, the BTS 10200 will check the status field to determine if a LNP trigger has been assigned and will port out the call or terminate the call to the subscriber.

Examples:

LNP Trigger = Y

In DN2Sub

**Step 7**  Check the destination table for the subscriber information. Based on the destination table information, the BTS 10200 will route the call or issue a subscriber terminator, release the call, and play the released call announcement. As part of routing the call, the BTS 10200 will perform an LNP query and, if necessary, port out the call.

Examples:

LNP Local Sub

LNP Route
Figure 6-11  Ported-In Call Processing

- **Office code is not assigned to switch**
  - **No**
    - Perform normal call processing
    - **Yes**
      - **Is the in-call-agent flag set?** (Ported-Office-Code in CA = N)
        - **No**
          - Do LNP query
        - **Yes**
          - **Is the LNP-trigger flag set?** (LNP trigger = y)
            - **No**
              - Check the Status field
            - **Yes**
              - **Route**

- **Is sub in dn2subscriber table?** (Ported-Office-Code in CA = N)
  - **No**
    - Do LNP query
  - **Yes**
    - Check the Destination table (LNP Local Sub LNP Route)
      - **No**
        - **Is sub in dn2subscriber table?** (Ported-Office-Code in CA = N)
          - **No**
            - **Route**
          - **Yes**
            - **Check the Status field**
      - **Yes**
        - **Is the LNP-trigger flag set?** (LNP trigger = y)
          - **No**
            - **Route**
          - **Yes**
            - **Check the Status field**

- **Check the Subscriber terminator Route Ported out Assigned**
  - **Play announcement and release the call**
  - **Terminate to subscriber**
Command Line Interface Routing Examples

This section provides CLI routing examples. The following CLI examples are provided:

- Carrier – Service-Provider
- Carrier 9999 Use Dial-Plan “N”
- Carrier All = N
- Carrier All = Y
- Carrier Intra = Y
- Carrier Op-Serv = Y
- Carrier Use Dial-Plan “Y”
- Destination
- Destination Carrier
- Destination Interlata
- Destination RID
- Destination ROUTE
- Destination SUB
- Dial-Plan
- Dial-Plan Ca-Config
- Dial-Plan “dp50”
- DN2Sub
- Dp50 Digit-String = 202
- Ea-Use = Y
- In DN2Sub
- LNP Local Sub
- LNP Route
- LNP Trigger = Y
- Not in DN2Sub
- POP 50 Block
- POP 50 No Block
- POP Block-ea = N
- POP Block-ea = Y
- POP Ea-use = N
- POP ITP = Y
- POP LEC-OSS
- Ported-Office-Code in CA
- Ported-Office-Code in CA = N
- Service Provider
- Sub DP Dest Interlata
• Sub DP Dest Intralata
• Subscriber Test1
• Subscriber Test2
• Subscriber and Sub-Profile
• Trunk-grp 6969

Carrier – Service-Provider

The Carrier – Service-Provider CLI example is used in the Carrier Based Routing routing example.

Carrier – Service-Provider Example:

CLI>show carrier id=7777
Reply : Success: Entry 1 of 1 returned.

ID=7777
STATUS=INS
INTER=Y
INTRA=N
INTL=N
CASUAL=Y
CUT_THRU=Y
OP_SERVICES=Y
SEND_CN=N
SEND_CSP=N
USE_DIAL_PLAN=N
ROUTE_GUIDE_ID=test
SP_ID=test
NETWORK_TYPE=NOTUSED
NATIONAL_NETWORK_PLAN=NOTUSED

Carrier 9999 Use Dial-Plan “N”

The Carrier 9999 Use Dial-Plan “N” CLI example is used in the Carrier Based Routing routing example.

Carrier 9999 Use Dial-Plan “N” Example:

CLI>show carrier id=9999
Reply : Success: Entry 1 of 1 returned.

ID=9999
STATUS=INS
INTER=Y
INTRA=N
INTL=N
CASUAL=Y
CUT_THRU=Y
OP_SERVICES=Y
SEND_CN=N
SEND_CSP=N
USE_DIAL_PLAN=N
NETWORK_TYPE=NOTUSED
NATIONAL_NETWORK_PLAN=NOTUSED
Carrier All = N

The Carrier All = N CLI example is used in the Carrier Based Routing routing examples.

Carrier All = N Example:

CLI>show carrier id=7777
Reply : Success: Entry 1 of 1 returned.

ID=7777
STATUS=INS
INTER=N
INTRA=N
INTL=N
CASUAL=N
CUT_THRU=N
OP_SERVICES=N
SEND_CN=N
SEND_CSP=N
USE_DIAL_PLAN=N
ROUTE_GUIDE_ID=test
NETWORK_TYPE=NOTUSED
NATIONAL_NETWORK_PLAN=NOTUSED

Carrier All = Y

The Carrier All = Y CLI example is used in the Carrier Based Routing routing examples.

Carrier All = Y Example:

CLI>show carrier id=7777
Reply : Success: Entry 1 of 1 returned.

ID=7777
STATUS=INS
INTER=Y
INTRA=Y
INTL=Y
CASUAL=Y
CUT_THRU=Y
OP_SERVICES=Y
SEND_CN=N
SEND_CSP=N
USE_DIAL_PLAN=N
ROUTE_GUIDE_ID=test
NETWORK_TYPE=NOTUSED
NATIONAL_NETWORK_PLAN=NOTUSED
Carrier Intra = Y

The Carrier Intra = Y CLI example is used in the 1+ Intralata Call and 0+ Intralata Call routing examples.

Carrier Intra = Y Example:

CLI>show carrier id=9999
Reply : Success: Entry 1 of 1 returned.

ID=9999
STATUS=INS
INTER=Y
INTRA=Y
INTL=N
CASUAL=Y
CUT_THRU=Y
OP_SERVICES=Y
SEND_CN=N
SEND_CSP=N
USE_DIAL_PLAN=Y
NETWORK_TYPE=NOTUSED
NATIONAL_NETWORK_PLAN=NOTUSED

Carrier Op-Serv = Y

The Carrier Op-Serv = Y CLI example is used in the 0+ Interlata Call and 0+ Intralata Call routing examples.

Carrier Op-Serv = Y Example:

CLI>show carrier id=7777
Reply : Success: Entry 1 of 1 returned.

ID=7777
STATUS=INS
INTER=Y
INTRA=N
INTL=N
CASUAL=Y
CUT_THRU=Y
OP_SERVICES=Y
SEND_CN=N
SEND_CSP=N
USE_DIAL_PLAN=N
ROUTE_GUIDE_ID=test
SP_ID=test
NETWORK_TYPE=NOTUSED
NATIONAL_NETWORK_PLAN=NOTUSED
Carrier Use Dial-Plan “Y”

The Carrier Use Dial-Plan “Y” CLI example is used in the Carrier Based Routing routing example.

Carrier Use Dial-Plan “Y” Example:

CLI> show carrier id=8888
Reply : Success: Entry 1 of 1 returned.

ID=8888
STATUS=INS
INTER=Y
INTRA=N
INTL=N
CASUAL=Y
CUT_THRU=Y
OP_SERVICES=Y
SEND_CN=N
SEND_CSP=N
USE_DIAL_PLAN=Y
DESCRIPTION=TEST
NETWORK_TYPE=NOTUSED
NATIONAL_NETWORK_PLAN=NOTUSED

Destination

The Destination CLI example is used in the Basic Subscriber Routing and Basic Trunk Routing routing examples.

Destination Example:

CLI> show destination

DEST_ID=local-sub
CALL_TYPE=LOCAL
ROUTE_TYPE=SUB
ZERO_PLUS=N
INTRA_STATE=Y
GAP_ROUTING=N

Destination Carrier

The Destination Carrier CLI example is used in the Basic Dial Plan Routing routing example.

Destination Carrier Example:

CLI> show destination dest-id=800;
Reply : Success: Entry 1 of 1 returned.

DEST_ID=800
CALL_TYPE=TOLL_FREE
ROUTE_TYPE=CARRIER
CARRIER_ID=7777
ZERO_PLUS=N
INTRA_STATE=Y
GAP_ROUTING=N
Destination Interlata

The Destination Interlata CLI example is used in the 1+ Interlata Call routing example.

Destination Interlata Example:

CLI>show destination dest-id=interlata
Reply : Success: Entry 1 of 1 returned.

DEST_ID=interlata
CALL_TYPE=INTERLATA
ROUTE_TYPE=ROUTE
ROUTE_GUIDE_ID=test
ZERO_PLUS=N
INTRA_STATE=Y
GAP_ROUTING=N

Destination RID

The Destination RID CLI example is used in the Basic Dial Plan Routing routing example.

Destination RID Example:

CLI>show destination dest-id=65019
Reply : Success: Entry 1 of 1 returned.

DEST_ID=65019
CALL_TYPE=LOCAL
ROUTE_TYPE=RID
ZERO_PLUS=N
INTRA_STATE=Y
ROUTE_ID=65019
GAP_ROUTING=N

Destination ROUTE

The Destination ROUTE CLI example is used in the Basic Dial Plan Routing routing example.

Destination ROUTE Example:

CLI>show destination dest-id=65019
Reply : Success: Entry 1 of 1 returned.

DEST_ID=65019
CALL_TYPE=LOCAL
ROUTE_TYPE=ROUTE
ROUTE_GUIDE_ID=local6561200
ZERO_PLUS=N
INTRA_STATE=Y
GAP_ROUTING=N
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**Destination SUB**

The Destination SUB CLI example is used in the Basic Dial Plan Routing routing example.

Destination SUB Example:

```plaintext
CLI> show destination dest-id=65019
Reply : Success: Entry 1 of 1 returned.

DEST_ID=65019
CALL_TYPE=LOCAL
ROUTE_TYPE=SUB
ZERO_PLUS=N
INTRA_STATE=Y
GAP_ROUTING=N
```

**Dial-Plan**

The Dial-Plan CLI example is used in the Basic Trunk Routing routing example.

Dial-Plan Example:

```plaintext
CLI> show dial-plan id=dp50; digit-string=312-454;
Reply : Success: Entry 1 of 1 returned.

ID=dp50
DIGIT_STRING=312454
REQD_DIGITS=10
DEST_ID=local-sub
SPLIT_NPA=NONE
MIN_DIGITS=10
MAX_DIGITS=10
NOA=NATIONAL
```

**Dial-Plan Ca-Config**

The Dial-Plan Ca-Config CLI example is used in the Basic Dial Plan Routing routing example.

Dial-Plan Ca-Config Example:

```plaintext
CLI> show dial-plan-profile id=dp51
Reply : Success: Entry 1 of 1 returned.

ID=dp51
INTL_DIAL_PLAN_ID=dp50
NANP_DIAL_PLAN=Y

CLI> show dial-plan-profile id=dp50
Reply : Success: Entry 1 of 1 returned.

ID=dp50
DESCRIPTION=dialing plan 1
NANP_DIAL_PLAN=Y

CLI> show ca-config TYPE=DEFAULT-INTL-DIAL-PLAN-ID;
Reply : Success: Entry 1 of 1 returned.

TYPE=DEFAULT-INTL-DIAL-PLAN-ID
DATATYPE=STRING
VALUE=DEFAULT
```
Dial-Plan “dp50”

The Dial-Plan “dp50” CLI example is used in the Basic Subscriber Routing routing example.

Dial-Plan “dp50” Example:

CLI>show dial-plan id=dp50
Reply : Success: Entries 1-3 of 3 returned.

ID=dp50
DIGIT_STRING=212454
REQD_DIGITS=10
DEST_ID=local-sub
SPLIT_NPA=NONE
MIN_DIGITS=10
MAX_DIGITS=10
NOA=NATIONAL

ID=dp50
DIGIT_STRING=312454
REQD_DIGITS=10
DEST_ID=local-sub
SPLIT_NPA=NONE
MIN_DIGITS=10
MAX_DIGITS=10
NOA=NATIONAL

ID=dp50
DIGIT_STRING=412454
REQD_DIGITS=10
DEST_ID=local-sub
SPLIT_NPA=NONE
MIN_DIGITS=10
MAX_DIGITS=10
NOA=NATIONAL
DN2sub

The DN2sub CLI example is used in the Basic Subscriber Routing and Ported-In Call Processing routing examples.

DN2sub Example:

CLI>show ndc digit-string=312
Reply : Success: Entry 1 of 1 returned.

DIGIT_STRING=312

CLI>show exchange-code ndc=312
Reply : Success: Entry 1 of 1 returned.

NDC=312
EC=454
OFFICE_CODE_INDEX=1188
MIN_DN_LENGTH=10
MAX_DN_LENGTH=10

CLI>show office-code ndc=312; ec=454
Reply : Success: Entry 1 of 1 returned.

DIGIT_STRING=312454
OFFICE_CODE_INDEX=1188
DID=N
CALL_AGENT_ID=CA552
DIALABLE=Y
NDC=312
EC=454
DN_GROUP=xxxx

CLI>show dn2subscriber office-code-index=1188
Reply : Success: Entry 1 of 1 returned.

OFFICE_CODE_INDEX=1188
DN=0001
STATUS=ASSIGNED
RING_TYPE=1
LNP_TRIGGER=N
NP_RESERVED=N
SUB_ID=test2
**Dp50 Digit-String = 202**

The Dp50 Digit-String = 202 CLI example is used in the 1+ Interlata Call routing example.

**Dp50 Digit-String = 202 Example:**

```
CLI>show dial-plan id=dp50; digit-string=202;
Reply : Success: Entry 1 of 1 returned.

ID=dp50
DIGIT_STRING=202
REQD_DIGITS=10
DEST_ID=interlata
SPLIT_NPA=NONE
MIN_DIGITS=10
MAX_DIGITS=10
NOA=NATIONAL
```

```
CLI>show destination dest-id=interlata
Reply : Success: Entry 1 of 1 returned.

DEST_ID=interlata
CALL_TYPE=INTERLATA
ROUTE_TYPE=ROUTE
ROUTE_GUIDE_ID=test
ZERO_PLUS=N
INTRA_STATE=Y
GAP_ROUTING=N
```

**Ea-Use = Y**

The Ea-Use = Y CLI example is used in the 0+ Interlata Call routing example.

**Ea-Use = Y Example:**

```
CLI>show sub-profile id=sp50
Reply : Success: Entry 1 of 1 returned.

ID=sp50
DIAL_PLAN_ID=dp50
LOCAL_PFX1_OPT=NR
TOLL_PFX1_OPT=RQ
POP_ID=50
OLI=0
EA_USE_PIC1=Y
```
In DN2Sub

The In DN2Sub CLI example is used in the Ported-In Call Processing routing examples.

In DN2Sub Example:

CLI> show office-code digit-string=214-387
Reply : Success: Entry 1 of 1 returned.

DIGIT_STRING=214387
OFFICE_CODE_INDEX=657
DID=N
CALL_AGENT_ID=CA552
DIALABLE=Y
NDC=214
EC=387
DN_GROUP=xxxx

CLI> show dn2subscriber OFFICE_CODE_INDEX=657;dn=1000
Reply : Success: Entry 1 of 1 returned.

OFFICE_CODE_INDEX=657
DN=1000
STATUS=ASSIGNED
RING_TYPE=1
LNP_TRIGGER=N
NP_RESERVED=N
SUB_ID=test1

LNP Local Sub

The LNP Local Sub CLI example is used in the Ported-In Call Processing routing examples.

LNP Local Sub Example:

CLI> show dial-plan id=dp50;digit-string=214-387
Reply : Success: Entry 1 of 1 returned.

ID=dp50
DIGIT_STRING=214387
DEST_ID=local-sub
SPLIT_NPA=NONE
MIN_DIGITS=10
MAX_DIGITS=10
NOA=NATIONAL

CLI> show destination dest-id=local-sub
Reply : Success: Entry 1 of 1 returned.

DEST_ID=local-sub
CALL_TYPE=LOCAL
ROUTE_TYPE=SUB
ZERO_PLUS=N
INTRA_STATE=Y
GAP_ROUTING=N
LNP Route

The LNP Route CLI example is used in the Ported-In Call Processing routing examples.

LNP Route Example:

CLI>show dial-plan id=dp50;digit-string=214-387
Reply : Success: Entry 1 of 1 returned.

ID=dp50
DIGIT_STRING=214387
DEST_ID=out
SPLIT_NPA=NONE
MIN_DIGITS=10
MAX_DIGITS=10
NOA=NATIONAL

CLI>show destination dest-id=local-sub
Reply : Success: Entry 1 of 1 returned.

DEST_ID=out
CALL_TYPE=LOCAL
ROUTE_TYPE=ROUTE
ROUTE_GUIDE_ID=test
ZERO_PLUS=N
INTRA_STATE=Y
GAP_ROUTING=N

LNP Trigger = Y

The LNP Trigger = Y CLI example is used in the Ported-In Call Processing routing examples.

LNP Trigger = Y Example:

CLI>show dn2subscriber OFFICE_CODE_INDEX=657;dn=1000
Reply : Success: Entry 1 of 1 returned.

OFFICE_CODE_INDEX=657
DN=1000
STATUS=ASSIGNED
RING_TYPE=1
LNP_TRIGGER=Y
NP_RESERVED=N
SUB_ID=test1
Not in DN2Sub

The Not in DN2Sub CLI example is used in the Ported-In Call Processing routing examples.

Not in DN2Sub Example:

CLI>show office-code digit-string=214-387
Reply : Success: Entry 1 of 1 returned.

DIGIT_STRING=214387
OFFICE_CODE_INDEX=657
DID=N
CALL_AGENT_ID=CA552
DIALABLE=Y
NDC=214
EC=387
DN_GROUP=xxxx

CLI>show dn2subscriber OFFICE_CODE_INDEX=657;dn=1000
Reply : Success: Database is void of entries.

POP 50 Block

The POP 50 Block CLI example is used in the 1+ Interlata Call routing example.

POP 50 Block Example:

CLI>show pop id=50
Reply : Success: Entry 1 of 1 returned.

ID=50
STATE=tx
COUNTRY=usa
TIMEZONE=CST
LOCAL_7D_DIALING=Y
ITP=N
ZERO_MINUS=LEC
BLOCK_EAMOPIC=Y
CNAM_OPTION=NONE
PIC2_REQD=N
TREAT_IMS_ANONYMOUS=N
**POP 50 No Block**

The POP 50 No Block CLI example is used in the 1+ Interlata Call routing example.

**POP 50 No Block Example:**

```plaintext
CLI>show pop id=50
Reply : Success: Entry 1 of 1 returned.

ID=50
STATE=tx
COUNTRY=usa
TIMEZONE=CST
LOCAL_7D_DIALING=Y
ITP=N
ZERO_MINUS=LEC
BLOCK_EAWOPIC=N
CNAM_OPTION=NONE
PIC2_REQD=N
TREAT_IMS_ANONYMOUS=N
```

**POP Block-ea = N**

The POP Block-ea = N CLI example is used in the 0+ Interlata Call routing example.

**POP Block-ea = N Example:**

```plaintext
CLI>show pop id=50
Reply : Success: Entry 1 of 1 returned.

ID=50
STATE=tx
COUNTRY=usa
TIMEZONE=CST
LOCAL_7D_DIALING=Y
ITP=Y
ZERO_MINUS=LEC
BLOCK_EAWOPIC=N
CNAM_OPTION=NONE
PIC2_REQD=N
LECOSS_ROUTE_GUIDE_ID=test
TREAT_IMS_ANONYMOUS=N
```
POP Block-ea = Y

The POP Block-ea = Y CLI example is used in the 0+ Interlata Call routing example.

POP Block-ea = Y Example:

CLI>show pop id=50
Reply : Success: Entry 1 of 1 returned.

ID=50
STATE=tx
COUNTRY=usa
TIMEZONE=CST
LOCAL_7D_DIALING=Y
ITP=Y
ZERO_MINUS=LEC
BLOCK_EAWOPIC=Y
CNAMEOPTION=None
PIC2_REQD=N
LECOSS_ROUTE_GUIDE_ID=test
TREAT_IMS_ANONYMOUS=N

POP Ea-use = N

The POP Ea-use = N CLI example is used in the 0+ Interlata Call routing example.

POP Ea-use = N Example:

CLI>show sub-profile id=sp50
Reply : Success: Entry 1 of 1 returned.

ID=sp50
DIAL_PLAN_ID=dp50
LOCAL_PFX1_OPT=NR
TOLL_PFX1_OPT=RQ
POP_ID=50
OLI=0
EA_USE_PIC1=N

POP ITP = Y

The POP ITP = Y CLI example is used in the 1+ Intralata Call and 0+ Intralata Call routing examples.

POP ITP = Y Example:

CLI>show pop id=50
Reply : Success: Entry 1 of 1 returned.

ID=50
STATE=tx
COUNTRY=usa
TIMEZONE=CST
LOCAL_7D_DIALING=Y
ITP=Y
ZERO_MINUS=LEC
BLOCK_EAWOPIC=Y
CNAMEOPTION=None
PIC2_REQD=N
LECOSS_ROUTE_GUIDE_ID=test
TREAT_IMS_ANONYMOUS=N
**POP LEC-OSS**

The POP LEC-OSS CLI example is used in the 1+ Interlata Call, 1+ Intralata Call, 0+ Interlata Call, and 0+ Intralata Call routing examples.

**POP LEC-OSS Example:**

```
CLI>show pop id=50
Reply : Success: Entry 1 of 1 returned.

ID=50
STATE=tx
COUNTRY=usa
TIMEZONE=CST
LOCAL_7D_DIALING=Y
ITP=N
ZERO_MINUS=LEC
BLOCK_EAWOPIC=Y
CNAM_OPTION=NONE
PIC2_REQD=N
LECOSS_ROUTE_GUIDE_ID=test
TREAT_IMS_ANONYMOUS=N
```

**Ported-Office-Code in CA**

The Ported-Office-Code in CA CLI example is used in the Ported-In Call Processing routing examples.

**Ported-Office-Code in CA Example:**

```
CLI>show ported-office-code digit-string=214-387
Reply : Success: Entry 1 of 1 returned.

DIGIT_STRING=214387
IN_CALL_AGENT=Y
```

**Ported-Office-Code in CA = N**

The Ported-Office-Code in CA = N CLI example is used in the Ported-In Call Processing routing examples.

**Ported-Office-Code CA = N Example:**

```
CLI>show ported-office-code digit-string=214-387
Reply : Success: Entry 1 of 1 returned.

DIGIT_STRING=214387
IN_CALL_AGENT=N
```
Service Provider

The Service Provider CLI example is used in the Carrier Based Routing routing example.

Service Provider Example:

CLI>show service-provider id=test
Reply : Success: Entry 1 of 1 returned.

ID=test
SP_BASED_ROUTING=N
USE_DIAL_PLAN=Y
ANI WB LIST=NONE

Sub DP Dest Interlata

The Sub DP Dest Interlata CLI example is used in the 0+ Interlata Call routing example.

Sub DP Dest Interlata Example:

CLI>show sub-profile id=sp50
Reply : Success: Entry 1 of 1 returned.

ID=sp50
DIAL PLAN ID=dp50
LOCAL PFX1 OPT=NR
TOLL PFX1 OPT=RQ
POP ID=50
CLI=0
EA_USE PIC1=Y

CLI>show dial-plan id=dp50;digit-string=202
Reply : Success: Entry 1 of 1 returned.

ID=dp50
DIGIT STRING=202
REQD DIGITS=10
DEST ID=interlata
SPLIT NPA=NONE
MIN DIGITS=10
MAX DIGITS=10
NOA=NATIONAL

CLI>show destination dest-id=interlata
Reply : Success: Entry 1 of 1 returned.

DEST ID=interlata
CALL TYPE=INTERLATA
ROUTE TYPE=ROUTE
ROUTE GUIDE ID=test
ZERO PLUS=Y
INTRA STATE=Y
GAP ROUTING=N
Sub DP Dest Intralata

The Sub DP Dest Intralata CLI example is used in the 1+ Intralata Call and 0+ Intralata Call routing examples.

Sub DP Dest Intralata Example:

CLI> show sub-profile id=sp50
Reply : Success: Entry 1 of 1 returned.

ID=sp50
DIAL_PLAN_ID=dp50
LOCAL_PFX1_OPT=NR
TOLL_PFX1_OPT=RQ
POP_ID=50
OLI=0
EA_USE_PIC1=Y

CLI> show dial-plan id=dp50;digit-string=817
Reply : Success: Entry 1 of 1 returned.

ID=dp50
DIGIT_STRING=817
DEST_ID=toll
SPLIT_NPA=NONE
MIN_DIGITS=10
MAX_DIGITS=10
NOA=NATIONAL

CLI> show destination dest-id=toll
Reply : Success: Entry 1 of 1 returned.

DEST_ID=toll
CALL_TYPE=TOLL
ROUTE_TYPE=ROUTE
ROUTE_GUIDE_ID=test
ZERO_PLUS=N
INTRA_STATE=Y
GAP_ROUTING=N
Subscriber Test1

The Subscriber Test1 CLI example is used in the Basic Subscriber Routing, 1+ Interlata Call, 1+ Intralata Call, 0+ Interlata Call, and 0+ Intralata Call routing examples.

Subscriber Test1 Example:

```
CLI>show subscriber id=test1
Reply : Success: Entry 1 of 1 returned.

ID=test1
CATEGORY=INDIVIDUAL
NAME=c2421-227-2-1
STATUS=ACTIVE
BILLING_DN=2124540001
DN1=2124540001
PRIVACY=NONE
RING_TYPE_DN1=1
TERM_ID=aaln/S1/1
MGW_ID=c2421-227-2
PIC1=NONE
PIC2=NONE
PIC3=NONE
GRP=N
USAGE_SENS=Y
SUB_PROFILE_ID=sp50
TERM_TYPE=TERM
IMMEDIATE_RELEASE=N
TERMINATING_IMMEDIATE_REL=N
SEND_BILLING_DN=N
```

Subscriber Test2

The Subscriber Test2 CLI example is used in the Basic Subscriber Routing and Basic Trunk Routing routing examples.

Subscriber Test2 Example:

```
CLI>show sub id=test2
Reply : Success: Entry 1 of 1 returned.

ID=test2
CATEGORY=INDIVIDUAL
NAME=c2421-227-125-1
STATUS=ACTIVE
BILLING_DN=3124540001
DN1=3124540001
PRIVACY=NONE
RING_TYPE_DN1=1
TERM_ID=aaln/S1/1
MGW_ID=c2421-227-125
PIC1=NONE
PIC2=NONE
PIC3=NONE
GRP=N
USAGE_SENS=Y
SUB_PROFILE_ID=sp50
TERM_TYPE=TERM
IMMEDIATE_RELEASE=N
TERMINATING_IMMEDIATE_REL=N
SEND_BILLING_DN=N
```
Subscriber and Sub-Profile

The Subscriber and Sub-Profile CLI example is used in the Basic Subscriber Routing and 1+ Interlata Call routing examples.

Subscriber and Sub-Profile Example:

CLI> show subscriber id=test1
Reply : Success: Entry 1 of 1 returned.

ID=test1
CATEGORY=INDIVIDUAL
NAME=c2421-227-2-1
STATUS=ACTIVE
BILLING_DN=2124540001
DN1=2124540001
PRIVACY=NONE
RING_TYPE_DN1=1
TERM_ID=aaln/S1/1
MGW_ID=c2421-227-2
PIC1=NONE
PIC2=NONE
PIC3=NONE
GRP=N
USAGE_SENS=Y
SUB_PROFILE_ID=sp50
TERM_TYPE=TERM
IMMEDIATE_RELEASE=N
TERMINATING_IMMEDIATE_REL=N
SEND_BILLING_DN=N

CLI> show sub-profile id=sp50
Reply : Success: Entry 1 of 1 returned.

ID=sp50
DIAL_PLAN_ID=dp50
LOCAL_PFX1_OPT=NR
TOLL_PFX1_OPT=RQ
POP_ID=50
OLI=0
EA_USE_PIC1=Y
Trunk-grp 6969

The Trunk-grp 6969 CLI example is used in the Basic Trunk Routing routing example.

Trunk-grp 6969 Example:

CLI>show trunk-grp id=6969
Reply : Success: Entry 1 of 1 returned.

ID=6969
CALL_AGENT_ID=CA552
TG_TYPE=SS7
NUM_OF_TRUNKS=96
DPC=19-1-1
TG_PROFILE_ID=3
STATUS=OOS
DIRECTION=BOTH
SEL_POLICY=ASC
GLARE=SLAVE
ALT_ROUTE_ON_CONG=N
SIGNAL_PORTED_NUMBER=N
DIAL_PLAN_ID=dp50
DEL_DIGITS=0
OPER_STATUS=N
TRAFFIC_TYPE=LOCAL
ANI_BASED_ROUTING=N
NO_ANSWER_TMR=185
Preparation for Dial Plan Provisioning

Introduction

This chapter describes the prerequisite tasks you need to perform before you can begin provisioning a dial plan. It also describes the tools you will use, and provides detailed information on the dial plan parameters and syntax conventions that you will need to be familiar with as you create your dial plan. This chapter includes the following sections:

- Provisioning Prerequisites
- Provisioning Tools
- Creating a Dial Plan

Note

The Cisco BTS 10200 Softswitch can use two servers, an active and a standby, for maximum reliability. The dial plans discussed in this chapter apply to both the active and standby server. You need only create one dial plan and deploy that dial plan on both the active and standby server.

The following sections describe recommended practices to assist you in provisioning dial plans for the BTS 10200.

Provisioning Prerequisites

This section describes the tasks that must be completed and the information that you need before you start dial plan provisioning.
Prerequisite Tasks

The following steps describe the tasks you should perform prior to using this dial plan guide.

**Step 1**  
Plan and diagram your network configuration in detail.  
A detailed network diagram is essential when creating a dial plan. Refer to the respective solution overview and provisioning documentation for detailed information about a particular solution.

**Step 2**  
Set up the BTS 10200 and install all required software.  
Before you start the dial planning process, you should prepare the BTS 10200 as described in the following manuals:
- *Site Preparation and Network Communications Requirements*
- *Network Site Survey for Software Installation Cisco BTS 10200 Softswitch*
- *BTS 10200 Building Environment and Power Site Survey*
- *BTS 10200 Cabling, VLAN, and IRDP Procedures*
- *BTS 10200 CD Jumpstart Procedure for Solaris 10 Based Duplex Systems*
- *BTS 10200 Application Installation*
- *BTS 10200 Provisioning Guide*
- *BTS 10200 Command Line Interface Reference Guide*

**Step 3**  
Complete all provisioning worksheets and site surveys, including filling in the names and IP addresses of all devices, attributes, and all other necessary information.

Prerequisite Information

Before you can complete the dial plan provisioning, you must collect the BTS 10200 dial plan provisioning information. Table 7-1 provides space for you to enter the following information:

- **id**—dial plan identification
- **dest_id**—destination identification
- **digit_string**—dial plan digit string
- **max_digits**—maximum number of digits
- **min_digits**—minimum number of digits
- **noa**—nature of address
- **split_npa**—split number plan area
- **del_digits**—deleted digits
- **pfx_digits**—prefix digits
Provisioning Tools

The BTS 10200 includes two tools that you can use to provision the dial plan:

- Command Line Interface (CLI)
- Extensible Provisioning and Operations Manager (EPOM)

You can use both the CLI and EPOM to provision the dial plan for a BTS 10200.

Command Line Interface

The Command Line Interface can be used to provision and deploy dial plans for the BTS 10200.

- For detailed instructions on using the CLI, refer to the Cisco BTS 10200 Softswitch Command Line Interface Reference Guide.
- For more information on provisioning a dial plan with the CLI, refer to “Provisioning a Dial Plan with the Command Line Interface” section on page 8-1

Table 7-1  Trunk Worksheet Example

<table>
<thead>
<tr>
<th>id</th>
<th>dest_id</th>
<th>digit_string</th>
<th>max_digits</th>
<th>noa</th>
<th>split_npa</th>
<th>del_digits</th>
<th>pfx_digits</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Cisco BTS 10200 Softswitch Dial Plan Guide, Release 5.0.x
Extensible Provisioning and Operations Manager

The EPOM visual interface can be used to provision and deploy dial plans for the BTS 10200.

- For detailed instructions on using the CLI, refer to the Cisco Extensible Provisioning and Operations Manager Getting Started Guide.
- For more information on provisioning a dial plan with the EPOM, refer to “Provisioning a Dial Plan with the Extensible Provisioning and Operations Manager” section on page 8-9

Creating a Dial Plan

The remaining sections in this chapter describe how to plan for dial plan provisioning and provide sample dial plans for the BTS 10200.

Add a Dial Plan Profile

The Dial Plan Profile (dial-plan-profile) table creates dial-plan-profile-ids before they are assigned to subscribers or trunk groups. The dial-plan-profile-id links digit-string entries in the Dial Plan table within a dial plan. Different dial-plan-profile-ids are assigned to subscribers and trunk groups. A dial-plan-id must be created in this table before entries can be added to the Dial Plan table.

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>add dial-plan-profile id=dp1; description=dialing plan profile id;</td>
<td>Adds a dial plan profile</td>
</tr>
</tbody>
</table>

Add a Dial Plan

A dial plan analyzes, screens, and routes a call based on dialed digits. The Dial Plan (dial-plan) table holds dial plan information for a specific type of call. It defines valid dialing patterns and determines call routing. All records that share a common dial-plan-profile-id are considered a dial plan.

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>add dial-plan id=sub; digit-string=469-255; noa=national; dest-id=local_call;</td>
<td>Adds a dial plan</td>
</tr>
</tbody>
</table>
BTS 10200 Provisioning Sequence

The order in which you provision dial plan tables is important. The following list identifies the recommended sequence for BTS 10200 provisioning:

1. Add a media gateway profile.
2. Add a media gateway.
3. Add a termination.
4. Add a destination.
5. Add a dial plan profile.
6. Add a dial plan.
7. Add a subscriber profile.
8. Add a subscriber.
9. Generate a DN2Subscriber.
10. Control a media gateway.
11. Equip a subscriber termination
12. Control a subscriber termination.

For additional BTS 10200 provisioning information, refer to the *Cisco BTS 10200 Softswitch Provisioning Guide*. 
Provisioning Dial Plans

Introduction

This chapter provides detailed instructions for configuring Cisco BTS 10200 Softswitch configuration dial plans using the Command Line Interface (CLI) and the Cisco Extensible Provisioning and Operations Manager (EPOM). The following subjects are discussed:

- Provisioning a Dial Plan with the Command Line Interface
- Provisioning a Dial Plan with the Extensible Provisioning and Operations Manager

Provisioning a Dial Plan with the Command Line Interface

This section provides the detailed instructions for managing dial plans in the BTS 10200 configuration using the CLI. The CLI also allows you to perform show, add, change, and delete dial plans. The following subjects are discussed:

- Dial Plan
- Dial Plan Profile
- International Dial Plan
- International Dial Plan Profile
- Custom Dial Plan
- Custom Dial Plan Profile

Dial Plan

Dial plans analyze, screen, and route calls based on dialed digits. The Dial Plan (dial-plan) table holds dial plan information for a specific type of call. It defines valid dialing patterns and determines call routing. All records that share a common dial-plan-profile id are considered a dial plan. For additional information on the Dial Plan, refer to the “Dial Plan” section on page 1-45.
Dial Plan Profile

The Dial Plan Profile (dial-plan-profile) table creates dial-plan-profile ids before they are assigned to subscribers or trunk groups. The dial-plan-profile id links digit-string entries in the Dial Plan table within a dial plan. Different dial-plan-profile ids are assigned to subscribers and trunk groups. A dial-plan-id must be created in this table before entries can be added to the Dial Plan table. For additional information on the Dial Plan Profile, refer to the “Dial Plan Profile” section on page 1-36.

International Dial Plan

The International Dial Plan (intl-dial-plan) table holds international dial plan information for calls to regions outside the North American Numbering Plan (NANP). It contains the country code, minimum and maximum digits, the country name, and the route-grp-id. For additional information on the International Dial Plan, refer to the “International Dial Plan” section on page 1-50.

International Dial Plan Profile

The International Dial Plan Profile (intl-dial-plan-profile) table is used to create unique IDs for international dial plans. This ID must be created before provisioning the International Dial Plan table. For additional information on the International Dial Plan Profile, refer to the “International Dial Plan Profile” section on page 1-42.

Custom Dial Plan

The Custom Dial Plan (custom-dial-plan) table translates Centrex calls. If the result of a custom dial plan (CDP) is a POTS access code, call processing uses the POTS Dial Plan table to translate the digits dialed after the POTS access code. Speed call codes are provisioned in this table as nod=speed-call and fname=SC1D (or SC2D). Screening does not apply to speed dialing.

Table Name: CUSTOM_DIAL_PLAN
Table Containment Area: EMS, FSPTC

Command Types

add, audit, change, delete, help, show, sync

Caution

The sync command is a restricted command and is intended for repairing data only. Improper use may corrupt the database and disrupt call processing. Use with caution.

Examples

show custom-dial-plan id=cisco plan; digit-string=4xx;
add custom-dial-plan id=cisco plan; digit-string=9; nod=pots-access;
cat-string=1111111111;
change custom-dial-plan id=cisco plan; digit-string=4xx; nod=vsc; fname=CFUA;
delete custom-dial-plan id=cisco plan; digit-string=*72;
Usage Guidelines

Primary Key Token(s): ID, DIGIT_STRING
Foreign Key Token(s): id, fname

Syntax Description

AUTO_REFRESH
Description: Specifies whether to display cached data on the screen. Valid only for the show command.
CHAR(1): Y/N (Default = Y).
Y—Queries the database for the most current data.
N—Queries the database for the most current data only if the cached data is unavailable.
Valid for Command: show
Default Value: Y
Possible Value: Y, N
Parser: BooleanParser

CAT_STRING
Valid for Command: add, change, audit, sync, show
Possible Value: [1_16]
Parser: BinaryParser

DIGIT_STRING
Description: Primary key. Ported number which can be 7, 8, or 10 digits in the format NPA-NXX-XXXX, where NPA is the assigned geographic numbering plan area, NXX designates a specific central office within the NPA, and XXXX is the subscriber's number. N in the NXX portion of the number can be any number from 2 to 9 and X can be any number from 0 to 9. To support number pooling, the digit string can specify a pool of 1000 numbers (which requires 7 digits, NPA-NXX-X) or a pool of 100 numbers (which requires 8 digits, NPA-NXX-XX).
VARCHAR(10): 7, 8, or 10 ASCII characters in the NPA-NXX-XXXX format.
Valid for Command: add, change, show, delete, audit, sync
Mandatory: add, change, delete
Possible Value: [1_7]
Parser: TextParser

DISPLAY
Description: Specifies what token information to display on the screen. Valid only for the show command.
VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
Valid for Command: show
Possible Value: [1_1024]
Parser: TextParser
### FNAME
- **Description:** Primary key. Foreign key: Feature table. Feature name.
- **VARCHAR(16):** 1-16 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Possible Value:** [1_16]
- **Parser:** TextNoCaseParser

### ID
- **Description:** Network ID of a specific CA or FS. Valid for the download to Standby CA or FS command.
- **VARCHAR(8):** 1-8 ASCII characters consisting of any valid, provisioned CA, FSPTC, or FSAIN ID.
- **Valid for Command:** add, change, show, delete, audit, sync
- **Mandatory:** add, change, delete
- **Possible Value:** [1_16]
- **Parser:** TextParser

### LIMIT
- **Description:** Specifies the number of rows to display on the screen. Valid only for the show command.
- **INTEGER:** 1-100000000 (Default = 100000000).
- **Valid for Command:** show
- **Default Value:** 100000000
- **Possible Value:** [1_100000000]
- **Parser:** DecimalParser

### MASTER
- **Valid for Command:** sync
- **Mandatory:** sync
- **Possible Value:** [1_10]
- **Parser:** TextParser

### NOD
- **Description:** Primary key. Foreign key: Nature of Dial table. Nature of dial.
- **VARCHAR(16):** 1-16 ASCII characters.
- **Valid for Command:** add, change, audit, sync, show
- **Mandatory:** add
- **Possible Value:** VSC, ATTENDANT_ACCESS, POTS_ACCESS, EXTENSION, SPEED_CALL
- **Parser:** TextParser

### ORDER
- **Description:** Specifies whether to display data on the screen in a sorted order. Valid only for the show command.
- **VARCHAR(51200):** 1-51200 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
- **Valid for Command:** show
- **Possible Value:** [1_1024]
- **Parser:** TextParser
| **PLATFORM_STATE** | Description: State of an active or standby system shared memory database; use to audit an active or standby system shared memory database. Valid for the audit database and audit table name commands.  
  VARCHAR(7): 1-7 ASCII characters. Permitted values are:  
  ACTIVE (Default)—System is active (currently running).  
  STANDBY—System is in standby mode.  
  EMS—Audits the active EMS to the standby EMS.  
  Valid for Command: sync, audit  
  Default Value: ACTIVE  
  Possible Value: ACTIVE, STANDBY  
  Parser: TextParser |
| **START_ROW** | Description: Specifies to begin displaying data on the screen at a specific row. Valid only for the show command.  
  INTEGER: 1-100000000 (Default = 1).  
  Valid for Command: show  
  Default Value: 1  
  Possible Value: [1_100000000]  
  Parser: DecimalParser |
| **TARGET** | Description: Specifies the network element to receive the request.  
  VARCHAR(5): 1-5 ASCII characters. Permitted values are:  
  CA—Network identifier of a Call Agent.  
  FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server.  
  FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.  
  Valid for Command: sync  
  Mandatory: sync  
  Possible Value: [1_10]  
  Parser: TextParser |
Custom Dial Plan Profile

The Custom Dial Plan Profile (custom-dial-plan-profile) table defines custom dial plan IDs (CDP IDs) assigned to Centrex groups.

Table Name: CUSTOM_DIAL_PLAN_PROFILE
Table Containment Area: EMS

Command Types
add, change, delete, help, show

Examples
show custom-dial-plan-profile id=cisco plan;
add custom-dial-plan-profile id=cisco plan;
change custom-dial-plan-profile id=cisco plan; description=main dialing plan for cisco;
delete custom-dial-plan-profile id=cisco plan;

Usage Guidelines
Primary Key Token(s): ID
Check Rule:
Delete Rules: ID does not exist in any custom-dial-plan::id.

Syntax Description

AUTO_REFRESH
Description: Specifies whether to display cached data on the screen. Valid only for the show command.
CHAR(1): Y/N (Default = Y).
Y—Queries the database for the most current data.
N—Queries the database for the most current data only if the cached data is unavailable.
Valid for Command: show
Default Value: Y
Possible Value: Y, N
Parser: BooleanParser

DESCRIPTION
Description: Described by the service provider.
VARCHAR(64): 1-64 ASCII characters.
Valid for Command: add, change, audit, sync, show
Possible Value: [1_64]
Parser: TextParser
### DISPLAY
**Description:** Specifies what token information to display on the screen. Valid only for the show command.

- `VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
- `Valid for Command: show`
- `Possible Value: [1_1024]`
- `Parser: TextParser`

### ID
**Description:** Primary key. Custom dial plan profile ID.

- `VARCHAR(16): 1-16 ASCII characters.`
- `Valid for Command: add, change, show, delete, audit, sync`
- `Mandatory: add, change, delete`
- `Possible Value: [1_16]`
- `Parser: TextParser`

### LIMIT
**Description:** Specifies the number of rows to display on the screen. Valid only for the show command.

- `INTEGER: 1-100000000 (Default = 100000000).`
- `Valid for Command: show`
- `Default Value: 100000000`
- `Possible Value: [1_100000000]`
- `Parser: DecimalParser`

### MASTER
**Valid for Command: sync**

- `Mandatory: sync`
- `Possible Value: [1_10]`
- `Parser: TextParser`

### ORDER
**Description:** Specifies whether to display data on the screen in a sorted order. Valid only for the show command.

- `VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma.
- `Valid for Command: show`
- `Possible Value: [1_1024]`
- `Parser: TextParser`
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Type</th>
<th>Permitted Values</th>
<th>Valid for Command</th>
<th>Default Value</th>
<th>Possible Value</th>
<th>Parser</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLATFORM_STATE</td>
<td>Description: State of an active or standby system shared memory database; use to audit an active or standby system shared memory database. Valid for the audit database and audit table name commands.</td>
<td>VARCHAR(7): 1-7 ASCII characters. Permitted values are:</td>
<td>ACTIVE (Default)—System is active (currently running). STANDBY—System is in standby mode. EMS—Audits the active EMS to the standby EMS.</td>
<td>sync, audit</td>
<td>ACTIVE</td>
<td>ACTIVE, STANDBY</td>
<td>TextParser</td>
</tr>
<tr>
<td>START_ROW</td>
<td>Description: Specifies to begin displaying data on the screen at a specific row. Valid only for the show command.</td>
<td>INTEGER: 1-100000000 (Default = 1).</td>
<td>Valid for Command: show</td>
<td>show</td>
<td>1</td>
<td>[1_100000000]</td>
<td>DecimalParser</td>
</tr>
<tr>
<td>TARGET</td>
<td>Description: Specifies the network element to receive the request.</td>
<td>VARCHAR(5): 1-5 ASCII characters. Permitted values are:</td>
<td>CA—Network identifier of a Call Agent. FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers.</td>
<td>sync</td>
<td>sync</td>
<td>[1_10]</td>
<td>TextParser</td>
</tr>
</tbody>
</table>
Provisioning a Dial Plan with the Extensible Provisioning and Operations Manager

This section provides the detailed instructions for adding a dial plan to the BTS 10200 configuration using the Extensible Provisioning and Operations Manager (EPOM). Additionally, detailed instructions are provided for using EPOM to manage configured dial plans. The EPOM also allows you to perform add, delete, and edit commands on multiple dial plans with a single operation. The following subjects are discussed:

- Adding a Dial Plan to the BTS 10200 Configuration
- Applying an EPOM Template to a Selected Dial Plan
- Editing a Dial Plan in the BTS 10200 Configuration
- Deleting a Dial Plan from the BTS 10200 Configuration
- Adding Multiple Dial Plans to a BTS 10200 Configuration
- Editing Multiple Dial Plans in the BTS 10200 Configuration
- Deleting Multiple Dial Plans in the BTS 10200 Configuration

For additional details on using the EPOM, refer to the Cisco Extensible Provisioning and Operations Manager Getting Started Guide.

Adding a Dial Plan to the BTS 10200 Configuration

Tip

Make sure that you have the configuration information for the component that you want to add to the Cisco EPOM inventory.

Add components to the Cisco EPOM inventory to build a managed network. The device information includes static and dynamic selections to other parts of the configuration. Follow this example to add a dial plan.

Step 1

From the Domain window, select the domain > BTS10200s > the Cisco BTS 10200 Softswitch EMS server.

Step 2

Click Config.

The BTS 10200 Component Status window opens.

Step 3

In the Configuration tree, choose Office Tables > dial_plan.
The BTS 10200 Component window opens showing a list of dial plans. If this is the first dial plan (or device of this type) that you are adding, the list is empty.

**Step 4** Click **Add**.

The BTS 10200 Component Add window opens.
Step 5  Define the device. Required fields are identified with a red check mark.

Step 6  Click OK or Apply.

- When you click OK, the component is added and the list of components in the Component: name window appears.
- When you click Apply, the component is added, but you remain in the Add component window for further tasks.

You return to the BTS 10200 Component window. The new dial plan is added to the list.

To edit a single component, see the ““Editing a Dial Plan in the BTS 10200 Configuration” section on page 8-12; to delete a single component, see the ““Deleting a Dial Plan from the BTS 10200 Configuration” section on page 8-14.

**Applying an EPOM Template to a Selected Dial Plan**

Step 1  In a Domain view, select the desired domain > BTS10200s > the desired BTS 10200 EMS server.

Step 2  Click Config. The BTS 10200 Component Status view opens.

Step 3  In the Configuration tree, select Office Tables > dial_plan. The BTS 10200 Component view opens showing a list of dial plans. If this is the first dial plan (or device of this type) that you are adding, the list is empty.
**Provisioning a Dial Plan with the Extensible Provisioning and Operations Manager**

### Chapter 8  Provisioning Dial Plans

#### Step 4  Click **Add**. The BTS 10200 Component Add view opens.

![Image of Add component: dial_plan](image)

**Template:**

- **id**
- **dest_id**
- **digit_string**
- **max_digits**
- **min_digits**
- **moa**
- **split_npa**
- **dial_digits**
- **px_digits**

#### Step 5  Select a template from the list.

#### Step 6  Click **Load**.

Click **OK** or **Apply**.

- When you click **OK**, the component is added and the list of components in the Component name window is displayed.
- When you click **Apply**, the component is added, but you remain in the Add component window for further operations. The new dial plan is added to the list when you return to the BTS 10200 Component view.

---

**Note**

The ID field is unique to each device and cannot be repeated among devices. Assign a unique ID for the device before adding it to the Cisco EPOM inventory. You can either specify a value in the ID field to be used as a prefix, or leave a blank field that forces the user to specify a valid, unique ID.

To create a new template from this screen, make changes to the existing component details and save the resulting dial plan as a template by entering a template name and clicking **Save**.

---

**Editing a Dial Plan in the BTS 10200 Configuration**

#### Step 1  From the Domain window, choose the **domain > BTS10200s > the Cisco BTS 10200 Softswitch EMS server.**

#### Step 2  Click **Config**.

The BTS 10200 Component Status window opens.

#### Step 3  In the Configuration tree, choose **Office Tables > dial_plan**.

The BTS 10200 Component window shows a list of currently configured dial plans.

#### Step 4  Select the row that you wish to edit and click **Edit**.

The Change component window appears.
Step 5 Make the required changes to the attribute fields. To make changes follow the steps mentioned below.

a. Enter the new value in the text field or select a new value from the drop down box. This action displays a check box against the changed field. This check box is enabled by default.

b. Click OK to save changes. EPOM will send only the checked elements along with the mandatory fields to BTS 10200, instead of sending whole edit page elements. This will update the BTS 10200 Server with the new values along with the mandatory attributes.

Note Mandatory attributes cannot be edited, hence no check box will be displayed against it when the user tries to change its value.

Caution If the user decides to revert back and retain the old values then it has be to done before saving. It can be done by un checking the check box. This way the same old values are send to the database when the user clicks OK to save the changes.
**Step 6** EPOM provides the option to edit multiple nouns in a single instance. Select the nouns which needs to be updated in template and click **Edit**. The browser displays multiple templates.

**Note**

EPOM provides option to edit multiple nouns in a single instance. Select the nouns which needs to be updated in template and click **Edit**. The browser displays multiple templates.

**Step 7** Click **OK**.

You return to the BTS 10200 Component window. The edited dial plan appears in the list.

To add a single component, see the “**Adding a Dial Plan to the BTS 10200 Configuration**” section on page 8-9; to delete a single component, see the “**Deleting a Dial Plan from the BTS 10200 Configuration**” section on page 8-14.

### Deleting a Dial Plan from the BTS 10200 Configuration

**Step 1** Choose the **domain > BTS10200s > the Cisco BTS 10200 Softswitch EMS server** from the Domain window.

**Step 2** Click **Config**.

The BTS 10200 Component Status window opens.

**Step 3** In the Configuration tree, choose **Office Tables > dial_plan**.

The BTS 10200 Component window shows a list of currently configured dial plans.

**Step 4** In the Component: **name** window, select one or more dial plans to delete.

**Step 5** Click **Delete**.

The Delete component window with the requested deletion appears.
Provisioning a Dial Plan with the Extensible Provisioning and Operations Manager

Note

The first (blank) row with the checked box indicates that the component identified in the banner title was selected for displaying details, editing, or deletion.

Step 6

Click OK.

To add a single component, see the “Adding a Dial Plan to the BTS 10200 Configuration” section on page 8-9; to edit a single component, see the “Editing a Dial Plan in the BTS 10200 Configuration” section on page 8-12.

Adding Multiple Dial Plans to a BTS 10200 Configuration

Step 1

In the ems-server window left pane, click a component.

The Component: name window appears.

Step 2

Click Add.

The Add component window appears.

Step 3

Select the Expand range expression check box.

If you fail to select this check box, you get an error message when you enter a range expression.

Tip

For information on acceptable range expressions, move your cursor over the “?” symbol next to the Expand range expression field.

Step 4

In the id field, enter a range expression in square brackets [ ].

For example, to add a group of 10 dial plans with the id prefix dp001_new, enter dp001_new[01-10]. Doing so adds dial plans dp001_new01, dp001_new02, through dp001_new10.

Step 5

Enter information in the remaining attribute fields.
Provisioning a Dial Plan with the Extensible Provisioning and Operations Manager

Chapter 8  Provisioning Dial Plans

Provisioning a Dial Plan with the Extensible Provisioning and Operations Manager

Step 6  Click OK or Apply.

- When you click OK, the component is added and the list of components in the Component: name window appears.
- When you click Apply, the component is added, but you remain in the Add component window for further operations.

You have now added multiple dial plans to the BTS 10200 EMS network.

Editing Multiple Dial Plans in the BTS 10200 Configuration

Step 1  In the ems-server window left pane, click a component.

The Component: name window appears.

Step 2  In the Component: name window, select one or more components that you want to edit.

Step 3  Click Edit.

The Change component window appears.

Note  The first (blank) row with the checked box indicates that the component in the window title was selected for displaying details, editing, or deletion.

Step 4  Make the required changes to the attribute fields.

Step 5  Click OK.

Step 6  You have now edited multiple components in the BTS 10200 EMS network.
Deleting Multiple Dial Plans in the BTS 10200 Configuration

**Step 1**
Step 1 In the ems-server window left pane, click a component.
The Component: name window appears.

**Step 2**
In the Component: name window, select one or more components that you want to delete.

**Step 3**
Click **Delete**.
The Delete component window appears with the requested deletions.

The first (blank) row with the checked box indicates that this component was selected for displaying details, editing, or deletion.

**Step 4**
Click **OK**.
You have now deleted multiple dial plans in the BTS 10200 EMS network.
### Glossary

Revised: April 22, 2009, OL-8720-10

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<thead>
<tr>
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<th>abbreviated</th>
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<tr>
<td>ACQ</td>
<td>all calls query</td>
</tr>
<tr>
<td>ADDR</td>
<td>address</td>
</tr>
<tr>
<td>AIN</td>
<td>Advanced Intelligent Network</td>
</tr>
<tr>
<td>ALT</td>
<td>alternate</td>
</tr>
<tr>
<td>ALWD</td>
<td>allowed</td>
</tr>
<tr>
<td>ANSI</td>
<td>American National Standards Institute</td>
</tr>
<tr>
<td>ANI</td>
<td>automatic number identification</td>
</tr>
<tr>
<td>ANNC</td>
<td>announcement</td>
</tr>
<tr>
<td>ARQ</td>
<td>admission request</td>
</tr>
<tr>
<td>AS</td>
<td>application server</td>
</tr>
<tr>
<td>ASC</td>
<td>ascending</td>
</tr>
<tr>
<td>ASCII</td>
<td>American standard code for information interchange</td>
</tr>
<tr>
<td>AT</td>
<td>access tandem</td>
</tr>
<tr>
<td>ATM</td>
<td>Asynchronous Transfer Mode</td>
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<thead>
<tr>
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<th></th>
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<tbody>
<tr>
<td>BKWD</td>
<td>backward</td>
</tr>
<tr>
<td>BLV</td>
<td>business line verification</td>
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</table>
### Glossary

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CA</td>
<td>California</td>
</tr>
<tr>
<td>CA</td>
<td>call agent</td>
</tr>
<tr>
<td>CAC</td>
<td>carrier access code</td>
</tr>
<tr>
<td>CAP</td>
<td>competitive access provider</td>
</tr>
<tr>
<td>CAS</td>
<td>channel associated signaling</td>
</tr>
<tr>
<td>CASC</td>
<td>cyclic ascending</td>
</tr>
<tr>
<td>CC</td>
<td>country code</td>
</tr>
<tr>
<td>CD-ROM</td>
<td>compact disk-read only memory</td>
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<tr>
<td>CdPN</td>
<td>called party number</td>
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<tr>
<td>CDP</td>
<td>custom dial plan</td>
</tr>
<tr>
<td>CDSC</td>
<td>cyclic descending</td>
</tr>
<tr>
<td>CHAR</td>
<td>character</td>
</tr>
<tr>
<td>CHG</td>
<td>charge</td>
</tr>
<tr>
<td>CLDPTY</td>
<td>called party</td>
</tr>
<tr>
<td>CLI</td>
<td>Command Line Interface</td>
</tr>
<tr>
<td>CLLI</td>
<td>Common Language Location Identifier</td>
</tr>
<tr>
<td>CND</td>
<td>calling number delivery</td>
</tr>
<tr>
<td>COMM</td>
<td>communication</td>
</tr>
<tr>
<td>COS</td>
<td>class of service</td>
</tr>
<tr>
<td>COT</td>
<td>continuity test</td>
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<tr>
<td>CPN</td>
<td>calling party number</td>
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<tr>
<td>CTRL</td>
<td>control</td>
</tr>
<tr>
<td>CTX</td>
<td>Centrex</td>
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<td><strong>D</strong></td>
<td>Definition</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------------------------------------</td>
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<tr>
<td>DA</td>
<td>directory assistance</td>
</tr>
<tr>
<td>DBM</td>
<td>database management</td>
</tr>
<tr>
<td>DDD</td>
<td>direct distance or domestic dialing</td>
</tr>
<tr>
<td>DEL</td>
<td>delete</td>
</tr>
<tr>
<td>DEST</td>
<td>destination</td>
</tr>
<tr>
<td>DIGMAN</td>
<td>digital manipulation</td>
</tr>
<tr>
<td>DN</td>
<td>directory number</td>
</tr>
<tr>
<td>DNIS</td>
<td>dialed number identification service</td>
</tr>
<tr>
<td>DOW</td>
<td>day of week</td>
</tr>
<tr>
<td>DOY</td>
<td>day of year</td>
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<td>DP</td>
<td>dial plan</td>
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<td>DP-ID</td>
<td>dial-plan identification</td>
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<td>DPC</td>
<td>destination point code</td>
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<tr>
<td>DSC</td>
<td>descending order</td>
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<tr>
<td>DT</td>
<td>CAS DTMF endpoints</td>
</tr>
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<td>DTMF</td>
<td>dual tone multifrequency</td>
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<table>
<thead>
<tr>
<th><strong>E</strong></th>
<th>Definition</th>
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<tbody>
<tr>
<td>EMEA</td>
<td>Europe, Middle East, and Asia</td>
</tr>
<tr>
<td>EMG</td>
<td>emergency</td>
</tr>
<tr>
<td>EMS</td>
<td>Element Management System</td>
</tr>
<tr>
<td>ENUM</td>
<td>electronic number mapping</td>
</tr>
<tr>
<td>EPOM</td>
<td>Extensible Provisioning and Operations Manager</td>
</tr>
</tbody>
</table>
Glossary

F
FA   faulty
FA-RB faulty remotely blocked
FAS  facility associated signaling
FGD  Feature Group D
FS   Feature Server

G
GAP  generic address parameter
GRP  group
GTD  Generic Transparency Descriptor
GW   gateway

H
HNPA home numbering plan area

I
IAM  initial address message
ID   identification
IDDD international direct dial domestic
IDs  identification
INFO information
INTL international
INTL-OPR international operator
ISDN Integrated Services Digital Network
ISUP ISDN user part
IT   ISUP trunk
ITP  IP transfer point
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITU</td>
<td>International Telecommunication Union</td>
</tr>
<tr>
<td>IVR</td>
<td>interactive voice response</td>
</tr>
<tr>
<td>LATA</td>
<td>local access transport area</td>
</tr>
<tr>
<td>LB</td>
<td>loop-back</td>
</tr>
<tr>
<td>LCR</td>
<td>least cost routing</td>
</tr>
<tr>
<td>LECOSS</td>
<td>local exchange carrier operations support system</td>
</tr>
<tr>
<td>LNP</td>
<td>local number portability</td>
</tr>
<tr>
<td>LRN</td>
<td>local routing number</td>
</tr>
<tr>
<td>LRU</td>
<td>least recently used</td>
</tr>
<tr>
<td>LS</td>
<td>load sharing</td>
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<tr>
<td>LSA</td>
<td>local service area</td>
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<tr>
<td>MAX</td>
<td>maximum</td>
</tr>
<tr>
<td>MD</td>
<td>MF FGD package</td>
</tr>
<tr>
<td>MF</td>
<td>multifrequency</td>
</tr>
<tr>
<td>MGCP</td>
<td>Media Gateway Control Protocol</td>
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<tr>
<td>MGW</td>
<td>media gateway</td>
</tr>
<tr>
<td>MIN</td>
<td>minimum</td>
</tr>
<tr>
<td>MLHG</td>
<td>Multi-line Hunt Group</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>MO</td>
<td>MF operator trunk</td>
</tr>
<tr>
<td>MRU</td>
<td>most recently used</td>
</tr>
<tr>
<td>MS</td>
<td>CAS MF endpoints</td>
</tr>
<tr>
<td>MSG</td>
<td>message</td>
</tr>
<tr>
<td>MT</td>
<td>MF terminating trunk</td>
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<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>not applicable</td>
</tr>
<tr>
<td>NA</td>
<td>not applicable</td>
</tr>
<tr>
<td>NANP</td>
<td>North American Numbering Plan</td>
</tr>
<tr>
<td>NAS</td>
<td>network access server</td>
</tr>
<tr>
<td>NAT</td>
<td>national</td>
</tr>
<tr>
<td>NAT-OPR</td>
<td>national operator</td>
</tr>
<tr>
<td>NCT</td>
<td>network continuity test</td>
</tr>
<tr>
<td>NDC</td>
<td>national destination code</td>
</tr>
<tr>
<td>NF</td>
<td>non-faulty</td>
</tr>
<tr>
<td>NF-RB</td>
<td>non-faulty remotely blocked</td>
</tr>
<tr>
<td>NFAS</td>
<td>non-facility associated signaling</td>
</tr>
<tr>
<td>NLB</td>
<td>network loop-back</td>
</tr>
<tr>
<td>NOA</td>
<td>nature of address</td>
</tr>
<tr>
<td>NPA</td>
<td>numbering plan area</td>
</tr>
<tr>
<td>NS0</td>
<td>network specific (111 1000)</td>
</tr>
<tr>
<td>NS1</td>
<td>network specific (111 1001)</td>
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<td>NS2</td>
<td>network specific (111 1010)</td>
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<td>NS5</td>
<td>network specific (111 1101)</td>
</tr>
<tr>
<td>NS6</td>
<td>network specific (111 1110)</td>
</tr>
</tbody>
</table>
NTWK

Network

NUM

Number

O

OBCSM

Originating basic call state machine

OCN

Original called number

ODD

Odd-numbered

ODR

Origin dependent routing

OLI

Originating line information

OPR

Operator

OPER

Operational

P

PBX

Private branch exchange

PC

Point code

PCS

Personal communications services

PFX

Prefix

PIC

Point in call, presubscribed interexchange carrier

PKG

Package

POP

Point of presence

POTS

Plain old telephone service

PSTN

Public switched telephone network

Q

QOR

Query on release

QOS

Quality of service
### Glossary

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>RACF</td>
<td>remote activation of call forwarding</td>
</tr>
<tr>
<td>RAND</td>
<td>random</td>
</tr>
<tr>
<td>RDN</td>
<td>Redirecting Number Information Element</td>
</tr>
<tr>
<td>REL</td>
<td>release</td>
</tr>
<tr>
<td>RID</td>
<td>route identification</td>
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<tr>
<td>RN</td>
<td>routing number</td>
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<tr>
<td>RPF</td>
<td>registration and profiling tool</td>
</tr>
<tr>
<td>RR</td>
<td>round robin</td>
</tr>
<tr>
<td>RRQ</td>
<td>registration request</td>
</tr>
<tr>
<td>S1</td>
<td>severity 1</td>
</tr>
<tr>
<td>S2</td>
<td>severity 2</td>
</tr>
<tr>
<td>S3</td>
<td>severity 3</td>
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<tr>
<td>S4</td>
<td>severity 4</td>
</tr>
<tr>
<td>SAC</td>
<td>service access code</td>
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<tr>
<td>SCP</td>
<td>service control point</td>
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<tr>
<td>SEL</td>
<td>selection</td>
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<tr>
<td>SEQ</td>
<td>sequential</td>
</tr>
<tr>
<td>SIP</td>
<td>Session Initiation Protocol</td>
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<tr>
<td>SOFTSW</td>
<td>Session Initiation Protocol (SIP)</td>
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<tr>
<td>SP</td>
<td>service provider</td>
</tr>
<tr>
<td>SS7</td>
<td>Signaling System 7</td>
</tr>
<tr>
<td>SUB</td>
<td>subscriber</td>
</tr>
<tr>
<td>SUB-OPR</td>
<td>subscriber operator</td>
</tr>
<tr>
<td>SUPP</td>
<td>supported</td>
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</tbody>
</table>
Glossary

T

TAC  Technical Assistance Center
TBCSM  terminating basic call system manager
TCL  tool command language
TDM  telecommunications data link monitor
TG  trunk group
TGN  trunk group number
TM  trunk member
TMR  timer
TNS  transit network selection
TOD  time of day
TSAP  transport service access point
TW  time weather call

U

UAN  universal access number
URL  uniform resource locator
US  United States
USA  United States of America

V

VARCHAR  variable character
VSC  Vertical Service Code

W