



Domain-Based Routing Feature Module

Feature History

Release	Modification
9.8	This feature was introduced on the PGW 2200 Softswitch.

This document describes the Domain-Based Routing (DBR) feature in the following sections.

- [Feature Description, page 1](#)
- [Configuring Domain-Based Call Processing, page 3](#)
- [Call Redirection Handling, page 10](#)
- [Updated CDR Viewer, page 13](#)
- [Dial Plan Procedures, page 14](#)
- [MML Command Reference, page 25](#)
- [Software Changes for This Feature, page 35](#)
- [Provisioning Worksheets, page 52](#)
- [Glossary, page 58](#)
- [Obtaining Documentation and Submitting a Service Request, page 58](#)

Feature Description

DBR enhances the PGW 2200 Softswitch analysis and routing functions to allow the PGW 2200 Softswitch to route calls based on user and domain names. These changes allow the PGW 2200 Softswitch to simultaneously route calls using E.164 numbers, domain names, user names, or a combination of E.164 and non-E.164 data.

DBR also introduces domain-based call screening functions and translation tables to map E.164 numbers to domain and user names.



Benefits

This feature provides the following benefits:

- Routing based on user and domain name together with existing E.164 analysis
- New call features for domain-based calls, including
 - Screening based on source domain name
 - Translation from URI to E.164 numbers
 - The ability to specify a source domain
- Session Initiation Protocol (SIP) 302 Redirection Rejection—The capability to reject a SIP 302 request either unconditionally or in the case where the Contact header is non-E.164.
- SIP Refer Rejection—The capability to reject a SIP Refer request unconditionally or when the Refer-To header does not contain an E.164 number.

Prerequisites

The PGW 2200 Softswitch must be running PGW 2200 Softswitch Software Release 9.8(1). Prerequisites for this release can be found in the *Release Notes for the PGW 2200 Softswitch Software Release 9.8(1)* at

http://www.cisco.com/en/US/partner/docs/voice_ip_comm/pgw/9/release/note/rn981.html

Restrictions or Limitations

- DBR is supported for SIP only.
- This feature does not support DBR for SIP calls that are transmitted via EISUP.
- Lawful Intercept is not supported for calls routed based on source domain, destination domain, or username.
- The IP_SOURCE_SCREEN result type is supported for blacklist screening only.
- The IP_SET_SOURCE_DOMAIN result type is supported for preanalysis and A- and B-number analysis only.

Related Features and Technology

The following features are related to DBR:

- SIP Profiles
- SIP Loose Routing
- SIP-I Protocol
- P-Asserted headers
- Remote-Party-Id headers
- Enhanced LNP

Related Documents

This document contains information that is strictly related to this feature. The documents that contain additional information related to the PGW 2200 Softswitch are at

http://www.cisco.com/en/US/products/hw/vcallcon/ps2027/tsd_products_support_series_home.html

Supported Standards, MIBs, and RFCs

This section identifies the new or modified standards, MIBs, and RFCs that are supported by this feature.

Standards

No new or modified standards are supported by this feature.

MIBs

No new or modified MIBs are supported by this feature. For more information on the MIBs used in the PGW 2200 Softswitch software, see the *PGW 2200 Softswitch MIBs* at

http://www.cisco.com/en/US/products/hw/vcallcon/ps2027/prod_technical_reference_list.html

RFCs

No new or modified RFCs are supported by this feature.

Configuring Domain-Based Call Processing

DBR introduces a domain routing policy (DRP) table, which allows you to configure the PGW 2200 Softswitch to analyze calls based on user and domain names. The DRP table establishes a separate preanalysis structure for calls that use domain names rather than E.164 numbers.

The following sections describe how to use the DRP table:

- [Understanding the DRP Table](#)
- [Using the DRP Table](#)

Understanding the DRP Table

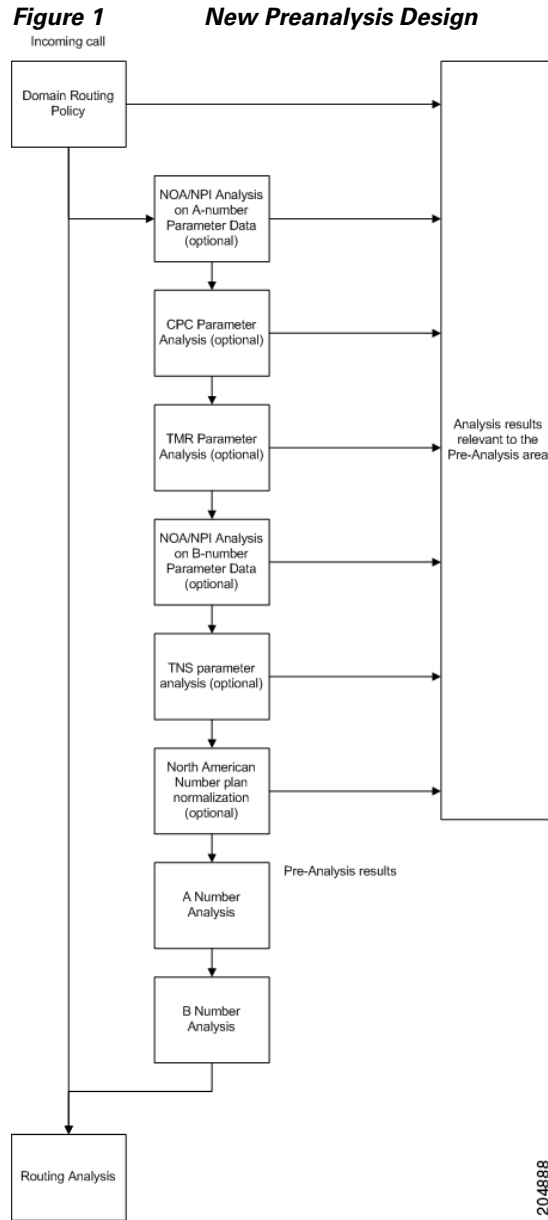
The PGW 2200 Softswitch uses the DRP table to analyze calls as follows:

- The PGW 2200 Softswitch enters DRP processing only if the source domain is populated.
- If a call contains domain information and E.164 information the PGW 2200 Softswitch completes DRP processing. If the PGW 2200 Softswitch cannot obtain routing from DRP processing, it proceeds to the next preanalysis table (NOA_A).
- If a call contains domain information only, the PGW 2200 Softswitch completes DRP processing and exits the preanalysis stage.

**Note**

The IP_DEST_TRANS result type enables more flexible call routing by allowing you to translate a non-E.164 destination to an E.164 destination (domain to phone number) as well as a non-E.164 destination to another non-E.164 destination (a domain name to another domain name). For more information about translation, see the [“Using the IP_DEST_TRANS Result Type”](#) section on page 18.

Figure 1 shows the new preanalysis design.



For a summary of the current preanalysis design, see the *PGW 2200 Softswitch Release 9.8 Dial Plan Guide*.

Using the DRP Table

The DRP table is a sequential list of result sets that the PGW 2200 Softswitch executes when analyzing domain-based calls. The DRP can contain up to six steps, each of which contain the name of a result set. The DRP table allows you to define the PGW 2200 Softswitch’s domain-based call processing according to your needs.

Table 1 shows a sample DRP table.

Table 1 **Sample Domain Routing Policy Table**

Index	Result Set Name
1	ResultSet1
2	ResultSet2
3	ResultSet3
4	ResultSet4
5	ResultSet5
6	ResultSet6

For existing result set types, the PGW 2200 Softswitch processes the result sets sequentially. Analysis ends when the PGW 2200 Softswitch has processed all the steps in the table or it reaches a DRP_EXIT result type.

However, DBR also introduces several new result types that can contain references to other result sets. For more information about the new result types, see the [“New TimesTen Tables” section on page 6](#).

New TimesTen Tables

The DBR feature adds the following new tables to the TimesTen database:

- Source Domain/Username Blacklist Screening table
- Destination Domain/Username translation table
- Route selector table

The PGW 2200 Softswitch uses TimesTen for these functions in order to accommodate the potentially large volume of entries. For more information about the new TimesTen tables, see the [“Dial Plan Components” section on page 39](#).

New Dial Plan Tables

This feature also introduces two new dial plan tables:

- \$DRP—Allows you to define the result sets that the PGW 2200 Softswitch executes at each step in the DRP table. For more information, see the [“Domain Routing Policy \(DRPTABLE\) Table” section on page 39](#).
- \$DomainStrings—Allows you to define domains for use with the IP_SET_SOURCE_DMN result type. For more information, see the [“Domain Strings \(DMNMODSTRING\) Table” section on page 39](#).

New Result Types

The PGW 2200 Softswitch feature introduces six new result types that allow you to configure the PGW 2200 Softswitch to process domain-based calls. The new result types are

- **IP_SOURCE_SCREEN**—Provides screening capabilities for non-E.164 calls. This result is supported for blacklist screening only. For more information, see the [“Using the IP_SOURCE_SCREEN Result Type”](#) section on page 14.
- **IP_SET_SOURCE_DOMAIN**—Allows you to set the source domain name for domain-based calls. This result is supported for preanalysis and A and B number analysis only. For more information, see the [“Using the IP_SET_SOURCE_DMN Result Type”](#) section on page 16.
- **IP_DEST_TRANS**—Translates a destination into another format, such as an E.164 destination (domain) to a non-E.164 destination (phone number). You can also use IP_DEST_TRANS to translate a non-E.164 destination to another non-E.164 destination (a domain name to another domain name). For more information, see the [“Using the IP_DEST_TRANS Result Type”](#) section on page 18.
- **IP_ROUTE_SEL**—Allows the PGW 2200 Softswitch to select a route based on a destination user or domain name, source user or domain name, or a combination of the two. For more information, see the [“Using the IP_ROUTE_SEL Result Type”](#) section on page 20.
- **DRP_EXIT**—Directs the PGW 2200 Softswitch to exit from the DRP stage of preanalysis. For more information, see the [“Using the DRP_EXIT Result Type”](#) section on page 23.

**Note**

The IP_SET_SOURCE_DOMAIN result type is available in A- and B- analysis. All other result types are available in preanalysis only.

Nested Result Sets

This feature allows you to create a nested group of result sets that allows for more complex handling of domain-based calls. The IP_SOURCE_SCREEN, IP_DEST_TRANS, and IP_ROUTE_SEL result types have two data words, foundSetName (dw3) and notFoundSetName (dw4), that direct the PGW 2200 Softswitch to execute another result set. Applying a nested result set diverts the PGW 2200 Softswitch from normal processing of the DRP table until all nested results have been processed.

When the PGW 2200 Softswitch executes a nested result, it performs a database lookup and records the outcome (found or not found). If the result value is found in the database and dw3 is set, the PGW 2200 Softswitch executes the result set in dw3. If the result value is not found in the database and dw4 is set, the PGW 2200 Softswitch executes the result set in dw4; otherwise it moves to the next result in the result set.

To create a nested result set, use the foundSetName and notFoundSetName data words to specify result sets that the PGW 2200 Softswitch executes. You can nest results up to three levels.

**Note**

You can specify in a DRP step and also reference it in the foundSetName and notFoundSetName data words.

Nested Result Processing Example

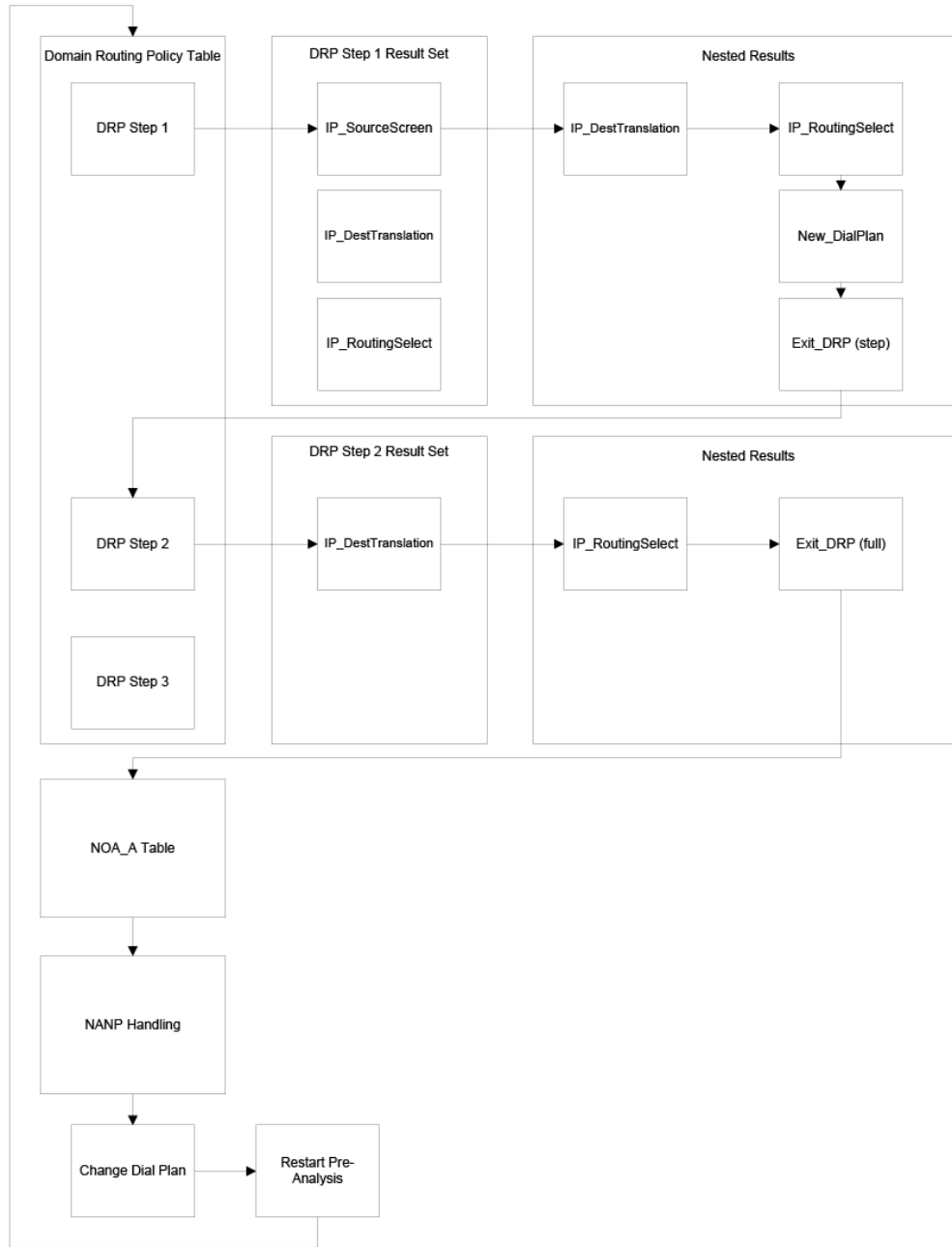
The following example shows a complex implementation of nested result sets and explains how the PGW 2200 Softswitch processes the configuration.

In this example, the following assumptions are made:

- The received source and destination are all non-E.164.
- The Dplongest match feature is enabled.

Figure 2 shows the PGW 2200 Softswitch processing of a set of results.

Figure 2 Sample Preanalysis Using Nested Results



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The PGW 2200 Softswitch processes the result set configuration as follows:

1. The PGW 2200 Softswitch receives an incoming call and begins to process it using a dial plan. The first step in the DRP table is a result set that contains the following results:
 - IP_SourceScreen
 - IP_Dest_Trans
 - IP_RoutingSelect
2. The PGW 2200 Softswitch executes the IP_SourceScreen result, and the source number is not found in the screening table. However, IP_SourceScreen data word 4 (notFoundSetName) contains a nested result set.
3. The PGW 2200 Softswitch moves to this result set and executes the first result type, IP_Dest_Trans. The PGW 2200 Softswitch finds a match, but data word 3 (FoundSetName) contains a nested result set.
4. The PGW 2200 Softswitch executes this result set, beginning with IP_RoutingSelect.
5. The PGW 2200 Softswitch collects the New_DialPlan result and exits the DRP when it processes the Exit_DRP result.
6. When the remaining stages of preanalysis are complete, the PGW 2200 Softswitch executes the dial plan changes collected earlier. This means that the PGW 2200 Softswitch restarts preanalysis using the new dial plan.

Call Processing

The following sections describe how the PGW 2200 Softswitch processes a SIP Invite in order to determine a source and list of destinations.

Source Selection

The following sections describe how the PGW 2200 Softswitch determines a source URI.

Single Source URI

DBR does not impact how the PGW 2200 Softswitch determines the source URI for SIP Invites with a single source URI. If the header contains a P-asserted or Remote Party ID (RPID) header, the PGW 2200 Softswitch uses this header to determine the source URI; otherwise, the PGW 2200 Softswitch uses the From header to determine the source URI.

Multiple Source URIs

The PGW 2200 Softswitch evaluates SIP Invites with multiple source URIs as follows:

- If the Invite contains a P-Asserted or RPID header, the PGW 2200 Softswitch uses it to define the source URI.
- If no P-asserted or RPID header is present, the PGW 2200 Softswitch uses the URI in the From header.

If the Invite contains multiple P-Asserted or RPID headers, the PGW 2200 Softswitch uses the following rules:

- If all the P-Asserted or RPID headers are domains (non-E.164), the PGW 2200 Softswitch uses the first header found in analysis as the source.
- If one of the P-Asserted or RPID contains a phone number (E.164), the PGW 2200 Softswitch uses it as the source and as the A number used in analysis. The settings for respectSIPUriUserParam can override this behavior.
- If all the P-Asserted or Remote-Party-Id headers are phone numbers (E.164), the PGW 2200 Softswitch uses the first header found in analysis as the source.

Destination Selection

The PGW 2200 Softswitch determines the destination URI by building a prioritized list of destination URIs on the SipIngressRoutingControl trunk group property settings.

SipIngressRoutingControl defines the preferred SIP header used for ingress routing decisions as determined from the initial Invite message. It has the following values:

- 1—Explicit Route header: The PGW 2200 Softswitch uses the Route header, followed by the Requestline header, followed by the To header.
- 2—RequestLine: The PGW 2200 Softswitch uses the Requestline header, followed by the To header.
- 3—To header: The PGW 2200 Softswitch uses the To header.

For more information about SipIngressRoutingControl, see the *PGW 2200 Softswitch Release 9.8 Provisioning Guide*.

Analysis

The PGW 2200 Softswitch continues DRP analysis until it has evaluated all the destinations in the SIP Invite header. If the PGW 2200 Softswitch does not find a route, it restarts analysis on the next destination in the header. The PGW 2200 Softswitch exits the DRP stage as soon as it finds a route. The PGW 2200 Softswitch incorporates the SIPAttributes property value of a trunk when determining a route.

The PGW 2200 Softswitch records source and destination information for incoming and outgoing calls in the Call Data Records (CDRs). For more information about CDRs, see the [“Billing Interface” section on page 36](#).

Call Redirection Handling

Prior to the introduction of this feature, the PGW 2200 Softswitch supported call redirection using recursion, local treatment, and backward transit. The following sections describe how the PGW 2200 Softswitch handles call redirection using the DBR feature.

- [Call Redirection for Non-E.164 Headers](#)
- [SIP 302 Rejection](#)
- [SIP Refer Rejection](#)

Call Redirection for Non-E.164 Headers

Table 2 summarizes how the PGW 2200 Softswitch handles call redirection for calls with non-E.164 URIs.

Table 2 Call Redirection for Non-E.164 URIs

Inbound SIP Trunk Supports E.164	Inbound SIP Trunk Does Not Support E.164	Outbound SIP Trunk Supports E.164	Outbound SIP Trunk Does Not Support E.164
Recursion	Local Treatment	Recursion	Local treatment

SIP 302 Rejection

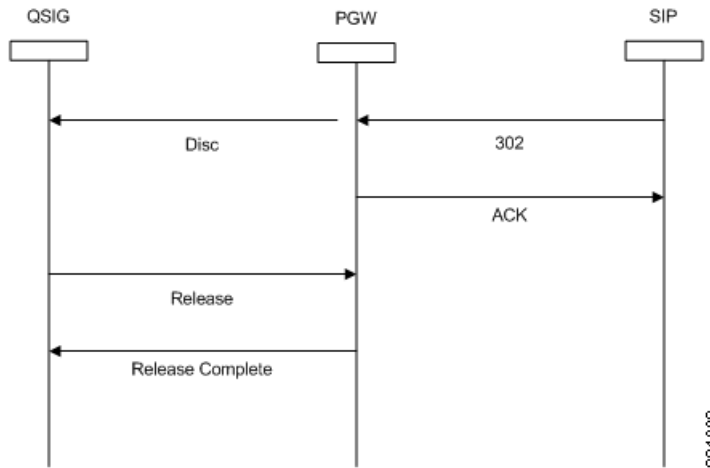
This feature adds the ability for the PGW 2200 Softswitch to reject a SIP 302 (Moved Temporarily/redirection) request unconditionally or when the Contact header does not contain an E.164 number. You can apply this capability to

- Trunks that do not support non-E.164 URIs. This setting helps ensure that the PGW 2200 Softswitch does not redirect domain-based calls to a trunk that cannot support them.
- Trunks that cannot complete backward transit for the 302 request when the incoming trunk configuration indicates that it does not support domain-based calls.

To use this capability, use data words 1 and 2 for the FACILITY result type. For more information about the updates to the FACILITY result type, see the “FACILITY” section on page 47.

Figure 3 shows the call flow for 302 rejection.

Figure 3 SIP 302 Redirection Rejection



SIP Refer Rejection

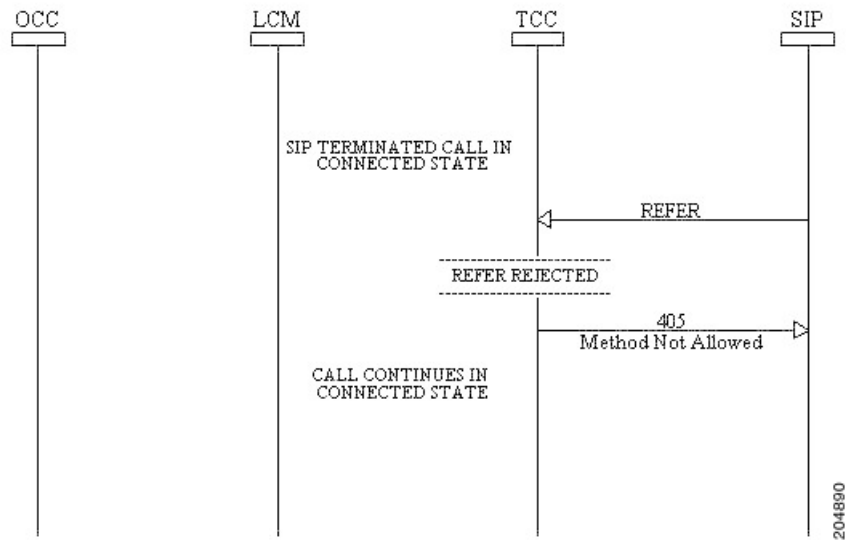
DBR introduces the ability to reject a SIP Refer request unconditionally or when the Refer-To header does not contain an E.164 number. You can apply this capability to

- Trunks that do not support non-E.164 URIs. This helps ensure that the PGW 2200 Softswitch does not refer domain-based calls to a trunk that cannot support them.
- Trunks that cannot complete backward transit for the Refer request when the incoming trunk configuration indicates that it does not support domain-based calls.

To use this capability, use data words 1 and 2 for the FACILITY result type. For more information about the updates to the FACILITY result type, see the “[FACILITY](#)” section on page 47.

Figure 4 shows the call flow for a Refer rejection.

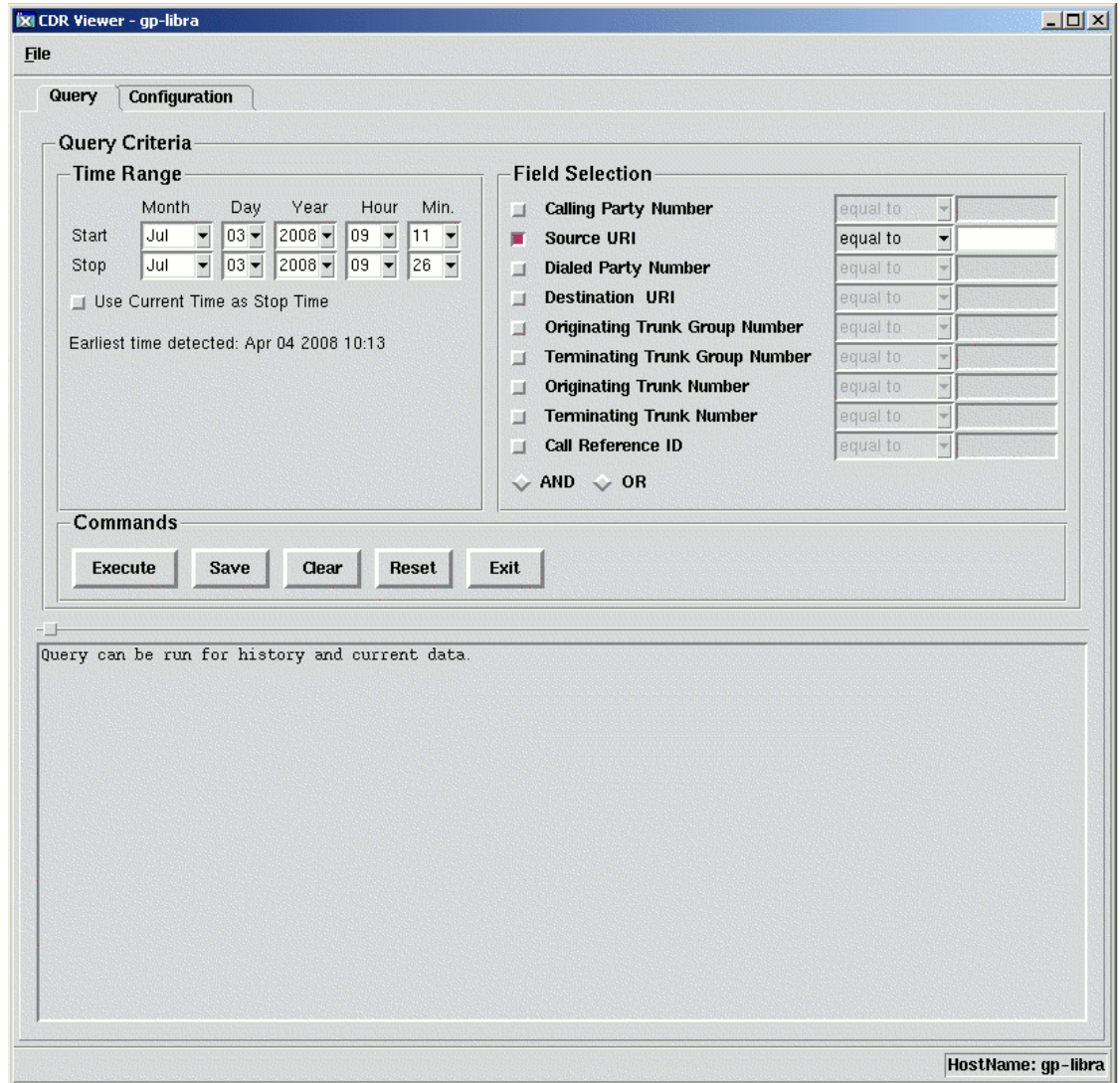
Figure 4 SIP Refer Rejection



Updated CDR Viewer

DBR updates the CDR viewer utility for use with domain-based calls. The new interface incorporates the source and destination URI. [Figure 5](#) shows the new interface.

Figure 5 CDR Viewer



For more information about the CDR viewer, see the *PGW 2200 Softswitch Software Release 9 Operations, Maintenance, and Troubleshooting Guide*.

Dial Plan Procedures

The following sections describe how to use the new result types that allow you to control how the PGW 2200 Softswitch dial plan processes domain-based calls:

- [Using the IP_SOURCE_SCREEN Result Type](#)
- [Using the IP_SET_SOURCE_DMN Result Type](#)
- [Using the IP_DEST_TRANS Result Type](#)
- [Using the IP_ROUTE_SEL Result Type](#)
- [Using the DRP_EXIT Result Type](#)

For more information on the tasks related to creating a dial plan, see the *PGW 2200 Softswitch Release 9.8 Dial Plan Guide*.

Using the IP_SOURCE_SCREEN Result Type

The IP_SOURCE_SCREEN result type allows you to screen non-E.164 calls based on a source URI. This capability allows you to restrict calling permissions for a user or group of users on your network, which can be useful for purposes such as billing or security.

This result is supported for blacklist screening only. The following sections describe how to use the IP_SOURCE_SCREEN result type.

Adding the IP_SOURCE_SCREEN Result Type

Use the following steps to add the IP_SOURCE_SCREEN result type:

Step 1 Log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command to add a dial plan:

```
mml> numan-add:dialplan:custgrpid="dp11"
```

Step 2 Enter the following command to add a result set:

```
mml> numan-add:resultset:custgrpid="dp11",name="set1"
```

Step 3 Enter the following command to add the service table entry:

```
mml> numan-add:service:custgrpid="dp11", name="group1"
```

Step 4 Now add the IP Source Screen result type to a result set and define the result set in the result table:

```
mml> numan-add:resulttable:custgrpid= "dp11", name="result1", resulttype=
"IP_SOURCE_SCREEN", dw1="1", dw2="group1", dw3="foundResultSet", dw4="notFoundResultSet",
setname="set1"
```



Note Data words 2, 3, and 4 are optional.

Where:

- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
- *name*—The name of the result table in the resultset.

- *resulttype*—Indicates the result type being provisioned.
- *screenType* (dw1)—The type of blacklist screen to apply. Valid values are
 - 1= Blacklist screening of source (username + host domain)
 - 2= Blacklist screening of source username only
 - 3= Blacklist screening of source host domain only
- *serviceName* (dw2)—The name of the service.
- *foundSetName* (dw3)—The result set that the PGW 2200 Softswitch executes if the user or domain name matches an entry in the blacklist.
- *notFoundSetName* (dw4)—The result set that the PGW 2200 Softswitch executes if the user or domain name does not match an entry in the blacklist.
- *setname*—The name of an existing result set.
- Repeat Step 4, as necessary, to add IP_SOURCE_SCREEN result types to the result table.

Modifying the IP_SOURCE_SCREEN Result Type

To modify the IP_SOURCE_SCREEN result type, complete the following steps:

- Step 1** To modify the result type, log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command:

```
mml> numan-ed:resulttable: custgrpid="dp11",name="result1", resulttype="IP_SOURCE_SCREEN",
dw1="1", dw2="group1", dw3="foundResultSet", dw4="notFoundResultSet", setname="set1"
```

Where:

- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
- *name*—The name of the result table in the resultset.
- *resulttype*—Indicates the result type that you are modifying.
- *screenType* (dw1)—The type of blacklist screen to apply. Valid values are:
 - 1= Blacklist screening of source (username + host domain)
 - 2= Blacklist screening of source username only
 - 3= Blacklist screening of source host domain only
- *serviceName* (dw2)—The name of the service.
- *foundSetName* (dw3)—The result set that the PGW 2200 Softswitch executes if the user or domain name matches an entry in the blacklist.
- *notFoundSetName* (dw4)—The result set that the PGW 2200 Softswitch executes if the user or domain name does not match an entry in the blacklist.
- *setname*—The name of an existing result set.

- Step 2** To verify that the command was executed successfully, enter the following command:

```
mml> numan-rtrv:resulttable:custgrpid="dp11", setname="set1", name="result1"
```

- Step 3** Repeat Steps 1 and 2, as necessary, to modify the IP_SOURCE_SCREEN result type in the dial plan.
-

Deleting the IP_SOURCE_SCREEN Result Type

To delete an IP_SOURCE_SCREEN entry in the result table, complete the following steps:

- Step 1** Log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command:

```
mml> numan-dlt:resulttable:custgrpid= "dp11", name= "result1",
resulttype="IP_SOURCE_SCREEN", dw1="1", dw2="group1", dw3="foundResultSet",
dw4="notFoundResultSet", setname="set1"
```

This command deletes the IP_SOURCE_SCREEN result type from the result table.

- Step 2** To verify that the command was executed successfully, enter the command:

```
mml> numan-rtrv:resulttable:custgrpid="dp11", name="result1", setname="set1"
```

- Step 3** Repeat Steps 1 and 2, as necessary, to remove other IP_SOURCE_SCREEN result types from the result table.
-

Using the IP_SET_SOURCE_DMN Result Type

The IP_SET_SOURCE_DMN result type allows you to set the source domain name for domain-based calls. You can use this capability to hide the origin of a call from nontrusted users or disguise the origin of a call for business purposes. This result is supported for preanalysis and A and B number analysis only.

The following sections describe how to use the IP_SET_SOURCE_DMN result type.

Adding the IP_SET_SOURCE_DMN Result Type

Use the following steps to add the IP_SET_SOURCE_DMN result type:

- Step 1** Log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command to add a dial plan:

```
mml> numan-add:dialplan:custgrpid="dp12",overdec="yes"
```

- Step 2** Enter the following command to add a result set:

```
mml> numan-add:resultset:custgrpid="dp12",name="set3"
```

- Step 3** Enter the following command to add a new domain string:

```
numan-add:dmnmodstring: custgrpid="dp12",name="domainname1", dmnstring="dmnstring1"
```

- Step 4** Add the IP_SET_SOURCE_DMN result type to a result set and define the result set in the result table:

```
numan-add:resulttable:custgrpid="dp12", name="result1", resulttype="IP_SET_SOURCE_DMN",
dw1="domainname1", dw2="0", dw3="0", setname="set3"
```

Where:

- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
- *name*—The name of an existing result table.
- *resulttype*—Indicates the result type being provisioned.
- *dmnString* (dw1)—An existing domain name string in the *dmnmodstring* table.
- *applicationStatus* (dw2)—Specifies whether the command can override an existing entry. 0 indicates that the PGW 2200 Softswitch overwrites the source domain on the outgoing side; 1 specifies that the PGW 2200 Softswitch does not overwrite the original source domain obtained during call analysis.

**Note**

For an SS7-originated call, setting *dw2* to 0 or 1 has the same effect because there is no source domain. For a SIP-originated call, the *dw2* settings determine whether the PGW 2200 Softswitch overwrites the source domain obtained during call analysis.

- *applyTo* (*dw3*)—Specifies the headers that the PGW 2200 Softswitch rewrites with the new source domain. 0 sets the PGW 2200 Softswitch to apply the command to all source headers that are present; 1 sets the PGW 2200 Softswitch to apply the command to the current source header only.

**Note**

Bear in mind that trunk group property settings control which headers the PGW 2200 Softswitch inserts into a call; the PGW 2200 Softswitch does not insert new headers such as From, P-asserted, or RPID (remote party ID) headers unless you set the appropriate trunk group properties.

- *setname*—The name of an existing result set.

Step 5 Repeat Step 4, as necessary, to add `IP_SET_SOURCE_DMN` result types to the result table.

Modifying the IP_SET_SOURCE_DMN Result Type

To modify the `IP_SET_SOURCE_DMN` result type, complete the following steps:

Step 1 Log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command to modify a line in the result table:

```
mml> numan-ed:resulttable:custgrpid="dp12", name="result1",
resulttype="IP_SET_SOURCE_DMN", dw1="domainname1", dw2="0", dw3="0", setname="set3"
```

Where:

- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
- *name*—The name of an existing result table.
- *resulttype*—Indicates the result type that you are modifying.
- *dmnString* (dw1)—An existing domain name string in the *dmnmodstring* table.
- *applicationStatus* (dw2)—Specifies whether the command can override an existing entry. 0 indicates that the command can override an entry; 1 indicates that the command cannot override an existing entry.

- *applyTo* (dw3)—Specifies which source headers to which the PGW 2200 Softswitch applies the command. 0 sets the PGW 2200 Softswitch to apply the command to all source headers that are present; 1 set the PGW 2200 Softswitch to apply the command to the current source header only.
- *setName*—The name of an existing result set.

Step 2 To verify that the command was executed successfully, enter the following command:

```
mml> numan-rtrv:resulttable:custgrpid="dp12",name="result1",setname="set3"
```

If the command succeeds, the output shows the modified result type.

Step 3 Repeat Steps 1 and 2, as necessary, to modify the IP_SET_SOURCE_DMN result type in the dial plan.

Deleting the IP_SET_SOURCE_DMN Result Type

To delete an IP_SET_SOURCE_DMN result type from the result table, complete the following steps:

Step 1 Log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command:

```
mml> numan-dlt:resulttable:custgrpid="dp12",name="result1",resulttype="IP_SET_SOURCE_DMN",dw1="domainname1",dw2="0",dw3="0",setname="set3"
```

This command deletes the IP_SET_SOURCE_DMN result type from the result table.

Step 2 To verify that the command was executed successfully, enter the following command:

```
mml> numan-rtrv:resulttable:custgrpid="dp12",name="result1",setname="set3"
```

If the command succeeds, the output does not show the deleted result type.

Step 3 Repeat Steps 1 and 2, as necessary, to remove IP_SET_SOURCE_DMN result types from the result table.

Using the IP_DEST_TRANS Result Type

The following sections describe how to use the IP_DEST_TRANS result type.

The IP_DEST_TRANS result type can translate between two E.164 or non-E.164 destinations, such as the following:

- A domain to a phone number: rcool@cisco.com translates to 1234567890@cisco.com.
- A phone number to a domain: 1234567890@cisco.com translates to rcool@cisco.com.
- A domain to another domain: rcool@cisco.com translates to rcool@example.com.

Adding the IP_DEST_TRANS Result Type

Perform the following steps to add the IP_DEST_TRANS result type:

Step 1 Log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command to add a dial plan:

```
mml> numan-add:dialplan:custgrpid="dp12",overdec="yes"
```

Step 2 Enter the following command to add a result set:

```
mm1> numan-add:resultset:custgrpid="dp12",name="dmnrtgset1"
```

Step 3 Enter the following command to add a service name to the service table:

```
mm1> numan-add:service:custgrpid="dp12",name="set3"
```

Step 4 Now add the IP_DEST_TRANS result type to a result set and define the result set in the result table:

```
mm1> numan-add:resulttable: custgrpid="dp12", name="result1", resulttype="IP_DEST_TRANS",  
dw1="1", dw2="set3", dw3="foundSet", dw4="notFoundSet", setname="dmnrtgset1"
```

Where:

- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
- *name*—The name of an existing result table.
- *resulttype*—Indicates the result type that you are adding.
- *inputAndAction* (dw1)—Determines whether the PGW 2200 Softswitch translates the destination of the user and host (1) or the destination host only (2).
- *serviceName*(dw2)—An existing service name.
- *foundSetName*(dw3)—An existing result set that the PGW 2200 Softswitch executes if the user or domain name matches an entry in the table.
- *notFoundSetName*(dw4)—An existing result set that the PGW 2200 Softswitch executes if the user or domain name does not match an entry in the table.



Note

You must define a result set before referencing it in data word 3 or 4. For this example, we assume that you have already defined the result sets referenced in the foundSet and notFoundSet parameters.

- *setname*—The name of an existing result set.

Step 5 Repeat Step 4, as necessary, to add IP_DEST_TRANS result types to the result table.

Modifying the IP_DEST_TRANS Result Type

To modify the IP_DEST_TRANS result type, complete the following steps:

Step 1 To modify an entry in the IP_DEST_TRANS table, log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command:

```
mm1> numan-ed:resulttable: custgrpid="dp12", name="result1", resulttype="IP_DEST_TRANS",  
dw1="1", dw2="set3", dw3="foundSet", dw4="notFoundSet", setname="dmnrtgset1"
```

Where:

- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
- *name*—The name of an existing result table.
- *resulttype*—Indicates the result type being provisioned.

- *inputAndAction* (dw1)—Determines whether the PGW 2200 Softswitch translates the destination of the user and host (1) or the destination host only (2).
- *serviceName*(dw2)—The name of an existing service.
- *foundSetName*(dw3)—The result set that the PGW 2200 Softswitch executes if the user or domain name matches an entry in the table.
- *notFoundSetName*(dw4)—The result set that the PGW 2200 Softswitch executes if the user or domain name does not match an entry in the table.

**Note**

You must define a result set before referencing it in data word 3 or 4.

- *setname*—The name of an existing result set.

This command modifies the IP_DES_TRANS result type in the result table.

Step 2 To verify that the command was executed successfully, enter the following command:

```
mml> numan-rtrv:resulttable: custgrpid="dp12", name="result1", setname="dmnrtgset1"
```

If the command succeeds, the output shows the modified result type.

Step 3 Repeat Steps 1 and 2, as necessary, to modify the IP_DES_TRANS result type in the dial plan.

Deleting the IP_DEST_TRANS Result Type

To delete an IP_DEST_TRANS result type from the result table, complete the following steps:

Step 1 Log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command:

```
mml> numan-dlt:resulttable: custgrpid="dp12", name="result1", resulttype="IP_DEST_TRANS", dw1="1", dw2="set3", dw3="foundSet", dw4="notFoundSet", setname="dmnrtgset1"
```

This command deletes the IP_DEST_TRANS result type from the result table.

Step 2 To verify that the command was executed successfully, enter the following command:

```
mml> numan-rtrv:resulttable: custgrpid="dp12", name="result1", setname="dmnrtgset1"
```

If the command succeeds, the output does not show the deleted result type.

Repeat Steps 1 and 2, as necessary, to remove IP_DEST_TRANS result types from the result table.

Using the IP_ROUTE_SEL Result Type

The IP_ROUTE_SEL result type allows the PGW 2200 Softswitch to route domain-based calls according to their destination user or domain name, source user or domain name, or a combination of the two. This result replicates the routing options for E.164 calls, while providing more flexibility about the information used to route the call.

The following sections describe how to use the IP_ROUTE_SEL result type.

Adding the IP_ROUTE_SEL Result Type

Use the following steps to add the IP_ROUTE_SEL result type:

Step 1 Log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command to add a dial plan:

```
mml> numan-add:dialplan:custgrpid="dp12", overdec="yes"
```

Step 2 Enter the following command to add a new result set:

```
mml> numan-add:resultset:cusgrpid="dp12", name="dmnrtgset1"
```

Step 3 Enter the following command to add a service name to the service table:

```
mml> numan-add:service:custgrpid="dp12", name="set3"
```

Step 4 Now add the IP_ROUTE_SEL result type to a result set and define the result set in the result table:

```
mml> numan-add:resulttable: custgrpid="dp12", name="result1", resulttype="IP_ROUTE_SEL",  
dw1="1", dw2="set3", dw3="foundSet", dw4="notFoundSet", setname="dmnrtgset1"
```

Where:

- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
- *name*—The name of the result table in the resultset.
- *resulttype*—Indicates the result type being provisioned.
- *inputDataType* (dw1)—Specifies the data that the PGW 2200 Softswitch uses to select the route. Valid values are
 - 1 = route selection against destination (user + host)
 - 2 = route selection against destination host only
 - 3 = route selection against source (user and host)
 - 4 = route selection against source host only
 - 5 = route selection against both destination (user and host) and source (user and host)
 - 6 = route selection against both destination (host only) and source (host only)
 - 7 = route selection against both destination (user and host) and source (host only)
 - 8 = route selection against both destination (host only). And source (user and host)
- *serviceName* (dw2)—Service name which must already exist in the \$service table (optional)
- *foundSetName* (dw3)—The result set that the PGW 2200 Softswitch executes if the data matches an entry in the table.
- *notFoundSetName* (dw4)—The result set that the PGW 2200 Softswitch executes if the data does not match an entry in the table.
- *setname*—Result set name. The name you give to the result set. The name can be as many as 20 alphanumeric characters enclosed in straight quotes.

Step 5 Repeat Step 4, as necessary, to add IP_ROUTE_SEL result types to the result table.

Modifying the IP_ROUTE_SEL Result Type

To modify the IP_ROUTE_SEL result type, complete the following steps:

- Step 1** To modify a line in the IP_ROUTE_SEL table, log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command:

```
mml> numan-ed:resulttable: custgrpid="dp12", name="result1", resulttype="IP_ROUTE_SEL",
dw1="1", dw2="set3", dw3="foundSet", dw4="notFoundSet", setname="dmnrtgset1"
```

Where:

- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
- *name*—The name of the result table in the resultset.
- *resulttype*—Indicates the result type being provisioned.
- *inputDataType* (dw1)—Specifies the data that the PGW 2200 Softswitch uses to select the route. Valid values are
 - 1 = route selection against destination (user + host)
 - 2 = route selection against destination host only
 - 3 = route selection against source (user and host)
 - 4 = route selection against source host only
 - 5 = route selection against both destination (user and host) and source (user and host)
 - 6 = route selection against both destination (host only) and source (host only)
 - 7 = route selection against both destination (user and host) and source (host only)
 - 8 = route selection against both destination (host only) and source (user and host)
- *serviceName* (dw2)—Service name which must already exist in the \$service table (optional)
- *foundSetName* (dw3)—The result set that the PGW 2200 Softswitch executes if the data matches an entry in the table.
- *notFoundSetName* (dw4)—The result set that the PGW 2200 Softswitch executes if the data does not match an entry in the table.
- *setname*—Result set name. The name you give to the result set. The name can be as many as 20 alphanumeric characters enclosed in straight quotes.

- Step 2** To verify that the command was executed successfully, enter the following command:

```
mml> numan-rtrv:resulttable: custgrpid="dp12", name="result1", setname="dmnrtgset1"
```

- Step 3** Repeat Steps 1 and 2, as necessary, to modify the IP_ROUTE_SEL result type in the dial plan.

Deleting the IP_ROUTE_SEL Result Type

The IP_ROUTE_SEL result type allows the PGW 2200 Softswitch to select a route based on a destination user or domain name, source user or domain name, or a combination of the two. To delete an IP_ROUTE_SEL result type from the result table, complete the following steps:

- Step 1** Log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command:

```
mml> numan-dlt:resulttable:custgrpid="dp12", setname="dmnrtgset1", name="result1"
```

This command deletes the IP_ROUTE_SEL result type from the result table.

Step 2 To verify that the command was executed successfully, enter the following command:

```
mml> numan-rtrv:resulttable: custgrpid="dp12", setname="dmnrtgset1", name="result1"
```

Step 3 Repeat Steps 1 and 2, as necessary, to remove IP_ROUTE_SEL result types from the result table.

Using the DRP_EXIT Result Type

The DRP_EXIT result type directs the PGW 2200 Softswitch to exit from an individual step of the DRP table or to exit DRP analysis completely. The following sections describe how to use the DRP_EXIT result type.



Note

The DRP_EXIT result type is optional. If you do not use it, the PGW 2200 Softswitch exits from DRP analysis when it has processed all steps in the DRP table and any nested result sets. For more information, see [Nested Result Sets](#).

Adding the DRP_EXIT Result Type

Use the following steps to add the DRP_EXIT result type:

Step 1 Log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command to add a dial plan:

```
mml> numan-add:dialplan:custgrpid="dp12", overdec="yes"
```

Step 2 Enter the following command to add a new result set:

```
mml> numan-add:resultset:cusgrpid="dp12", name="dmnrtgset1"
```

Step 3 Add the DRP_EXIT result type to a result set and define the result set in the result table:

```
mml> numan-add:resulttable: custgrpid="dp12", name="result1", resulttype="DRP_EXIT",  
dw1="1", setname="dmnrtgset1"
```

Where:

- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
- *name*—The name of the result table in the resultset.
- *resulttype*—Indicates the result type being provisioned.
- *drpExitType* (*dw1*)—Specifies the type of exit from preanalysis. Valid values are
 - 1 = Exit current DRP step and move to the next step
 - 2 = Exit from entire DRP stage of preanalysis
- *setname*—Result set name. The name you give to the result set. The name can be as many as 20 alphanumeric characters enclosed in straight quotes.

Step 4 Repeat Step 2, as necessary, to add `DRP_EXIT` result types to the result table.

Modifying the `DRP_EXIT` Result Type

To modify the `DRP_EXIT` result type, complete the following steps:

Step 1 Log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command to modify a line in the result table:

```
mml> numan-ed:resulttable: custgrpid="dp12", name="result1", resulttype="DRP_EXIT",
dw1="1", setname="dmnrtgset1"
```

Where:

- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
- *name*—The name of the result table in the resultset.
- *resulttype*—Indicates the result type being provisioned.
- *drpExitType* (*dw1*)—Specifies the type of exit from preanalysis. Valid values are
 - 1 = Exit current `DRP` Step and move to the next step
 - 2 = Exit from entire `DRP` stage of preanalysis
- *setname*—Result set name. The name you give to the result set. The name can be as many as 20 alphanumeric characters enclosed in straight quotes.

This command modifies the `DRP_EXIT` result type in the result table.

Step 2 To verify that the command was executed successfully, enter the following command:

```
mml> numan-rtrv:resulttable:custgrpid="dp12", setname="dmnrtgset1", name="result1"
```

If the command succeeds, the output shows the modified result type.

Step 3 Repeat Steps 1 and 2, as necessary, to modify the `DRP_EXIT` result type in the dial plan.

Deleting the `DRP_EXIT` Result Type

To delete an `DRP_EXIT` result type from the result table, complete the following steps:

Step 1 Log in to the active PGW 2200 Softswitch, start an MML session, and enter the following command:

```
mml> numan-dlt:resulttable: custgrpid="dp12", setname="dmnrtgset1", name="result1"
```

This command deletes the `DRP_EXIT` result type from the result table.

Step 2 To verify that the command was executed successfully, enter the following command:

```
mml> numan-rtrv:resulttable:custgrpid="dp12", name="result1", resulttype="DRP_EXIT"
```

If the command succeeds, the output does not show the deleted result type.

Step 3 Repeat Steps 1 and 2, as necessary, to remove `DRP_EXIT` result types from the result table.

MML Command Reference

This section documents new, modified, or deleted Man-Machine Language (MML) commands. All other MML commands are documented in the *PGW 2200 Softswitch Software Release 9 MML Command Reference*.

New MML Commands

This section contains the MML commands that are new for this feature.

NUMAN-ADD:DESTTRANS (Release 9.8(1))

Purpose: This MML command adds an entry to the destination username/domain translation table. For more information about the destination username/domain translation table, see the [“Destination Username/Domain Translation \(DESTTRANS\) Table” section on page 40](#).

Syntax:

```
mml> numan-add:desttrans: custgrpid="custgrp",
destdmnstring="destdmnstring", svcname="svcname",
displayname="displayname", username="username", domainname="domainname",
uriparameters= "uriparameters"
```

Input Description:

- *custgrp*id—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
- *destdmnstring*—The destination username (bob@cisco.com) or domain name (cisco.com).
- *svcname*—The MML name of a service.
- *displayname*—The display name for the user, such as BobOffice.

Note RFC 3261 provides for two formats for this parameter: a quoted string or a series of tokens. To use a series of tokens, enter the displayname in normal MML syntax. To use a quoted string, use the escape sequence %22. For example, the display name “TerryOffice” (including quotation marks) is “%22TerryOffice%22”.

- *username*—A username.
- *domainname*—The new domain name.
- *uriparameters*—URI parameters that the PGW 2200 Softswitch adds to the header.

Note The uriparameters value must start with a semicolon.

Output Description:

- COMPLD—The table addition succeeds.
- DENY—The table addition fails.

Examples: The MML command shown in the following example adds one entry in the destination username/domain translation table:

```
mml> numan-add:desttrans: custgrpid="dp11",  
destdmnstring="bob@cisco.com", svcname="destgroup1",  
displayname="BobOffice", username="bjones", domainname="example.com",  
uriparameters=";USER=phone"
```

```
MGC-01 - Media Gateway Controller 2008-08-01 16:40:09.168 EDT
```

```
M   COMPLD  
    "Desttrans"  
    ;
```

Comments: Performance impact category: A

NUMAN-ADD:DMNMODSTRING (Release 9.8(1))

- Purpose:** This MML command adds an entry to the domain strings table. For more information about the DRP, see the “[Domain Strings \(DMNMODSTRING\) Table](#)” section on page 39.
- Syntax:** `numan-add:dmnmodstring:custgrpId="custgrpId", name="tablename", dmnstring="dmnstring"`
- Input Description:**
- *custgrpId*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) to identify the dial plan.
 - *name*—The MML name of the source modification string.
 - *dmnstring*—The domain name to modify, such as cisco.com or example.com.
- Output Description:**
- COMPLD—The table addition succeeds.
 - DENY—The table addition fails.
- Examples:** The MML command shown in the following example adds one entry in the domain strings table:
- ```
mml> numan-add:dmnmodstring:custgrpId="T002", name="dmn1",
dmnstring="example.com"

MGC-01 - Media Gateway Controller 2008-08-04 10:22:29.141 EDT
M COMPLD
 "dmnmodstring"
;
```
- Comments:** Performance impact category: A

## NUMAN-ADD:DRPTABLE (Release 9.8(1))

- Purpose:** This MML command adds an entry to the domain routing policy (DRP) table. For more information about the DRP, see the “[Domain Routing Policy \(DRPTABLE\) Table](#)” section on page 39.
- Syntax:** `numan-add:drptable:custgrpId="custgrpId", drpstepnum="drpstepvalue", setname="dmnrtgset1"`
- Input Description:**
- *custgrpId*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
  - *drpstepnum*—The step number in the DRP table (1–6).
  - *setname*—The result set that the PGW 2200 Softswitch executes at the given step of the DRP table.
- Output Description:**
- COMPLD—The table addition succeeds.
  - DENY—The table addition fails.

Examples: The MML command shown in the following example adds one entry in the DRP table:

```
mml> numan-add:drptable: custgrpid="T002", drpstepnum="1",
setname="dmnrtgset1"

MGC-01 - Media Gateway Controller 2008-08-01 16:40:09.168 EDT
M COMPLD
 "Drptable"
 ;
```

Comments: Performance impact category: A

## NUMAN-ADD:ROUTESEL (Release 9.8(1))

- Purpose:** This MML command adds an entry to the route selection table. For more information about the route selection table, see the [“Route Selection \(ROUTESEL\) Table” section on page 40](#).
- Syntax:** `numan-add:routesel:custgrpid="custgrpid", "destdmnstring="destdmnstring", srcdmnstring="srcdmnstring", svcname="svcname", rtlistname="rtlistname"`
- Input Description:**
- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) to identify the dial plan.
  - *destdmnstring*—The destination username (bob@cisco.com) or domain name (cisco.com).
  - *srcdmnstring*—The source username (bob@example.com) or domain name (example.com).
  - *svcname*—The MML name of a service.
  - *rtlistname*—The MML name of a route list.
- Output Description:**
- COMPLD—Provision succeeds
  - DENY—Provision fails
- Examples:** The MML command shown in the following example adds one entry in the route selection table:
- ```
mml> numan-add:routesel:custgrpid="dp11", "destdmnstring="cisco.com",
srcdmnstring="example.com", svcname="svcname", rtlistname="rtlistcisco1"

MGC-01 - Media Gateway Controller 2008-08-04 10:30:27.394 EDT
M COMPLD
"routesel"
;
```
- Comments:** Performance impact category: A

NUMAN-ADD:SOURCEBLACK (Release 9.8(1))

- Purpose:** This MML command adds an entry to the source domain blacklist table. For more information about the source blacklist table, see the [“Source Blacklist Screening \(SOURCEBLACK\) Table” section on page 39](#).
- Syntax:** `mml> numan-add:sourceblack:custgrpid="custgrpid", srcdmnstring="srcdmnstring", svcname="svcname"`
- Input Description:**
- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
 - *srcdmnstring*—The name of the source domain.
 - *svcname*—The MML name of a service.

- Output
- COMPLD—The table addition succeeds.
- Description:
- DENY—The table addition fails.

Examples: The MML command shown in the following example adds one entry in the source blacklist table:

```
mml> numan-add:sourceblack:custgrpid="dp11", svcname="destgroup1",  
srcdmnstring="cisco.com"
```

```
      MGC-01 - Media Gateway Controller 2008-08-04 10:35:41.680 EDT  
M  COMPLD  
   "sourceblack"  
   ;
```

Comments: Performance impact category: A

NUMAN-RTRV:DESTTRANS (Release 9.8(1))

Purpose: This MML command retrieves entries in the destination username/domain translation table. For more information about the destination username/domain translation table, see the [“Destination Username/Domain Translation \(DESTTRANS\) Table”](#) section on page 40.

Syntax:

```
mml> numan-rtrv:desttrans: custgrpId="custgrpId", svcname="svcname",
destdmnstring="destdmnstring"

mml> numan-rtrv:desttrans:custgrpId="custgrpId", "all"
```

Input Description:

- *custgrpId*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) to identify the dial plan.
- *svcname*—The MML name of a service.
- *destdmnstring*—The domain name to be translated.
- *all*—Retrieves all entries in the DESTTRANS table.

Output Description:

- RTRV—Retrieve succeeds.
- DENY—Retrieve fails.

Examples: The MML command shown in the following example retrieves one entry in the destination username/domain translation table:

```
mml> numan-rtrv: desttrans: custgrpId="dp11", svcname="destgroup1",
destdmnstring="cisco.com"
```

```
MGC-01 - Media Gateway Controller 2008-08-01 16:43:09.101 EDT
```

```
M RTRV
  "session=sessionname:desttrans"
  /*
```

```
CustGrpId ServiceName DestUserDomain NewDisplay NewUser NewDomain
NewUriParameters
```

```
-----
dp11      destgroup1 bob@cisco.com BobOffice bJones example.com
;USER=phone
  */
;
```

Comments: Performance impact category: A

NUMAN-RTRV:DMNMODSTRING (Release 9.8(1))

Purpose: This MML command retrieves an entry from the domain strings table. For more information about the domain strings table, see the [“Domain Strings \(DMNMODSTRING\) Table”](#) section on page 39.

Syntax:

```
mml> numan-rtrv:dmnmodstring:custgrpId="custgrpId", name="tablename"

mml> numan-rtrv:dmnmodstring:custgrpId="T002", all
```

Input Description:

- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
- *name*—The MML name of the source modification string.
- *all*—Displays all entries in the domain strings table.

Output Description:

- RTRV—Retrieve succeeds.
- DENY—Retrieve fails.

Examples: The MML command shown in the following example retrieves one entry from the domain strings table:

```
mm1> nman-rtrv:dmnmodstring:custgrpid="dp11", name="dmn1"

MGC-01 - Media Gateway Controller 2008-08-04 10:23:44.807 EDT
M RTRV
  "session=sessionname:dmnmodstring"
  /*
dmnName          dmnString
-----          -
example.com      cisco.com
  */
;
```

Comments: Performance impact category: A

NUMAN-RTRV:DRPTABLE (Release 9.8(1))

- Purpose:** This MML command retrieves entries in the route selection table. For more information about the route selection table, see the [“Route Selection \(ROUTESEL\) Table” section on page 40](#).
- Syntax:** `numan-rtrv:drptable:custgrpid="custgrpid", drpstepnum="drpstepvalue"`
`numan-rtrv:drptable:custgrpid="T002"`
- Input Description:**
- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
 - *drpstepnum*—The step number in the DRP table (1–6).
 - *all*—Displays all entries in the route selection table
- Output Description:**
- RTRV—Retrieve succeeds.
 - DENY—Retrieve fails.
- Examples:** The MML command shown in the following example retrieves one entry from the DRP table:
- ```
mml> numan-rtrv:drptable:custgrpid="T002", drpstepnum="1"

MGC-01 - Media Gateway Controller 2008-08-01 16:54:51.010 EDT
M RTRV
 "session=sessionname:drptable"
 /*
stepIndex resultSetName
----- -----
1 dmnRtgExitSet
 */
 ;
```
- Comments:** Performance impact category: A

**NUMAN-RTRV:ROUTESEL (Release 9.8(1))**

- Purpose:** This MML command retrieves entries from the route selection table. For more information about the route selection table, see the [“Route Selection \(ROUTESEL\) Table” section on page 40](#).
- Syntax:** `mml> numan-rtrv:routesel:custgrpid="custgrpid",`  
`"destdmnstring="destdmnstring", srcdmnstring="srcdmnstring",`  
`svcname="svcname", rtlistname="rtlistname"`  
`mml> numan-rtrv:routesel:custgrpid="custgrpid", "all"`

- Input Description:
- *custgrpid*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) to identify the dial plan.
  - *destdmnstring*—The destination username (bob@cisco.com) or domain name (cisco.com).
  - *srcdmnstring*—The source username (bob@example.com) or domain name (example.com).
  - *svcname*—The MML name of a service.
  - *rtlistname*—The MML name of a route list.
  - *all*—Retrieves all entries in the ROUTSEL table.

- Output Description:
- RTRV—Retrieve succeeds.
  - DENY—Retrieve fails.

Examples: The MML command shown in the following example retrieves one entry in the route selection table:

```
mml> numan-rtrv:routese1:custgrpid="dp11","destdmnstring="cisco.com",
srcdmnstring="example.com",svcname="svcname", rtlistname="rtlistcisco1"
```

```

MGC-01 - Media Gateway Controller 2008-08-04 10:33:15.042 EDT
M RTRV
"session=sessionname:routese1"
/*
CustGrpId ServiceName DestUserDomain SrcUserDomain Route List Name
----- -----
dp11 destgroup1 cisco.com fred@example.com rtlist60
*/
;
```

Comments: Performance impact category: A

## NUMAN-RTRV:SOURCEBLACK (Release 9.8(1))

**Purpose:** This MML command retrieves entries from the source domain blacklist table. For more information about the source blacklist table, see the [“Source Blacklist Screening \(SOURCEBLACK\) Table”](#) section on page 39.

**Syntax:**

```
mml> numan-rtrv:sourceblack:custgrpId="custgrpId",
srcdmnstring="srcdmnstring", svcname="svcname"

mml> numan-rtrv:sourceblack:custgrpId="custgrpId", "all"
```

**Input Description:**

- *custgrpId*—Customer group ID. A 4-digit numeric string (enclosed in straight quotes) that identifies the dial plan.
- *srcdmnstring*—The name of the source domain.
- *svcname*—The MML name of a service.
- *all*—Retrieves all entries in the SOURCEBLACK table.

**Output Description:**

- RTRV—Retrieve succeeds.
- DENY—Retrieve fails.

**Examples:** The MML command shown in the following example retrieves one entry from the source blacklist table:

```
mml> numan-rtrv:sourceblack:custgrpId="dp11", svcname="destgroup1",
srcdmnstring="cisco.com"

MGC-01 - Media Gateway Controller 2008-08-04 10:37:11.471 EDT
M RTRV
 "session=sessionname:sourceblack"
 /*
CustGrpId ServiceName SourceUserDomain

dp11 destgroup1 cisco.com
 */
;
```

**Comments:** Performance impact category: A

## Software Changes for This Feature

The following sections contain software changes related to this feature:

- [Billing Interface, page 36](#)
- [Dial Plan Components, page 39](#)
- [Result Type Definitions, page 41](#)
- [Cause and Location Codes, page 48](#)

## Billing Interface

This section identifies the Call Detail Record (CDR) data added for this feature. For billing interface information for the rest of the PGW 2200 Softswitch software, refer to the *PGW 2200 Softswitch Release 9 Billing Interface Guide*.

### Original Source Header (Tag: 4249)

**Table 3** Original Source Header Description Form

|                                                                                                                                  |        |                  |                            |        |                    |        |        |        |
|----------------------------------------------------------------------------------------------------------------------------------|--------|------------------|----------------------------|--------|--------------------|--------|--------|--------|
| <b>Name:</b> Original Source Header                                                                                              |        | <b>Tag:</b> 4249 |                            |        | <b>Source:</b> MDL |        |        |        |
| <b>Description/Purpose:</b> Indicates which header or URL the PGW 2200 Softswitch used to obtain the source URI.                 |        |                  |                            |        |                    |        |        |        |
| <b>Format:</b> Integer                                                                                                           |        |                  | <b>Length in Octets:</b> 1 |        |                    |        |        |        |
| <b>Data Value:</b>                                                                                                               |        |                  |                            |        |                    |        |        |        |
| <ul style="list-style-type: none"> <li>• 1 = Remote-Party-ID:/P-Asserted-Identity: header</li> <li>• 2 = From: header</li> </ul> |        |                  |                            |        |                    |        |        |        |
| <b>Extended Data Value:</b> No extended value.                                                                                   |        |                  |                            |        |                    |        |        |        |
| <b>General Information:</b>                                                                                                      |        |                  |                            |        |                    |        |        |        |
| <b>Release:</b> Release 9.8(1) and later.                                                                                        |        |                  |                            |        |                    |        |        |        |
| CDBs to be included in:                                                                                                          |        |                  |                            |        |                    |        |        |        |
| (1010)                                                                                                                           | (1020) | (1030)           | (1040)                     | (1050) | (1060)             | (1070) | (1080) | (1110) |
| Y                                                                                                                                | N      | Y                | N                          | N      | N                  | N      | N      | Y      |
| New tag needs checkpointing for failover: N                                                                                      |        |                  |                            |        |                    |        |        |        |

### Original Source URI (Tag: 4250)

**Table 4** Original Source URI Description Form

|                                                                                          |        |                  |                                  |        |                    |        |        |        |
|------------------------------------------------------------------------------------------|--------|------------------|----------------------------------|--------|--------------------|--------|--------|--------|
| <b>Name:</b> Original Source URI                                                         |        | <b>Tag:</b> 4250 |                                  |        | <b>Source:</b> MDL |        |        |        |
| <b>Description/Purpose:</b> This tag contains the original source URI used for analysis. |        |                  |                                  |        |                    |        |        |        |
| <b>Format:</b> IA5 String                                                                |        |                  | <b>Length in Octets:</b> 1 to 40 |        |                    |        |        |        |
| <b>Data Value:</b> URI                                                                   |        |                  |                                  |        |                    |        |        |        |
| <b>Example:</b> Bob@example.com                                                          |        |                  |                                  |        |                    |        |        |        |
| <b>Extended Data Value:</b> No extended value.                                           |        |                  |                                  |        |                    |        |        |        |
| <b>General Information:</b>                                                              |        |                  |                                  |        |                    |        |        |        |
| <b>Release:</b> Release 9.8(1) and later.                                                |        |                  |                                  |        |                    |        |        |        |
| CDBs to be included in:                                                                  |        |                  |                                  |        |                    |        |        |        |
| (1010)                                                                                   | (1020) | (1030)           | (1040)                           | (1050) | (1060)             | (1070) | (1080) | (1110) |
| Y                                                                                        | N      | Y                | N                                | N      | N                  | N      | N      | Y      |
| New tag needs checkpointing for failover: N                                              |        |                  |                                  |        |                    |        |        |        |

## Final Destination URI (Tag: 4251)

**Table 5** *Final Destination URI Description Form*

|                                                                                                                               |        |                  |                                  |                    |        |        |        |        |
|-------------------------------------------------------------------------------------------------------------------------------|--------|------------------|----------------------------------|--------------------|--------|--------|--------|--------|
| <b>Name:</b> Translated Destination URI                                                                                       |        | <b>Tag:</b> 4251 |                                  | <b>Source:</b> MDL |        |        |        |        |
| <b>Description/Purpose:</b> Contains the post-analysis destination URI that is used to generate outgoing SIP Invite messages. |        |                  |                                  |                    |        |        |        |        |
| <b>Format:</b> IA5 String                                                                                                     |        |                  | <b>Length in Octets:</b> 1 to 40 |                    |        |        |        |        |
| <b>Data Value:</b> URI                                                                                                        |        |                  |                                  |                    |        |        |        |        |
| <b>Example:</b> Phil@example.com                                                                                              |        |                  |                                  |                    |        |        |        |        |
| <b>Extended Data Value:</b> No extended value.                                                                                |        |                  |                                  |                    |        |        |        |        |
| <b>General Information:</b>                                                                                                   |        |                  |                                  |                    |        |        |        |        |
| <b>Release:</b> Release 9.8(1) and later.                                                                                     |        |                  |                                  |                    |        |        |        |        |
| CDBs to be included in:                                                                                                       |        |                  |                                  |                    |        |        |        |        |
| (1010)                                                                                                                        | (1020) | (1030)           | (1040)                           | (1050)             | (1060) | (1070) | (1080) | (1110) |
| Y                                                                                                                             | N      | Y                | N                                | N                  | N      | N      | N      | Y      |
| New tag needs checkpointing for failover: N                                                                                   |        |                  |                                  |                    |        |        |        |        |

## Non-E.164 Destination Route Select Failure (Tag: 4252)

**Table 6** *Non-E.164 Destination Route Select Failure Description Form*

|                                                                                                                                                                                 |        |                  |                                  |                    |        |        |        |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------|----------------------------------|--------------------|--------|--------|--------|--------|
| <b>Name:</b> Non-E.164 Destination Route Select Failure                                                                                                                         |        | <b>Tag:</b> 4252 |                                  | <b>Source:</b> MDL |        |        |        |        |
| <b>Description/Purpose:</b> This tag indicates that the PGW 2200 Softswitch is unable to select a non-E.164 destination. The tag contains the URI of the attempted destination. |        |                  |                                  |                    |        |        |        |        |
| <b>Format:</b> IA5 String                                                                                                                                                       |        |                  | <b>Length in Octets:</b> 1 to 40 |                    |        |        |        |        |
| <b>Data Value:</b> URI                                                                                                                                                          |        |                  |                                  |                    |        |        |        |        |
| <b>Example:</b> Jim@example.com                                                                                                                                                 |        |                  |                                  |                    |        |        |        |        |
| <b>Extended Data Value:</b> No extended value.                                                                                                                                  |        |                  |                                  |                    |        |        |        |        |
| <b>General Information:</b>                                                                                                                                                     |        |                  |                                  |                    |        |        |        |        |
| <b>Release:</b> Release 9.8(1) and later.                                                                                                                                       |        |                  |                                  |                    |        |        |        |        |
| CDBs to be included in:                                                                                                                                                         |        |                  |                                  |                    |        |        |        |        |
| (1010)                                                                                                                                                                          | (1020) | (1030)           | (1040)                           | (1050)             | (1060) | (1070) | (1080) | (1110) |
| Y                                                                                                                                                                               | N      | Y                | Y                                | N                  | N      | N      | N      | Y      |
| New tag needs checkpointing for failover: N                                                                                                                                     |        |                  |                                  |                    |        |        |        |        |

## Domain Screening Failure URI (Tag: 4253)

**Table 7** Domain Screening Failure URI Description Form

|                                                                                                                                 |                            |                    |        |        |        |        |        |        |
|---------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------|--------|--------|--------|--------|--------|--------|
| <b>Name:</b> Domain Screening Failure URI                                                                                       | <b>Tag:</b> 4253           | <b>Source:</b> MDL |        |        |        |        |        |        |
| <b>Description/Purpose:</b> This tag indicates that a source or destination domain has failed blacklist or whitelist screening. |                            |                    |        |        |        |        |        |        |
| <b>Format:</b> BE                                                                                                               | <b>Length in Octets:</b> 2 |                    |        |        |        |        |        |        |
| <b>Data Value:</b>                                                                                                              |                            |                    |        |        |        |        |        |        |
| <b>Octet 1:</b>                                                                                                                 |                            |                    |        |        |        |        |        |        |
| 1 = Source Domain; 2 = Destination Domain                                                                                       |                            |                    |        |        |        |        |        |        |
| <b>Octet 2:</b>                                                                                                                 |                            |                    |        |        |        |        |        |        |
| 1 = Blacklist; 2 = Whitelist                                                                                                    |                            |                    |        |        |        |        |        |        |
| <b>Extended Data Value:</b> No extended value.                                                                                  |                            |                    |        |        |        |        |        |        |
| <b>General Information:</b>                                                                                                     |                            |                    |        |        |        |        |        |        |
| <b>Release:</b> Release 9.8(1) and later.                                                                                       |                            |                    |        |        |        |        |        |        |
| CDBs to be included in:                                                                                                         |                            |                    |        |        |        |        |        |        |
| (1010)                                                                                                                          | (1020)                     | (1030)             | (1040) | (1050) | (1060) | (1070) | (1080) | (1110) |
| N                                                                                                                               | N                          | Y                  | N      | N      | N      | N      | N      | Y      |
| New tag needs checkpointing for failover: N                                                                                     |                            |                    |        |        |        |        |        |        |

## SIP Final Source URI (Tag: 4255)

**Table 8** SIP Final Source URI Description Form

|                                                                                                                          |                            |                    |        |        |        |        |        |        |
|--------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------|--------|--------|--------|--------|--------|--------|
| <b>Name:</b> SIP Final Source URI                                                                                        | <b>Tag:</b> 4255           | <b>Source:</b> MDL |        |        |        |        |        |        |
| <b>Description/Purpose:</b> Contains the post-analysis source URI that is used to generate outgoing SIP Invite messages. |                            |                    |        |        |        |        |        |        |
| <b>Format:</b> IA5 String                                                                                                | <b>Length in Octets:</b> 2 |                    |        |        |        |        |        |        |
| <b>Data Value:</b> URI                                                                                                   |                            |                    |        |        |        |        |        |        |
| <b>Example:</b> Jim@example.com                                                                                          |                            |                    |        |        |        |        |        |        |
| <b>Extended Data Value:</b> No extended value.                                                                           |                            |                    |        |        |        |        |        |        |
| <b>General Information:</b>                                                                                              |                            |                    |        |        |        |        |        |        |
| <b>Release:</b> Release 9.8(1) and later.                                                                                |                            |                    |        |        |        |        |        |        |
| CDBs to be included in:                                                                                                  |                            |                    |        |        |        |        |        |        |
| (1010)                                                                                                                   | (1020)                     | (1030)             | (1040) | (1050) | (1060) | (1070) | (1080) | (1110) |
| Y                                                                                                                        | N                          | Y                  | N      | N      | N      | N      | N      | Y      |
| New tag needs checkpointing for failover: N                                                                              |                            |                    |        |        |        |        |        |        |

## Dial Plan Components

The following sections discuss the dial plan components that are added, modified, or deleted for this feature. This feature introduces the following new components:

- [Domain Strings \(DMNMODSTRING\) Table](#)
- [Domain Routing Policy \(DRPTABLE\) Table](#)
- [Source Blacklist Screening \(SOURCEBLACK\) Table](#)
- [Route Selection \(ROUTESEL\) Table](#)
- [Destination Username/Domain Translation \(DESTTRANS\) Table](#)
- [SIP Attributes \(SIPRTRNKGRP\) Table](#)

For information on the rest of the dial plan components in the PGW 2200 Softswitch software, see the *PGW 2200 Softswitch Software Release 9.8 Dial Plan Guide*.

### Domain Strings (DMNMODSTRING) Table

The domain strings table allows you to define domains for use with the IP\_SET\_SOURCE\_DMN result type. [Table 9](#) summarizes the structure of the domain strings table structure.

**Table 9** *DMNMODSTRING Component Structure*

| Parameter MML Name | Parameter Description    | Parameter Values (Default)                                   |
|--------------------|--------------------------|--------------------------------------------------------------|
| NAME               | Source modification name | MML name of the Source modification string                   |
| DMNSTRING          | The name of a domain     | A unique domain name value, such as cisco.com or example.com |

### Domain Routing Policy (DRPTABLE) Table

The Domain Routing Policy (DRP) table allows you to define the result sets that the PGW 2200 Softswitch executes at a given step in the DRP table. For more information about the DRP table, see the [“Using the DRP Table” section on page 5](#). [Table 10](#) summarizes the DRP table structure.

**Table 10** *DRPTABLE Component Structure*

| Parameter MML Name | Parameter Description                                                                          | Parameter Values (Default)   |
|--------------------|------------------------------------------------------------------------------------------------|------------------------------|
| DRPSTEPNUM         | The step number in the DRP table.                                                              | 1–6 (0)                      |
| SETNAME            | The name of the result set that the PGW 2200 Softswitch runs at a given step in the DRP table. | The MML name of a result set |

### Source Blacklist Screening (SOURCEBLACK) Table

The Source Blacklist Screening (SOURCEBLACK) table allows you to screen calls based on their source domain name. [Table 11](#) summarizes the Source Blacklist Screening table.

**Table 11** SOURCEBLACK Component Structure

| Parameter MML Name | Parameter Description           | Parameter Values (Default)                                    |
|--------------------|---------------------------------|---------------------------------------------------------------|
| SRCDMNSTRING       | The domain name to be screened. | A unique domain name value, such as cisco.com or example.com. |
| SVCNAME            | SVCNAME                         | The MML name of a service.                                    |

## Route Selection (ROUTESEL) Table

The Route Selection Table allows the PGW 2200 Softswitch to route calls based on the source and destination domain names. [Table 12](#) summarizes the Route Selection table structure.

**Table 12** ROUTESEL Component Structure

| Parameter MML Name | Parameter Description              | Parameter Values (Default)                                    |
|--------------------|------------------------------------|---------------------------------------------------------------|
| DESTDMNSTRING      | The name of the destination domain | A unique domain name value, such as cisco.com or example.com. |
| SRCDMNSTRING       | The name of the source domain      | A unique domain name value, such as cisco.com or example.com  |
| SVCNAME            | Service name                       | The MML name of a service                                     |
| RTLSTNAME          | Route list name                    | The MML name of a route list                                  |

## Destination Username/Domain Translation (DESTTRANS) Table

The Destination username/Domain Translation table translates the non-E.164 destinations to E.164 destinations (domains to phone numbers). [Table 13](#) summarizes the Destination username/Domain Translation table structure.

**Table 13** DESTTRANS Component Structure

| Parameter MML Name | Parameter Description            | Parameter Values (Default)                                      |
|--------------------|----------------------------------|-----------------------------------------------------------------|
| DESTDMNSTRING      | The domain name to be translated | A username and domain, such as bob@cisco.com.                   |
| SVCNAME            | Service name                     | The MML name of a service                                       |
| DISPLAYNAME        | New display name                 | A name describing the function for the user, such as BobOffice  |
| USERNAME           | New user name                    | A username, such as bjones                                      |
| DOMAINNAME         | New domain name                  | A unique domain name value, such as example.com                 |
| URIPARAMETERS      | New complete URI parameter       | A URI parameter beginning with a semicolon, such as ;USER=phone |



## SIP Attributes (SIPRTTRNKGRP) Table

DBR modifies the SIP Attributes table to add a the DomainBasedRtgSupport field. This field allows you to specify whether a trunk group supports non-E.164 based routing.

**Table 14** *SIPRTTRNKGRP Component Structure*

| Parameter MML Name    | Parameter Description                                     | Parameter Values (Default)                                                                                                                                          |
|-----------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NAME                  | Trunk group number                                        | A valid trunk group number                                                                                                                                          |
| URL                   | The IP address or URL of the SIP proxy service            | A valid IP address, host name, or domain name                                                                                                                       |
| SIPPROXYPORT          | UDP port number used by the SIP proxy server              | A valid UDP port number                                                                                                                                             |
| VERSION               | SIP version of the SIP proxy server                       | A valid SIP version number, such as 2                                                                                                                               |
| CUTTHROUGH            | Specifies if cut-through is enabled                       | 0–3 (0)                                                                                                                                                             |
| EXTSUPPORT            | SIP extension supported                                   | 0–1 (0)                                                                                                                                                             |
| SRVRR                 | URL is SRV DNS name                                       | 0–1 (0)                                                                                                                                                             |
| BEARERCAPNAME         | Bearer capability name                                    | 20 alphanumeric (NULL)                                                                                                                                              |
| DOMAINBASEDRTGSUPPORT | Indicates whether the trunk group permits non-E.164 calls | 0—False (non-E.164 calls not permitted)<br>1—True (non-E.164 calls permitted)<br>Default: 0<br><b>Note</b> Ensure that the remote trunk matches this configuration. |

## Result Type Definitions

The DBR feature introduces several changes to the result types for the PGW 2200 Softswitch. The changes are summarized in the following sections:

- [New Result Types](#)
- [Results Added to Preanalysis](#)
- [Modified Result Types](#)

For information on other result type definitions for the PGW 2200 Softswitch software, see the *PGW 2200 Softswitch Release 9.8 Dial Plan Guide*.

## New Result Types

The DBR feature adds five new result types. [Table 15](#) summarizes the new result types.

**Table 15** *New Result Types*

| Result Number | Result Type                       | Data Word 1    | Data Word 2       | Data Word 3  | Data Word 4     | Analysis Points |           | Result Type Valid For |                  |       |             |   |
|---------------|-----------------------------------|----------------|-------------------|--------------|-----------------|-----------------|-----------|-----------------------|------------------|-------|-------------|---|
|               |                                   |                |                   |              |                 | Intermediate    | End Point | A-digit Analysis      | B-digit Analysis | Cause | Preamalysis |   |
| 78            | <a href="#">IP_SOURCE_SCREEN</a>  | screenType     | serviceName       | foundSetName | notFoundSetName | X               |           |                       |                  |       |             | X |
| 79            | <a href="#">IP_DEST_TRANS</a>     | inputAndAction | serviceName       | foundSetName | notFoundSetName | X               |           |                       |                  |       |             | X |
| 80            | <a href="#">IP_SET_SOURCE_DMN</a> | dmnString      | applicationStatus | applyTo      |                 |                 |           | X                     | X                |       |             | X |
| 81            | <a href="#">IP_ROUTE_SEL</a>      | inputDataType  | serviceName       | foundSetName | notFoundSetName | X               |           |                       |                  |       |             | X |
| 82            | <a href="#">DRP_EXIT</a>          | drpExitType    |                   |              |                 | X               |           |                       |                  |       |             | X |

The following section contains definitions of each result type listed in [Table 15](#).

### IP\_SOURCE\_SCREEN

[Table 16](#) summarizes the IP\_SOURCE\_SCREEN result type.

**Table 16** *IP\_SOURCE\_SCREEN Result Type*

| Option                                                                                        | Example                                     | Data Word Types | Analysis Point | Type of Analysis |
|-----------------------------------------------------------------------------------------------|---------------------------------------------|-----------------|----------------|------------------|
| IP_SOURCE_SCREEN<br>(<screenType>,<br><serviceName>,<br><foundSetName>,<br><notFoundSetName>) | IP_SOURCE_SCREEN<br>(1, Telco1, T001, T002) | I, S, S, S      | Intermediate   | Preamalysis      |

IP\_SOURCE\_SCREEN has the following data words:

- screenType (dw1)—The type of blacklist screen to apply. Valid values are
  - 1 = Blacklist screening of source (username + host domain)
  - 2 = Blacklist screening of source username only
  - 3 = Blacklist screening of source host domain only
- serviceName (dw2)—The name of the service.

- foundSetName (dw3)—An existing result set which the PGW 2200 Softswitch executes if it finds a match in the IP Source Screening table.
- notFoundSetName (dw4)—An existing result set which the PGW 2200 Softswitch executes if it does not find a match in the IP Source Screening table.



**Note** Data words 2, 3, and 4 are optional.

### IP\_DEST\_TRANS

Table 17 summarizes the IP\_DEST\_TRANS result type.

**Table 17** IP\_DEST\_TRANS Result Type

| Option                                                                                        | Example                                                          | Data Word Types | Analysis Point | Type of Analysis |
|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------|-----------------|----------------|------------------|
| IP_DEST_TRANS<br>(<inputAndAction>,<br><serviceName>,<br><foundSetName>,<br><notFoundSetName> | IP_DEST_TRANS<br>(1, "group1",<br>"resultset1",<br>"resultset2") | I, S, S, S      | Intermediate   | Preanalysis      |

IP\_DEST\_TRANS has the following data words:

- inputAndAction (dw1)—Determines whether the PGW 2200 Softswitch translates the destination of the user and host (1) or the destination host only (2)
- serviceName (dw2)—The name of the service
- foundSetName (dw3)—The result set that the PGW 2200 Softswitch executes if the user or domain name matches an entry in the table
- notFoundSetName (dw4)—The result set that the PGW 2200 Softswitch executes if the user or domain name does not match an entry in the table

### IP\_SET\_SOURCE\_DMN

Table 18 summarizes the IP\_SET\_SOURCE\_DMN result type.

**Table 18** IP\_SET\_SOURCE\_DMN Result Type

| Option                                                                   | Example                    | Data Word Types | Analysis Point | Type of Analysis                                  |
|--------------------------------------------------------------------------|----------------------------|-----------------|----------------|---------------------------------------------------|
| IP_SET_SOURCE_DMN<br>(<dmnString>,<br><applicationStatus>,<br><applyTo>) | IP_SET_SOURCE_DMN<br>(1,1) | S, I, I         | Intermediate   | Preanalysis, A-number analysis, B-number analysis |

IP\_SET\_SOURCE\_DMN has the following data words:

- dmnString (dw1)—The name of the source domain.

- applicationStatus (dw2)—Specifies whether the command can override an existing domain name entry. The following values are valid:
  - 0 = The command can override a domain name entry.
  - 1 = The command cannot override an existing domain name entry.
- applyTo (dw3)—Specifies the source headers to which the PGW 2200 Softswitch applies the command. The following values are valid:
  - 0 = Sets the PGW 2200 Softswitch to apply the command to all source headers that are present
  - 1 = Sets the PGW 2200 Softswitch to apply the command to the current source header only

## IP\_ROUTE\_SEL

Table 18 summarizes the IP\_ROUTE\_SEL result type.

**Table 0-1** *IP\_ROUTE\_SEL Result Type*

| Option                                                                                      | Example                                          | Data Word Types | Analysis Point | Type of Analysis |
|---------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------|----------------|------------------|
| IP_ROUTE_SEL<br>(<inputDataType>,<br><serviceName>,<br><foundSetname>,<br><notFoundSetname> | IP_ROUTE_SEL (1,<br>"group1", "T002",<br>"T004") | I, S, S, S      | Intermediate   | Preanalysis      |

IP\_ROUTE\_SEL has the following data words:

- inputDataType (dw1)—Specifies the data that the PGW 2200 Softswitch uses to select the route. Valid values are
  - 1 = Route selection against destination (user + host)
  - 2 = Route selection against destination host only
  - 3 = Route selection against source (user and host)
  - 4 = Route selection against source host only
  - 5 = Route selection against both destination (user and host) and source (user and host)
  - 6 = Route selection against both destination (host only) and source (host only)
  - 7 = Route selection against both destination (user and host) and source (host only)
  - 8 = Route selection against both destination (host only) and source (user and host)
- serviceName (dw2)—Service name which must already exist in the service table (optional).
- foundSetName (dw3)— The result set that the PGW 2200 Softswitch executes if the data matches an entry in the table
- notFoundSetName (dw4)—The result set that the PGW 2200 Softswitch executes if the data does not match an entry in the table

**DRP\_EXIT**

Table 18 summarizes the DRP\_EXIT result type.

**Table 19** *DRP\_EXIT Result Type*

| Option                      | Example      | Data Word Types | Analysis Point | Type of Analysis |
|-----------------------------|--------------|-----------------|----------------|------------------|
| DRP_EXIT<br>(<drpExitType>) | DRP_EXIT (1) | I               | Intermediate   | Preanalysis      |

DRP\_EXIT has one data word, drpExitType (dw1). This data word specifies the type of DRP exit. Valid values are

- 1 = Directs the PGW 2200 Softswitch to exit current DRP step and move to the next step
- 2 = Directs the PGW 2200 Softswitch to exit from entire DRP stage of preanalysis

**Results Added to Preanalysis**

DBR adds six existing A and B analysis result types to preanalysis. Table 20 summarizes the existing result types that are now available in preanalysis.

**Table 20** *Result Types Added to Preanalysis*

| Result Number | Result Type     | Data Word 1 | Data Word 2 | Data Word 3 | Data Word 4 | Analysis Points |           | Result Type Valid For |                  |       |             |
|---------------|-----------------|-------------|-------------|-------------|-------------|-----------------|-----------|-----------------------|------------------|-------|-------------|
|               |                 |             |             |             |             | Intermediate    | End Point | A-digit Analysis      | B-digit Analysis | Cause | Preanalysis |
| 6             | CAUSE           | cause       |             |             |             | X               |           | X                     | X                | X     | X           |
| 7             | <b>FACILITY</b> | type        | treatment   |             |             | X               |           | X                     | X                |       | X           |
| 47            | CODEC           | CodecIdx    | action      |             |             | X               |           | X                     | X                |       | X           |
| 36            | CHARGE_ORIGIN   | chgOrigin   |             |             |             | X               |           | X                     |                  |       | X           |
| 72            | DTMF_CAP        | DtmfCap     |             |             |             |                 |           | X                     | X                |       | X           |
| 37            | CG_PRES_IND     | presIndic   |             |             |             |                 |           | X                     | X                |       | X           |

For information about these result types, see the *PGW 2200 Softswitch Release 9.8 Dial Plan Guide*.

## Modified Result Types

The DBR feature modifies the result types listed in [Table 21](#).

**Table 21** *Modified Result Types*

| Result Number | Result Type                  | Data Word 1 | Data Word 2  | Data Word 3 | Data Word 4 | Analysis Points |           | Result Type Valid For |                  |       |             |
|---------------|------------------------------|-------------|--------------|-------------|-------------|-----------------|-----------|-----------------------|------------------|-------|-------------|
|               |                              |             |              |             |             | Intermediate    | End Point | A-digit Analysis      | B-digit Analysis | Cause | Preanalysis |
| 33            | <a href="#">NEW_DIALPLAN</a> | CustGrpId   | AnalysisType |             |             | X               |           | X                     | X                | X     | X           |
| 7             | <a href="#">FACILITY</a>     | type        | treatment    |             |             | X               |           | X                     | X                |       | X           |
| 42            | <a href="#">RETRY_ACTION</a> | RetryType   | redirAnPhase |             |             | X               |           |                       |                  | X     |             |

The following paragraphs contain definitions of the result type listed in [Table 21](#).

### NEW\_DIALPLAN

The DBR feature modifies the NEW\_DIALPLAN result type to allow the PGW 2200 Softswitch to restart at the A Number stage of analysis. To use this setting, set data word 2 to a value of 3.

[Table 22](#) summarizes the updated NEW\_DIALPLAN result type.

**Table 22** *NEW\_DIALPLAN Result Type*

| Option                                       | Example                     | Data Word Types | Analysis Point | Type of Analysis                                                  |
|----------------------------------------------|-----------------------------|-----------------|----------------|-------------------------------------------------------------------|
| NEW_DIALPLAN<br>(<custGrpId>,<AnalysisType>) | NEW_DIALPLAN<br>("T001", 1) | S, I            | Intermediate   | Preanalysis, A-number analysis, B-number analysis, Cause analysis |

NEW\_DIALPLAN has the following data words:

- custGrpId—Identifies the new dial plan to which the PGW 2200 Softswitch switches.
- AnalysisType—Indicates the stage in which number analysis should start in the new dial plan. This data word applies to B-number analysis only. Valid values are as follows:
  - 0 = Default
  - 1 = Start analysis at preanalysis stage
  - 2 = Start analysis at B-number stage
  - 3 = Start analysis at A-number stage (new value)

## FACILITY

The DBR feature modifies the FACILITY result type to introduce new values for data words 1 and 2. You can use these values to conditionally reject calls based on source or destination domain name.

The DBR feature also adds the FACILITY result type to preanalysis.

[Table 23](#) summarizes the FACILITY result type.

**Table 23** *FACILITY Result Type*

| Option                            | Example              | Data Word Types | Analysis Point | Type of Analysis                                  |
|-----------------------------------|----------------------|-----------------|----------------|---------------------------------------------------|
| FACILITY<br>(<type>, <treatment>) | FACILITY(2, 2, 0, 0) | I, I            | Intermediate   | Preanalysis, A-number analysis, B-number analysis |

The DBR feature introduces the following new data word values:

- Type (dw1)—The DBR feature introduces the value 6 (Terminating Call Transfer treatment action) for DW1 (Type). This value controls handling of Call Transfer and Refer requests.
- Treatment (dw2)—The DBR feature introduces the values 5 and 6 for DW2 (Treatment). These values determine the action taken when the terminating side of a call issues a redirect.

Thus, the updated Facility result type has the following data words:

- Type (dw1)
  - 1 = Proxy Mode required
  - 2 = Originating Redirection treatment action
  - 3 = Originating Call Transfer treatment action
  - 4 = Terminating Redirection treatment action
  - 5 = Originating Redirection Rejection treatment action
  - 6 = Terminating Call Transfer treatment action (new value)
- Treatment (dw2)
  - This data word provides the actions required based on the Type data word value. Valid values are 1–6.

The DBR feature defines two new values for data word 2 for use when data word 1 (Type) is set to 4 (Terminating Redirection treatment action). [Table 24](#) summarizes these values.

**Table 24** *Data Word Values for Use With Terminating Redirection Treatment Action*

| dw1 Value | dw2 Value | Action                                                                           |
|-----------|-----------|----------------------------------------------------------------------------------|
| 4         | 5         | Unconditional rejection of Redirection Request (SIP 302)                         |
| 4         | 6         | Rejection of Redirection Request (SIP 302) when the CONTACT header is non- E.164 |

The DBR feature defines two new values for data word 2 for use when data word 1 (Type) is set to 6 (Terminating Call Transfer Treatment action). [Table 25](#) summarizes these values.

**Table 25** Data Word Values for Use With Terminating Call Transfer Treatment Action

| dw1 Value | dw2 Value | Action                                                                          |
|-----------|-----------|---------------------------------------------------------------------------------|
| 6         | 5         | Unconditional rejection of Call Transfer/Refer requests                         |
| 6         | 6         | Rejection of Call Transfer/Refer Requests when the Refer-To header is non-E.164 |

## RETRY\_ACTION

The DBR feature modifies the RETRY\_ACTION result type, allowing you to configure the stage of analysis in which the PGW 2200 Softswitch restarts when retrying a call. This capability provides consistent redirection handling for E.164 and non-E.164 calls. To configure this option, use data word 2.

Table 26 summarizes the RETRY\_ACTION result type.

**Table 26** RETRY\_ACTION Cause Analysis Result Type

| Option                                       | Example            | Data Word Types | Analysis Point | Type of Analysis |
|----------------------------------------------|--------------------|-----------------|----------------|------------------|
| RETRY_ACTION<br>(<RetryType>,<redirAnPhase>) | RETRY_ACTION(1, 0) | I, I            | Intermediate   | Cause analysis   |

RETRY\_ACTION has the following data words:

- RetryType (dw1)—The manner in which the PGW 2200 Softswitch retries the call. Valid values are
  - 1 = Reattempt
  - 2 = TGAdvance
  - 3 = Redirect
- redirAnPhase (dw2)—The phase of analysis in which the PGW 2200 Softswitch restarts when retrying a call. Valid values are
  - 0 = B-number analysis (default value)
  - 1 = Preanalysis

## Cause and Location Codes

This section describes the cause and location codes that are updated for this feature. For table setup examples for cause and location codes, see the *PGW 2200 Softswitch Release 9.8 Dial Plan Guide*.

This feature introduces the IC\_BLACKLIST\_SRC\_MATCHED cause code.

IC\_BLACKLIST\_SRC\_MATCHED uses internal value 222 and is mapped to the corresponding SIP cause code, 403 Forbidden.



## Dial Plan Examples

This section provides the following examples of dial plan provisioning for this feature. Additional examples of dial plan provisioning for the PGW 2200 Softswitch software can be found in the *PGW 2200 Softswitch Release 9.8 Dial Plan Guide*.

In these examples, the assumption is that you have already created route lists with the following names:

- rtlistcisco1
- rtlistcisco2
- rtlistdefaultswbd

### IP\_DEST\_TRANS Example

In this example, the IP\_DEST\_TRANS result type is used to translate the destination URI and displayname from Bob <sip:bob@dbrpgw.cisco.com:5060> to JoeAtlanta <sip:Joe@abc.cisco.com:5079> ;user=phone. The PGW 2200 Softswitch routes the call based on the new destination URI using the routelist rtlistcisco2.

```
prov-stp::
; Start a new MML session
prov-sta::srcver="active", dstver="TRANS", confirm
prov-ed:siprttrnkgrp:name="2002", domainbasedrtgsupport=1, url="abc.cisco.com"
numan-add:dialplan:custgrpid="T002", overdec="YES"
numan-add:service:custgrpid="T002", name="group1"
; Defines destination translation from Bob to JoeAtlanta
numan-add:desttrans:custgrpid="T002", svcname="group1",
destdmnstring="bob@dbrpgw.cisco.com", displayname="JoeAtlanta", username="Joe",
domainname="abc.cisco.com:5079", uriparameters=";user=phone"
; Adds JoeAtlanta to the Route Selection table to enable routing based on the destination
; domain name.
numan-add:routesel:custgrpid="T002", svcname="group1", destdmnstring="Joe@abc.cisco.com",
rtlistname="rtlistcisco2"
; Result sets
numan-add:resultset:custgrpid="T002", name="drpstep1"
numan-add:resultset:custgrpid="T002", name="dmnRtgExitSet"
numan-add:resultset:custgrpid="T002", name="routeCall"
; Result table entries
numan-add:resulttable:custgrpid="T002", name="resultexitdrp", resulttype="DRP_EXIT",
dw1="2", setname="dmnRtgExitSet"
numan-add:resulttable:custgrpid="T002", name="resultrsel1", resulttype="IP_ROUTE_SEL",
dw1="1", dw2="group1", dw3="dmnRtgExitSet", setname="routeCall"
; Adds a result set that translates based on the user and host. The PGW 2200 Softswitch
; routes the call if the set is found.
numan-add:resulttable:custgrpid="T002", setname="drpstep1", name="trans",
resulttype="IP_DEST_TRANS", dw1="1", dw2="group1", dw3="routeCall"
numan-add:drptable:custgrpid="T002", drpstepnum="1", setname="drpstep1"
Prov-dply::
```

### IP\_SET\_SOURCE\_DMN Example

In this example, the IP\_SET\_SOURCE\_DMN result type is used to overwrite the source domain of incoming traffic with the source domain abc.cisco.com. The PGW 2200 Softswitch routes calls based on the new source domain using routelist rtlistcisco2.

```

prov-stp::
; Start a new MML session
prov-sta::srcver="active", dstver="SETDOMAIN", confirm
; Enable Domain-Based Routing using trunk group 2002
prov-ed:siprttrnkgrp:name="2002", domainbasedrtgssupport=1, url="abc.cisco.com"
numan-add:service:custgrpid="T002", name="group1"
numan-add:dialplan:custgrpid="T002", overdec="YES"
; Add abc.cisco.com to the route selection table
numan-add:routesel:custgrpid="T002", svcname="group1", srcdmnstring="abc.cisco.com",
rtlistname="rtlistcisco2"
; Add abc.cisco.com to the Domain Strings table
numan-add:dmnmodstring:custgrpid="T002", name="domainname1", dmnstring="abc.cisco.com"
; Add result sets
numan-add:resultset:custgrpid="T002" name="rsetdrpstep1"
numan-add:resultset:custgrpid="T002", name="dmnRtgExitSet"
; Result table entries
numan-add:resulttable:custgrpid="T002", name="resultexitdrp", resulttype="DRP_EXIT",
dw1="2", setname="dmnRtgExitSet"
; Adds a result set that overwrites the source domain on the outgoing side. The
; PGW 2200 Softswitch applies this change to the current source header only.
numan-add:resulttable:custgrpid="T002", name="resultchangesrc1",
resulttype="IP_SET_SOURCE_DMN", dw1="domainname1", setname="rsetdrpstep1", dw2="0",
dw3="1"
numan-add:resulttable:custgrpid="T002", name="resultrsel1", resulttype="IP_ROUTE_SEL",
dw1="4", dw2="group1", dw3="dmnRtgExitSet", setname="rsetdrpstep1"
numan-add:drptable:custgrpid="T002", drpstepnum="2", setname="rsetdrpstep1"
Prov-dply::

```

## IP\_ROUTE\_SEL Example

In this example, the IP\_ROUTE\_SEL result type is used to route calls based on the destination hostname joe@cisco.com or the destination domain cisco.com.

```

prov-stp::
; Start a new MML session
prov-sta::srcver="active", dstver="mod_ver01", confirm
numan-add:dialplan:custgrpid="T002", overdec="YES"
numan-add:resultset:custgrpid="T002", name="dmnrtgset1"
numan-add:resultset:custgrpid="T002", name="dmnRtgExitSet"
numan-add:resultset:custgrpid="T002", name="finalDefaultRtgSet"
numan-add:resultset:custgrpid="T002", name="dmnrtgDefaultSet"
numan-add:service:custgrpid="T002", name="group1"
; Adds a route selection table entry to route based on destination domain joe@cisco.com
numan-add:routesel:custgrpid="T002", destdmnstring="joe@cisco.com", svcname="group1",
rtlistname="rtlistcisco1"
; Adds a route selection table entry to route based on destination domain cisco.com
numan-add:routesel:custgrpid="T002", destdmnstring="cisco.com", svcname="group1",
rtlistname="rtlistcisco2"
numan-add:resulttable:custgrpid="T002", name="resultexitdrp", resulttype="DRP_EXIT",
dw1="2", setname="dmnRtgExitSet"
numan-add:resulttable:custgrpid="T002", name="resultfinalrte", resulttype="ROUTE",
dw1="rtlistdefaultswbd", setname="finalDefaultRtgSet"
; Adds a result that selects a route based on the destination hostname
numan-add:resulttable:custgrpid="T002", name="resultrsel2", resulttype="IP_ROUTE_SEL",
dw1="2", dw2="group1", dw3="dmnRtgExitSet", dw4="finalDefaultRtgSet",
setname="dmnrtgDefaultSet"
; Adds a result that selects a route based on destination user and hostname
numan-add:resulttable:custgrpid="T002", name="resultrsel1", resulttype="IP_ROUTE_SEL",
dw1="1", dw2="group1", dw3="dmnRtgExitSet", dw4="dmnrtgDefaultSet", setname="dmnrtgset1"
numan-add:drptable:custgrpid="T002", drpstepnum="1", setname="dmnrtgset1"
Prov-dply::

```

## IP\_SOURCE\_SCREEN Example

In this example, calls are screened based on the source domain example.com. Non-screened calls are routed based on the destination URI dbrpgw.cisco.com.

```
prov-stp::
; Start a new MML session
prov-sta::srcver="active", dstver="source_screen", confirm
; Enable non-164 routing on the siprttrnkgrp
prov-ed:siprttrnkgrp:name="2002", DomainBasedRtgSupport="1", url="dbrpgw.cisco.com"
; Add result set entries
numan-add:resultset:custgrpid="T002", name="screenURI"
numan-add:service:custgrpid="T002", name="group1"
; Add a route selection entry to route based on the destination bob@dbrpgw.cisco.com
numan-add:routesel:custgrpid="T002", svcname="group1",
destdmnstring="bob@dbrpgw.cisco.com", rtlistname="rtlist002"
; Screen calls based on the source domain example.com.
numan-add:sourceblack:custgrpid="T002", svcname="group1", srcdmnstring="example.com"
; Add resulttable entries
numan-add:resulttable:custgrpid="T002", setname="screenURI", name="UserHost",
resulttype="IP_SOURCE_SCREEN", dw1="1", dw2="group1", dw3="0"
numan-add:resulttable:custgrpid="T002", setname="screenURI", name="routecall",
resulttype="IP_ROUTE_SEL", dw1="1", dw2="group1"
; Add an entry to the DRP table
numan-add:drpstable:custgrpid="T002", drpstepnum="1", setname="screenURI"
Prov-dply::
```

## Example with All Result Types

In this example, two domain routing policy (DRP) table steps and all of the result types introduced in the DBR feature are defined.

A PGW 2200 Softswitch with this configuration would process calls as follows:

- In DRP step 1, the PGW 2200 Softswitch screens SIP calls based on the source domain example.com. When a match is found, the PGW 2200 Softswitch uses the IP\_SET\_SOURCE\_DMN table to change the source domain from example.com to abc.cisco.com. When DRP step 1 is complete, the PGW 2200 Softswitch proceeds to DRP step 2.
- In DRP step 2, the PGW 2200 Softswitch translates the destination domain and port number from dbrpgw.cisco.com to atlanta.cisco.com:5079 and routes calls based on the destination URI bob@atlanta.cisco.com.

```
prov-stp::
; Start a new MML session
prov-sta::srcver="active", dstver="nested", confirm
; Add a new entry in the service table
numan-add:service:custgrpid="T002", name="group1"
; Enable DBR on trunk group 2002
prov-ed:siprttrnkgrp:name="2002", domainbasedrtgsupport=1, url="bob@atlanta.cisco.com"
; Add entries in TimesTen tables
numan-add:routesel:custgrpid="T002", svcname="group1",
destdmnstring="bob@atlanta.cisco.com", rtlistname="rtlist002"
numan-add:sourceblack:custgrpid="T002", svcname="group1", srcdmnstring="example.com"
numan-add:desttrans:custgrpid="T002", svcname="group1", destdmnstring="dbrpgw.cisco.com",
domainname="atlanta.cisco.com:5079"
; Add result set entries
```







- Db-bulkcp is safer than MML. MML can accomplish the import/export function in a single transaction, but it might cause some serious problems due to the excessive data collected in the transaction log when there are a huge number of entries to be imported. For this reason, db-bulkcp encapsulates 5000 rows as a single transaction.

Db-bulkcp can detect duplicate rows.

To load data into the TimesTen database, follow these steps:



**Note**

The rows preceded by # are for guidance only; you can keep these rows or delete them.

### Step 1

Prepare a file according to the format shown in the example.

```
##ttBulkCp
#
CISCO.PORTEDNUMBERS, 4 columns
columns:
1. CALLEDNUM CHAR(20)
2. ROUTINGNUM CHAR(20)
3. MINLENGTH TINYINT
4. MAXLENGTH TINYINT
end
#
"123456789", "444", 0, 0
"1234567890", "555", 5, 12
"1234567891", "5566", 3, 9
.....
```



**Note**

This file format does not include the type column used for MML import and export commands.

### Step 2

Use the following command to import the file:

```
db-bulkcp import tablename filename
```



**Note**

You can also export data by specifying **export** instead of import.

## Using MML Import/Export

You can import data in MML using the **prov-add** command. This method uses the following file format:

| #type | digitString | routingNum | minlength | maxlength |
|-------|-------------|------------|-----------|-----------|
| 1     | 124333      | DFFF       | 5         | 12        |
| 3     | 124666      | DEEE       | 5         | 12        |



**Note**

A **type** value of 1 adds an entry; a value of 3 modifies an existing entry.

To import data with MML, use the following command:

```
mml> prov-add:files:name="TKGFile",file="<dir_name>/export_trkgrp.dat",action="import"
```

For more information about importing with MML, see the *PGW 2200 Softswitch Release 9.8 Provisioning Guide*.

## Translation Verification Tool (callver)

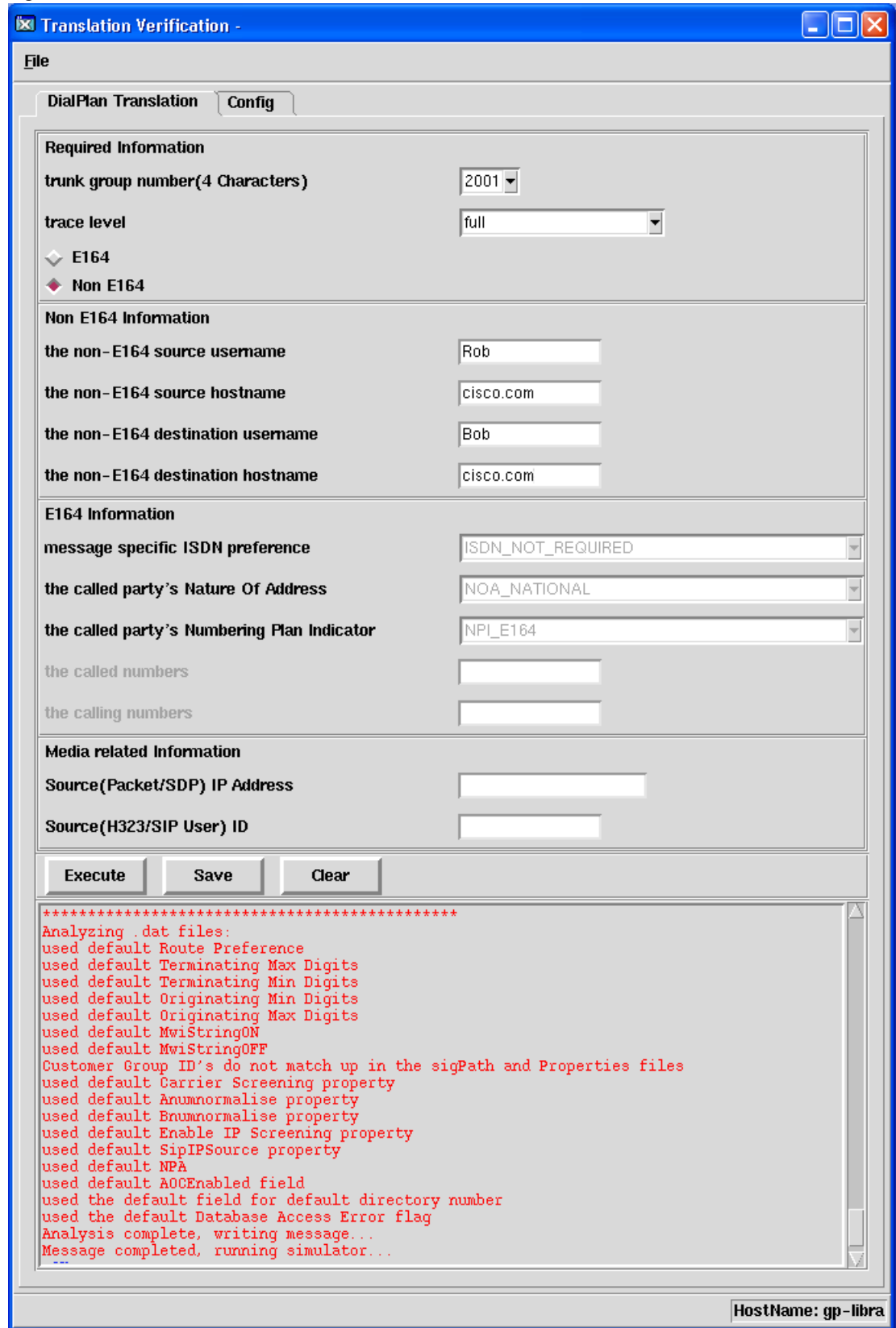
The DBR feature modifies the Translation Verification Tool (callver) so that it supports domain-based calls. The following new fields are now available for domain-based (non-E.164) calls:

- Source username
- Source hostname
- Destination username
- Destination hostname

[Figure 6](#) shows the modified Translation Verification Tool.



Figure 6 Translation Verification Tool



## Mini-parse Trace Analysis Tool

This feature updates the mini-parse trace analysis tool introduced in CSCsk32769. The tool has been modified to capture the following information:

- E.164 sources and destinations
- New and modified result types
- Nested result types
- DRP table
- New database calls and results
- Routing table changes

## Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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## Glossary

**Table 32**      **Acronym Expansions**

| Acronym | Expansion                     |
|---------|-------------------------------|
| B2BUA   | Back-to-back user agent       |
| CDR     | Call detail record            |
| DBR     | Domain-based routing          |
| DNS     | Domain name system            |
| DTMF    | Dual tone multi-frequency     |
| DRP     | Domain routing policy         |
| GA      | Generic analysis              |
| LNP     | Local number portability      |
| MGC     | Media gateway controller      |
| RPID    | Remote party ID               |
| SIP     | Session Initiation Protocol   |
| URI     | Universal resource identifier |
| URL     | Universal resource locator    |

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