CHAPTER 2

Routing

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Introduction

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

- Routing Types
- Call Types
- Policy Based Flexible Routing

Routing Types

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

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

- Basic Subscriber Routing—This is the Cisco BTS 10200 Softswitch routing type which is based on subscriber needs, Basic Subscriber Routing can be used for both line and trunk routing.
- Basic Trunk Routing—This is the Cisco BTS 10200 Softswitch routing type which is used for basic trunk routing. Basic Trunk Routing can only be used for trunk routing.
- Service Provider Routing—This is the Cisco BTS 10200 Softswitch routing type which is used in the wholesale network environment where the network operator owns the facility and provides transport facilities to carry voice calls on behalf of smaller service providers. Service Provided Routing can only be used for trunk routing.
- Carrier Based Routing—This is the Cisco BTS 10200 Softswitch routing type which is based on specific carrier needs. Carrier Based Routing can be utilized for both line and trunk routing.
- Basic Dial Plan Routing—This is the Cisco BTS 10200 Softswitch default routing type. Basic Dial Plan Routing can be utilized for both line and trunk routing.
- Automatic Number Identification Based Routing—This is the Cisco BTS 10200 Softswitch routing type based on automatic number identification (ANI) as it comes in on a trunk on a hosted private branch exchange (PBX) configuration. ANI Based Routing can only be utilized for trunk routing.
- Nature of Address Routing—Nature of address (NOA) routing is used to select separate dial plans for directory number (DN) and routing number (RN). The ISDN user part (ISUP) initial address message (IAM) called party number (CdPN) parameter contains a NOA value. The NOA value distinguishes the format of the digits, i.e., DN only vs. RN+DN. In some countries, DN prefixes may be the same as some RNs. In these cases, NOA routing allows using different dial plans for DN routing and RN routing.
- International WZ1 (INTL_WZ1) Preferred Carrier Routing—Enhances the flexibility of preferred carrier routing for INTL_WZ1 calls.

Basic Subscriber Routing

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

Step 1 Subscriber incoming received or placed.

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

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

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

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

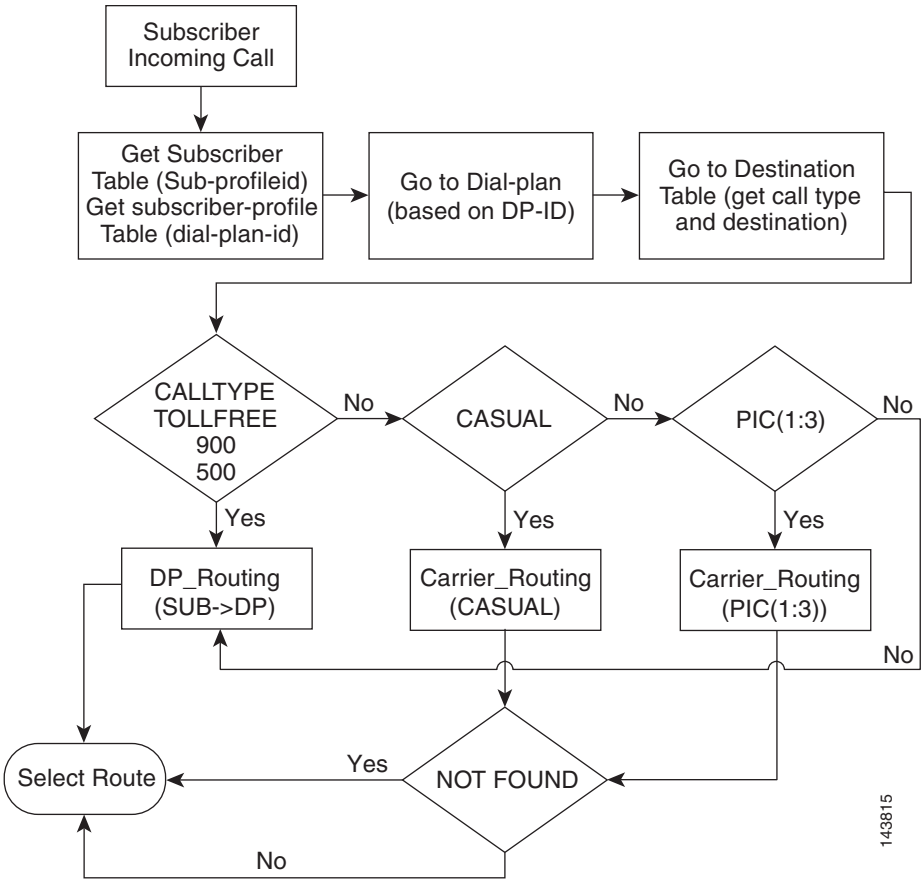
Step 6 Determine the call type. If the call type is toll free, 900, or 500, proceed to Step 7. If the call type is casual, proceed to Step 8. If the call type is via a presubscribed interexchange carrier (PIC), proceed to Step 9.

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

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

Step 9 If the call type is via a PIC, the Cisco BTS 10200 Softswitch will user the PIC carrier routing information to select the call route and to route the call.

Figure 2-1 Basic Subscriber Routing



Basic Trunk Routing

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

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

Step 2 Get the DP-ID from the TG.

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

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

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

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

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

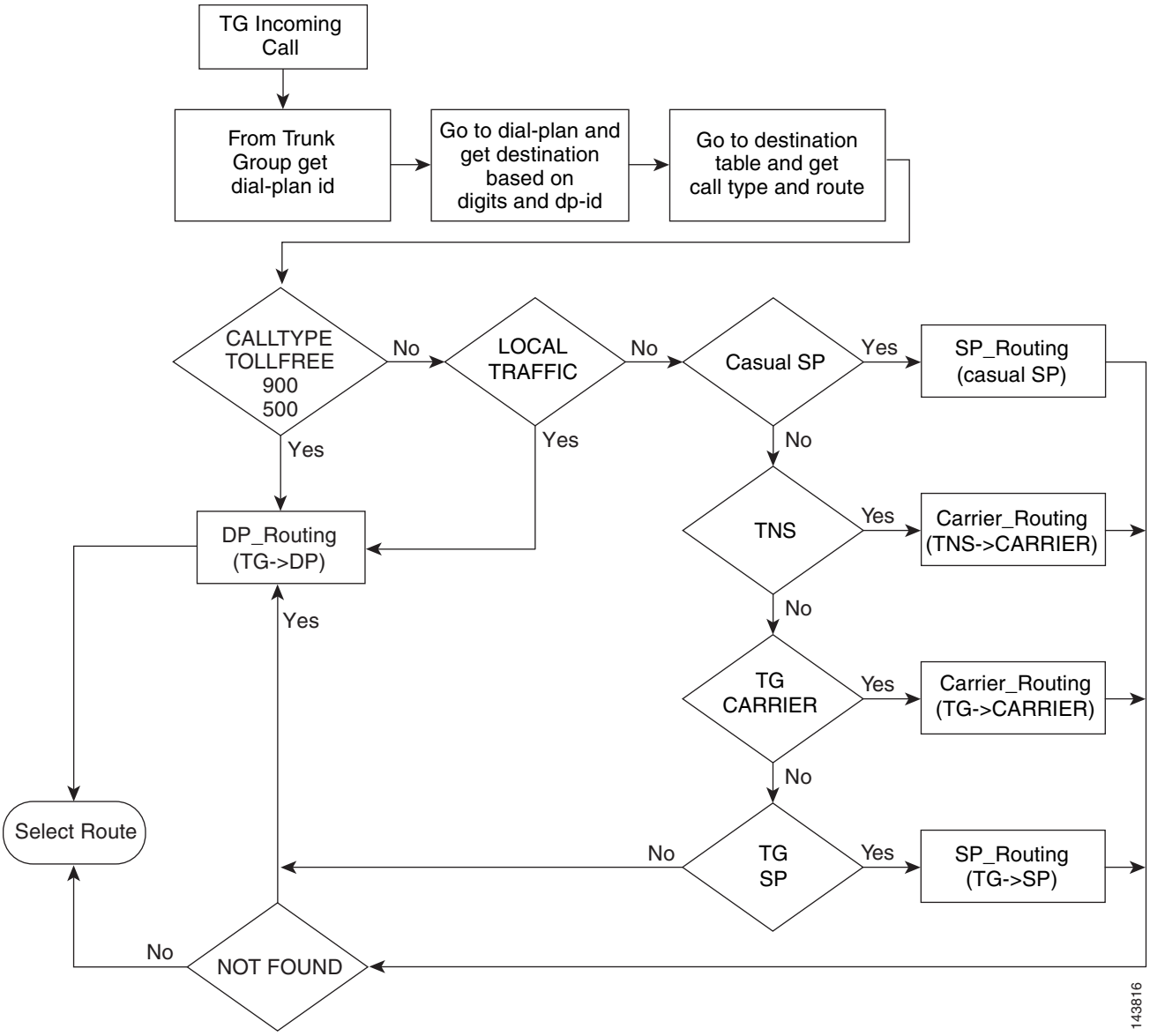
Step 8 If the call type is casual SP, the Cisco BTS 10200 Softswitch will use the SP routing to select the call route and to route the call. If the SP routing is not found, the Cisco BTS 10200 Softswitch will user the dial plan to select the call route and to route the call.

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

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

Step 11 If the call type is TG SP, the Cisco BTS 10200 Softswitch will the SP routing to select the call route and to route the call. If the SP routing is not found, the Cisco BTS 10200 Softswitch will user the dial plan to select the call route and to route the call.

Figure 2-2 Basic Trunk Routing



Service Provider Routing

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

Step 1 Service provider call received.

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

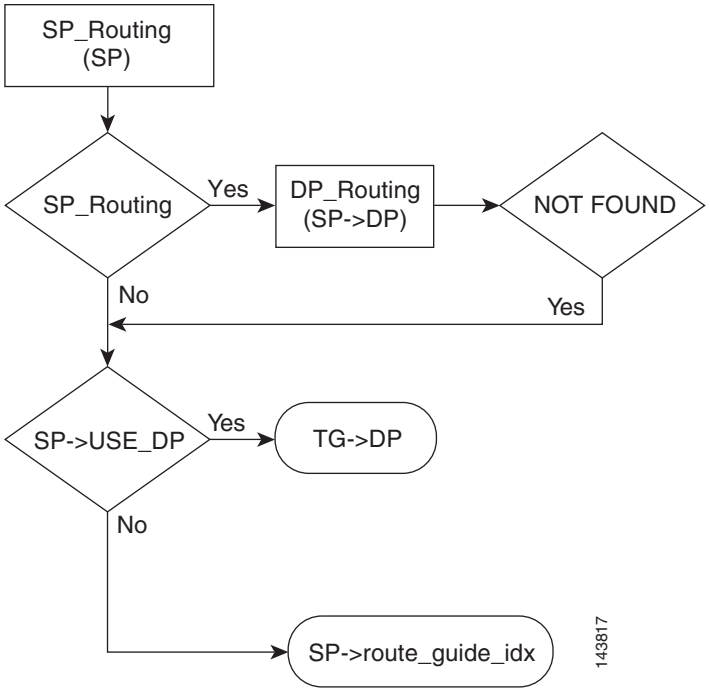
Step 3 If service provider routing is available, the Cisco BTS 10200 Softswitch will use the service provider dial plan to select the call route and to route the call. If the service provider dial plan can not be found, proceed to Step 4.

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

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

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

Figure 2-3 Service Provider Routing



Carrier Based Routing

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

Step 1 Carrier based routing call is received.

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

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

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

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

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

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

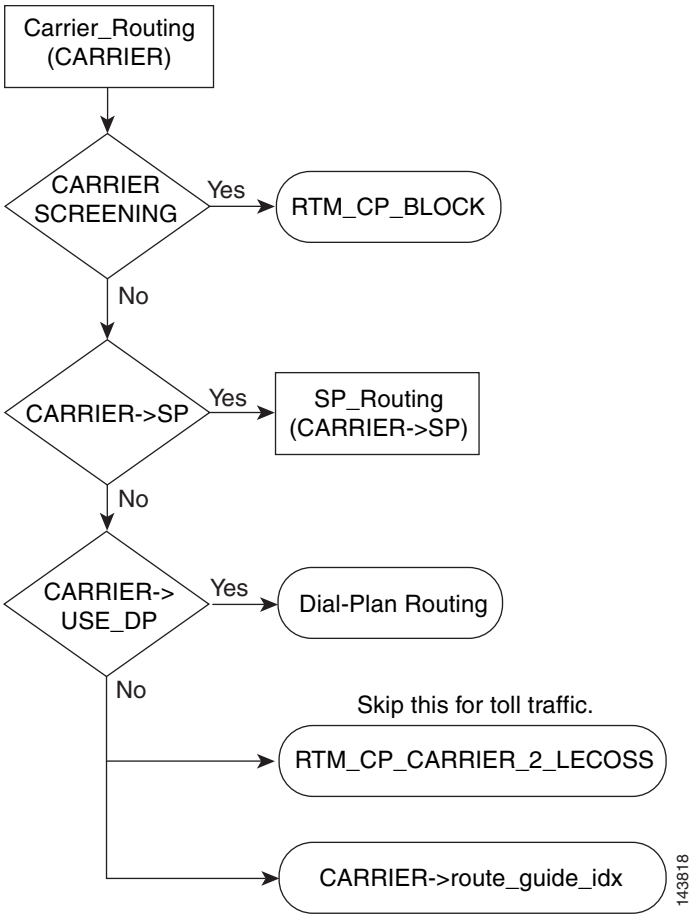
Step 8 If a carrier dial plan is not configured, the Cisco BTS 10200 Softswitch will determine if a carrier remote call processing to local exchange carrier operations support system is available (RTM_CP_CARRIER_2_LECOSS). If the RTM_CP_CARRIER_2_LECOSS is available, proceed to Step 9. If the RTM_CP_CARRIER_2_LECOSS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

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

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

Step 10 If the RTM_CP_CARRIER_2_LECOSS is not available, the Cisco BTS 10200 Softswitch will use the carrier guide index to select the call route and to route the call.

Figure 2-4 Carrier Based Routing



Basic Dial Plan Routing

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

Step 1 Basic dial plan routing call received.

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

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

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

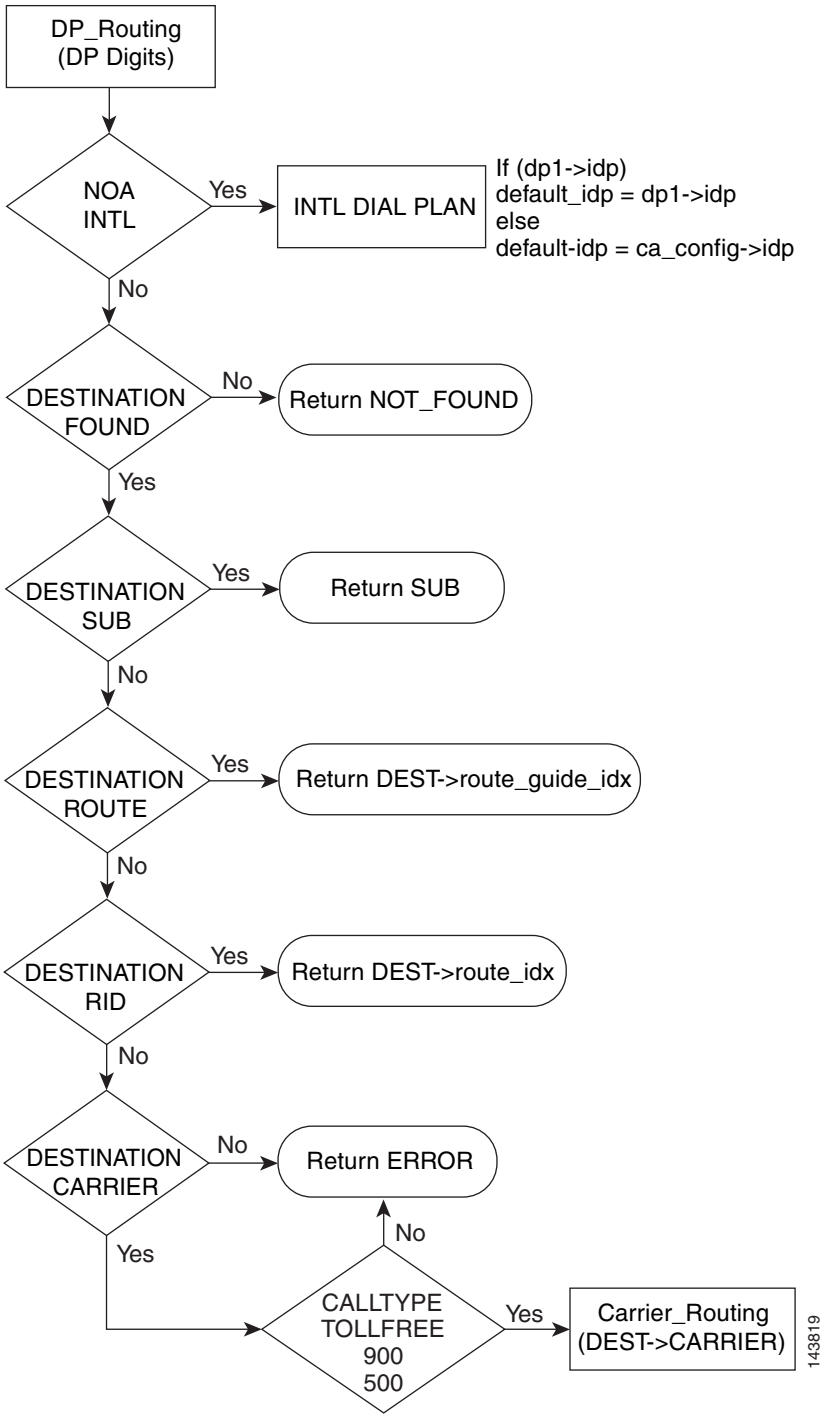
Step 5 Determine if a call destination route is found. If a call destination route is found, the Cisco BTS 10200 Softswitch will return a destination (DEST) response and will use the route guide index to select the call route and to route the call. If a call destination route is not found, proceed to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

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

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

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

Figure 2-5 Basic Dial Plan Routing



Automatic Number Identification Based Routing

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

Step 1 A TG incoming call is received.

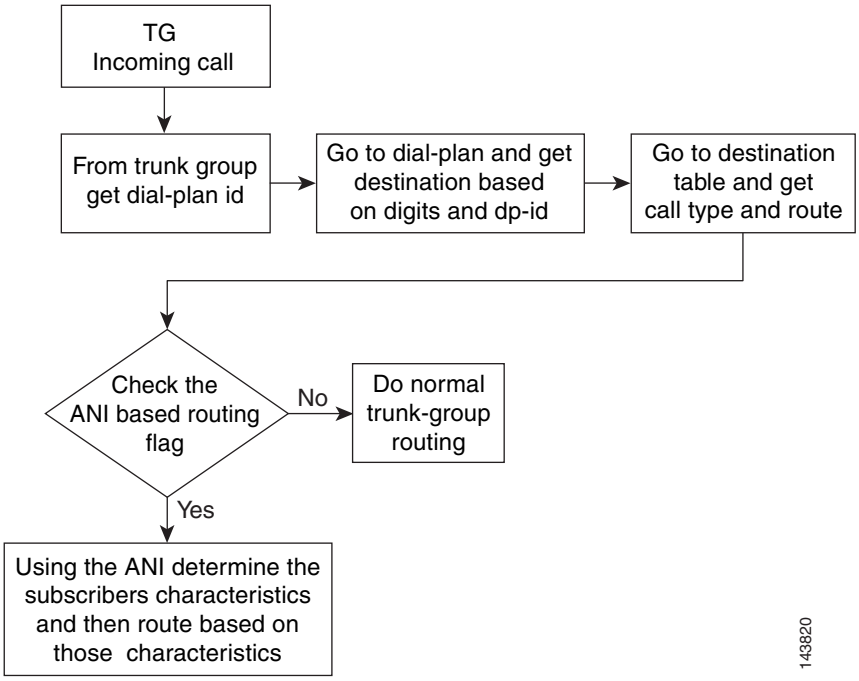
Step 2 Get the dial plan ID from the TG.

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

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

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

Figure 2-6 Automatic Number Identification Based Routing



Nature of Address Routing

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

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

Routing Number

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

Switch Types

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

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

Query Types

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

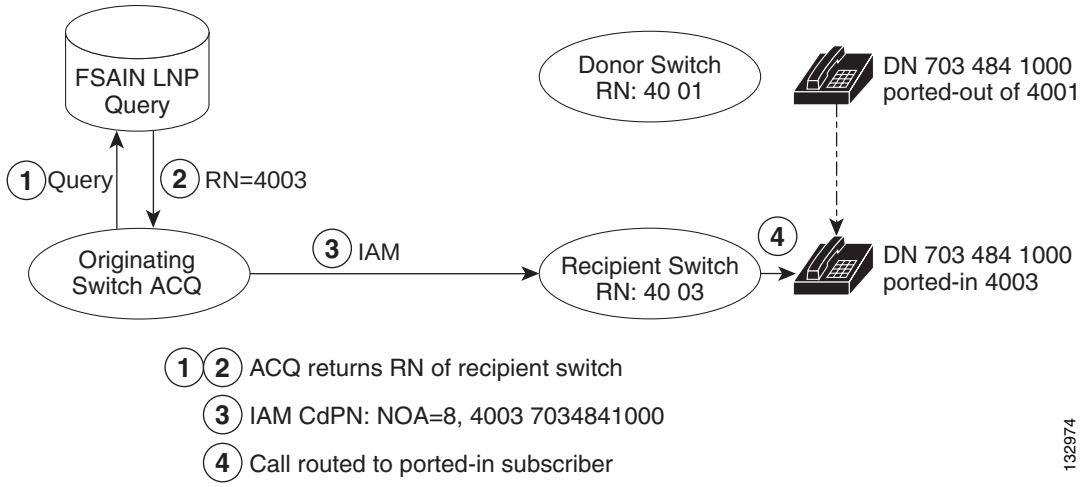
ITU LNP supports the following query types:

- All Calls Query (ACQ)—An LNP query is performed by the Cisco BTS 10200 Softswitch on all originating calls by BTS subscribers. In some cases, the BTS performs an ACQ for another switch that does not have the capability. This method is efficient for networks with many ported subscribers.
- Query On Release (QOR)—A call is routed without a query. When it reaches the donor switch, the call is released backward with the QOR cause code of OOR: Ported Number (14). The originating switch receives the REL with QOR, performs the LNP query, and routes the call on to the recipient switch. This method is efficient for networks with few ported subscribers.
- Onward Donor Based Routing (ODBR), also known as Onward Call Routing (OCR)—LNP queries are only performed in a donor switch when it is determined that the called party is ported-out of the switch. The donor switch performs the query and routes the call onward to the recipient switch. This method is efficient for networks with very few ported subscribers.

All Calls Query (ACQ)

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

Figure 2-7 All Calls Query



ACQ might also be performed by an intermediate or donor switch for another switch or network.

Intermediate or Donor Switch Performs ACQ for Another Switch or Network

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

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

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

Destination Table ACQ Controls

- ACQ-LNP-QUERY=NA in the Destination table is used when an ACQ is not applicable, for example, when the country does not support LNP or ACQ or when the operator does not want the Destination table to have any affect on LNP queries as configured in the LNP Profile and Trunk Group tables.
- ACQ-LNP-QUERY=LNP-QUERY-BASED-ON-CALL-TYPE in the Destination table is provided to allow or prevent ACQ queries for certain call types. For example, LNP queries should not be performed for emergency calls. When ACQ-LNP-QUERY=LNP-QUERY-BASED-ON-CALL-TYPE, in the Destination table, the value of the LNP-QUERY token in the Call Type Profile table determines whether a query will be allowed for a given call type (and the value of the PERFORM-LNP-QUERY in the Trunk Group table, if the call is an incoming trunk group).

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

- ACQ-LNP-QUERY=PERFORM-LNP-QUERY and ACQ-LNP-QUERY=NO-LNP-QUERY—ACQ queries are performed for a subset of calls based on the called number prefix. To support this requirement, ALL-CALLS-QUERY=Y in the LNP Profile table. In addition, calls to the specific prefixes requiring ACQ have dial-plan entries pointing to destinations with ACQ-LNP-QUERY , in the Destination table, set to PERFORM-LNP-QUERY. For calls to these ACQ destinations, if the call originates on a trunk, then the Trunk Group table PERFORM-LNP-QUERY also must be set to 'Y' for a query to be performed.
- ACQ-LNP-QUERY=NO-LNP-QUERY—There is a requirement to block queries on outgoing carrier calls. The value ACQ-LNP-QUERY=NO-LNP-QUERY, in the Destination table, indicates that a query will not be performed on any call to this destination.

ACQ and Call Forwarding

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

ACQ Matrix

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

Table 2-1 Subscriber Origination ACQ Matrix

LNP Profile ALL-CALL-QUERY	Destination ACQ-LNP-QUERY = NA	Destination ACQ-LNP-QUERY = PERFORM-LNP-QUERY	Destination ACQ-LNP-QUERY = NO-LNP-QUERY	Destination (ACQ-LNP-QUERY = ACQ-BASED-ON-CALL-TYPE) and (Call-Type-Profile for call type LNP-QUERY = Y	Destination (ACQ-LNP-QUERY = ACQ-BASED-ON-CALL-TYPE) and (Call-Type-Profile for call type not present or LNP-QUERY = N	BTS ACQ Query Performed?
Y	X					Y
Y		X				Y
Y			X			N
Y				X		Y
Y					X	N
N	X					N
N		X				N
N			X			N
N				X		N
N					X	N

Table 2-2 Trunk Origination ACQ Matrix

LNP Profile ALL-CALL-QUERY	Incoming Trunk Grp PERFORM-LNP-QUERY	Destination ACQ-LNP-QUERY = NA	Destination ACQ-LNP-QUERY = PERFORM-LNP-QUERY	Destination ACQ-LNP-QUERY = NO-LNP-QUERY	Destination (ACQ-LNP-QUERY = ACQ-BASED-ON-CALL-TYPE) and (Call-Type-Profile for call type LNP-QUERY = Y	Destination (ACQ-LNP-QUERY = ACQ-BASED-ON-CALL-TYPE) and (Call-Type-Profile for call type not present or LNP-QUERY = N	BTS ACQ Query Performed?
Y	Y	X					Y
Y	Y		X				Y
Y	Y			X			N
Y	Y				X		Y
Y	Y		-	-	-	X	N

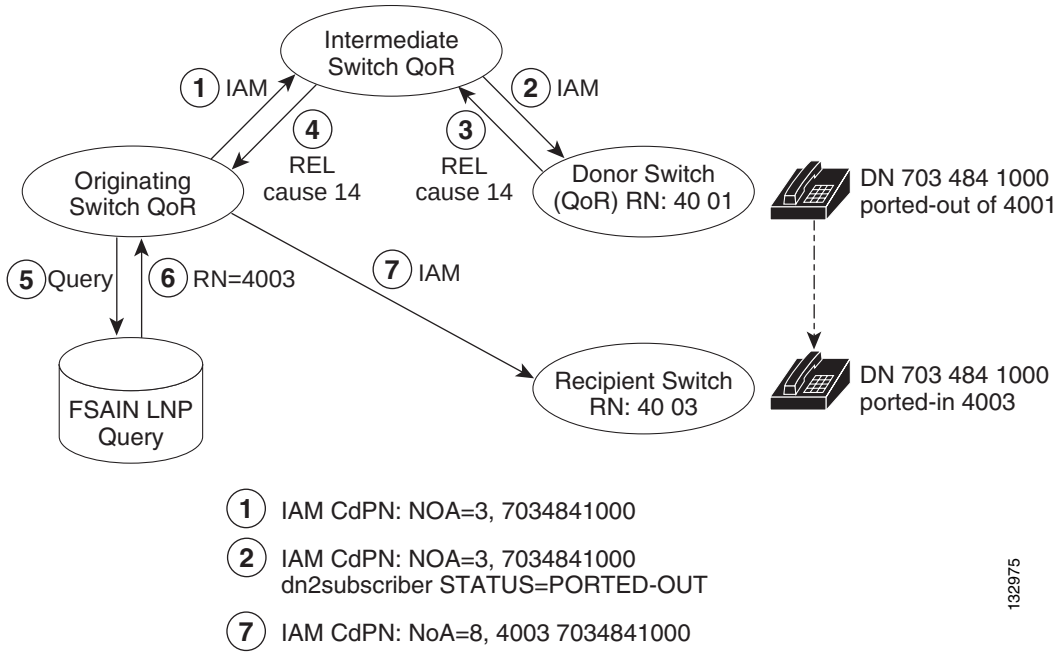
Table 2-2 Trunk Origination ACQ Matrix (continued)

LNP Profile ALL-CALL-QUERY	Incoming Trunk Grp PERFORM-LNP-QUERY	Destination ACQ-LNP-QUERY = NA	Destination ACQ-LNP-QUERY = PERFORM-LNP-QUERY	Destination ACQ-LNP-QUERY = NO-LNP-QUERY	Destination (ACQ-LNP-QUERY = ACQ-BASED-ON-CALL-TYPE) and (Call-Type-Profile for call type LNP-QUERY = Y	Destination (ACQ-LNP-QUERY = ACQ-BASED-ON-CALL-TYPE) and (Call-Type-Profile for call type not present or LNP-QUERY = N	BTS ACQ Query Performed?
Y	N	X					N
Y	N		X				N
Y	N			X			N
Y	N				X		N
Y	N					X	N
N	Y	X					N
N	Y		X				N
N	Y			X			N
N	Y				X		N
N	Y		-	-	-	X	N
N	N	X					N
N	N		X				N
N	N			X			N
N	N				X		N
N	N					X	N

Query On Release (QOR)

For Query on Release (QOR), illustrated in Figure 1, calls are routed normally, with no LNP query, until a call is received for a ported-out subscriber at the donor switch. The donor switch supporting QOR clears the call and sends backward release (REL) with the QOR cause code specified by the network, cause value QOR: Ported Number (14) in ITU/ETSI networks. Each intermediate/transit switch in turn clears backward with the same QOR release cause until finally the originating switch receives the backward REL. This originating switch performs the QOR query and re-routes the call onward towards the recipient switch.

Figure 2-8 Query On Release



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

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

The BTS performs one of the following functions for QoR:

- Donor Switch
- Intermediate or Transit Switch
- Originating Switch

Donor Switch

- Normal case—When the BTS receives a call to a DN with a DN2subscriber record, if the STATUS has a value of PORTED-OUT, and if the LNP Profile table indicates QUERY-ON-RELEASE=Y, then a backward release (REL) is sent with the QOR ported number release cause defined in the LNP Profile table (defaults to cause value QOR: Ported Number (14)).
- QOR not supported by backward switch—For a trunk originated call to a ported-out subscriber, the incoming trunk group may indicate that QOR is not supported by the previous switch or network and that the BTS is expected to perform the QOR query (LNP Profile table QUERY-ON-RELEASE=Y and Trunk Group table PERFORM-LNP-QUERY =Y). In this case, a QOR query is performed by the BTS and the call is re-routed onward to the recipient switch.
- Misrouted call or configuration error—If the dn2subscriber record STATUS has a value of PORTED-OUT, but the LNP Profile table QUERY-ON-RELEASE=N and ONWARD-CALL-ROUTING=N, a network routing error has occurred (for example, the CRD LNP database is incorrect, the originating switch performing ACQ misrouted the call, or the BTS DN2subscriber or LNP Profile flags are incorrect). For a misrouted call where the CdPN contained a regular non-ported DN, the BTS will clear the call with a non-LNP release cause indicating an unallocated number ; otherwise, if the CdPN contained the ported NOA as a result of the incoming trunk call or subscriber origination on this switch, then the cause misrouted ported number is used.

Intermediate or Transit Switch

- Normal case—When the BTS receives a backward REL with the QOR ported number release cause, the BTS clears the call and sends a backward REL with the same release cause.
- QOR not supported by backward switch—If the incoming trunk group indicates that QOR is not supported by the previous switch or network and that the BTS is expected to perform the QOR query (LNP Profile table QUERY-ON-RELEASE =Y and Trunk Group table PERFORM-LNP-QUERY=Y) , a QOR query is performed by the BTS and the call is re-routed onward to the recipient switch.

Originating Switch

- Normal case—When the BTS receives a backward REL with the QOR ported number release cause, if the LNP Profile table QUERY-ON-RELEASE=Y, a query is preformed. The call is then re-routed onward to the recipient switch.
- When the BTS receives a backward REL with cause QOR: Ported Number (14), if the LNP Profile table QUERY-ON-RELEASE=N, this cause value is not defined as a QOR ported number cause value. If the operator desires explicit cause mapping for this cause, cause-code mapping should be provisioned.
- When the BTS receives a backward REL with the QoR ported number release cause, and the LNP Profile table QUERY-ON-RELEASE=Y, if the BTS determines that a query was done previously (ACQ) which did not find an RN and the call was routed with the DN, the call is cleared with a cause unallocated number.
- When the BTS receives a backward REL with the QOR Ported Number release cause, if the BTS determines that a query was done previously (ACQ) that returned an RN, and the call was routed using the RN and NOA for ported number, then the call is cleared with a cause 31 unspecified This case is normally not expected to occur. If the BTS is the donor switch in this case and receives a called party number with ported NOA, then REL with cause unallocated number is sent back to the originating switch. Cause QoR: Ported Number (14) is not used for an incoming call containing a ported number NOA.

Intermediate or Donor Switch Performing QoR for Another Switch or Network

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

QoR and Call Forwarding

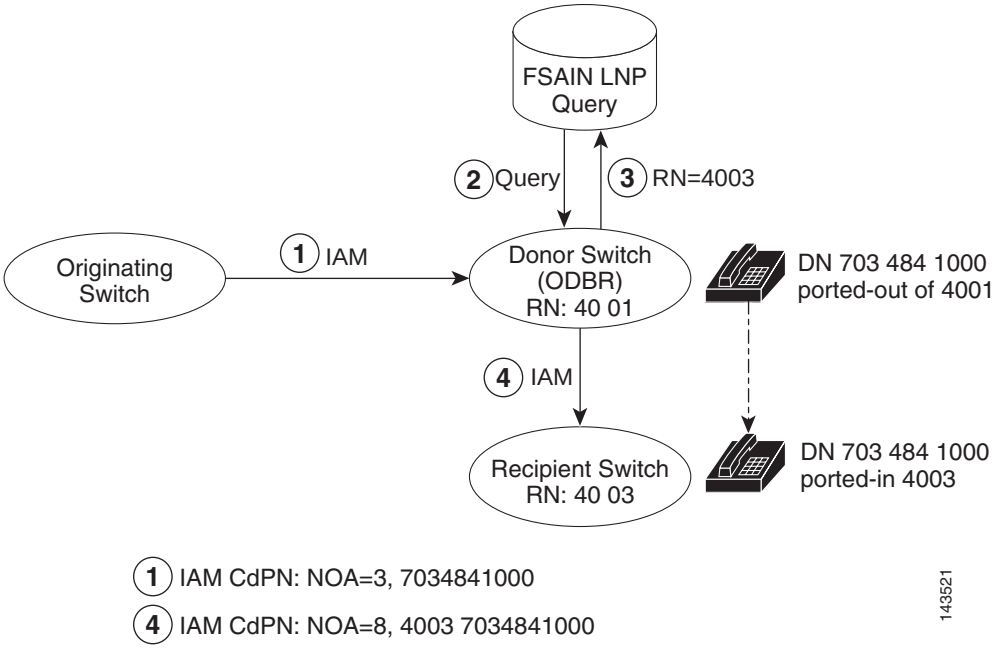
A call terminating to a BTS subscriber may be forwarded to another number, for example, in the case of CFU, CFB, or CFNA. In the case of LNP, the forwarded call is considered a new subscriber. If a backward REL with the ported number release cause is received, and QoR is configured, a query is performed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

Onward Donor Based Routing (ODBR)

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

ODBR is illustrated in Figure 2-9.

Figure 2-9 ODBR Routing



Subscriber Based LNP Trigger on a Donor Switch

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

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

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

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

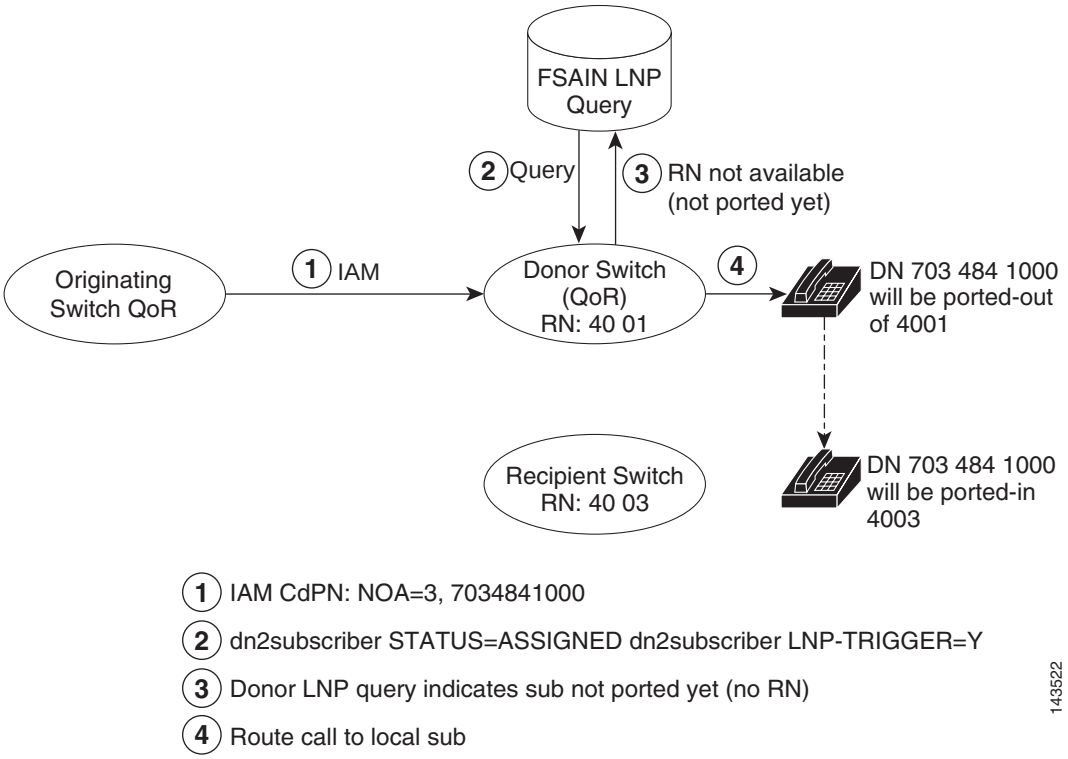
The subscriber-based LNP trigger makes it easy for the operator because configuring of the subscriber ported status is not required to be synchronized with the porting window. The operator sets the subscriber query (LNP-TRIGGER) flag in advance of the porting time window and can set the subscriber STATUS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

Note The LNP-TRIGGER flag is not applicable for ACQ.

Example 1: QoR Donor Transition Period

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

Figure 2-10 Before Subscriber Porting

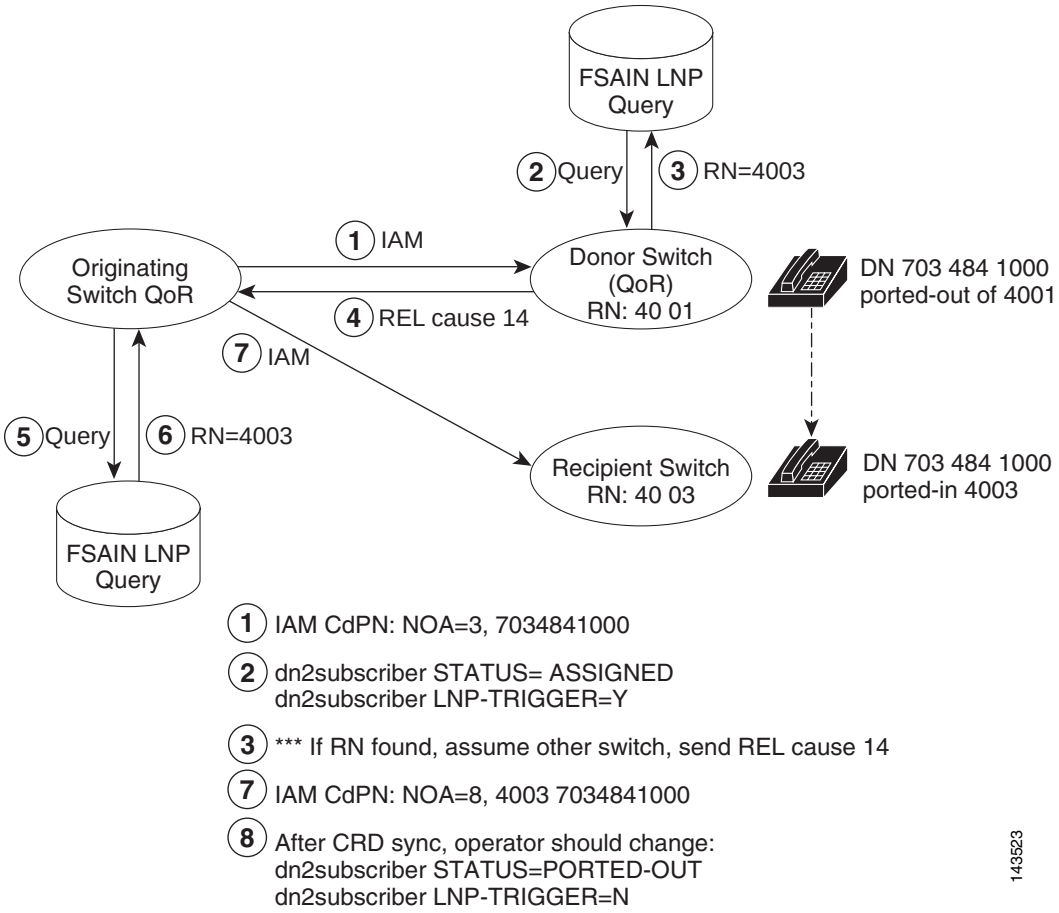


1. The originating switch sends an IAM to the donor switch with NOA=3 and DN=7034841000.
2. In the DN2subscriber table on the donor switch, STATUS=ASSIGNED and LNP-TRIGGER=Y. Since the LNP-TRIGGER=Y, the donor switch performs a query.
3. The query does not return a RN to the donor switch, indicating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

Example 2: QOR Donor Transition Period

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

Figure 2-11 After Subscriber Porting



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

Precedence of Query Types

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

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

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

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

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

Table 2-3 Precedence of Query Matrix

LNP Profile ALL-CALL-QUERY	LNP Profile ONWARD-CALL-ROUTING	LNP Profile QUERY-ON-RELEASE	DN2SUBSCRIBER status PORTED-OUT)	DN2SUBSCRIBER LNP-TRIGGER (and not PORTED-OUT)	Trunk Grp PERFORM-LNP-QUERY	Originating Switch Query?	Intermediate Switch Query?	Donor Switch Query?	Recipient Switch Query?
Y						ACQ			
	Y		Y					ODBR	
		Y				REL QOR		REL	
				Y				Note 3	
					Y				
Y	Y		Y			ACQ		ODBR	
Y		Y	Y			ACQ		REL	
Y				Y		ACQ		Note 3	
Y					Y	ACQ	ACQ	ACQ	
	Y	Y	Y					ODBR	
	Y			Y				Note 1	

Table 2-3 Precedence of Query Matrix (continued)

	Y		Y		Y			ODBR	
		Y		Y				Note 2	
		Y			Y	REL QOR	REL QOR	REL QOR	
Y	Y	Y	Y			ACQ		ODBR	
Y	Y	Y		Y		ACQ		Note 1	
Y	Y	Y			Y	ACQ	ACQ	ACQ	
Y	Y	Y		Y	Y	ACQ	ACQ	ACQ	

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

case B: Donor switch dn2subscriber table LNP-TRIGGER=Y and dn2subscriber table STATUS=ASSIGNED with ONWARD-CALL-ROUTING=Y: LNP-TRIGGER query. If query result returns an RN, then if the RN is for another switch the call routed onward to the recipient switch; otherwise, the call is routed to the local subscriber

Note 2: case A: Donor switch dn2subscriber table LNP-TRIGGER=Y with QUERY-ON-RELEASE=Y and dn2subscriber STATUS=PORTED-OUT: Call is cleared backward with REL and QOR: ported number cause.

case B: Donor switch dn2subscriber table LNP-TRIGGER=Y with QUERY-ON-RELEASE=Y and dn2subscriber table STATUS=ASSIGNED: LNP-TRIGGER query. If query result returns any RN or other switch, then the call is failed with QoR release cause such as unallocated number (not cause QoR: Ported Number (14)). Otherwise, an attempt is made to route the call to the local subscriber

Note 3: Donor switch dn2subscriber LNP-TRIGGER=Y, but not ODBR or QoR. Route call to subscriber with no query.

Dial Plan and Nature of Address Routing

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

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

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

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

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

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

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

Local Number Portability Query Returns Routing Number for Ported Directory Number

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

International WZ1 (INTL_WZ1) Preferred Carrier Routing

This section describes the preferred carrier (PIC) routing for an international world zone 1 call. In the past releases, the BTS 10200 supported preferred carrier (PIC) routing based on the routing application defined for the North America PSTN environment. Table 2-4 lists the general preferred carrier routing behavior in prior releases of the BTS 10200.

Table 2-4 General Preferred Routing

CALL TYPE	PIC	Description
CALLTYPE_INTERLATA CALLTYPE_INTL_WZ1	PIC1	Uses SUBSCRIBER.PIC1 to route the call. If PIC1 is not provisioned then route the call to POP.LECOSS.
CALLTYPE_TOLL	PIC2	If POP.ITP is set to Y then uses SUBSCRIBER.PIC2 to route the call. Otherwise, route the call according to the provisioning defined in DIAL_PLAN.
CALLTYPE_INTL	PIC3/PIC1	Uses SUBSCRIBER.PIC3 to route the call if PIC3 is provisioned. If PIC3 is not provisioned then use SUBSCRIBER.PIC1 to route the call. If neither PIC1 nor PIC3 is provisioned then route the call to POP.LECOSS.

Because different customers have different needs regarding the routing for INTL_WZ1 calls, the flexibility of preferred carrier routing for INTL_WZ1 calls has been enhanced as shown in Table 2-5.

Table 2-5 Enhanced Preferred Routing

CALL TYPE	PIC	Description
CALLTYPE_INTERLATA	PIC1	Uses SUBSCRIBER.PIC1 to route the call. If PIC1 is not provisioned then route the call to POP.LECOSS. Filter: CARRIER: INTER
CALLTYPE_INTL_WZ1	PIC1	CA-CONFIG:INTL_WZ1_USE_PIC3 = N Uses SUBSCRIBER.PIC1 to route the call. If PIC1 is not provisioned then route the call to POP.LECOSS. Filter: CARRIER: INTER or CARRIER: INTL (Allow call goes through if either one set to Y)
	PIC3/PIC1	CA-CONFIG:INTL_WZ1_USE_PIC3 = Y Uses SUBSCRIBER.PIC3 to route the call if PIC3 is provisioned. If PIC3 is not provisioned then use SUBSCRIBER.PIC1 to route the call. If neither PIC1 nor PIC3 is provisioned then route the call to POP.LECOSS. Filter: CARRIER: INTER or CARRIER: INTL (Allow call goes through if either one set to Y)
CALLTYPE_TOLL	PIC2	If POP.ITP is set to Y then uses SUBSCRIBER.PIC2 to route the call. Otherwise, route the call according to the provisioning defined in DIAL_PLAN. Filter: CARRIER: INTRA
CALLTYPE_INTL	PIC3/PIC1	Uses SUBSCRIBER.PIC3 to route the call if PIC3 is provisioned. If PIC3 is not provisioned then use SUBSCRIBER.PIC1 to route the call. If neither PIC1 nor PIC3 is provisioned then route the call to POP.LECOSS. Filter: CARRIER: INTL

There is no change to CALLTYPE_INTERLLATA, CALLTYPE_TOLL, and CALLTYPE_INTL. The CALLTYPE_INTL_WZ1 has two different flavors of preferred carrier routing controlled by the CA-CONFIG:INTL_WZ1_PIC3 flag.

For operator assisted calls, there are minor differences between PIC2 and PIC1/PIC3. A call associated with PIC1 or PIC3 is routed to the PIC1/PIC3 carrier if the SUB_PROFILE.EA_USE_PIC1 is set to Y, otherwise the call is routed to POP.LECOSS. A associated with PIC2 is routed to the PIC2 carrier.

Note When a call is routed to any PICx carrier but the specific carrier does not support it (CARRIER.OP-SERVICES=N), the will be rerouted to POP.LECOSS.

Casual calls are routed to PICx carrier according to the call type if the specified carrier supports casual calls (CARRIER.CASUAL=N), otherwise the call is blocked.

Note Enhanced preferred routing affects the entire system for CALL TYPE INTL_WZ1 routing. All subscriber originated CALL TYPE INTL_WZ1 calls use preferred carrier routing. In another words, the BTS 10200 does not allow one subscriber to use PIC1 while other subscribers use PIC3 for CALL TYPE INTL_WZ1 calls.

Call Types

This section provides detailed information on the Cisco BTS 10200 Softswitch call types. Information on the following call types is provided:

- 1+ Interlata Call
- 1+ Intralata Call
- 0+ Interlata Call
- 0+ Intralata Call
- Ported-In Call Processing
- Call-Type After Multiple Digit Translations
- Operator Services

1+ Interlata Call

This section provides a detailed description of the Cisco BTS 10200 Softswitch routing and call flow for 1+ interlata calls. Refer to Figure 2-12 for visual representation of the 1+ interlata call routing flow while reviewing the following detailed step-by-step 1+ interlata call routing flow.

Step 1 A 1+ interlata call is received.

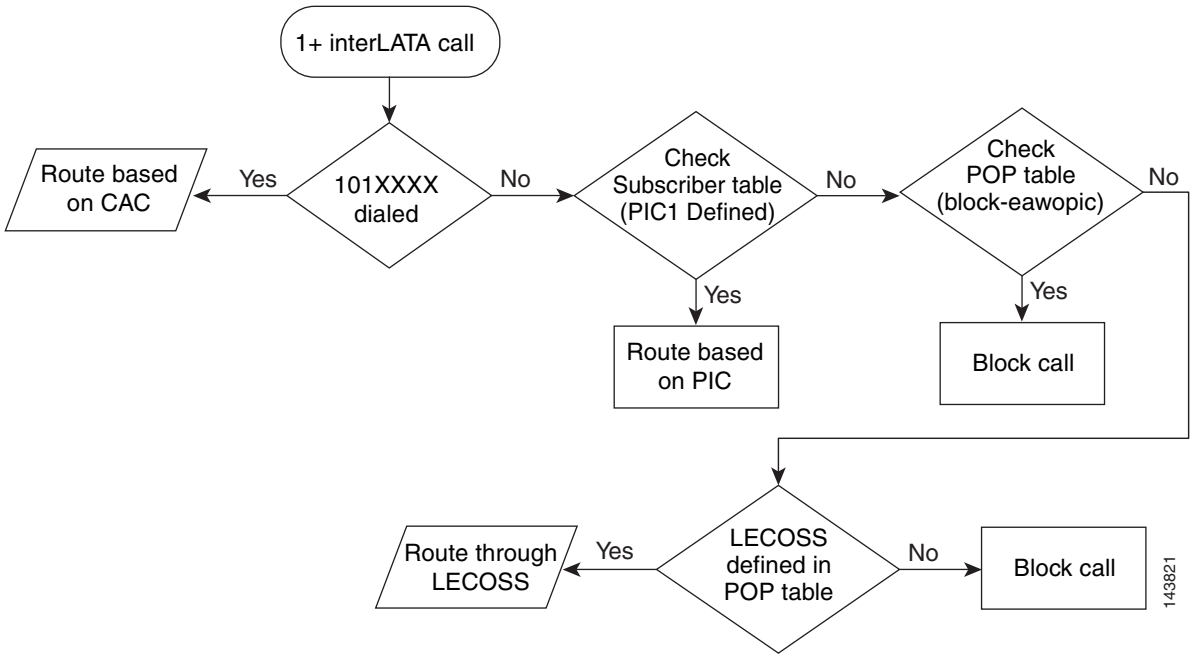
Step 2 Determine if a 101XXXX number has been dialed. If a 101XXXX number has been dialed, the Cisco BTS 10200 Softswitch will select the call route and route the call based on the carrier access code (CAC). If a 101XXXX number has not been dialed, proceed to Step 3.

Step 3 Check the subscriber table to determine if a PIC is defined. If a PIC is defined, the Cisco BTS 10200 Softswitch will select the call route and route the call based on the PIC information. If a PIC is not defined, proceed to Step 4.

Step 4 Check the point of presence (POP) table and verify if a block-eawopic is configured. If the a block-eawopic is configured, the Cisco BTS 10200 Softswitch will block the call. If a block-eawopic is not configured, proceed to Step 5.

Step 5 Determine if a local exchange carrier operations support system (LECOSS) is defined in the POP table. If a LECOSS is defined in the POP table, the Cisco BTS 10200 Softswitch will select route the call via the LECOSS. If a LECOSS is not defined in the POP table, the Cisco BTS 10200 Softswitch will block the call.

Figure 2-12 1+ Interlata Call



1+ Intralata Call

This section provides a detailed description of the Cisco BTS 10200 Softswitch routing and call flow for 1+ intralata calls. Refer to Figure 2-13 for visual representation of the 1+ intralata call routing flow while reviewing the following detailed step-by-step 1+ intralata call routing flow.

Step 1 An 1+ intralata call is received.

Step 2 Determine if 101XXXX number has been dialed. If a 101XXXX number has been dialed proceed to Step 3. If a 101XXXX number has not been dialed, proceed to Step 4.

Step 3 Check the carrier table for a carrier access code (CAC). If a CAC is available, the Cisco BTS 10200 Softswitch will select the call route and route the call based on the CAC. If a CAC is not available, proceed to Step 3a.

a. Determine if a LECOSS is defined in the POP table. If a LECOSS is defined in the POP table, the Cisco BTS 10200 Softswitch will select the call route and route the call via the LECOSS. If a LECOSS is not defined in the POP table, the Cisco BTS 10200 Softswitch will block the call.

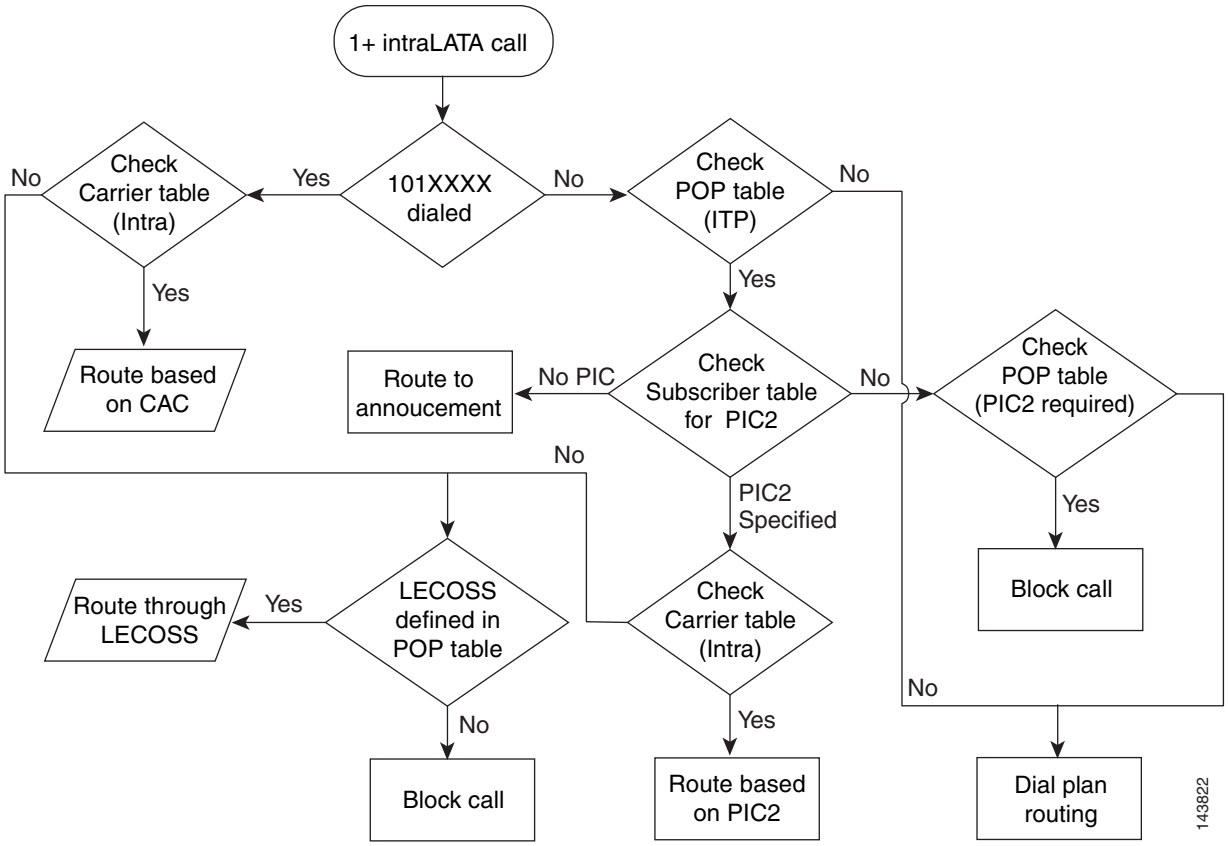
Step 4 Check the POP table for a configured IP transfer point (ITP). If an ITP is configured, proceed to Step 4a. If an ITP is not configured, the Cisco BTS 10200 Softswitch will route the call via dial plan routing.

a. Check the subscriber table for a specified PIC. If a PIC is specified, proceed to Step 4b. If a PIC is not specified, the Cisco BTS 10200 Softswitch will route the call to the announcement server and will check the POP table for a specified PIC. If a PIC is not specified, the Cisco BTS 10200 Softswitch will block the call or if a dial plan is available, the Cisco BTS 10200 Softswitch will select the call route and route the call according to the dial plan routing information.

b. Check the intra carrier table for a specified PIC. If a PIC is specified in the intra carrier table, the Cisco BTS 10200 Softswitch will select the call route and route the call based on the PIC information. If a PIC is not specified in the intra carrier table, proceed to Step 4c.

c. Determine if a LECOSS is defined in the POP table. If a LECOSS is defined in the POP table, the Cisco BTS 10200 Softswitch will select the call route and route the call via the LECOSS. If a LECOSS is not defined in the POP table, the Cisco BTS 10200 Softswitch will block the call.

Figure 2-13 1+ Intralata Call



0+ Interlata Call

This section provides a detailed description of the Cisco BTS 10200 Softswitch routing and call flow for 0+ interlata calls. Refer to Figure 2-14 for visual representation of the 0+ interlata call routing flow while reviewing the following detailed step-by-step 0+ interlata call routing flow.

Step 1 A 0+ interlata call is received.

Step 2 Determine if a 101XXXX number has been dialed. If a 101XXXX number has been dialed proceed to Step 3. If a 101XXXX number has not been dialed proceed to Step 5.

Step 3 Check the carrier table for a CAC. If a CAC is available, the Cisco BTS 10200 Softswitch will select the call route and route the call based on the CAC. If a CAC is not available, proceed to Step 4.

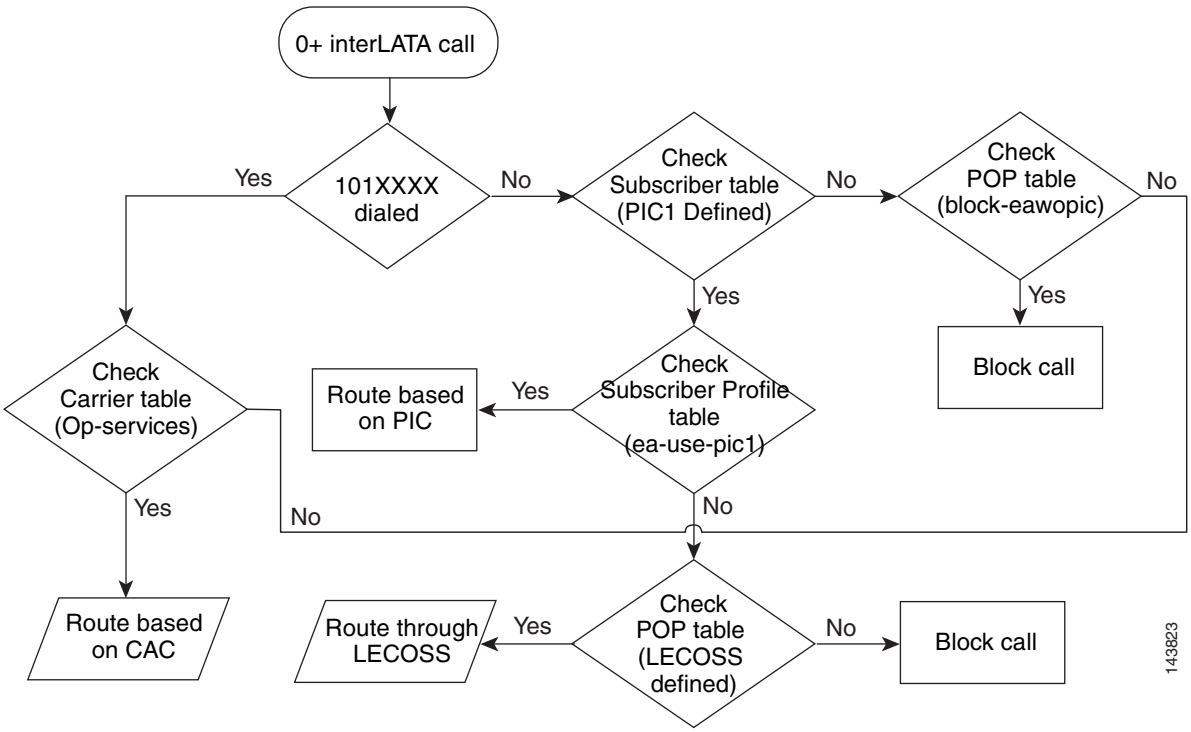
Step 4 Check the POP table for a defined LECOSS. If a LECOSS is defined in the POP table, the Cisco BTS 10200 Softswitch will route the call via the LECOSS. If a LECOSS is not defined in the POP table, the Cisco BTS 10200 Softswitch will block the call.

Step 5 Check the subscriber table for a defined PIC. If a PIC is defined in the subscriber table, proceed to Step 6. If a PIC is not defined in the subscriber table, proceed to Step 7.

Step 6 Check the subscriber profile for ea-use-pic entry. If the subscriber profile contains an ea-use-pic entry, the Cisco BTS 10200 Softswitch will select the call route and route the call based on the PIC information. If the subscriber profile does not contained an ea-use-pic entry, return to Step 4.

Step 7 Check the POP table for a block-eawopic entry. If the POP table contains a block-eawopic entry, the Cisco BTS 10200 Softswitch will block the call. If the POP table does not contain a block-eawopic entry, return to Step 4.

Figure 2-14 0+ Interlata Call



0+ Intralata Call

This section provides a detailed description of the Cisco BTS 10200 Softswitch routing and call flow for 0+ intralata calls. Refer to Figure 2-15 for visual representation of the 0+ intralata call routing flow while reviewing the following detailed step-by-step 0+ intralata call routing flow.

Step 1 A 0+ intralata call is received.

Step 2 Determine if a 101XXXX number was dialed. If a 101XXXX number was dialed, proceed to Step 3. If a 101XXXX number was not dialed, proceed to Step 5.

Step 3 Check the carrier table for a CAC. If a CAC is available, the Cisco BTS 10200 Softswitch will select the call route and route the call based on the CAC. If a CAC is not available, proceed to Step 4.

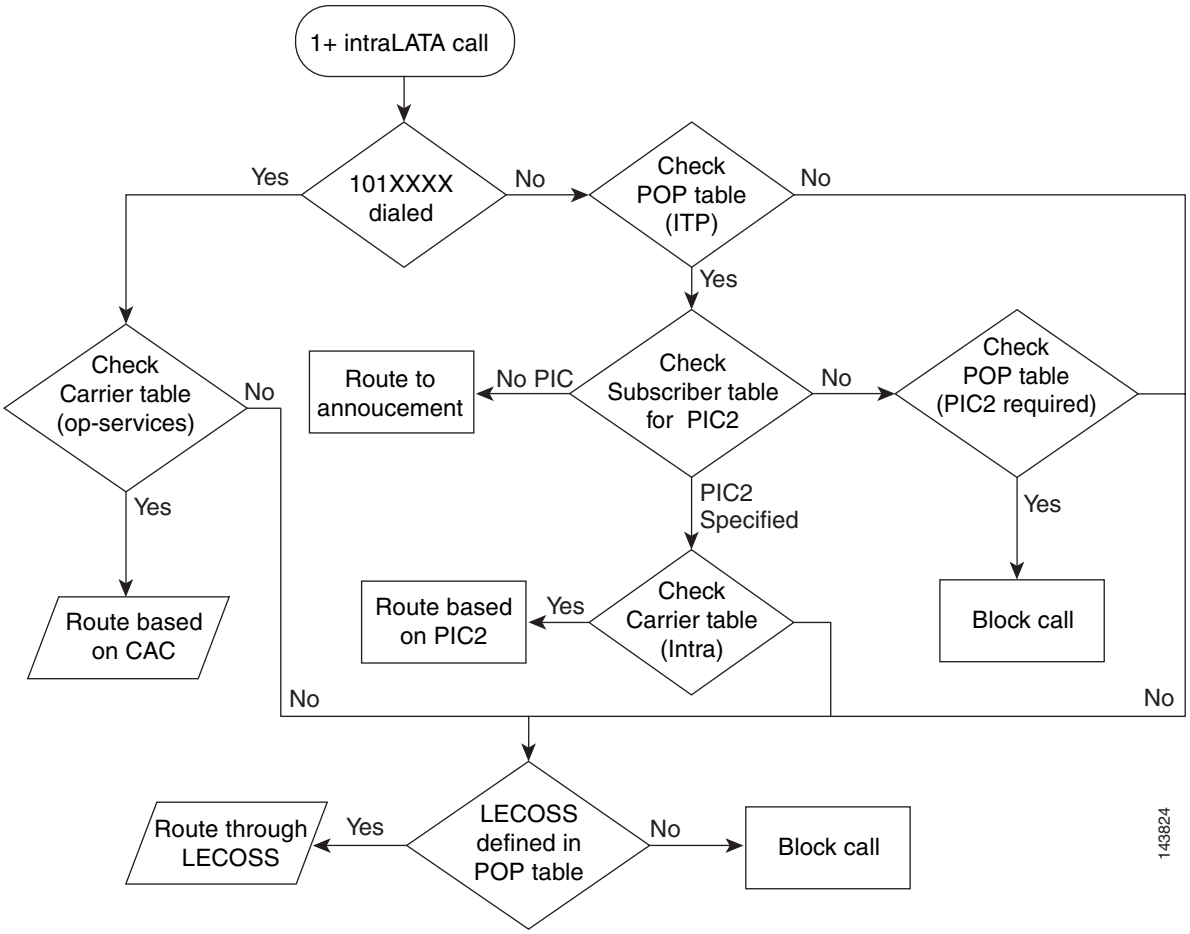
Step 4 Check the POP table for a defined LECOSS. If a LECOSS is defined in the POP table, the Cisco BTS 10200 Softswitch will route the call via the LECOSS. If a LECOSS is not defined in the POP table, the Cisco BTS 10200 Softswitch will block the call.

Step 5 Check the POP table for a configured ITP. If an ITP is configured, proceed to Step 6. If an ITP is not configured return to Step 4.

Step 6 Check the subscriber table for a specified PIC. If a PIC is specified, proceed to Step 7. If a PIC is not specified, the Cisco BTS 10200 Softswitch will route the call to the announcement server. Additionally, if a PIC is not specified in the subscriber table, the Cisco BTS 10200 Softswitch will check the POP table for a specified PIC. If a PIC is specified in the POP table, the Cisco BTS 10200 Softswitch will block the call. If a PIC is not specified in the POP table, return to Step 4.

Step 7 Check the intra carrier table for the specified PIC. If the specified PIC is included in the intra carrier table, the Cisco BTS 10200 Softswitch will select the call route and route the call based on the PIC information. If the specified PIC is not included in the intra carrier table, return to Step 4.

Figure 2-15 0+ Intralata Call



Ported-In Call Processing

This section provides a detailed description of the Cisco BTS 10200 Softswitch routing and call flow for ported-in call processing calls. Refer to Figure 2-16 for visual representation of the ported-in call processing call routing flow while reviewing the following detailed step-by-step ported-in call processing call routing flow. Note that in Figure 2-16 the call flow logic applies to American National Standards Institute (ANSI)/North America; for International Telecommunication Union (ITU) local number portability (LNP), the logic is different. For a complete explanation of the call processing logic for ITU LNP, refer to the *ITU Local Number Portability Feature Module*.

Step 1 A ported-in call is received. If a query has already been performed (e.g., Forward Call Indicators (FCI) is set to "number translated", then a query is not performed in the Cisco BTS 10200 Softswitch. Proceed to Step 7.

Step 2 The office code is not assigned to the Cisco BTS 10200 Softswitch.

Step 3 Determine if the office code is in the ported-in office code table. If the office code is in the ported-in office code table, proceed to Step 4. if the office code is not in the ported-in office code table, perform normal call processing.

Step 4 Determine if the in-call agent flag is set. If the in-call agent flag is set, proceed to Step 5. If the in-call agent flag is not set, the Cisco BTS 10200 Softswitch will perform an LNP query. Please note that a query is not performed if it has already been completed on a previous switch.

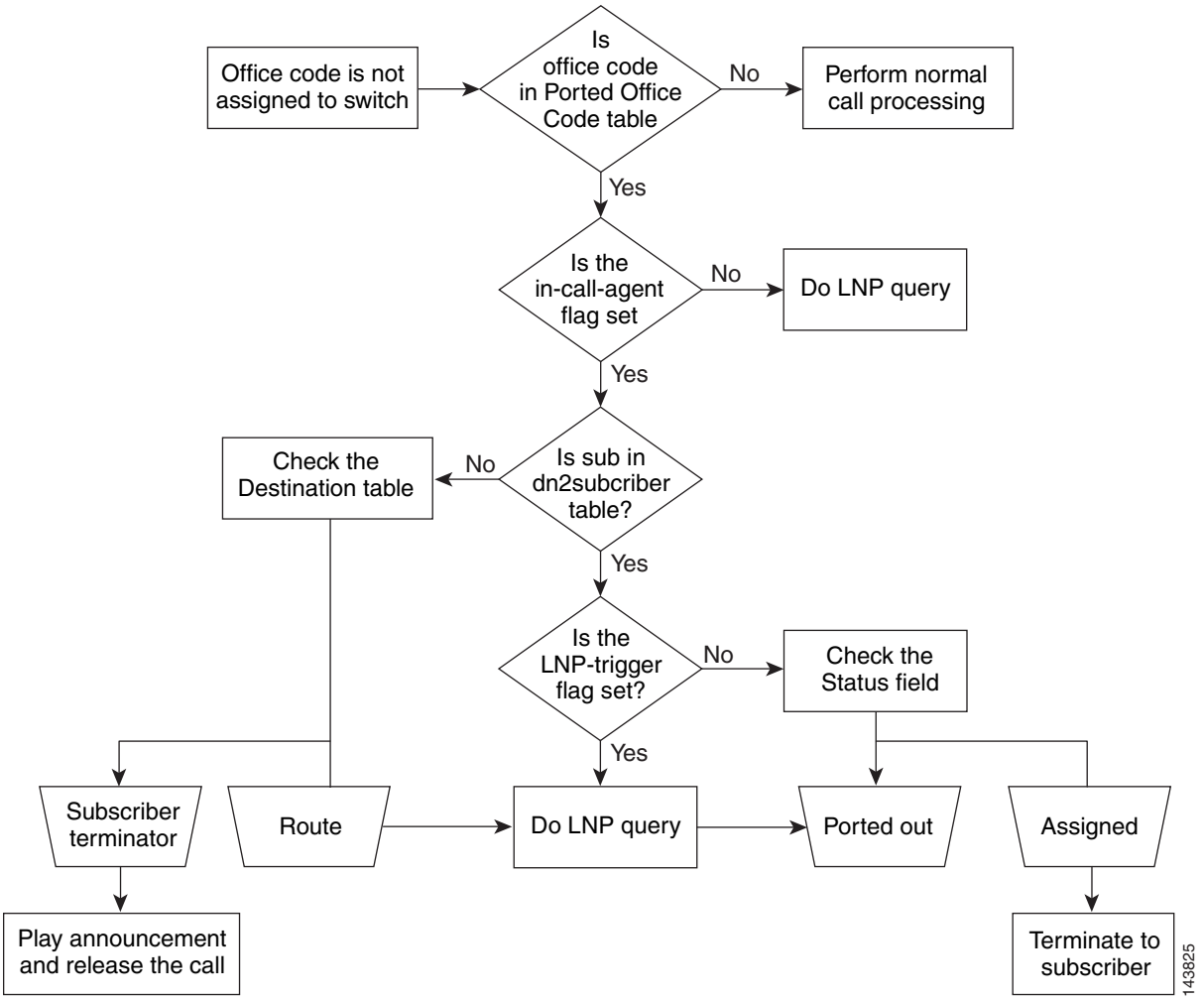
Step 5 Determine if the subscriber is included the dn2subscriber table. If the subscriber is included in the dn2sunscriber table, proceed to Step 6. If the subscriber is not included in dn2subscriber table, proceed to Step 7.

Step 6 Determine if the LNP trigger flag is set. If the LNP trigger flag is set, the Cisco BTS 10200 Softswitch will perform an LNP query and port out the call. If the LNP trigger flag is not set, the Cisco BTS 10200 Softswitch will check the status field to determine if a LNP trigger has been assigned and will port out the call or terminate the call to the subscriber. Please note that a query is not performed if it has already been completed on a previous switch.

Alternately, if dn2subscriber status = PORTED-OUT, or LNP-TRIGGER = Y an LNP query is performed, and depending upon the result of the query (whether or not an local routing number (LRN) is found), the call may be routed to a ported-in DN, routed out to a DN ported-in to another switch, routed in or out if the DN is not ported at all, or the call may fail if routing is not possible.

Step 7 Check the destination table for the subscriber information. Based on the destination table information, the Cisco BTS 10200 Softswitch will route the call or issue a subscriber terminator, release the call, and play the released call announcement. As part of routing the call, the Cisco BTS 10200 Softswitch will perform an LNP query and , if necessary, port out the call. Please note that a query is not performed if it has already been completed on a previous switch.

Figure 2-16 Ported-In Call Processing



Call-Type After Multiple Digit Translations

Normally after a digit translation, the call-type is retrieved from the resulting Destination. It is possible that further digit translations will occur, for example, the re-translation on the LRN after an LNP query. Normally the call-type from the original translation is used after subsequent translations. So, the call-type in the Destination resulting from the LRN translation is ignored, in favor of the original call-type resulting from the original called DN translation. An exception is that the call-type can change from a translation for policy-nxx. For example, dialed digits 611 translate to a Destination with call-type REPAIR, which has a route-guide containing policy-type=NXX, with a policy-nxx containing a new "translated-dn". In this case, a new translation on the translated-dn occurs, and the new Destination call-type is used subsequently during the call. This is necessary to prevent problems related to a possible > NXX (800 toll-free) translation.

Operator Services

The Operator Services feature allows routing of operator calls to a Feature Group D Operator Trunk (FGD OS) using the CAS MF Operator Package (MO). The following operator calls are included:

- 0-
- 0+
- 00
- 01+CC+NN
- 10XXXXX + 0-
- 10XXXXX + 0+
- 10XXXXX + 00
- 10XXXXX + 01+CC+NN

The operator call is routed to a CAS MO trunk group by sending the called number followed by information digits (I or II) and the calling number (ANI). All these digits are outpulsed to the CAS MO trunk group using multifrequency (MF) signaling. The information digits and ANI can be delivered in any one of these formats (configurable on a per terminating trunk basis):

- I + 7 digit ANI
- I + 10 digit ANI
- II + 7 digit ANI
- II + 10 digit ANI

Prerequisites

The Dial Plan table must be provisioned with a dial plan for operator calls.

An operator CAS MO terminating trunk group must be provisioned.

Supported Interfaces

Table 2-6 shows the interface support between call origination and termination.

Table 2-6 Operator Services Supported Interfaces

	RGW termination	CAS termination	SS7 termination	ISDN termination	SIP termination
RGW origination		X			
CAS origination		X			
SS7 origination		X			
ISDN origination		X			
SIP origination		X			

Note These calls can be terminated to another type of trunk group such as ISDN, SS7, and SIP, but in these cases the calls are treated as regular calls.

Provisioning Operator Services

To provision operator services, perform the following steps:

Step 1 Add the CAS trunk group profile and the operator trunk group.

```
add cas-tg-profile id=cas-OPS0; type=MO-10II; oss-sig=y; test-line=n;

add trunk-grp id=1500; tg-type=CAS; dial-plan-id=dpcas; sel-policy=LRU;
direction=outgoing; glare=ODD; tg-profile-id=cas-OPS0; call-agent-id=CA166; status=oos;
```

Step 2 Add the operator trunk terminations to the Termination Prefix table.

```
add termination prefix=cas/ops/mo/; mgw-id=224.14:2434; type=TRUNK; mgcp-pkg-type=MO;
port-start=1; port-end=24;

add trunk cic-start=5; cic-end=8; tgn-id=1500; termination-prefix=cas/ops/mo/;
mgw-id=224.14:2434; termination-port-start=5; termination-port-end=8;
```

Step 3 Add the operator routes.

```
add route id=ops1500; tgn1-id=1500; lcr=y;

add route-guide id=ops1500; policy-type=route; policy-id=ops1500;
```

Step 4 Add the carrier ID and put the carrier in service.

```
add carrier id=0510; intra=y; intl=y; route-guide-id=ops1500; use-dial-plan=y;

change carrier id=0510; status=ins;
```

Step 5 Add the destination IDs.

```
add destination dest-id=ops-toll; call-type=toll; route-type=ROUTE;
route-guide-id=ops1502; zero-plus=y;

add destination dest-id=ops-interlata; call-type=interlata; route-type=ROUTE;
route-guide-id=ops1501; zero-plus=y;

add destination dest-id=ops-intl; call-type=intl; route-type=ROUTE;
route-guide-id=ops1503; zero-plus=y;
add dial-plan id=dpcas; digit-string=817-313; reqd-digits=10; dest-id=ops-toll;
```

Step 6 Add the dial plan and international dial plan.

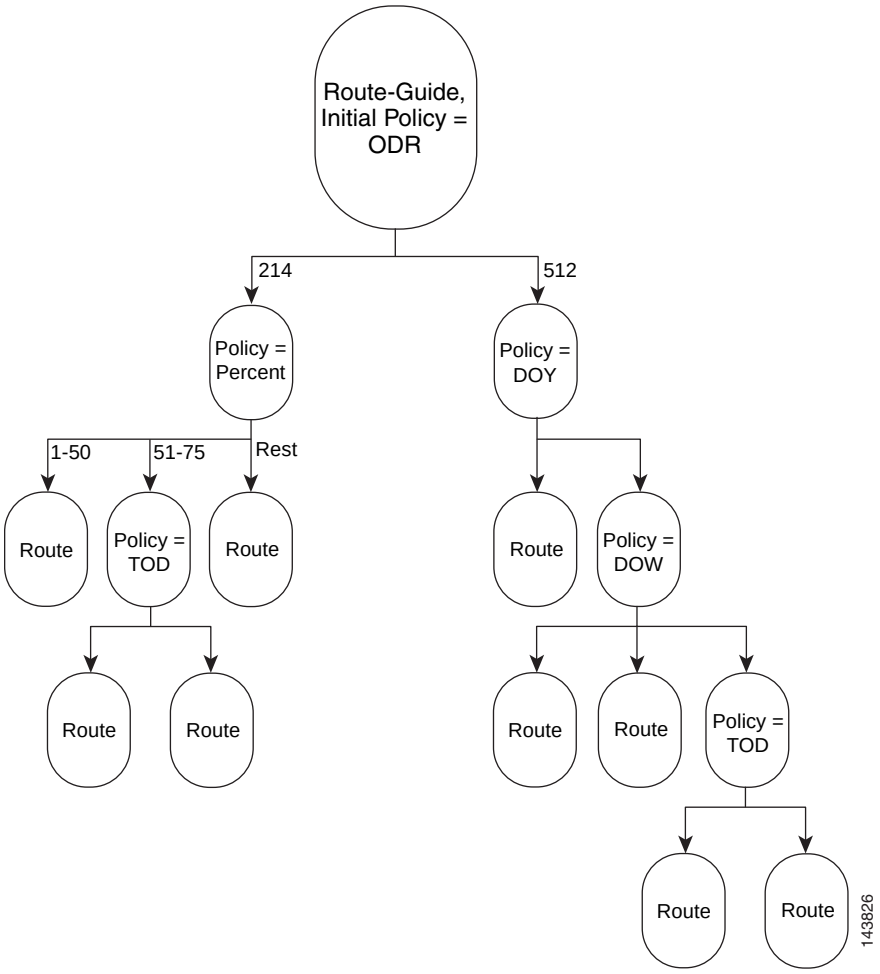
```
add dial-plan id=dpcas; digit-string=404-313; reqd-digits=10; dest-id=ops-interlata;

add intl-dial-plan cc=42; min-digits=6; max-digits=16; dest-id=ops-intl;
```

Policy Based Flexible Routing

The Cisco BTS 10200 Softswitch policy based flexible routing use policy based routing tree decisions to select the call route and to route the call. Flexible routing allows service providers to provision policy based flexible routing by configuring the route guide table using the policy variables. Please note that the order of the policies is provisionable and one or more policies may be assigned. Figure 2-17 illustrates the Cisco BTS 10200 Softswitch flexible routing tree structure. This section includes information describing each of the Cisco BTS 10200 Softswitch policy types.

Figure 2-17 Flexible Routing Tree Structure



Each of the following policies are described:

- Policy Day of Year, Day of Week, and Time of Day
- Policy Origin Dependent Routing
- Policy Originating Line Information
- Policy NXX
- Policy Percent
- Policy Point of Presence
- Policy Prefix
- Region Profile
- Policy Region

Policy Day of Year, Day of Week, and Time of Day

The Policy Day of Year, Day of Week, and Time of Day enables the flexible routing of calls via the Cisco BTS 10200 Softswitch by day of year (DOY), day of week (DOW), time of day (TOD).

Table Name: POLICY_TOD

Table Containment Area: EMS, CA, FSAIN

Command Types

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

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

Examples

```
show policy-tod id=basictime;
add policy-tod id=basictime; doy1=03-01; doy1-policy-type=route;
doy1-policy-id=dallasaustin; start-dow1=mon; stop-dow1=fri; start-time1=07:00;
stop-time1=17:00; policy-type1=per;
policy-id1=texaspercent;default-policy-id=dallasaustin;
change policy-tod id=basictime; doy2=07-04;
delete policy-tod id= basictime;
```

Usage Guidelines

Primary Key Token(s): ID

Add Rules: id exists in the Policy Profile table.

Change Rules: policy-id exists in policy-<policy-type>::id if entered.

Upgrade Impact:

- Set TYPE to TOD.
- For each entry in POLICY_TOD, add an entry into POLICY_PROFILE table with (DEFAULT_POLICY_ID, DEFAULT_POLICY_TYPE) if not null.
- For each TOD#_POLICY_ID if not null, add an entry into POLICY_PROFILE table.

Syntax Description

AUTO_REFRESH	Description: Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable. Valid for Command: show Default Value: Y Possible Value: Y, N Parser: BooleanParser
DEFAULT_POLICY_ID	Description: Use default policy ID when there is no match with the above schedule. Assigned by service provider. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
DEFAULT_POLICY_TYPE	Description: Points to the default policy type to use if the next route is not found in the Policy table. Policy routing continues until policy-type=route or policy-nxx is reached. All policy types except Route point to the Policy Type table where type = ctype| odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id is used to index to the Policy or Route table. Some examples are: If policy-type=tod, then the Policy TOD table is indexed with policy-id. If policy-type=route, then the Route table is indexed with policy-id. VARCHAR(7): 1-7 ASCII characters. Permitted values are: CC—Circuit code based routing. CTYPE—Call type based routing. NXX—Use translated DN. ODR—Origin dependent routing. OLI—Originating line information. POP—Point of presence. PERCENT—Percentage based routing. PREFIX—Prefix-based Routing. REGION—Region based Routing ROUTE—Go to Route table. TOD—Time of day routing. Valid for Command (is): audit, sync, show Valid for Command (was): add, change, audit, sync, show Possible Value: ODR, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser

DISPLAY	Description: Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
DOY1	Description: Month and day (day of year provisioning). CHAR(5): 5 characters in the format mm-dd. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: DateParser
DOY1_POLICY_ID	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. Points to the next policy type table to be used in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be. Examples: If policy-type=tod, then policy-tod table is indexed with policy-id. If policy-type=route, then Route table is indexed with policy-id. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser

DOY1_POLICY_TYPE	Description: Foreign key: doyn -policy-type plus the doy n-policy-id to Policy Profile table. Points to the next policy type table to be used in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be. Examples: If policy-type=tod, then policy-tod table is indexed with policy-id. If policy-type=route, then Route table is indexed with policy-id. VARCHAR(7): 1-7 ASCII characters. Permitted values are: CC—Circuit Code based routing. CTYPE—Call Type based routing. NXX—Use translated DN. ODR—Origin Dependent Routing. OLI—Originating line information. PERCENT—Percentage based routing POP—Point of presence. PREFIX—Prefix-based routing. REGION—Region-based routing. ROUTE—Go to Route table. TOD—Time-of-day routing. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
DOY10	Description: Month and day (day of year provisioning). CHAR(5): 5 characters in the format mm-dd. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: DateParser
DOY10_POLICY_ID	Description: See DOY1-POLICY-ID. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser

DOY10_POLICY_TYPE	Description: See DOY1-POLICY-TYPE. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
DOY2	Description: Month and day (day of year provisioning). CHAR(5): 5 characters in the format mm-dd. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: DateParser
DOY2_POLICY_ID	Description: See DOY1-POLICY-ID. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
DOY2_POLICY_TYPE	Description: See DOY1-POLICY-TYPE. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
DOY3	Description: Month and day (day of year provisioning). CHAR(5): 5 characters in the format mm-dd. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: DateParser
DOY3_POLICY_ID	Description: See DOY1-POLICY-ID. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
DOY3_POLICY_TYPE	Description: See DOY1-POLICY-TYPE. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser

DOY4	Description: Month and day (day of year provisioning). CHAR(5): 5 characters in the format mm-dd. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: DateParser
DOY4_POLICY_ID	Description: See DOY1-POLICY-ID. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
DOY4_POLICY_TYPE	Description: See DOY1-POLICY-TYPE. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
DOY5	Description: Month and day (day of year provisioning). CHAR(5): 5 characters in the format mm-dd. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: DateParser
DOY5_POLICY_ID	Description: See DOY1-POLICY-ID. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
DOY5_POLICY_TYPE	Description: See DOY1-POLICY-TYPE. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
DOY6	Description: Month and day (day of year provisioning). CHAR(5): 5 characters in the format mm-dd. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: DateParser

DOY6_POLICY_ID	Description: See DOY1-POLICY-ID. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
DOY6_POLICY_TYPE	Description: See DOY1-POLICY-TYPE. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
DOY7	Description: Month and day (day of year provisioning). CHAR(5): 5 characters in the format mm-dd. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: DateParser
DOY7_POLICY_ID	Description: See DOY1-POLICY-ID. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
DOY7_POLICY_TYPE	Description: See DOY1-POLICY-TYPE. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
DOY8	Description: Month and day (day of year provisioning). CHAR(5): 5 characters in the format mm-dd. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: DateParser
DOY8_POLICY_ID	Description: See DOY1-POLICY-ID. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser

DOY8_POLICY_TYPE	Description: See DOY1-POLICY-TYPE. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
DOY9	Description: Month and day (day of year provisioning). CHAR(5): 5 characters in the format mm-dd. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: DateParser
DOY9_POLICY_ID	Description: See DOY1-POLICY-ID. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
DOY9_POLICY_TYPE	Description: See DOY1-POLICY-TYPE. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
ID	Description: Primary key. Unique identifier for this policy-tod. Assigned by service provider. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [1_16] Parser: TextParser
LIMIT	Description: Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1-100000000 (Default = 100000000). Valid for Command: show Default Value: 100000000 Possible Value: [1_100000000] Parser: DecimalParser

MASTER	Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser
ORDER	Description: Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
PLATFORM_STATE	Description: State of an active or standby system shared memory database; use to audit an active or standby system shared memory database. Valid for the audit database and audit table name commands. VARCHAR(7): 1-7 ASCII characters. Permitted values are: ACTIVE (Default)—System is active (currently running). STANDBY—System is in standby mode. EMS—Audits the active EMS to the standby EMS. Valid for Command: sync, audit Default Value: ACTIVE Possible Value: ACTIVE, STANDBY Parser: TextParser
POLICY_ID1	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID10	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser

POLICY_ID2	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID3	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID4	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID5	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID6	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID7	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser

POLICY_ID8	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID9	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_TYPE1	Description: Foreign key: policy-type n plus the policy-id n to Policy Profile table. Points to the next policy type table to be used in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be. Examples: If policy-type=tod, then policy-tod table is indexed with policy-id. If policy-type=route, then Route table is indexed with policy-id. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE10	Description: See POLICY-TYPE1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE2	Description: See POLICY-TYPE1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser

POLICY_TYPE3	Description: See POLICY-TYPE1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE4	Description: See POLICY-TYPE1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE5	Description: See POLICY-TYPE1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE6	Description: See POLICY-TYPE1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE7	Description: See POLICY-TYPE1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE8	Description: See POLICY-TYPE1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser

POLICY_TYPE9	Description: See POLICY-TYPE1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
START_DOW1	Description: Day of week that this policy begins (day of week provisioning). Start-dow1 and stop-dow1 define a range of days. The DOW begins on MON and ends on SUN, such as when specifying range, START-DOWn = STOP-DOWn. CHAR(3). Permitted values are: MON—Monday TUE—Tuesday WED—Wednesday THU—Thursday FRI—Friday SAT—Saturday SUN—Sunday Examples: START-DOW1=MON; STOP-DOW1=FRI; is valid. START-DOW1=FRI; STOP-DOW1=MON; is invalid. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
START_DOW10	Description: See START-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
START_DOW2	Description: See START-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
START_DOW3	Description: See START-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser

START_DOW4	Description: See START-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
START_DOW5	Description: See START-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
START_DOW6	Description: See START-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
START_DOW7	Description: See START-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
START_DOW8	Description: See START-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
START_DOW9	Description: See START-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
START_ROW	Description: Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1-100000000 (Default = 1). Valid for Command: show Default Value: 1 Possible Value: [1_100000000] Parser: DecimalParser
START_TIME1	Description: The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning). CHAR(5): HH:MM. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser

START_TIME10	Description: The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning). CHAR(5): HH:MM. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
START_TIME2	Description: The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning). CHAR(5): HH:MM. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
START_TIME3	Description: The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning). CHAR(5): HH:MM. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
START_TIME4	Description: The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning). CHAR(5): HH:MM. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
START_TIME5	Description: The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning). CHAR(5): HH:MM. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
START_TIME6	Description: The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning). CHAR(5): HH:MM. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser

START_TIME7	Description: The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning). CHAR(5): HH:MM. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
START_TIME8	Description: The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning). CHAR(5): HH:MM. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
START_TIME9	Description: The time in hours and minutes (24-hour clock) that this policy starts (time of day provisioning). CHAR(5): HH:MM. Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
STOP_DOW1	Description: Day of week that this policy ends. Start-dow1 and stop-dow1 define a range of days. The DOW begins on MON and ends on SUN, such as when specifying range, START-DOWn = STOP-DOWn. CHAR(3). Permitted values are: MON—Monday TUE—Tuesday WED—Wednesday THU—Thursday FRI—Friday SAT—Saturday SUN—Sunday Examples: START-DOW1=MON; STOP-DOW1=FRI; is valid. START-DOW1=FRI; STOP-DOW1=MON; is invalid. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser

STOP_DOW10	Description: See STOP-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
STOP_DOW2	Description: See STOP-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
STOP_DOW3	Description: See STOP-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
STOP_DOW4	Description: See STOP-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
STOP_DOW5	Description: See STOP-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
STOP_DOW6	Description: See STOP-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
STOP_DOW7	Description: See STOP-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
STOP_DOW8	Description: See STOP-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser
STOP_DOW9	Description: See STOP-DOW1. Valid for Command: add, change, audit, sync, show Possible Value: SUN, MON, TUE, WED, THU, FRI, SAT Parser: TextParser

STOP_TIME1	Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning). CHAR(5): HH:MM Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
STOP_TIME10	Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning). CHAR(5): HH:MM Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
STOP_TIME2	Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning). CHAR(5): HH:MM Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
STOP_TIME3	Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning). CHAR(5): HH:MM Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
STOP_TIME4	Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning). CHAR(5): HH:MM Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
STOP_TIME5	Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning). CHAR(5): HH:MM Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser

STOP_TIME6	Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning). CHAR(5): HH:MM Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
STOP_TIME7	Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning). CHAR(5): HH:MM Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
STOP_TIME8	Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning). CHAR(5): HH:MM Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
STOP_TIME9	Description: The time in hours and minutes (24-hour clock) that this policy ends (time of day provisioning). CHAR(5): HH:MM Valid for Command: add, change, audit, sync, show Possible Value: [5_5] Parser: TimeParser
TARGET	Description: Specifies the network element to receive the request. VARCHAR(5): 1-5 ASCII characters. Permitted values are: CA—Network identifier of a Call Agent. FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers. Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser

Policy Origin Dependent Routing

The Policy Origin Dependent Routing enables the flexible routing of calls via the Cisco BTS 10200 Softswitch by the use of origin dependent routing (ODR). The numbering plan area (NPA) (or NPA-NXX) of the calling party number selects a route. If no match is found based on the calling party number, the route marked as default routes the call.

Table Name: POLICY_ODR

Table Containment Area: EMS, CA, FSAIN

Command Types

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

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

Examples

```
show policy-odr id=ca200; digit-string=512;
add policy-odr id=ca200; digit-string=512; policy-type=tod; policy-id=tod101;
change policy-odr id=ca200; digit-string=512; policy-type=tod; policy-id=tod102;
delete policy-odr id=ca200; digit-string=512;
```

Usage Guidelines

Primary Key Token(s): ID, DIGIT_STRING

Add Rules: policy-id exists in policy-<policy-type>::id if entered.

Change Rules: policy-id exists in policy-<policy-type>::id if entered.

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

Upgrade Impact:

- Set TYPE to ODR.
- For each entry in POLICY_ODR, add an entry into POLICY_PROFILE table.
- For each POLICY_ID, add an entry into POLICY_PROFILE table if it does not exist yet.

Syntax Description

AUTO_REFRESH	Description: Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable. Valid for Command: show Default Value: Y Possible Value: Y, N Parser: BooleanParser
DIGIT_STRING	Description: Primary key. Longest match based on the calling party number. The calling party number can be specified as the NDC, NDC+EC or the full DN. VARCHAR(10): 1-10 ASCII characters. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [1_14] Parser: GenericDNWithDefaultParser
DISPLAY	Description: Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
ID	Description: Primary key. Unique identifier for this policy-tod. Assigned by service provider. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [1_16] Parser: TextParser
LIMIT	Description: Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1-100000000 (Default = 100000000). Valid for Command: show Default Value: 100000000 Possible Value: [1_100000000] Parser: DecimalParser

MASTER	Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser
ORDER	Description: Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
PLATFORM_STATE	Description: State of an active or standby system shared memory database; use to audit an active or standby system shared memory database. Valid for the audit database and audit table name commands. VARCHAR(7): 1-7 ASCII characters. Permitted values are: ACTIVE (Default)—System is active (currently running). STANDBY—System is in standby mode. EMS—Audits the active EMS to the standby EMS. Valid for Command: sync, audit Default Value: ACTIVE Possible Value: ACTIVE, STANDBY Parser: TextParser
POLICY_ID	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: [1_16] Parser: TextParser

POLICY_TYPE	Description: Points to the next policy type table to use in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the Policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be. VARCHAR(7): 1-7 ASCII characters. Permitted values are: CC—Circuit Code based routing CTYPE—Call Type based routing NXX—Use translated DN. ODR—Origin Dependent Routing. OLI—Originating line information. PERCENT—Percentage based routing POP—Point of presence. PREFIX—Prefix-based routing. REGION—Region-based routing. ROUTE—Go to Route table. TOD—Time-of-day routing. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
START_ROW	Description: Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1-100000000 (Default = 1). Valid for Command: show Default Value: 1 Possible Value: [1_100000000] Parser: DecimalParser
TARGET	Description: Specifies the network element to receive the request. VARCHAR(5): 1-5 ASCII characters. Permitted values are: CA—Network identifier of a Call Agent. FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers. Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser

Policy Originating Line Information

The Policy Originating Line Information enables the flexible routing of calls via the Cisco BTS 10200 Softswitch by the use of originating line information (OLI). The Policy Originating Line Information performs routing based on the originating line information of the calling party number.

Table Name: POLICY_OLI

Table Containment Area: EMS, CA, FSAIN

Command Types

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

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

Examples

```
show policy-oli id=normalroute; oli=00;
add policy-oli id=normalroute; oli=00; policy-type=tod; policy-id=holiday;
change policy-oli id=normalroute; oli=00; policy-type=tod; policy-id=regular;
delete policy-oli id=normalroute; oli=00;
```

Usage Guidelines

Primary Key Token(s): ID, OLI

Add Rules: policy-id exists in policy-<policy-type>::id if entered.

Change Rules: policy-id exists in policy-<policy-type>::id if entered.

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

Upgrade Impact:

- Set TYPE to OLI.
- For each unique ID in POLICY_OLI (multiple OLI with same ID), add an entry into POLICY_PROFILE table, set default route as (POLICY_ID, POLICY_TYPE) for that entry if OLI=255. Remove this entry from POLICY_OLI if OLI=255.

Syntax Description

AUTO_REFRESH	Description: Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable. Valid for Command: show Default Value: Y Possible Value: Y, N Parser: BooleanParser
DISPLAY	Description: Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
ID	Description: Primary key. Unique identifier for this policy-tod. Assigned by service provider. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [1_16] Parser: TextParser
LIMIT	Description: Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1-100000000 (Default = 100000000). Valid for Command: show Default Value: 100000000 Possible Value: [1_100000000] Parser: DecimalParser
MASTER	Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser

OLI	Description: Primary key. Originating line information parameter. SMALLINT: 0-99. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [0_255] Parser: DecimalParser
ORDER	Description: Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
PLATFORM_STATE	Description: State of an active or standby system shared memory database; use to audit an active or standby system shared memory database. Valid for the audit database and audit table name commands. VARCHAR(7): 1-7 ASCII characters. Permitted values are: ACTIVE (Default)—System is active (currently running). STANDBY—System is in standby mode. EMS—Audits the active EMS to the standby EMS. Valid for Command: sync, audit Default Value: ACTIVE Possible Value: ACTIVE, STANDBY Parser: TextParser
POLICY_ID	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: [1_16] Parser: TextParser

POLICY_TYPE	Description: Points to the next policy type table to use in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the Policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be. VARCHAR(7): 1-7 ASCII characters. Permitted values are: CC—Circuit Code based routing CTYPE—Call Type based routing NXX—Use translated DN. ODR—Origin Dependent Routing. OLI—Originating line information. PERCENT—Percentage based routing POP—Point of presence. PREFIX—Prefix-based routing. REGION—Region-based routing. ROUTE—Go to Route table. TOD—Time-of-day routing. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
START_ROW	Description: Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1-100000000 (Default = 1). Valid for Command: show Default Value: 1 Possible Value: [1_100000000] Parser: DecimalParser
TARGET	Description: Specifies the network element to receive the request. VARCHAR(5): 1-5 ASCII characters. Permitted values are: CA—Network identifier of a Call Agent. FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers. Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser

Policy NXX

The Policy NXX enables the flexible routing of calls via the Cisco BTS 10200 Softswitch when a number services call results in a translated number, carrier ID, translated number and a carrier ID, or a route ID.

Table Name: POLICY_NXX

Table Containment Area: EMS, CA, FSAIN

Command Types

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

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

Examples

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

Usage Guidelines

Primary Key Token(s): ID

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

Upgrade Impact:

- Set TYPE to NXX.
- Set ROUTE_POLICY_TYPE to ROUTE.
- For each entry in POLICY_NXX, add an entry into POLICY_PROFILE table.
- For each ROUTE if not null, add an entry into POLICY_PROFILE table if it does not exist yet.

Syntax Description

AUTO_REFRESH	Description: Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable. Valid for Command: show Default Value: Y Possible Value: Y, N Parser: BooleanParser
CARRIER	Description: Carrier identification code (CIC). Used for routing a call. CHAR(4): 0000-9999 Valid for Command: add, change, audit, sync, show Possible Value: [4_4] Parser: DigitParser
DISPLAY	Description: Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
ID	Description: Primary key. Unique identifier for this policy-tod. Assigned by service provider. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [1_16] Parser: TextParser
LIMIT	Description: Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1-100000000 (Default = 100000000). Valid for Command: show Default Value: 100000000 Possible Value: [1_100000000] Parser: DecimalParser

MASTER	Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser
ORDER	Description: Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
PLATFORM_STATE	Description: State of an active or standby system shared memory database; use to audit an active or standby system shared memory database. Valid for the audit database and audit table name commands. VARCHAR(7): 1-7 ASCII characters. Permitted values are: ACTIVE (Default)—System is active (currently running). STANDBY—System is in standby mode. EMS—Audits the active EMS to the standby EMS. Valid for Command: sync, audit Default Value: ACTIVE Possible Value: ACTIVE, STANDBY Parser: TextParser
ROUTE	Description: Defines a list of trunk groups. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
START_ROW	Description: Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1-100000000 (Default = 1). Valid for Command: show Default Value: 1 Possible Value: [1_100000000] Parser: DecimalParser

TARGET	Description: Specifies the network element to receive the request. VARCHAR(5): 1-5 ASCII characters. Permitted values are: CA—Network identifier of a Call Agent. FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers. Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser
TRANSLATED_DN	Description: The call is routed to the translated DN. VARCHAR(14): 1-14 numeric digits. Valid for Command: add, change, audit, sync, show Possible Value: [1_14] Parser: GenericDNParser

Policy Percent

The Policy Percent enables the flexible routing of calls via the Cisco BTS 10200 Softswitch based on percent allocation. This type of traffic distribution is used primarily for local 8XX routing and Tandem applications.

Table Name: POLICY_PERCENT

Table Containment Area: EMS, CA, FSAIN

Command Types

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

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

Examples

```
show policy-percent id=texaspercent;
add policy-percent id=texaspercent; begin-range1=1; end-range1=90; policy-type1=tod;
policy-id1=tod001;
change policy-percent id=texaspercent; begin-range2=91; end-range2=100; policy-type1=tod;
policy-id1=tod002;
delete policy-percent id=texaspercent;
```

Usage Guidelines

Primary Key Token(s): ID

Add Rules: policy-id exists in policy-<policy-type>::id if entered.

Change Rules: policy-id exists in policy-<policy-type>::id if entered.

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

Upgrade Impact:

- Set TYPE to PERCENT.
- For each entry in POLICY_PERCENT, add an entry into POLICY_PROFILE table with (DEFAULT_POLICY_ID, DEFAULT_POLICY_TYPE) if not null.
- For each POLICY_ID# if not null, add an entry into POLICY_PROFILE table.

Syntax Description

AUTO_REFRESH	Description: Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable. Valid for Command: show Default Value: Y Possible Value: Y, N Parser: BooleanParser
BEGIN_RANGE1	Description: At least one range must be specified. Defines the beginning percent range (beginning and ending percents) for the first destination. SMALLINT: 1-100. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: [1_100] Parser: DecimalParser
BEGIN_RANGE2	Description: Defines the beginning percent range (beginning and ending percents) for the second destination. SMALLINT: 1-100. Valid for Command: add, change, audit, sync, show Possible Value: [1_100] Parser: DecimalParser

BEGIN_RANGE3	Description: Defines the beginning percent range (beginning and ending percents) for the third destination. SMALLINT: 1-100. Valid for Command: add, change, audit, sync, show Possible Value: [1_100] Parser: DecimalParser
BEGIN_RANGE4	Description: Defines the beginning percent range (beginning and ending percents) for the fourth destination. SMALLINT: 1-100. Valid for Command: add, change, audit, sync, show Possible Value: [1_100] Parser: DecimalParser
BEGIN_RANGE5	Description: Defines the beginning percent range (beginning and ending percents) for the fifth destination. SMALLINT: 1-100. Valid for Command: add, change, audit, sync, show Possible Value: [1_100] Parser: DecimalParser
DEFAULT_POLICY_ID	Description: ID of a Policy or Route table matching the policy type. Indexes the ID to the type. Assigned by service provider. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser

DEFAULT_POLICY_TYPE	Description: Points to the default policy type to use if the next route is not found in the Policy table. Policy routing continues until policy-type=route or policy-nxx is reached. All policy types except Route point to the Policy Type table where type = ctypel odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id is used to index to the Policy or Route table. Some examples are: If policy-type=tod, then the Policy TOD table is indexed with policy-id. If policy-type=route, then the Route table is indexed with policy-id. VARCHAR(7): 1-7 ASCII characters. Permitted values are: CC—Circuit code based routing. CTYPE—Call type based routing. NXX—Use translated DN. ODR—Origin dependent routing. OLI—Originating line information. POP—Point of presence. PERCENT—Percentage based routing. PREFIX—Prefix-based Routing. REGION—Region based Routing ROUTE—Go to Route table. TOD—Time of day routing. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
DISPLAY	Description: Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
END_RANGE1	Description: Defines the end of the percent range (beginning and ending percents) for the first destination. SMALLINT: 1-100. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: [1_100] Parser: DecimalParser

END_RANGE2	Description: Defines the end of the percent range (beginning and ending percents) for the second destination. SMALLINT: 1-100. Valid for Command: add, change, audit, sync, show Possible Value: [1_100] Parser: DecimalParser
END_RANGE3	Description: Defines the end of the percent range (beginning and ending percents) for the third destination. SMALLINT: 1-100. Valid for Command: add, change, audit, sync, show Possible Value: [1_100] Parser: DecimalParser
END_RANGE4	Description: Defines the end of the percent range (beginning and ending percents) for the fourth destination. SMALLINT: 1-100. Valid for Command: add, change, audit, sync, show Possible Value: [1_100] Parser: DecimalParser
END_RANGE5	Description: Defines the end of the percent range (beginning and ending percents) for the fifth destination. SMALLINT: 1-100. Valid for Command: add, change, audit, sync, show Possible Value: [1_100] Parser: DecimalParser
ID	Description: Primary key. Unique identifier for this policy-tod. Assigned by service provider. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [1_16] Parser: TextParser
LIMIT	Description: Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1-100000000 (Default = 100000000). Valid for Command: show Default Value: 100000000 Possible Value: [1_100000000] Parser: DecimalParser

MASTER	Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser
ORDER	Description: Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
PLATFORM_STATE	Description: State of an active or standby system shared memory database; use to audit an active or standby system shared memory database. Valid for the audit database and audit table name commands. VARCHAR(7): 1-7 ASCII characters. Permitted values are: ACTIVE (Default)—System is active (currently running). STANDBY—System is in standby mode. EMS—Audits the active EMS to the standby EMS. Valid for Command: sync, audit Default Value: ACTIVE Possible Value: ACTIVE, STANDBY Parser: TextParser
POLICY_ID1	Description: ID of the Policy or Route table matching the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: [1_16] Parser: TextParser
POLICY_ID2	Description: See policy-id1. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser

POLICY_ID3	Description: See policy-id1. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID4	Description: See policy-id1. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID5	Description: See policy-id1. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser

POLICY_TYPE1	Description: Points to the next policy type table to be used in the sequence. Policy routing continues until policy-type=route or Policy-nxx is reached. All policy-types except route point to the Policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be. Examples: If policy-type=tod, then the policy-tod table is indexed with policy-id. If policy-type=route, then the route table is indexed with policy-id. VARCHAR(7): 1-7 ASCII characters. Permitted values are: CC—Circuit Code based routing. CTYPE—Call Type based routing. NXX—Use translated DN. ODR—Origin Dependent Routing. OLI—Originating line information. PERCENT—Percentage based routing POP—Point of presence. PREFIX—Prefix-based routing. REGION—Region-based routing. ROUTE—Go to Route table. TOD—Time-of-day routing. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE2	Description: See policy-type1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE3	Description: See policy-type1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser

POLICY_TYPE4	Description: See policy-type1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE5	Description: See policy-type1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
START_ROW	Description: Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1-100000000 (Default = 1). Valid for Command: show Default Value: 1 Possible Value: [1_100000000] Parser: DecimalParser
TARGET	Description: Specifies the network element to receive the request. VARCHAR(5): 1-5 ASCII characters. Permitted values are: CA—Network identifier of a Call Agent. FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers. Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser

Policy Point of Presence

The Policy Point of Presence enables the flexible routing of calls via the Cisco BTS 10200 Softswitch based on the point of presence (POP). The POP based policy routing routes a call to the nearest trunk group when there are multiple trunk groups. There are several situations where a policy POP can be used. If a Call Agent serves several POPs, each POP can have its own announcement server. A POP-specific announcement server can be more efficient than a centralized announcement server. InterLATA carriers also have a point of presence in each POP. Route interLATA or international calls to the nearest carrier location using policy POP routing.

Table Name: POLICY_POP

Table Containment Area: EMS, CA, FSAIN

Command Types

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

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

Examples

```
show policy-pop id=car9999; pop-id=dallaspop;
add policy-pop id=car9999; pop-id=dallaspop; policy-type=tod; policy-id=tod101;
change policy-pop id=car9999;pop-id=dallaspop;policy-type=oli;policy-id=tod101;
delete policy-pop id=car9999;
```

Usage Guidelines

Primary Key Token(s): ID, POP_ID

Add Rules: policy-id exists in policy-<policy-type>::id if entered.

Change Rules: policy-id exists in policy-<policy-type>::id if entered.

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

Upgrade Impact:

- Set TYPE to POP.
- For each entry in POLICY_POP, add an entry into POLICY_PROFILE table.
- For each POLICY_ID, add an entry into POLICY_PROFILE table.
- Need a pre-check to make sure POP_ID is valid in POP table.

Syntax Description

AUTO_REFRESH	Description: Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable. Valid for Command: show Default Value: Y Possible Value: Y, N Parser: BooleanParser
DISPLAY	Description: Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
ID	Description: Primary key. Unique identifier for this policy-tod. Assigned by service provider. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [1_16] Parser: TextParser
LIMIT	Description: Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1-100000000 (Default = 100000000). Valid for Command: show Default Value: 100000000 Possible Value: [1_100000000] Parser: DecimalParser
MASTER	Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser

ORDER	Description: Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
PLATFORM_STATE	Description: State of an active or standby system shared memory database; use to audit an active or standby system shared memory database. Valid for the audit database and audit table name commands. VARCHAR(7): 1-7 ASCII characters. Permitted values are: ACTIVE (Default)—System is active (currently running). STANDBY—System is in standby mode. EMS—Audits the active EMS to the standby EMS. Valid for Command: sync, audit Default Value: ACTIVE Possible Value: ACTIVE, STANDBY Parser: TextParser
POLICY_ID	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: [1_16] Parser: TextParser

POLICY_TYPE	Description: Points to the next policy type table to use in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the Policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be. VARCHAR(7): 1-7 ASCII characters. Permitted values are: CC—Circuit Code based routing CTYPE—Call Type based routing NXX—Use translated DN. ODR—Origin Dependent Routing. OLI—Originating line information. PERCENT—Percentage based routing POP—Point of presence. PREFIX—Prefix-based routing. REGION—Region-based routing. ROUTE—Go to Route table. TOD—Time-of-day routing. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POP_ID	Description: Primary key. Foreign key: Point of Presence table. The pop-id assigned to the subscriber profile or the incoming trunk group to be used. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [1_16] Parser: TextParser

START_ROW	Description: Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1-100000000 (Default = 1). Valid for Command: show Default Value: 1 Possible Value: [1_100000000] Parser: DecimalParser
TARGET	Description: Specifies the network element to receive the request. VARCHAR(5): 1-5 ASCII characters. Permitted values are: CA—Network identifier of a Call Agent. FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers. Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser

Policy Prefix

The Policy Prefix enables the flexible routing of calls via the Cisco BTS 10200 Softswitch based on prefix (type of call). Typical call types include 1+ dialing, international calls, toll-free, and so on. The Policy Prefix is used mainly for carrier routing.

Table Name: POLICY_PREFIX

Table Containment Area: EMS, CA, FSAIN

Command Types

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

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

Examples

```
show policy-prefix id=standard;
add policy-prefix id=standard; prefix1=national; policy-type1=tod; policy-id1=tod01;
change policy-prefix id=standard; prefix2=da; policy-type=tod; policy-id=tod99;
delete policy-prefix id=standard;
```

Usage Guidelines

Primary Key Token(s): ID

Foreign Key Token(s): policy-type n plus policy-id n

Add Rules: policy-id exists in policy-<policy-type>::id if entered.

Change Rules: policy-id exists in policy-<policy-type>::id if entered.

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

Upgrade Impact:

- Set TYPE to PREFIX.
- For each entry in POLICY_PREFIX, add an entry into POLICY_PROFILE table with (DEFAULT_POLICY_ID, DEFAULT_POLICY_TYPE) if not null.
- For each POLICY_ID# if not null, add an entry into POLICY_PROFILE table.

Syntax Description

AUTO_REFRESH	Description: Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable. Valid for Command: show Default Value: Y Possible Value: Y, N Parser: BooleanParser
DEFAULT_POLICY_ID	Description: ID of a Policy or Route table matching the policy type. Indexes the ID to the type. Assigned by service provider. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser

DEFAULT_POLICY_TYPE	Description: Points to the default policy type to use if the next route is not found in the Policy table. Policy routing continues until policy-type=route or policy-nxx is reached. All policy types except Route point to the Policy Type table where type = ctype| odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id is used to index to the Policy or Route table. Some examples are: If policy-type=tod, then the Policy TOD table is indexed with policy-id. If policy-type=route, then the Route table is indexed with policy-id. VARCHAR(7): 1-7 ASCII characters. Permitted values are: CC—Circuit code based routing. CTYPE—Call type based routing. NXX—Use translated DN. ODR—Origin dependent routing. OLI—Originating line information. POP—Point of presence. PERCENT—Percentage based routing. PREFIX—Prefix-based Routing. REGION—Region based Routing ROUTE—Go to Route table. TOD—Time of day routing. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
DISPLAY	Description: Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
ID	Description: Primary key. Unique identifier for this policy-tod. Assigned by service provider. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [1_16] Parser: TextParser

LIMIT	Description: Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1-100000000 (Default = 100000000). Valid for Command: show Default Value: 100000000 Possible Value: [1_100000000] Parser: DecimalParser
MASTER	Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser
ORDER	Description: Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
PLATFORM_STATE	Description: State of an active or standby system shared memory database; use to audit an active or standby system shared memory database. Valid for the audit database and audit table name commands. VARCHAR(7): 1-7 ASCII characters. Permitted values are: ACTIVE (Default)—System is active (currently running). STANDBY—System is in standby mode. EMS—Audits the active EMS to the standby EMS. Valid for Command: sync, audit Default Value: ACTIVE Possible Value: ACTIVE, STANDBY Parser: TextParser
POLICY_ID1	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: [1_16] Parser: TextParser

POLICY_ID10	Description: See policy-id1. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID2	Description: See policy-id1. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID3	Description: See policy-id1. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID4	Description: See policy-id1. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID5	Description: See policy-id1. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID6	Description: See policy-id1. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID7	Description: See policy-id1. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser

POLICY_ID8	Description: See policy-id1. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser
POLICY_ID9	Description: See policy-id1. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: [1_16] Parser: TextParser

POLICY_TYPE1	Description: Foreign key: Policy-type n plus the policy-id n to the Policy Profile table. Points to the next policy type table to be used in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the Policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be. Examples: If policy-type=tod, then the Policy-tod table is indexed with policy-id. If policy-type=route, then Route table is indexed with policy-id. VARCHAR(7): 1-7 ASCII characters. Permitted values are: CC—Circuit Code based routing. CTYPE—Call Type based routing. NXX—Use translated DN. ODR—Origin Dependent Routing. OLI—Originating line information. PERCENT—Percentage based routing POP—Point of presence. PREFIX—Prefix-based routing. REGION—Region-based routing. ROUTE—Go to Route table. TOD—Time-of-day routing. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE10	Description: See policy-type1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser

POLICY_TYPE2	Description: See policy-type1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE3	Description: See policy-type1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE4	Description: See policy-type1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE5	Description: See policy-type1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE6	Description: See policy-type1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE7	Description: See policy-type1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser

POLICY_TYPE8	Description: See policy-type1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
POLICY_TYPE9	Description: See policy-type1. VARCHAR(7): 1-7 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: ODR, TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser
PREFIX1	Description: Type of call being provisioned. VARCHAR(10): 1-10 ASCII characters. Permitted values are: NATIONAL—National call (1+) INTL—International call (011+) OPERATOR—Operator call (0-, 00) NAT-OPR—National operator call (0+ call) INTL-OPR—International operator call (01+ call) TOLL-FREE—Toll free call (8XX) CUT-THRU—Cut-through call (101XXXX+#) DA—Directory assistance call Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA Parser: TextParser
PREFIX10	Description: See prefix1. VARCHAR(10): 1-10 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA Parser: TextParser
PREFIX2	Description: See prefix1. VARCHAR(10): 1-10 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA Parser: TextParser

PREFIX3	Description: See prefix1. VARCHAR(10): 1-10 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA Parser: TextParser
PREFIX4	Description: See prefix1. VARCHAR(10): 1-10 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA Parser: TextParser
PREFIX5	Description: See prefix1. VARCHAR(10): 1-10 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA Parser: TextParser
PREFIX6	Description: See prefix1. VARCHAR(10): 1-10 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA Parser: TextParser
PREFIX7	Description: See prefix1. VARCHAR(10): 1-10 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA Parser: TextParser
PREFIX8	Description: See prefix1. VARCHAR(10): 1-10 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA Parser: TextParser

PREFIX9	Description: See prefix1. VARCHAR(10): 1-10 ASCII characters. Valid for Command: add, change, audit, sync, show Possible Value: NATIONAL, INTL, OPERATOR, NAT_OPR, INTL_OPR, TOLL_FREE, CUT_THRU, DA Parser: TextParser
START_ROW	Description: Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1-100000000 (Default = 1). Valid for Command: show Default Value: 1 Possible Value: [1_100000000] Parser: DecimalParser
TARGET	Description: Specifies the network element to receive the request. VARCHAR(5): 1-5 ASCII characters. Permitted values are: CA—Network identifier of a Call Agent. FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers. Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser

Region Profile

The Region Profile (region-profile) table groups North American Numbering Plan (NANP) digits to an originating region. There can be many ID and digit-string combinations for a given region. In this conceptual relationship, a number of digit patterns (digit-string) can belong to a given region and a number of originating regions comprise a region profile (id). Use the value specified in the ca-config record as the default region where type=default-region.

Table Name: REGION_PROFILE

Table Containment Area: EMS, CA, FSAIN

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

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

Examples

```
show region-profile id=e911; digit-string=210-470;
add region-profile id=e911; digit-string=210-470; region=sanantonio;
change region-profile id=e911; digit-string=210-470; region=sanantonio;
delete region-profile id=e911; digit-string=210-470;
```

Usage Guidelines

Primary Key Token(s): ID, DIGIT_STRING

Note This table allows the service provider to provision a list of up to10 trunk groups (TG1 to TG10), and a parameter for selecting the priority of the TGs for routing (TG-SELECTION). The system attempts to route the call on the highest priority TG. If the call cannot be completed on the highest priority TG, the system attempts to use the next (lower priority) TG, a process known as route advance. The system attempts route advance to lower priority TGs up to five times. (Any TG in the list that is administratively out of service is not counted as an attempt.) If all five attempts fail, the call is released, and the system provides a release announcement.

Syntax Description

AUTO_REFRESH	Description: Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable. Valid for Command: show Default Value: Y Possible Value: Y, N Parser: BooleanParser
DIGIT_STRING	Description: Primary key. Longest match based on the calling party number. The calling party number can be specified as the NDC, NDC+EC or the full DN. VARCHAR(10): 1-10 ASCII characters. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [1_14] Parser: GenericDNWithDefaultParser
DISPLAY	Description: Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser

ID	Description: Primary key. Unique identifier for this policy-tod. Assigned by service provider. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [1_16] Parser: TextParser
LIMIT	Description: Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1-100000000 (Default = 100000000). Valid for Command: show Default Value: 100000000 Possible Value: [1_100000000] Parser: DecimalParser
MASTER	Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser
ORDER	Description: Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
PLATFORM_STATE	Description: State of an active or standby system shared memory database; use to audit an active or standby system shared memory database. Valid for the audit database and audit table name commands. VARCHAR(7): 1-7 ASCII characters. Permitted values are: ACTIVE (Default)—System is active (currently running). STANDBY—System is in standby mode. EMS—Audits the active EMS to the standby EMS. Valid for Command: sync, audit Default Value: ACTIVE Possible Value: ACTIVE, STANDBY Parser: TextParser

REGION	Description: Region assigned to the calling party number. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, show, delete, audit, sync Mandatory: add Possible Value: [1_16] Parser: TextParser
START_ROW	Description: Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1-100000000 (Default = 1). Valid for Command: show Default Value: 1 Possible Value: [1_100000000] Parser: DecimalParser
TARGET	Description: Specifies the network element to receive the request. VARCHAR(5): 1-5 ASCII characters. Permitted values are: CA—Network identifier of a Call Agent. FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers. Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser

Policy Region

The Policy Region enables the flexible routing of calls via the Cisco BTS 10200 Softswitch based on the call region. The region is derived using the Region Profile table from the Route Guide table and the calling party number ANI. If ANI is not available or the Region Profile table is not provisioned, the region assigned to the trunk group is used for trunk origination. If a record cannot be found based on the region, the record with region=default (if provisioned) is used for routing.

Table Name: POLICY_REGION

Table Containment Area: EMS, CA, FSAIN

Command Types

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

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

Examples

```
show policy-region id=ca200; region=sanantonio;
add policy-region id=ca200; region=sanantonio; policy-type=tod; policy-id=tod101;
change policy-region id=ca200; region=sanantonio; policy-type=tod; policy-id=tod102;
delete policy-region id=ca200; region=sanantonio;
```

Usage Guidelines

Primary Key Token(s): ID, REGION

Foreign Key Token(s): policy-type n plus policy-id n

Add Rules: region-profile id must exist; policy-id exists in policy-<policy-type>::id if entered.

Change Rules: id must exist; policy-id exists in policy-<policy-type>::id if entered.

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

Upgrade Impact:

- Set TYPE to REGION.
- For each entry in POLICY_REGION, add an entry into POLICY_PROFILE table.
- For each POLICY_ID, add an entry into POLICY_PROFILE table.

Syntax Description

AUTO_REFRESH	Description: Specifies whether to display cached data on the screen. Valid only for the show command. CHAR(1): Y/N (Default = Y). Y—Queries the database for the most current data. N—Queries the database for the most current data only if the cached data is unavailable. Valid for Command: show Default Value: Y Possible Value: Y, N Parser: BooleanParser
DISPLAY	Description: Specifies what token information to display on the screen. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all tokens are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser

ID	Description: Primary key. Unique identifier for this policy-tod. Assigned by service provider. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [1_16] Parser: TextParser
LIMIT	Description: Specifies the number of rows to display on the screen. Valid only for the show command. INTEGER: 1-100000000 (Default = 100000000). Valid for Command: show Default Value: 100000000 Possible Value: [1_100000000] Parser: DecimalParser
MASTER	Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser
ORDER	Description: Specifies whether to display data on the screen in a sorted order. Valid only for the show command. VARCHAR(1024): 1-1024 (Default = all rows are displayed). Permitted values are any valid token that can be shown for this command. Multiple tokens can be entered by separating with a comma. Valid for Command: show Possible Value: [1_1024] Parser: TextParser
PLATFORM_STATE	Description: State of an active or standby system shared memory database; use to audit an active or standby system shared memory database. Valid for the audit database and audit table name commands. VARCHAR(7): 1-7 ASCII characters. Permitted values are: ACTIVE (Default)—System is active (currently running). STANDBY—System is in standby mode. EMS—Audits the active EMS to the standby EMS. Valid for Command: sync, audit Default Value: ACTIVE Possible Value: ACTIVE, STANDBY Parser: TextParser

POLICY_ID	Description: ID of the Policy or Route table that matches the policy type. Indexes the ID to the type. VARCHAR(16): 1-16 ASCII characters. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: [1_16] Parser: TextParser
POLICY_TYPE	Description: Points to the next policy type table to use in the sequence. Policy routing continues until policy-type=route or policy-nxx is reached. All policy-types except route point to the Policy-$type table where $type = odr | tod | percent | prefix | oli | pop | nxx. If policy-type = route, the Route table is used for routing. The policy-id indexes the Policy or Route table, whatever the case may be. VARCHAR(7): 1-7 ASCII characters. Permitted values are: CC—Circuit Code based routing CTYPE—Call Type based routing NXX—Use translated DN. ODR—Origin Dependent Routing. OLI—Originating line information. PERCENT—Percentage based routing POP—Point of presence. PREFIX—Prefix-based routing. REGION—Region-based routing. ROUTE—Go to Route table. TOD—Time-of-day routing. Valid for Command: add, change, audit, sync, show Mandatory: add Possible Value: TOD, PERCENT, PREFIX, OLI, POP, ROUTE, NXX, REGION Parser: TextParser

REGION	Description: Primary key. Region is derived from the Region Profile table based on the ANI. If the region cannot be derived from the region-profile, use the region assigned to the incoming trunk group. If a region is not available, use the default region to route the call. VARCHAR(16): 1-16 ASCII characters. The character string default defines the default route for the specified ID. If a record based on the region based on the calling party number or incoming trunk group is not found, the Call Agent searches for the default record. Valid for Command: add, change, show, delete, audit, sync Mandatory: add, change, delete Possible Value: [1_16] Parser: TextParser
START_ROW	Description: Specifies to begin displaying data on the screen at a specific row. Valid only for the show command. INTEGER: 1-100000000 (Default = 1). Valid for Command: show Default Value: 1 Possible Value: [1_100000000] Parser: DecimalParser
TARGET	Description: Specifies the network element to receive the request. VARCHAR(5): 1-5 ASCII characters. Permitted values are: CA—Network identifier of a Call Agent. FSPTC (POTS/Tandem/Centrex Feature Server)—Network identifier of a specific Feature Server. FSAIN (AIN Feature Server)—Network identifier of AIN Feature Servers. Valid for Command: sync Mandatory: sync Possible Value: [1_10] Parser: TextParser