Tekelec EAGLE® 5
Integrated Signaling System

Release 40.1

Database Administration Manual - Features

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TEKELEC

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Patents

This product is covered by one or more of the following U.S. and foreign patents:
U.S. Patent Numbers:
5,732,213; 5,953,404; 6,115,746; 6,167,129; 6,324,183; 6,327,350; 6,456,845; 6,606,379; 6,639,981; 6,647,113; 6,662,017; 6,735,441; 6,745,041; 6,765,990; 6,795,546; 6,819,932; 6,836,477; 6,839,423; 6,885,872; 6,901,262; 6,914,973; 6,940,866; 6,944,184; 6,954,526;6,954,794; 6,959,076; 6,965,592; 6,967,956; 6,968,048; 6,970,542; 6,987,781; 6,987,849; 6,990,089; 6,990,347; 6,993,038; 7,002,988; 7,020,707; 7,031,340; 7,035,239; 7,035,387; 7,043,000; 7,043,001; 7,043,002; 7,046,667; 7,050,456; 7,050,562; 7,054,422; 7,068,773; 7,072,678; 7,075,331; 7,079,524; 7,088,728; 7,092,505; 7,108,468; 7,110,780; 7,113,581; 7,113,781; 7,117,411; 7,123,710; 7,127,057; 7,133,420; 7,136,477; 7,139,388; 7,145,875; 7,146,181; 7,155,206; 7,155,243; 7,155,505; 7,155,512; 7,181,194; 7,190,702; 7,190,772; 7,190,959; 7,197,036; 7,206,394; 7,215,748; 7,219,264; 7,222,192; 7,227,927; 7,231,024; 7,242,695; 7,254,391; 7,260,086; 7,260,207; 7,283,969; 7,286,516; 7,286,647; 7,286,839; 7,295,579; 7,299,050; 7,301,910; 7,304,957; 7,318,091; 7,319,857; 7,327,670
Foreign Patent Numbers:
EP1062792; EP1308054; EP1247378; EP1303994; EP1252788; EP1161819; EP1177660; EP1169829; EP1135905; EP1364520; EP1192758; EP1240772; EP1173969; CA2352246

Ordering Information

Your Tekelec Sales Representative can provide you with information about how to order additional discs.

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Chapter 1

Introduction

Topics:

Chapter 1, Introduction, contains an overview of the features described in this manual, general information about the database, and the organization of this manual.

Overview

The Database *Administration Manual – Features* describes the procedures used configure the EAGLE 5 ISS and its database to implement these features:

- X.25 Gateway
- STPLAN
- Database Transport Access
- GSM MAP Screening
- Eagle 5 Integrated Monitoring Support

Note: Before enabling any one of these features, make sure you have purchased the feature to be turned on. If you are not sure whether you have purchased the feature to be turned on, contact your Tekelec Sales Representative or Account Representative.

Note: Database administration privileges are password restricted. Only those persons with access to the command class "Database Administration" can execute the administrative functions. Refer to the *Commands Manual* for more information on command classes and commands allowed by those classes.

It is possible for two or more users to make changes to the same database element at any time during their database administration sessions. It is strongly recommended that only one user at a time make any changes to the database.

X.25 Gateway

The X.25 Gateway feature provides connectivity between SS7 and X.25 networks. This feature enables cellular (IS.41) applications using different transport services to connect. The gateway is physically positioned between the SS7 network and the X.25 network and transports IS.41 messages from one network to the other using the SS7 Transaction Capability Application Part (TCAP) protocol.

STPLAN

The STPLAN feature provides a TCP/IP connection from any interface shelf to support external applications. Message signaling units (MSUs) that are processed by the EAGLE 5 ISS can be copied and directed through the LAN interface to an external server or microcomputer application such as a usage measurements system. The gateway screening feature must be available on the STP in order to use the STPLAN feature.

The feature requires an STPLAN card, either the Application Communications Module (ACM) running the `stplan` application, or the Database Communications Module (DCM) running the `vxwslan` application.

Database Transport Access

The Database Transport Access (DTA) feature provides a mechanism for the redirection of specific Message signaling units (MSUs) to a customized database. The EAGLE 5 ISS uses gateway screening to qualify incoming MSUs for redirection. Once gateway screening is passed, the original MSU is encapsulated into a new MSU and routed to its new destination.

GSM MAP Screening

The GSM MAP Screening feature examines the Mobile Application Part (MAP) level of incoming SCCP messages to against predefined criteria in the system database to determine whether or not to allow an external server to interrogate an HLR and obtain information about the location and/or state of a GSM subscriber. This feature also allows the user to control which external entities can request this information, and what information they can request before allowing the message to pass through to the HLR.

EAGLE 5 Integrated Monitoring Support

The Integrated Monitoring Support feature allows the network traffic on the EAGLE 5 ISS's signaling links to be monitored by an IMF (integrated message feeder) without additional intrusive cabling. Message Signaling Units (MSUs), alarms, and events are copied to the Sentinel/IMF to provide the network traffic monitoring. The monitored traffic is delivered to the Sentinel/IMF using the EAGLE 5 ISS's STCs (Signaling Transport Cards) which are connected to the ESP/IMF subsystem by Ethernet links. The ESP/IMF subsystem delivers the monitored traffic to the Sentinel/IMF. EAGLE 5 ESP (extended services platform)/

Scope and Audience

This manual is intended for database administration personnel or translations personnel responsible for configuring the EAGLE 5 ISS and its database to implement the features shown in the *Overview* on page 2 section.

Manual Organization

Throughout this document, the terms database and system software are used. Database refers to all data that can be administered by the user, including shelves, cards, links, routes, global title translation tables, and gateway screening tables. System software refers to data that cannot be administered by the user, including generic program loads (GPLs).

This document is organized into the following sections.

Introduction on page 1 contains an overview of the features described in this manual, general information about the database, and the organization of this manual.

X.25 Gateway Configuration on page 15 describes the X.25 Gateway feature and the procedures necessary to configure the EAGLE 5 ISS to support this feature.

STPLAN Configuration on page 165 describes the STPLAN feature and the procedures necessary to configure the EAGLE 5 ISS to support this feature.

Database Transport Access (DTA) Configuration on page 223 describes the Database Transport Access (DTA) feature and the procedures necessary to configure the EAGLE 5 ISS to support this feature.

GSM MAP Screening Configuration on page 271 describes the GSM MAP Screening feature and the procedures necessary to configure the EAGLE 5 ISS to support this feature.

EAGLE 5 Integrated Monitoring Support Configuration on page 435 describes the Eagle 5 Integrated Monitoring Support feature and the procedures necessary to configure the EAGLE 5 ISS to support this feature.

Documentation Admonishments

Admonishments are icons and text throughout this manual that alert the reader to assure personal safety, to minimize possible service interruptions, and to warn of the potential for equipment damage.

Table 1: Admonishments

	DANGER: (This icon and text indicate the possibility of *personal injury*.)
	WARNING: (This icon and text indicate the possibility of *equipment damage*.)
	CAUTION: (This icon and text indicate the possibility of *service interruption*.)

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The Tekelec Customer Care Center is your initial point of contact for all product support needs. A representative takes your call or email, creates a Customer Service Request (CSR) and directs your requests to the Tekelec Technical Assistance Center (TAC). Each CSR includes an individual tracking number. Together with TAC Engineers, the representative will help you resolve your request.

The Customer Care Center is available 24 hours a day, 7 days a week, 365 days a year, and is linked to TAC Engineers around the globe.

Tekelec TAC Engineers are available to provide solutions to your technical questions and issues 7 days a week, 24 hours a day. After a CSR is issued, the TAC Engineer determines the classification of the trouble. If a critical problem exists, emergency procedures are initiated. If the problem is not critical, normal support procedures apply. A primary Technical Engineer is assigned to work on the CSR and provide a solution to the problem. The CSR is closed when the problem is resolved.

Tekelec Technical Assistance Centers are located around the globe in the following locations:

Tekelec - Global

Email (All Regions): support@tekelec.com

- **USA and Canada**

  Phone:

  1-888-FOR-TKLC or 1-888-367-8552 (toll-free, within continental USA and Canada)

  1-919-460-2150 (outside continental USA and Canada)

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  Phone:

  USA access code +1-800-658-5454, then 1-888-FOR-TKLC or 1-888-367-8552 (toll-free)

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In the event of a critical service situation, emergency response is offered by the Tekelec Customer Care Center 24 hours a day, 7 days a week. The emergency response provides immediate coverage, automatic escalation, and other features to ensure that the critical situation is resolved as rapidly as possible.

A critical situation is defined as a problem with an EAGLE 5 ISS that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical problems affect service and/or system operation resulting in:

- A total system failure that results in loss of all transaction processing capability
- Significant reduction in system capacity or traffic handling capability
- Loss of the system's ability to perform automatic system reconfiguration
- Inability to restart a processor or the system
- Corruption of system databases that requires service affecting corrective actions
- Loss of access for maintenance or recovery operations
- Loss of the system ability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity/traffic, billing, and maintenance capabilities may be defined as critical by prior discussion and agreement with the Tekelec Customer Care Center.

Related Publications

For information about additional publications that are related to this document, refer to the *Related Publications* document. The *Related Publications* document is published as a part of the *Release Documentation* and is also published as a separate document on the Tekelec Customer Support Site.

Documentation Availability, Packaging, and Updates

Tekelec provides documentation with each system and in accordance with contractual agreements. For General Availability (GA) releases, Tekelec publishes a complete EAGLE 5 ISS documentation set. For Limited Availability (LA) releases, Tekelec may publish a documentation subset tailored to specific feature content or hardware requirements. Documentation Bulletins announce a new or updated release.

The Tekelec EAGLE 5 ISS documentation set is released on an optical disc. This format allows for easy searches through all parts of the documentation set.

The electronic file of each manual is also available from the Tekelec Customer Support site (*support.tekelec.com*). This site allows for 24-hour access to the most up-to-date documentation, including the latest versions of Feature Notices.

Printed documentation is available for GA releases on request only and with a lead time of six weeks. The printed documentation set includes pocket guides for commands and alarms. Pocket guides may also be ordered separately. Exceptions to printed documentation are:

- Hardware or Installation manuals are printed without the linked attachments found in the electronic version of the manuals.

- The Release Notice is available only on the Customer Support site.

Note:

Customers may print a reasonable number of each manual for their own use.

Documentation is updated when significant changes are made that affect system operation. Updates resulting from Severity 1 and 2 PRs are made to existing manuals. Other changes are included in the documentation for the next scheduled release. Updates are made by re-issuing an electronic file to the customer support site. Customers with printed documentation should contact their Sales Representative for an addendum. Occasionally, changes are communicated first with a Documentation Bulletin to provide customers with an advanced notice of the issue until officially released in the documentation. Documentation Bulletins are posted on the Customer Support site and can be viewed per product and release.

Maintenance and Administration Subsystem

The Maintenance and Administration Subsystem (MAS) is the central management point for the EAGLE 5 ISS. The MAS provides user interface, maintenance communication, peripheral services, alarm processing, system disk interface, and measurements. Management and redundancy are provided by use of two separate subsystem processors.

The MAS resides on two separate sets of Maintenance and Administration Subsystem Processor (MASP) cards and a Maintenance Disk and Alarm card (collectively referred to as control cards). The control cards are located in slots 1113 through 1118 of the EAGLE 5 ISS control shelf. The control cards can be either E5-based cards or legacy cards.

Note: In normal operation, the E5-based control cards and the legacy control cards cannot be mixed in one EAGLE 5 ISS control shelf.

Legacy Control Cards

The legacy set of EAGLE 5 ISS control cards consists of the following cards:

- Two MASP card sets; each set contains the following two cards:
  - A General Purpose Service Module II (GPSM-II) card
  - A Terminal Disk Module (TDM) card
- One Maintenance Disk and Alarm (MDAL) card

General Purpose Service Module II (GPSM-II) Card

Each GPSM-II card contains the Communications Processor and the Applications Processor and provides connections to the IMT bus. The card controls the maintenance and database administration activity and performs both application and communication processing. GPSM-II cards are located in slots 1113 and 1115 of the control shelf.

Terminal Disk Module (TDM) Card

Each TDM card provides the Terminal Processor for the 16 I/O ports, and interfaces to the Maintenance Disk and Alarm (MDAL) card. The TDM card also distributes Composite Clocks and High Speed Master clocks throughout the EAGLE 5 ISS, and distributes Shelf ID to the EAGLE 5 ISS. Each TDM card contains one fixed disk drive that is used to store primary and backup system databases, measurements, and Generic Program Loads (GPLs). The TDM cards are located in slots 1114 and 1116 of the control shelf.

Maintenance Disk and Alarm (MDAL) Card

The MDAL card processes alarm requests and provides fan control. There is only one MDAL card in a control card set. Critical, major, and minor system alarms are provided for up to 6 individual frames. In addition to the 3 system alarms, the MDAL card provides the system audible alarm. The MDAL card provides control of fans on a per-frame basis and allows for each fan relay to be set individually. The MDAL card contains a removable cartridge drive; the removable cartridge is used for installing new software; backing up the system software, the application software, and the database; and for downloading data for off-line processing. The MDAL card is located in slots 1117 and 1118 of the control shelf.

E5-based Control Cards

The E5-based set of EAGLE 5 ISS control cards consists of the following cards:

- Two Maintenance and Administration Subsystem Processor cards (E5-MASP) cards. Each dual-slot E5-MASP card is made up of the following two modules:
  - Maintenance Communication Application Processor (E5-MCAP) card
  - Terminal Disk Module (E5-TDM) card
- One Maintenance Disk and Alarm card (E5-MDAL card)

Maintenance Communication Application Processor (E5-MCAP) Card

The E5-MCAP card contains the Communications Processor and Applications Processor and provides connections to the IMT bus. The card controls the maintenance and database administration activity and performs both application and communication processing. E5-MCAP cards are located in slots 1113 and 1115 of the control shelf.

Each E5-MCAP card contains two USB ports. One latched USB port is used with removable flash media (“thumb drives”), and one flush-mounted USB port is used with a plug-in “credit card” flash drive. The removable media drive is used to install and back up customer data. The credit card drive is used for upgrade and could be used for disaster recovery.

Terminal Disk Module (E5-TDM) Card

The E5-TDM card provides the Terminal Processor for the 16 I/O ports, and interfaces to the Maintenance Disk and Alarm (E5-MDAL) card and fixed disk storage. The E5-TDM card also distributes Composite Clocks and High Speed Master clocks throughout the EAGLE 5 ISS, and distributes Shelf ID to the EAGLE 5 ISS. Each E5-TDM card contains one fixed SATA drive that is used to store primary and backup system databases, measurements, and Generic Program Loads (GPLs). E5-TDM cards are located in slots 1114 and 1116 of the control shelf.

Maintenance Disk and Alarm (E5-MDAL) Card

The E5-MDAL card processes alarm requests and provides fan control. There is only one E5-MDAL card in a control card set. Critical, major, and minor system alarms are provided for up to 6 individual frames. In addition to the 3 system alarms, the E5-MDAL card provides the system audible alarm. The E5-MDAL card provides control of fans on a per-frame basis, and allows for each fan relay to be set individually. The E5-MDAL card does not contain a removable cartridge drive; drives for removable media are located on the E5-MCAP card. The E5-MDAL card is located in slots 1117 and 1118 of the control shelf.

EAGLE 5 ISS Database Partitions

The data that the EAGLE 5 ISS uses to perform its functions are stored in two separate areas: the fixed disk drives, and the removable cartridge. The following sections describe these areas and data that is stored on them. These areas and their partitions are shown in *Figure 1: EAGLE 5 ISS Database Partitions (Legacy Control Cards)* on page 10 and *Figure 2: EAGLE 5 ISS Database Partitions (E5-Based Control Cards)* on page 10.

Figure 1: EAGLE 5 ISS Database Partitions (Legacy Control Cards)

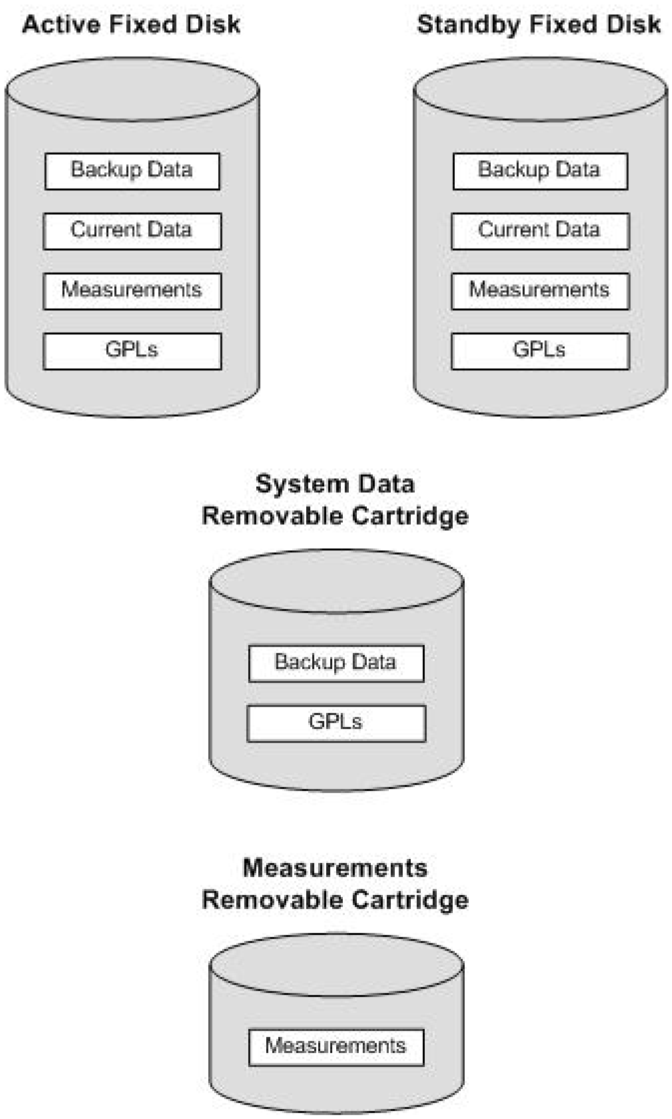
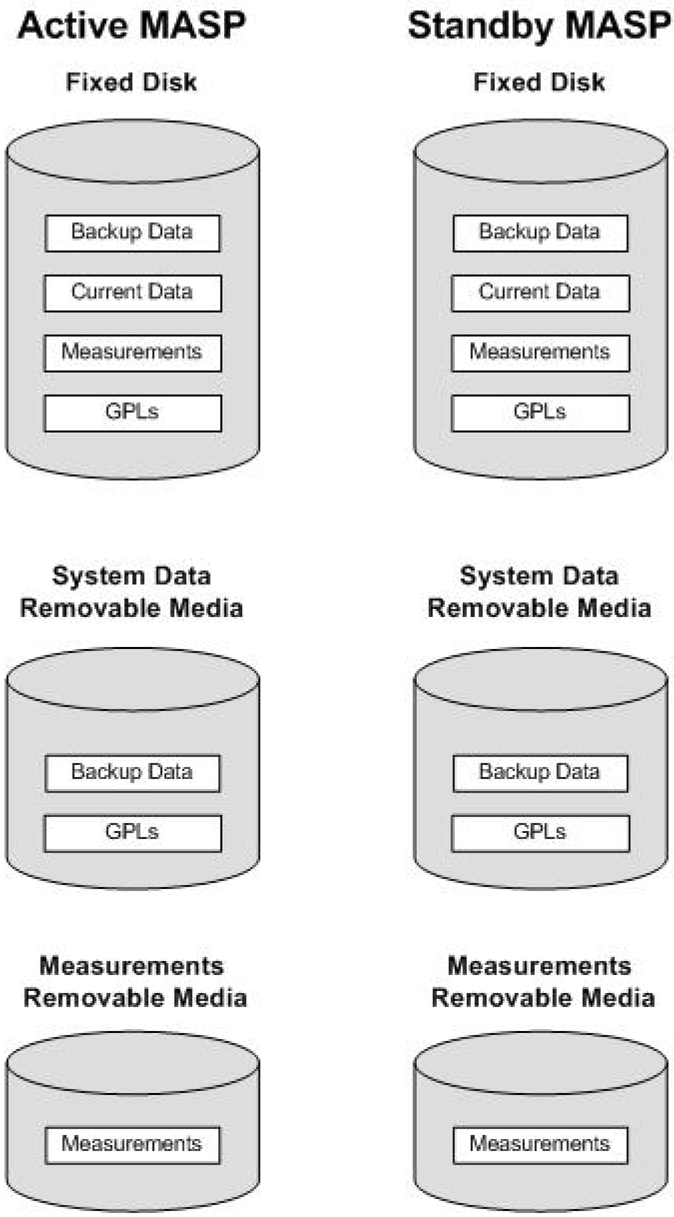


Figure 2: EAGLE 5 ISS Database Partitions (E5-Based Control Cards)



Fixed Disk Drive

There are two fixed disk drives on the EAGLE 5 ISS. The fixed disk drives contain the "master" set of data and programs for the EAGLE 5 ISS. The two fixed disk drives are located on the terminal disk modules (TDMs). Both disks have the same files. The data stored on the fixed disks is partially replicated on the various cards in the EAGLE 5 ISS. Changes made during database administration sessions are sent to the appropriate cards.

The data on the fixed disks can be viewed as four partitions.

- Current partition
- Backup partition

- Measurements partition
- Generic program loads (GPLs) partition

The data which can be administered by users is stored in two partitions on the fixed disk, a current database partition which has the tables which are changed by on-line administration, and a backup database partition which is a user-controlled copy of the current partition.

All of the on-line data administration commands effect the data in the current partition. The purpose of the backup partition is to provide the users with a means of rapidly restoring the database to a known good state if there has been a problem while changing the current partition.

A full set of GPLs is stored on the fixed disk, in the GPL partition. There is an approved GPL and a trial GPL for each type of GPL in this set and a utility GPL, which has only an approved version. Copies of these GPLs are downloaded to the EAGLE 5 ISS cards. The GPL provides each card with its functionality. For example, the `ss7ansi` GPL provides MTP functionality for link interface modules (LIMs).

Measurement tables are organized as a single partition on the fixed disk. These tables are used as holding areas for the measurement counts.

Removable Cartridge or Removable Media

The removable cartridge is used with the legacy MDAL control card in card location 1117. The removable media is used with the E5-MCAP card portion of the E5-MASP in card locations 1113 and 1115.

The removable cartridge or removable media is used for two purposes.

- To hold an off-line backup copy of the administered data and system GPLs
- To hold a copy of the measurement tables

Because of the size of the data stored on the fixed disk drives on the TDMs, a single removable cartridge or removable media cannot store all of the data in the database, GPL and measurements partitions.

To use a removable cartridge or removable media to hold the system data, it must be formatted for system data. To use a removable cartridge or removable media to hold measurements data, it must be formatted for measurements data. The EAGLE 5 ISS provides the user the ability to format a removable cartridge or removable media for either of these purposes. A removable cartridge or removable media can be formatted on the EAGLE 5 ISS by using the `format-disk` command. More information on the `format-disk` command can be found in the *Commands Manual*. More information on the removable cartridge or removable media drives can be found in the *Hardware Manual - EAGLE 5 ISS*.

Additional and preformatted removable cartridges or removable media are available from the *Customer Care Center* on page 4.

Locate Product Documentation on the Customer Support Site

Access to Tekelec's Customer Support site is restricted to current Tekelec customers only. This section describes how to log into the Tekelec Customer Support site and locate a document.

Viewing the document requires Adobe Acrobat Reader, which can be downloaded at www.adobe.com.

1. Log into the Tekelec **new** Customer Support site at *support.tekelec.com*.

   Note: If you have not registered for this new site, click the **Register Here** link. Have your customer number available. The response time for registration requests is 24 to 48 hours.

2. Click the **Product Support** tab.
3. Use the Search field to locate a document by its part number, release number, document name, or document type. The Search field accepts both full and partial entries.
4. Click a subject folder to browse through a list of related files.
5. To download a file to your location, right-click the file name and select **Save Target As**.

Chapter 2

X.25 Gateway Configuration

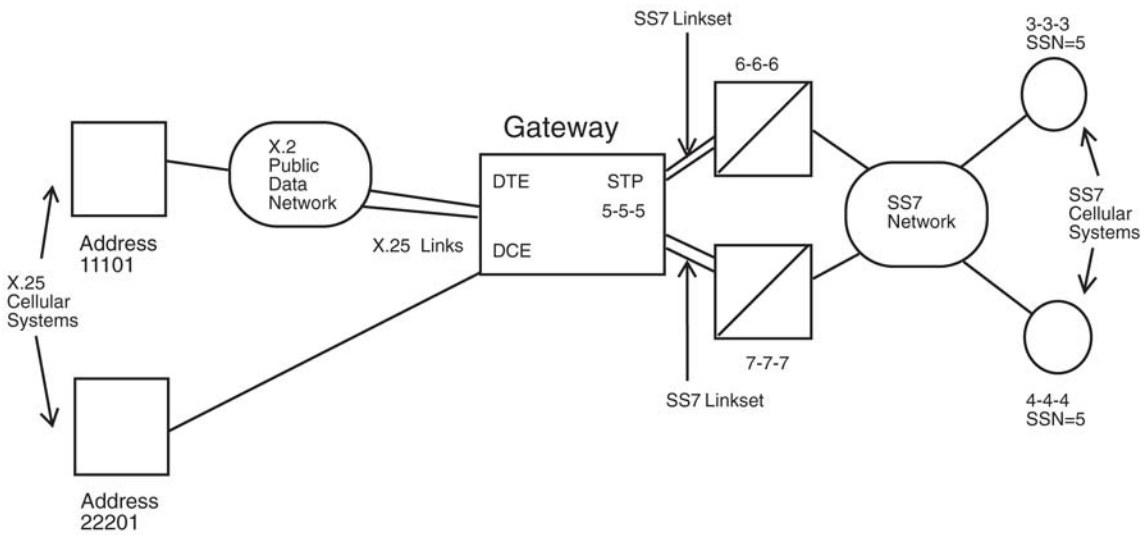
Topics:

Chapter 2, X.25 Gateway Configuration, describes the X.25 Gateway feature and the procedures necessary to configure the EAGLE 5 ISS to support this feature.

The X.25 Gateway

The EAGLE 5 ISS X.25/SS7 gateway feature provides connectivity between SS7 and X.25 networks. This enables cellular (IS.41) applications using different transport services to connect. The gateway is physically positioned between the SS7 network and X.25 network. See *Figure 3: X.25 Gateway Network* on page 16. The gateway transports IS.41 messages from one network to the other using the SS7 Transaction Capability Application Part (TCAP) protocol.

Figure 3: X.25 Gateway Network



The X.25 gateway requires a new communications capability between SS7 and X.25 networks. The gateway uses a LIM card running the `ss7gx25` application. The LIM supports the DS0A, OCU, or V.35 interfaces at lines speeds of 4800, 9600, 19,200, 56,000, and 64,000 bps.

The card looks and operates like any other LIM card. The card is labeled as a LIM-DS0, LIM-V35, and so forth. It can perform gateway screening. It must also provide three distinct functional components: MTP (Level 3) processing, IS.41 gateway and X.25 conversion.

The MTP Level 3 processing is similar to the operation on SS7 LIM cards. The IS.41 gateway function converts the MTP portion of the packet to X.25 protocol. The X.25 function controls the X.25 protocol and the X.25 link status.

Connectivity to the X.25 Node

The gateway supports these two types of connectivity to the X.25 node:

- direct connectivity
- connectivity through a public or private data network

If the gateway has a direct link to the X.25 node, the gateway appears as a DCE to the X.25 node. The gateway can also connect to the X.25 node through a public data network where it appears as a DTE to the X.25 network.

Message Conversion

The gateway performs the message conversion for all TCAP traffic in both directions. The message conversion removes and adds protocol envelopes used by the X.25 and SS7 networks. The TCAP portion of the data is not changed. The MTP/SCCP of SS7 is converted to X.25 and reverse, depending upon the traffic direction. TCAP is passed through the gateway unchanged. IS.41 uses TCAP as the "carrier."

Address Mapping

In order to route traffic between networks, the gateway performs address mapping between the X.25 domain and the SS7 domain. The X.25 application entities and the SS7 application entities must have addresses not only in their domain but also in the opposite network domain. For example, the X.25 application entity is addressed by the SS7 network using a pseudo point code and pseudo subsystem number (XPC and XSSN). Conversely, the SS7 application entity must be addressed by the X.25 network using a pseudo X.25 network address (SADDR).

X.25 Gateway Description

X.25 requires that any data that is transmitted must be sent on a connection. A connection represents a route between two application entities (one in the X.25 domain and one in the SS7 domain). It must exist before any messages can be transferred. The connection can be one of three types:

- PVC (permanent virtual circuit): A fixed connection that can only be altered through administration.
- SVCA (switched virtual circuit-automatic): A connection established by the STP as soon as the X.25 gateway card initializes.
- SVCR (switched virtual circuit-remote): A connection established by the X.25-user end when necessary.

For these connections, a route must be defined through administration. Every application entity that can be connected through the gateway must be defined. The association between the application entities must also be defined.

An X.25 link appears to the STP as though it is an SS7 link. Adjacent point codes are either the originating point code of the X.25 distant end (if the connection is direct), or a virtual point code (if the connection is through a network). This is equivalent to routing through an adjacent STP to the signaling points connected to it. See *Figure 3: X.25 Gateway Network* on page 16.

As messages travel from the X.25 network to the SS7 network, the gateway determines the destination point code (DPC) and adds the SS7 SCCP and MTP envelopes to the TCAP message. The gateway determines the virtual circuit and removes the SCCP and MTP envelopes on messages transmitted from the SS7 network side to an X.25 destination.

Other attributes of the gateway are as follows:

- Each X.25 link supports up to 255 logical channels as SVCs or PVCs or a combination.
- The EAGLE 5 ISS supports up to 1024 X.25 logical connections. If the 2000 X.25 routes feature is turned on, shown by the entry `X252000 = on` entry in the `rtrv-feat` command output, the EAGLE 5 ISS supports up to 2000 X.25 logical connections.
- All X.25 network-initiated calls are accepted when the calling X.25 node is correctly defined in the STP.

- Gateway screening is supported from the X.25 to the SS7 network.
- Routing does not occur through the X.25 gateway between two X.25 points.
- X.25 networks that do not supply the calling address in the call request are not supported for network-initiated connections.

X.25 Gateway Routing

Gateway routing is performed through four different functions:

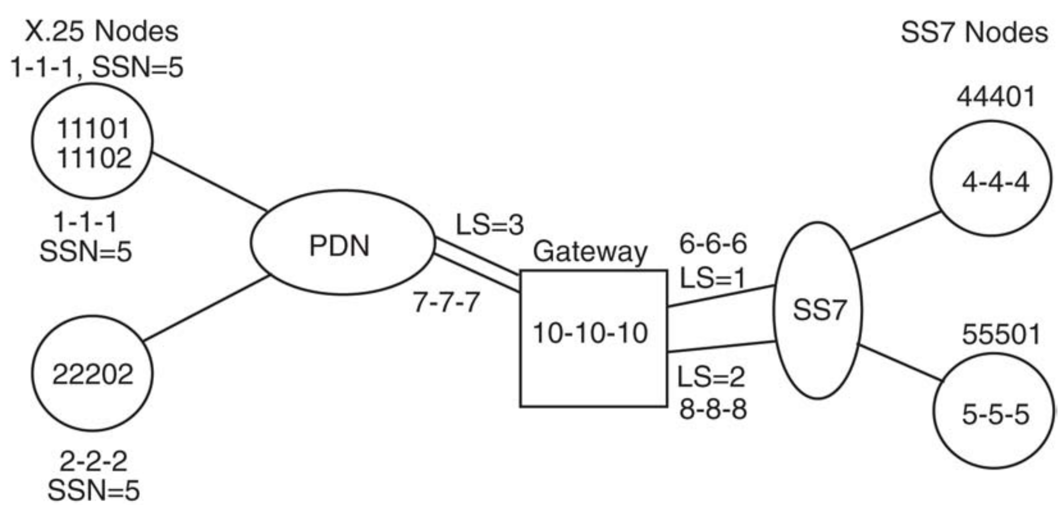
- Connection Determination
- X.25 Connection Control
- Same-Link Management
- Logical Channel to Network Management Mapping

Connection Determination

The destination address for X.25 is defined as a destination element (X.25 DE). An X.25 DE is an object on the X.25 network to which a connection can be made and has a point code assigned to it. An X.25 link can be either point-to-point (direct) or through an intermediary network. A destination for SS7 is a point code, plus an optional subsystem number (SSN).

A destination for X.25 is dependent upon whether a connection is established. A connection is defined as a pair of destinations that are exchanging messages. The destination for X.25 is an X.25 address before connection, and a logical channel (LC) after connection. One of the destinations must be in the X.25 domain and the other in the SS7 domain. See *Figure 4: X.25 Gateway Connection Determination* on page 18.

Figure 4: X.25 Gateway Connection Determination



The connection is determined using the gateway routing table (GRT). This process can be divided by whether the message arrives from the X.25 side (inbound) or the SS7/MTP side (outbound):

- Inbound messages:

If the logical channel on which the message arrives is in the connected state, it already points to an entry in the gateway routing table. The destination point code (DPC) is the value in the SS7 point code field. The origination point code (OPC) is the value in the X.25 point code field.

For an incoming SVC (SVCR), the X.25 user must first establish the connection.

- Outbound messages:

  The DPC is used to locate the connection on which to send the message. The order of the lookup in the GRT is as follows:

1. The STP locates an entry in the X.25 point code field that matches the DPC. If no entry is found for that point code, the gateway produces MRN #1140 and the MSU is discarded.

   Note: If no entry is found, or an SVCA defined, the connection cannot be established.

2. The STP verifies that the OPC matches the SS7 point code field. If there is no match, the gateway produces MRN #1134 and the MSU is discarded.
3. Once the connection entry is found in the Gateway Routing Table (GRT), the STP examines the card address field and proceeds as follows:

Table 2: Card Address Field Action

If...	then...
the card address is the same as the card that receives the MSU,	the routing is complete and the message passes to format conversion.
the card address is not the same card that receives the MSU,	the STP passes the MSU to “single link” management for the card defined in the card address field.

X.25 Connection Control

There is an additional routing requirement, connection routing and control, that is different from SS7 routing.

A connection must be established before any message can be transferred between the STP and an X.25 DE. A connection is established depending upon when and where the connection is made.

A fixed connection route is defined through administration and can be either PVC (permanent virtual circuit), SVCA (switched virtual circuit-automatic) or SVCR (switched virtual circuit - remote). If the connection type field is PVC, the PVC is already established when the link is initialized through provisioning in the public data network (PDN) and STP. The PVC remains in effect while the link is operational.

If the connection type field is SVCA, the connection is established by the designated LIM card (defined in the location field) immediately after the link becomes initialized. It is possible that the remote end becomes available during this cycle, and makes the connection from the remote end. The remote end could make the connection to any card. The connection remains in effect while the link is operational or until the remote end fails or clears the connection.

If the connection type field is SVCR, the connection can only be made by the X.25 DE as follows:

If an X.25 DE wants to send a message to an SS7 node, and the STP has not established a connection to that node, the X.25 DE attempts to establish one before sending the message. The X.25 DE establishes the connection by sending a call request to the STP with identification in the calling address field, and the SS7 node in the called address field.

When the STP receives the incoming call, the STP verifies both the calling and called addresses using the X.25 address and SS7 address fields. If the STP finds an entry for the X.25 address pair, it checks to see if a connection is active.

Table 3: Connection Action

If...	then...
the connection is active,	the STP clears the incoming call.
the connection is not active, and the SS7 point code is accessible from the STP,	it is set as active. Otherwise, the STP clears the incoming call.
an entry for the X.25 address pair is not found,	the STP checks the X.25 destination table to see if the designated X.25 addresses are present.
both addresses are present (the caller is in the X.25 domain and the called address is in the SS7 domain),	the connection is established and a temporary entry is added to the database.

Same Link Management

X.25 requires that if there is a set of links into a PDN (or directly to an X.25 DE), a response to a request must be returned on the same link and logical channel as the request was received. Because MTP routing does not use a particular link on a linkset, it is likely that a response would go to a non-originating LIM. Same link management assures that the message is sent out on the same link. This is achieved by each LIM informing all others LIMs when the state of a connection changes.

Logical Channel to Network Management Mapping

The EAGLE 5 ISS X.25/SS7 gateway also provides management procedures for failed X.25 logical channels. This feature allows traffic destined for failed logical channels to be rerouted to an alternate route.

When configuring logical channel to network management mapping (LC2NM), you must determine if the X.25 entity is expecting associated queries and responses to use the same logical channel, or if they may be assigned to different logical channels. If associated queries and responses can be received over different logical channels, load balancing and failure recovery through alternate routing is supported.

If logical channel to network management mapping is enabled, and the X.25 entity can receive associated queries and responses on different logical channels, data destined to a failed logical channel is diverted by forced rerouting procedures in the EAGLE 5 ISS to the alternate route. All other associated traffic is diverted, and the logical channels to which associated traffic is assigned are made unavailable.

If the X.25 entity expects all associated queries and responses to be received on the same logical channel, traffic is still diverted to the alternate route if the logical channel fails. Forced rerouting procedures are not needed in this case.

If the alternate route is not available, the EAGLE 5 ISS uses level three network management procedures. For example, an X.25 link interface module (LIM) determines a logical channel has failed. Network management diverts traffic away from the failed logical channel to a defined terminate route.

No network management messages are sent outside the EAGLE 5 ISS, and therefore should have no adverse effects on the SS7 network. The EAGLE 5 ISS uses SS7 network management procedures in software to divert traffic from the failed X.25 signaling link to another X.25 signaling link.

If route management mapping is not enabled on the X.25 linkset, there is no indication of logical channel failures. An unsolicited alarm message (UAM) output is created, which provides a textual message to indicate failure of an X.25 logical channel. All traffic destined to the failed logical channel is discarded.

If X.25 level 2 should fail within the X.25 LIM, all X.25 routes associated with the LIM are considered unavailable and forced rerouting procedures are used.

In either of the above cases, when the logical channel is restored to service, network management will divert traffic back to the newly restored logical channel.

X. 25 Gateway Routing on Mated STPs

If the network uses two STPs as gateways between an X.25 network (or set of X.25 networks) and the SS7 network, there are special routing considerations.

To use the mated STPs, you must define two connections between each pair of nodes that communicate through the mated pair. The view is different for the X.25 node and the SS7 node. To the SS7 node, there is one destination for the messages. To the X.25 node, there are two X.25 address pairs that represent this same logical connection.

The X.25 application on one MSC sees two connection paths to another MSC – one is primary the other secondary.

X.25 Gateway Configuration Procedures

For the EAGLE 5 ISS to implement the X.25/SS7 gateway feature, the EAGLE 5 ISS must be configured to support the X.25 network. These items must be configured to support the X.25 network.

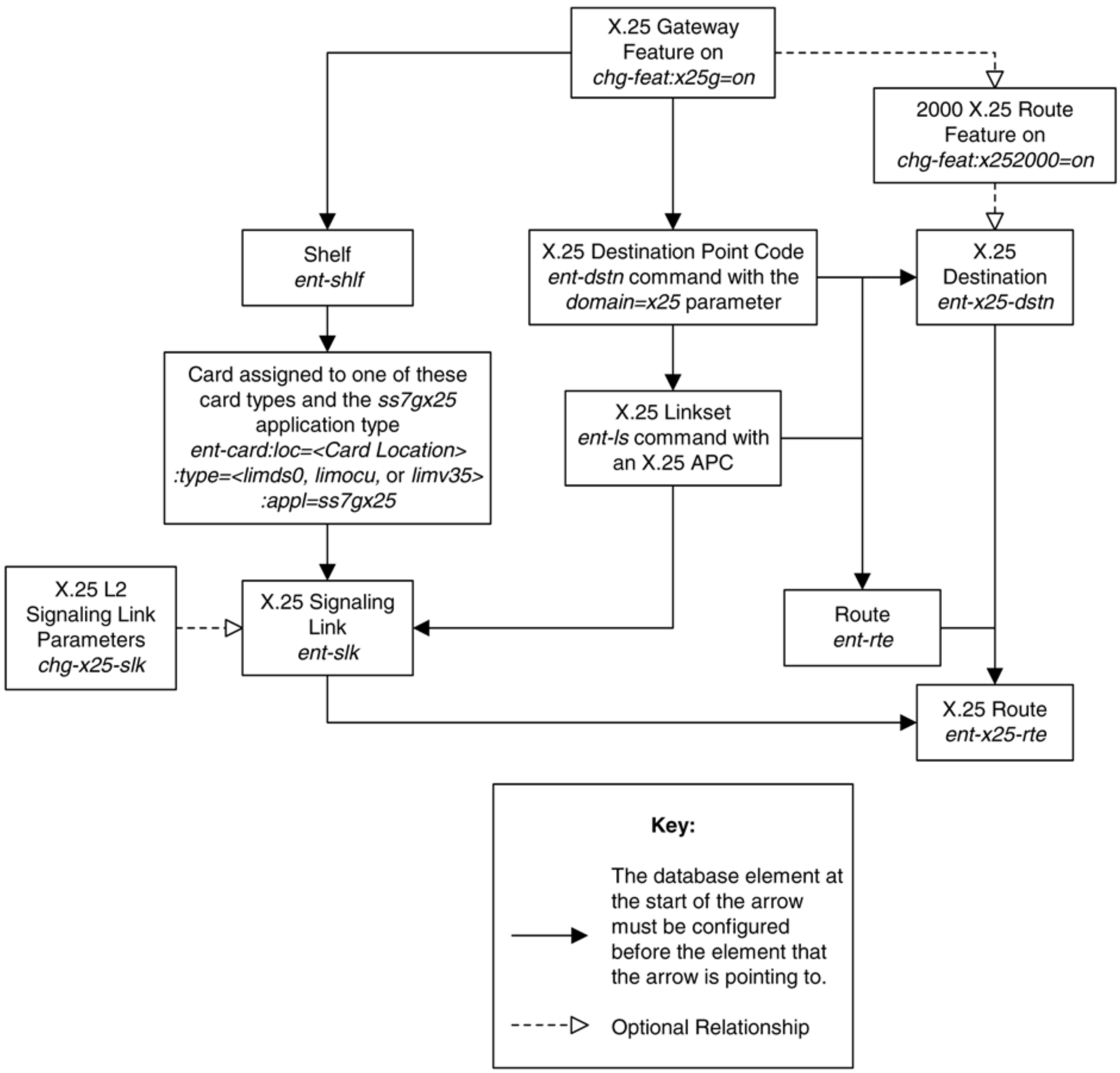
- X.25 LIMs
- X.25 gateway destinations
- X.25 linksets
- X.25 signaling links
- X.25 routes
- X.25 signaling link parameters – if the default X.25 signaling link parameters need to be changed

The procedures shown in this chapter use a variety of commands. If more information on these commands is needed, go to the *Commands Manual* to find the required information.

In addition to the X.25 gateway destinations, X.25 linksets, X.25 signaling links, X.25 routes, and X.25 signaling link parameters, other entities must be provisioned in the database to support the X.25 network. The entities that are required for the particular X.25 entity are listed with the particular procedure. They are also shown here to give an overview of what is required to configure the EAGLE 5 ISS to support the X.25 network. These entities must also be provisioned in the order that they are shown.

Figure 5: X.25 Gateway Database Relationships on page 22 shows the relationships of the database elements that are configured in these procedures.

Figure 5: X.25 Gateway Database Relationships



1. The X.25/SS7 gateway feature must be turned on with the `chg-feat:x25g=on` command. If the database is to contain more that 1024 X.25 destinations and routes, the 2000 X.25 routes feature must be turned on with the `chg-feat:x252000=on` command. The `rtrv-feat` command is used to verify whether these features are on or off.

Note: Once the X.25 gateway feature and the 2000 X.25 routes features are turned on with the `chg-feat` command, they cannot be turned off.

2. Make sure that the required shelf is in the database with the `rtrv-shlf` command. If it is not in the database, add it with the `ent-shlf` command.
3. Make sure the cards that the X.25 signaling links will be assigned to are in the database with the `rtrv-card` command. These cards must be LIMs (card types `limds0`, `limocu`, or `limv35`) and must have the `ss7gx25` application assigned to them. If these cards are not in the database, add them with the `ent-card` command, specifying a LIM (`:type=limds0`, `:type=limocu`, or `:type=limv35`) and the `ss7gx25` application (`:appl=ss7gx25`).
4. The X.25 network configuration for the EAGLE 5 ISS requires linksets, routes, and X.25 destinations. These entities use point codes and these point codes must be defined in the database. Verify that the necessary point codes are in the database with the `rtrv-dstn` command. If they are not in the database, add them with the `ent-dstn` command. The point codes must also be assigned to the X.25 domain.

   Note: No database entity used for the X.25/SS7 gateway feature can contain ITU international and ITU national point codes. The `ent-dstn` command does not allow an ITU international or ITU national point code to be assigned to the X.25 domain.

5. The X.25 destination, used to assign an X.25 address to a point code, must be in the database. Verify this with the `rtrv-x25-dstn` command. If it is not in the database, add it with the `ent-x25-dstn` command, specifying a point code in the X.25 domain.
6. The linksets that will contain the X.25 signaling links must be in the database. These linksets must be assigned an adjacent point code (APC) that is in the X.25 domain. Verify this with the `rtrv-ls` command. If the APC is in the X.25 domain, the entry `X25` is shown in the `DOMAIN` field of the output. If the necessary linksets are not in the database, add them with the `ent-ls` command, specifying an APC that is in the database and in the X.25 domain, added in step 4.
7. The X.25 signaling links must be in the database. Verify this with the `rtrv-slk` command. The X.25 signaling links are assigned to linksets in the X.25 domain, from step 6 and to LIMs with the `ss7gx25` application, from step 3. They also have dashes in the `L2TSET` field in the `rtrv-slk` command. If the necessary X.25 signaling links are not in the database, add them with the `ent-slk` command. These signaling links must be assigned to LIMs with the `ss7gx25` application and to linksets whose APC is in the X.25 domain.
8. When the X.25 signaling links are added to the database, there are parameters that control the behavior of these signaling links that are not configured with the `ent-slk` command and are assigned default values. These values can be changed with the `chg-x25-slk` command. If you wish to change the values for these parameters, display the current values with the `rtrv-x25-slk` command. Change these values with the `chg-x25-slk` command.
9. The point codes assigned to each of the X.25 destinations must also be assigned to a route. A route must also be assigned to the linksets containing the X.25 APCs. Verify this with the `rtrv-rte` command. If the necessary routes are not in the database, add them to the database with the `ent-rte` command, specifying a point code assigned to an X.25 destination, from step 5, and a linkset with an X.25 APC, from step 6.
10. The X.25 routes, containing the X.25 addresses from step 5, and the X.25 signaling links from step 7, must be in the database. The connection type assigned to each X.25 route must conform to the number of connection types allowed for X.25 signaling link assigned to the X.25 route. This is shown in output of the `rtrv-x25-slk` command, from step 8, in the `PVC` and `SVC` fields. Verify this with the `rtrv-x25-rte` command. If the X.25 routes are not in the database, add them with the `ent-x25-rte` command.

Figure 6: Typical X.25/SS7 Gateway Configuration on page 24 shows a typical network configuration and *Table 4: Typical X.25/SS7 Gateway Routing Table* on page 24 shows the information in the gateway routing table (GRT) after the typical network is provisioned.

Figure 6: Typical X.25/SS7 Gateway Configuration

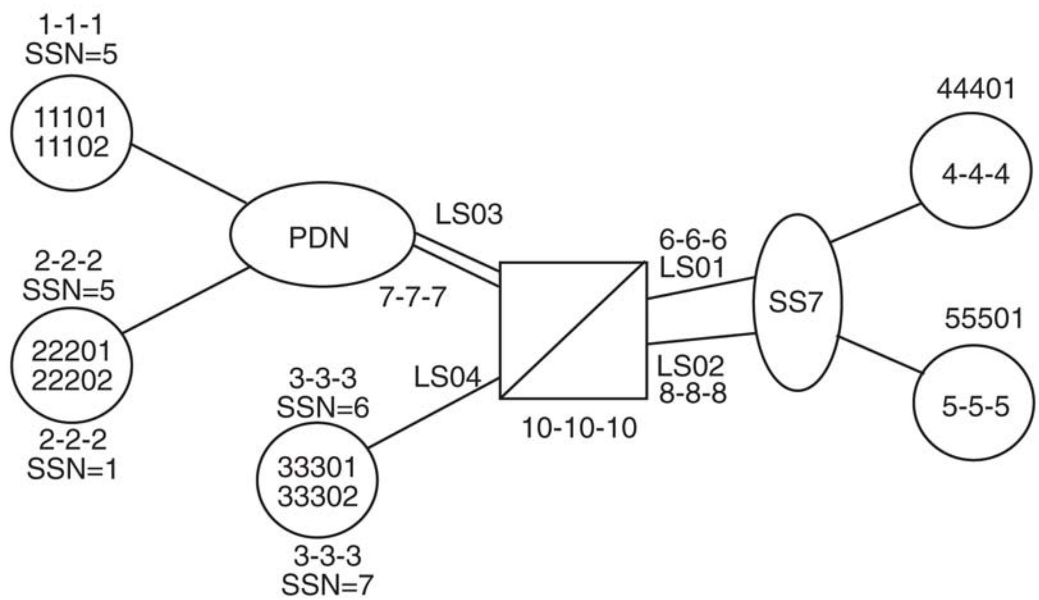


Table 4: Typical X.25/SS7 Gateway Routing Table

Conn #	X.25 Address	SS7 Address	X.25 Point Code/SSN	SS7 Point Code/SSN	Connection Type	Location	Port	Logical Channel
1	11101	44401	1-1-1/5	4-4-4/5	PVC	1205	A	1
2	11102	55501	1-1-1/5	5-5-5/5	PVC	1206	A	2
3	22201	44401	2-2-2/5	4-4-4/5	PVC	1205	A	2
4	22202	55501	2-2-2/10	5-5-5/10	PVC	1206	A	1
5	33301	44401	3-3-3/6	4-4-4/6	Auto-SVC	1207	A	--
6	33302	55501	3-3-3/7	5-5-5/7	Auto-SVC	1207	A	--

Adding an X.25 LIM

This procedure is used to add an X.25 LIM to the database using the `ent-card` command. The `ent-card` command uses these parameters.

`:loc` – The location of the card being added to the database.

`:type` – The type of card being added to the database. The X.25 LIM can be assigned to one of three card types: `limds0`, `limocu`, or `limv35`. *Table 5: X.25 LIM Card Type Combinations* on page 25 shows the names and part numbers of the cards that can be configured as X.25 LIMs in the database. This can be used to verify that the card being entered into the database matches the card physically installed in the EAGLE 5 ISS.

Table 5: X.25 LIM Card Type Combinations

Card Name	Part Number	Card Type (:type)
LIM or LIM-AINF	870-1014-XX 870-1488-XX	limds0, limocu, limv35
EILA	870-2049-XX	limds0, limocu, limv35
LIM-DS0	870-1009-XX 870-1485-XX	limds0
LIM-OCU	870-1010-XX 870-1486-XX	limocu
LIM-V.35	870-1012-XX 870-1487-XX	limv35
The LIM, LIM-AINF, or EILA is a link interface module using the AINF interface and can be installed in place of the LIM-DS0, LIM-OCU, or LIM-V.35. It is configured in the database as either a LIM-DS0, LIM-OCU, or LIM-V.35 card.		

`:appl` – The application software that is assigned to the card. For this procedure, the value of this parameter is `ss7gx25`.

`:force` – Allow the LIM to be added to the database even if there are not enough service modules to support the number of LIMs in the EAGLE 5 ISS This parameter is obsolete and is no longer used.

The shelf to which the card is to be added, must already be in the database. This can be verified with the `rtrv-shlf` command. If the shelf is not in the database, see the Adding a Shelf procedure in the Database *Administration Manual – System Management*.

The card cannot be added to the database if the specified card location already has a card assigned to it.

Before an X.25 LIM can be configured in the database, the X.25 gateway feature must be turned on with the `chg-feat` command. The `rtrv-feat` command can verify that the X.25 gateway feature is on.

Note: Once the X.25 gateway feature is turned on with the `chg-feat` command, it cannot be turned off.

The examples in this procedure are used to configure an X.25 LIM on a LIM-V.35 card in card slot 1202 in the database.

1. Display the cards in the EAGLE 5 ISS using the `rtrv-card` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1101   TSM       SCCP
1102   TSM       GLS
1113   GPSM      EOAM
1114   TDM-A
1115   GPSM      EOAM
1116   TDM-B
1117   MDAL
1201   LIMDS0    SS7ANSI   sp2           A    0   sp1           B    0
1203   LIMDS0    SS7ANSI   sp3           A    0
1204   LIMDS0    SS7ANSI   sp3           A    1
1206   LIMDS0    SS7ANSI   nsp3          A    1   nsp4          B    1
1207   LIMV35    SS7GX25   nsp1          A    0
1208   LIMV35    SS7GX25   nsp1          A    1
1216   ACMENET   STPLAN
1301   TSM       SCCP
1308   LIMDS0    SS7ANSI   sp6           A    1   sp7           B    0
1314   LIMDS0    SS7ANSI   sp7           A    1   sp5           B    1
1317   ACMENET   STPLAN
```

   The cards should be distributed throughout the EAGLE 5 ISS for proper power distribution. Refer to the *Installation Manual* - EAGLE 5 ISS for the shelf power distribution. If the `APPL` field of the `rtrv-card` command output shows cards assigned to the `ss7gx25` application, skip steps 2, and 3, and go to step 4.

2. Verify that the X.25 gateway feature is on, by entering the `rtrv-feat` command.

   If the X.25 gateway feature is on, the `X25G` field should be set to `on` For this example, the X.25 gateway feature is off.

   Note: The `rtrv-feat` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in the *Commands Manual*.

3. If the X.25 gateway feature is not on, shown by the `X25G = off` entry in the `rtrv-feat` command output in step 2, turn the X.25 gateway feature on by entering this command.

   `chg-feat:x25g=on`

   Note: Once the X.25 gateway feature is turned on with the `chg-feat` command, it cannot be turned off.

When the `chg-feat` has successfully completed, this message should appear.

```
rlghncxa03w 06-10-07 00:57:31 GMT EAGLE5 36.0.0
CHG-FEAT: MASP A - COMPLTD
```

4. Using *Table 5: X.25 LIM Card Type Combinations* on page 25 as a reference, verify that the card has been physically installed into the proper location.
5. Add the card using the `ent-card` command.

   For this example, enter this command.

   `ent-card:loc=1202:type=limv35:appl=ss7gx25`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-12 09:12:36 GMT  EAGLE5 36.0.0
ENT-CARD: MASP A - COMPLTD
```

6. Verify the changes using the `rtrv-card` command with the card location specified.

   For this example, enter this command.

   `rtrv-card:loc=1202`

   This is an example of the possible output.

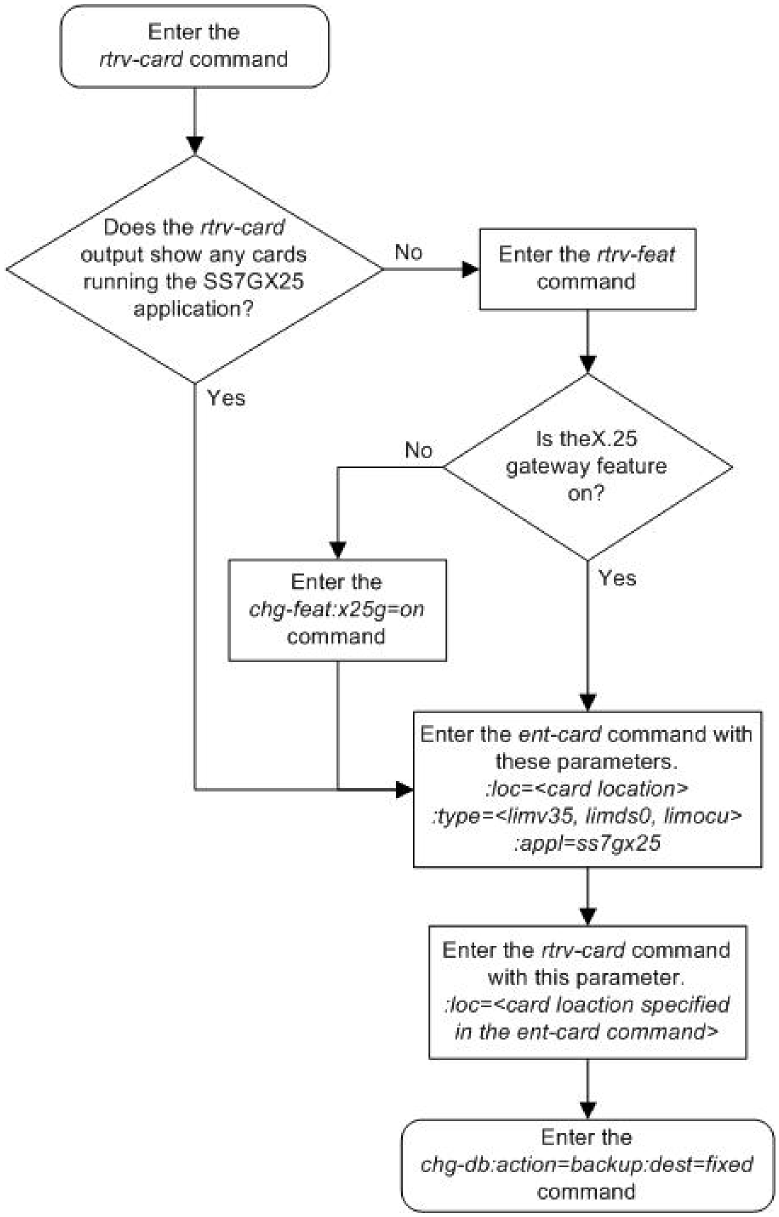
```
rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1202   LIMV35    SS7GX25
```

7. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 7: Adding an X.25 LIM to the Database



Removing an X.25 LIM

This procedure is used to remove an X.25 LIM from the database using the `dlt-card` command.

The card being removed must exist in the database.

CAUTION:

If the X.25 LIM is the last X.25 LIM in service, removing this card from the database will cause X.25 traffic to be lost.

The examples in this procedure are used to remove the X.25 LIM in card location 1202.

Canceling the REPT-STAT-CARD Command

Because the `rept-stat-card` command used in this procedure can output information for a long period of time, the `rept-stat-card` command can be canceled and the output to the terminal stopped. There are three ways that the `rept-stat-card` command can be canceled.

- Press the `F9` function key on the keyboard at the terminal where the `rept-stat-card` command was entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rept-stat-card` command was entered.
- Enter the `canc-cmd:trm=<xx>`, where `<xx>` is the terminal where the `rept-stat-card` command was entered, from another terminal other that the terminal where the `rept-stat-card` command was entered. To enter the `canc-cmd:trm=<xx>` command, the terminal must allow Security Administration commands to be entered from it and the user must be allowed to enter Security Administration commands. The terminal's permissions can be verified with the `rtrv-secu-trm` command. The user's permissions can be verified with the `rtrv-user` or `rtrv-secu-user` commands.

For more information about the `canc-cmd` command, go to the *Commands Manual*.

1. Display the cards in the database using the `rtrv-card` command. The X.25 LIMs are shown by the entry `SS7GX25` in the `APPL` field. This is an example of the possible output.

```
rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1101   TSM       SCCP
1102   TSM       GLS
1113   GPSM      EOAM
1114   TDM-A
1115   GPSM      EOAM
1116   TDM-B
1117   MDAL
1201   LIMDS0    SS7ANSI   sp2           A    0   sp1           B    0
1202   LIMV35    SS7GX25
1203   LIMDS0    SS7ANSI   sp3           A    0
1204   LIMDS0    SS7ANSI   sp3           A    1
1206   LIMDS0    SS7ANSI   nsp3          A    1   nsp4          B    1
1207   LIMV35    SS7GX25   nsp1          A    0
1208   LIMV35    SS7GX25   nsp1          A    1
1216   ACMENET   STPLAN
1301   TSM       SCCP
1308   LIMDS0    SS7ANSI   sp6           A    1   sp7           B    0
1314   LIMDS0    SS7ANSI   sp7           A    1   sp5           B    1
1317   ACMENET   STPLAN
```

2. Display the current configuration of the X.25 routes in the database by entering the `rtrv-x25-rte` command. This is an example of the possible output.

```
rlghncxa03w 06-10-12 09:12:36 GMT EAGLE5 36.0.0
X25 ADDR          SS7 ADDR          TYPE  LOC   PORT  LC  RT   LC2NM
2510010011234567  342342341234567   pvc   1202  a     02  xpc  no
251001002         234234231         pvc   1202  a     04  pc   no
51200105          34223422845       svca  1202  a     --  pc   no
2510103           232330            pvc   1206  a     06  xpc  yes
2510103           232330            svcr  ----  -     --  pc   no
2516019002        24247235          svca  1206  a     --  pc   no
```

```
345454              4545434           svca  1206  a     --  pc   no
X.25 ROUTE TABLE IS  30 % FULL
```

3. Remove the X.25 route assigned to the card that you wish to remove (in this example, 1202) by entering the `dlt-x25-rte` command. For this example, enter these commands.

   `dlt-x25-rte:xaddr=2510010011234567:saddr=342342341234567`

   `dlt-x25-rte:xaddr=251001002:saddr=234234231`

   `dlt-x25-rte:xaddr=51200105:saddr=34223422845`

   When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 06-10-12 09:12:36 GMT  EAGLE5 36.0.0
DLT-X25-RTE: MASP A - X.25 Route table 45% full
DLT-X25-RTE: MASP A - COMPLTD
```

4. Display the status of the X.25 signaling link assigned to the card by entering the `rept-stat-slk` command, specifying the card location and the signaling link. For this example, enter this command.

   `rept-stat-slk:loc=1202:link=a`

   This is an example of the possible output.

```
rlghncxa03w 06-10-12 09:12:36 GMT  EAGLE5 36.0.0
SLK      LSN       CLLI        PST          SST       AST
1202,A   lsngwy    ----------- IS-NR        Avail     ----
  ALARM STATUS       = No Alarms.
  UNAVAIL REASON     = --
Command Completed.
```

5. If the X.25 signaling link is not in an OOS-MT-DSBLD state, deactivate the X.25 signaling link using the `dact-slk` command. For this example, enter this command.

   `dact-slk:loc=1202:link=a`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-12 09:12:36 GMT  EAGLE5 36.0.0
Deactivate Link message sent to card
```

6. Display the cards that are in service with the `rept-stat-card:stat=nr` command.

   `rept-stat-card:stat=nr`

   This is an example of the possible output.

```
rlghncxa03w 06-10-27 16:43:42 GMT  EAGLE5 36.0.0
CARD  VERSION      TYPE    GPL       PST           SST       AST
1101  113-003-000  TSM     SCCP      IS-NR         Active    ---
1102  113-003-000  TSM     GLS       IS-NR         Active    ---
1109  113-003-000  HMUX    BPHMUX    IS-NR         Active    ---
1110  113-003-000  HMUX    BPHMUX    IS-NR         Active    ---
1201  113-003-000  LIMDS0  SS7ANSI   IS-NR         Active    ---
1202  113-003-000  LIMV35  SS7GX25   IS-NR         Active    ---
1203  113-003-000  LIMDS0  SS7ANSI   IS-NR         Active    ---
1204  113-003-000  LIMDS0  SS7ANSI   IS-NR         Active    ---
1206  113-003-000  LIMDS0  SS7ANSI   IS-NR         Active    ---
1207  113-003-000  LIMV35  SS7GX25   IS-NR         Active    ---
1208  113-003-000  LIMV35  SS7GX25   IS-NR         Active    ---
```

```
1209  113-003-000  HMUX    BPHMUX    IS-NR         Active    ---
1210  113-003-000  HMUX    BPHMUX    IS-NR         Active    ---
1216  113-003-000  ACMENET STPLAN    IS-NR         Active    ---
1301  113-003-000  TSM     SCCP      IS-NR         Active    ---
1308  113-003-000  LIMDS0  SS7ANSI   IS-NR         Active    ---
1309  113-003-000  HMUX    BPHMUX    IS-NR         Active    ---
1310  113-003-000  HMUX    BPHMUX    IS-NR         Active    ---
1314  113-003-000  LIMDS0  SS7ANSI   IS-NR         Active    ---
1317  113-003-000  ACMENET STPLAN    IS-NR         Active    ---
```

7. If the signaling link on the card to be removed from the database is the last signaling link in a linkset, the `force=yes` parameter must be used with the `dlt-slk` command. To verify this, enter the `rtrv-ls` command with the linkset name shown in step 1 (LSET NAME field). For this example, enter this command.

   `rtrv-ls:lsn=lsngwy`

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 16:31:35 GMT EAGLE5 36.0.0

                                  L3T SLT              GWS GWS GWS
LSN          APCA   (X25)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsngwy       240-020-000   scr1  1   1   yes A   1    off off off yes   off

           CLLI         TFATCABMLQ MTPRSE ASL8
           -----------  ---        ---    ---

           IPGWAPC MATELSN    IPTPS LSUSEALM SLKUSEALM GTTMODE
           no      ---------- ---   ---      ---       CdPA

                                 L2T          L1                PCR  PCR
          LOC  LINK SLC TYPE     SET  BPS    MODE TSET  ECM    N1   N2
          1202 A    0   LIMV35   1    56000  ---  ---   BASIC ---  -----

Link set table is ( 10 of 1024)  1% full
```

8. Inhibit the card using the `rmv-card` command, specifying the card location. If the LIM to be inhibited contains the only signaling link in the linkset that in service, the `force=yes` parameter must also be specified. For this example, enter this command.

   `rmv-card:loc=1202:force=yes`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-12 09:12:36 GMT  EAGLE5 36.0.0
Card has been inhibited.
```

9. Remove the signaling link on the specified card by using the `dlt-slk` command. If the output of step 7 shows that the signaling link being removed is the last signaling link in a linkset, the `force=yes` parameter must be used. For this example, enter this command.

   `dlt-slk:loc=1202:link=a:force=yes`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-12 09:12:36 GMT  EAGLE5 36.0.0
DLT-SLK: MASP A - COMPLTD
```

10. Remove the card using the `dlt-card` command with the card location of the card to be removed. The `dlt-card` command has only one parameter, `loc`, which is the location of the card. For this example, enter this command.

    `dlt-card:loc=1202`

    When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-12 09:12:36 GMT  EAGLE5 36.0.0
DLT-CARD: MASP A - COMPLTD
```

11. Verify the changes using the `rtrv-card` command specifying the card that was removed in step 11. For this example, enter this command.

    `rtrv-card:loc=1202`

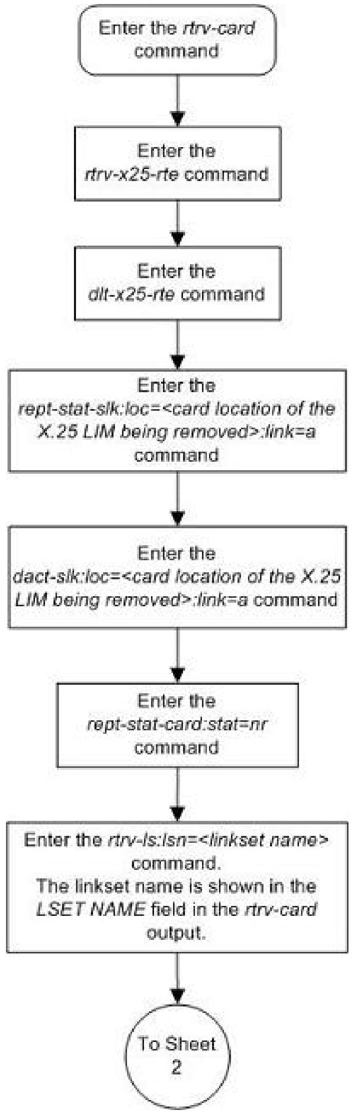
    When this command has successfully completed, this message should appear.

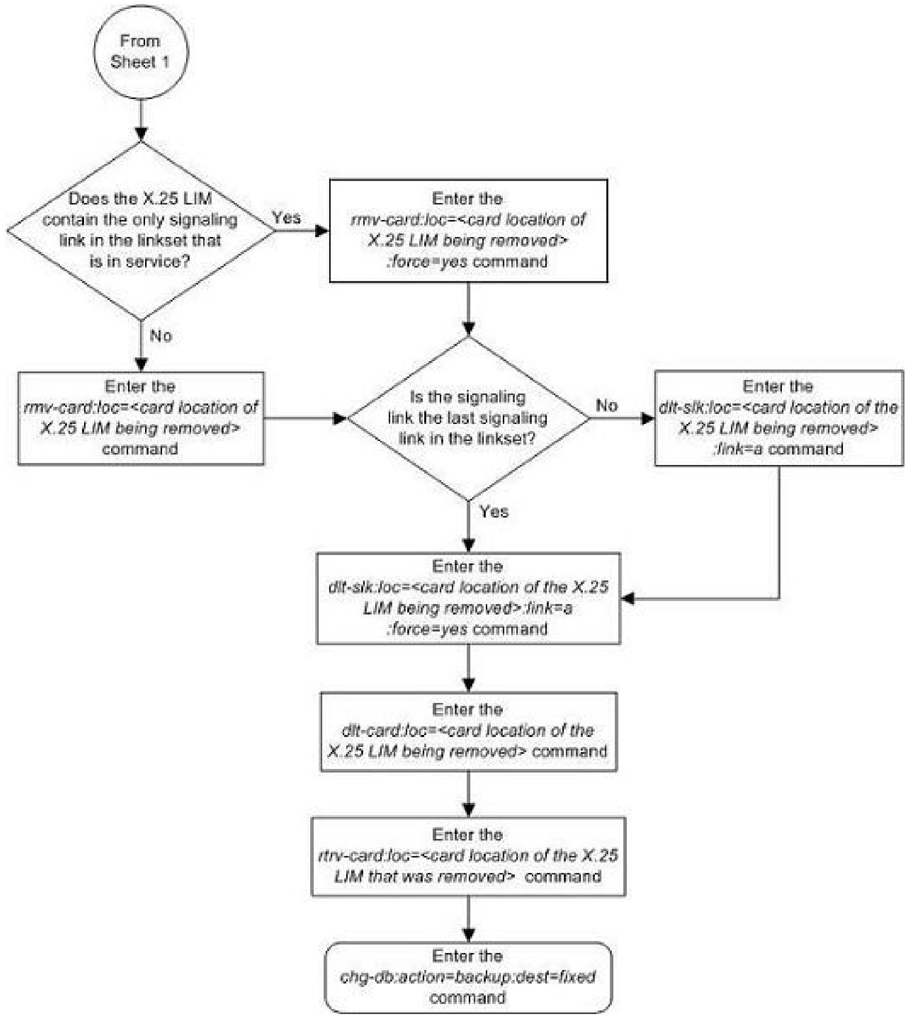
```
E2144 Cmd Rej: Location invalid for hardware configuration
```

12. Backup the new changes using the `chg-db:action=backup:dest=fixed` command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 8: Removing an X.25 LIM


Enter the rtrv-card command
Enter the rtrv-x25-rte command
Enter the dlt-x25-rte command
Enter the rept-stat-slk:loc=<card location of the X.25 LIM being removed>:link=a command
Enter the dact-slk:loc=<card location of the X.25 LIM being removed>:link=a command
Enter the rept-stat-card:stat=nr command
Enter the rtrv-ls:lsn=<linkset name> command.
The linkset name is shown in the LSET NAME field in the rtrv-card output.
To Sheet 2



Adding an X.25 Gateway Destination

This procedure is used to add an X.25 destination to the database using the `ent-x25-dstn` command.

The `ent-x25-dstn` command uses these parameters.

`:xaddr` – The X.25 network address of the X.25 destination entity or the SS7 node.

`:dpc` – The real SS7 point code assigned to a real SS7 node or the dummy point code for an X.25 destination entity. The value for this parameter is an ANSI point code.

`:ssn` – The subsystem number of the destination point code to be assigned to the X.25 address.

The examples in this procedure are based on the example network shown in *Figure 6: Typical X.25/SS7 Gateway Configuration* on page 24 and *Table 4: Typical X.25/SS7 Gateway Routing Table* on page 24.

A destination point code (DPC) in the X.25 domain – see the "Adding a Destination Point Code" procedure in the Database *Administration Manual* – SS7 .

Note: The point code assigned to the X.25 address in the X.25 destination cannot be an ITU international or ITU national point code. The `ent-dstn` command does not allow an ITU international or ITU national point code to be assigned to the X.25 domain.

The destination point code specified with the `ent-x25-dstn` command must be a full point code. Cluster point codes and network routing point codes cannot be specified for X.25 destinations. For more information on cluster point codes, go to the "Cluster Routing and Management Diversity" section in the Database *Administration Manual* – SS7 . For more information on network routing point codes, go to the "Network Routing" section in the Database *Administration Manual* – SS7 .

The X.25 gateway destination to be added cannot already be in the database. This can be verified in step 2.

The X.25/SS7 gateway feature must be turned on. Verify this by entering the `rtrv-feat` command. If the X.25/SS7 gateway feature is off, shown by the entry `X25G = off` in the output of the `rtrv-feat` command, it can be turned on by entering the `chg-feat:x25g=on` command.

If the database is to contain more than 1024 X.25 destinations and routes, The 2000 X.25 routes feature must be turned on. Verify this by entering the `rtrv-feat` command. If the 2000 X.25 routes feature is off, shown by the entry `X252000 = off` in the output of the `rtrv-feat` command, it can be turned on by entering the `chg-feat:x252000=on` command.

Note: Once the X.25 gateway feature and the 2000 X.25 routes features are turned on with the `chg-feat` command, they cannot be turned off.

Canceling the RTRV-DSTN Command

Because the `rtrv-dstn` command used in this procedure can output information for a long period of time, the `rtrv-dstn` command can be canceled and the output to the terminal stopped. There are three ways that the `rtrv-dstn` command can be canceled.

- Press the `F9` function key on the keyboard at the terminal where the `rtrv-dstn` command was entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rtrv-dstn` command was entered.
- Enter the `canc-cmd:trm=<xx>`, where `<xx>` is the terminal where the `rtrv-dstn` command was entered, from another terminal other that the terminal where the `rtrv-dstn` command was entered. To enter the `canc-cmd:trm=<xx>` command, the terminal must allow Security Administration commands to be entered from it and the user must be allowed to enter Security Administration commands. The terminal's permissions can be verified with the `rtrv-secu-trm` command. The user's permissions can be verified with the `rtrv-user` or `rtrv-secu-user` commands.

For more information about the `canc-cmd` command, go to the *Commands Manual*.

1. Verify that the X.25 gateway feature is on, by entering the `rtrv-feat` command.

   If the X.25 gateway feature is on, the `X25G` field should be set to `on`. For this example, the X.25 gateway feature is off.

   Note: The `rtrv-feat` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in the *Commands Manual*.

If the X.25 gateway feature is on, skip step 2 and go to step 3.

If the X.25 gateway feature is not on, go to step 2.

2. If the X.25 gateway feature is not on, shown by the `X25G = off` entry in the `rtrv-feat` command output in step 1, turn the X.25 gateway feature on by entering this command.

   `chg-feat:x25g=on`

   Note: Once the X.25 gateway feature is turned on with the `chg-feat` command, it cannot be turned off.

   When the `chg-feat` has successfully completed, this message should appear.

```
rlghncxa03w 06-10-07 00:57:31 GMT EAGLE5 36.0.0
CHG-FEAT: MASP A - COMPLTD
```

3. Display the DPCs in the database by entering the `rtrv-dstn` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 16:02:05 GMT  EAGLE5 36.0.0
DPCA        CLLI        BEI ELEI  ALIASI   ALIASN      DOMAIN
020-002-*   rlghncbb000 yes yes   -------  ----------  SS7
004-004-004 --------    yes ---   -------  ----------  SS7
005-005-005 --------    yes ---   -------  ----------  SS7
240-012-004 rlghncbb001 yes ---   1-111-1  11111       SS7
240-012-005 rlghncbb002 yes ---   1-112-2  11112       SS7
240-012-006 rlghncbb003 yes ---   1-112-3  11113       SS7
240-012-008 --------    yes ---   1-113-5  11114       SS7
001-001-001 --------    yes ---   -------  ----------  X25
002-002-002 --------    yes ---   -------  ----------  X25
003-003-003 --------    yes ---   -------  ----------  X25

DPCI        CLLI        BEI ELEI  ALIASA       ALIASN      DOMAIN
2-131-1     rlghncbb023 no  ---   222-210-000  12001       SS7
2-131-2     --------    no  ---   222-211-001  12002       SS7
2-131-3     --------    no  ---   222-211-002  12003       SS7

DPCN        CLLI        BEI ELEI  ALIASA       ALIASI  DOMAIN
11211       rlghncbb013 no  ---   222-200-200 2-121-1  SS7
11212       rlghncbb013 no  ---   222-200-201 2-121-2  SS7

DESTINATION ENTRIES ALLOCATED:   2000
    FULL DPC(s):                   14
    EXCEPTION DPC(s):               0
    NETWORK DPC(s):                 0
    CLUSTER DPC(s):                 1
    TOTAL DPC(s):                  15
    CAPACITY (% FULL):             1%
ALIASES ALLOCATED:               8000
    ALIASES USED:                  18
    CAPACITY (% FULL):             1%
X-LIST ENTRIES ALLOCATED:         500
RTRV-DSTN: MASP A - COMPLTD
```

   If the required DPC is not in the database, go to the “Adding a Destination Point Code” procedure in the Database *Administration Manual* - SS7 and add the DPC to the database.

4. Display the X.25 destinations in the database by entering the `rtrv-x25-dstn` command.

This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR         SS7 DPC      SSN
220525586456772  240-012-004  002
234234231        240-012-005  113
23423422834      244-010-006  235
2342342325       244-010-006  236
23423423         244-010-007  112
423423045656767  244-010-008  112
9342             244-010-006  234
X.25 DSTN TABLE IS  30 % FULL
```

If the database is to contain more than 1024 X.25 destinations and routes, the X.25 gateway feature and the 2000 X.25 routes feature must be turned on. If the 2000 X.25 routes feature is on, the `X252000` field in the `rtrv-feat` command output in step 1 should be set to `on`.

If the database is to contain 1024 X.25 destinations and routes or less, skip step 5 and go to step 6.

If the 2000 X.25 routes feature is on, skip step 5 and go to step 6.

If the 2000 X.25 routes feature is off, and the database is to contain more than 1024 X.25 destinations and routes, go to step 5.

5. If the 2000 X.25 routes feature is not on, shown by the `X252000 = off` entry in the `rtrv-feat` command output in step 1, turn the 2000 X.25 routes feature on by entering this command.

   `chg-feat:x252000=on`

   Note: Once the 2000 X.25 routes feature is turned on with the `chg-feat` command, it cannot be turned off.

   When the `chg-feat` has successfully completed, this message should appear.

```
rlghncxa03w 06-10-07 00:57:31 GMT EAGLE5 36.0.0
CHG-FEAT: MASP A - COMPLTD
```

6. Add the X.25 destination to the database using the `ent-x25-dstn` command.

   For this example, enter these commands.

   `ent-x25-dstn:xaddr=11101:dpc=001-001-001:ssn=5`

   `ent-x25-dstn:xaddr=11102:dpc=001-001-001:ssn=5`

   `ent-x25-dstn:xaddr=22201:dpc=002-002-002:ssn=5`

   `ent-x25-dstn:xaddr=22202:dpc=002-002-002:ssn=10`

   `ent-x25-dstn:xaddr=33301:dpc=003-003-003:ssn=6`

   `ent-x25-dstn:xaddr=33302:dpc=003-003-003:ssn=7`

   `ent-x25-dstn:xaddr=44401:dpc=004-004-004`

   `ent-x25-dstn:xaddr=55501:dpc=005-005-005`

   When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:38:53 GMT  EAGLE5 36.0.0
X.25 DSTN TABLE  33 % FULL
ENT-X25-DSTN: MASP A - COMPLTD
```

7. Verify the changes using the `rtrv-x25-dstn` command.

   This is an example of the possible output.

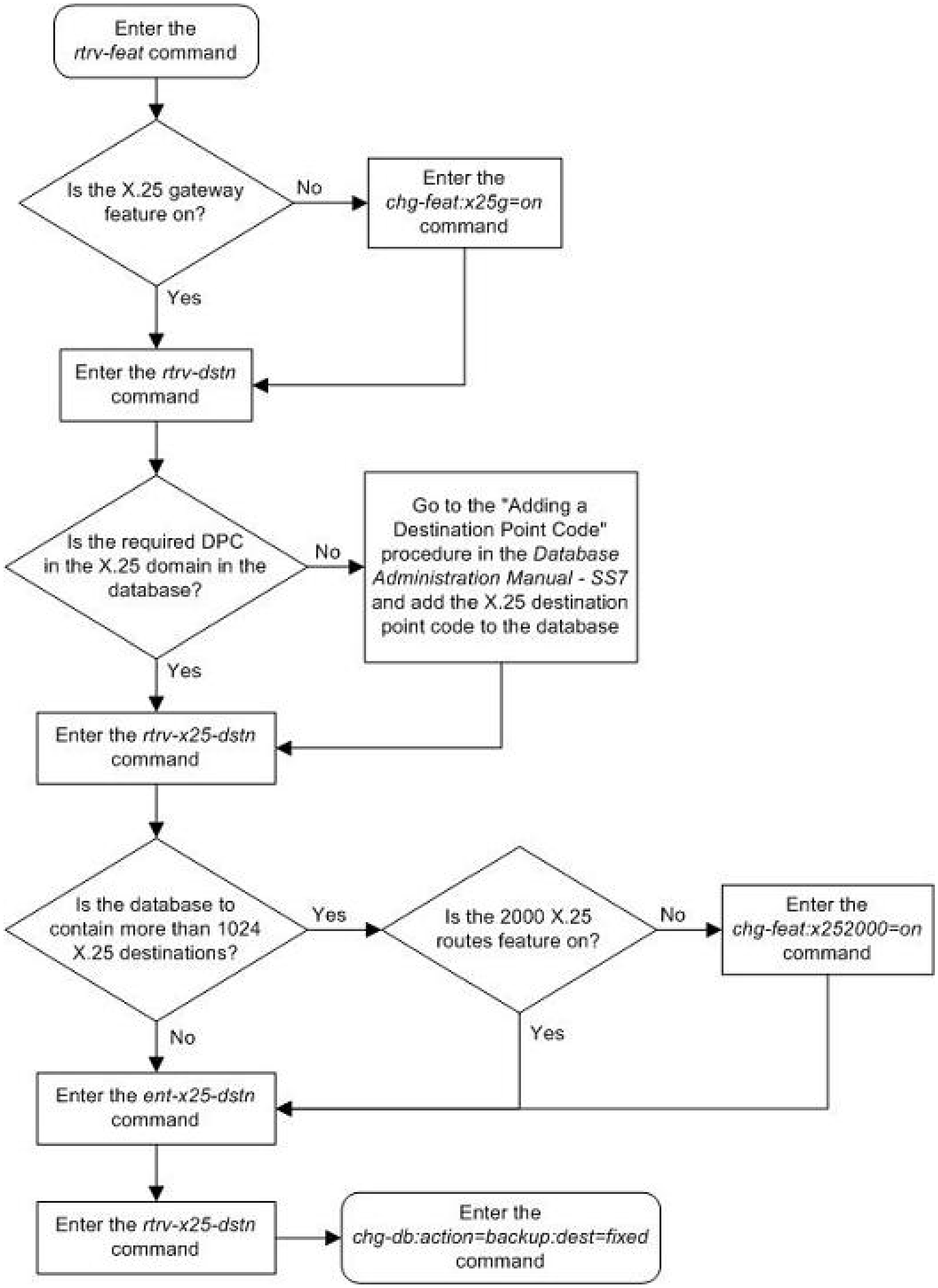
```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR          SS7 DPC      SSN
11101             001-001-001  005
11102             001-001-001  005
22201             002-002-002  005
22202             002-002-002  010
220525586456772   240-012-004  002
234234231         240-012-005  113
23423422834       244-010-006  235
2342342325        244-010-006  236
23423423          244-010-007  112
33301             003-003-003  006
33302             003-003-003  007
3450912           244-010-005  114
423423045656767   244-010-008  112
44401             004-004-004  005
55501             005-005-005  005
9342              244-010-006  234
X.25 DSTN TABLE IS  30 % FULL
```

8. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 9: Adding an X.25 Gateway Destination


Enter the rtrv-feat command
Is the X.25 gateway feature on?
No
Enter the chg-feat:x25g=on command
Yes
Enter the rtrv-dstn command
Is the required DPC in the X.25 domain in the database?
No
Go to the "Adding a Destination Point Code" procedure in the Database Administration Manual - SS7 and add the X.25 destination point code to the database
Yes
Enter the rtrv-x25-dstn command
Is the database to contain more than 1024 X.25 destinations?
Yes
Is the 2000 X.25 routes feature on?
No
Enter the chg-feat:x252000=on command
Yes
No
Enter the ent-x25-dstn command
Enter the rtrv-x25-dstn command
Enter the chg-db:action=backup:dest=fixed command

Removing an X.25 Gateway Destination

This procedure is used to remove an X.25 destination from the database using the `dlt-x25-dstn` command.

The `dlt-x25-dstn` command has only one parameter, `xaddr`, which is the X.25 network address of the X.25 destination entity or the SS7 node.

The examples in this procedure are used to remove the X.25 destination `33301` from the database.

The X.25 gateway destination to be removed must be in the database. This can be verified in step 1.

The X.25 gateway destination to be removed cannot have any X.25 routes assigned to it. This can be verified in step 2.

1. Display the X.25 destinations in the database by entering the `rtrv-x25-dstn` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR          SS7 DPC      SSN
11101             001-001-001  005
11102             001-001-001  005
22201             002-002-002  005
22202             002-002-002  010
220525586456772   240-012-004  002
234234231         240-012-005  113
23423422834       244-010-006  235
2342342325        244-010-006  236
23423423          244-010-007  112
33301             003-003-003  006
33302             003-003-003  007
3450912           244-010-005  114
423423045656767   244-010-008  112
44401             004-004-004  005
55501             005-005-005  005
9342              244-010-006  234
X.25 DSTN TABLE IS  30 % FULL
```

2. Verify that there are no X.25 routes assigned to the X.25 destination to be removed by entering the `rtrv-x25-rte` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR           SS7 ADDR          TYPE  LOC   PORT  LC  RT   LC2NM
11101              44401             pvc   1205  a     01  xpc  no
11102              55501             pvc   1206  a     02  pc   no
22201              44401             pvc   1205  a     02  pc   no
22202              55501             pvc   1206  a     01  xpc  yes
33301              44401             svca  1207  a     --  pc   no
33302              55501             svca  1207  a     --  pc   no
X.25 ROUTE TABLE IS  30 % FULL
```

3. If the X.25 destination to be removed, shown in the `X25 ADDR` column in the output of step 1, is shown in either the `X25 ADDR` or `SS7 ADDR` columns in the output of step 2, then the X.25 destination has an X.25 route assigned to it.

Remove these X.25 routes by using the `dlt-x25-rte` command. For this example, enter this command.

`dlt-x25-rte:xaddr=33301:saddr=44401`

When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 36.0.0
DLT-X25-RTE: MASP A - X.25 Route table 45% full
DLT-X25-RTE: MASP A - COMPLTD
```

4. Verify the changes using the `rtrv-x25-rte` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR          SS7 ADDR         TYPE  LOC   PORT  LC  RT   LC2NM
11101             44401            pvc   1205  a     01  xpc  no
11102             55501            pvc   1206  a     02  pc   no
22201             44401            pvc   1205  a     02  pc   no
22202             55501            pvc   1206  a     01  xpc  yes
33302             55501            svca  1207  a     --  pc   no
X.25 ROUTE TABLE IS  30 % FULL
```

5. Remove the X.25 destination from the database using the `dlt-x25-dstn` command.

   For this example, enter this command.

   `dlt-x25-dstn:xaddr=33301`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:38:53 GMT  EAGLE5 36.0.0
X.25 DSTN TABLE  33 % FULL
DLT-X25-DSTN: MASP A - COMPLTD
```

6. Verify the changes using the `rtrv-x25-dstn` command.

   This is an example of the possible output.

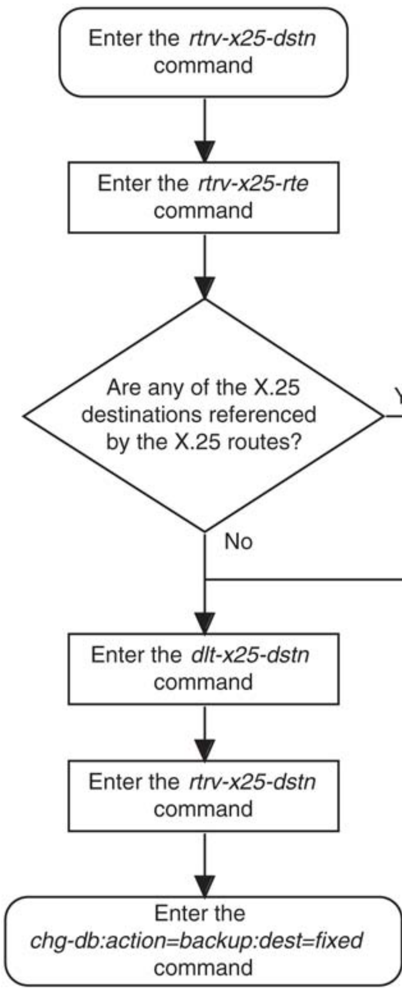
```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR         SS7 DPC      SSN
11101            001-001-001  005
11102            001-001-001  005
22201            002-002-002  005
22202            002-002-002  010
220525586456772  240-012-004  002
234234231        240-012-005  113
23423422834      244-010-006  235
2342342325       244-010-006  236
23423423         244-010-007  112
33302            003-003-003  007
3450912          244-010-005  114
423423045656767  244-010-008  112
44401            004-004-004  005
55501            005-005-005  005
9342             244-010-006  234
X.25 DSTN TABLE IS  30 % FULL
```

7. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 10: Removing an X.25 Gateway Destination



Changing an X.25 Gateway Destination

This procedure is used to change the attributes of an X.25 destination in the database using the `chg-x25-dstn` command.

The `chg-x25-dstn` command uses these parameters.

`:xaddr` – The X.25 network address of the X.25 destination entity or the SS7 node.

`:dpc` – The real SS7 point code assigned to a real SS7 node or the dummy point code for an X.25 destination entity. The value for this parameter is an ANSI point code.

`:ssn` – The subsystem number of the destination that is assigned to the X.25 address.

The examples in this procedure are used to change the DPC and SSN of the X.25 destination `33301` in the database to the DPC 011-011-011 and the SSN 230.

The X.25 gateway destination to be changed must be in the database and cannot have any X.25 routes assigned to it. This can be verified in steps 1 and 2.

If the destination point code (DPC) is changed, the new DPC must be in the database. This can be verified in step 5 with the `rtrv-dstn` command. If the new DPC is not in the database, go to the "Adding a Destination Point Code" procedure in the Database *Administration Manual* – SS7 .

Note: The point code assigned to the X.25 address in the X.25 destination cannot be an ITU international or ITU national point code. The `ent-dstn` command does not allow an ITU international or ITU national point code to be assigned to the X.25 domain.

The destination point code specified with the `chg-x25-dstn` command must be a full point code. Cluster point codes and network routing point codes cannot be specified for X.25 destinations. For more information on cluster point codes, go to the "Cluster Routing and Management Diversity" section in the Database *Administration Manual* – SS7 . For more information on network routing point codes, go to the "Network Routing" section in the Database *Administration Manual* – SS7 .

Canceling the `RTRV-DSTN` Command

Because the `rtrv-dstn` command used in this procedure can output information for a long period of time, the `rtrv-dstn` command can be canceled and the output to the terminal stopped. There are three ways that the `rtrv-dstn` command can be canceled.

- Press the `F9` function key on the keyboard at the terminal where the `rtrv-dstn` command was entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rtrv-dstn` command was entered.
- Enter the `canc-cmd:trm=<xx>`, where `<xx>` is the terminal where the `rtrv-dstn` command was entered, from another terminal other that the terminal where the `rtrv-dstn` command was entered. To enter the `canc-cmd:trm=<xx>` command, the terminal must allow Security Administration commands to be entered from it and the user must be allowed to enter Security Administration commands. The terminal's permissions can be verified with the `rtrv-secu-trm` command. The user's permissions can be verified with the `rtrv-user` or `rtrv-secu-user` commands.

For more information about the `canc-cmd` command, go to the *Commands Manual*.

1. Display the X.25 destinations in the database by entering the `rtrv-x25-dstn` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR         SS7 DPC      SSN
11101            001-001-001  005
11102            001-001-001  005
22201            002-002-002  005
22202            002-002-002  010
220525586456772  240-012-004  002
234234231        240-012-005  113
23423422834      244-010-006  235
```

```
2342342325       244-010-006  236
23423423         244-010-007  112
33301            003-003-003  006
33302            003-003-003  007
3450912          244-010-005  114
423423045656767  244-010-008  112
44401            004-004-004  005
55501            005-005-005  005
9342             244-010-006  234
X.25 DSTN TABLE IS  30 % FULL
```

2. Verify that there are no X.25 routes assigned to the X.25 destination to be changed by entering the `rtrv-x25-rte` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR          SS7 ADDR         TYPE  LOC   PORT  LC  RT   LC2NM
11101             44401            pvc   1205  a     01  xpc  no
11102             55501            pvc   1206  a     02  pc   no
22201             44401            pvc   1205  a     02  pc   no
22202             55501            pvc   1206  a     01  xpc  yes
33301             44401            svca  1207  a     --  pc   no
33302             55501            svca  1207  a     --  pc   no
X.25 ROUTE TABLE IS  30 % FULL
```

3. If the X.25 destination to be removed, shown in the `X25 ADDR` column in the output of step 1, is shown in either the `X25 ADDR` or `SS7 ADDR` columns in the output of step 2, then the X.25 destination has an X.25 route assigned to it.

   Remove these X.25 routes by using the `dlt-x25-rte` command. For this example, enter this command.

   `dlt-x25-rte:xaddr=33301:saddr=44401`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 36.0.0
DLT-X25-RTE: MASP A - X.25 Route table 45% full
DLT-X25-RTE: MASP A - COMPLTD
```

4. Verify the changes using the `rtrv-x25-rte` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR          SS7 ADDR         TYPE  LOC   PORT  LC  RT   LC2NM
11101             44401            pvc   1205  a     01  xpc  no
11102             55501            pvc   1206  a     02  pc   no
22201             44401            pvc   1205  a     02  pc   no
22202             55501            pvc   1206  a     01  xpc  yes
33302             55501            svca  1207  a     --  pc   no
X.25 ROUTE TABLE IS  30 % FULL
```

5. If the DPC is being changed, display the DPCs in the database by entering the `rtrv-dstn` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 16:02:05 GMT  EAGLE5 36.0.0
DPCA        CLLI        BEI ELEI  ALIASI   ALIASN      DOMAIN
020-002-*   rlghncbb000 yes yes   -------  ----------  SS7
004-004-004 --------    yes ---   -------  ----------  SS7
```

```
005-005-005 --------    yes ---   -------  ----------  SS7
240-012-004 rlghncbb001 yes ---   1-111-1  11111       SS7
240-012-005 rlghncbb002 yes ---   1-112-2  11112       SS7
240-012-006 rlghncbb003 yes ---   1-112-3  11113       SS7
240-012-008 --------    yes ---   1-113-5  11114       SS7
001-001-001 --------    yes ---   -------  ----------  X25
002-002-002 --------    yes ---   -------  ----------  X25
003-003-003 --------    yes ---   -------  ----------  X25
011-011-011 --------    yes ---   -------  ----------  X25

DPCI        CLLI        BEI ELEI  ALIASA       ALIASN      DOMAIN
2-131-1     rlghncbb023 no  ---   222-210-000  12001       SS7
2-131-2     --------    no  ---   222-211-001  12002       SS7
2-131-3     --------    no  ---   222-211-002  12003       SS7

DPCN        CLLI        BEI ELEI  ALIASA       ALIASI  DOMAIN
11211       rlghncbb013 no  ---   222-200-200 2-121-1  SS7
11212       rlghncbb013 no  ---   222-200-201 2-121-2  SS7

DESTINATION ENTRIES ALLOCATED:   2000
    FULL DPC(s):                   15
    EXCEPTION DPC(s):               0
    NETWORK DPC(s):                 0
    CLUSTER DPC(s):                 1
    TOTAL DPC(s):                  16
    CAPACITY (% FULL):             1%
ALIASES ALLOCATED:               8000
    ALIASES USED:                  18
    CAPACITY (% FULL):             1%
X-LIST ENTRIES ALLOCATED:         500
RTRV-DSTN: MASP A - COMPLTD
```

If the required DPC is not in the database, go to the "Adding a Destination Point Code" procedure in the Database *Administration Manual* - SS7 and add the DPC to the database.

6. Change the attributes of the X.25 destination using the `chg-x25-dstn` command.

   For this example, enter this command.

   `chg-x25-dstn:xaddr=33301:dpc=011-011-011:ssn=230`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:38:53 GMT  EAGLE5 36.0.0
X.25 DSTN TABLE  33 % FULL
CHG-X25-DSTN: MASP A - COMPLTD
```

7. Verify the changes using the `rtrv-x25-dstn` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR         SS7 DPC      SSN
11101            001-001-001  005
11102            001-001-001  005
22201            002-002-002  005
22202            002-002-002  010
220525586456772  240-012-004  002
234234231        240-012-005  113
23423422834      244-010-006  235
2342342325       244-010-006  236
23423423         244-010-007  112
33301            011-011-011  230
33302            003-003-003  007
3450912          244-010-005  114
```

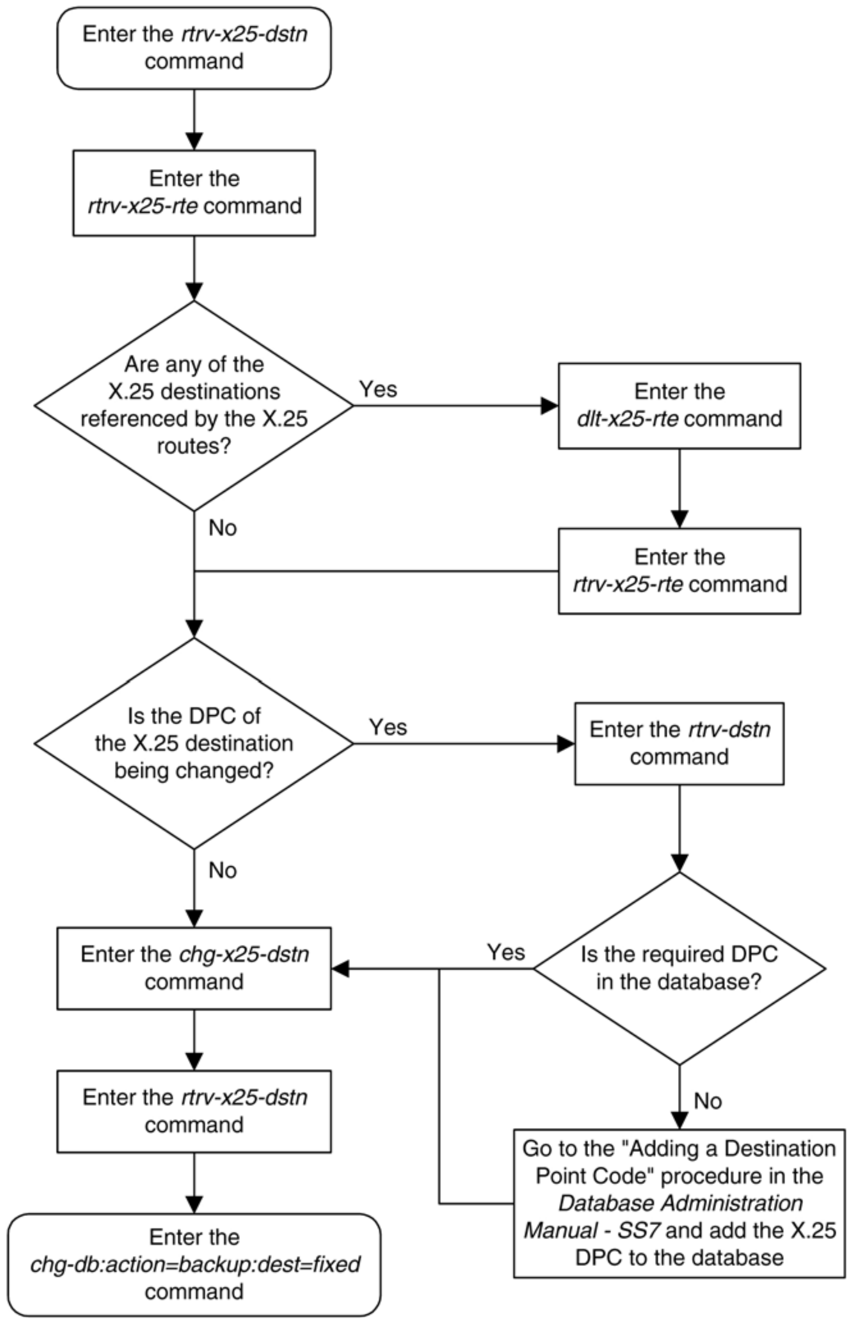
```
423423045656767  244-010-008  112
44401            004-004-004  005
55501            005-005-005  005
9342             244-010-006  234
X.25 DSTN TABLE IS  30 % FULL
```

8. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 11: Changing an X.25 Gateway Destination



Adding an X.25 Linkset

This procedure is used to add X.25 linksets to the EAGLE 5 ISS using the `ent-ls` command. To add SS7 linksets, go to the "Adding an SS7 Linkset" procedure in the Database *Administration Manual* – SS7 .

The `ent-ls` command uses these parameters.

`:lsn` – The name of the linkset. The linkset name can contain up to 10 characters, with the first character being a letter. However, the SEAS interface supports only eight characters. If this linkset is displayed on the SEAS interface and the linkset name contains more than eight characters, only the first eight characters in the linkset name are shown. If this linkset name contains more than eight characters, and is specified with the linkset commands on the SEAS interface, only the first eight characters can be specified.

`:apc/apca` – Adjacent point code – the point code identifying the node that is next to the EAGLE 5 ISS.

`:spc/spca` – The secondary point code assigned to the linkset. Secondary point codes are used for multiple linksets that have the same APC. Secondary point codes can be used only if the Multiple Linksets to Single Adjacent PC feature is enabled and turned on (shown in the `rtrv-ctrl-feat` output.

Note: See Chapter 2, "Configuring Destination Tables," in the Database *Administration Manual -* SS7 for a definition of the point code types that are used on the EAGLE 5 ISS.

`:lst` – The linkset type of the specified linkset - A, B, C, D, or E.

`:clli` – The Common Language Location Identifier assigned to this point code. The value of the `clli` parameter is only displayed in the `rtrv-ls` command output when a specific linkset is being displayed with the `rtrv-ls:lsn=<linkset name>` command.

`:sltset` – The signaling link test message record to be associated with the linkset.

`:l3tset` – The level 3 timer set table. This parameter identifies which level three timer set is to be assigned to this linkset.

`:scrn` – The name of the screenset to be assigned to this linkset if gateway screening is to be used.

`:gwsa` – Gateway screening action determines whether gateway screening (GWS) is on or off for the specified link set.

`:gwsm` – Gateway screening messaging is used to turn on or off the display of messages generated for each screened message. When an MSU is rejected by gateway screening, a message is output to alert personnel of the event.

`:gwsd` – Gateway screening MSU discard is used to turn on or off the discarding of MSUs that bypass the gateway screening function due to load-shedding. Also use this parameter with the redirect function; MSUs that cannot be screened are discarded if you specify `gwsd=on`.

`:bei` – The broadcast exception indicator. This parameter indicates whether TFP (transfer prohibited) messages are allowed to be broadcast on the linkset. The `yes` parameter means TFPs are not broadcast. The `no` parameter means TFPs are broadcast. The `bei=yes` parameter must be specified, or the `bei` parameter must be omitted.

`:gttmode` – The GTT mode/hierarchy identifying the types of global title translation that will be performed on the messages arriving on the specified linkset. The values for this parameter are:

- `sysdflt` – the value of the `dfltgttmode` parameter shown in the `rtrv-sccpopts` command output.
- `cd` - CdPA GTT only
- `cg` - CgPA GTT only
- `acdcd` - Advanced CdPA GTT, CdPA GTT
- `acdcgcd` - Advanced CdPA GTT, CgPA GTT, CdPA GTT
- `acdcdcg` - Advanced CdPA GTT, CdPA GTT, CgPA GTT

- `cgacdcd` - CgPA GTT, Advanced CdPA GTT, CdPA GTT
- `cgcd` - CgPA GTT, CdPA GTT
- `cdcg` - CdPA GTT, CgPA GTT

The default value for the `gttmode` parameter is `sysdflt`.

For more information on using the `gttmode` parameter, see the Origin Based SCCP Routing Feature section in the Database *Administration Manual* - Global Title Translation .

`:cggtmod` - The calling party GT modification indicator. This parameter specifies whether or not calling party global title modification is required. The values for this parameter are `yes` (calling party global title modification is required) or `no` (calling party global title modification is not required). The default value for the `cggtmod` parameter is `no`. This parameter can be specified only if the AMGTT or AMGTT CgPA Upgrade feature is enabled. Enter the `rtrv-ctrl-feat` command to verify that either the AMGTT or AMGTT CgPA Upgrade feature is enabled. If the AMGTT or AMGTT CgPA Upgrade feature is not enabled, perform the "Activating the Advanced GT Modification Feature" procedure in the *Database Administration Manual - Global Title Translation* procedure to enable the required feature. For more information about the Advanced GT Modification feature, refer to the "Advanced GT Modification Feature" section in the *Database Administration Manual - Global Title Translation*.

`:islsrsb` – selects which bit (1 - 4) of the SLS field to use as the least significant bit for signaling link selection in the link set for all messages on ANSI and ITU linksets on incoming linksets. For more information on the islsrsb parameter refer to the "ITU SLS Enhancement" section in the *Database Administration Manual - SS7*. To specify the `islsrsb` parameter, the SLS Bit Rotation by Incoming Linkset feature must be enabled. To enable the SLS Bit Rotation by Incoming Linkset feature, perform the "Activating the SLS Bit Rotation by Incoming Linkset Feature" procedure in the *Database Administration Manual - SS7*.

The examples in this procedure are based on the example network shown in *Figure 6: Typical X.25/SS7 Gateway Configuration* on page 24 and *Table 6: X.25 Linkset Configuration Table* on page 49 and are used to add X.25 linksets `ls03` and `ls04` to the database.

Table 6: X.25 Linkset Configuration Table

Linksets	Linkset APC	# LINKS	LST	GWSA	GWSD	SCRN
ls03	007-007-007	2	A	ON	OFF	SCR0
ls04	003-003-003	1	A	ON	ON	SCR2

The EAGLE 5 ISS can contain 1024 linksets, with a maximum of 255 of these linksets being gateway linksets. A gateway linkset is a linkset that contains routes to a different network.

The linkset to be added cannot be in the database. This can be verified in step 1 of this procedure.

The adjacent point code (APC) must be defined in the database. This can be verified in step 2 of this procedure. The domain of the point code is shown in the `DOMAIN` field in the output of the `rtrv-dstn` command (step 2). The adjacent point code must be a full point code and cannot be a cluster point code.

If the APC is not in the destination point code table, go to the "Adding a Destination Point Code" procedure in the Database *Administration Manual* – SS7 . and add the point code to the destination point code table.

Note: The adjacent point code for the X.25 linkset cannot be an ITU international or ITU national point code. An ITU international or ITU national point code cannot be assigned to the X.25 domain.

An X.25 APC cannot be referenced by an X.25 route that has the logical channel to network management function turned on (`lc2nm=yes`). Enter the `rtrv-x25-dstn` command to show the association of the point codes to X.25 addresses. Enter the `rtrv-x25-rte` command to show which X.25 routes have the logical channel to network management function turned on. This is shown by the entry `no` in the `LC2NM` field in the output of the `rtrv-x25-rte` command. The APC cannot be associated with an X.25 address that is assigned to an X.25 route that has the logical channel to network management function turned on (`lc2nm=yes`).

The `gwsa`, `gwsm`, and `gwsd` parameters can only be specified if the `scrn` parameter is defined. Enter the `rtrv-ls` command to verify that the `scrn` parameter is defined for the specified linkset. If the `scrn` parameter is defined, a gateway screening screen set name is shown in the `SCRN` field of the output. This gateway screening screen set name must also be defined as a gateway screening screen set entity. This can be verified with the `rtrv-scrset` command.

The `gwsd` parameter allows the discarding of messages that should have gone through the gateway screening process, but did not. The `gwsd` parameter is only intended to be used with the Database Transport Access (DTA) feature. If you are not using the DTA feature, the `gwsd` parameter should not be specified or should be set to no (`gwsd=no`).

CAUTION: When Gateway Screening is in the screen test mode, as defined by the linkset parameters `gwsa=off` and `gwsm=on`, the gateway screening action in the gateway screening stop action set specified by the `actname` parameter of the gateway screening screen set at the end of the gateway screening process will be performed.

If the `clli` parameter is specified with the `ent-ls` command, the value of the `clli` parameter must match the CLLI value of the adjacent point code of the linkset. The CLLI value of the adjacent point code is shown in the `CLLI` field of the `rtrv-dstn` command.

To provision more than one linkset with the same APC, the Multiple Linksets to Single Adjacent PC feature must be enabled and turned on. The database can contain a maximum of six linksets that have the same APC. A secondary point code (shown in the `rtrv-spc` output) must be specified with the linkset. The network type and format of the secondary point code must be the same as the APC of the linkset. Secondary point codes cannot be assigned to the APC of the linkset when the point code is provisioned in the database with the `ent-dstn` or `chg-dstn` commands.

Other Optional Parameters

The `ent-ls` command contains other optional parameters that are not used to configure an X.25 linkset. These parameters are discussed in more detail in the *Commands Manual* or in these sections.

- The *Configuring a Linkset for the GSM MAP Screening Feature* on page 313 procedure
- The "Adding an SS7 Linkset" procedure in the *Database Administration Manual - SS7*
- These procedures in the *Database Administration Manual - IP7 Secure Gateway*
    - Configuring an IPGWx Linkset
    - Adding a Mate IPGWx Linkset to another IPGWx Linkset
    - Removing a Mate IPGWx Linkset from another IPGWx Linkset
    - Adding an IPSG M3UA Linkset

- Adding an IPSG M2PA Linkset

Canceling the REPT-STAT-LS, RTRV-LS, and RTRV-DSTN Commands

Because the `rept-stat-ls, rtrv-ls,`and `rtrv-dstn` commands used in this procedure can output information for a long period of time, the `rept-stat-ls, rtrv-ls,`and `rtrv-dstn` commands can be canceled and the output to the terminal stopped. There are three ways that the `rept-stat-ls, rtrv-ls,`and `rtrv-dstn` commands can be canceled.

- Press the `F9` function key on the keyboard at the terminal where the `rept-stat-ls, rtrv-ls ,`or `rtrv-dstn` commands were entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rept-stat-ls, rtrv-ls,`or `rtrv-dstn` commands were entered.
- Enter the `canc-cmd:trm=<xx>`, where `<xx>` is the terminal where the `rept-stat-ls, rtrv-ls,`or `rtrv-dstn` commands were entered, from another terminal other that the terminal where the `rept-stat-ls, rtrv-ls,`or `rtrv-dstn` commands were entered. To enter the `canc-cmd:trm=<xx>` command, the terminal must allow Security Administration commands to be entered from it and the user must be allowed to enter Security Administration commands. The terminal's permissions can be verified with the `rtrv-secu-trm` command. The user's permissions can be verified with the `rtrv-user` or `rtrv-secu-user` commands.

For more information about the `canc-cmd` command, go to the *Commands Manual*.

1. Display the current linkset configuration using the `rtrv-ls` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 37.5.0

                             L3T SLT                GWS GWS GWS
LSN          APCA   (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsa1         240-020-000   scr1  1   1   yes  a  1    off off off no    off
lsa2         240-030-000   scr2  1   2   no   c  3    on  on  on  yes   off
lsa3         240-040-000   scr3  1   3   yes  c  5    off off off yes   off
ls01         006-006-006   scr1  1   1   yes  a  1    on  off off no    off
ls02         008-008-008   scr1  1   1   yes  a  1    on  off off yes   off

                             L3T SLT                GWS GWS GWS
LSN          APCA   (X25)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
ls6          244-010-004   scr4  1   4   no  a   6    off off off ---   off
ls7          244-012-005   scr5  1   5   no  c   3    on  on  on  ---   off
ls8          244-012-006   scr6  1   6   no  c   8    off off off ---   off

                             L3T SLT                GWS GWS GWS
LSN          APCI   (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsi1         1-111-1       scr1  1   1   yes a   1    off off off ---   ---
lsi2         1-111-2       scr2  1   2   no  c   3    on  on  on  ---   ---
lsi3         1-111-3       scr3  1   3   yes c   5    off off off ---   ---

                             L3T SLT                GWS GWS GWS
LSN          APCN   (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsn1         11111         scr1  1   1   yes a   1    off off off ---   off
lsn2         11112         scr2  1   2   no  c   3    on  on  on  ---   off
lsn3         11113         scr3  1   3   yes c   5    off off off ---   off
```

```
Link set table is ( 14 of 1024)  1% full
```

If the APC of the linkset is being assigned to more than one linkset, and multiple linksets with the same APC are shown in the `rtrv-ls` output in this step, continue the procedure with *Step 3* on page 52.

If the APC of the linkset is being assigned to more than one linkset, and multiple linksets with the same APC are not shown in the `rtrv-ls` output in this step, continue the procedure with *Step 2* on page 52.

2. Verify whether or not the Multiple Linksets to Single Adjacent PC feature is enabled and turned on by entering this command.

   `rtrv-ctrl-feat:partnum=893017901`

   This is an example of the possible output.

```
rlghncxa03w 07-08-21 15:48:20 EST  37.5.0
The following features have been permanently enabled:

Feature Name              Partnum   Status Quantity
Multiple Linkset to APC   893019701 on     ----


The following features have been temporarily enabled:

Feature Name              Partnum   Status Quantity   Trial Period Left
Zero entries found.


The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

   If the Multiple Linksets to Single Adjacent PC feature is not enabled or turned on, perform the "Activating the Multiple Linksets to Single Adjacent PC (MLS) Feature" procedure in this chapter to enable and turn on this feature. After this feature has been enabled and turned on, continue the procedure with *Step 3* on page 52.

   If the Multiple Linksets to Single Adjacent PC feature is enabled and turned on, continue the procedure with *Step 3* on page 52.

3. Display the linksets that contain the APC for the new linkset by entering the `rtrv-ls` command with the APC of the linkset. For this example, enter this command.

   `rtrv-ls:apca=001-001-002`

   This is an example of the possible output.

```
rlghncxa03w 07-08-22 08:09:26 EST  37.5.0

APCA   =    001-001-002

                                 L3T SLT                 GWS GWS GWS
LSN           SPCA           SCRN SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
e1m1s2        020-020-021    none 1   1   no  A   7    off off off no    off

Link set table is (10 of 1024) 1% full.
```

   The maximum number of linksets that can use the same APC is six. If six linksets are shown in this step, the specified APC cannot be used in this procedure. Select another APC from the `rtrv-ls` output in *Step 1* on page 51 and repeat this step.

If one to five linksets are shown in this step, continue the procedure with *Step 4* on page 53.

4. Display the secondary point codes by entering the `rtrv-spc` command. This is an example of the possible output.

```
rlghncxa03w 07-08-22 09:39:30 EST  37.5.0
SPC (Secondary Point Codes)

SPCA
     020-020-020
     020-020-021
     021-021-021
     022-022-022
     026-026-026
     026-026-027
     026-026-028
     026-026-029
     200-010-000

SPC-I

none

SPC-N
        00002

SPC-N24

none

Secondary Point Code table is (10 of 40) 25% full.
```

If the desired secondary point code is shown in this step, continue the procedure with *Step 7* on page 55.

If the desired secondary point code is not shown in this step, perform the "Adding a Secondary Point Code" procedure in the *Database Administration Manual - SS7* to add the desired secondary point code. The network type of the new secondary point code must be the same as the APC of the linkset. After the secondary point code has been added, continue the procedure with *Step 7* on page 55.

5. Display the point codes in the destination point code table by using the `rtrv-dstn` command. This is an example of the possible output.

```
rlghncxa03w 06-10-28 16:02:05 GMT  EAGLE5 37.5.0
DPCA        CLLI        BEI ELEI  ALIASI   ALIASN      DOMAIN
004-004-004 --------    yes ---   -------  ----------  SS7
005-005-005 --------    yes ---   -------  ----------  SS7
006-006-006 --------    no  ---   -------  ----------  SS7
008-008-008 --------    no  ---   -------  ----------  SS7
240-012-004 rlghncbb001 yes ---   1-111-1  11111       SS7
240-012-005 rlghncbb002 yes ---   1-112-2  11112       SS7
240-012-006 rlghncbb003 yes ---   1-112-3  11113       SS7
240-012-008 --------    yes ---   1-113-5  11114       SS7
001-001-001 --------    yes ---   -------  ----------  X25
002-002-002 --------    yes ---   -------  ----------  X25
003-003-003 --------    yes ---   -------  ----------  X25
007-007-007 --------    yes ---   -------  ----------  X25
244-010-004 ls06clli    no  ---   -------  ----------  X25
244-012-005 ls07clli    no  ---   -------  ----------  X25
244-012-006 ls08clli    no  ---   -------  ----------  X25
244-012-007 --------    no  ---   -------  ----------  X25
244-012-008 --------    no  ---   -------  ----------  X25
```

```
DPCI        CLLI        BEI ELEI  ALIASA       ALIASN      DOMAIN
2-131-1     rlghncbb023 no  ---   222-210-000  12001       SS7
2-131-2     --------    no  ---   222-211-001  12002       SS7
2-131-3     --------    no  ---   222-211-002  12003       SS7

DPCN        CLLI        BEI ELEI  ALIASA       ALIASI  DOMAIN
11211       rlghncbb013 no  ---   222-200-200 2-121-1  SS7
11212       rlghncbb013 no  ---   222-200-201 2-121-2  SS7

Destination table is (22 of 2000) 1% full
```

If the required DPC is not in the database, go to the “Adding a Destination Point Code” procedure in the Database *Administration Manual* - SS7 and add the DPC to the database. After the adjacent point code has been added, continue the procedure with *Step 7* on page 55.

6. The adjacent point code of the linkset cannot be the DPC of any exception route. Verify that the adjacent point code of the new linkset is not the DPC of any exception route by entering the `rtrv-rtx` command with the `dpc/dpca` parameter. The `dpc/dpca` parameter value is the adjacent point code value that will be specified for the linkset. For this example, enter this command.

`rtrv-rtx:dpca=010-020-005`

This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 37.5.0
    DPCA          RTX-CRITERIA              LSN        RC    APC

    010-020-005   OPCA
                  007-008-009               ls01       20    006-006-006
                  008-008-100               ls02       40    008-008-008

 DESTINATION ENTRIES ALLOCATED:   2000
     FULL DPC(s):                   13
     EXCEPTION DPC(s):               5
     NETWORK DPC(s):                 0
     CLUSTER DPC(s):                 1
     TOTAL DPC(s):                  19
     CAPACITY (% FULL):              1%
 ALIASES ALLOCATED:              12000
     ALIASES USED:                   0
     CAPACITY (% FULL):              0%
 X-LIST ENTRIES ALLOCATED:         500
```

If the adjacent point code of the linkset is not the DPC of a route exception table entry, no entries are displayed in the `rtrv-rtx` output, but a summary of the point code quanties is displayed, as shown in the following output example.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 37.5.0

    DESTINATION ENTRIES ALLOCATED:   2000
        FULL DPC(s):                   15
        EXCEPTION DPC(s):               5
        NETWORK DPC(s):                 0
        CLUSTER DPC(s):                 1
        TOTAL DPC(s):                  21
        CAPACITY (% FULL):              1%
    ALIASES ALLOCATED:              12000
        ALIASES USED:                   0
```

```
        CAPACITY (% FULL):              0%
    X-LIST ENTRIES ALLOCATED:         500
```

If the point code specified in this step is shown in the DPCA column in this step, the point code value cannot be used as an adjacent point code unless one of two actions are taken:

a) Choose another adjacent point code value and repeat *Step 5* on page 53 and *Step 6* on page 54.

b) Remove all the entries displayed in this step by performing the "Removing a Route Exception Entry" procedure in the Database *Administration Manual* - SS7 .

7. Verify that the gateway screening screen set that is to be assigned to the linkset is in the database by entering the `rtrv-scrset` command. This is an example of the possible output.

Note: If the screen set assigned to the linkset is not being changed, or if the screen set that you wish to assign to the linkset is assigned to other linksets (shown in the SCRN field of the `rtrv-ls` command output in *Step 1* on page 51), continue the procedure with *Step 8* on page 56.

```
rlghncxa03w 06-10-28 16:37:05 GMT EAGLE5 37.5.0
ENTIRE GWS DATABASE IS 1% FULL
CDPA + AFTPC TABLES ARE 1% FULL
THERE ARE 243 SCREEN SETS AVAILABLE

THE FOLLOWING ARE OVER 80% FULL:
SCRN  NSFI    NSR/ACT  FULL  RULES  TABLES  DESTFLD

SCRN  NSFI    NSR/ACT  FULL  RULES  TABLES  DESTFLD
fld1  OPC            1%     5    4       NO
gws1  OPC     gws4       1%     9  7       NO
gws2  BLKOPC  gws5       1%     5  4       NO
ls01  SIO     ls02       1%     3  3       YES
scr1  OPC     opc1       1%    37  10      YES
scr2  OPC     opc2       2%    75  22      YES
scr3  OPC     opc3       2%    75  22      YES
scr4  OPC     opc1      51%  2075  22      NO
scr5  OPC     opc1      51%  2075  22      YES
scr6  OPC     opc1      51%  2075  22      NO
ss28  OPC     opc1      51%  2075  22      YES
wrd1  SIO     iec        1%     6  5       YES
```

If you wish to examine the contents of a particular screen set, enter the `rtrv-scrset:scrn=<screen set name>` command specifying a screen set name shown in the SCRN field of either the `rtrv-scrset` command executed in this step or the `rtrv-ls` command executed in step 1.

For this example, enter the `rtrv-scrset:scrn=scr1` command.

This is an example of the possible output.

```
rlghncxa03w 06-10-14 16:39:04 GMT EAGLE5 37.5.0
SCRN  NSFI    NSR/ACT   RULES  DESTFLD
scr1  OPC     opc1          3   Y
      BLKDPC  bkd2          2
      CGPA    cgp1          3
      TT      tt1           3
      TT      tt2           3
      TT      tt3           4
      CDPA    cdp1          3
      CDPA    cdp2          3
```

```
      CDPA     cdp3          4
      AFTPC    end1          9
```

The output of this command shows the screens that make up the screen set. These screens can be examined by entering the gateway screening retrieve command corresponding the to the value in the NSFI field and specifying the screening reference name shown in the NSR/ACT field. For this example, you enter these commands to examine the screens in the screen set.

- rtrv-scr-opc:sr=opc1
- rtrv-scr-blkdpc:sr=bkd2
- rtrv-scr-cgpa:sr=cgp1
- rtrv-scr-tt:sr=tt1
- rtrv-scr-tt:sr=tt2
- rtrv-scr-tt:sr=tt3
- rtrv-scr-cdpa:sr=cdp1
- rtrv-scr-cdpa:sr=cdp2
- rtrv-scr-cdpa:sr=cdp3
- rtrv-scr-aftpc:sr=end1

If the screen set that you wish to assign to the linkset is not in the database, go to the "Adding a Screen Set" procedure in the Database *Administration Manual* - Gateway Screening and add the screen set to the database.

8. Display the X.25 destinations in the database by entering the rtrv-x25-dstn command with the point code to be assigned to the linkset, shown in the rtrv-dstn output in *Step 5* on page 53.

   Note: If a new X.25 point code was added in *Step 5* on page 53, continue the procedure with *Step 10* on page 57.

   rtrv-x25-dstn:dpca=244-012-008

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 37.5.0
X25 ADDR         SS7 DPC      SSN
234234231        244-012-008  113
234234231        244-012-008  113
X.25 DSTN TABLE IS   30 % FULL
```

   If the new APC of the linkset is not shown in the rtrv-x25-dstn output, continue the procedure with *Step 10* on page 57. If the new APC of the linkset is shown in the rtrv-x25-dstn output, continue the procedure with *Step 10* on page 57.

9. Display the X.25 routes by entering the rtrv-x25-rte command with the xaddr parameter value shown in *Step 8* on page 56. For this example, enter this command.

   rtrv-x25-rte:xaddr=234234231

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 37.5.0
X25 ADDR          SS7 ADDR          TYPE  LOC   PORT  LC  RT   LC2NM
234234231         44401             pvc   1205  a     01  xpc  no
X.25 ROUTE TABLE IS   30 % FULL
```

   If the LC2NM value in the X.25 route is no, continue the procedure with *Step 10* on page 57.

If the LC2NM value in the X.25 route is yes, the new linkset APC cannot be used in the X.25 linkset. To use the new linkset APC in the X.25 linkset, the LC2NM value of the X.25 route associated with the new linkset APC must be no. The LC2NM value must be changed to no, or another X.25 point code must be chosen.

To chose another X.25 point code, repeat this procedure from *Step 5* on page 53.

To change the LC2NM value, perform the *Changing an X.25 Route* on page 140 procedure. Then continue the procedure with *Step 10* on page 57.

10. The `gttmode` parameter can be specified with the values `acdcd`, `cgacdcd`, `acdcgcd`, `acdcdcg`, `cgcd`, `cdcg`, or `cg` only if the Origin Based SCCP Routing feature is enabled. Enter the `rtrv-ctrl-feat` command with the part number of the Origin Based SCCP Routing feature to verify whether or not the Origin Based SCCP Routing feature is enabled. Enter this command.

    Note: If the `gttmode` parameter is not being specified for the linkset, or if the `gttmode` parameter is being specified for the linkset with either the `sysdflt` or `cd` values, continue the procedure with *Step 11* on page 57 .

    `rtrv-ctrl-feat:partnum=893014301`

    This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 37.5.0
The following features have been permanently enabled:

Feature Name              Partnum   Status Quantity
Origin Based SCCP Routing 893014301 on     ----

The following features have been temporarily enabled:

Feature Name              Partnum   Status Quantity   Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

    If the Origin Based SCCP routing feature is enabled, continue the procedure with *Step 11* on page 57 .

    If the Origin Based SCCP routing feature is not enabled, perform the “Activating the Origin Based SCCP Routing Feature” procedure in the Database *Administration Manual* - Global Title Translation to enabled the Origin Based SCCP Routing feature. After the Origin Based SCCP Routing feature is enabled, continue the procedure with *Step 11* on page 57 .

11. The `cggtmod` parameter cannot be specified with the `ent-ls` command unless the AMGTT or AMGTT CgPA Upgrade features are enabled. If the `cggtmod` parameter will be specified with the linkset, enter the `rtrv-ctrl-feat` command to verify the status of the AMGTT or AMGTT CgPA Upgrade features.

    Note: If the `cggtmod` parameter will not be specified with the `ent-ls` command, this step does need to be performed. Continue the procedure with *Step 12* on page 58 .

    This is an example of the possible output.

```
rlghncxa03w 07-08-22 10:58:06 EST  37.0.0
The following features have been permanently enabled:

Feature Name              Partnum   Status Quantity
```

```
HC-MIM SLK Capacity       893012707 on     64
Origin-Based MTP Routing  893014201 on     ----
Multiple Linkset to APC   893019701 on     ----
Proxy Point Code          893018702 on     20
AMGTT CdPA Only           893021802 on     ----


The following features have been temporarily enabled:

Feature Name              Partnum   Status Quantity   Trial Period Left
Zero entries found.


The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

If the AMGTT feature (shown by the entry `AMGTT` with the part number 893021801) or the AMGTT CgPA Upgrade feature (shown by the entry `AMGTT CgPA Upgrade` with the part number 893021803) is enabled, continue the procedure with *Step 12* on page 58 .

If the AMGTT or the AMGTT CgPA Upgrade features are not enabled, or if the AMGTT CdPA Only feature is enabled, perform the "Activating the Advanced GT Modification Feature" procedure in the *Database Administration Manual - Global Title Translation* procedure to enable the required feature. After the AMGTT or the AMGTT CgPA Upgrade feature is enabled, continue the procedure with *Step 12* on page 58 .

12. The `islsrsb` parameter can be specified only if the SLS Bit Rotation by Incoming Linkset feature is enabled. Enter the `rtrv-ctrl-feat` command with the part number of the SLS Bit Rotation by Incoming Linkset feature to verify whether or not the SLS Bit Rotation by Incoming Linkset feature is enabled. Enter this command.

    Note: If the `islsrsb` parameter is not being specified for the linkset, continue the procedure with *Step 13* on page 59.

    `rtrv-ctrl-feat:partnum=893026501`

    This is an example of the possible output.

```
rlghncxa03w 08-12-10 11:43:04 GMT EAGLE5 40.0.0
The following features have been permanently enabled:

Feature Name              Partnum   Status Quantity
ISLSBR                    893026501 on     ----

The following features have been temporarily enabled:

Feature Name              Partnum   Status Quantity   Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

If the SLS Bit Rotation by Incoming Linkset feature is enabled, continue the procedure with *Step 13* on page 59.

If the SLS Bit Rotation by Incoming Linkset feature is not enabled, perform the “Activating the SLS Bit Rotation by Incoming Linkset Feature” procedure in the *Database Administration Manual*

- *SS7* to enabled the SLS Bit Rotation by Incoming Linkset feature. After the SLS Bit Rotation by Incoming Linkset feature is enabled, continue the procedure with *Step 13* on page 59.

13. Using the outputs from *Step 1* on page 51 through *Step 12* on page 58 as a guide, add the new linkset using the `ent-ls` command. The new linkset must meet these conditions.
    a) The new linkset cannot already be in the database – the linkset configuration is shown in the output of *Step 1* on page 51.
    b) The APC of the new linkset must be in the destination point code table, shown in the output of *Step 5* on page 53. The adjacent point code for the X.25 linkset must be an ANSI point code in the X.25 domain.
    c) The new linkset cannot use an APC assigned to an X.25 address that is assigned to an X.25 route that has the logical channel to network management function turned on (shown by the entry `yes` in the `LC2NM` field in the output of *Step 9* on page 56). The output of *Step 8* on page 56 shows which X.25 addresses are assigned to the point codes that can be used as APCs for linksets. The output of *Step 9* on page 56 shows the X.25 addresses used by the X.25 routes.

    For this example, enter these commands.

    `ent-ls:lsn=ls03:apca=007-007-007:lst=a:gwsa=on:scrn=scr1`

    `ent-ls:lsn=ls04:apca=003-003-003:lst=a:gwsa=on:scrn=scr2:gttmode=cgacdcd`

    When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 16:23:21 GMT  EAGLE5 37.5.0
Link set table is ( 16 of 1024)  2% full
ENT-LS: MASP A - COMPLTD
```

14. Verify the changes using the `rtrv-ls` command with the linkset name that was specified in *Step 13* on page 59. For this example, enter these commands.

    `rtrv-ls:lsn=ls03`

    This is an example of the possible output.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 37.5.0

                                 L3T SLT                     GWS GWS GWS
LSN           APCA    (X25)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
ls03          007-007-007   scr1  1   1   yes a   0    on  off off ---   off

           CLLI         TFATCABMLQ MTPRSE ASL8
           -----------  ---        ---    ---

           IPGWAPC MATELSN    IPTPS LSUSEALM SLKUSEALM GTTMODE
           no      ---------- ---   ---      ---       CdPA

Link set table is ( 16 of 1024)  2% full
```

    `rtrv-ls:lsn=ls04`

    This is an example of the possible output.

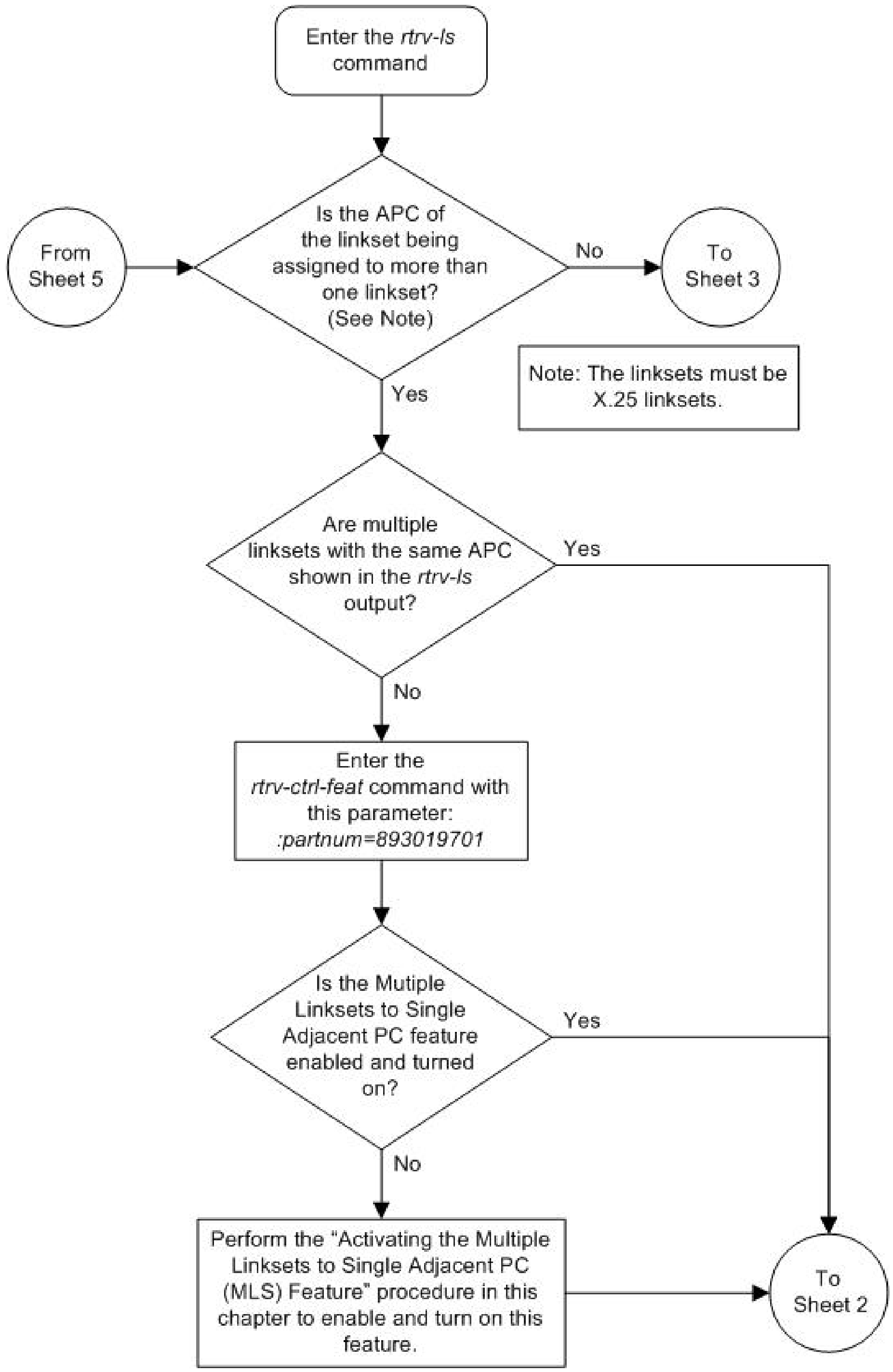
```
rlghncxa03w 06-10-28 08:40:38 GMT  EAGLE5 37.5.0

                                 L3T SLT                     GWS GWS GWS
LSN           APCA    (X25)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
ls04          003-003-003   scr2  1   1   yes a   0    on  off off ---   off
```

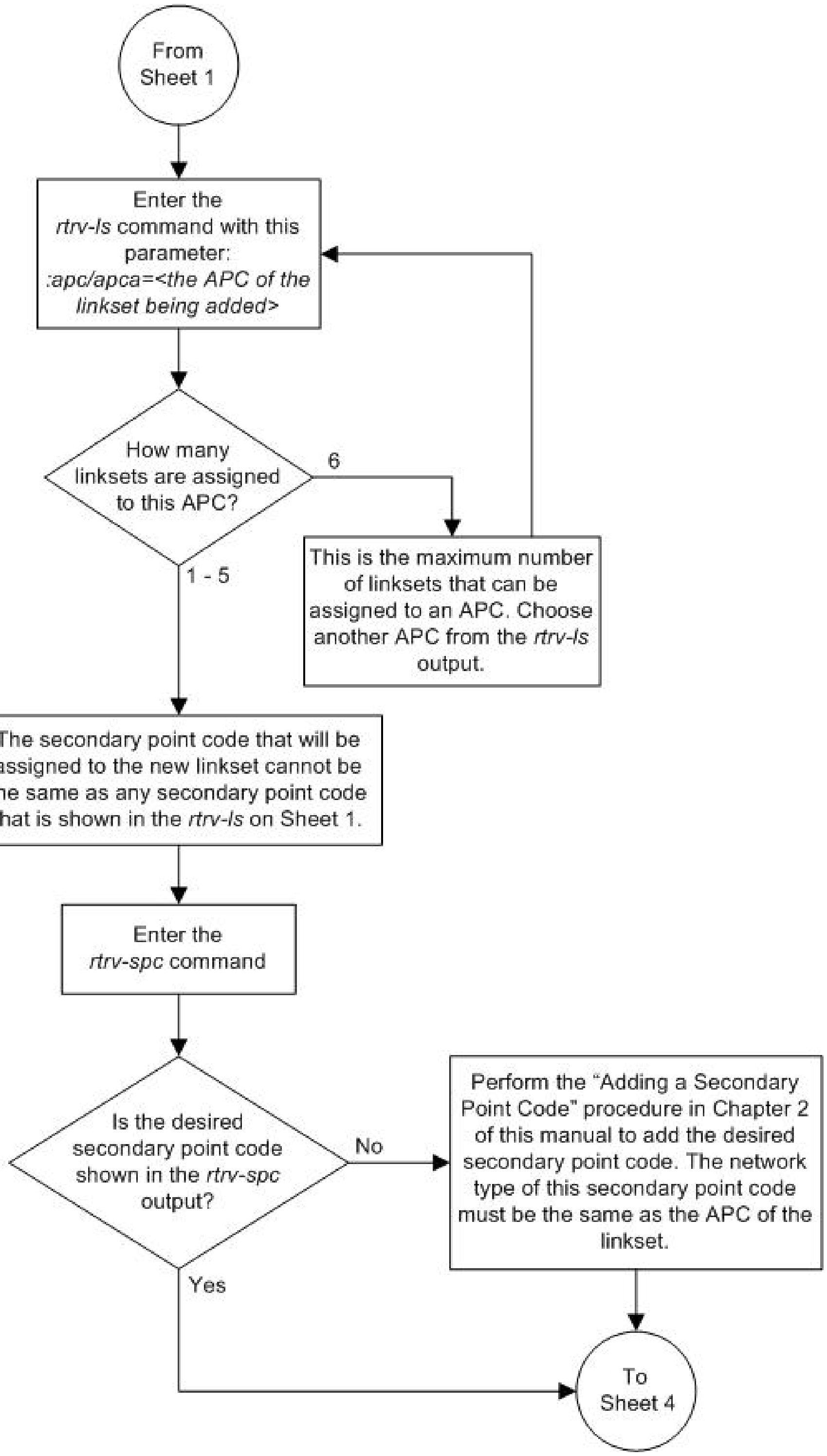
```
          CLLI        TFATCABMLQ MTPRSE ASL8
          ----------- ---        ---    ---

          IPGWAPC MATELSN    IPTPS LSUSEALM SLKUSEALM GTTMODE
          no      ---------- ---   ---      ---       CgPA,AdvCdPA,CdPA

Link set table is ( 16 of 1024)  2% full
```

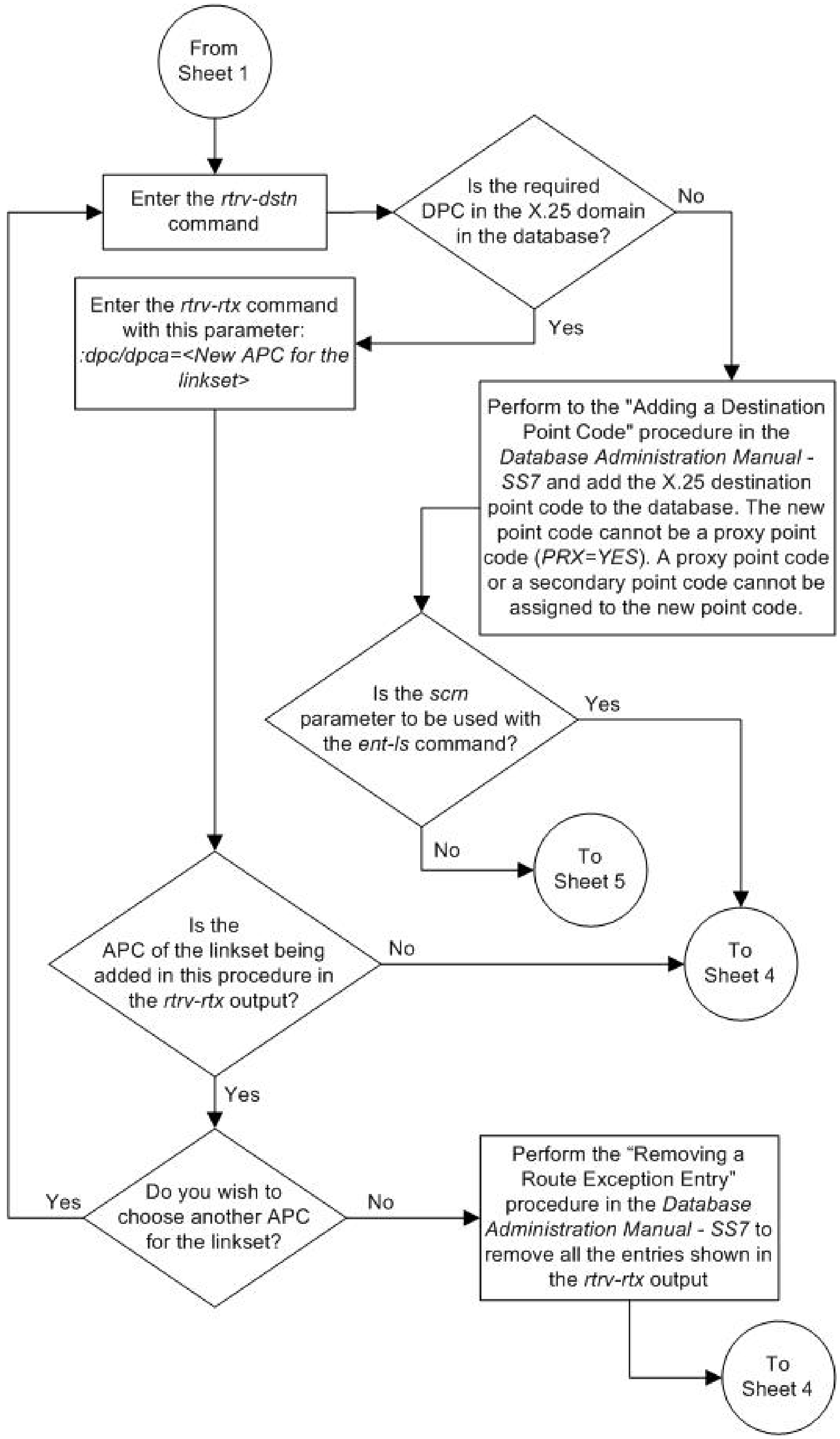
15. Backup the new changes using the `chg-db:action=backup:dest=fixed` command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

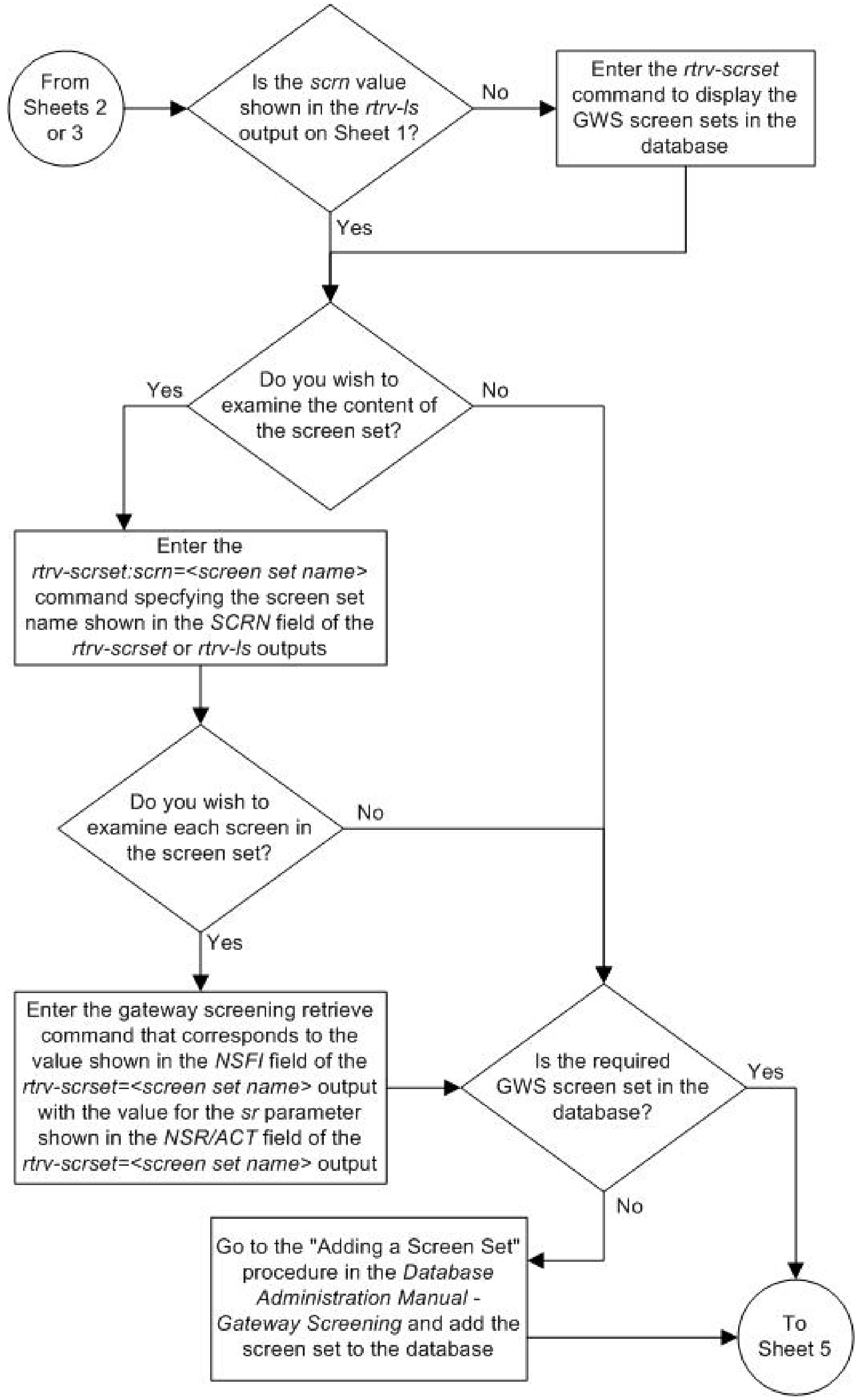
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

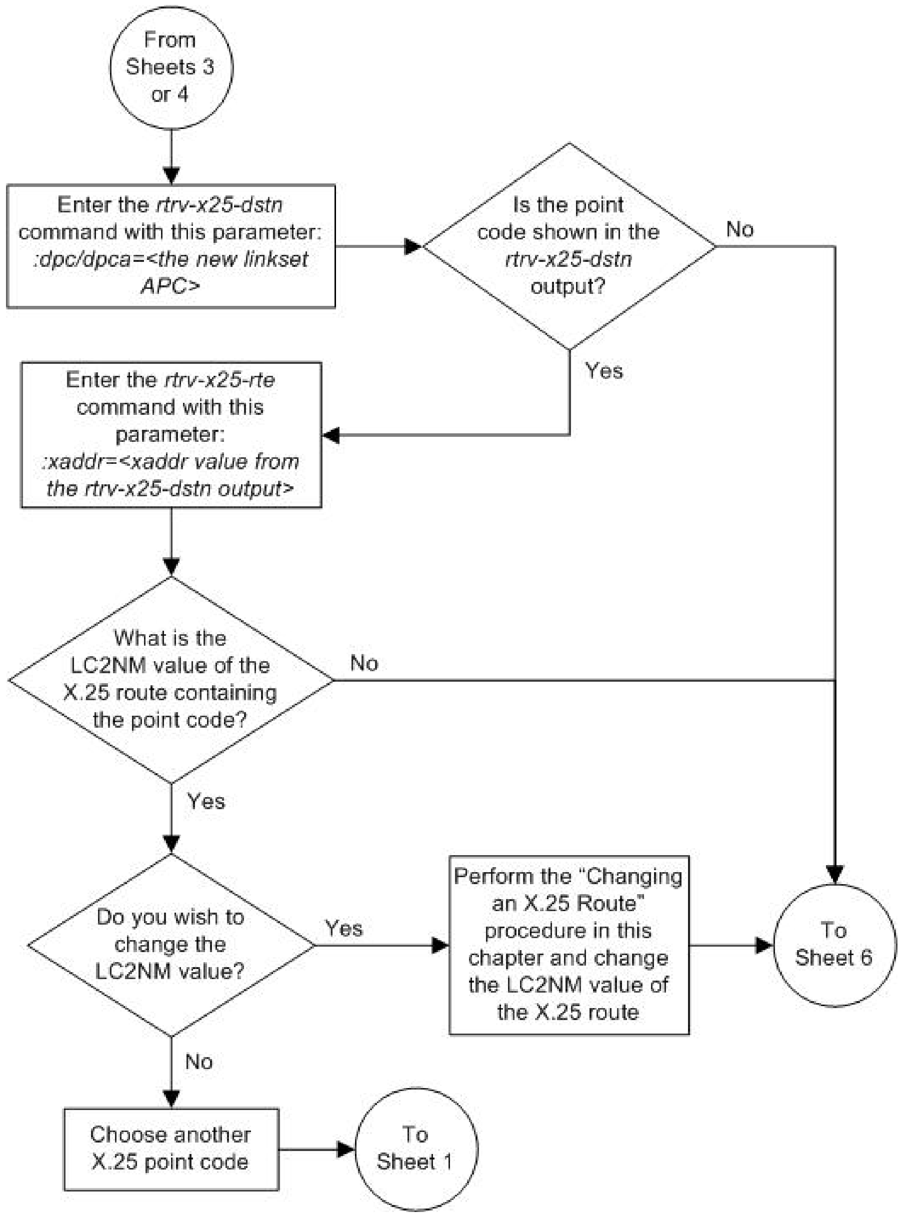
Figure 12: Adding an X.25 Linkset

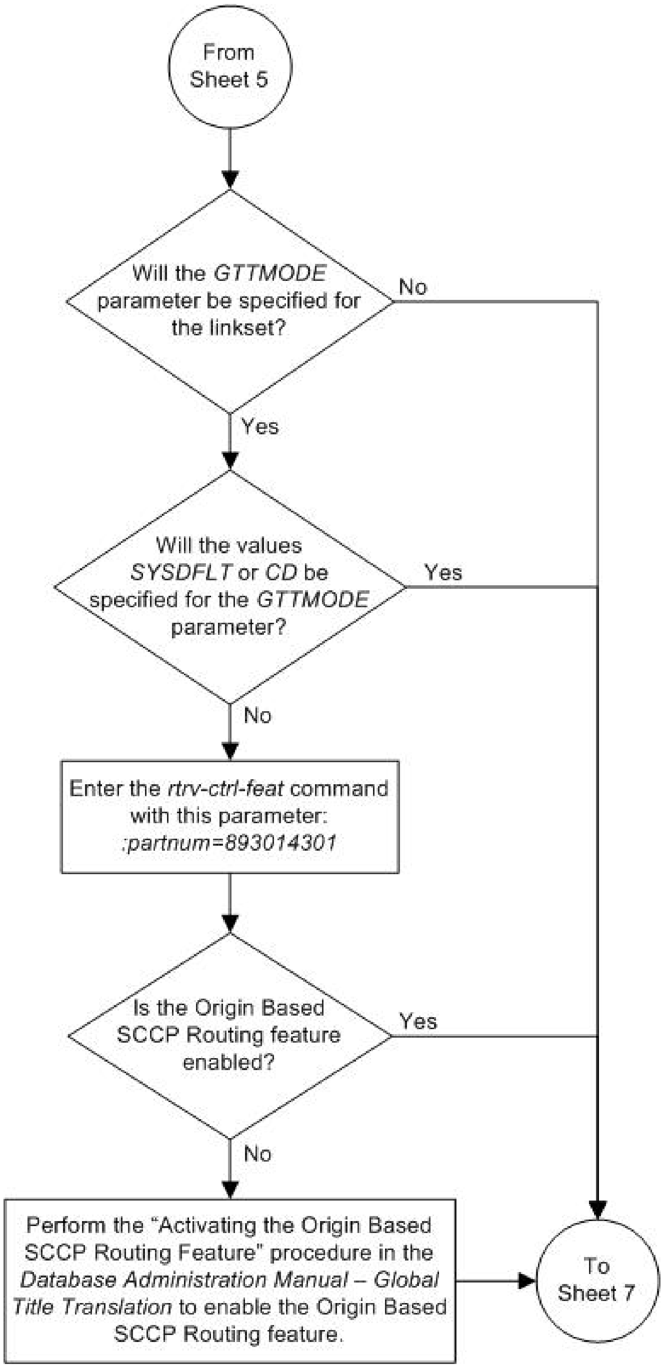

Enter the rtrv-ls command
Is the APC of the linkset being assigned to more than one linkset? (See Note)
From Sheet 5
No
To Sheet 3
Yes
Note: The linksets must be X.25 linksets.
Are multiple linksets with the same APC shown in the rtrv-ls output?
Yes
No
Enter the rtrv-ctrl-feat command with this parameter: :partnum=893019701
Is the Mutiple Linksets to Single Adjacent PC feature enabled and turned on?
Yes
No
Perform the "Activating the Multiple Linksets to Single Adjacent PC (MLS) Feature" procedure in this chapter to enable and turn on this feature.
To Sheet 2

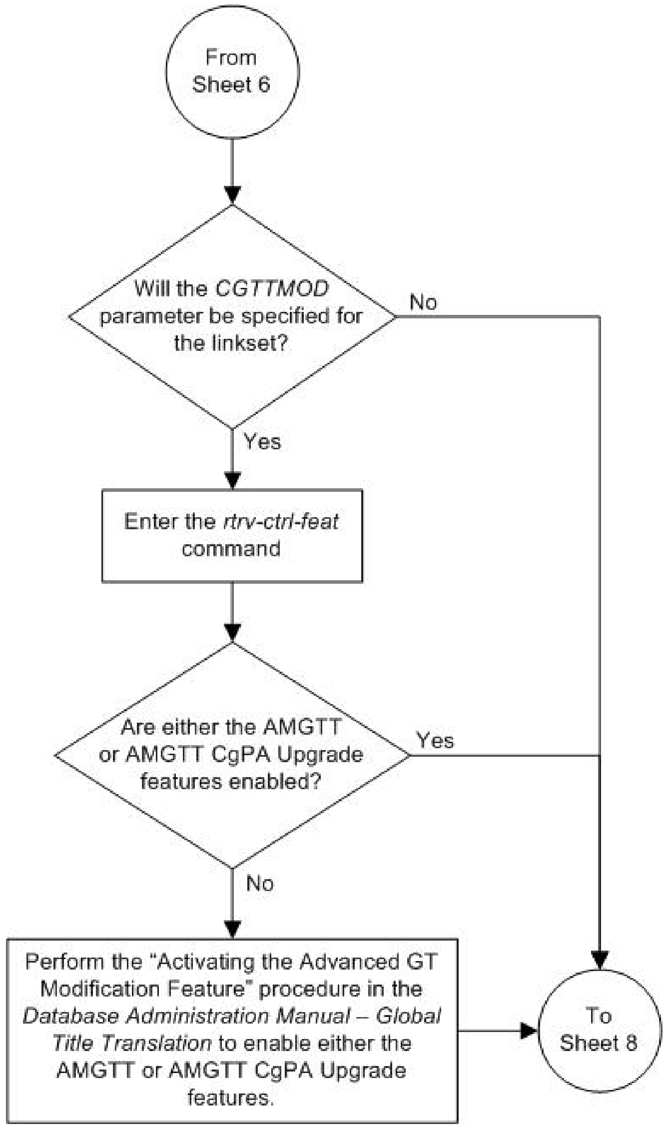

From Sheet 1
Enter the *rtrv-ls* command with this parameter: *:apc/apca=<the APC of the linkset being added>*
How many linksets are assigned to this APC?
6
This is the maximum number of linksets that can be assigned to an APC. Choose another APC from the *rtrv-ls* output.
1 - 5
The secondary point code that will be assigned to the new linkset cannot be the same as any secondary point code that is shown in the *rtrv-ls* on Sheet 1.
Enter the *rtrv-spc* command
Is the desired secondary point code shown in the *rtrv-spc* output?
No
Perform the "Adding a Secondary Point Code" procedure in Chapter 2 of this manual to add the desired secondary point code. The network type of this secondary point code must be the same as the APC of the linkset.
Yes
To Sheet 4

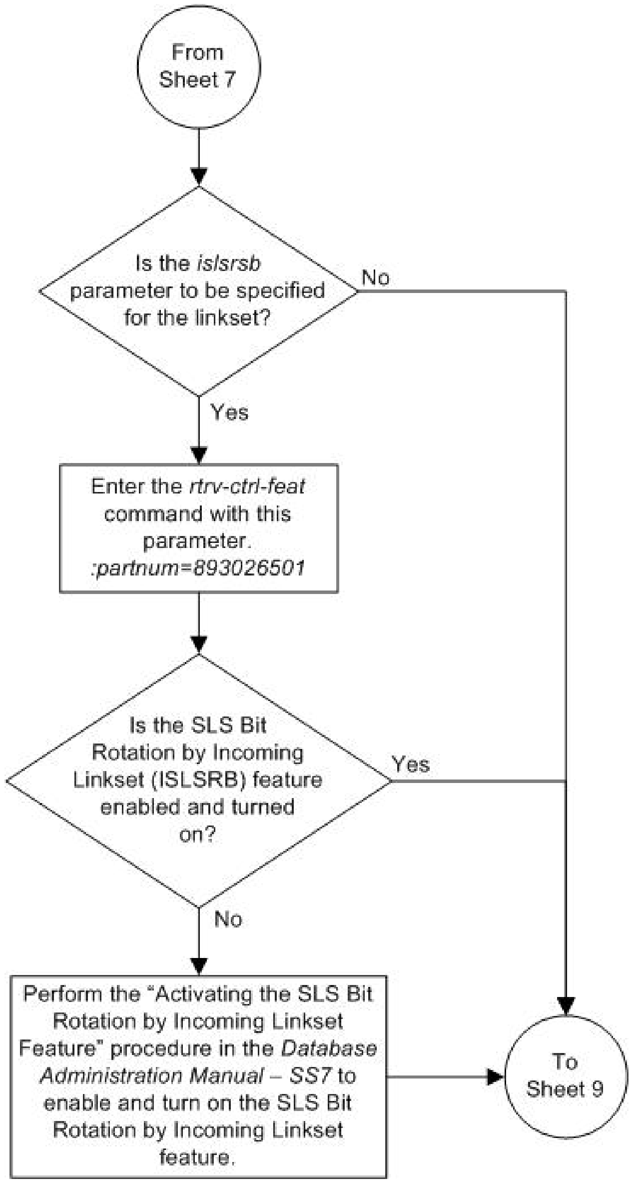

From Sheet 1
Enter the rtrv-dstn command
Is the required DPC in the X.25 domain in the database?
No
Yes
Enter the rtrv-rtx command with this parameter: :dpc/dpca=<New APC for the linkset>
Perform to the "Adding a Destination Point Code" procedure in the Database Administration Manual - SS7 and add the X.25 destination point code to the database. The new point code cannot be a proxy point code (PRX=YES). A proxy point code or a secondary point code cannot be assigned to the new point code.
Is the scrn parameter to be used with the ent-ls command?
Yes
No
To Sheet 5
Is the APC of the linkset being added in this procedure in the rtrv-rtx output?
No
To Sheet 4
Yes
Do you wish to choose another APC for the linkset?
Yes
No
Perform the "Removing a Route Exception Entry" procedure in the Database Administration Manual - SS7 to remove all the entries shown in the rtrv-rtx output
To Sheet 4

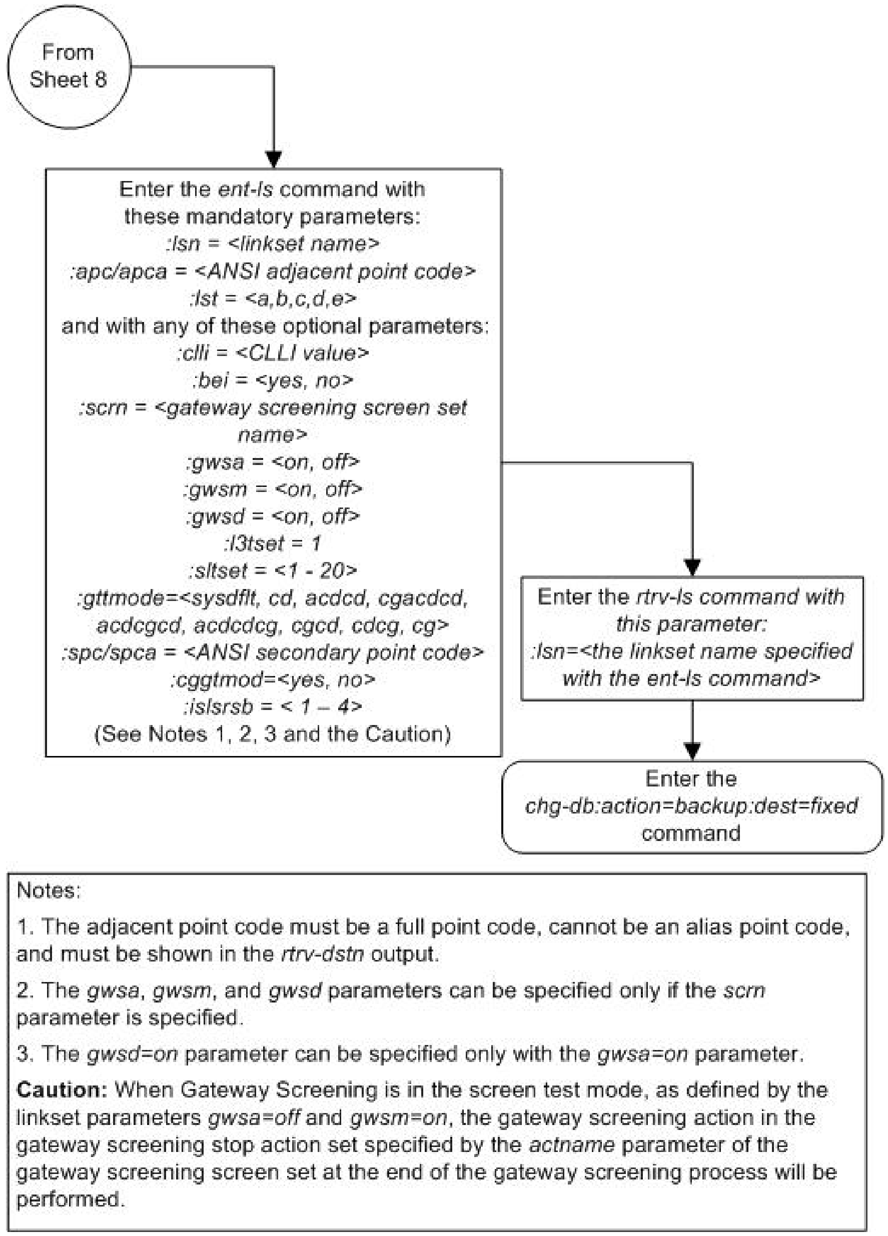

From Sheets 2 or 3
Is the scrn value shown in the rtrv-ls output on Sheet 1?
No
Enter the rtrv-scrset command to display the GWS screen sets in the database
Yes
Do you wish to examine the content of the screen set?
Yes
No
Enter the rtrv-scrset:scrn=<screen set name> command specfying the screen set name shown in the SCRN field of the rtrv-scrset or rtrv-ls outputs
Do you wish to examine each screen in the screen set?
No
Yes
Enter the gateway screening retrieve command that corresponds to the value shown in the NSFI field of the rtrv-scrset=<screen set name> output with the value for the sr parameter shown in the NSR/ACT field of the rtrv-scrset=<screen set name> output
Is the required GWS screen set in the database?
Yes
No
Go to the "Adding a Screen Set" procedure in the Database Administration Manual - Gateway Screening and add the screen set to the database
To Sheet 5


From Sheets 3 or 4
Enter the rtrv-x25-dstn command with this parameter: :dpc/dpca=<the new linkset APC>
Is the point code shown in the rtrv-x25-dstn output?
No
Yes
Enter the rtrv-x25-rte command with this parameter: :xaddr=<xaddr value from the rtrv-x25-dstn output>
What is the LC2NM value of the X.25 route containing the point code?
No
Yes
Do you wish to change the LC2NM value?
Yes
Perform the "Changing an X.25 Route" procedure in this chapter and change the LC2NM value of the X.25 route
To Sheet 6
No
Choose another X.25 point code
To Sheet 1


From Sheet 5
Will the GTTMODE parameter be specified for the linkset?
No
Yes
Will the values SYSDFLT or CD be specified for the GTTMODE parameter?
Yes
No
Enter the rtrv-ctrl-feat command with this parameter: :partnum=893014301
Is the Origin Based SCCP Routing feature enabled?
Yes
No
Perform the "Activating the Origin Based SCCP Routing Feature" procedure in the Database Administration Manual – Global Title Translation to enable the Origin Based SCCP Routing feature.
To Sheet 7


From Sheet 6
Will the CGTTMOD parameter be specified for the linkset?
No
Yes
Enter the rtrv-ctrl-feat command
Are either the AMGTT or AMGTT CgPA Upgrade features enabled?
Yes
No
Perform the "Activating the Advanced GT Modification Feature" procedure in the Database Administration Manual – Global Title Translation to enable either the AMGTT or AMGTT CgPA Upgrade features.
To Sheet 8


From Sheet 7
Is the islsrsb parameter to be specified for the linkset?
No
Yes
Enter the rtrv-ctrl-feat command with this parameter.
:partnum=893026501
Is the SLS Bit Rotation by Incoming Linkset (ISLSRB) feature enabled and turned on?
Yes
No
Perform the "Activating the SLS Bit Rotation by Incoming Linkset Feature" procedure in the Database Administration Manual – SS7 to enable and turn on the SLS Bit Rotation by Incoming Linkset feature.
To Sheet 9



Removing a Linkset Containing X.25 Signaling Links

This procedure is used to remove a linkset with X.25 signaling links from the database using the `dlt-ls` command. To remove linksets with SS7 signaling links, go to the "Removing a Linkset Containing SS7 Signaling Links" procedure in the Database *Administration Manual* – SS7 .

The `dlt-ls` command has only one parameter, `lsn`, which is the name of the linkset to be removed from the database.

The examples in this procedure are used to remove linkset `ls04` from the database.

The linkset to be removed must exist in the database. This can be verified in step 1.

To remove a linkset, all links associated with the linkset must be removed. This can be verified in step 2.

All X.25 routes associated with the X.25 signaling links in the linkset must be removed. This can be verified in step 3.

The linkset to be removed cannot be referenced by a routeset. This can be verified in step 5.

Canceling the `REPT-STAT-LS` and `RTRV-LS` Commands

Because the `rept-stat-ls` and `rtrv-ls`commands used in this procedure can output information for a long period of time, the `rept-stat-ls` and `rtrv-ls`commands can be canceled and the output to the terminal stopped. There are three ways that the `rept-stat-ls` and `rtrv-ls`commands can be canceled.

- Press the `F9` function key on the keyboard at the terminal where the `rept-stat-ls` or `rtrv-ls`commands were entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rept-stat-ls` or `rtrv-ls`commands were entered.
- Enter the `canc-cmd:trm=<xx>`, where `<xx>` is the terminal where the `rept-stat-ls` or `rtrv-ls`commands were entered, from another terminal other that the terminal where the `rept-stat-ls` or `rtrv-ls`commands were entered. To enter the `canc-cmd:trm=<xx>` command, the terminal must allow Security Administration commands to be entered from it and the user must be allowed to enter Security Administration commands. The terminal's permissions can be verified with the `rtrv-secu-trm` command. The user's permissions can be verified with the `rtrv-user` or `rtrv-secu-user` commands.

For more information about the `canc-cmd` command, go to the *Commands Manual*.

1. Display the current linkset configuration using the `rtrv-ls` command. This is an example of the possible output.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 36.0.0

                                L3T SLT              GWS GWS GWS
LSN          APCA   (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsa1         240-020-000   scr1  1   1   yes a   1    off off off no    off
lsa2         240-030-000   scr2  1   2   no  c   3    on  on  on  yes   off
lsa3         240-040-000   scr3  1   3   yes c   5    off off off yes   off
ls01         006-006-006   scr1  1   1   yes a   1    on  off off no    off
ls02         008-008-008   scr1  1   1   yes a   1    on  off off yes   off

                                L3T SLT              GWS GWS GWS
LSN          APCA   (X25)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
ls03         007-007-007   scr1  1   1   yes a   3    on  off off ---   off
ls04         003-003-003   scr2  1   1   yes a   1    on  off off ---   off
ls6          244-010-004   scr4  1   4   no  a   6    off off off ---   off
ls7          244-012-005   scr5  1   5   no  c   3    on  on  on  ---   off
ls8          244-012-006   scr6  1   6   no  c   8    off off off ---   off

                                L3T SLT              GWS GWS GWS
LSN          APCI   (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsi1         1-111-1       scr1  1   1   yes a   1    off off off ---   ---
lsi2         1-111-2       scr2  1   2   no  c   3    on  on  on  ---   ---
lsi3         1-111-3       scr3  1   3   yes c   5    off off off ---   ---

                                L3T SLT              GWS GWS GWS
```

```
LSN          APCN   (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsn1         11111         scr1  1   1   yes a   1    off off off ---   off
lsn2         11112         scr2  1   2   no  c   3    on  on  on  ---   off
lsn3         11113         scr3  1   3   yes c   5    off off off ---   off

Link set table is ( 16 of 1024)  2% full
```

2. Select a linkset whose APC is shown in the output of step 1 and is assigned to the X.25 domain. Display the signaling links in that linkset using the `rtrv-ls` command, specifying the linkset name of the linkset you wish to remove from the database. For this example, enter this command.

   `rtrv-ls:lsn=ls04`

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 36.0.0

                             L3T SLT              GWS GWS GWS
LSN          APCA   (X25)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
ls04         003-003-003   scr2  1   1   yes a   1    on  off off ---   off

           CLLI         TFATCABMLQ MTPRSE ASL8
           rlghncwd40z  ---        ---    ---

           IPGWAPC MATELSN    IPTPS LSUSEALM SLKUSEALM GTTMODE
           no      ---------- ---   ---      ---       CdPA

                              L2T         L1              PCR  PCR
           LOC  LINK SLC TYPE     SET  BPS    MODE TSET  ECM   N1   N2
           1207 a    0   LIMV35   1    56000  DTE  ---   BASIC ---  -----

Link set table is ( 16 of 1024)  2% full
```

3. Display the X.25 routes in the database by entering the `rtrv-x25-rte` command. This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR          SS7 ADDR         TYPE  LOC   PORT  LC  RT   LC2NM
11101             44401            pvc   1205  a     01  xpc  no
11102             55501            pvc   1206  a     02  pc   no
22201             44401            pvc   1205  a     02  pc   no
22202             55501            pvc   1206  a     01  xpc  yes
33301             44401            svca  1207  a     --  pc   no
33302             55501            svca  1207  a     --  pc   no
X.25 ROUTE TABLE IS  30 % FULL
```

4. If any X.25 routes shown in the output of step 3 are assigned to the X.25 signaling links shown in the output of step 2, remove those X.25 routes by using the `dlt-x25-rte` command. For this example, enter these commands.

   `dlt-x25-rte:xaddr=33301:saddr=44401`

   `dlt-x25-rte:xaddr=33302:saddr=55501`

   When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 11:45:17 GMT  EAGLE5 36.0.0
DLT-X25-RTE: MASP A - X.25 Route table is 4
DLT-X25-RTE: MASP A - COMPLTD
```

5. Display the routes in the database by using the `rtrv-rte` command, specifying the name of the linkset you wish to remove. For this example, enter this command.

   `rtrv-rte:lsn=ls04`

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 36.0.0
LSN           DPC           RC
ls04          004-004-004   10
```

   If the X.25 linkset is shown in the `rtrv-rte` output, perform to the “Removing a Route” procedure in the Database *Administration Manual* - SS7 and remove the routes shown in this step from the database.

6. Deactivate the X.25 signaling links in the linkset using the `dact-slk` command. For this example, enter this command.

   `dact-slk:loc=1207:link=a`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:41:12 GMT  EAGLE5 36.0.0
Deactivate Link message sent to card
```

7. Verify that the signaling link status is out of service maintenance disabled (OOS-MT-DSBLD) using the `rept-stat-ls` command. This is an example of the possible output.

```
rlghncxa03w 06-10-28 08:40:38 GMT  EAGLE5 36.0.0
LSN       APCA           PST           SST       AST
lsa1      240-020-000    IS-NR         Allowed   -----
lsa2      240-030-000    IS-NR         Allowed   GWS
lsa3      240-040-000    IS-NR         Allowed   -----
ls01      006-006-006    IS-NR         Allowed   GWS
ls02      008-008-008    IS-NR         Allowed   GWS
ls03      007-007-007    IS-NR         Allowed   GWS
ls04      003-003-003    OOS-MT-DSBLD  Prohibit  GWS

LSN       APCI           PST           SST       AST
lsi1      1-111-1        IS-NR         Allowed   -----
lsi2      1-111-2        IS-NR         Allowed   -----
lsi3      1-111-3        IS-NR         Allowed   -----

LSN       APCN           PST           SST       AST
lsn1      11111          IS-NR         Allowed   -----
lsn2      11112          IS-NR         Allowed   -----
lsn3      11113          IS-NR         Allowed   -----
Command Completed.
```

8. If any signaling links in the linkset are the last signaling link on a card, the card must be placed out of service before that signaling link can be removed. Verify this by entering the `rtrv-slk` command and specifying each of the card locations shown in the output of step 2. Do not specify the `link` parameter. For this example, enter this command.

   `rtrv-slk:loc=1207`

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:17:04 GMT EAGLE5 36.0.0
                                   L2T         L1               PCR  PCR
```

```
LOC  LINK LSN         SLC TYPE     SET  BPS    MODE TSET  ECM   N1   N2
1207 A    LS04         0  LIMV35   1    56000  DTE  ---   BASIC ---  -----
```

9. If the output of step 9 shows that any of the signaling links in the specified linkset are the last signaling links on the card, place that card out of service by using the `rmv-card` command, specifying the card location to be taken out of service. For this example, enter this command.

   `rmv-card:loc=1207`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28  11:11:28 GMT  EAGLE5 36.0.0
Card has been inhibited.
```

10. Remove all X.25 signaling links in the linkset using the `dlt-slk` command. For this example, enter this command.

    `dlt-slk:loc=1207:link=a`

    When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:41:17 GMT  EAGLE5 36.0.0
DLT-SLK: MASP A - COMPLTD
```

11. Display any entires in the route exception table whose linkset name is the name of the linkset being removed in this procedure. Enter the `rtrv-rtx` command with the `lsn` parameter. For this example, enter this command.

    `rtrv-rtx:lsn=ls04`

    This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0

    DPCA          RTX-CRITERIA             LSN        RC    APC

    004-004-004   OPCA
                  008-008-008              ls04       40    003-003-003

    DESTINATION ENTRIES ALLOCATED:   2000
        FULL DPC(s):                   15
        EXCEPTION DPC(s):               5
        NETWORK DPC(s):                 0
        CLUSTER DPC(s):                 1
        TOTAL DPC(s):                  21
        CAPACITY (% FULL):              1%
    ALIASES ALLOCATED:              12000
        ALIASES USED:                   0
        CAPACITY (% FULL):              0%
    X-LIST ENTRIES ALLOCATED:         500
```

If the linkset being removed in this procedure is not assigned to a route exception table entry, no entries are displayed in the `rtrv-rtx` output, but a summary of the point code quanties is displayed.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0

    DESTINATION ENTRIES ALLOCATED:   2000
        FULL DPC(s):                   15
        EXCEPTION DPC(s):               5
        NETWORK DPC(s):                 0
```

```
        CLUSTER DPC(s):                 1
        TOTAL DPC(s):                  21
        CAPACITY (% FULL):              1%
    ALIASES ALLOCATED:              12000
        ALIASES USED:                   0
        CAPACITY (% FULL):              0%
    X-LIST ENTRIES ALLOCATED:         500
```

If the name of the linkset being removed in this procedure shown in the LSN column in this step, perform one of these procedures:

a) Change the name of the linkset in the entries displayed in this step by performing the “Changing a Route Exception Entry” procedure in the Database *Administration Manual* - SS7 .
b) Remove all the entries displayed in this step by performing the “Removing a Route Exception Entry” procedure in the Database *Administration Manual* - SS7 .

12. Remove the linkset using the `dlt-ls` command with the name of the linkset being removed. For this example, enter this command.

`dlt-ls:lsn=ls04`

When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 16:03:12 GMT  EAGLE5 36.0.0
Link set table is ( 15 of 1024)  1% full
DLT-LS: PSM A - COMPLTD
```

13. Verify the changes using the `rtrv-ls` command and specifying the name of the linkset specified in step 12. For this example, enter this command.

`rtrv-ls:lsn=ls04`

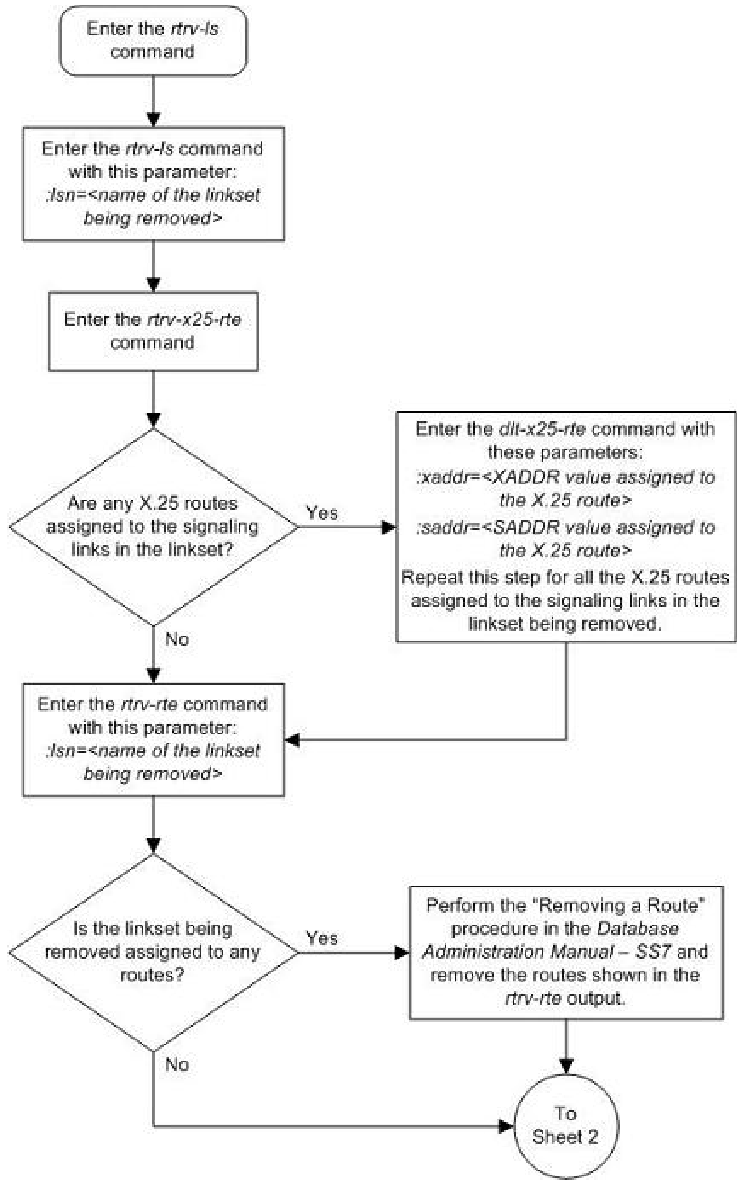
The following message should appear indicating that the linkset is not in the database.

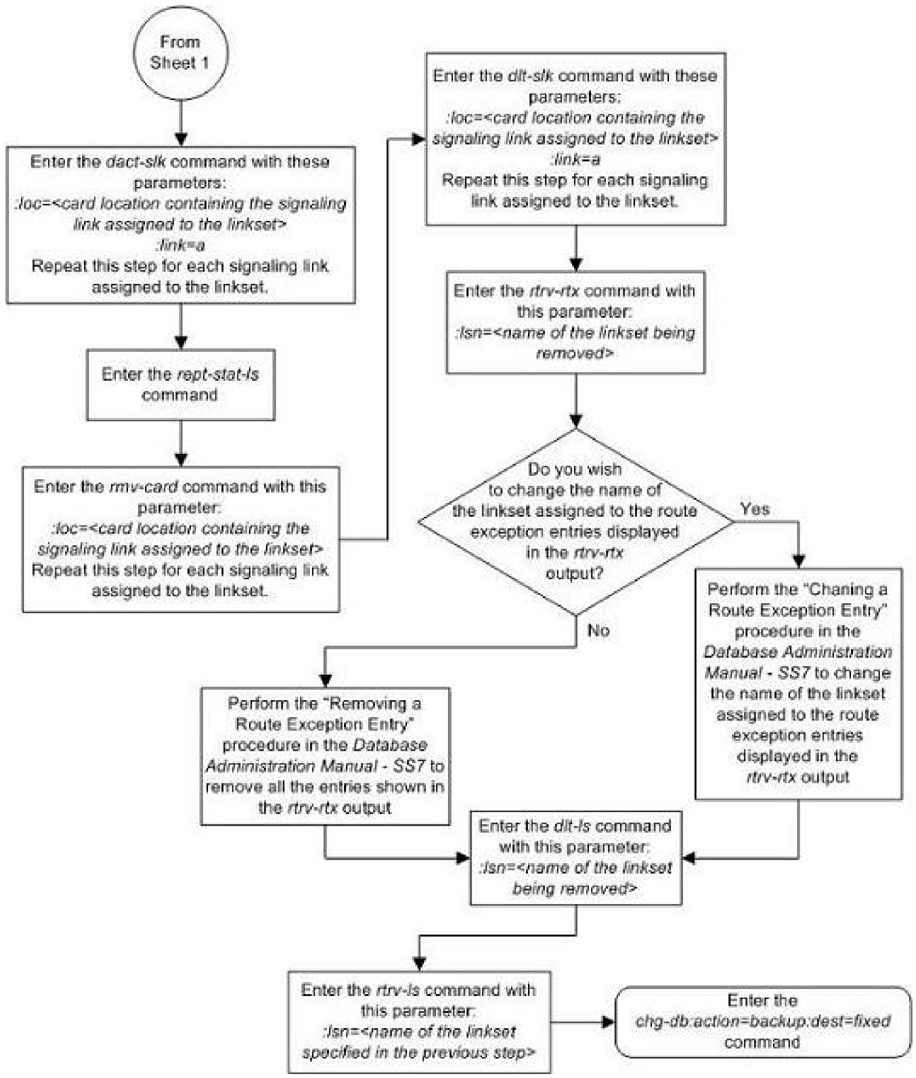
`E2346 Cmd Rej: Linkset not defined`

14. Backup the new changes using the `chg-db:action=backup:dest=fixed` command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 13: Removing a Linkset Containing X.25 Signaling Links


Enter the rtrv-ls command
Enter the rtrv-ls command with this parameter: :lsn=<name of the linkset being removed>
Enter the rtrv-x25-rte command
Are any X.25 routes assigned to the signaling links in the linkset?
Yes
Enter the dlt-x25-rte command with these parameters: :xaddr=<XADDR value assigned to the X.25 route> :saddr=<SADDR value assigned to the X.25 route> Repeat this step for all the X.25 routes assigned to the signaling links in the linkset being removed.
No
Enter the rtrv-rte command with this parameter: :lsn=<name of the linkset being removed>
Is the linkset being removed assigned to any routes?
Yes
Perform the "Removing a Route" procedure in the Database Administration Manual – SS7 and remove the routes shown in the rtrv-rte output.
No
To Sheet 2



Changing an X.25 Linkset

This procedure is used to change the definition of linksets that contain X.25 signaling links using the `chg-ls` command. To change SS7 linksets, go to the "Changing an SS7 Linkset" procedure in the Database *Administration Manual* – SS7 . The `chg-ls` command uses these parameters.

`:lsn` – The name of the linkset. The linkset name can contain up to 10 characters, with the first character being a letter. However, the SEAS interface supports only eight characters. If this linkset is displayed on the SEAS interface and the linkset name contains more than eight characters, only the first eight characters in the linkset name are shown. If this linkset name contains more than eight characters, and is specified with the linkset commands on the SEAS interface, only the first eight characters can be specified.

`:apc/apca` – ANSI adjacent point code – the point code identifying the node that is next to the EAGLE 5 ISS. ITU point codes cannot be used for an X.25 linkset.

`:spc/spca` – The secondary point code assigned to the linkset. Secondary point codes are used for multiple linksets that have the same APC. Secondary point codes can be used only if the Multiple Linksets to Single Adjacent PC feature is enabled and turned on (shown in the `rtrv-ctrl-feat` output.

Note: See Chapter 2, "Configuring Destination tables," in the Database *Administration Manual* - SS7 for a definition of the point code types that are used on the EAGLE 5 ISS.

`:lst` – The linkset type of the specified linkset - A, B, C, D, or E.

`:clli` – The Common Language Location Identifier assigned to this point code. The value of the `clli` parameter is only displayed in the `rtrv-ls` command output when a specific linkset is being displayed with the `rtrv-ls:lsn=<linkset name>` command.

`:sltset` – The signaling link test message record to be associated with the linkset.

`:l3tset` – The level 3 timer set table. This parameter identifies which level three timer set is to be assigned to this linkset. Currently, only one is supported.

`:scrn` – The name of the screenset to be assigned to this linkset if gateway screening is to be used.

`:gwsa` – Gateway screening action determines whether gateway screening (GWS) is on or off for the specified link set.

`:gwsm` – Gateway screening messaging is used to turn on or off the display of messages generated for each screened message. When an MSU is rejected by gateway screening, a message is output to alert personnel of the event.

`:gwsd` – Gateway screening MSU discard is used to turn on or off the discarding of MSUs that bypass the gateway screening function due to load-shedding. Also use this parameter with the redirect function; MSUs that cannot be screened are discarded if you specify `gwsd=on`.

`:bei` – The broadcast exception indicator. This parameter indicates whether TFP (transfer prohibited) messages are allowed to be broadcast on the linkset. The `yes` parameter means TFPs are not broadcast. The `no` parameter means TFPs are broadcast. For an X.25 linkset, the `bei=yes` parameter must be specified, or the `bei` parameter must be omitted.

`:nlsn` – The new name of the linkset

`:gttmode` – The GTT mode/hierarchy identifying the types of global title translation that will be performed on the messages arriving on the specified linkset. The values for this parameter are:

- `sysdflt` – the value of the `dfltgttmode` parameter shown in the `rtrv-sccpopts` command output.
- `cd` - CdPA GTT only
- `cg` - CgPA GTT only
- `acdcd` - Advanced CdPA GTT, CdPA GTT
- `acdcgcd` - Advanced CdPA GTT, CgPA GTT, CdPA GTT
- `acdcdcg` - Advanced CdPA GTT, CdPA GTT, CgPA GTT
- `cgacdcd` - CgPA GTT, Advanced CdPA GTT, CdPA GTT
- `cgcd` - CgPA GTT, CdPA GTT
- `cdcg` - CdPA GTT, CgPA GTT

For more information on using the `gttmode` parameter, see the Origin Based SCCP Routing Feature section in the Database *Administration Manual* - Global Title Translation .

`:cggtmod` - The calling party GT modification indicator. This parameter specifies whether or not calling party global title modification is required. The values for this parameter are `yes` (calling party global title modification is required) or `no` (calling party global title modification is not required). The default value for the `cggtmod` parameter is `no`. This parameter can be specified only if the AMGTT or AMGTT CgPA Upgrade feature is enabled. Enter the `rtrv-ctrl-feat` command to verify that either the AMGTT or AMGTT CgPA Upgrade feature is enabled. If the AMGTT or AMGTT CgPA Upgrade feature is not enabled, perform the "Activating the Advanced GT Modification Feature" procedure in the *Database Administration Manual - Global Title Translation* procedure to enable the required feature. For more information about the Advanced GT Modification feature, refer to the "Advanced GT Modification Feature" section in the *Database Administration Manual - Global Title Translation*.

`:islsrsb` – selects which bit (1 - 4) of the SLS field to use as the least significant bit for signaling link selection in the link set for all messages on ANSI and ITU linksets on incoming linksets. For more information on the islsrsb parameter refer to the "ITU SLS Enhancement" section in the *Database Administration Manual - SS7*. To specify the `islsrsb` parameter, the SLS Bit Rotation by Incoming Linkset feature must be enabled. To enable the SLS Bit Rotation by Incoming Linkset feature, perform the "Activating the SLS Bit Rotation by Incoming Linkset Feature" procedure in the *Database Administration Manual - SS7*.

The linkset to be changed must exist in the database.

If the adjacent point code (APC) is changed, the new APC must be in the destination point code table and must be defined as a true point code in the destination point code table and cannot be an alias point code. The domain of the new APC must be the same as the APC being changed. The new APC of the linkset cannot match the self ID of the EAGLE 5 ISS. The new APC must be a full point code and cannot be a cluster point code.

The signaling link configuration of the linkset can be verified by entering the `rtrv-ls:lsn=<linkset name>` command specifying the linkset name as shown in *Step 15* on page 90.

Use the `rtrv-dstn` command to verify that the new APC is in the destination point code table and to verify the domain of the new APC. If the new APC is not shown in the `rtrv-dstn` command output, go to the "Adding a Destination Point Code" in the Database *Administration Manual* – SS7 and add the new APC to the destination point code table.

To change the APC of a linkset, all signaling links in the linkset must be in the OOS-MT-DSBLD state.

The domain of the linkset's APC cannot be changed using the `chg-ls` command. For example, if the current domain of the APC is X.25, the new APC must also be in the X.25 domain. To change the domain of the linkset's APC, the linkset must be removed from the database using the `dlt-ls` command and re-entered with the new APC in the different domain using the `ent-ls` command. To remove the X.25 linkset, go to the *Removing a Linkset Containing X.25 Signaling Links* on page 69 procedure. To add the X.25 linkset, go to the *Adding an X.25 Linkset* on page 47 procedure. To add an SS7 linkset, go to the "Adding an SS7 Linkset" procedure in the Database *Administration Manual* – SS7 .

The `gwsa`, `gwsm`, and `gwsd` parameters can only be specified if the `scrn` parameter is defined. Enter the `rtrv-ls` command to verify that the `scrn` parameter is defined for the specified linkset. If the `scrn` parameter is defined, a gateway screening screen set name is shown in the `SCRN` field of the output. This gateway screening screen set name must also be defined as a gateway screening screen set entity. This can be verified with the `rtrv-scrset` command.

The `gwsd` parameter allows the discarding of messages that should have gone through the gateway screening process, but could not. The `gwsd` parameter is only intended to be used with the database transport access (DTA) feature. If you are not using the DTA feature, the `gwsd` parameter should not be specified or should be set to off (`gwsd=off`).

If the `gwsa=off` parameter is specified, then the `gwsd=off` parameter must be specified.

CAUTION: When Gateway Screening is in the screen test mode, as defined by the linkset parameters `gwsa=off` and `gwsm=on`, the gateway screening action in the gateway screening stop action set specified by the `actname` parameter of the gateway screening screen set at the end of the gateway screening process will be performed.

An X.25 APC cannot be referenced by an X.25 route that has the logical channel to network management function turned on (`lc2nm=yes`). Use the `rtrv-x25-dstn` command to verify which point codes are assigned to each X.25 address. Use the `rtrv-x25-rte` to verify which X.25 address is assigned to each X.25 route and to verify which X.25 route has the logical channel to network management function turned on, shown by the entry `yes` in the `LC2NM` field.

The word `SEAS` cannot be used as a value for the `scrn` parameter of the `chg-ls` command. The word `SEAS` is used in the `rtrv-ls` command output, in the `SCRN` field, to show gateway linksets created on the SEAS interface. A gateway linkset combines the functions of a gateway screening screen set and an SS7 linkset specifying the `gwsa=on` and `scrn` parameters. Like an EAGLE 5 ISS gateway screening screen set, a gateway linkset defines the screening references that are to be used to screen the messages on the linkset. It also defines the linkset whose messages are to be screened. A gateway linkset can only be configured from a SEAS terminal and not from an EAGLE 5 ISS terminal.

If the `clli` parameter is specified with the `chg-ls` command, the value of the `clli` parameter must match the CLLI value of the adjacent point code of the linkset. The CLLI value of the adjacent point code is shown in the `CLLI` field of the `rtrv-dstn` command.

To provision more than one linkset with the same APC, the Multiple Linksets to Single Adjacent PC feature must be enabled and turned on. The database can contain a maximum of six linksets that have the same APC. A secondary point code (shown in the `rtrv-spc` output) must be specified with the linkset. The network type and format of the secondary point code must be the same as the APC of the linkset. Secondary point codes cannot be assigned to the APC of the linkset when the point code is provisioned in the database with the `ent-dstn` or `chg-dstn` commands. When these linksets are assigned to routes

The secondary point code that is assigned to a linkset can be removed from the linkset by specifying the value `none` for the `spc/spca` parameter. A secondary point code can be removed from only one of the linksets in a group of linksets that have the same APC.

In this procedure, the examples are used to change the definition of a linkset named `ls7`. The attributes of linkset `ls7` that are changed in this example are the APC, the gateway screening screen set name, and to change the linkset type to A. For any optional parameters not specified with the `chg-ls` command, the values for those parameters are not changed.

Other Optional Parameters

The `chg-ls` command contains other optional parameters that are not used to configure an X.25 linkset. These parameters are discussed in more detail in the *Commands Manual* or in these sections.

- The *Configuring a Linkset for the GSM MAP Screening Feature* on page 313 procedure
- These procedures in the *Database Administration Manual - SS7*

- Adding an SS7 Linkset
- Changing an SS7 Linkset

- These procedures in the *Database Administration Manual - IP[7] Secure Gateway*
  - Configuring an IPGWx Linkset
  - Adding a Mate IPGWx Linkset to another IPGWx Linkset
  - Removing a Mate IPGWx Linkset from another IPGWx Linkset
  - Changing an IPSG M3UA Linkset
  - Changing an IPSG M2PA Linkset

Canceling the `RTRV-DSTN` and `RTRV-LS` Commands

Because the `rtrv-dstn` and `rtrv-ls`commands used in this procedure can output information for a long period of time, the `rtrv-dstn` and `rtrv-ls`commands can be canceled and the output to the terminal stopped. There are three ways that the `rtrv-dstn` and `rtrv-ls`commands can be canceled.

- Press the `F9` function key on the keyboard at the terminal where the `rtrv-dstn` or `rtrv-ls`commands were entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rtrv-dstn` or `rtrv-ls`commands were entered.
- Enter the `canc-cmd:trm=<xx>`, where `<xx>` is the terminal where the `rtrv-dstn` or `rtrv-ls`commands were entered, from another terminal other that the terminal where the `rtrv-dstn` or `rtrv-ls`commands were entered. To enter the `canc-cmd:trm=<xx>` command, the terminal must allow Security Administration commands to be entered from it and the user must be allowed to enter Security Administration commands. The terminal's permissions can be verified with the `rtrv-secu-trm` command. The user's permissions can be verified with the `rtrv-user` or `rtrv-secu-user` commands.

For more information about the `canc-cmd` command, go to the *Commands Manual*.

1. Display the current linkset configuration using the `rtrv-ls` command. This is an example of the possible output.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 37.5.0
                                L3T SLT              GWS GWS GWS
LSN          APCA   (SS7)  SCRN SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsa1         240-020-000   scr1 1   1   yes a   1    off off off no    off
lsa2         240-030-000   scr2 1   2   no  c   3    on  on  on  yes   off
lsa3         240-040-000   scr3 1   3   yes c   5    off off off yes   off
ls1          240-012-004   scr1 1   1   yes a   4    off off off yes   off
ls2          240-012-005   scr2 1   2   yes c   2    on  on  on  yes   off
ls3          240-012-006   scr3 1   3   yes c   5    off off off no    off
ls01         002-002-002   scr1 1   1   no  c   0    on  off off yes   off
ls02         004-004-004   scr1 1   1   no  b   0    on  off off no    off
ls03         003-003-003   scr1 1   1   no  d   0    on  off off no    off
ls04         001-002-003   scr2 1   1   no  a   0    on  off on  yes   off
ls06         002-007-008   scr4 1   1   no  a   0    on  off off yes   off

                                L3T SLT              GWS GWS GWS
LSN          APCA   (X25)  SCRN SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
ls6          244-010-004   scr4 1   4   no  a   6    off off off ---   off
ls7          244-012-005   scr5 1   5   no  c   3    on  on  on  ---   off
ls8          244-012-006   scr6 1   6   no  c   8    off off off ---   off
```

```
                             L3T SLT                GWS GWS GWS
LSN          APCI   (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsi1         1-111-1       scr1  1   1   yes a   1    off off off ---   ---
lsi2         1-111-2       scr2  1   2   no  c   3    on  on  on  ---   ---
lsi3         1-111-3       scr3  1   3   yes c   5    off off off ---   ---
lsi7         3-150-4       scr1  1   1   no  a   0    on  off off ---   ---

                             L3T SLT                GWS GWS GWS
LSN          APCN   (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsn1         11111         scr1  1   1   yes a   1    off off off ---   off
lsn2         11112         scr2  1   2   no  c   3    on  on  on  ---   off
lsn3         11113         scr3  1   3   yes c   5    off off off ---   off
lsn5         10685         scr3  1   1   no  a   0    on  off off ---   off

Link set table is ( 22 of 1024)  2% full
```

If you wish to change the APC of a linkset to an APC that is assigned to another linkset and multiple linksets with the same APC are shown in the `rtrv-ls` output, continue the procedure with *Step 3* on page 82. If multiple linksets with the same APC are not shown in the `rtrv-ls` output, continue the procedure with *Step 2* on page 81.

If you wish to change the secondary point code that is assigned to a linkset and multiple linksets with the same APC are shown in the `rtrv-ls` output, continue the procedure with *Step 3* on page 82. If multiple linksets with the same APC are not shown in the `rtrv-ls` output, continue the procedure with *Step 2* on page 81.

If you wish to change the APC of a linkset to an APC that is not assigned to another linkset or do not with to change the secondary point code that is assigned to a linkset, continue the procedure with *Step 10* on page 87.

If neither the APC of the linkset nor the secondary point code that is assigned to the linkset is being changed, continue the procedure with *Step 12* on page 87.

2. Verify whether or not the Multiple Linksets to Single Adjacent PC feature is enabled and turned on by entering this command.

   `rtrv-ctrl-feat:partnum=893017901`

   This is an example of the possible output.

```
rlghncxa03w 07-08-21 15:48:20 EST  37.5.0
The following features have been permanently enabled:

Feature Name             Partnum   Status Quantity
Multiple Linkset to APC  893019701 on     ----


The following features have been temporarily enabled:

Feature Name             Partnum   Status Quantity   Trial Period Left
Zero entries found.


The following features have expired temporary keys:

Feature Name             Partnum
Zero entries found.
```

If the Multiple Linksets to Single Adjacent PC feature is not enabled or turned on, perform the "Activating the Multiple Linksets to Single Adjacent PC (MLS) Feature" procedure in the *Database Administration Manual - SS7* to enable and turn on this feature. After this feature has been enabled and turned on, and the APC of the linkset is being changed, continue the procedure with *Step 3* on page 82. If only the secondary point code that is assigned to the linkset is being changed, continue the procedure with *Step 4* on page 82.

If the Multiple Linksets to Single Adjacent PC feature is enabled and turned on, and the APC of the linkset is being changed, continue the procedure with *Step 3* on page 82. If only the secondary point code that is assigned to the linkset is being changed, continue the procedure with *Step 4* on page 82.

3. A maximum of six linksets can be assigned to an APC. Verify the number of linksets that are assigned to the new APC of the linkset that is being changed by entering the `rtrv-ls` command with the new APC of the linkset. For this example, enter this command.

`rtrv-ls:apca=002-002-002`

This is an example of the possible output.

```
rlghncxa03w 07-08-22 08:09:26 EST  37.5.0

APCA   =    002-002-002

                            L3T SLT             GWS GWS GWS
LSN           SPCA          SCRN SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsn2          001-001-002   none 1   1   no  A   2    off off off no    off
lsn40         020-020-021   none 1   1   no  A   2    off off off no    off
lsn41         021-021-021   none 1   1   no  A   2    off off off no    off
lsn42         022-022-022   none 1   1   no  A   3    off off off no    off


Link set table is (29 of 1024) 3% full.
```

If six linksets are shown in this step, choose another APC for the linkset from the `rtrv-ls` output and repeat this step.

If one to five linksets are shown in this step, continue this procedure with *Step 4* on page 82.

4. Display the linkset that is being changed by entering the `rtrv-ls` command with the name of the linkset. For this example, enter this command.

`rtrv-ls:lsn=ls04`

This is an example of the possible output.

```
rlghncxa03w 06-10-17 11:43:04 GMT EAGLE5 37.5.0
                            L3T SLT             GWS GWS GWS
LSN           APCA   (SS7)  SCRN SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
ls04          001-002-003   scr2 1   1   no  a   4    off off off yes   off

              SPCA          CLLI          TFATCABMLQ MTPRSE ASL8
            ---------------- -----------  2          ---    no

          IPGWAPC MATELSN    IPTPS LSUSEALM SLKUSEALM GTTMODE
          no      ---------- ---   ---      ---       CdPA

                             L2T          L1                PCR  PCR
          LOC   LINK SLC TYPE     SET  BPS    MODE TSET  ECM   N1   N2
          1205  b    0   LIMDS0   1    56000  ---  ---   BASIC ---  -----
          1213  b    1   LIMOCU   1    56000  ---  ---   BASIC ---  -----
          1211  a    2   LIMDS0   1    56000  ---  ---   BASIC ---  -----
          1207  b    3   LIMV35   1    64000  DCE  OFF   BASIC ---  -----

Link set table is ( 24 of 1024)  2% full
```

Changing the APC of the Linkset

If the APC of the linkset is being changed:

- To use the APC displayed in *Step 3* on page 82, the secondary point code assigned to the linkset shown in this step cannot be shown in *Step 3* on page 82, unless the secondary point code that is assigned to the linkset shown in this step is changed.
  - If you wish to change the secondary point code assigned to the linkset shown in this step, refer to the *Changing the Secondary Point Code of the Linkset* on page 83 section in this step.
  - If you do not wish to change the secondary point code assigned to the linkset shown in this step, choose another APC for the linkset from the `rtrv-ls` output in *Step 1* on page 80 and repeat this procedure from *Step 2* on page 81.
- If the secondary point code assigned to the linkset shown in this step is not shown in *Step 3* on page 82, the APC displayed in *Step 3* on page 82 can be used as the APC of the linkset that is being changed. The secondary point code that is assigned to the linkset can be changed along with the APC of the linkset.
  - If you wish to change the secondary point code that is assigned to the linkset, refer to the *Changing the Secondary Point Code of the Linkset* on page 83 section in this step.
  - If you only wish to change the APC of the linkset, continue the procedure with *Step 10* on page 87.

Changing the Secondary Point Code of the Linkset

If the secondary point code assigned to the linkset shown in this step is being changed:

- and a secondary point code is not assigned to the linkset, continue the procedure with *Step 8* on page 85.
- and a secondary point code is assigned to the linkset, the secondary point code can be changed to another secondary point code value or can be removed from the linkset.
  - If you wish to change the secondary point code to another secondary point code value, continue the procedure with *Step 8* on page 85.
  - If you wish to remove the secondary point code value from the linkset, continue the procedure with *Step 7* on page 85.

5. Only one linkset can be assigned to an APC that does not have a secondary point code. Verify the secondary point codes of the linksets that are assigned to the APC shown in *Step 4* on page 82 by entering the `rtrv-ls` command with the APC of the linkset shown in *Step 4* on page 82. For this example, enter this command.

   `rtrv-ls:apca=001-002-003`

   This is an example of the possible output.

```
rlghncxa03w 07-08-22 08:09:26 EST  37.5.0

APCA   =    001-002-003

                                 L3T SLT              GWS GWS GWS
LSN            SPCA          SCRN SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
ls04        ---------------- scr2 1   1   no  a   4    off off off yes   off

Link set table is (29 of 1024) 3% full.
```

If one linkset is shown in this step that does not have a secondary point code, then no secondary point codes can be removed from any of the linksets shown in this step.

- The secondary point code value can be changed to another secondary point code value. If you wish to change the secondary point code value to another secondary point code value, continue the procedure with *Step 6* on page 84.
- If the secondary point code value will not be changed to another secondary point code value and the APC of the linkset is being changed,*Step 3* on page 82 and *Step 4* on page 82 were performed, skip continue the procedure with *Step 10* on page 87. If the APC of the linkset is not being changed, continue the procedure with *Step 12* on page 87.

If all the linksets shown in this step have a secondary point code, then the secondary point code from one of these linksets can be removed. If the APC of the linkset is also being changed, *Step 3* on page 82 and *Step 4* on page 82 were performed, continue the procedure with *Step 10* on page 87. If the APC of the linkset is not being changed, continue the procedure with *Step 12* on page 87.

6. Display the secondary point codes by entering the `rtrv-spc` command. This is an example of the possible output.

```
rlghncxa03w 07-08-22 09:39:30 EST  37.5.0
SPC (Secondary Point Codes)

SPCA
     020-020-020
     020-020-021
     021-021-021
     022-022-022
     026-026-026
     026-026-027
     026-026-028
     026-026-029
     200-010-000

SPC-I

none

SPC-N
        00002

SPC-N24

none

Secondary Point Code table is (10 of 40) 25% full.
```

If the desired secondary point code is shown in this step, continue the procedure with *Step 7* on page 85.

If the desired secondary point code is not shown in this step, perform the "Adding a Secondary Point Code" procedure in the *Database Administration Manual - SS7* to add the desired secondary point code. The network type of the new secondary point code must be the same as the APC of the linkset. If the APC of the linkset is being changed, after the secondary point code has been added, continue the procedure with *Step 10* on page 87. If the APC of the linkset is not being changed, after the secondary point code has been added, continue the procedure with *Step 12* on page 87.

7. Verify the secondary point codes of the linksets that are assigned to the APC shown in Step 4 on page 82 by entering the `rtrv-ls` command with the APC of the linkset shown in Step 4 on page 82. For this example, enter this command.

   Note: If Step 5 on page 83 was performed, displaying the linksets that are assigned to the APC shown in Step 4 on page 82 does not have to be performed.

   `rtrv-ls:apca=001-002-003`

   This is an example of the possible output.

```
rlghncxa03w 07-08-22 08:09:26 EST  37.5.0

APCA   =    001-002-003

                                 L3T SLT                GWS GWS GWS
LSN           SPCA           SCRN SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
ls04       ---------------- scr2 1   1   no  a   4    off off off yes   off

Link set table is (29 of 1024) 3% full.
```

   The secondary point code value that will be assigned to the linkset that is being changed cannot be assigned to any of the linksets shown in this step or in Step 5 on page 83. Choose another secondary point code by repeating Step 6 on page 84 and Step 7 on page 85.

   The secondary point code value that will be assigned to the linkset that is being changed is not assigned to any of the linksets shown in this step or in Step 5 on page 83, continue the procedure with either Step 10 on page 87 or Step 12 on page 87. If the APC of the linkset is also being changed, Step 3 on page 82 and Step 4 on page 82 were performed, continue the procedure with Step 10 on page 87. If the APC of the linkset is not being changed, continue the procedure with Step 12 on page 87.

8. Display the point codes in the destination point code table by using the `rtrv-dstn` command. This is an example of the possible output.

```
rlghncxa03w 06-10-28 16:02:05 GMT  EAGLE5 37.5.0
DPCA        CLLI        BEI ELEI  ALIASI    ALIASN      DOMAIN
004-004-004 --------    yes ---   -------   ----------  SS7
005-005-005 --------    yes ---   -------   ----------  SS7
006-006-006 --------    no  ---   -------   ----------  SS7
008-008-008 --------    no  ---   -------   ----------  SS7
240-012-004 rlghncbb001 yes ---   1-111-1   11111       SS7
240-012-005 rlghncbb002 yes ---   1-112-2   11112       SS7
240-012-006 rlghncbb003 yes ---   1-112-3   11113       SS7
240-012-008 --------    yes ---   1-113-5   11114       SS7
001-001-001 --------    yes ---   -------   ----------  X25
002-002-002 --------    yes ---   -------   ----------  X25
003-003-003 --------    yes ---   -------   ----------  X25
007-007-007 --------    yes ---   -------   ----------  X25
244-010-004 ls06clli    no  ---   -------   ----------  X25
244-012-005 ls07clli    no  ---   -------   ----------  X25
244-012-006 ls08clli    no  ---   -------   ----------  X25
244-012-007 --------    no  ---   -------   ----------  X25
244-012-008 --------    no  ---   -------   ----------  X25

DPCI        CLLI        BEI ELEI  ALIASA        ALIASN      DOMAIN
2-131-1     rlghncbb023 no  ---   222-210-000  12001       SS7
2-131-2     --------    no  ---   222-211-001  12002       SS7
2-131-3     --------    no  ---   222-211-002  12003       SS7

DPCN        CLLI        BEI ELEI  ALIASA      ALIASI  DOMAIN
11211       rlghncbb013 no  ---   222-200-200 2-121-1 SS7
```

```
11212       rlghncbb013 no  ---   222-200-201 2-121-2  SS7

Destination table is (22 of 2000) 1% full
```

If the new APC of the linkset is not shown in the `rtrv-dstn` output, go to the “Adding a Destination Point Code” procedure in the *Database Administration Manual - SS7* and add the point code to the database. Continue the procedure with *Step 11* on page 87.

If the new APC of the linkset is shown in the `rtrv-dstn` output, continue the procedure with *Step 9* on page 86.

9. The adjacent point code of the linkset cannot be the DPC of any exception route. Verify that the adjacent point code of the new linkset is not the DPC of any exception route by entering the `rtrv-rtx` command with the `dpc/dpca` parameter. The `dpc/dpca` parameter value is the adjacent point code value that will be specified for the linkset. For this example, enter this command.

Note: If the adjacent point code was added in *Step 8* on page 85, continue the procedure with *Step 10* on page 87.

`rtrv-rtx:dpca=244-012-008`

This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 37.5.0
    DPCA          RTX-CRITERIA              LSN        RC     APC

    244-012-008   OPCA
                  007-008-009               ls01       20     002-002-002
                  008-008-100               ls02       40     004-004-004

 DESTINATION ENTRIES ALLOCATED:   2000
     FULL DPC(s):                   13
     EXCEPTION DPC(s):               5
     NETWORK DPC(s):                 0
     CLUSTER DPC(s):                 1
     TOTAL DPC(s):                  19
     CAPACITY (% FULL):              1%
 ALIASES ALLOCATED:              12000
     ALIASES USED:                   0
     CAPACITY (% FULL):              0%
 X-LIST ENTRIES ALLOCATED:         500
```

If the adjacent point code of the linkset is not the DPC of a route exception table entry, no entries are displayed in the `rtrv-rtx` output, but a summary of the point code quanties is displayed, as shown in the following output example.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 37.5.0

    DESTINATION ENTRIES ALLOCATED:   2000
        FULL DPC(s):                   15
        EXCEPTION DPC(s):               5
        NETWORK DPC(s):                 0
        CLUSTER DPC(s):                 1
        TOTAL DPC(s):                  21
        CAPACITY (% FULL):              1%
    ALIASES ALLOCATED:              12000
        ALIASES USED:                   0
```

```
        CAPACITY (% FULL):              0%
    X-LIST ENTRIES ALLOCATED:         500
```

If the point code specified in this step is shown in the DPCA column in this step, the point code value cannot be used as an adjacent point code unless one of two actions are taken:

a) Choose another adjacent point code value and repeat this procedure from *Step 1* on page 80 .

b) Remove all the entries displayed in this step by performing the "Removing a Route Exception Entry" procedure in the Database *Administration Manual* - SS7 .

10. Display the X.25 destinations in the database by entering the `rtrv-x25-dstn` command with the point code shown in the `rtrv-dstn` output in *Step 8* on page 85.

`rtrv-x25-dstn:dpca=244-012-008`

This is an example of the possible output.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 37.5.0
X25 ADDR        SS7 DPC      SSN
234234231       244-012-008  113
X.25 DSTN TABLE IS  30 % FULL
```

If the new APC of the linkset is not shown in the `rtrv-x25-dstn` output, continue the procedure with *Step 12* on page 87.

If the new APC of the linkset is shown in the `rtrv-x25-dstn` output, continue the procedure with *Step 11* on page 87.

11. Display the X.25 routes by entering the `rtrv-x25-rte` command with the `xaddr` parameter value shown in *Step 10* on page 87. For this example, enter this command.

`rtrv-x25-rte:xaddr=234234231`

This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 37.5.0
X25 ADDR         SS7 ADDR         TYPE  LOC   PORT  LC  RT   LC2NM
234234231        44401            pvc   1205  a     01  xpc  no
X.25 ROUTE TABLE IS  30 % FULL
```

If the LC2NM value in the X.25 route is no, continue the procedure with *Step 12* on page 87.

If the LC2NM value in the X.25 route is yes, the new linkset APC cannot be used in the X.25 linkset. To use the new linkset APC in the X.25 linkset, the LC2NM value of the X.25 route associated with the new linkset APC must be no. The LC2NM value must be changed to no, or another X.25 point code must be chosen.

To chose another X.25 point code, repeat this procedure from *Step 1* on page 80 .

To change the LC2NM value, perform the *Changing an X.25 Route* on page 140 procedure. Then continue the procedure with *Step 12* on page 87.

12. Verify that the gateway screening screen set that is to be assigned to the linkset is in the database by entering the `rtrv-scrset` command.

Note: If the screen set assigned to the linkset is not being changed, or if the screen set that you wish to assign to the linkset is assigned to other linksets (shown in the SCRN field of the `rtrv-ls` command output in *Step 1* on page 80), continue the procedure with *Step 13* on page 89.

This is an example of the possible output.

```
rlghncxa03w 06-10-28 16:37:05 GMT EAGLE5 37.5.0
ENTIRE GWS DATABASE IS 1% FULL
CDPA + AFTPC TABLES ARE 1% FULL
THERE ARE 243 SCREEN SETS AVAILABLE

THE FOLLOWING ARE OVER 80% FULL:
SCRN  NSFI    NSR/ACT  FULL  RULES  TABLES  DESTFLD

SCRN  NSFI    NSR/ACT  FULL  RULES  TABLES  DESTFLD
fld1  OPC     fld2       1%      5  4       NO
gws1  OPC     gws4       1%      9  7       NO
gws2  BLKOPC  gws5       1%      5  4       NO
ls01  SIO     ls02       1%      3  3       YES
scr1  OPC     opc1       1%     37  10      YES
scr2  OPC     opc2       2%     75  22      YES
scr3  OPC     opc3       2%     75  22      YES
scr4  OPC     opc1      51%   2075  22      NO
scr5  OPC     opc1      51%   2075  22      YES
scr6  OPC     opc1      51%   2075  22      NO
ss28  OPC     opc1      51%   2075  22      YES
wrd1  SIO     iec        1%      6  5       YES
```

If you wish to examine the contents of a particular screen set, enter the `rtrv-scrset:scrn=<screen set name>` command specifying a screen set name shown in the `SCRN` field of either the `rtrv-scrset` command executed in this step or the `rtrv-ls` command executed in *Step 1* on page 80.

For this example, enter the `rtrv-scrset:scrn=scr1` command.

This is an example of the possible output.

```
rlghncxa03w 06-10-14 16:39:04 GMT EAGLE5 37.5.0
SCRN  NSFI    NSR/ACT   RULES  DESTFLD
scr1  OPC     opc1          3   Y
      BLKDPC  bkd2          2
      CGPA    cgp1          3
      TT      tt1           3
      TT      tt2           3
      TT      tt3           4
      CDPA    cdp1          3
      CDPA    cdp2          3
      CDPA    cdp3          4
      AFTPC   end1          9
```

The output of this command shows the screens that make up the screen set. These screens can be examined by entering the gateway screening retrieve command corresponding the to the value in the `NSFI` field and specifying the screening reference name shown in the `NSR/ACT` field. For this example, you enter these commands to examine the screens in the screen set.

`rtrv-scr-opc:sr=opc1`

`rtrv-scr-blkdpc:sr=bkd2`

`rtrv-scr-cgpa:sr=cgp1`

`rtrv-scr-tt:sr=tt1`

`rtrv-scr-tt:sr=tt2`

`rtrv-scr-tt:sr=tt3`

rtrv-scr-cdpa:sr=cdp1

rtrv-scr-cdpa:sr=cdp2

rtrv-scr-cdpa:sr=cdp3

rtrv-scr-aftpc:sr=end1

If the screen set that you wish to assign to the linkset is not in the database, go to the "Adding a Screen Set" procedure in the Database *Administration Manual* - Gateway Screening and add the screen set to the database.

13. Remove the current screen set assigned to this linkset by entering the `chg-ls` command with the `scrn=none` parameter. For this example, enter this command.

Note: If the linkset being changed does not have a screen set assigned to it (the `SCRN` value for the linkset is `NONE`), continue the procedure with *Step 14* on page 89.

chg-ls:lsn=ls7:scrn=none

When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-07  08:38:45 GMT  EAGLE5 37.5.0
Link set table is ( 24 of 1024)  2% full
CHG-LS:  MASP A - COMPLTD
```

14. The `gttmode` parameter can be specified with the values `acdcd`, `cgacdcd`, `acdcgcd`, `acdcdcg`, `cgcd`, `cdcg`, or `cg` only if the Origin Based SCCP Routing feature is enabled. Enter the `rtrv-ctrl-feat` command with the part number of the Origin Based SCCP Routing feature to verify whether or not the Origin Based SCCP Routing feature is enabled. Enter this command.

Note: If the `gttmode` parameter is not being specified for the linkset, continue the procedure with *Step 15* on page 90.

Note: If the `gttmode` parameter is being specified for the linkset with either the `sysdflt` or `cd` values, continue the procedure with *Step 15* on page 90.

rtrv-ctrl-feat:partnum=893014301

This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 37.5.0
The following features have been permanently enabled:

Feature Name              Partnum   Status Quantity
Origin Based SCCP Routing 893014301 on     ----

The following features have been temporarily enabled:

Feature Name              Partnum   Status Quantity   Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

If the Origin Based SCCP routing feature is enabled, continue the procedure with *Step 15* on page 90.

If the Origin Based SCCP routing feature is not enabled, perform the “Activating the Origin Based SCCP Routing Feature” procedure in the Database *Administration Manual* - Global Title

Translation to enabled the Origin Based SCCP Routing feature. After the Origin Based SCCP Routing feature is enabled, continue the procedure with *Step 15* on page 90.

15. Display the current linkset configuration of the linkset to be changed using the `rtrv-ls` command with the linkset name. For this example, enter this command.

    `rtrv-ls:lsn=ls7`

    This is an example of the possible output.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 37.5.0
                                 L3T SLT              GWS GWS GWS
LSN          APCA   (X25)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
ls7          244-012-005   scr5  1   5   no  c   3    on  on  on  ---   off

           CLLI         TFATCABMLQ MTPRSE ASL8
           ls07clli     ---        ---    ---

           IPGWAPC MATELSN    IPTPS LSUSEALM SLKUSEALM GTTMODE
           no      ---------- ---   ---      ---       CdPA

                                  L2T          L1                  PCR  PCR
           LOC  LINK SLC TYPE     SET  BPS     MODE TSET  ECM      N1   N2
           1205 A     0  LIMV35   -    56000   DTE  --    BASIC ---  -----
           1206 A     1  LIMV35   -    56000   DTE  --    BASIC ---  -----
           1207 A     2  LIMV35   -    64000   DTE  --    BASIC ---  -----

Link set table is ( 22 of 1024)  2% full
```

16. The `cggtmod` parameter cannot be specified with the `chg-ls` command unless the AMGTT or AMGTT CgPA Upgrade feature is enabled. If the `CGGTMOD` column is shown in the `rtrv-ls` output, the AMGTT or AMGTT CgPA Upgrade feature is enabled.

    - If the `cggtmod` parameter will not be specified with the `chg-ls` command, continue the procedure with *Step 17* on page 90 .
    - If the `CGGTMOD` column is shown in the `rtrv-ls` output in *Step 15* on page 90, and you wish to specify the `cggtmod` parameter with the `chg-ls` command, continue the procedure with *Step 17* on page 90 .
    - If the `CGGTMOD` column is not shown in the `rtrv-ls` output in *Step 15* on page 90, and you wish to specify the `cggtmod` parameter with the the `chg-ls` command, perform the "Activating the Advanced GT Modification Feature" procedure in the *Database Administration Manual - Global Title Translation* procedure to enable the required feature. After the AMGTT or AMGTT CgPA Upgrade feature is enabled, continue the procedure with *Step 17* on page 90 .

17. The `islsrsb` parameter can be specified only if the SLS Bit Rotation by Incoming Linkset feature is enabled. Enter the `rtrv-ctrl-feat` command with the part number of the SLS Bit Rotation by Incoming Linkset feature to verify whether or not the SLS Bit Rotation by Incoming Linkset feature is enabled. Enter this command.

    Note: If the `islsrsb` parameter is not being specified for the linkset, continue the procedure with *Step 18* on page 91.

    `rtrv-ctrl-feat:partnum=893026501`

    This is an example of the possible output.

```
rlghncxa03w 08-12-10 11:43:04 GMT EAGLE5 40.0.0
The following features have been permanently enabled:
```

```
Feature Name              Partnum   Status Quantity
ISLSBR                    893026501 on     ----

The following features have been temporarily enabled:

Feature Name              Partnum   Status Quantity   Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

If the SLS Bit Rotation by Incoming Linkset feature is enabled, continue the procedure with *Step 18* on page 91.

If the SLS Bit Rotation by Incoming Linkset feature is not enabled, perform the "Activating the SLS Bit Rotation by Incoming Linkset Feature" procedure in the *Database Administration Manual - SS7* to enabled the SLS Bit Rotation by Incoming Linkset feature. After the SLS Bit Rotation by Incoming Linkset feature is enabled, continue the procedure with *Step 18* on page 91.

18. Deactivate the signaling links in the linkset using the `dact-slk` command. For this example, enter these commands.

    `dact-slk:loc=1205:link=a`

    `dact-slk:loc=1206:link=a`

    `dact-slk:loc=1207:link=a`

    When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:41:12 GMT  EAGLE5 37.5.0
Deactivate Link message sent to card
```

19. Change the linkset configuration using the `chg-ls` command. For this example, enter this command.

    `chg-ls:lsn=ls7:apca=244-012-008:scrn=scr7:lst=a:gttmode=cgacdcd`

    This command example changes the APC of the linkset to `244-012-008`, changes the gateway screening screen set name to `scr7`, changes the linkset type to A, and changes the GTT mode to CgPA GTT, Advanced CdPA GTT, CdPA GTT.

    .When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28  08:38:45 GMT  EAGLE5 37.5.0
Link set table is ( 22 of 1024)  2% full
CHG-LS:  MASP A - COMPLTD
```

20. Verify the changes using the `rtrv-ls`command, specifying the linkset name that was changed in *Step 19* on page 91. For this example, enter this command.

    `rtrv-ls:lsn=ls7`

    This is an example of the possible output.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 37.5.0
                                 L3T SLT              GWS GWS GWS
LSN          APCA   (X25)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
ls7          244-012-008   scr7  1   5   no  a   3    on  on  on  ---   off
```

```
          CLLI         TFATCABMLQ MTPRSE ASL8
          -----------  ---        ---    ---

          IPGWAPC MATELSN    IPTPS LSUSEALM SLKUSEALM GTTMODE
          no      ---------- ---   ---      ---       CgPA,AdvCdPA,CdPA

                                  L2T          L1                 PCR  PCR
         LOC   LINK SLC TYPE      SET  BPS    MODE TSET  ECM   N1   N2
         1205  A    0   LIMV35    -    56000  DTE  --    BASIC ---  -----
         1206  A    1   LIMV35    -    56000  DTE  --    BASIC ---  -----
         1207  A    2   LIMV35    -    64000  DTE  --    BASIC ---  -----

Link set table is ( 22 of 1024)  2% full
```

21. Activate the signaling links that were deactivated in *Step 18* on page 91 using the `act-slk` command. For this example, enter these commands.

    `act-slk:loc=1205:link=a`

    `act-slk:loc=1206:link=a`

    `act-slk:loc=1207:link=a`

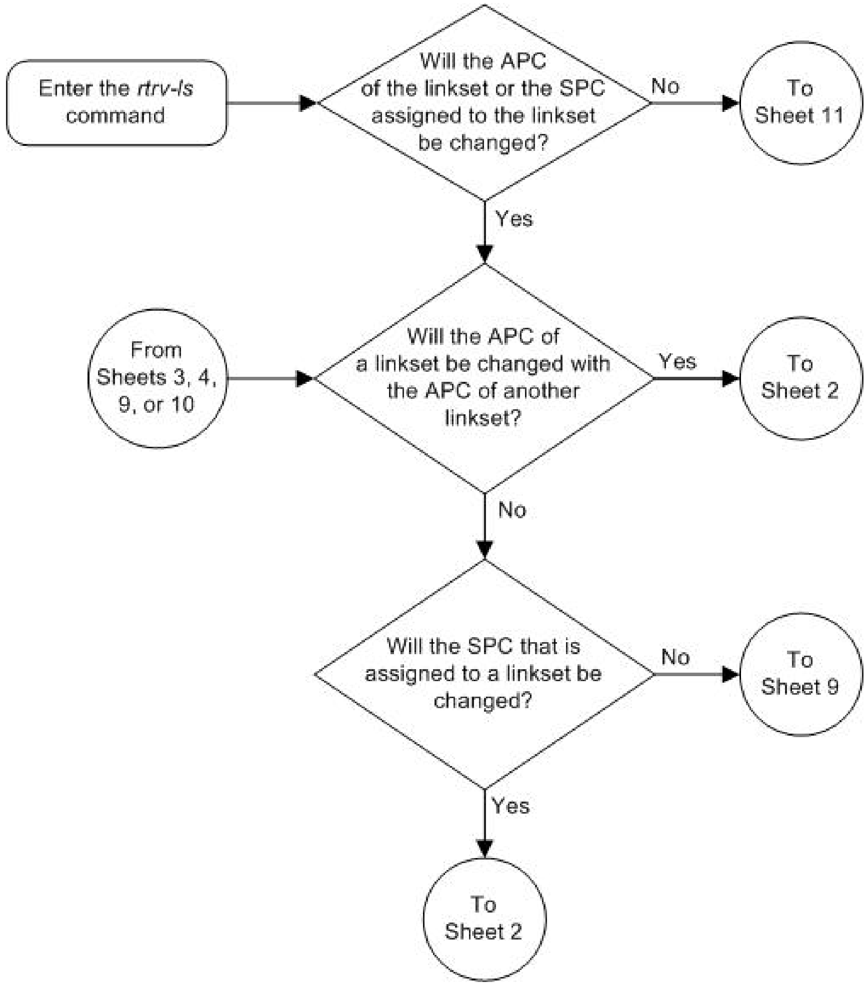
    When each of these commands have successfully completed, this message should appear.

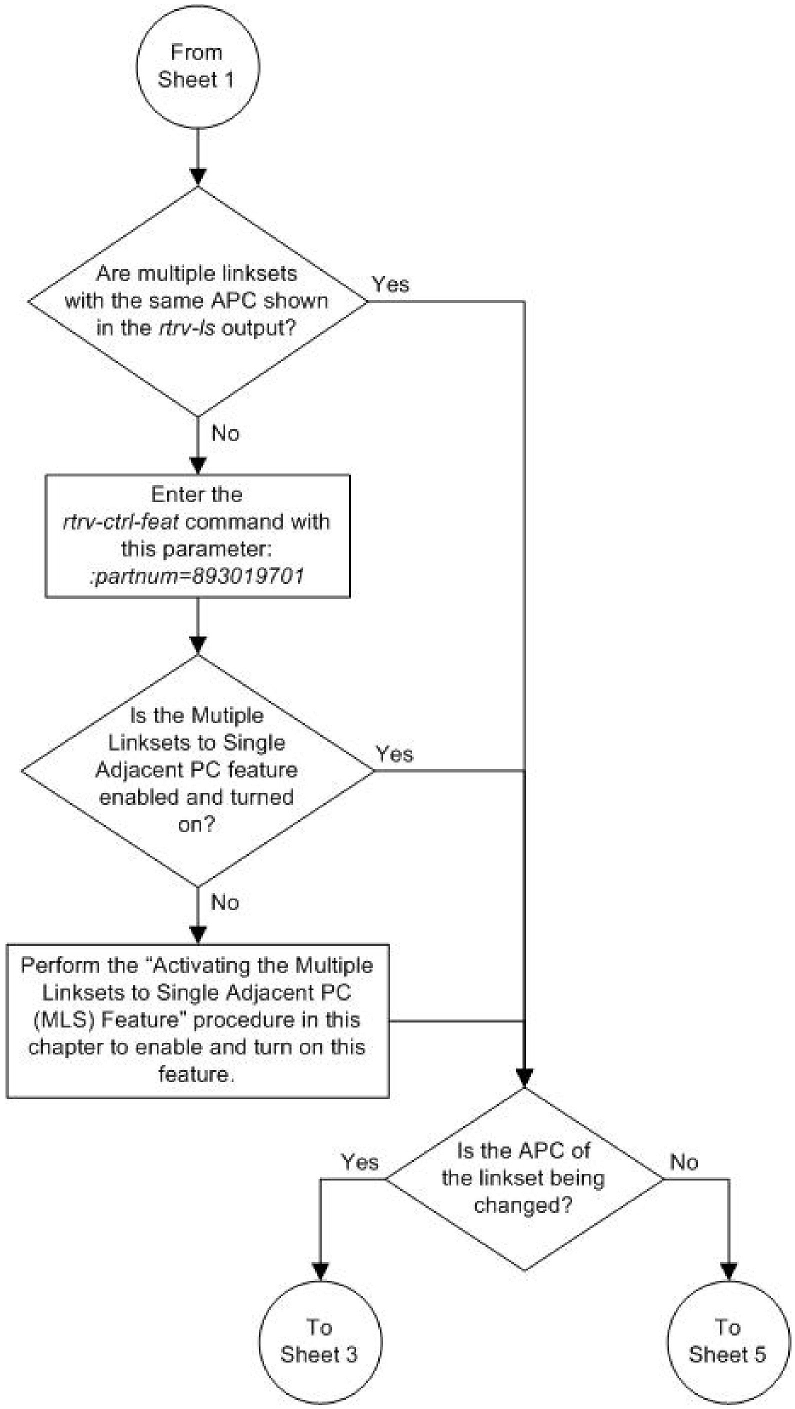
```
rlghncxa03w 06-10-28 08:41:12 GMT  EAGLE5 37.5.0
Activate Link message sent to card
```

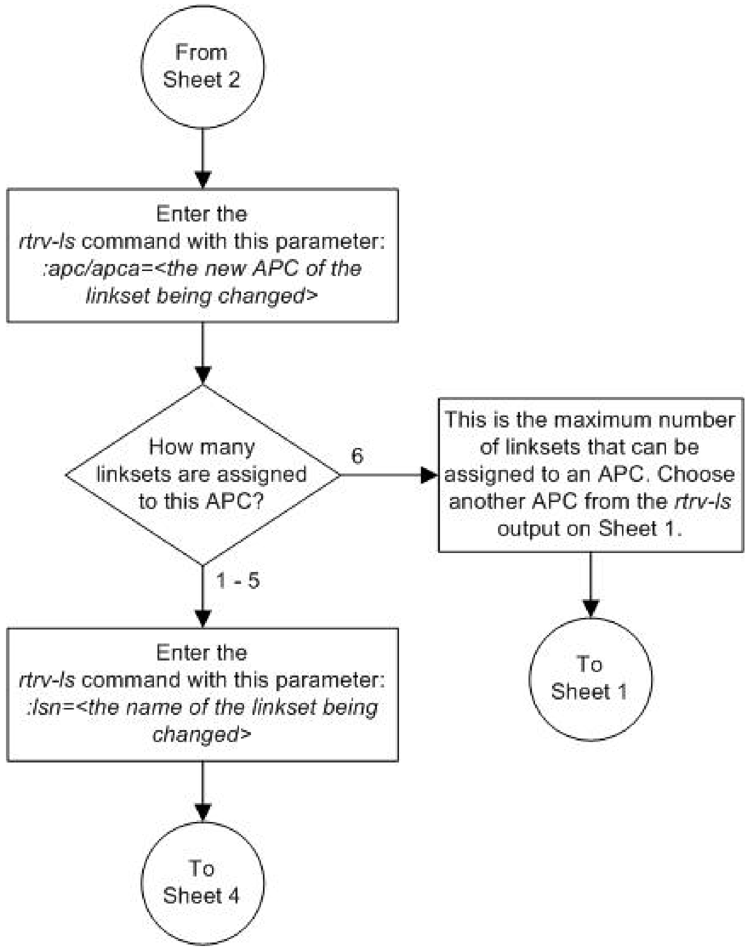
22. Backup the new changes using the `chg-db:action=backup:dest=fixed` command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

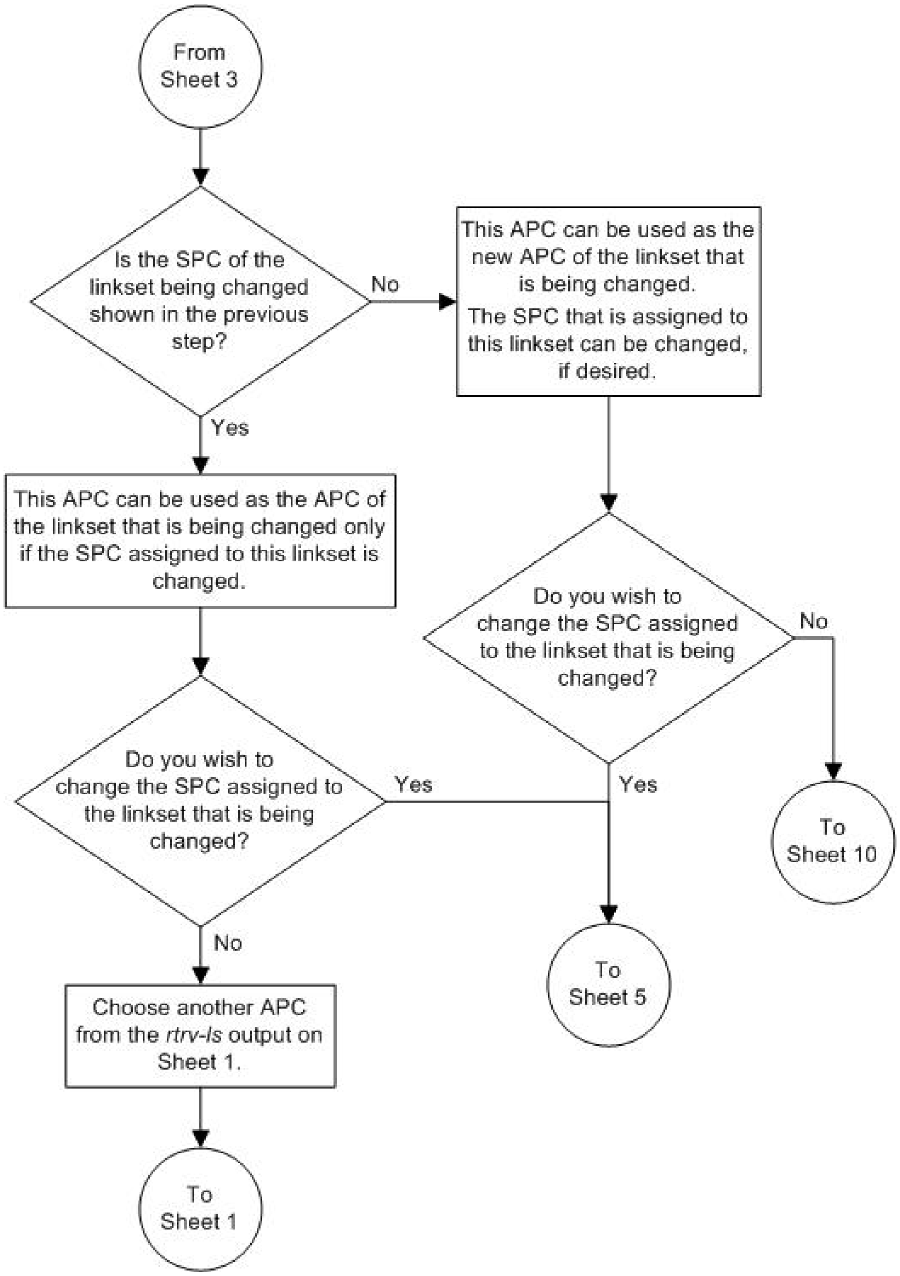
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

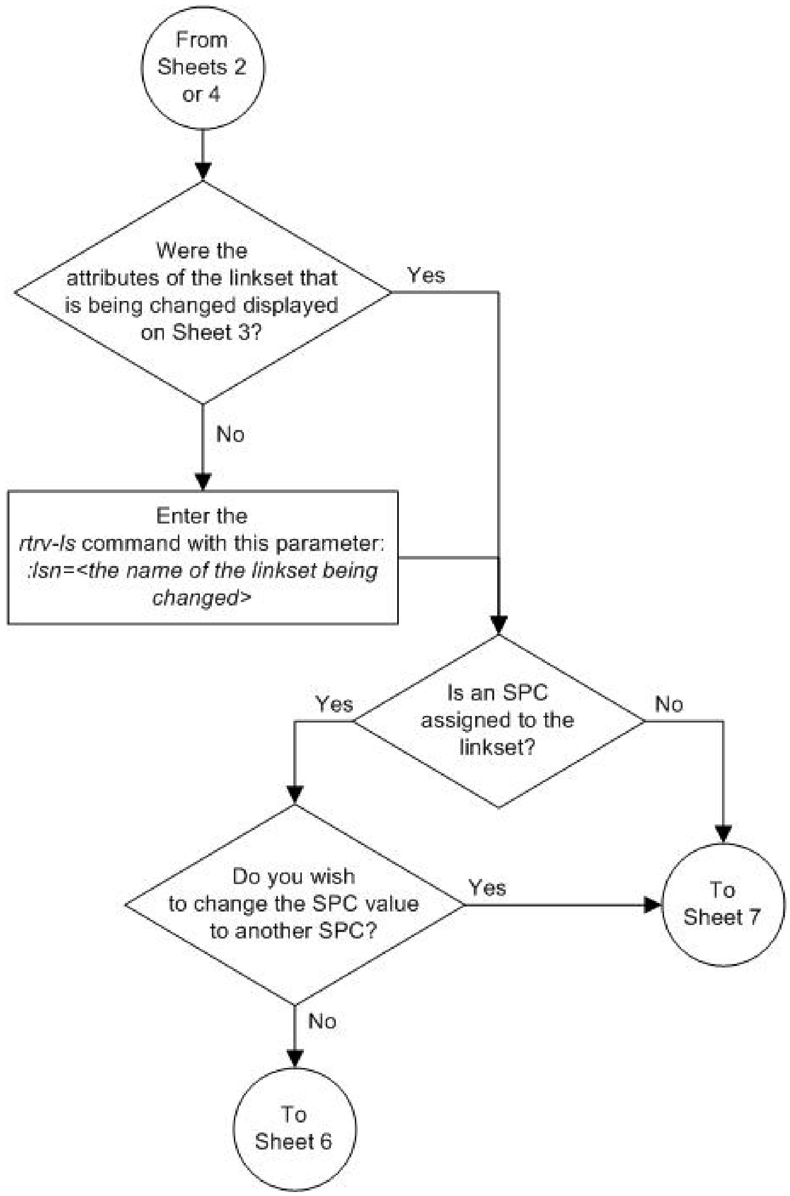
Figure 14: Changing an X.25 Linkset

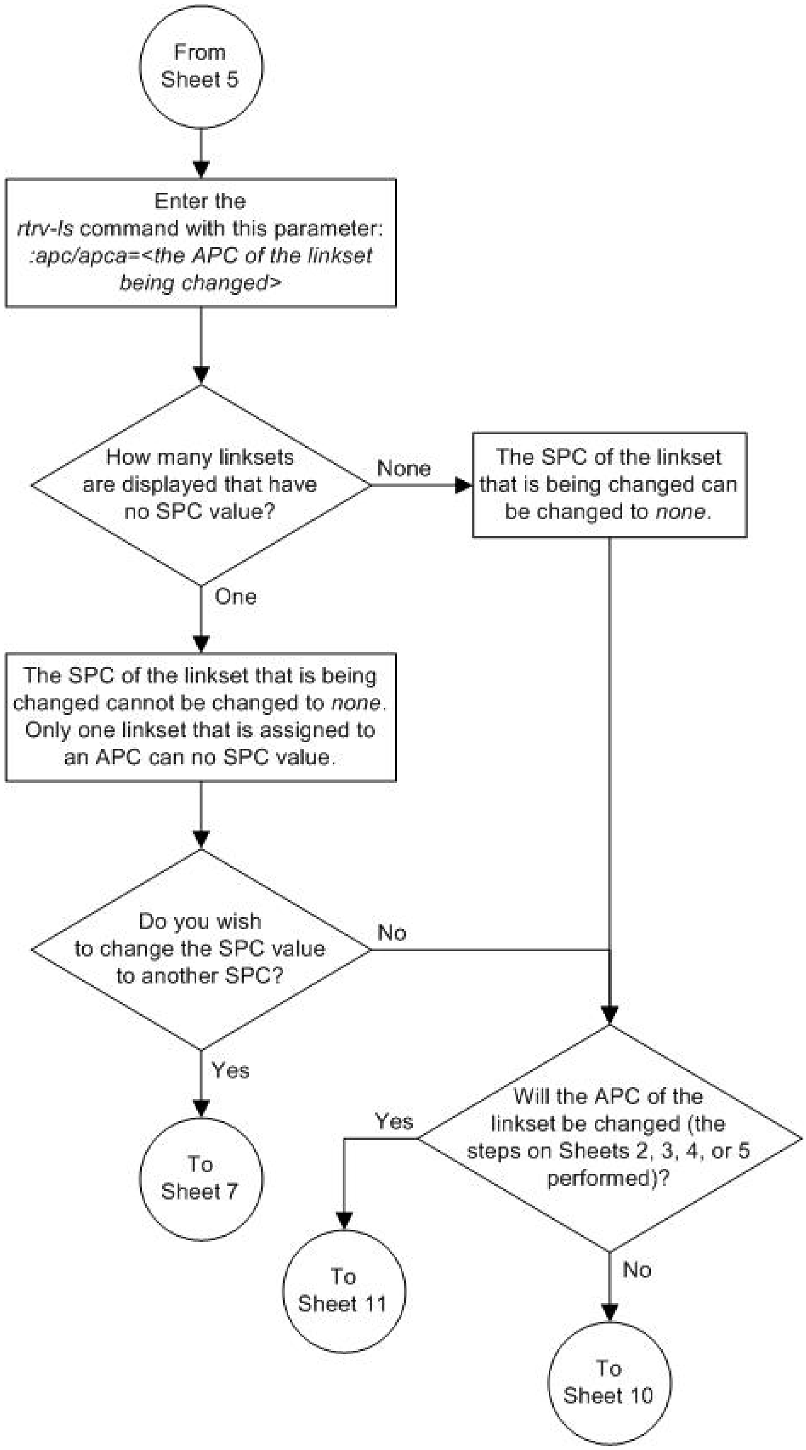

Enter the rtrv-ls command
Will the APC of the linkset or the SPC assigned to the linkset be changed?
No
To Sheet 11
Yes
From Sheets 3, 4, 9, or 10
Will the APC of a linkset be changed with the APC of another linkset?
Yes
To Sheet 2
No
Will the SPC that is assigned to a linkset be changed?
No
To Sheet 9
Yes
To Sheet 2

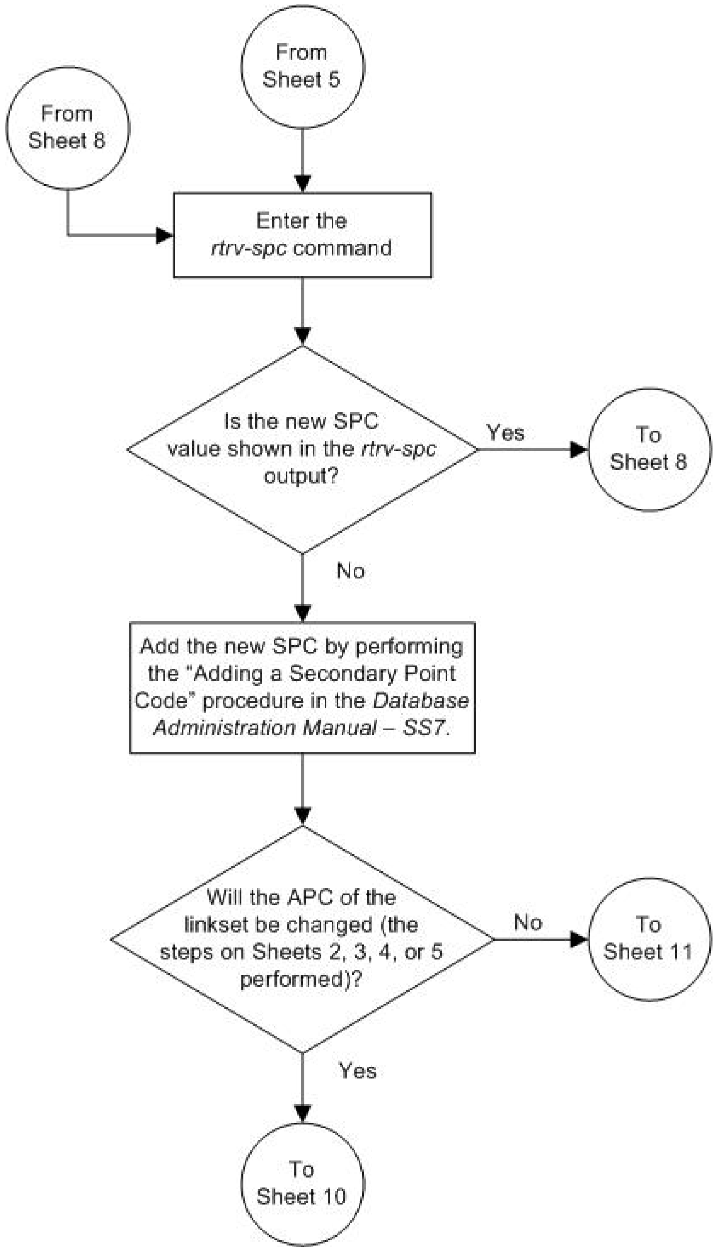

From Sheet 1
Are multiple linksets with the same APC shown in the rtrv-ls output?
Yes
No
Enter the rtrv-ctrl-feat command with this parameter: :partnum=893019701
Is the Mutiple Linksets to Single Adjacent PC feature enabled and turned on?
Yes
No
Perform the "Activating the Multiple Linksets to Single Adjacent PC (MLS) Feature" procedure in this chapter to enable and turn on this feature.
Is the APC of the linkset being changed?
Yes
No
To Sheet 3
To Sheet 5

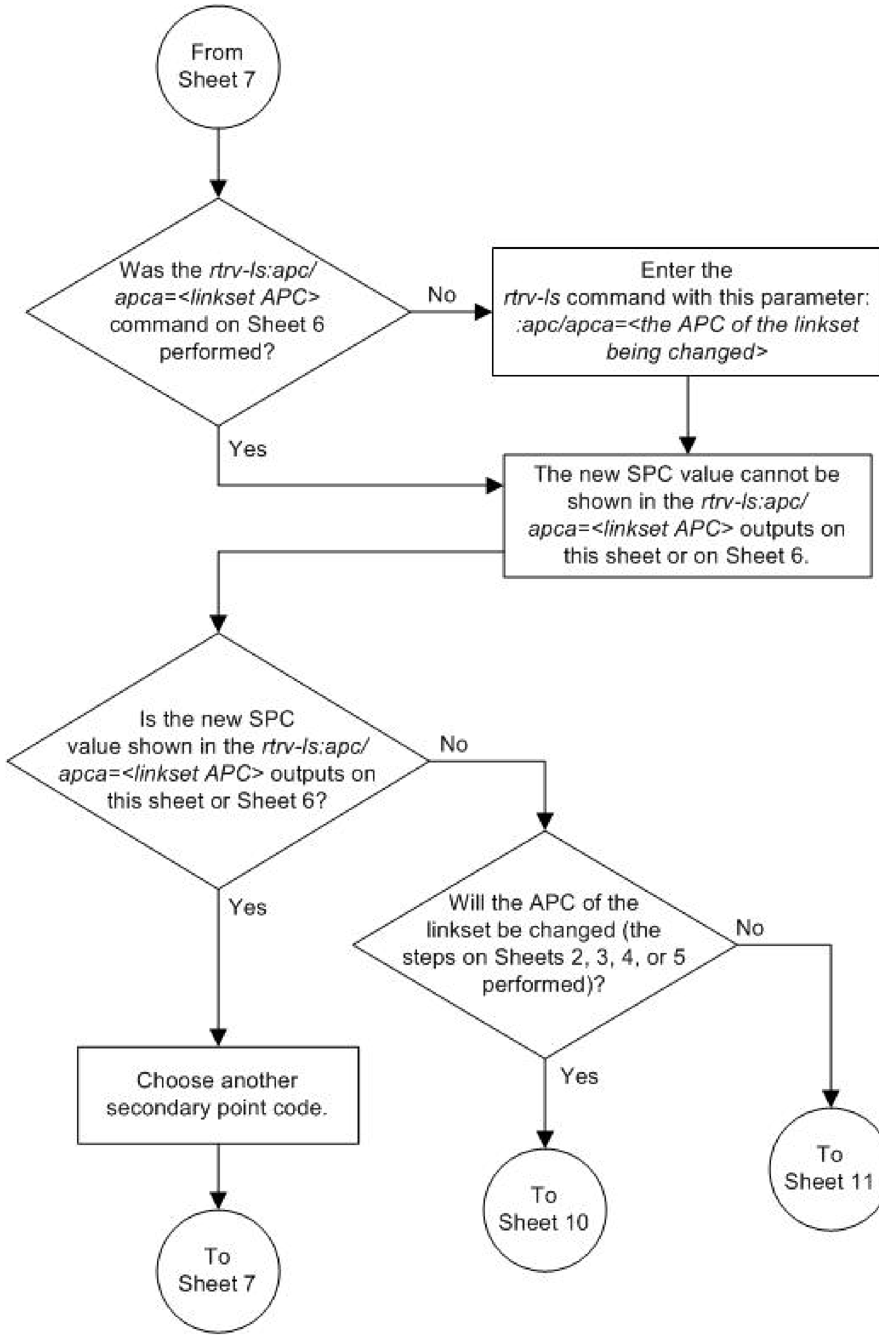

From Sheet 2
Enter the rtrv-ls command with this parameter: :apc/apca=<the new APC of the linkset being changed>
How many linksets are assigned to this APC?
6
This is the maximum number of linksets that can be assigned to an APC. Choose another APC from the rtrv-ls output on Sheet 1.
To Sheet 1
1 - 5
Enter the rtrv-ls command with this parameter: :lsn=<the name of the linkset being changed>
To Sheet 4

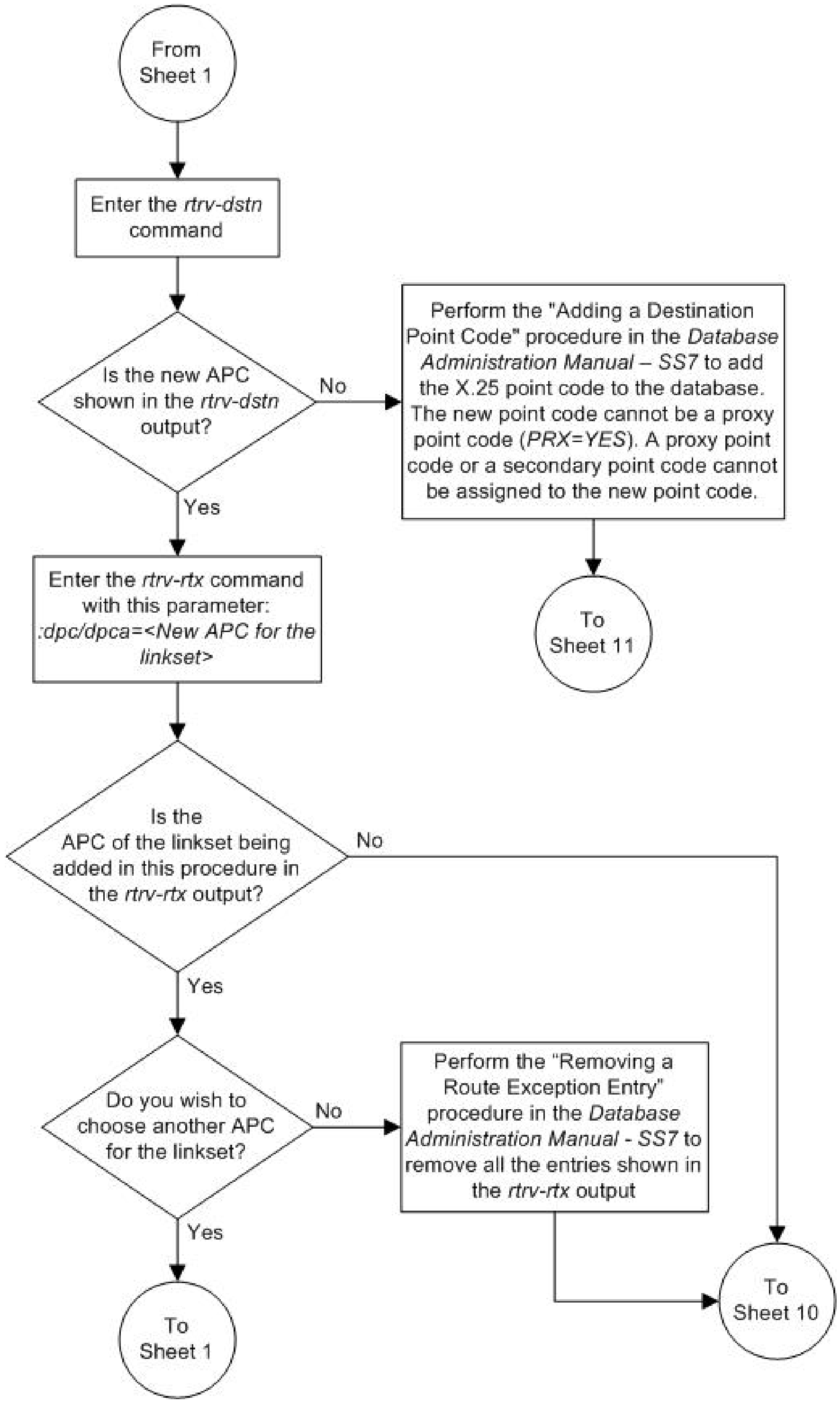

From Sheet 3
Is the SPC of the linkset being changed shown in the previous step?
No
This APC can be used as the new APC of the linkset that is being changed.
The SPC that is assigned to this linkset can be changed, if desired.
Yes
This APC can be used as the APC of the linkset that is being changed only if the SPC assigned to this linkset is changed.
Do you wish to change the SPC assigned to the linkset that is being changed?
No
Do you wish to change the SPC assigned to the linkset that is being changed?
Yes
Yes
To Sheet 10
No
To Sheet 5
Choose another APC from the rtrv-ls output on Sheet 1.
To Sheet 1

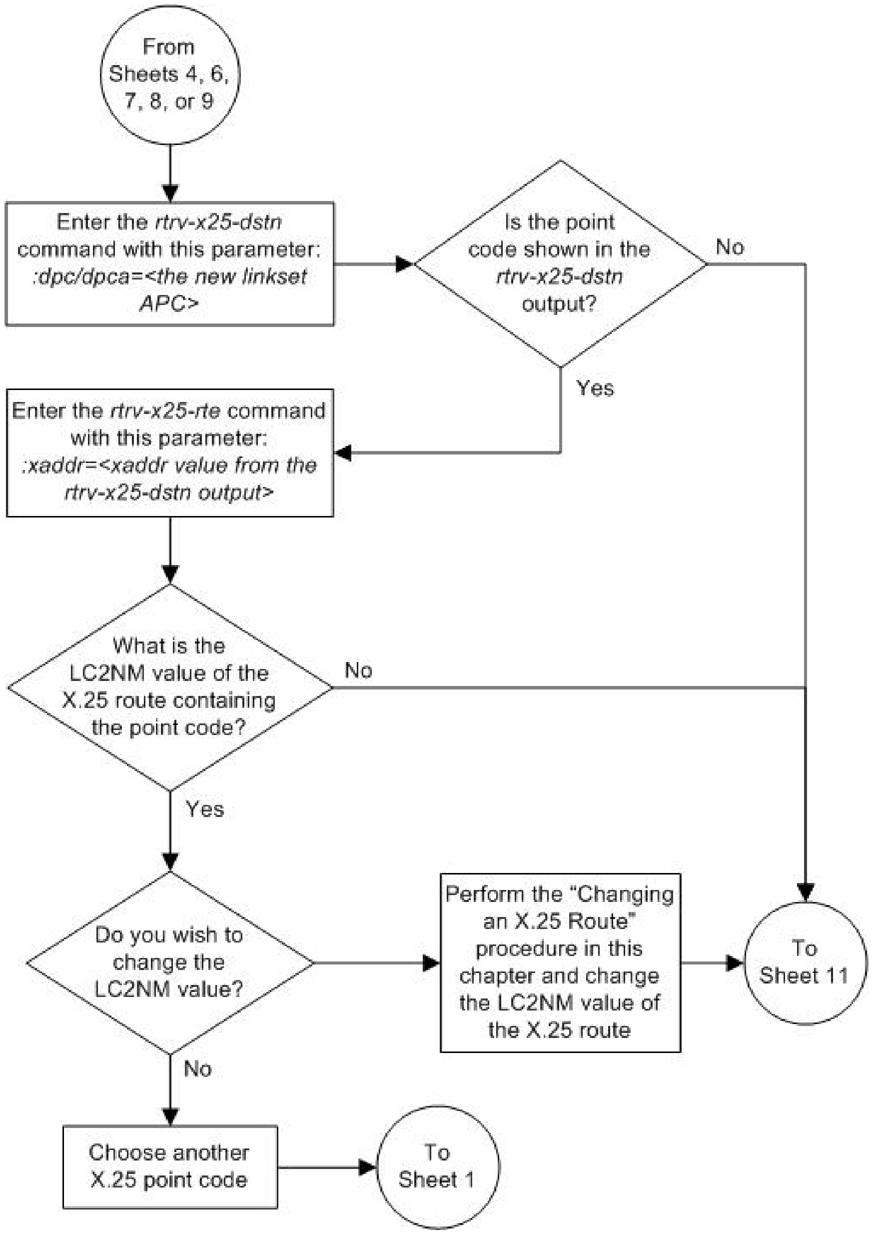

From Sheets 2 or 4
Were the attributes of the linkset that is being changed displayed on Sheet 3?
Yes
No
Enter the *rtrv-ls* command with this parameter: *:lsn=<the name of the linkset being changed>*
Is an SPC assigned to the linkset?
Yes
No
Do you wish to change the SPC value to another SPC?
Yes
No
To Sheet 7
To Sheet 6

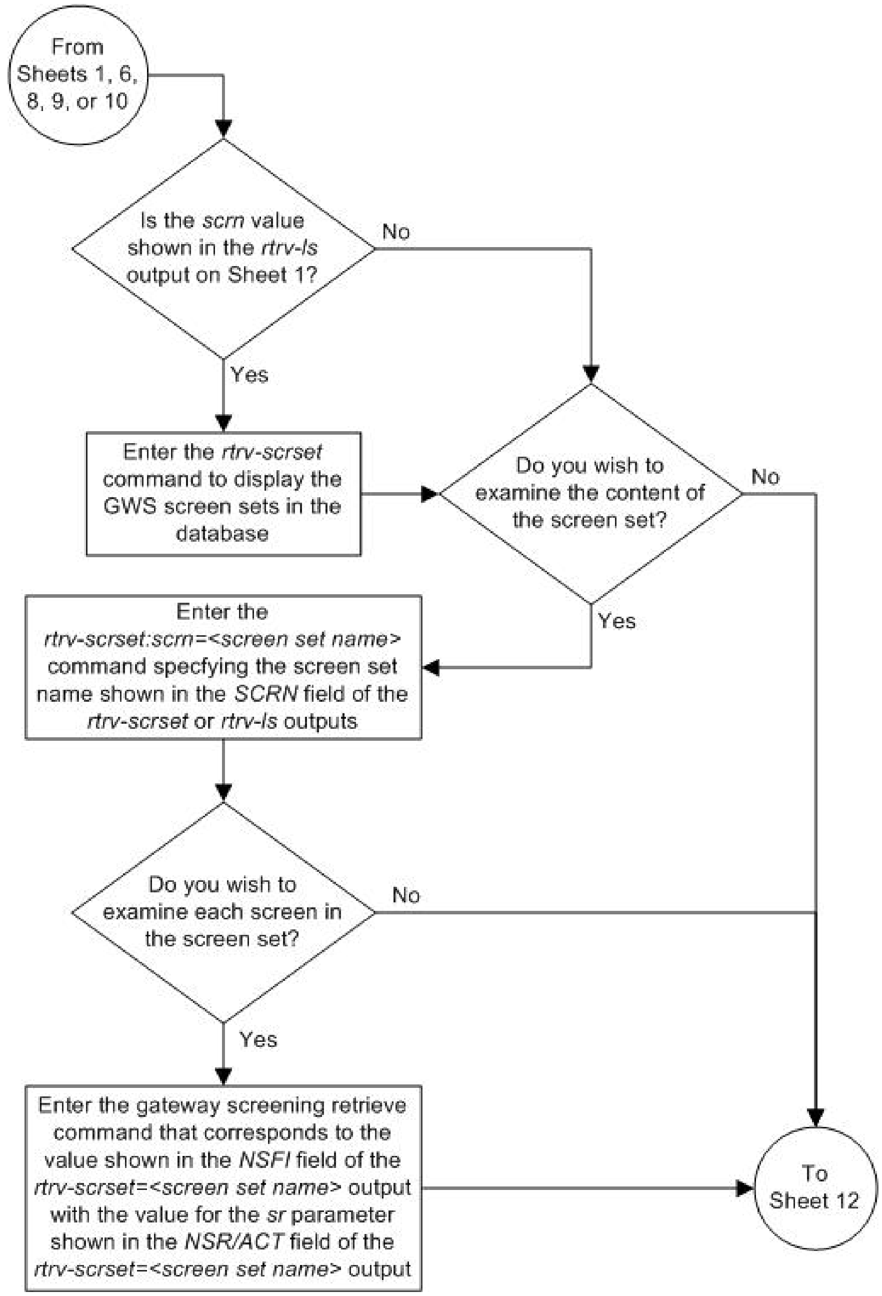

From Sheet 5
Enter the rtrv-ls command with this parameter: :apc/apca=<the APC of the linkset being changed>
How many linksets are displayed that have no SPC value?
None
The SPC of the linkset that is being changed can be changed to none.
One
The SPC of the linkset that is being changed cannot be changed to none. Only one linkset that is assigned to an APC can no SPC value.
Do you wish to change the SPC value to another SPC?
No
Yes
To Sheet 7
Will the APC of the linkset be changed (the steps on Sheets 2, 3, 4, or 5 performed)?
Yes
No
To Sheet 11
To Sheet 10

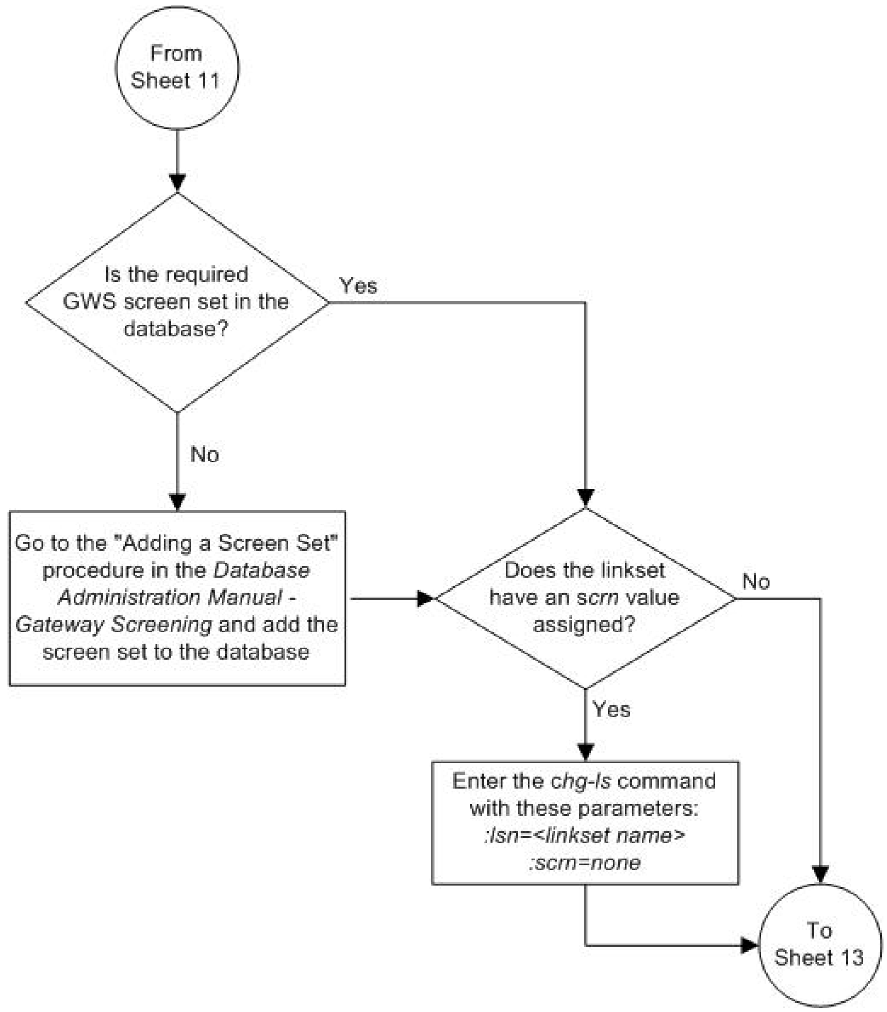

From Sheet 5
From Sheet 8
Enter the rtrv-spc command
Is the new SPC value shown in the rtrv-spc output?
Yes
To Sheet 8
No
Add the new SPC by performing the "Adding a Secondary Point Code" procedure in the Database Administration Manual – SS7.
Will the APC of the linkset be changed (the steps on Sheets 2, 3, 4, or 5 performed)?
No
To Sheet 11
Yes
To Sheet 10

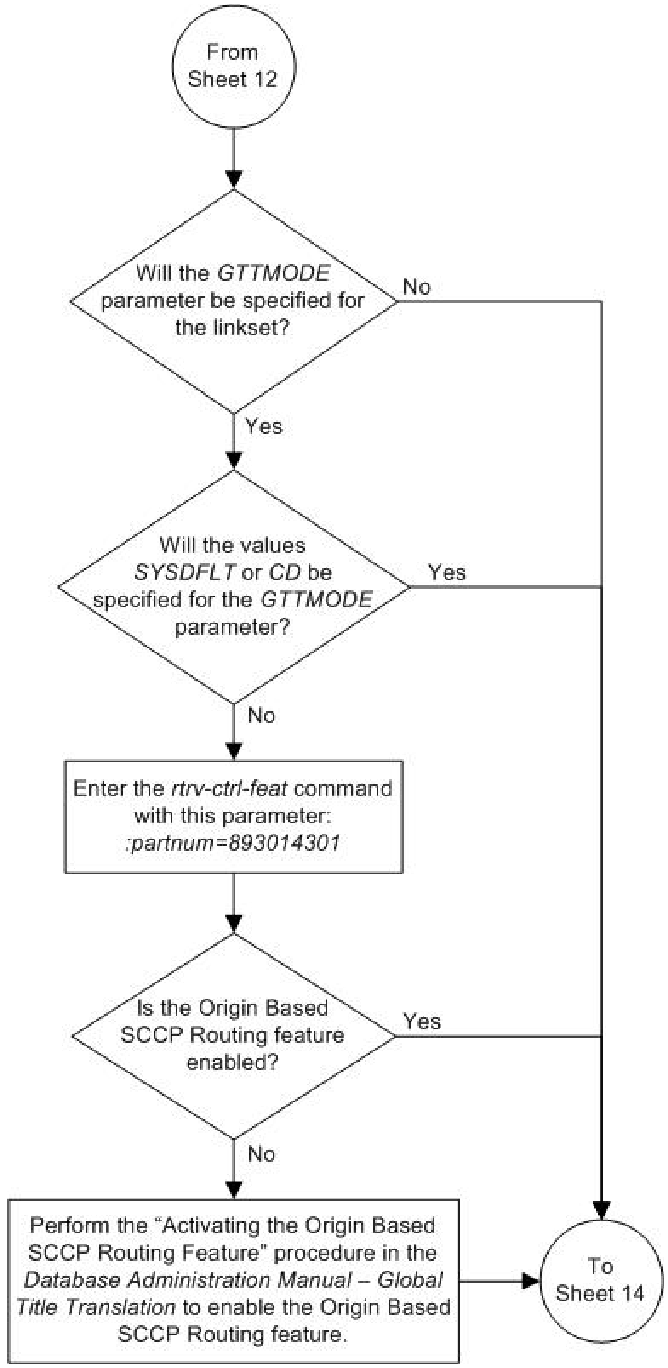

From Sheet 7
Was the rtrv-ls:apc/apca=<linkset APC> command on Sheet 6 performed?
No
Enter the rtrv-ls command with this parameter: :apc/apca=<the APC of the linkset being changed>
Yes
The new SPC value cannot be shown in the rtrv-ls:apc/apca=<linkset APC> outputs on this sheet or on Sheet 6.
Is the new SPC value shown in the rtrv-ls:apc/apca=<linkset APC> outputs on this sheet or Sheet 6?
No
Yes
Will the APC of the linkset be changed (the steps on Sheets 2, 3, 4, or 5 performed)?
No
Yes
Choose another secondary point code.
To Sheet 10
To Sheet 11
To Sheet 7

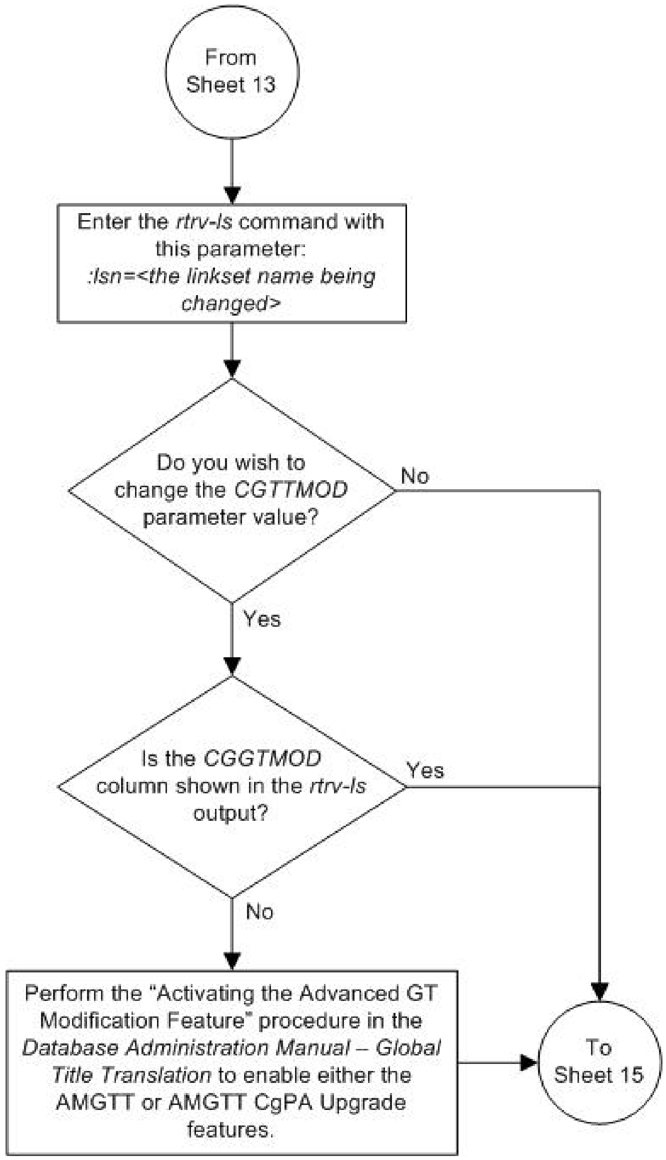

From Sheet 1
Enter the rtrv-dstn command
Is the new APC shown in the rtrv-dstn output?
No
Perform the "Adding a Destination Point Code" procedure in the Database Administration Manual – SS7 to add the X.25 point code to the database. The new point code cannot be a proxy point code (PRX=YES). A proxy point code or a secondary point code cannot be assigned to the new point code.
To Sheet 11
Yes
Enter the rtrv-rtx command with this parameter: :dpc/dpca=<New APC for the linkset>
Is the APC of the linkset being added in this procedure in the rtrv-rtx output?
No
Yes
Do you wish to choose another APC for the linkset?
No
Perform the "Removing a Route Exception Entry" procedure in the Database Administration Manual - SS7 to remove all the entries shown in the rtrv-rtx output
Yes
To Sheet 1
To Sheet 10

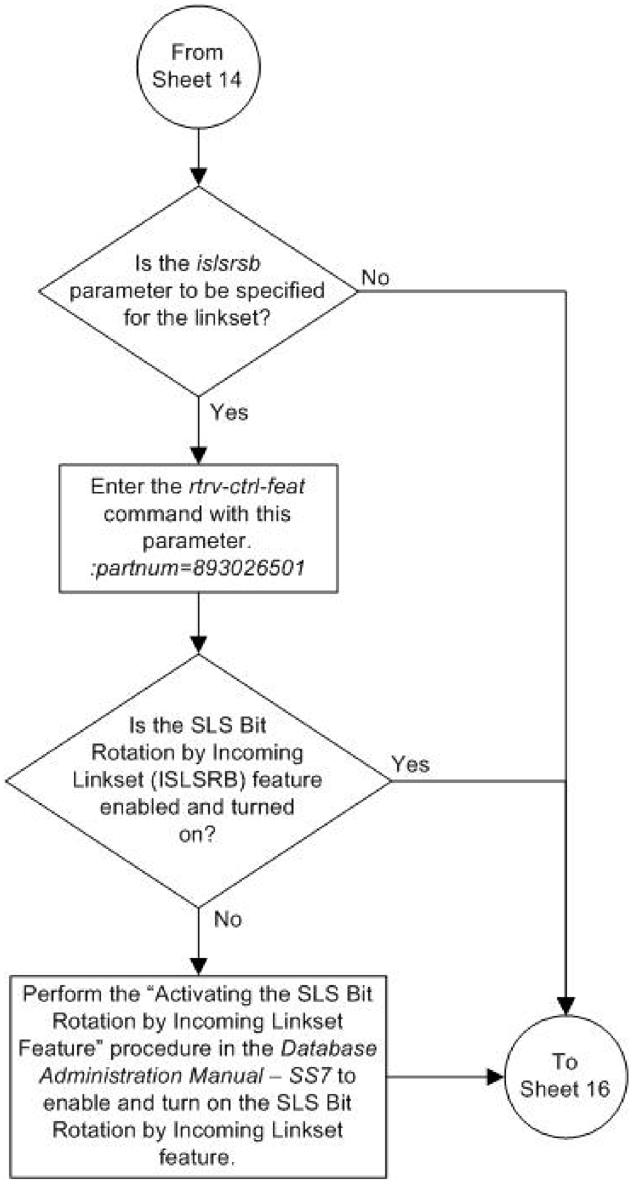

From Sheets 4, 6, 7, 8, or 9
Enter the rtrv-x25-dstn command with this parameter: :dpc/dpca=<the new linkset APC>
Is the point code shown in the rtrv-x25-dstn output?
No
Yes
Enter the rtrv-x25-rte command with this parameter: :xaddr=<xaddr value from the rtrv-x25-dstn output>
What is the LC2NM value of the X.25 route containing the point code?
No
Yes
Do you wish to change the LC2NM value?
Perform the "Changing an X.25 Route" procedure in this chapter and change the LC2NM value of the X.25 route
To Sheet 11
No
Choose another X.25 point code
To Sheet 1

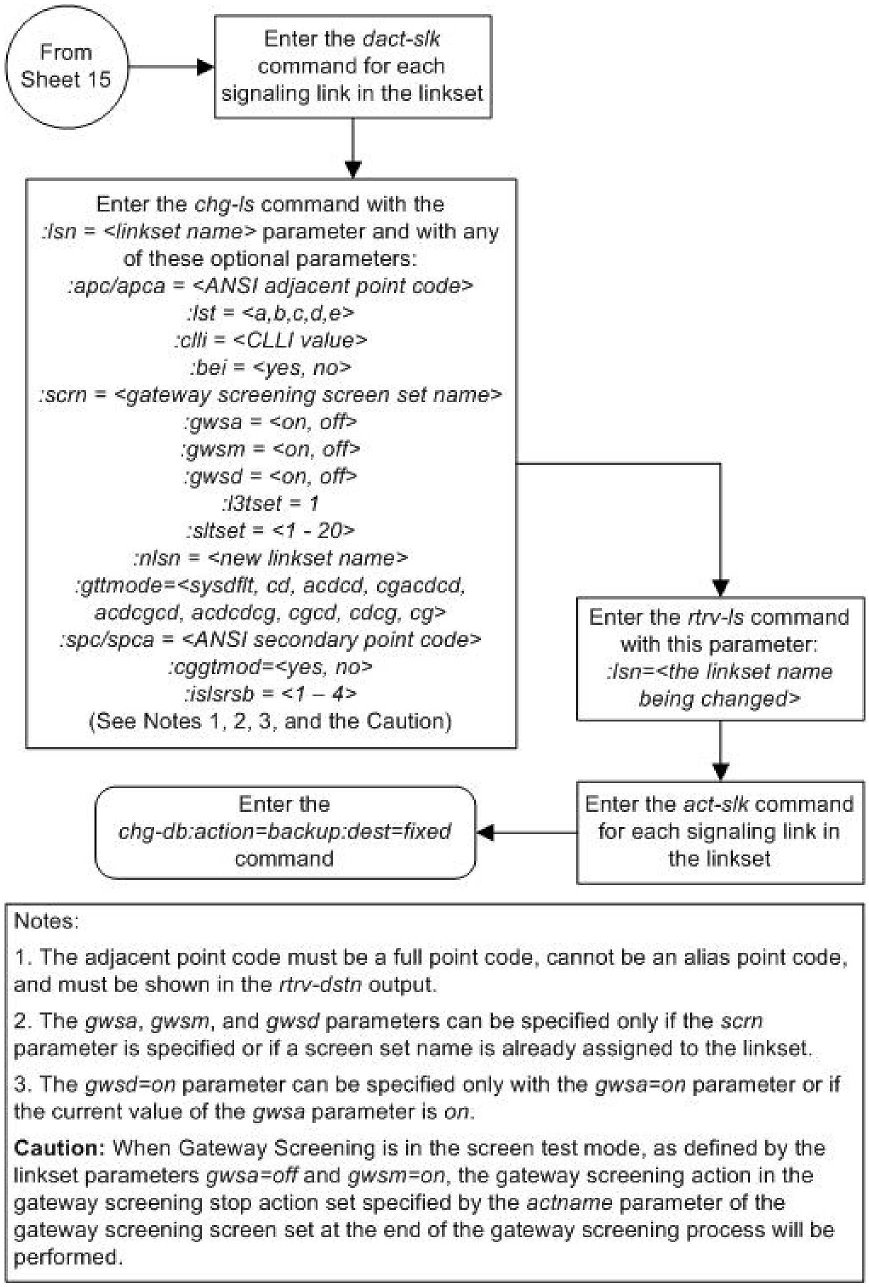

From Sheets 1, 6, 8, 9, or 10
Is the scrn value shown in the rtrv-ls output on Sheet 1?
No
Yes
Enter the rtrv-scrset command to display the GWS screen sets in the database
Do you wish to examine the content of the screen set?
No
Yes
Enter the rtrv-scrset:scrn=<screen set name> command specfying the screen set name shown in the SCRN field of the rtrv-scrset or rtrv-ls outputs
Do you wish to examine each screen in the screen set?
No
Yes
Enter the gateway screening retrieve command that corresponds to the value shown in the NSFI field of the rtrv-scrset=<screen set name> output with the value for the sr parameter shown in the NSR/ACT field of the rtrv-scrset=<screen set name> output
To Sheet 12


From Sheet 11
Is the required GWS screen set in the database?
Yes
No
Go to the "Adding a Screen Set" procedure in the *Database Administration Manual - Gateway Screening* and add the screen set to the database
Does the linkset have an scrn value assigned?
No
Yes
Enter the *chg-ls* command with these parameters:
:lsn=<linkset name>
:scrn=none
To Sheet 13


From Sheet 12
Will the *GTTMODE* parameter be specified for the linkset?
No
Yes
Will the values *SYSDFLT* or *CD* be specified for the *GTTMODE* parameter?
Yes
No
Enter the *rtrv-ctrl-feat* command with this parameter: *:partnum=893014301*
Is the Origin Based SCCP Routing feature enabled?
Yes
No
Perform the "Activating the Origin Based SCCP Routing Feature" procedure in the *Database Administration Manual – Global Title Translation* to enable the Origin Based SCCP Routing feature.
To Sheet 14


From Sheet 13
Enter the rtrv-ls command with this parameter: :lsn=<the linkset name being changed>
Do you wish to change the CGTTMOD parameter value?
No
Yes
Is the CGGTMOD column shown in the rtrv-ls output?
Yes
No
Perform the "Activating the Advanced GT Modification Feature" procedure in the Database Administration Manual – Global Title Translation to enable either the AMGTT or AMGTT CgPA Upgrade features.
To Sheet 15


From Sheet 14
Is the islsrsb parameter to be specified for the linkset?
No
Yes
Enter the rtrv-ctrl-feat command with this parameter.
:partnum=893026501
Is the SLS Bit Rotation by Incoming Linkset (ISLSRB) feature enabled and turned on?
Yes
No
Perform the "Activating the SLS Bit Rotation by Incoming Linkset Feature" procedure in the Database Administration Manual – SS7 to enable and turn on the SLS Bit Rotation by Incoming Linkset feature.
To Sheet 16



Adding an X.25 Signaling Link

This procedure is used to add an X.25 signaling link to the database using the `ent-slk` command. To add SS7 signaling links to the database, go to the “Adding an SS7 Signaling Link” procedure in the Database *Administration Manual – SS7* .

The `ent-slk` command uses these parameters to configure an X.25 signaling link.

`:loc` – The card location of the LIM that the X.25 signaling link will be assigned to.

`:link` – The signaling link on the card specified in the `loc` parameter. For an X.25 signaling link, this parameter value is A.

`:lsn` – The name of the linkset that will contain the signaling link.

`:slc` – The signaling link code. The SLC must be unique within the linkset. It must be the same at both the EAGLE 5 ISS location and the distant node.

`:l1mode` – The mode of operation used to select the link clocking source at layer 1. One end of a V.35 link must be DTE and the other end must be DCE.

`:bps` – The transmission rate for the link in bits per second.

`:tset` – Transmitter signal element timing.

`:ecm` – Error correction method.

`:pcrn1` – The threshold of the number of MSUs available for retransmission. If the error correction method being used is PCR, and this threshold is reached, no new MSUs or FISUs are sent. The retransmission cycle is continued up to the last MSU entered into the retransmission buffer in the order in which they were originally transmitted.

`:pcrn2` – The threshold of the number of MSU octets available for retransmission. If the error correction method being used is PCR, and this threshold is reached, no new MSUs or FISUs are sent. The retransmission cycle is continued up to the last MSU entered into the retransmission buffer in the order in which they were originally transmitted.

The `ent-slk` command contains other optional parameters that are not used to configure an X.25 signaling link. These parameters are discussed in more detail in the *Commands Manual* or in these sections.

- These procedures in the *Database Administration Manual - SS7*
  - Adding an SS7 Signaling Link
  - Adding an E1 Signaling Link
  - Adding a T1 Signaling Link
  - Adding an ATM High-Speed Signaling Link
- These procedures in the *Database Administration Manual - IP[7] Secure Gateway*
  - Adding an IPGWx Signaling Link
  - Adding an IPLIMx Signaling Link
  - Adding an IPSG M3UA Signaling Link
  - Adding an IPSG M2PA Signaling Link

The examples in this procedure are based on the example network shown in *Figure 6: Typical X.25/SS7 Gateway Configuration* on page 24 and *Table 7: X.25 Signaling Link Configuration Table* on page 109 and are used to add X.25 signaling links to cards 1205, 1206, and 1207.

Table 7: X.25 Signaling Link Configuration Table

SLK LOC	SLK LINK	LSN	SLC	TYPE	BPS
1205	A	LS03	0	LIMV35	56000

SLK LOC	SLK LINK	LSN	SLC	TYPE	BPS
1206	A	LS03	1	LIMV35	56000
1207	A	LS04	0	LIMV35	64000

These items must be provisioned in the database before an X.25 signaling link can be added:

- A shelf – see the "Adding a Shelf" procedure in the Database *Administration Manual – System Management*.
- An LIM (card type `limocu`, `limds0`, or `limv35`) assigned to the `ss7gx25` application – see *Adding an X.25 LIM* on page 25.
- A destination point code (DPC) assigned to the X.25 domain – see the “Adding a ANSI Destination Point Code” procedure in the Database *Administration Manual* – SS7 .
- A linkset whose adjacent point code (APC) is in the X.25 domain – see *Adding an X.25 Linkset* on page 47

Verify that the X.25 signaling link has been physically installed (all cable connections have been made).

If the `l1mode` or `tset` parameters are specified, the card type must be `limv35`.

The `tset` parameter can only be specified with the `l1mode=dce` parameter. When `l1mode=dce` is specified and the `tset` parameter is not specified, the value of the `tset` parameter is set to `off`, and dashes are shown in the `TSET` column in the `rtrv-slk` output. The default value for the `l1mode` parameter is `dte`.

The transmission rate of the X.25 signaling link can be either 4800 (`bps=4800`), 9600 (`bps=9600`), 19200 (`bps=19200`), 56000 (`bps=56000`), or 64000 (`bps=64000`) bits per second. If the card type is either `limds0` or `limocu`, the transmission rate of the X.25 signaling link can be either 56000 or 64000. The transmission rates 4800, 9600, or 19200 can be specified only if the card type is `limv35`. The default value for the X.25 signaling link transmission rate is 56000.

The `l2tset` parameter cannot be specified for an X.25 signaling link, but its value is defaulted to `11` and is shown in the `L2TSET` column in the `rtrv-slk` output.

The linkset must be in the database. The number of signaling links in a linkset cannot exceed 16. The number of signaling links in the linkset is shown in the `LNKS` column of the `rtrv-ls` command output.

The APC of the linkset assigned to the signaling link must be in the X.25 domain. Use the `rtrv-dstn` command to verify the domain of the APC of the linkset.

Requirements for EAGLE 5 ISSs Containing more than 700 Signaling Links

To provision an EAGLE 5 ISS with more than 700 signaling links (currently the EAGLE 5 ISS can have maximum capacities of 1200, 1500, or 2000 signaling links), the following additional requirements must be met:

- The Measurements Platform feature must be enabled. Perform these procedures in the Database *Administration Manual - System Management* to enable the Measurements Platform feature:
  - "Adding an MCPM"
  - "Configuring the IP Communications Link for the Measurements Platform"

- "Adding an FTP Server"

- To provision more than 1200 signaling links, the Large System # Links controlled feature must be enabled for 1500 or 2000 signaling links. For more information on enabling this feature, go to *Enabling the Large System # Links Controlled Feature* on page 155.

Note:

An X.25 signaling link cannot be assigned to a Multiport LIM.

For more information on these hardware components, go to the *Installation Manual* - EAGLE 5 ISS .

Determining the Number of High-Speed and Low-Speed Signaling Links

An EAGLE 5 ISS containing either 1200, 1500, or 2000 signaling links can contain the following quantities of signaling links:

- 180 high-speed ATM signaling links assigned to the ATMANSI application. If there are any high-speed ATM signaling links assigned to the ATMITU application, the maximum number of high-speed ATM signaling links is 115.
- 100 signaling links assigned to either the IPLIM or IPLIMI applications.
- 125 signaling links assigned to either the SS7IPGW or IPGWI application, or combinations of the SS7IPGW and IPGWI applications.
- 64 unchannelized E1 signaling links.

The following hardware and applications are the only signaling link hardware and applications supported for an EAGLE 5 ISS containing more than 1500 signaling links.

- E1/T1 MIM running the `ccs7itu` application.
- HC-MIM running the `ccs7itu` application.
- E5-E1T1 running the `ccs7itu` application.
- Single-slot EDCM running either the `iplimi` or `ipgwi` applications.
- E5-ENET running either the `iplimi` or `ipgwi` applications.
- ATM high-speed LIM running the `atmitu` application.

Canceling the `REPT-STAT-SLK` and `RTRV-SLK` Commands

Because the `rept-stat-slk` and `rtrv-slk`commands used in this procedure can output information for a long period of time, the `rept-stat-slk` and `rtrv-slk`commands can be canceled and the output to the terminal stopped.

There are three ways that the `rept-stat-slk` and `rtrv-slk`commands can be canceled.

- Press the `F9` function key on the keyboard at the terminal where the `rept-stat-slk` or `rtrv-slk`commands were entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rept-stat-slk` or `rtrv-slk`commands were entered.
- Enter the `canc-cmd:trm=<xx>`, where <xx> is the terminal where the `rept-stat-slk` or `rtrv-slk`commands were entered, from another terminal other that the terminal where the `rept-stat-slk` or `rtrv-slk`commands were entered. To enter the `canc-cmd:trm=<xx>` command, the terminal must allow Security Administration commands to be entered from it and the user must be allowed to enter Security Administration commands. The terminal's

permissions can be verified with the `rtrv-secu-trm` command. The user's permissions can be verified with the `rtrv-user` or `rtrv-secu-user` commands.

For more information about the `canc-cmd` command, go to the *Commands Manual*.

1. Display the cards in the database using the `rtrv-card` command.

The X.25 LIMs are shown by the entry `SS7GX25` in the `APPL` field. This is an example of the possible output.

```
rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1101   TSM       SCCP
1113   GPSM      EOAM
1114   TDM-A
1115   GPSM      EOAM
1116   TDM-B
1117   MDAL
1201   LIMDS0    SS7ANSI   sp2           A    0   sp1           B    0
1202   LIMV35    SS7GX25
1203   LIMDS0    SS7ANSI   sp3           A    0
1204   LIMDS0    SS7ANSI   sp3           A    1
1206   LIMDS0    SS7ANSI   nsp3          A    1   nsp4          B    1
1207   LIMV35    SS7GX25   nsp1          A    0
1208   LIMV35    SS7GX25   nsp1          A    1
1216   ACMENET   STPLAN
1301   TSM       SCCP
1308   LIMDS0    SS7ANSI   sp6           A    1   sp7           B    0
1314   LIMDS0    SS7ANSI   sp7           A    1   sp5           B    1
1317   ACMENET   STPLAN
```

If the required card is not in the database, go to *Adding an X.25 LIM* on page 25 and add the card to the database.

2. Display the current linkset configuration using the `rtrv-ls` command.

This is an example of the possible output.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 36.0.0

                                    L3T SLT                GWS GWS GWS
LSN          APCA   (SS7)  SCRN     SET SET BEI LST LNKS   ACT MES DIS SLSCI NIS
lsa1         240-020-000   scr1     1   1   yes  a  1      off off off no    off
lsa2         240-030-000   scr2     1   2   no   c  3      on  on  on  yes   off
lsa3         240-040-000   scr3     1   3   yes  c  5      off off off yes   off
ls01         006-006-006   scr1     1   1   yes  a  1      on  off off no    off
ls02         008-008-008   scr1     1   1   yes  a  1      on  off off yes   off

                                    L3T SLT                GWS GWS GWS
LSN          APCA   (X25)  SCRN     SET SET BEI LST LNKS   ACT MES DIS SLSCI NIS
ls6          244-010-004   scr4     1   4   no  a   6      off off off ---   off
ls7          244-012-005   scr5     1   5   no  c   3      on  on  on  ---   off
ls8          244-012-006   scr6     1   6   no  c   8      off off off ---   off

                                    L3T SLT                GWS GWS GWS
LSN          APCI   (SS7)  SCRN     SET SET BEI LST LNKS   ACT MES DIS SLSCI NIS
lsi1         1-111-1       scr1     1   1   yes a   1      off off off ---   ---
lsi2         1-111-2       scr2     1   2   no  c   3      on  on  on  ---   ---
lsi3         1-111-3       scr3     1   3   yes c   5      off off off ---   ---

                                    L3T SLT                GWS GWS GWS
LSN          APCN   (SS7)  SCRN     SET SET BEI LST LNKS   ACT MES DIS SLSCI NIS
lsn1         11111         scr1     1   1   yes a   1      off off off ---   off
```

```
lsn2          11112         scr2  1   2   no  c   3    on  on  on  ---    off
lsn3          11113         scr3  1   3   yes c   5    off off off ---    off

Link set table is ( 14 of 1024)  1% full
```

If the required linkset is not in the database, go to *Adding an X.25 Linkset* on page 47 and add the linkset to the database.

3. Display the current signaling link configuration using the `rtrv-slk` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
                                   L2T          L1                 PCR  PCR
LOC  LINK LSN          SLC TYPE    SET  BPS    MODE TSET  ECM    N1   N2
1201 A    lsn1201a      0  LIMDS0  1    56000  ---  ---   BASIC ---  -----
1201 B    lsn1201b      0  LIMDS0  1    56000  ---  ---   PCR   76   3800
1202 A    lsn1202a      0  LIMV35  -    64000  DTE  ---   BASIC ---  -----
1202 B    lsn1202b      1  LIMV35  3    64000  DCE  ON    BASIC ---  -----
1203 A    lsn1203a      0  LIMV35  1    56000  DCE  ON    BASIC 76   3800
1203 B    lsn1203b      0  LIMV35  1    56000  DCE  OFF   PCR   120  5034
1204 A    lsn1204a      1  LIMV35  3    64000  DCE  ON    PCR   76   3800
1204 B    lsn1204b      1  LIMV35  3    64000  DCE  ON    PCR   76   3800
1301 A    lsn1301a      0  LIMDS0  -    56000  ---  --    BASIC ---  -----

                                   LP             ATM
LOC  LINK LSN          SLC TYPE    SET  BPS       TSEL      VCI    VPI   LL
1302 A    atmansi0      0  LIMATM  3   1544000   INTERNAL  35     15    0
1305 A    atmansi1      0  LIMATM  4   1544000   INTERNAL  100    20    2
1318 A    atmansi0      1  LIMATM  9   1544000   LINE      150    25    4

SLK table is (12 of 1200) 1% full.
```

   If the `rtrv-slk` output shows that the maximum number of signaling links is 2000, go to step 4.

   If the `rtrv-slk` output shows that the maximum number of signaling links is 1200, and the signaling link being added increases the number beyond 1200, perform the *Enabling the Large System # Links Controlled Feature* on page 155 procedure and enable the Large System # Links controlled feature for either 1500 signaling links or 2000 signaling links. Then go to step 4.

   If the `rtrv-slk` output shows that the maximum number of signaling links is 1500, and the signaling link being added increases the number beyond 1500, perform the *Enabling the Large System # Links Controlled Feature* on page 155 procedure and enable the Large System # Links controlled feature for 2000 signaling links. Then go to step 4.

   If the addition of the new signaling link will not exceed the maximum number of signaling links, go to step 4.

4. Add the X.25 signaling link using the `ent-slk` command. For this example, enter these commands.

   `ent-slk:loc=1205:link=a:lsn=ls03:slc=0`

   `ent-slk:loc=1206:link=a:lsn=ls03:slc=1`

   `ent-slk:loc=1207:link=a:lsn=ls04:slc=0:bps=64000`

   When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:29:03 GMT  EAGLE5 36.0.0
ENT-SLK: MASP A - COMPLTD
```

5. Verify the changes using the `rtrv-slk` command with the card location specified in step 5. For this example, enter these commands.

   `rtrv-slk:loc=1205`

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
                                   L2T          L1                PCR   PCR
LOC   LINK LSN          SLC TYPE     SET   BPS    MODE TSET   ECM   N1    N2
1205 A    ls03          0  LIMV35   11    56000  DTE  ---    BASIC ---   -----
```

   `rtrv-slk:loc=1206`

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
                                   L2T          L1                PCR   PCR
LOC   LINK LSN          SLC TYPE     SET   BPS    MODE TSET   ECM   N1    N2
1206 A    ls03          1  LIMV35   11    56000  DTE  ---    BASIC ---   -----
```

   `rtrv-slk:loc=1207`

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
                                   L2T          L1                PCR   PCR
LOC   LINK LSN          SLC TYPE     SET   BPS    MODE TSET   ECM   N1    N2
1207 A    ls04          0  LIMV35   11    64000  DTE  ---    BASIC ---   -----
```

   Note: If the X.25 signaling link parameters for the newly added X.25 signaling link are not being changed, skip steps 6 through 8 and go to step 9.

6. Display the values of the X.25 signaling link you wish to change using the `rtrv-x25-slk` command. This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
LOC   PORT  T1  N1    N2  K  L3MODE  PVC  SVC  WIN  MPS
1202  A     9   1080  13  6  DTE     255  0    2    128
1205  A     5   2104  10  7  DTE     0    1    3    256
1206  A     5   2104  10  7  DTE     0    1    3    256
1207  A     5   2104  10  7  DTE     0    1    3    256
1301  A     5   1080  10  7  DTE     0    255  3    128
```

7. Change the X.25 signaling link parameter values using the `chg-x25-slk` command. For this example, enter these commands.

   `chg-x25-slk:loc=1205:port=a:t1=2:n1=1080:n2=5:k=1:l3mode=dte :pvc=2:svc=0:win=6:mps=128`

   `chg-x25-slk:loc=1206:port=a:t1=4:n1=2104:n2=12:k=3:l3mode=dce :pvc=2:svc=0:win=3:mps=256`

   `chg-x25-slk:loc=1207:port=a:t1=8:n1=2104:n2=7:k=6:l3mode=dce :pvc=0:svc=2:win=2:mps=256`

   When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 36.0.0
CHG-X25-SLK: MASP A - COMPLTD
```

8. Verify the changes using the `rtrv-x25-slk` command. This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
LOC   PORT  T1  N1    N2  K  L3MODE  PVC  SVC  WIN  MPS
1202  A     9   1080  13  6  DTE     255  0    2    128
1205  A     2   1080   5  1  DTE     2    0    6    128
1206  A     4   2104  12  3  DCE     2    0    3    256
1207  A     8   2104   7  6  DCE     0    2    2    256
1301  A     5   1080  10  7  DTE     0    255  3    128
```

9. Put the X.25 LIMs in service using the `rst-card` command with the card location specified in step 5. For this example, enter these commands.

   `rst-card:loc=1205`

   `rst-card:loc=1206`

   `rst-card:loc=1207`

   When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:21:07 GMT  EAGLE5 36.0.0
Card has been allowed.
```

10. Activate the X.25 signaling links using the `act-slk` command with the card location and the signaling link specified in step 5. For this example, enter these commands.

   `act-slk:loc=1205:link=a`

   `act-slk:loc=1206:link=a`

   `act-slk:loc=1207:link=a`

   When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:31:24 GMT  EAGLE5 36.0.0
Activate Link message sent to card
```

11. Check the status of the X.25 signaling link using the `rept-stat-slk` command with the card location and the signaling link specified in step 5 for each X.25 signaling link added in step 5. The state of the X.25 signaling link should be in service normal (IS-NR) after the link has completed alignment (shown in the `PST` field). For this example, enter these commands.

   `rept-stat-slk:loc=1205:link=a`

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 17:00:36 GMT  EAGLE5 36.0.0
SLK      LSN      CLLI         PST           SST        AST
1205,A   ls03     -----------  IS-NR         Avail     ----
  ALARM STATUS       = No alarm
  UNAVAIL REASON     =
Command Completed.
```

   `rept-stat-slk:loc=1206:link=a`

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 17:00:36 GMT  EAGLE5 36.0.0
SLK      LSN      CLLI         PST           SST        AST
```

```
1206,A   ls03     -----------  IS-NR         Avail     ----
  ALARM STATUS       = No alarm
  UNAVAIL REASON     =
Command Completed.
```

`rept-stat-slk:loc=12075:link=a`

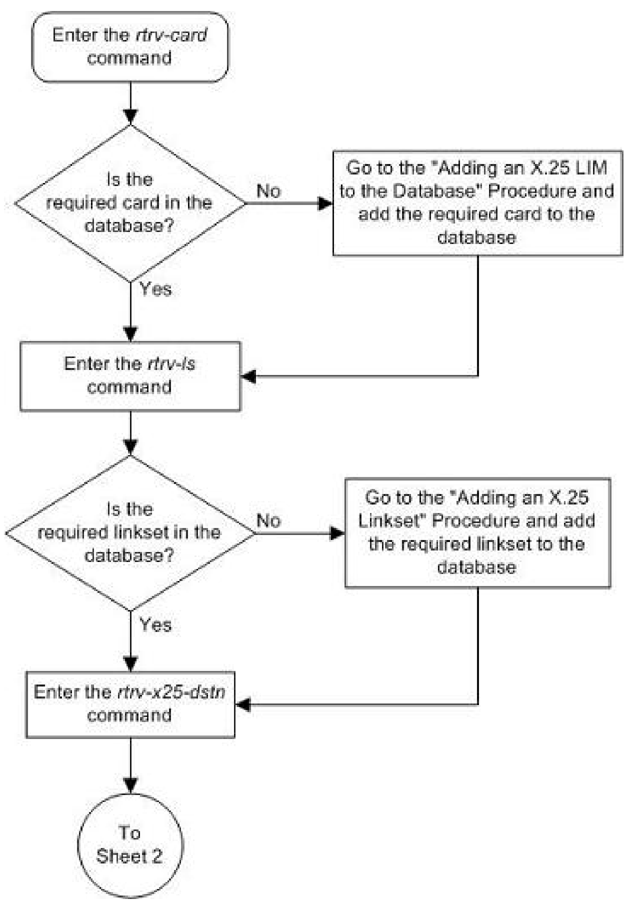
This is an example of the possible output.

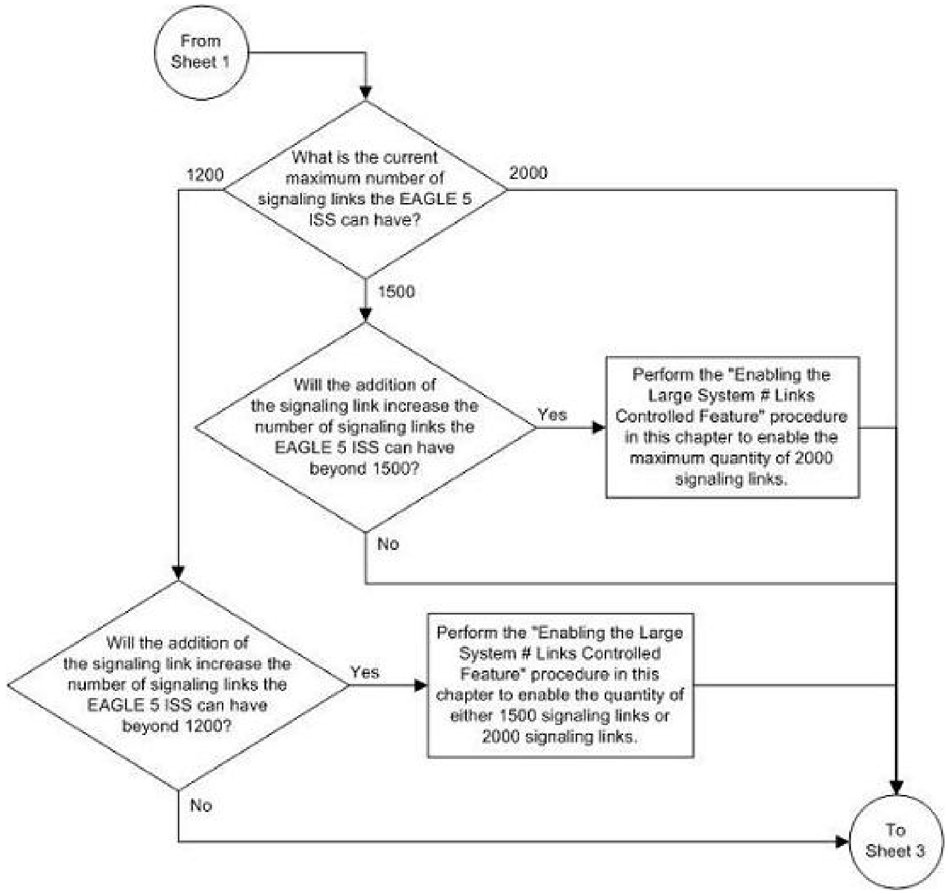
```
rlghncxa03w 06-10-28 17:00:36 GMT  EAGLE5 36.0.0
SLK      LSN      CLLI         PST           SST        AST
1207,A   ls04     -----------  IS-NR         Avail     ----
  ALARM STATUS       = No alarm
  UNAVAIL REASON     =
Command Completed.
```

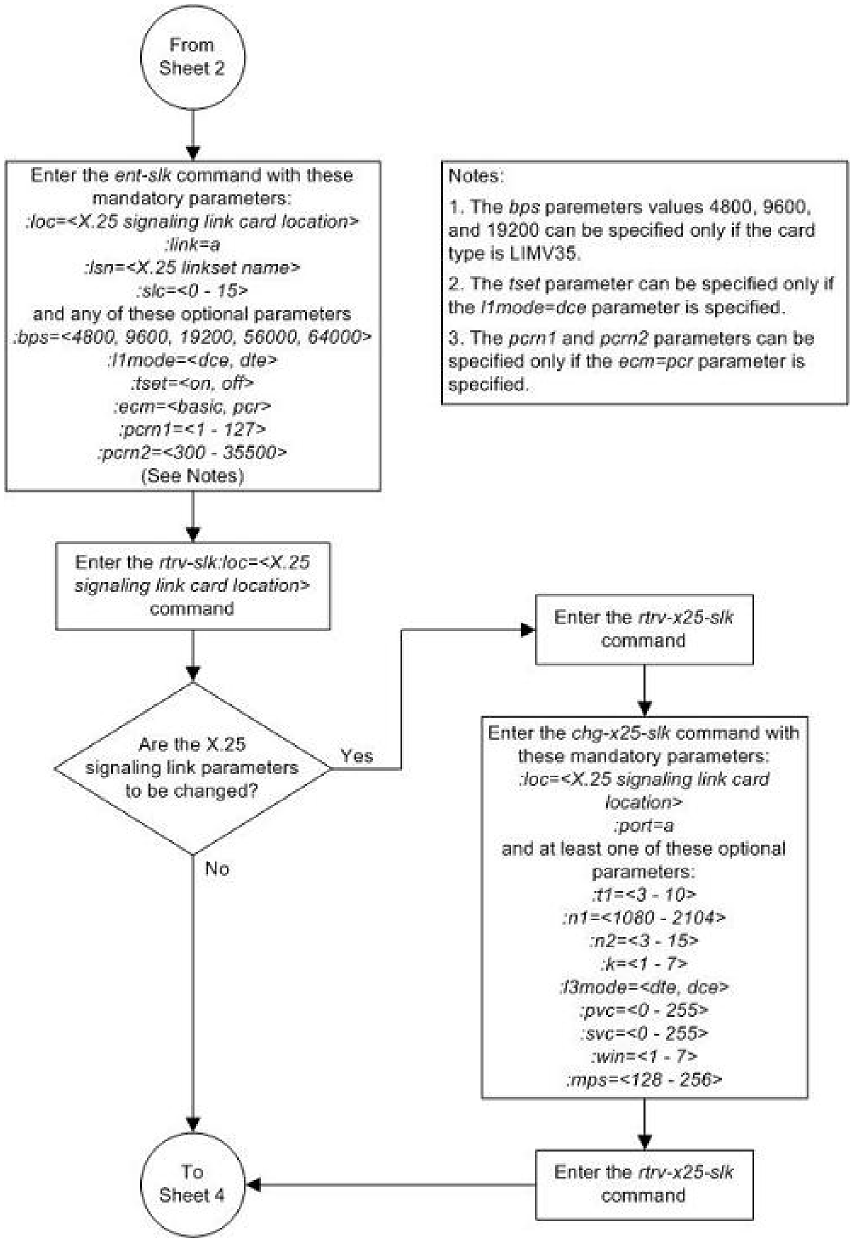
12. Backup the new changes using the `chg-db:action=backup:dest=fixed` command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

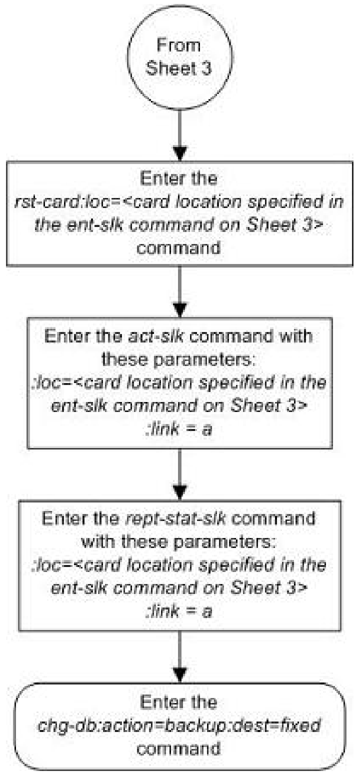
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 15: Adding an X.25 Signaling Link




From Sheet 1
What is the current maximum number of signaling links the EAGLE 5 ISS can have?
1200
2000
1500
Will the addition of the signaling link increase the number of signaling links the EAGLE 5 ISS can have beyond 1500?
Yes
Perform the "Enabling the Large System # Links Controlled Feature" procedure in this chapter to enable the maximum quantity of 2000 signaling links.
No
Will the addition of the signaling link increase the number of signaling links the EAGLE 5 ISS can have beyond 1200?
Yes
Perform the "Enabling the Large System # Links Controlled Feature" procedure in this chapter to enable the quantity of either 1500 signaling links or 2000 signaling links.
No
To Sheet 3


From Sheet 2
Enter the ent-slk command with these mandatory parameters:
:loc=<X.25 signaling link card location>
:link=a
:lsn=<X.25 linkset name>
:slc=<0 - 15>
and any of these optional parameters
:bps=<4800, 9600, 19200, 56000, 64000>
:l1mode=<dce, dte>
:tset=<on, off>
:ecm=<basic, pcr>
:pcrn1=<1 - 127>
:pcrn2=<300 - 35500>
(See Notes)
Notes:
1. The bps paremeters values 4800, 9600, and 19200 can be specified only if the card type is LIMV35.
2. The tset parameter can be specified only if the l1mode=dce parameter is specified.
3. The pcrn1 and pcrn2 parameters can be specified only if the ecm=pcr parameter is specified.
Enter the rtrv-slk:loc=<X.25 signaling link card location> command
Are the X.25 signaling link parameters to be changed?
Yes
No
Enter the rtrv-x25-slk command
Enter the chg-x25-slk command with these mandatory parameters:
:loc=<X.25 signaling link card location>
:port=a
and at least one of these optional parameters:
:t1=<3 - 10>
:n1=<1080 - 2104>
:n2=<3 - 15>
:k=<1 - 7>
:l3mode=<dte, dce>
:pvc=<0 - 255>
:svc=<0 - 255>
:win=<1 - 7>
:mps=<128 - 256>
Enter the rtrv-x25-slk command
To Sheet 4



Removing an X.25 Signaling Link

This procedure is used to remove an X.25 signaling link from the database using the `dlt-slk` command. To remove SS7 signaling links from the database, go to the "Removing an SS7 Signaling Link" procedure in the Database *Administration Manual – SS7* .

The `dlt-slk` command uses these parameters.

`:loc` – The card location of the LIM that the X.25 signaling link is assigned to.

`:link` – The signaling link on the card location specified in the `loc` parameter. For an X.25 signaling link, this parameter value is A.

`:force` – This parameter must be used to remove the last link in a linkset without having to remove all of the routes that referenced the linkset.

The examples in this procedure are used to remove the X.25 signaling link assigned to card 1207 from the database.

The X.25 signaling link to be removed must exist in the database.

All X.25 routes associated with this link must be removed before the X.25 signaling link can be removed. See the *Removing an X.25 Route* on page 138 procedure.

Canceling the RTRV-SLK Command

Because the `rtrv-slk` command used in this procedure can output information for a long period of time, the `rtrv-slk` command can be canceled and the output to the terminal stopped. There are three ways that the `rtrv-slk` command can be canceled.

- Press the `F9` function key on the keyboard at the terminal where the `rtrv-slk` command was entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rtrv-slk` command was entered.
- Enter the `canc-cmd:trm=<xx>`, where `<xx>` is the terminal where the `rtrv-slk` command was entered, from another terminal other that the terminal where the `rtrv-slk` command was entered. To enter the `canc-cmd:trm=<xx>` command, the terminal must allow Security Administration commands to be entered from it and the user must be allowed to enter Security Administration commands. The terminal's permissions can be verified with the `rtrv-secu-trm` command. The user's permissions can be verified with the `rtrv-user` or `rtrv-secu-user` commands.

For more information about the `canc-cmd` command, go to the *Commands Manual*.

1. Display the current link configuration using the `rtrv-slk` command. This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0

                                 L2T         L1                  PCR  PCR
LOC  LINK LSN         SLC TYPE   SET  BPS    MODE TSET  ECM   N1   N2
1201 A    lsn1201a     0  LIMDS0  1    56000  ---  ---   BASIC ---  -----
1201 B    lsn1201b     0  LIMDS0  1    56000  ---  ---   PCR   76   3800
1202 A    lsn1202a     0  LIMV35  -    64000  DTE  ---   BASIC ---  -----
1202 B    lsn1202b     1  LIMV35  3    64000  DCE  ON    BASIC ---  -----
1203 A    lsn1203a     0  LIMV35  1    56000  DCE  ON    BASIC 76   3800
1203 B    lsn1203b     0  LIMV35  1    56000  DCE  OFF   PCR   120  5034
1204 A    lsn1204a     1  LIMV35  3    64000  DCE  ON    PCR   76   3800
1204 B    lsn1204b     1  LIMV35  3    64000  DCE  ON    PCR   76   3800
1205 A    ls03         0  LIMV35  -    56000  DTE  --    BASIC ---  -----
1206 A    ls03         1  LIMV35  -    56000  DTE  --    BASIC ---  -----
1207 A    ls04         0  LIMV35  -    64000  DTE  --    BASIC ---  -----
1301 A    lsn1301a     0  LIMDS0  -    56000  ---  --    BASIC ---  -----

                                 LP             ATM
LOC  LINK LSN         SLC TYPE   SET  BPS       TSEL       VCI    VPI   LL
1302 A    atmansi0     0  LIMATM  3    1544000   INTERNAL   35     15    0
1305 A    atmansi1     0  LIMATM  4    1544000   INTERNAL   100    20    2
1318 A    atmansi0     1  LIMATM  9    1544000   LINE       150    25    4

SLK table is (15 of 1200) 1% full.
```

2. Deactivate the X.25 signaling link to be removed using the `dact-slk` command, using the output from step 1 to obtain the card location and the signaling link to be removed. For this example, enter this command.

   `dact-slk:loc=1207:link=a`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:41:12 GMT  EAGLE5 36.0.0
Deactivate Link message sent to card
```

3. Verify that the X.25 signaling link is out of service - maintenance (OOS-MT) using the `rept-stat-slk` command, using the card location and the signaling link. For this example, enter this command.

   `rept-stat-slk:loc=1207:link=a`

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 17:00:36 GMT  EAGLE5 36.0.0
SLK      LSN      CLLI         PST          SST        AST
1207,A   ls04     ---------    OOS-MT       Unavail    ----
  ALARM STATUS       = *   0221 REPT-LKF: X25 link unavailable
  UNAVAIL REASON     = X25FL
Command Completed.
```

4. Before the X.25 signaling link can be removed from the database, any X.25 routes associated with the X.25 signaling link must be removed from the database. Enter the `rtrv-x25-rte` command to display the X.25 routes in the database. This is an example if the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR          SS7 ADDR         TYPE  LOC   PORT  LC  RT   LC2NM
11101             44401            pvc   1205  a     01  xpc  no
11102             55501            pvc   1206  a     02  pc   no
22201             44401            pvc   1205  a     02  pc   no
22202             55501            pvc   1206  a     01  xpc  yes
33301             44401            svca  1207  a     --  pc   no
33302             55501            svca  1207  a     --  pc   no
X.25 ROUTE TABLE IS  30 % FULL
```

5. If any X.25 routes shown in the output of step 5 are assigned to the X.25 signaling links shown in the output of step 4, remove those X.25 routes by using the `dlt-x25-rte` command. For this example, enter these commands.

   `dlt-x25-rte:xaddr=33301:saddr=44401`

   `dlt-x25-rte:xaddr=33302:saddr=55501`

   When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 36.0.0
DLT-X25-RTE: MASP A - X.25 Route table 30% full
DLT-X25-RTE: MASP A - COMPLTD
```

6. Verify the changes using the `rtrv-x25-rte` command. This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR          SS7 ADDR         TYPE  LOC   PORT  LC  RT   LC2NM
11101             44401            pvc   1205  a     01  xpc  no
11102             55501            pvc   1206  a     02  pc   no
22201             44401            pvc   1205  a     02  pc   no
22202             55501            pvc   1206  a     01  xpc  yes
X.25 ROUTE TABLE IS  30 % FULL
```

7. Because there can only be one X.25 signaling link assigned to a LIM, that card must be inhibited. Enter the `rmv-card` command and specify the location of the card to be inhibited. The card location is shown in the output of `rept-stat-slk` command executed in step 4. For this example, enter this command.

   `rmv-card:loc=1207`

When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:41:12 GMT  EAGLE5 36.0.0
Card has been inhibited.
```

8. Remove the X.25 signaling link from the database using the `dlt-slk` command. If this X.25 signaling link is the last link in a linkset, the `force=yes` parameter must be specified. For this example, enter this command.

   `dlt-slk:loc=1207:link=a:force=yes`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:41:17 GMT  EAGLE5 36.0.0
DLT-SLK: MASP A - COMPLTD
```

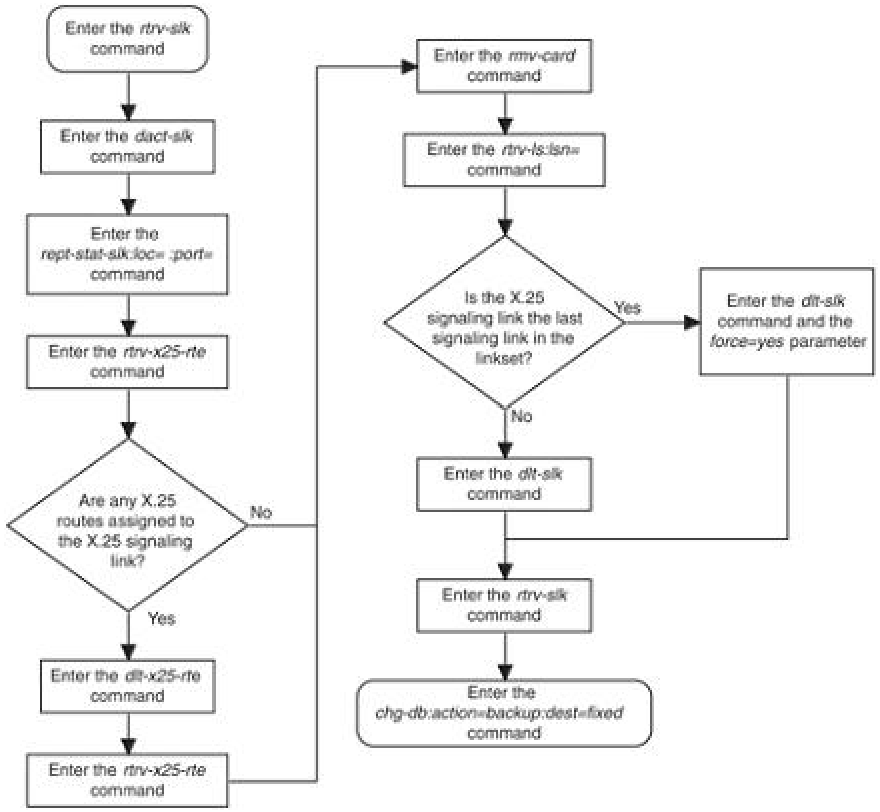
9. Verify the changes using the `rtrv-slk` command. This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
                                   L2T          L1                PCR  PCR
LOC  LINK LSN          SLC TYPE     SET  BPS    MODE TSET  ECM    N1   N2
1201 A    lsn1201a      0  LIMDS0   1    56000  ---  ---   BASIC  ---  -----
1201 B    lsn1201b      0  LIMDS0   1    56000  ---  ---   PCR    76   3800
1202 A    lsn1202a      0  LIMV35   -    64000  DTE  ---   BASIC  ---  -----
1202 B    lsn1202b      1  LIMV35   3    64000  DCE  ON    BASIC  ---  -----
1203 A    lsn1203a      0  LIMV35   1    56000  DCE  ON    BASIC  76   3800
1203 B    lsn1203b      0  LIMV35   1    56000  DCE  OFF   PCR    120  5034
1204 A    lsn1204a      1  LIMV35   3    64000  DCE  ON    PCR    76   3800
1204 B    lsn1204b      1  LIMV35   3    64000  DCE  ON    PCR    76   3800
1205 A    ls03          0  LIMV35   -    56000  DTE  --    BASIC  ---  -----
1206 A    ls03          1  LIMV35   -    56000  DTE  --    BASIC  ---  -----
1301 A    lsn1301a      0  LIMDS0   -    56000  ---  --    BASIC  ---  -----

                                   LP             ATM
LOC  LINK LSN          SLC TYPE     SET  BPS      TSEL      VCI    VPI   LL
1302 A    atmansi0      0  LIMATM   3   1544000   INTERNAL  35     15    0
1305 A    atmansi1      0  LIMATM   4   1544000   INTERNAL  100    20    2
1318 A    atmansi0      1  LIMATM   9   1544000   LINE      150    25    4

SLK table is (15 of 1200) 1% full.
```

10. Backup the new changes using the `chg-db:action=backup:dest=fixed` command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 16: Removing an X.25 Signaling Link



Adding an X.25 Route

This procedure is used to add an X.25 route to the database using the `ent-x25-rte` command.

The `ent-x25-rte` command uses these parameters.

`:xaddr` – The X.25 address assigned to the X.25 destination entity on the X.25 side of the circuit.

`:saddr` – The dummy X.25 address assigned to the SS7 destination entity on the SS7 side of the circuit.

`:type` – The type of X.25 connection that the link is expected to maintain.

`:loc` – The card location of the LIM containing the X.25 signaling link that will maintain the connection. For an automatic virtual circuit, this link is the link on which the EAGLE 5 ISS initially attempts the connection. However, if this attempt fails, the connection may be established by the X.25 destination entity on any other link in this link's linkset.

`:port` – The signaling link on the card specified in the `loc` parameter. For an X.25 signaling link, this parameter value is A.

`:lc` – The number of the logical channel on the X.25 signaling link to which the PVC connection is assigned. This parameter is mandatory if the `type=pvc` parameter is specified. If the `type=svca` or `type=svcr` parameters are specified, the logical channel number is arbitrary and cannot be specified.

`:rt` – The type of routing to perform for messages originating in the SS7 domain and destined for the X.25 domain. Two types of routing are available: (1) Route on X.25 destination point code (XPC) and (2) Route using X.25 origination and destination point code combinations (PC).

`:lc2nm` – Invokes network management for failures and recoveries of logical channels. When the logical channel being used to carry data fails, network management reroutes traffic to an alternate route. The logical channel to network management mapping (LC2NM) feature handles this process.

The examples in this procedure are based on the example network shown in *Figure 6: Typical X.25/SS7 Gateway Configuration* on page 24 and *Table 8: X.25/SS7 Gateway Route Configuration* on page 124 and are used to add X.25 signaling links to cards 1205, 1206, and 1207.

Table 8: X.25/SS7 Gateway Route Configuration

Conn #	X.25 Address	SS7 Address	X.25 Point Code/ SSN	SS7 Point Code/ SSN	Connection Type	Location	Port	Logical Channel
1	11101	44401	1-1-1/5	4-4-4/5	PVC	1205	A	1
2	11102	55501	1-1-1/5	5-5-5/5	PVC	1206	A	2
3	22201	44401	2-2-2/5	4-4-4/5	PVC	1205	A	2
4	22202	55501	2-2-2/10	5-5-5/10	PVC	1206	A	1
5	33301	44401	3-3-3/6	4-4-4/6	Auto-SVC	1207	A	--
6	33302	55501	3-3-3/7	5-5-5/7	Auto-SVC	1207	A	--

These items must be provisioned in the database before an X.25 route can be added:

- A LIM assigned to the `ss7gx25` application – see *Adding an X.25 LIM* on page 25 .
- An destination point code (DPC) assigned to the X.25 domain and a DPC assigned to the SS7 domain – see the "Adding a Destination Point Code" procedure in the Database *Administration Manual* – SS7 .

  Note:

  ITU international or ITU national point codes cannot be assigned to the X.25 domain.
- An X.25 destination – see *Adding an X.25 Gateway Destination* on page 34
- A linkset whose adjacent point code (APC) is in the X.25 domain – see *Adding an X.25 Linkset* on page 47 procedure
- A signaling link assigned to a linkset containing an X.25 APC – see *Adding an X.25 Signaling Link* on page 108
- A route assigned to the linkset containing the X.25 APC – see the "Adding a Route Containing an X.25 DPC" procedure in the Database *Administration Manual* – SS7 .

The X.25 gateway route to be added cannot already be in the database. The combination of the two X.25 addresses must be unique in the X.25 route table. The combination of point code/SSNs assigned to the two X.25 addresses must be unique in the X.25 route table. This can be verified with the `rtrv-x25-rte` command.

The point codes assigned to each of the X.25 destinations must also be assigned to a route. This can be verified with the `rtrv-rte` command.

The point codes assigned to each of the X.25 destinations must be a full point code. Cluster point codes and network routing point codes cannot be specified for X.25 destinations. For more information on cluster point codes, go to the "Cluster Routing and Management Diversity" section in the Database *Administration Manual* – SS7 . For more information on network routing point codes, go to the "Network Routing" section in the Database *Administration Manual* – SS7 .

Two new parameters have been added to the `ent-x25-rte` command, `rt` and `lc2nm`. The `rt` parameter defines the type of routing to perform on messages originating in the SS7 domain and destined for the X.25 domain. This parameter has two values, `xpc` and `pc`. The `rt=xpc` parameter routes the message based on the X.25 destination point code. The `rt=pc` parameter routes the message based on the X.25 origination and destination point code combination.

If the `rt=xpc` parameter is specified, the point code associated with the X.25 address used for this X.25 route cannot be in the X.25 route table. This can be verified with the `rtrv-x25-rte` command.

The X.25 network is connection oriented. All traffic from one node to another node uses one and only one logical channel. Once a logical channel is mapped to a pair of nodes, it cannot be used by any other pair of nodes.

When a logical channel on a particular X.25 route can no longer carry traffic between two nodes, the traffic between those two nodes can be rerouted to alternate routes with the logical channel to network management function and is specified by the `lc2nm` parameter. This function maps logical channel failures and recoveries to SS7 network management messages so that the alternate routing for the X.25 routes can be managed.

If the `lc2nm=yes` parameter is specified, then network management for logical channel failures and recoveries is performed. If the `lc2nm=no` parameter is specified, there is no network management for logical channel failures and recoveries.

If the X.25 route has the `lc2nm` parameter set to `yes`, and this X.25 route contains an X.25 destination whose X.25 destination point code is a member of a cluster, make sure that the `bei` parameter of the cluster containing the X.25 destination point code is set to `no`. Enter the `rtrv-x25-dstn` command to verify the destination point code that is assigned to the X.25 destination. Enter the `rtrv-dstn` command to verify that the X.25 destination point code is a member of a cluster and to verify the value of the `bei` parameter of the cluster. If the X.25 destination point code is not a member of a cluster, and you wish to use the `lc2nm=yes` parameter with the X.25 route, enter the `rtrv-dstn` command to verify that the value of the `bei` parameter for that X.25 destination point code is set to `no`. To change the existing value the `bei` parameter, go to the "Changing a Destination Point Code procedure in the Database *Administration Manual* – SS7 . For more information on the interaction of X.25 destination point codes and clusters, go to the "Adding a Destination Point Code" procedure in the Database *Administration Manual* – SS7 .

To specify the `lc2nm=yes` parameter, the `rt=xpc` parameter must be specified, and the point code that the message is to be routed on (`xpc`) cannot be an adjacent point code. This can be verified by first entering the `rtrv-x25-dstn` command to find the point code and X.25 address association, then the `rtrv-ls` command to display the linksets and the adjacent point codes they are assigned to. Any X.25 address that is associated with an adjacent point code, comparing the outputs of the `rtrv-x25-dstn` and `rtrv-ls` commands, cannot be used if the `ent-x25-rte` command specifies the `lc2nm=yes` parameter.

If the `lc2nm=yes` parameter is specified for the X.25 route in the linkset and the linkset has gateway screening associated with it, gateway screening must be configured to allow TFA and TFP network management messages on this linkset to pass through the EAGLE 5 ISS. Go to the Database *Administration Manual* - Gateway Screening for details on how to create a screen that allows network management messages.

To allow TFA messages to pass through the EAGLE 5 ISS on this linkset, the allowed SIO screen must contain these parameters: si=0, h0=4, h1=5. To allow TFP messages to pass through the EAGLE 5 ISS on this linkset, the allowed SIO screen must contain these parameters: si=0, h0=4, h1=1. This can be verified with the `rtrv-scr-sio` command. If the allowed SIO screen that allows TFA and TFP messages is not in the database, go to the “Adding an Allowed SIO Screen” procedure in the Database *Administration Manual* - Gateway Screening to add the allowed SIO screen with these parameters. If the required allowed SIO screen does not contain the parameters to allow the TFA and TFP messages, go to the “Changing an Allowed SIO Screen” procedure in the Database *Administration Manual* - Gateway Screening to change the parameters of this allowed SIO screen.

1. Display the current X.25 route configuration using the `rtrv-x25-rte` command.

   This is an example of the possible output.

   ```
   rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
   X25 ADDR          SS7 ADDR         TYPE  LOC   PORT  LC  RT   LC2NM
   2510010011234567  342342341234567  pvc   1201  a     02  xpc  yes
   251001002         234234231        pvc   1201  a     04  pc   no
   51200105          34223422845      svca  1202  a     --  pc   no
   2510103           232330           pvc   1201  a     06  xpc  yes
   2510103           232330           svcr  ----  -     --  pc   no
   2516019002        24247235         svca  3205  a     --  pc   no
   345454            4545434          svca  1201  a     --  pc   no
   X.25 ROUTE TABLE IS  30 % FULL
   ```

2. Add the X.25 route using the `ent-x25-rte` command.

   For this example, enter these commands.

   `ent-x25-rte:xaddr=11101:saddr=44401:type=pvc:loc=1205:port=a:lc=1`

   `ent-x25-rte:xaddr=11102:saddr=55501:type=pvc:loc=1206:port=a:lc=2`

   `ent-x25-rte:xaddr=22201:saddr=44401:type=pvc:loc=1205:port=a:lc=2`

   `ent-x25-rte:xaddr=22201:saddr=55501:type=pvc:loc=1206:port=a:lc=1`

   `ent-x25-rte:xaddr=33301:saddr=44401:type=svca:loc=1207:port=a`

   `ent-x25-rte:xaddr=33302:saddr=55502:type=svca:loc=1207:port=a`

   When each of these commands have successfully completed, this message should appear.

   ```
   rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 36.0.0
   ENT-X25-RTE: MASP A - X.25 Route table 32% full
   ENT-X25-RTE: MASP A - COMPLTD
   ```

3. Verify the changes using the `rtrv-x25-rte` command.

This is an example of the possible output.

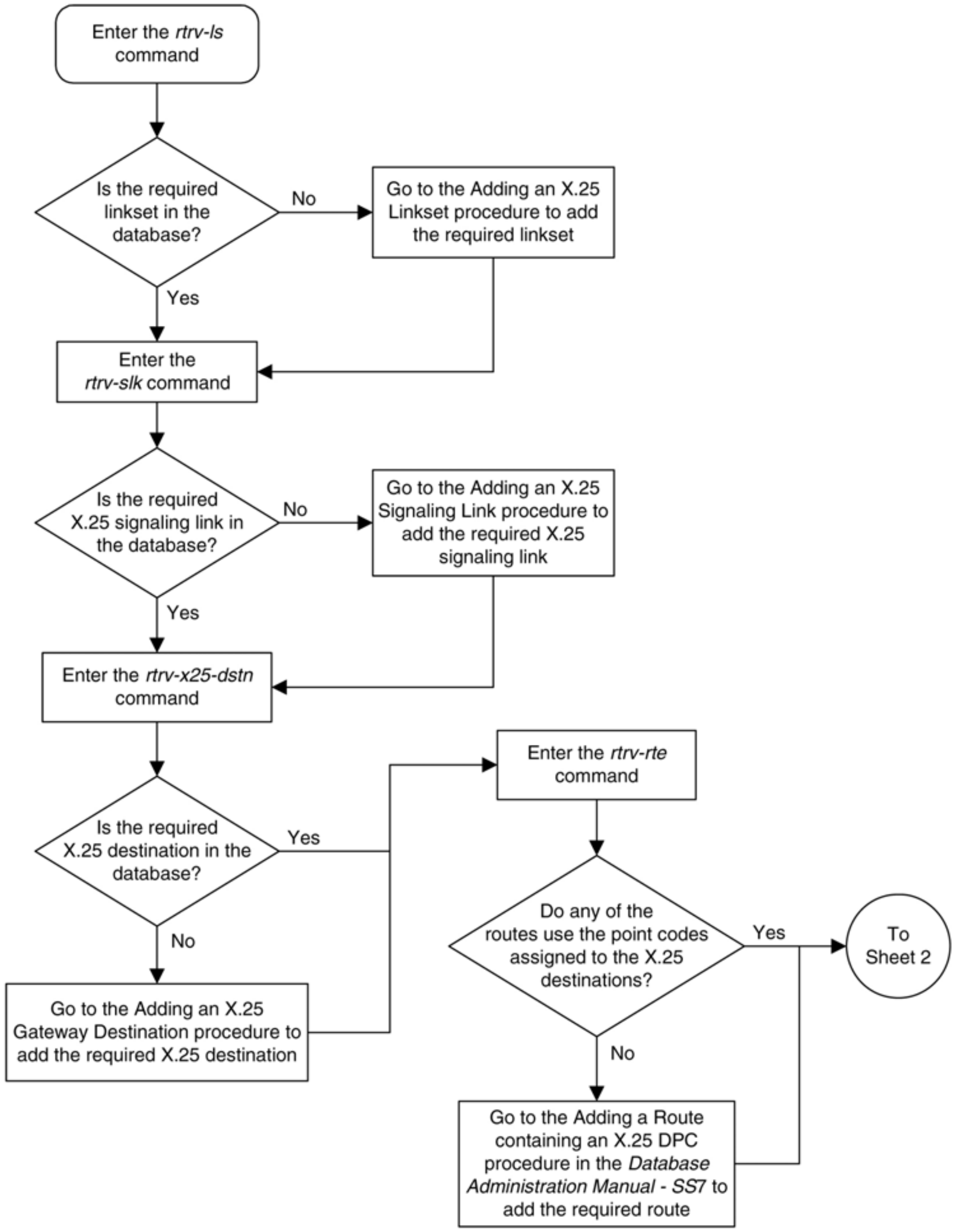
```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR          SS7 ADDR         TYPE  LOC   PORT  LC  RT   LC2NM
11101             44401            pvc   1205  a     01  pc   no
11102             55501            pvc   1206  a     02  pc   no
22201             44401            pvc   1205  a     02  pc   no
22202             55501            pvc   1206  a     01  pc   no
2510010011234567  342342341234567  pvc   1201  a     02  xpc  yes
251001002         234234231        pvc   1201  a     04  pc   no
2510103           232330           pvc   1201  a     06  xpc  yes
2510103           232330           svcr  ----  -     --  pc   no
2516019002        24247235         svca  3205  a     --  pc   no
33301             44401            svca  1207  a     --  pc   no
33302             55501            svca  1207  a     --  pc   no
345454            4545434          svca  1201  a     --  pc   no
51200105          34223422845      svca  1202  a     --  pc   no
6389012           57982            pvc   1301  a     01  xpc  yes
X.25 ROUTE TABLE IS  30 % FULL
```

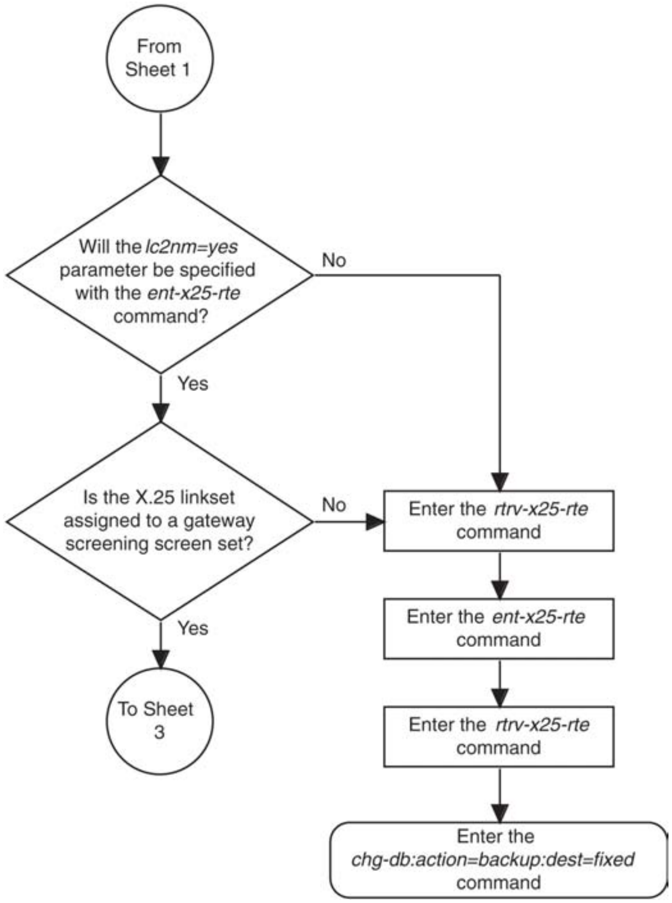
4. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

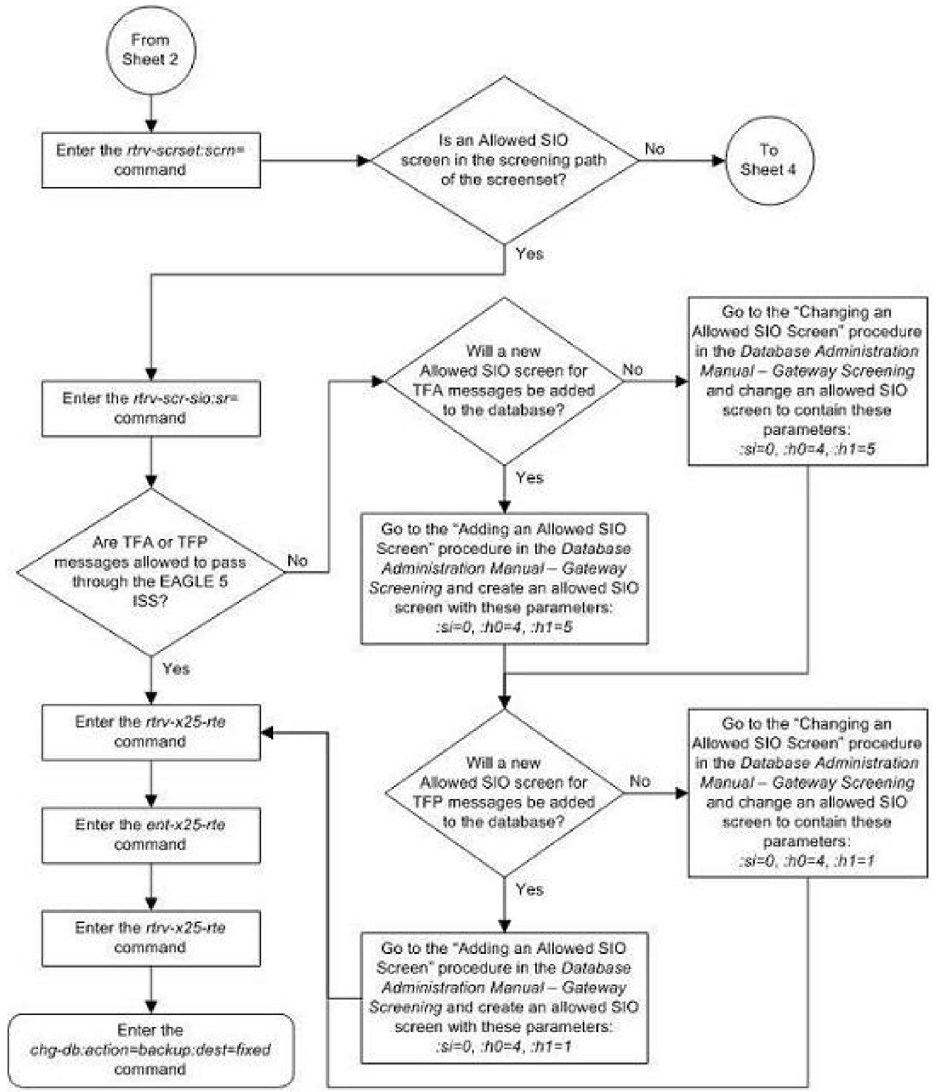
   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

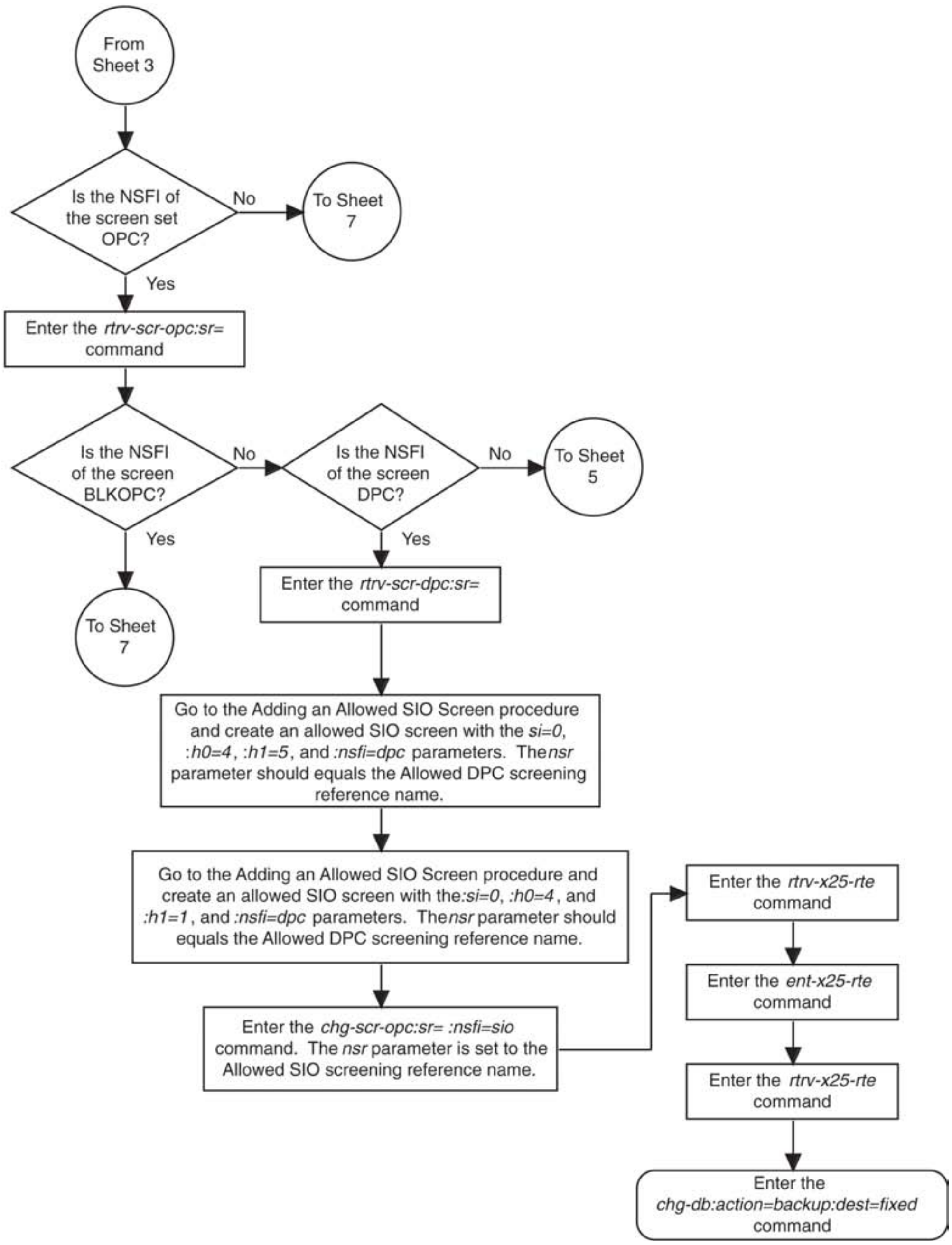
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 17: Adding an X.25 Route

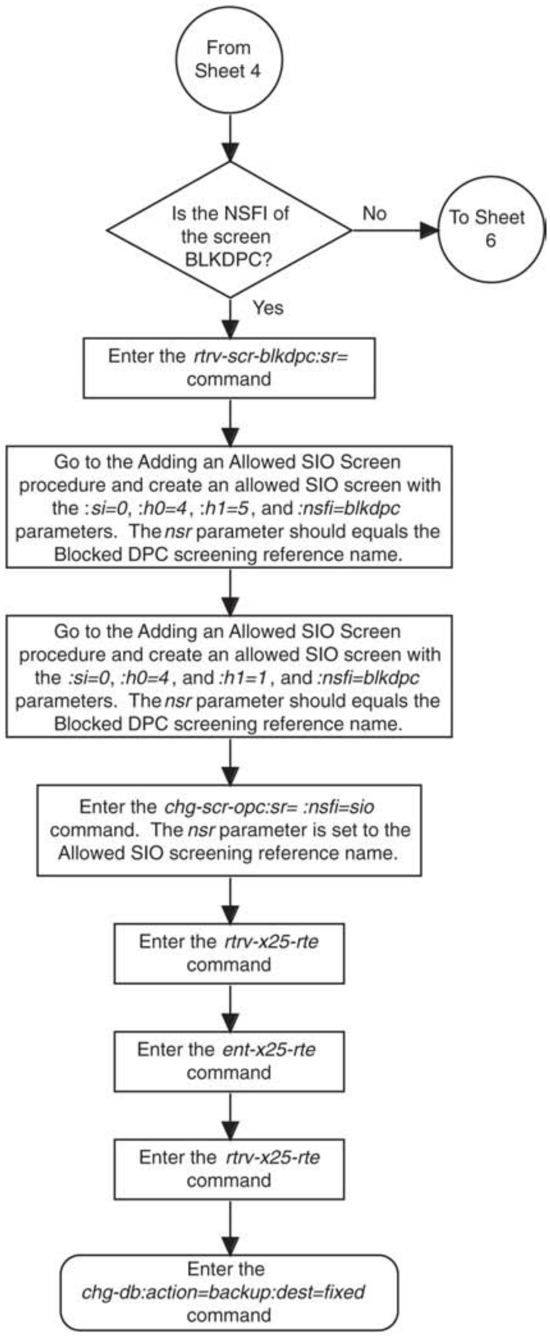

Enter the rtrv-ls command
Is the required linkset in the database?
No
Go to the Adding an X.25 Linkset procedure to add the required linkset
Yes
Enter the rtrv-slk command
Is the required X.25 signaling link in the database?
No
Go to the Adding an X.25 Signaling Link procedure to add the required X.25 signaling link
Yes
Enter the rtrv-x25-dstn command
Is the required X.25 destination in the database?
Yes
No
Go to the Adding an X.25 Gateway Destination procedure to add the required X.25 destination
Enter the rtrv-rte command
Do any of the routes use the point codes assigned to the X.25 destinations?
Yes
To Sheet 2
No
Go to the Adding a Route containing an X.25 DPC procedure in the Database Administration Manual - SS7 to add the required route

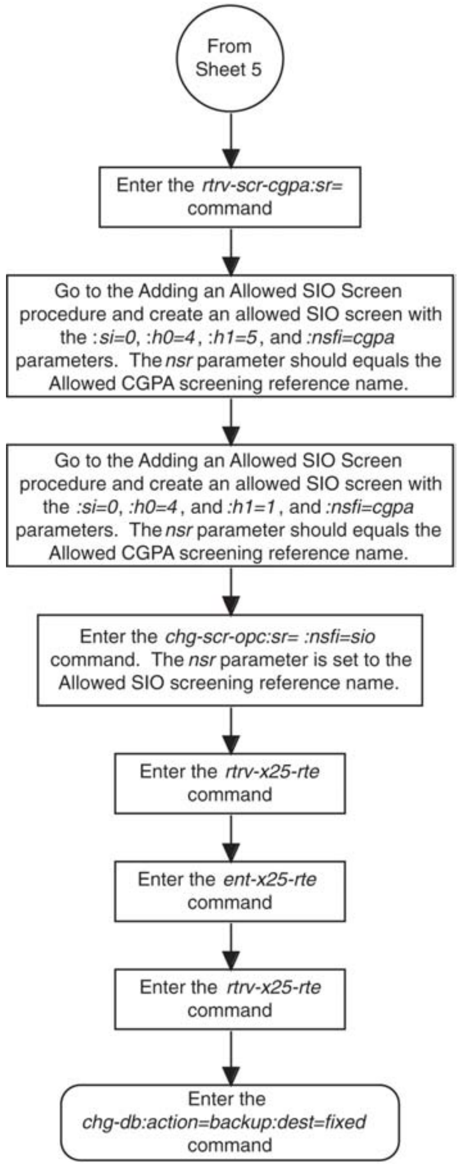

From Sheet 1
Will the lc2nm=yes parameter be specified with the ent-x25-rte command?
No
Yes
Is the X.25 linkset assigned to a gateway screening screen set?
No
Yes
To Sheet 3
Enter the rtrv-x25-rte command
Enter the ent-x25-rte command
Enter the rtrv-x25-rte command
Enter the chg-db:action=backup:dest=fixed command

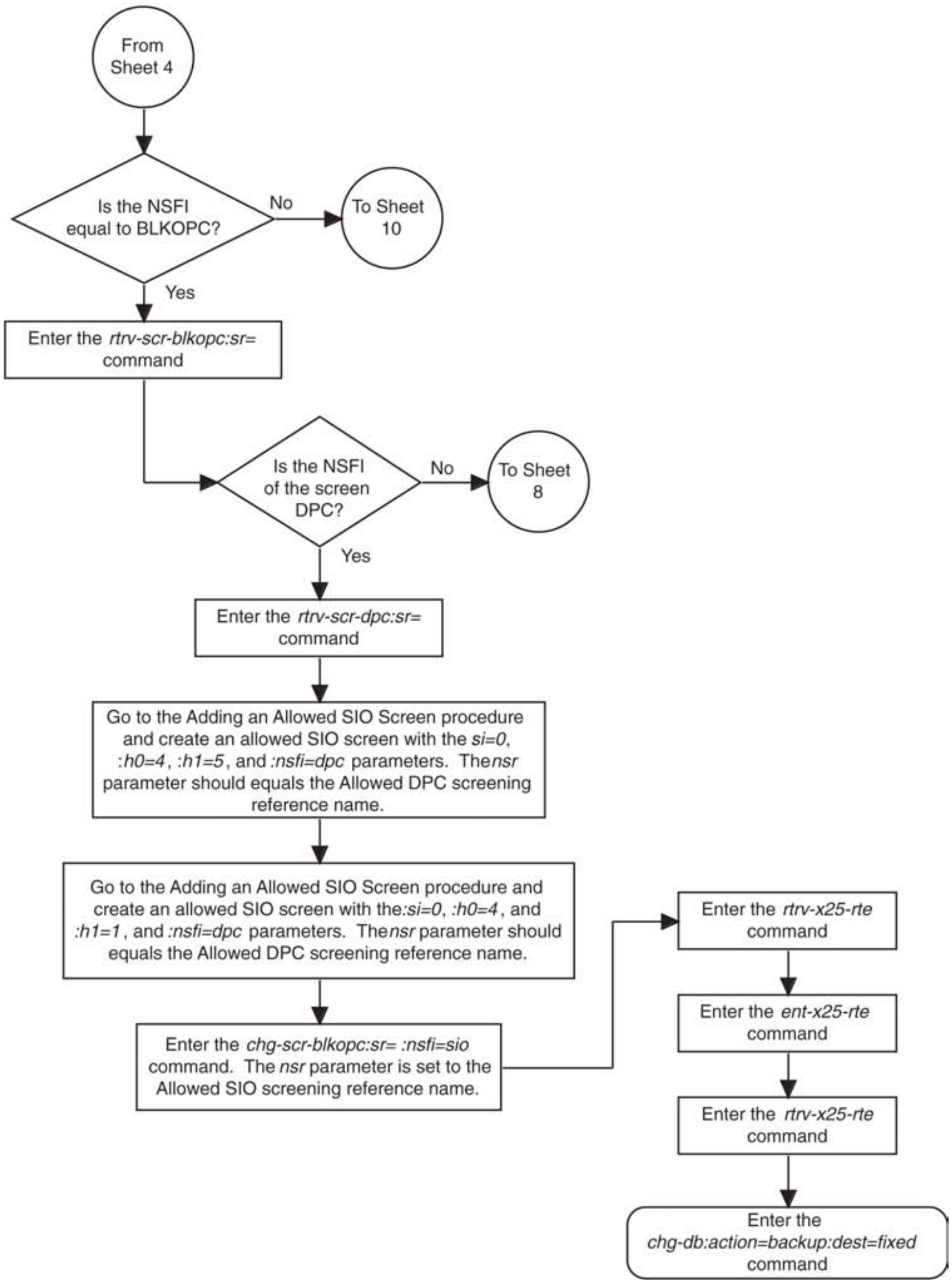

From Sheet 2
Enter the rtrv-scrset:scrn= command
Is an Allowed SIO screen in the screening path of the screenset?
No
To Sheet 4
Yes
Enter the rtrv-scr-sio:sr= command
Will a new Allowed SIO screen for TFA messages be added to the database?
No
Go to the "Changing an Allowed SIO Screen" procedure in the Database Administration Manual – Gateway Screening and change an allowed SIO screen to contain these parameters: :si=0, :h0=4, :h1=5
Yes
Go to the "Adding an Allowed SIO Screen" procedure in the Database Administration Manual – Gateway Screening and create an allowed SIO screen with these parameters: :si=0, :h0=4, :h1=5
Are TFA or TFP messages allowed to pass through the EAGLE 5 ISS?
No
Yes
Enter the rtrv-x25-rte command
Will a new Allowed SIO screen for TFP messages be added to the database?
No
Go to the "Changing an Allowed SIO Screen" procedure in the Database Administration Manual – Gateway Screening and change an allowed SIO screen to contain these parameters: :si=0, :h0=4, :h1=1
Enter the ent-x25-rte command
Yes
Enter the rtrv-x25-rte command
Go to the "Adding an Allowed SIO Screen" procedure in the Database Administration Manual – Gateway Screening and create an allowed SIO screen with these parameters: :si=0, :h0=4, :h1=1
Enter the chg-db:action=backup:dest=fixed command

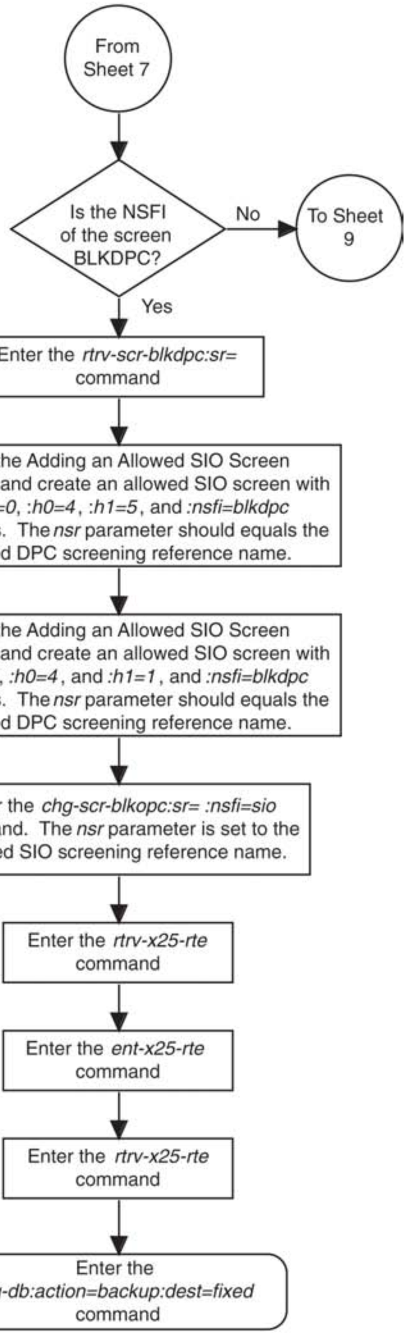


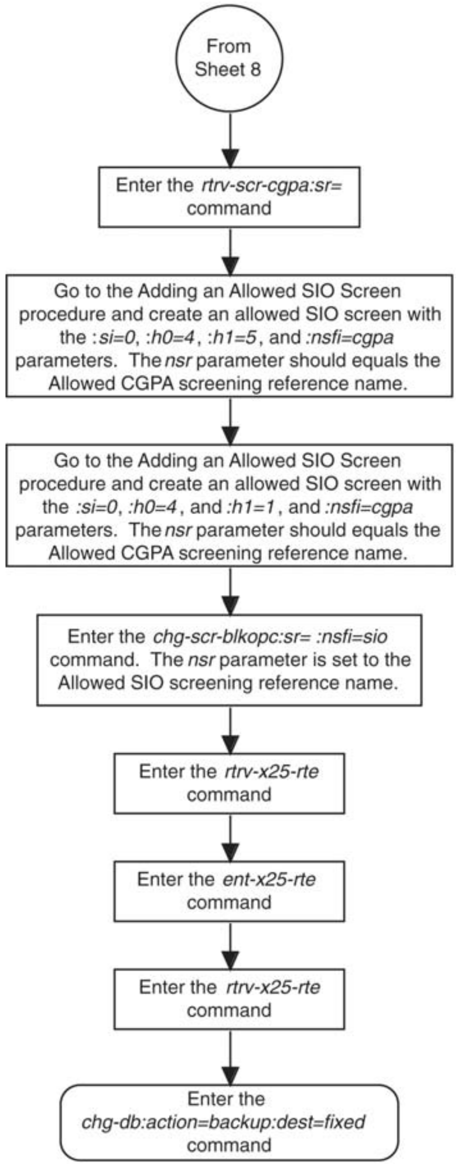
From Sheet 3
Is the NSFI of the screen set OPC?
No
To Sheet 7
Yes
Enter the rtrv-scr-opc:sr= command
Is the NSFI of the screen BLKOPC?
No
Is the NSFI of the screen DPC?
No
To Sheet 5
Yes
To Sheet 7
Yes
Enter the rtrv-scr-dpc:sr= command
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the si=0, :h0=4, :h1=5, and :nsfi=dpc parameters. The nsr parameter should equals the Allowed DPC screening reference name.
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, and :h1=1, and :nsfi=dpc parameters. The nsr parameter should equals the Allowed DPC screening reference name.
Enter the chg-scr-opc:sr= :nsfi=sio command. The nsr parameter is set to the Allowed SIO screening reference name.
Enter the rtrv-x25-rte command
Enter the ent-x25-rte command
Enter the rtrv-x25-rte command
Enter the chg-db:action=backup:dest=fixed command

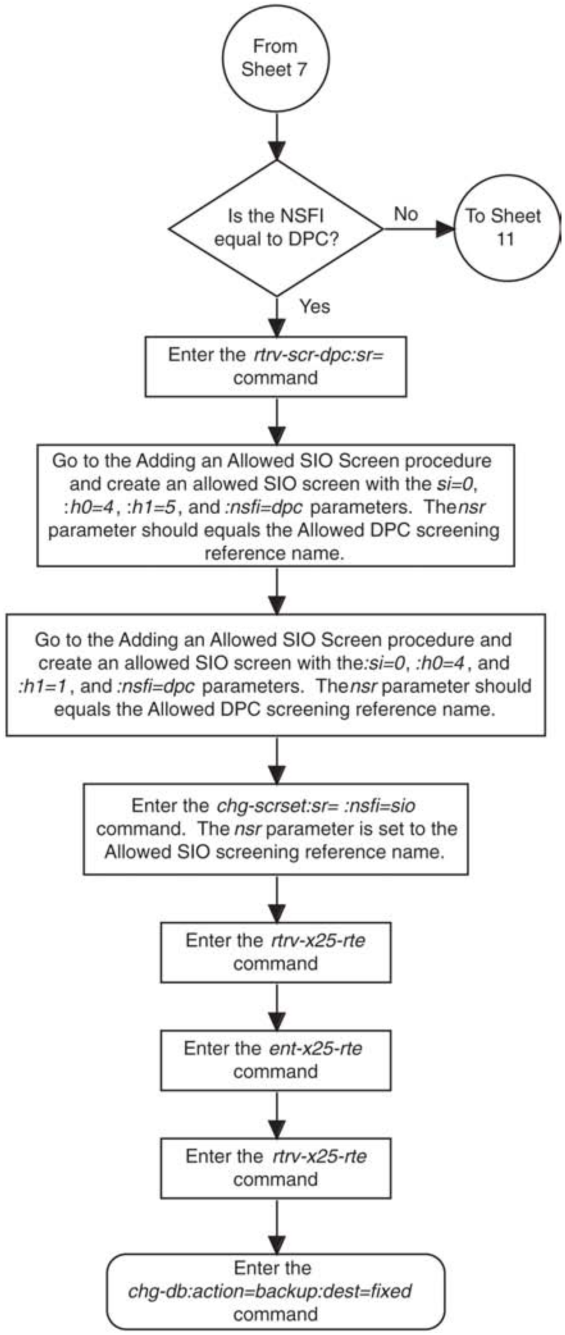

From Sheet 4
Is the NSFI of the screen BLKDPC?
No
To Sheet 6
Yes
Enter the rtrv-scr-blkdpc:sr= command
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, :h1=5, and :nsfi=blkdpc parameters. The nsr parameter should equals the Blocked DPC screening reference name.
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, and :h1=1, and :nsfi=blkdpc parameters. The nsr parameter should equals the Blocked DPC screening reference name.
Enter the chg-scr-opc:sr= :nsfi=sio command. The nsr parameter is set to the Allowed SIO screening reference name.
Enter the rtrv-x25-rte command
Enter the ent-x25-rte command
Enter the rtrv-x25-rte command
Enter the chg-db:action=backup:dest=fixed command

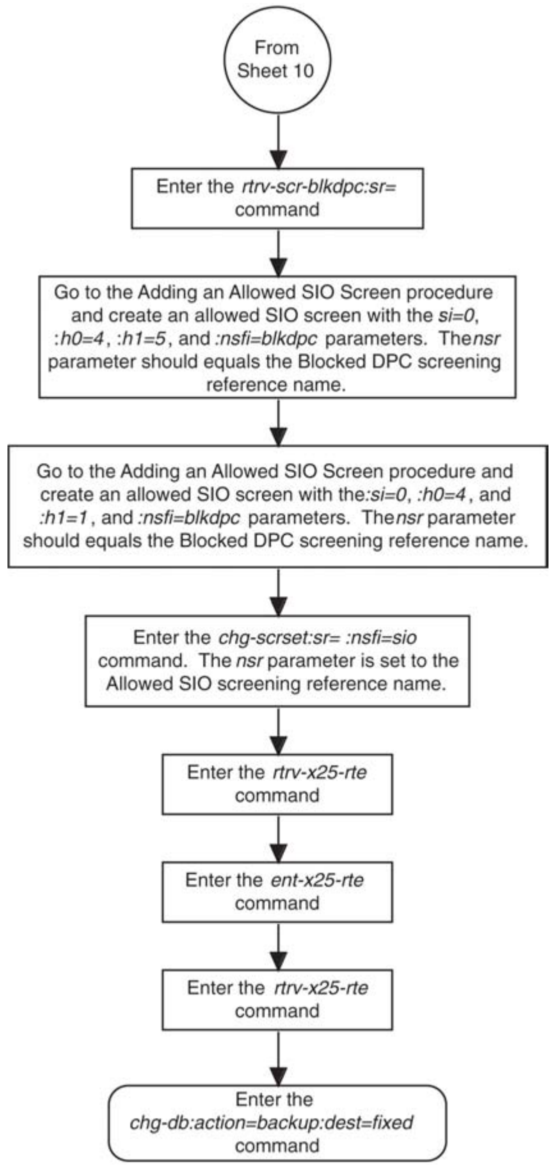

From Sheet 5
Enter the rtrv-scr-cgpa:sr= command
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, :h1=5, and :nsfi=cgpa parameters. The nsr parameter should equals the Allowed CGPA screening reference name.
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, and :h1=1, and :nsfi=cgpa parameters. The nsr parameter should equals the Allowed CGPA screening reference name.
Enter the chg-scr-opc:sr= :nsfi=sio command. The nsr parameter is set to the Allowed SIO screening reference name.
Enter the rtrv-x25-rte command
Enter the ent-x25-rte command
Enter the rtrv-x25-rte command
Enter the chg-db:action=backup:dest=fixed command


From Sheet 4
Is the NSFI equal to BLKOPC?
No
To Sheet 10
Yes
Enter the rtrv-scr-blkopc:sr= command
Is the NSFI of the screen DPC?
No
To Sheet 8
Yes
Enter the rtrv-scr-dpc:sr= command
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the si=0, :h0=4, :h1=5, and :nsfi=dpc parameters. The nsr parameter should equals the Allowed DPC screening reference name.
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, and :h1=1, and :nsfi=dpc parameters. The nsr parameter should equals the Allowed DPC screening reference name.
Enter the chg-scr-blkopc:sr= :nsfi=sio command. The nsr parameter is set to the Allowed SIO screening reference name.
Enter the rtrv-x25-rte command
Enter the ent-x25-rte command
Enter the rtrv-x25-rte command
Enter the chg-db:action=backup:dest=fixed command


From Sheet 7
Is the NSFI of the screen BLKDPC?
No
To Sheet 9
Yes
Enter the rtrv-scr-blkdpc:sr= command
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, :h1=5, and :nsfi=blkdpc parameters. The nsr parameter should equals the Blocked DPC screening reference name.
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, and :h1=1, and :nsfi=blkdpc parameters. The nsr parameter should equals the Blocked DPC screening reference name.
Enter the chg-scr-blkopc:sr= :nsfi=sio command. The nsr parameter is set to the Allowed SIO screening reference name.
Enter the rtrv-x25-rte command
Enter the ent-x25-rte command
Enter the rtrv-x25-rte command
Enter the chg-db:action=backup:dest=fixed command


From Sheet 8
Enter the rtrv-scr-cgpa:sr= command
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, :h1=5, and :nsfi=cgpa parameters. The nsr parameter should equals the Allowed CGPA screening reference name.
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, and :h1=1, and :nsfi=cgpa parameters. The nsr parameter should equals the Allowed CGPA screening reference name.
Enter the chg-scr-blkopc:sr= :nsfi=sio command. The nsr parameter is set to the Allowed SIO screening reference name.
Enter the rtrv-x25-rte command
Enter the ent-x25-rte command
Enter the rtrv-x25-rte command
Enter the chg-db:action=backup:dest=fixed command


From Sheet 7
Is the NSFI equal to DPC?
No
To Sheet 11
Yes
Enter the rtrv-scr-dpc:sr= command
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the si=0, :h0=4, :h1=5, and :nsfi=dpc parameters. The nsr parameter should equals the Allowed DPC screening reference name.
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, and :h1=1, and :nsfi=dpc parameters. The nsr parameter should equals the Allowed DPC screening reference name.
Enter the chg-scrset:sr= :nsfi=sio command. The nsr parameter is set to the Allowed SIO screening reference name.
Enter the rtrv-x25-rte command
Enter the ent-x25-rte command
Enter the rtrv-x25-rte command
Enter the chg-db:action=backup:dest=fixed command



Removing an X.25 Route

This procedure is used to remove an X.25 route from the database using the `dlt-x25-rte` command.

The `dlt-x25-rte` command uses these parameters.

`:xaddr` – The X.25 address assigned to the X.25 destination entity on the X.25 side of the circuit.

`:saddr` – The dummy X.25 address assigned to the SS7 destination entity on the SS7 side of the circuit.

The examples in this procedure are used to remove the X.25 route with the X.25 address (`xaddr`) of 22202 and an SS7 address (`saddr`) of 55501.

The X.25 route to be removed must be in the database. This can be verified in step 1.

1. Display the current X.25 route configuration using the `rtrv-x25-rte` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR          SS7 ADDR         TYPE  LOC   PORT  LC  RT   LC2NM
11101             44401            pvc   1205  a     01  pc   no
11102             55501            pvc   1206  a     02  pc   no
22201             44401            pvc   1205  a     02  pc   no
22202             55501            pvc   1206  a     01  pc   no
2510010011234567  342342341234567  pvc   1201  a     02  xpc  yes
251001002         234234231        pvc   1201  a     04  pc   no
2510103           232330           pvc   1201  a     06  xpc  yes
2510103           232330           svcr  ----  -     --  pc   no
2516019002        24247235         svca  3205  a     --  pc   no
33301             44401            svca  1207  a     --  pc   no
33302             55501            svca  1207  a     --  pc   no
345454            4545434          svca  1201  a     --  pc   no
51200105          34223422845      svca  1202  a     --  pc   no
6389012           57982            pvc   1301  a     01  xpc  yes
X.25 ROUTE TABLE IS  30 % FULL
```

2. Remove the X.25 route using the `dlt-x25-rte` command.

   For this example, enter this command.

   `dlt-x25-rte:xaddr=22202:saddr=55501`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 36.0.0
DLT-X25-RTE: MASP A - X.25 Route table 30% full
DLT-X25-RTE: MASP A - COMPLTD
```

3. Verify the changes using the `rtrv-x25-rte` command.

   This is an example of the possible output.

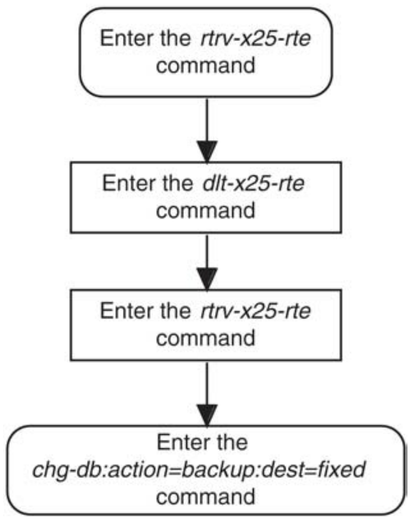
```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR          SS7 ADDR         TYPE  LOC   PORT  LC  RT   LC2NM
11101             44401            pvc   1205  a     01  pc   no
11102             55501            pvc   1206  a     02  pc   no
22201             44401            pvc   1205  a     02  pc   no
2510010011234567  342342341234567  pvc   1201  a     02  xpc  yes
251001002         234234231        pvc   1201  a     04  pc   no
2510103           232330           pvc   1201  a     06  xpc  yes
2510103           232330           svcr  ----  -     --  pc   no
2516019002        24247235         svca  3205  a     --  pc   no
33301             44401            svca  1207  a     --  pc   no
33302             55501            svca  1207  a     --  pc   no
345454            4545434          svca  1201  a     --  pc   no
51200105          34223422845      svca  1202  a     --  pc   no
6389012           57982            pvc   1301  a     01  xpc  yes
X.25 ROUTE TABLE IS  30 % FULL
```

4. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 18: Removing an X.25 Route



Changing an X.25 Route

This procedure is used to change the attributes of an X.25 route in the database using the `chg-x25-rte` command.

The `chg-x25-rte` command uses these parameters.

`:xaddr` – The X.25 address assigned to the X.25 destination entity on the X.25 side of the circuit.

`:saddr` – The alias X.25 address assigned to the SS7 destination entity on the SS7 side of the circuit.

`:type` – The type of X.25 connection that the link is expected to maintain.

`:loc` – The card location of the LIM containing the X.25 signaling link that maintains the connection.

`:port` – The signaling link on the card specified in the *loc* parameter. For an X.25 signaling link, this parameter value is A.

`:rt` – The type of routing to perform for messages originating in the SS7 domain and destined for the X.25 domain. Two types of routing are available: (1) route on X.25 destination point code (XPC) and (2) route using X.25 origination and destination point code combinations (PC).

`:lc2nm` – Invokes SS7 MTP network management for failures and recoveries of logical channels.

The examples in this procedure are used to change the attributes of the X.25 route with the X.25 address (`xaddr`) of 11102 and an SS7 address (`saddr`) of 55501. The new configuration of this

X.25 route has a connection type of `svca`, no logical channel assignment, and is assigned to the X.25 signaling link on card 1215.

The X.25 route to be changed must be in the database. This can be verified in step 1.

The card location assigned to the X.25 route must be an X.25 card (card type `ss7x25g`). This can be verified with the `rtrv-card` command.

The signaling link assigned to the X.25 route must be in the database and must be assigned to a linkset. The linkset must be assigned to a route associated with an X.25 destination and must contain an APC in the X.25 domain. This can be verified by entering these commands:

- `rtrv-slk` – to display the signaling links
- `rtrv-ls` – to display the linksets
- `rtrv-rte` – to display the routes
- `rtrv-x25-dstn` – to display the X.25 destinations
- `rtrv-dstn` – to display the destination point codes.

If the `lc2nm=yes` parameter is specified with the `chg-x25-rte` command, the SS7 point code assigned to the X.25 address used by the `xaddr` parameter must be unique in the X.25 routing table.

The `rt=xpc` parameter must be specified with the `chg-x25-rte` command if the `lc2nm=yes` is specified.

If the X.25 destination is an adjacent entity, the `lc2nm=no` parameter must be specified with the `chg-x25-rte` command.

If the X.25 route has the `lc2nm` parameter set to `yes`, and this X.25 route contains an X.25 destination whose X.25 destination point code is a member of a cluster, make sure that the `bei` parameter of the cluster containing the X.25 destination point code is set to `no`. Enter the `rtrv-x25-dstn` command to verify the destination point code that is assigned to the X.25 destination. Enter the `rtrv-dstn` command to verify that the X.25 destination point code is a member of a cluster and to verify the value of the `bei` parameter of the cluster. If the X.25 destination point code is not a member of a cluster, and you wish to use the `lc2nm=yes` parameter with the X.25 route, enter the `rtrv-dstn` command to verify that the value of the `bei` parameter for that X.25 destination point code is set to `no`. To change the existing value the `bei` parameter, go to the "Changing a Destination Point Code" procedure in the Database *Administration Manual* – SS7 . For more information on the interaction of X.25 destination point codes and clusters, go to the Adding a Destination Point Code procedure in the Database *Administration Manual* – SS7 .

If the `lc2nm=yes` parameter is specified for the X.25 route in the linkset and the linkset has gateway screening associated with it, gateway screening must be configured to allow TFA and TFP network management messages on this linkset to pass through the EAGLE 5 ISS. Refer to the *Database Administration Manual - Gateway Screening* for details on how to create a screen that allows network management messages.

To allow TFA messages to pass through the EAGLE 5 ISS on this linkset, the allowed SIO screen must contain these parameters: si=0, h0=4, h1=5. To allow TFP messages to pass through the EAGLE 5 ISS on this linkset, the allowed SIO screen must contain these parameters: si=0, h0=4, h1=1. This can be verified with the `rtrv-scr-sio` command. If the allowed SIO screen that allows TFA and TFP messages is not in the database, go to the “Adding an Allowed SIO Screen” procedure in the *Database Administration Manual - Gateway Screening* to add the allowed SIO screen with these parameters. If the required allowed SIO screen does not contain the parameters to allow the TFA and TFP messages, go to the "Changing an Allowed SIO Screen" procedure in the *Database Administration Manual - Gateway Screening* to change the parameters of this allowed SIO screen.

1. Display the current X.25 route configuration using the `rtrv-x25-rte` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR           SS7 ADDR          TYPE  LOC   PORT  LC  RT   LC2NM
11101              44401             pvc   1205  a     01  pc   no
11102              55501             pvc   1206  a     02  pc   no
22201              44401             pvc   1205  a     02  pc   no
22202              55501             pvc   1206  a     01  pc   no
2510010011234567   342342341234567   pvc   1201  a     02  xpc  yes
251001002          234234231         pvc   1201  a     04  pc   no
2510103            232330            pvc   1201  a     06  xpc  yes
2510103            232330            svcr  ----  -     --  pc   no
2516019002         24247235          svca  3205  a     --  pc   no
33301              44401             svca  1207  a     --  pc   no
33302              55501             svca  1207  a     --  pc   no
345454             4545434           svca  1201  a     --  pc   no
51200105           34223422845       svca  1202  a     --  pc   no
6389012            57982             pvc   1301  a     01  xpc  yes
X.25 ROUTE TABLE IS  30 % FULL
```

2. Change the attributes of the X.25 route using the `chg-x25-rte` command.

   For this example, enter this command.

   `chg-x25-rte:xaddr=11102:saddr=55501:type=svca:loc=1215:port=a`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 36.0.0
CHG-X25-RTE: MASP A - X.25 Route table 30% full
CHG-X25-RTE: MASP A - COMPLTD
```

3. Verify the changes using the `rtrv-x25-rte` command.

   This is an example of the possible output.

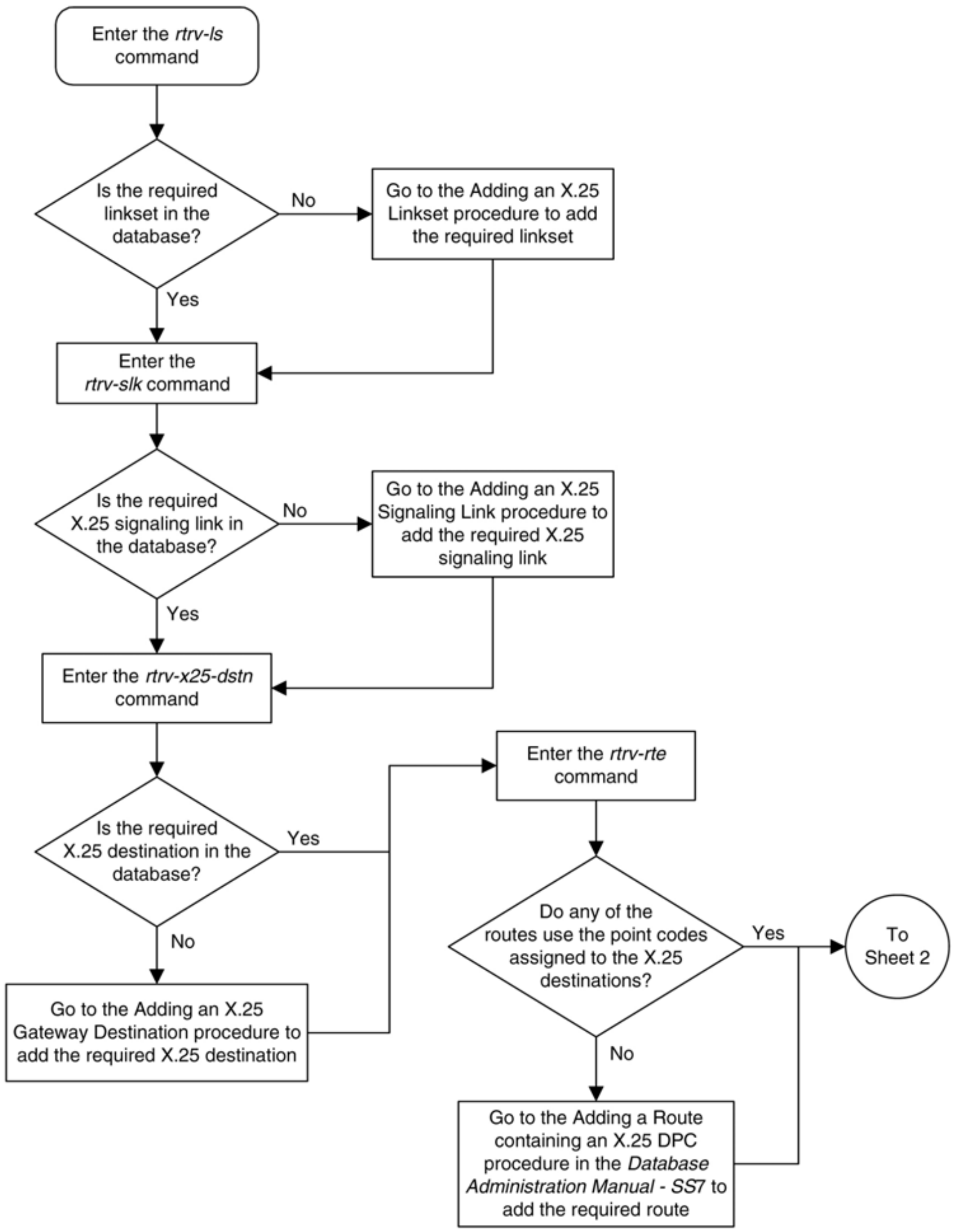
```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
X25 ADDR           SS7 ADDR          TYPE  LOC   PORT  LC  RT   LC2NM
11101              44401             pvc   1205  a     01  pc   no
11102              55501             svca  1215  a     --  pc   no
22201              44401             pvc   1205  a     02  pc   no
22202              55501             pvc   1206  a     01  pc   no
2510010011234567   342342341234567   pvc   1201  a     02  xpc  yes
251001002          234234231         pvc   1201  a     04  pc   no
2510103            232330            pvc   1201  a     06  xpc  yes
2510103            232330            svcr  ----  -     --  pc   no
2516019002         24247235          svca  3205  a     --  pc   no
33301              44401             svca  1207  a     --  pc   no
33302              55501             svca  1207  a     --  pc   no
345454             4545434           svca  1201  a     --  pc   no
51200105           34223422845       svca  1202  a     --  pc   no
6389012            57982             pvc   1301  a     01  xpc  yes
X.25 ROUTE TABLE IS  30 % FULL
```

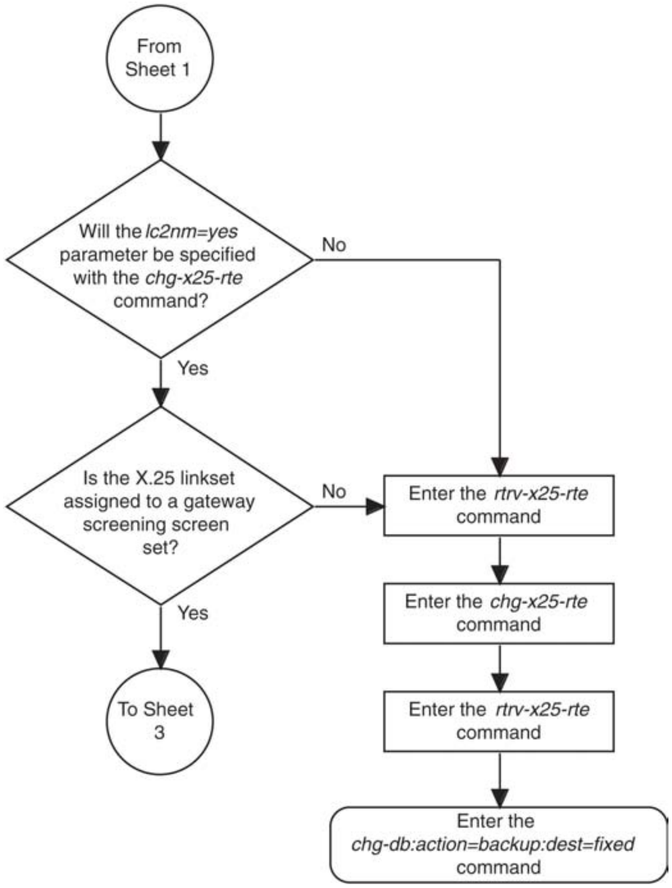
4. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

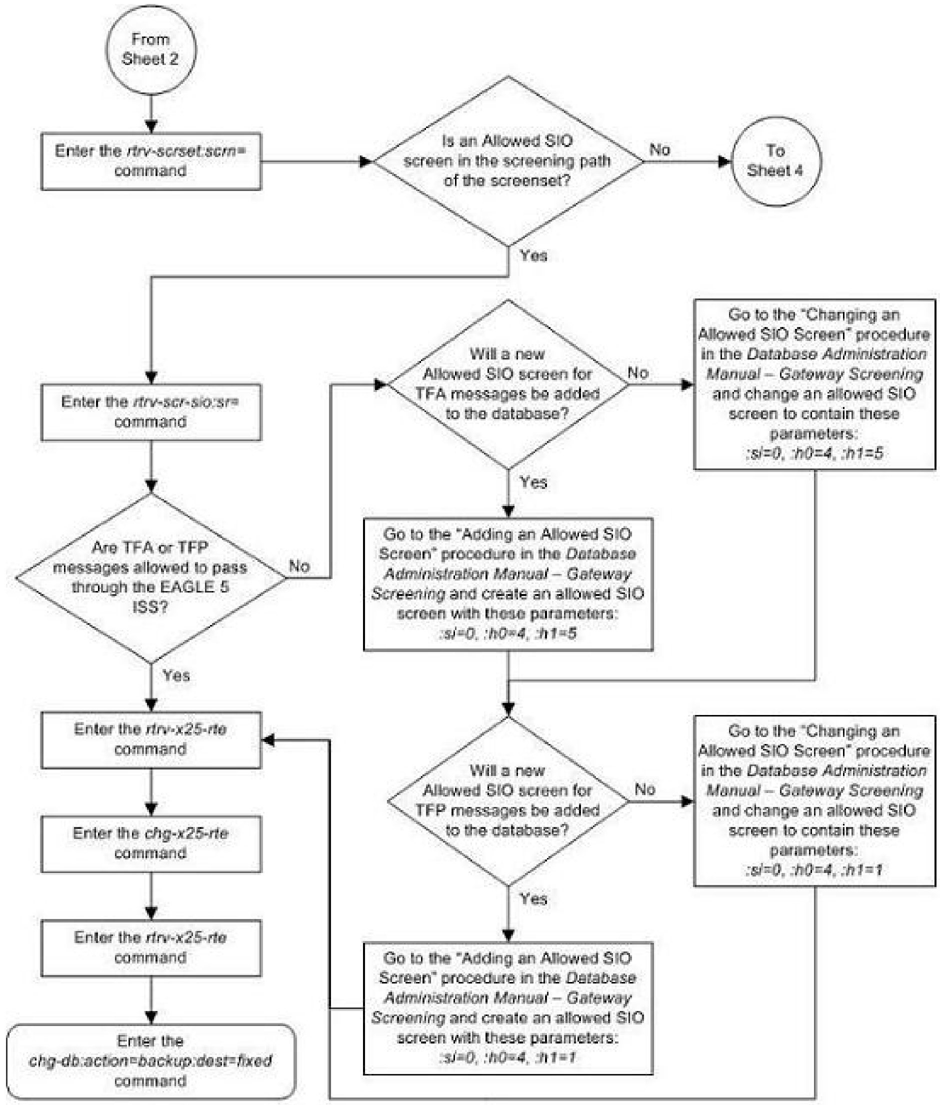
These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

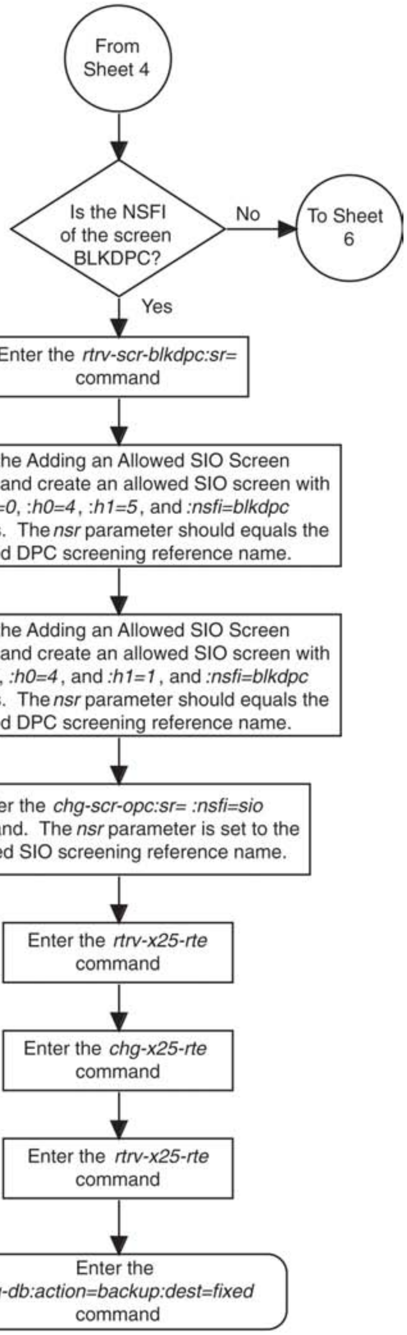
Figure 19: Changing an X.25 Route

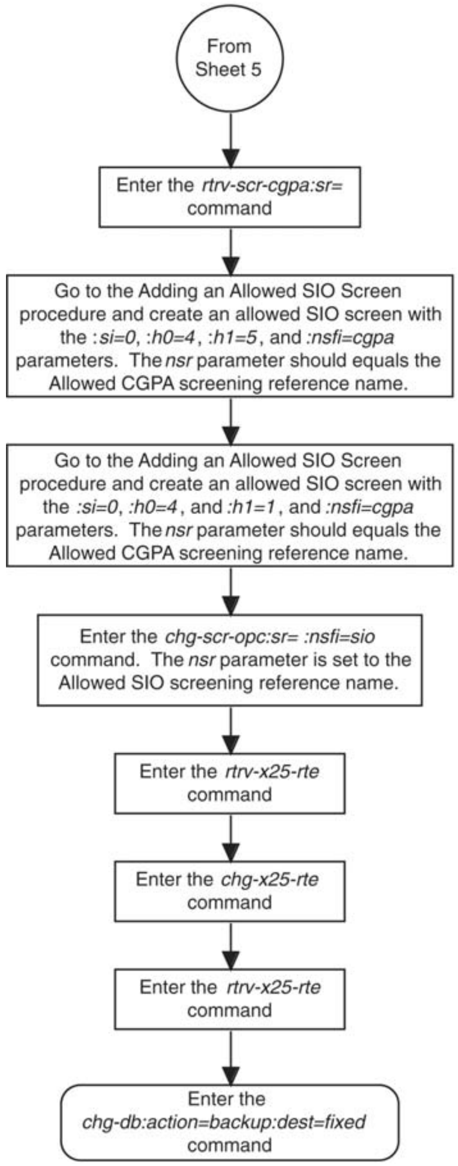


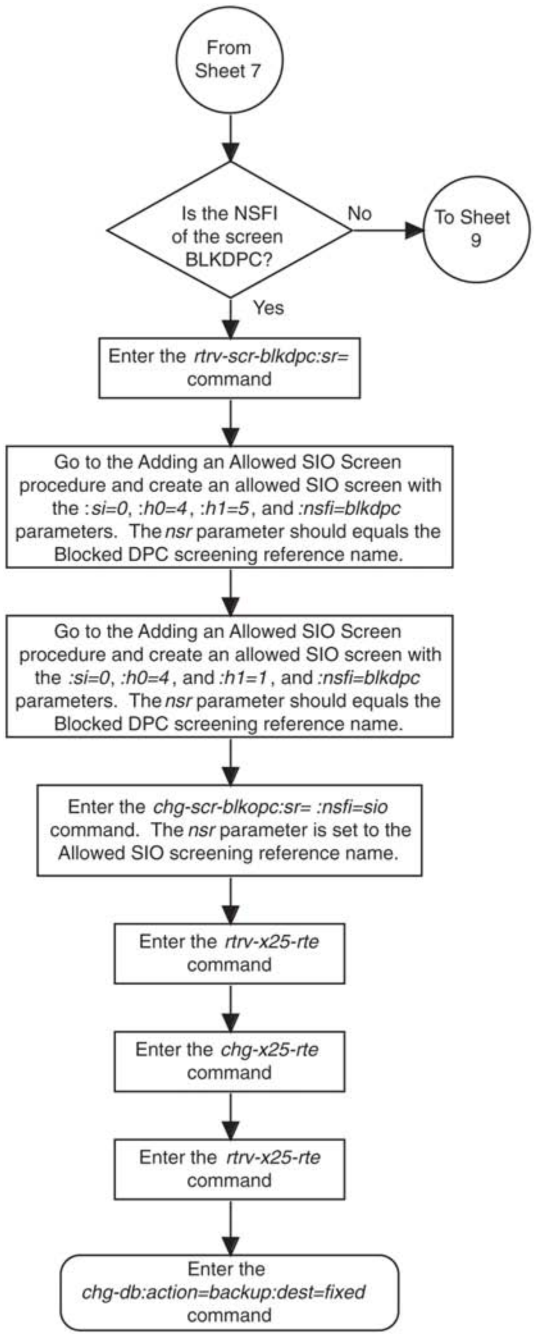

From Sheet 1
Will the lc2nm=yes parameter be specified with the chg-x25-rte command?
No
Yes
Is the X.25 linkset assigned to a gateway screening screen set?
No
Yes
To Sheet 3
Enter the rtrv-x25-rte command
Enter the chg-x25-rte command
Enter the rtrv-x25-rte command
Enter the chg-db:action=backup:dest=fixed command

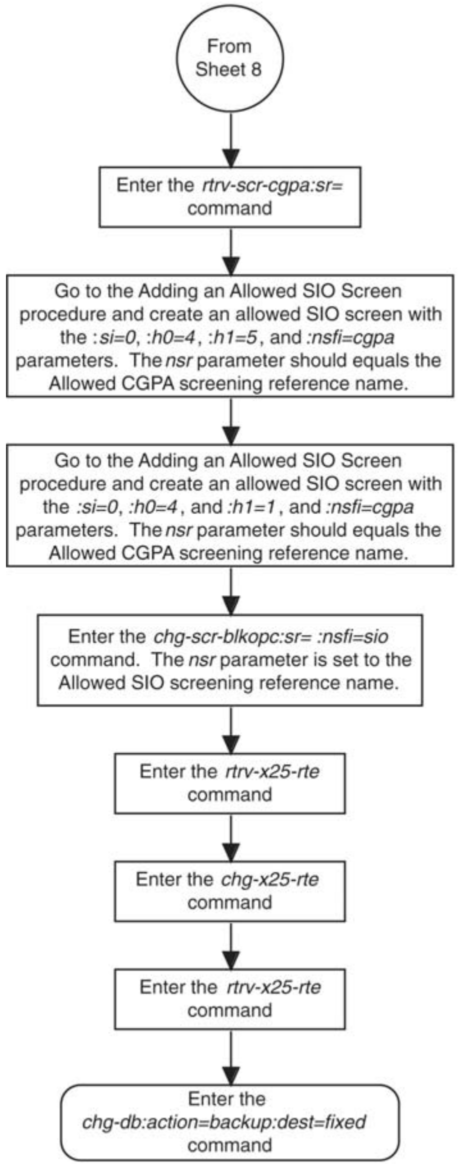


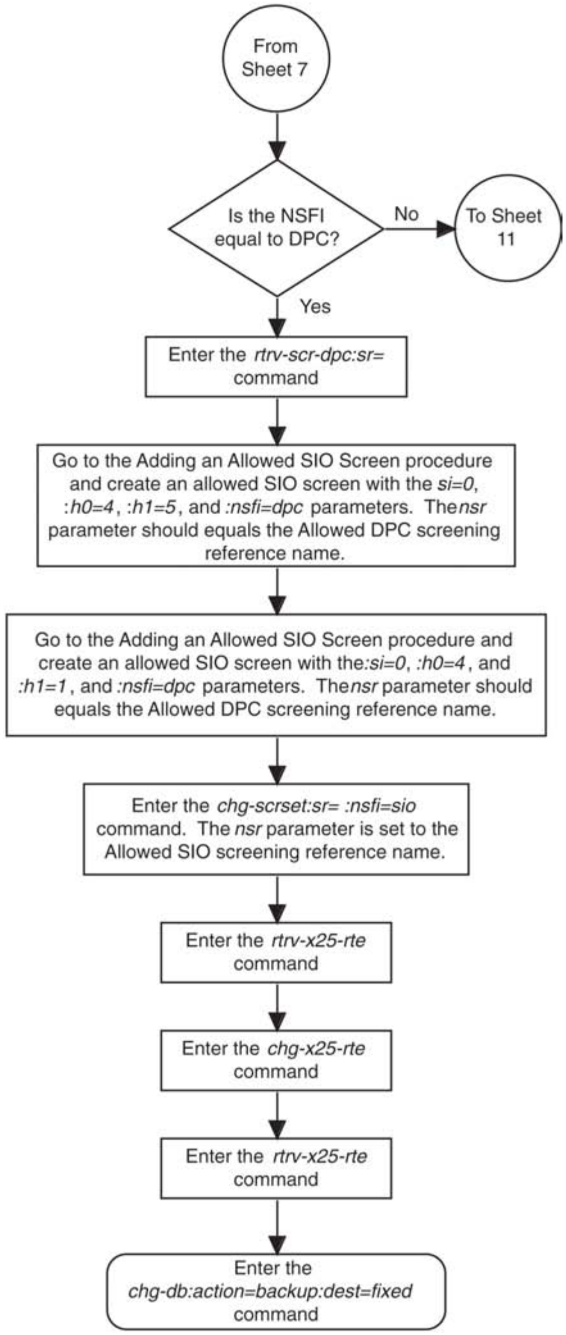
From Sheet 2
Enter the rtrv-scrset:scrn= command
Is an Allowed SIO screen in the screening path of the screenset?
No
To Sheet 4
Yes
Enter the rtrv-scr-sio:sr= command
Are TFA or TFP messages allowed to pass through the EAGLE 5 ISS?
No
Will a new Allowed SIO screen for TFA messages be added to the database?
No
Go to the "Changing an Allowed SIO Screen" procedure in the Database Administration Manual – Gateway Screening and change an allowed SIO screen to contain these parameters: :si=0, :h0=4, :h1=5
Yes
Go to the "Adding an Allowed SIO Screen" procedure in the Database Administration Manual – Gateway Screening and create an allowed SIO screen with these parameters: :si=0, :h0=4, :h1=5
Yes
Enter the rtrv-x25-rte command
Will a new Allowed SIO screen for TFP messages be added to the database?
No
Go to the "Changing an Allowed SIO Screen" procedure in the Database Administration Manual – Gateway Screening and change an allowed SIO screen to contain these parameters: :si=0, :h0=4, :h1=1
Enter the chg-x25-rte command
Yes
Enter the rtrv-x25-rte command
Go to the "Adding an Allowed SIO Screen" procedure in the Database Administration Manual – Gateway Screening and create an allowed SIO screen with these parameters: :si=0, :h0=4, :h1=1
Enter the chg-db:action=backup:dest=fixed command

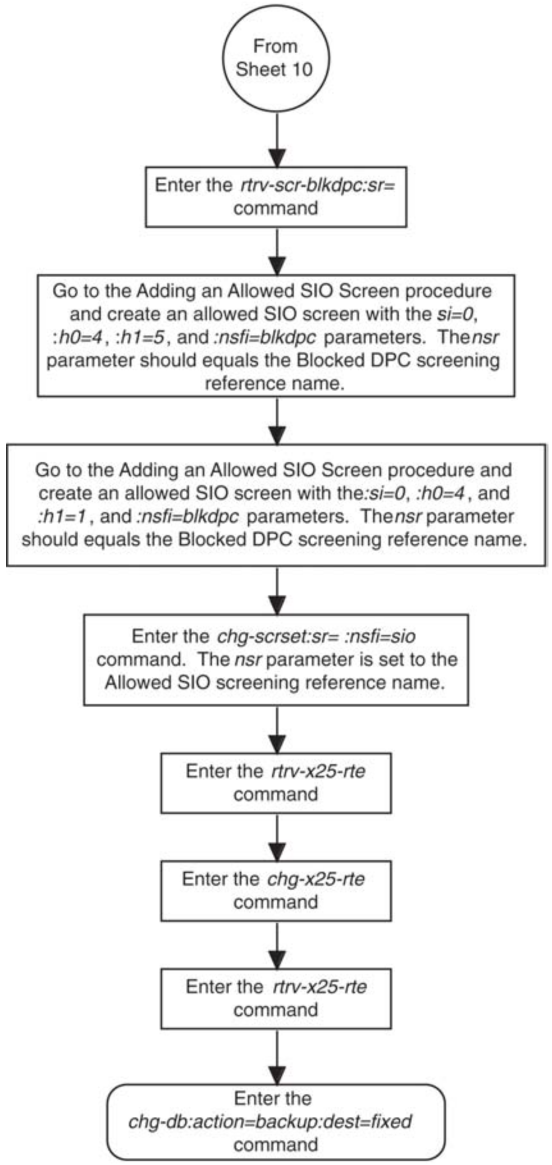

From Sheet 4
Is the NSFI of the screen BLKDPC?
No
To Sheet 6
Yes
Enter the rtrv-scr-blkdpc:sr= command
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, :h1=5, and :nsfi=blkdpc parameters. The nsr parameter should equals the Blocked DPC screening reference name.
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, and :h1=1, and :nsfi=blkdpc parameters. The nsr parameter should equals the Blocked DPC screening reference name.
Enter the chg-scr-opc:sr= :nsfi=sio command. The nsr parameter is set to the Allowed SIO screening reference name.
Enter the rtrv-x25-rte command
Enter the chg-x25-rte command
Enter the rtrv-x25-rte command
Enter the chg-db:action=backup:dest=fixed command


From Sheet 5
Enter the rtrv-scr-cgpa:sr= command
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, :h1=5, and :nsfi=cgpa parameters. The nsr parameter should equals the Allowed CGPA screening reference name.
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, and :h1=1, and :nsfi=cgpa parameters. The nsr parameter should equals the Allowed CGPA screening reference name.
Enter the chg-scr-opc:sr= :nsfi=sio command. The nsr parameter is set to the Allowed SIO screening reference name.
Enter the rtrv-x25-rte command
Enter the chg-x25-rte command
Enter the rtrv-x25-rte command
Enter the chg-db:action=backup:dest=fixed command


From Sheet 7
Is the NSFI of the screen BLKDPC?
No
To Sheet 9
Yes
Enter the rtrv-scr-blkdpc:sr= command
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, :h1=5, and :nsfi=blkdpc parameters. The nsr parameter should equals the Blocked DPC screening reference name.
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, and :h1=1, and :nsfi=blkdpc parameters. The nsr parameter should equals the Blocked DPC screening reference name.
Enter the chg-scr-blkopc:sr= :nsfi=sio command. The nsr parameter is set to the Allowed SIO screening reference name.
Enter the rtrv-x25-rte command
Enter the chg-x25-rte command
Enter the rtrv-x25-rte command
Enter the chg-db:action=backup:dest=fixed command


From Sheet 8
Enter the rtrv-scr-cgpa:sr= command
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, :h1=5, and :nsfi=cgpa parameters. The nsr parameter should equals the Allowed CGPA screening reference name.
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, and :h1=1, and :nsfi=cgpa parameters. The nsr parameter should equals the Allowed CGPA screening reference name.
Enter the chg-scr-blkopc:sr= :nsfi=sio command. The nsr parameter is set to the Allowed SIO screening reference name.
Enter the rtrv-x25-rte command
Enter the chg-x25-rte command
Enter the rtrv-x25-rte command
Enter the chg-db:action=backup:dest=fixed command


From Sheet 7
Is the NSFI equal to DPC?
No
To Sheet 11
Yes
Enter the rtrv-scr-dpc:sr= command
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the si=0, :h0=4, :h1=5, and :nsfi=dpc parameters. The nsr parameter should equals the Allowed DPC screening reference name.
Go to the Adding an Allowed SIO Screen procedure and create an allowed SIO screen with the :si=0, :h0=4, and :h1=1, and :nsfi=dpc parameters. The nsr parameter should equals the Allowed DPC screening reference name.
Enter the chg-scrset:sr= :nsfi=sio command. The nsr parameter is set to the Allowed SIO screening reference name.
Enter the rtrv-x25-rte command
Enter the chg-x25-rte command
Enter the rtrv-x25-rte command
Enter the chg-db:action=backup:dest=fixed command



Changing the X.25 Signaling Link Parameters

This procedure is used to change any of the X.25 signaling link parameters using the `chg-x25-slk` command.

The `chg-x25-slk` command uses these parameters.

`:loc` – The card location of the LIM containing the X.25 signaling link

`:port` – The signaling link on the card specified in the `loc` parameter. For an X.25 signaling link, this parameter value is A.

`:t1` – The amount of time to wait before retransmitting a frame.

`:n1` – The maximum number of bits in a frame.

`:n2` – The maximum number of retransmission attempts to complete a transmission.

`:k` – The maximum number of outstanding I frames.

`:l3mode` – The logical layer 3 address of the connection

`:pvc` – The total number of the permanent virtual circuits (PVCs) available on this X.25 signaling link.

`:svc` – The total number of the switched virtual circuits (SVCs) available on this X.25 signaling link.

`:win` – The number of packets allowed for a window on this X.25 signaling link.

`:mps` – The maximum packet size (in bytes) allowed on this X.25 signaling link.

The examples in this procedure are used to change the attributes of the X.25 signaling link assigned to card 1204.

The X.25 signaling link whose parameters are being changed must be in the database. This can be verified by entering the `rtrv-slk` command. The X.25 signaling links are shown by the dashes in the `L2TSET` column in the output.

1. Display the values of the X.25 signaling link you wish to change using the `rtrv-x25-slk` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
LOC   PORT  T1  N1    N2  K  L3MODE  PVC  SVC  WIN  MPS
1201  A     10  2104  15  7  DCE     25   205  1    256
1202  A     9   2104  13  6  DTE     255  0    2    256
1203  A     8   1080  11  5  DCE     10   10   3    128
1204  A     7   1080  9   4  DTE     0    255  4    128
1205  A     6   2104  7   3  DCE     100  0    5    256
1206  A     5   2104  5   2  DTE     0    100  6    256
1207  A     4   1080  3   1  DCE     100  100  7    128
1208  A     5   2104  10  7  DTE     0    255  3    256
```

2. Deactivate the X.25 signaling link using the `dact-slk` command, using the card location and the signaling link.

   For this example, enter this command.

   `dact-slk:loc=1204:link=a`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:41:12 GMT  EAGLE5 36.0.0
Deactivate SLK message sent to card
```

3. Verify that the X.25 signaling link is out of service - maintenance (OOS-MT) using the `rept-stat-slk` command, using the card location and the signaling link.

   For this example, enter this command.

   `rept-stat-slk:loc=1204:link=a`

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 17:00:36 GMT  EAGLE5 36.0.0
```

```
SLK      LSN      CLLI         PST          SST        AST
1204,A   nsp1     ---------    OOS-MT       Unavail    ----
  ALARM STATUS       = *   0221 REPT-LKF: X25 link unavailable
  UNAVAIL REASON     = X25FL
Command Completed.
```

4. Place the card assigned to the X.25 signaling link out of service using the `rmv-card` command, specifying the location of the card.

   For this example, enter this command.

   `rmv-card:loc=1204`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:41:12 GMT  EAGLE5 36.0.0
Card has been inhibited.
```

5. Change the X.25 signaling link parameter values using the `chg-x25-slk` command.

   For this example, enter this command.

   `chg-x25-slk:loc=1204:port=a:t1=10:n1=2104:n2=4:k=7:l3mode=dce :pvc=5:svc=10:win=2:mps=256`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 11:43:04 GMT EAGLE5 36.0.0
CHG-X25-SLK: MASP A - COMPLTD
```

6. Verify the changes using the `rtrv-x25-slk` command, specifying the card location.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:16:37 GMT EAGLE5 36.0.0
LOC   PORT  T1  N1    N2  K  L3MODE  PVC  SVC  WIN  MPS
1201  A     10  2104  15  7  DCE     25   205  1    256
1202  A     9   2104  13  6  DTE     255  0    2    256
1203  A     8   1080  11  5  DCE     10   10   3    128
1204  A     10  2104  4   7  DCE     5    10   2    256
1205  A     6   2104  7   3  DCE     100  0    5    256
1206  A     5   2104  5   2  DTE     0    100  6    256
1207  A     4   1080  3   1  DCE     100  100  7    128
1208  A     3   1080  5   2  DTE     1    1    6    128
```

7. Place the card back into service using the `rst-card` command, specifying the location of the card.

   For this example, enter this command.

   `rst-card:loc=1204`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:41:12 GMT  EAGLE5 36.0.0
Card has been allowed.
```

8. Activate the X.25 signaling link using the `act-slk` command, specifying the card location and the signaling link.

   For this example, enter this command.

   `act-slk:loc=1204:link=a`

When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 08:31:24 GMT  EAGLE5 36.0.0
Activate SLK message sent to card
```

9. Check the status of the X.25 signaling link using the `rept-stat-slk` command, specifying the card location and the signaling link.

   The state of the X.25 signaling link should be in service normal (IS-NR) after the link has completed alignment (shown in the PST field). For this example, enter this command.

   `rept-stat-slk:loc=1204:link=a`

   This is an example of the possible output.

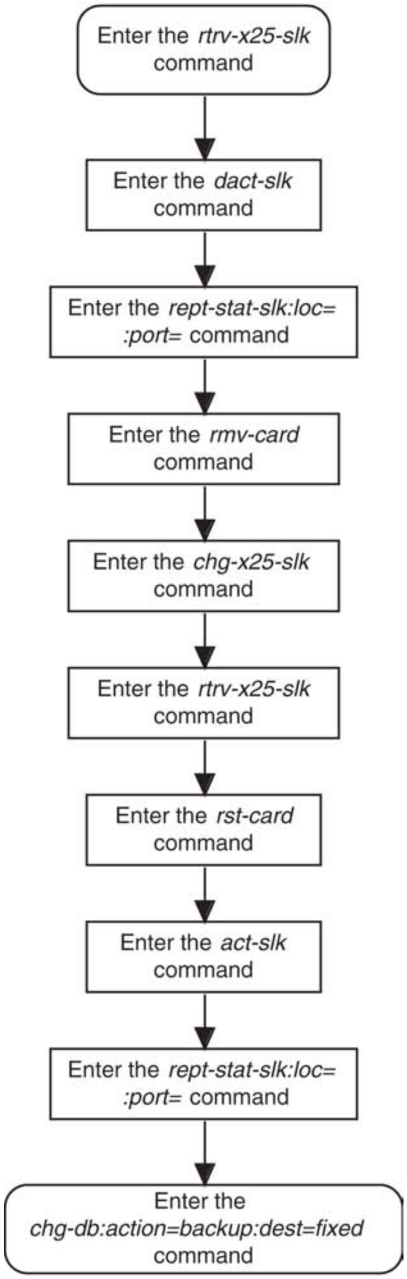
```
rlghncxa03w 06-10-28 17:00:36 GMT  EAGLE5 36.0.0
SLK      LSN      CLLI         PST           SST        AST
1204,A   nsp1     ---------    IS-NR         Avail      ----
  ALARM STATUS       =  No alarm
  UNAVAIL REASON:
Command Completed.
```

10. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

    These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 20: Changing the X.25 Signaling Link Parameters



Enabling the Large System # Links Controlled Feature

This procedure is used to enable the Large System # Links controlled feature using the feature's part number and a feature access key.

The feature access key for the Large System # Links controlled feature is based on the feature's part number and the serial number of the EAGLE 5 ISS, making the feature access key site-specific.

This feature allows the EAGLE 5 ISS to contain a maximum of either 1500 or 2000 signaling links.

The `enable-ctrl-feat` command enables the controlled feature by inputting the controlled feature's access key and the controlled feature's part number with these parameters:

`:fak` – The feature access key generated by Tekelec's feature access key generator, and supplied to you when you purchase or temporarily try a controlled feature. The feature access key contains 13 alphanumeric characters and is not case sensitive.

`:partnum` – The Tekelec-issued part number associated with the signaling link quantity being enabled:

- 893005901 for the 1500 signaling link quantity
- 893005910 for the 2000 signaling link quantity.

The `enable-ctrl-feat` command requires that the database contain a valid serial number for the EAGLE 5 ISS, and that this serial number is locked. This can be verified with the `rtrv-serial-num` command. The EAGLE 5 ISS is shipped with a serial number in the database, but the serial number is not locked. The serial number can be changed, if necessary, and locked once the EAGLE 5 ISS is on-site, by using the `ent-serial-num` command. The `ent-serial-num` command uses these parameters.

`:serial` – The serial number assigned to the EAGLE 5 ISS. The serial number is not case sensitive.

`:lock` – Specifies whether or not the serial number is locked. This parameter has only one value, `yes`, which locks the serial number. Once the serial number is locked, it cannot be changed.

Note: To enter and lock the EAGLE 5 ISS's serial number, the `ent-serial-num` command must be entered twice, once to add the correct serial number to the database with the `serial` parameter, then again with the `serial` and the `lock=yes` parameters to lock the serial number. You should verify that the serial number in the database is correct before locking the serial number. The serial number can be found on a label affixed to the control shelf (shelf 1100).

This feature cannot be temporarily enabled (with the temporary feature access key).

Once this feature is enabled with the `enable-ctrl-feat` command, the feature is also activated. The `chg-ctrl-feat` command is not necessary to activate the feature.

This feature cannot be disabled with the `chg-ctrl-feat` command and the `status=off` parameter.

Hardware Supported for Signaling Link Quantities Greater than 1500

The following hardware and applications are the only signaling link hardware and applications supported for an EAGLE 5 ISS containing more than 1500 signaling links.

- E1/T1 MIM running the `ccs7itu` application.
- HC-MIM running the `ccs7itu` application.
- E5-E1T1 card running the `ccs7itu` application.
- Single-slot EDCM running either the `iplimi` or `ipgwi` applications.
- E5-ENET card running either the `iplimi` or `ipgwi` applications.
- ATM high-speed LIM card running the `atmitu` application.

To increase the signaling link quantity to more than 1500 signaling links, HIPR cards must be installed into card locations 9 and 10 in each shelf in the EAGLE 5 ISS. Enter the `rept-stat-gpl:gpl=hipr` command to verify whether or not HIPR cards are installed in the EAGLE 5 ISS shelves.

1. Display the status of the Large System # Links controlled feature by entering the `rtrv-ctrl-feat` command.

   The following is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
Command Class Management  893005801  on      ----
LNP Short Message Service 893006601  on      ----
Intermed GTT Load Sharing 893006901  on      ----
XGTT Table Expansion      893006101  on      400000
XMAP Table Expansion      893007710  off     ----
Routesets                 893006401  on      6000
HC-MIM SLK Capacity       893012707  on      64

The following features have been temporarily enabled:

Feature Name              Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

   If the `rtrv-ctrl-feat` output shows that the controlled feature is enabled for the desired quantity or for a quantity that is greater than the desired quantity, no further action is necessary. This procedure does not need to be performed.

   Note: If the `rtrv-ctrl-feat` output in *Step 1* on page 157 shows any controlled features, or if the Large System # Links controlled feature is enabled for a quantity that is less than the desired quantity, continue the procedure with *Step 6* on page 158. If the `rtrv-ctrl-feat` output shows only the HC-MIMSLK Capacity feature with a quantity of 64, *Step 2* on page 157 through *Step 5* on page 158 must be performed.

2. Display the serial number in the database with the `rtrv-serial-num` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
System serial number = nt00001231

System serial number is not locked.

rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
Command Completed
```

   Note: If the serial number is correct and locked, continue the procedure with *Step 6* on page 158. If the serial number is correct but not locked, continue the procedure with *Step 5* on page 158. If the serial number is not correct, but is locked, this feature cannot be enabled and the remainder of this procedure cannot be performed. Contact the Customer Care Center to get an incorrect and locked serial number changed. Refer to *Customer Care Center* on page 4 for the contact information. The serial number can be found on a label affixed to the control shelf (shelf 1100).

3. Enter the correct serial number into the database using the `ent-serial-num` command with the `serial` parameter.

For this example, enter this command.

`ent-serial-num:serial=<EAGLE 5 ISS's correct serial number>`

When this command has successfully completed, the following message should appear.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
ENT-SERIAL-NUM:  MASP A - COMPLTD
```

4. Verify that the serial number entered into *Step 3* on page 157 was entered correctly using the `rtrv-serial-num` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
System serial number = nt00001231

System serial number is not locked.

rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
Command Completed
```

   If the serial number was not entered correctly, repeat *Step 3* on page 157 and *Step 4* on page 158 and re-enter the correct serial number.

5. Lock the serial number in the database by entering the `ent-serial-num` command with the serial number shown in *Step 2* on page 157, if the serial number shown in *Step 2* on page 157 is correct, or with the serial number shown in *Step 4* on page 158, if the serial number was changed in *Step 3* on page 157, and with the `lock=yes` parameter.

   For this example, enter this command.

   `ent-serial-num:serial=<EAGLE 5 ISS's serial number>:lock=yes`

   When this command has successfully completed, the following message should appear.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
ENT-SERIAL-NUM:  MASP A - COMPLTD
```

6. Verify that HIPR cards are installed in card locations 9 and 10 in each shelf of the EAGLE 5 ISS.

   Note: If the 2000 signaling link quantity is not being enabled in this procedure, continue the procedure with *Step 7* on page 159.

   Enter this command.

   `rept-stat-gpl:gpl=hipr`

   This is an example of the possible output.

```
rlghncxa03w 06-10-01 11:40:26 GMT  EAGLE5 36.0.0
GPL        CARD      RUNNING            APPROVED      TRIAL
HIPR       1109      126-002-000        126-002-000   126-003-000
HIPR       1110      126-002-000        126-002-000   126-003-000
HIPR       1209      126-002-000        126-002-000   126-003-000
HIPR       1210      126-002-000        126-002-000   126-003-000
HIPR       1309      126-002-000        126-002-000   126-003-000
HIPR       1310      126-002-000        126-002-000   126-003-000
HIPR       2109      126-002-000        126-002-000   126-003-000
```

```
HIPR       2110      126-002-000        126-002-000   126-003-000
Command Completed
```

If HIPR cards are installed in each the shelf in the EAGLE 5 ISS, continue the procedure with *Step 7* on page 159.

If HIPR cards are not installed on each shelf in the EAGLE 5 ISS, go to the *Installation Manual* - EAGLE 5 ISS and install the HIPR cards. Once the HIPR cards have been installed, continue the procedure with *Step 7* on page 159.

Note: Before the 2000 signaling link quantity is enabled, make sure the EAGLE 5 ISS is configured with the signaling link hardware shown in the *"Hardware Supported for Signaling Link Quantities Greater than 1500* on page 156" section.

If signaling hardware other than the hardware shown in the *"Hardware Supported for Signaling Link Quantities Greater than 1500"* on page 156 section is installed and provisioned, contact the Customer Care Center before enabling the 2000 signaling link quantity. Refer to *Customer Care Center* on page 4 for the contact information.

7. Enable the Large System # Links controlled feature for the desired quantity with the `enable-ctrl-feat` command specifying the part number corresponding to the new quantity of signaling links and the feature access key.

   To increase the number of signaling links the EAGLE 5 ISS can contain to 1500, enter this command.

   `enable-ctrl-feat:partnum=893005901:fak=<feature access key>`

   To increase the number of signaling links the EAGLE 5 ISS can contain to 2000, enter this command.

   `enable-ctrl-feat:partnum=893005910:fak=<feature access key>`

   Note: A temporary feature access key cannot be specified to enable this feature.

   Note: The values for the feature access key (the `fak` parameter) are provided by Tekelec. If you do not have the feature access key for the feature you wish to enable, contact your Tekelec Sales Representative or Account Representative.

   When the `enable-crtl-feat` command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

8. Verify the changes by entering the `rtrv-ctrl-feat` command with the part number specified in *Step 7* on page 159.

   If the 1500 signaling link quantity was enabled in *Step 7* on page 159, enter this command.

   `rtrv-ctrl-feat:partnum=893005901`

   The following is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
Large System # Links      893005901  on      1500

The following features have been temporarily enabled:
```

```
Feature Name              Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

If the 2000 signaling link quantity was enabled in *Step 7* on page 159, enter this command.

`rtrv-ctrl-feat:partnum=893005910`

The following is an example of the possible output.

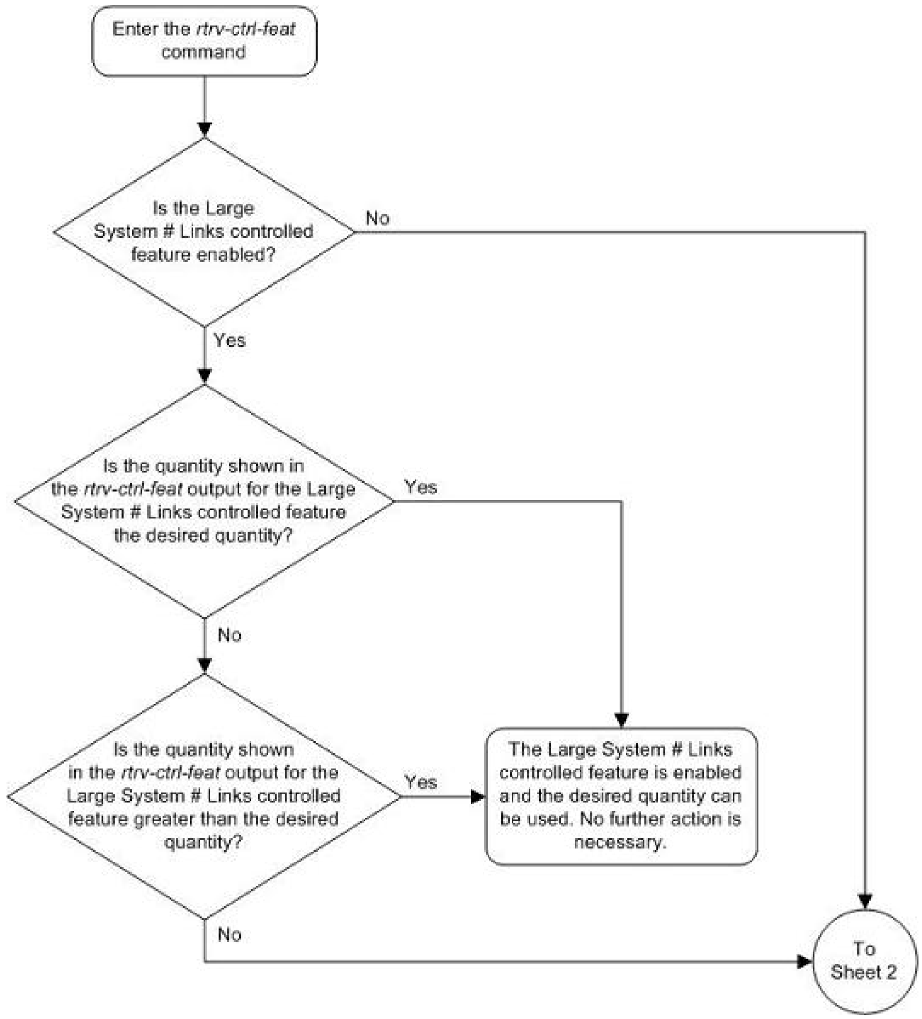
```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
Large System # Links      893005910  on      2000

The following features have been temporarily enabled:

Feature Name              Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

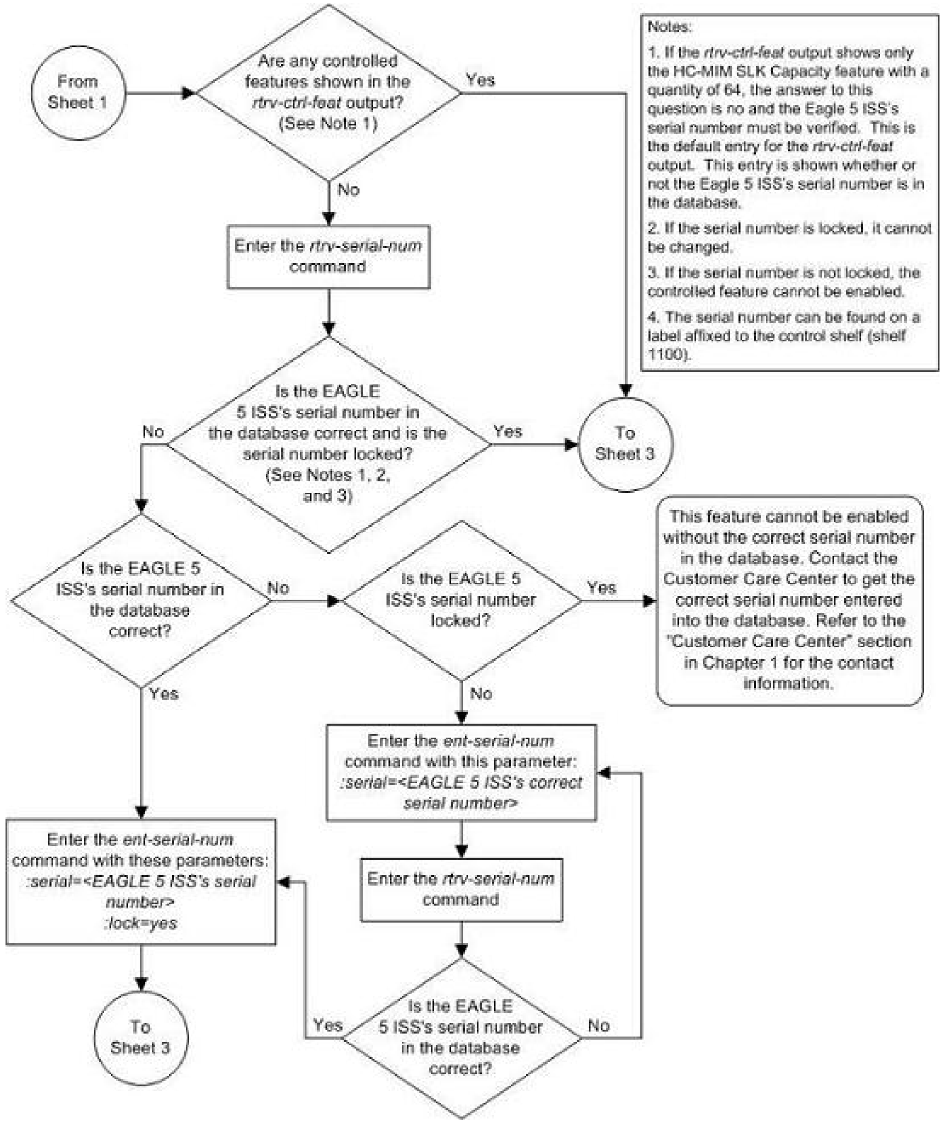
9. Back up the new changes using the `chg-db:action=backup:dest=fixed` command.

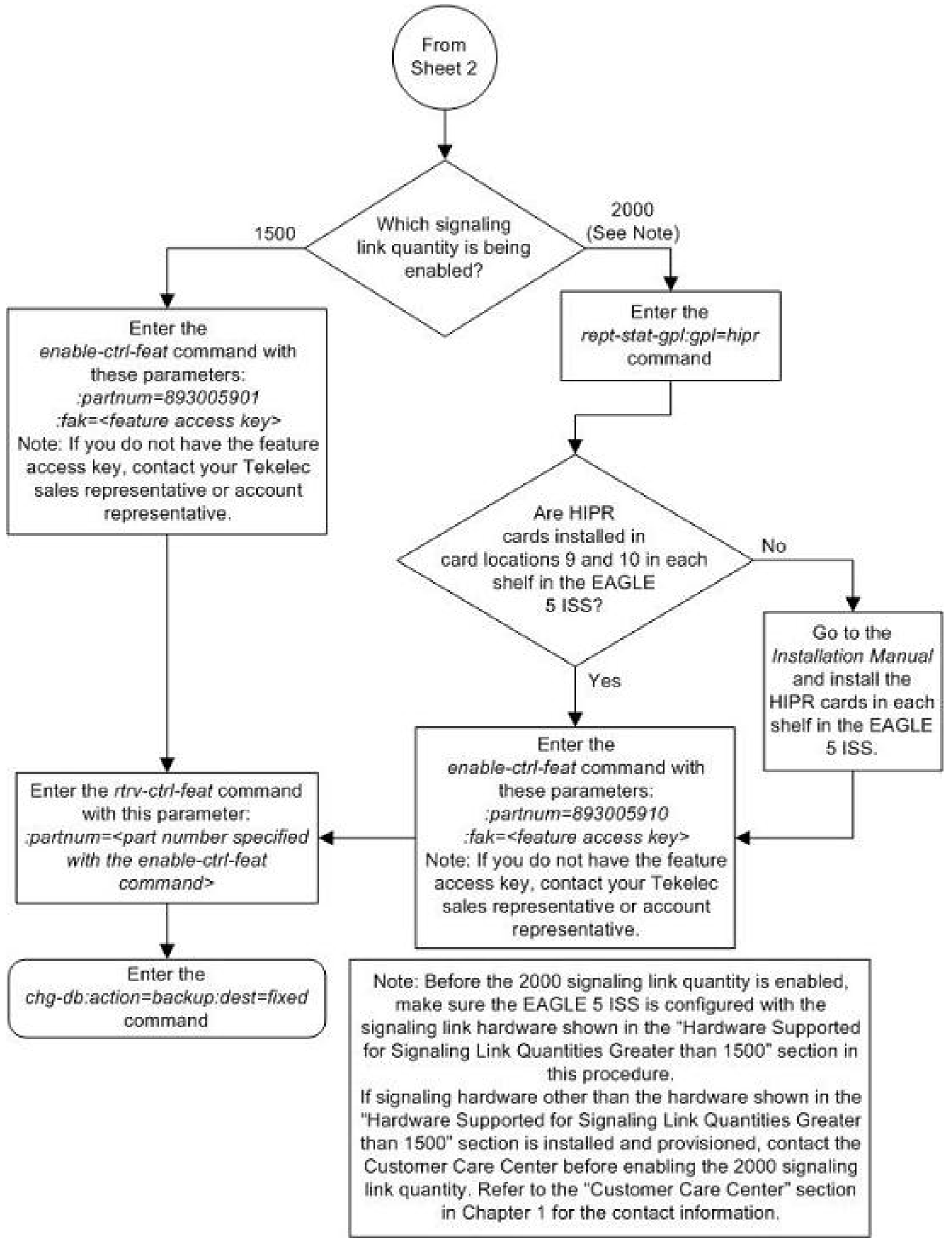
   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 21: Enabling the Large System # Links Controlled Feature


Enter the rtrv-ctrl-feat command
Is the Large System # Links controlled feature enabled?
No
Yes
Is the quantity shown in the rtrv-ctrl-feat output for the Large System # Links controlled feature the desired quantity?
Yes
No
Is the quantity shown in the rtrv-ctrl-feat output for the Large System # Links controlled feature greater than the desired quantity?
Yes
The Large System # Links controlled feature is enabled and the desired quantity can be used. No further action is necessary.
No
To Sheet 2


From Sheet 1
Are any controlled features shown in the rtrv-ctrl-feat output? (See Note 1)
Yes
No
Enter the rtrv-serial-num command
Is the EAGLE 5 ISS's serial number in the database correct and is the serial number locked? (See Notes 1, 2, and 3)
Yes
No
To Sheet 3
Is the EAGLE 5 ISS's serial number in the database correct?
No
Yes
Is the EAGLE 5 ISS's serial number locked?
Yes
No
This feature cannot be enabled without the correct serial number in the database. Contact the Customer Care Center to get the correct serial number entered into the database. Refer to the "Customer Care Center" section in Chapter 1 for the contact information.
Enter the ent-serial-num command with this parameter: :serial=<EAGLE 5 ISS's correct serial number>
Enter the rtrv-serial-num command
Is the EAGLE 5 ISS's serial number in the database correct?
Yes
No
Enter the ent-serial-num command with these parameters: :serial=<EAGLE 5 ISS's serial number> :lock=yes
To Sheet 3
Notes:
1. If the rtrv-ctrl-feat output shows only the HC-MIM SLK Capacity feature with a quantity of 64, the answer to this question is no and the Eagle 5 ISS's serial number must be verified. This is the default entry for the rtrv-ctrl-feat output. This entry is shown whether or not the Eagle 5 ISS's serial number is in the database.
2. If the serial number is locked, it cannot be changed.
3. If the serial number is not locked, the controlled feature cannot be enabled.
4. The serial number can be found on a label affixed to the control shelf (shelf 1100).


From Sheet 2
Which signaling link quantity is being enabled?
1500
2000 (See Note)
Enter the enable-ctrl-feat command with these parameters: :partnum=893005901 :fak=<feature access key> Note: If you do not have the feature access key, contact your Tekelec sales representative or account representative.
Enter the rept-stat-gpl:gpl=hipr command
Are HIPR cards installed in card locations 9 and 10 in each shelf in the EAGLE 5 ISS?
No
Yes
Go to the Installation Manual and install the HIPR cards in each shelf in the EAGLE 5 ISS.
Enter the enable-ctrl-feat command with these parameters: :partnum=893005910 :fak=<feature access key> Note: If you do not have the feature access key, contact your Tekelec sales representative or account representative.
Enter the rtrv-ctrl-feat command with this parameter: :partnum=<part number specified with the enable-ctrl-feat command>
Enter the chg-db:action=backup:dest=fixed command
Note: Before the 2000 signaling link quantity is enabled, make sure the EAGLE 5 ISS is configured with the signaling link hardware shown in the "Hardware Supported for Signaling Link Quantities Greater than 1500" section in this procedure.
If signaling hardware other than the hardware shown in the "Hardware Supported for Signaling Link Quantities Greater than 1500" section is installed and provisioned, contact the Customer Care Center before enabling the 2000 signaling link quantity. Refer to the "Customer Care Center" section in Chapter 1 for the contact information.

Chapter 3

STPLAN Configuration

Topics:

Chapter 3, STPLAN Configuration, describes the STPLAN feature and the procedures necessary to configure the EAGLE 5 ISS to support this feature.

STPLAN Feature Overview

The STPLAN feature provides a TCP/IP connection from any interface shelf to support external applications. Message signal units (MSUs) that are processed by the EAGLE 5 ISS can be copied and directed through the LAN interface to an external server or microcomputer application such as a usage measurements EAGLE 5 ISS. The gateway screening feature must be available on the STP in order to use the STPLAN feature.

The feature requires an STPLAN card, either the application communications module (ACM) running the `stplan` application, or database communications module (DCM) running the `stplan` application, or E5-SLAN card running the `stplan` application, which provides an ethernet interface at the backplane, as well as the processing power required to support TCP/IP message encapsulation.

The STPLAN card receives SS7 MSUs from the Interprocessor Message Transport (IMT) bus and copies the MSUs into memory resident on the STPLAN card. The EAGLE 5 ISS encapsulates the copied MSU into TCP/IP packets and sends the encapsulated message over the ethernet to the host computer or to a TCP/IP router. The host computer is responsible for assembling and processing the packets it receives. The TCP/IP router routes the messages to a host computer on another network.

Each STPLAN card has one ethernet port. The Transmission Control Protocol (TCP) and User Datagram Protocol (UDP) are supported at the transport layer. Internet Protocol (IP), Internet Control Message Protocol (ICMP) and Address Resolution Protocol (ARP) are supported at the network layer.

If the ACM is used as the STPLAN card, the EAGLE 5 ISS uses a special cable assembly for the ethernet connection, which is connected to an external media access unit (MAU). From the MAU, the customer can attach any compatible host EAGLE 5 ISS. The host system must be using TCP/IP as the higher layer protocol, and must support either 10base2 ethernet or 10baseT ethernet as the transmission method. The ACM's capacity is 435 transactions per second (TPS).

If the DCM is used as the STPLAN card, either 10baseT ethernet or 100baseT ethernet is supported by the EAGLE 5 ISS. The ethernet connection is made directly to the EAGLE 5 ISS backplane and no external media access unit (MAU) is used. The MAU is incorporated in the DCM. The DCM's capacity is 1200 TPS when configured to run on a 10baseT network, and 2500 TPS when configured for a 100baseT network.

If the E5-SLAN card is used as the STPLAN card, 10/100Mbps port data transfer rate is supported by the EAGLE 5 ISS. The E5-SLAN card has two ethernet interfaces. Each interface independently supports 10/100 Mbps data rates, full/half duplex, fixed/auto-negotiate, DIX/802.3 MAC header modes. The capacity of the E5-SLAN card is 1200 TPS when configured to run on a 10baseT network, or on a 100baseT network at half duplex, and 12000 TPS when configured for a 100baseT network at full duplex.

This implementation does not support standard TCP/IP protocols such as TELNET and FTP. However, it supports EAGLE 5 ISS applications that are built on TCP/IP using the Socket Application Programming Interface (API). The protocol stack is not biased toward any particular application.

Message Sequencing

The STPLAN card adds a time stamp to the message before sending it to the LAN. The time stamp maintains a one second granularity and is synchronized with the host computer. This synchronization requires the host computer to be capable of responding to the time and date queries on the UDP port 37. The receiver can use the time stamp to provide sequencing within an application. The STPLAN application does not use sequence numbers for messages.

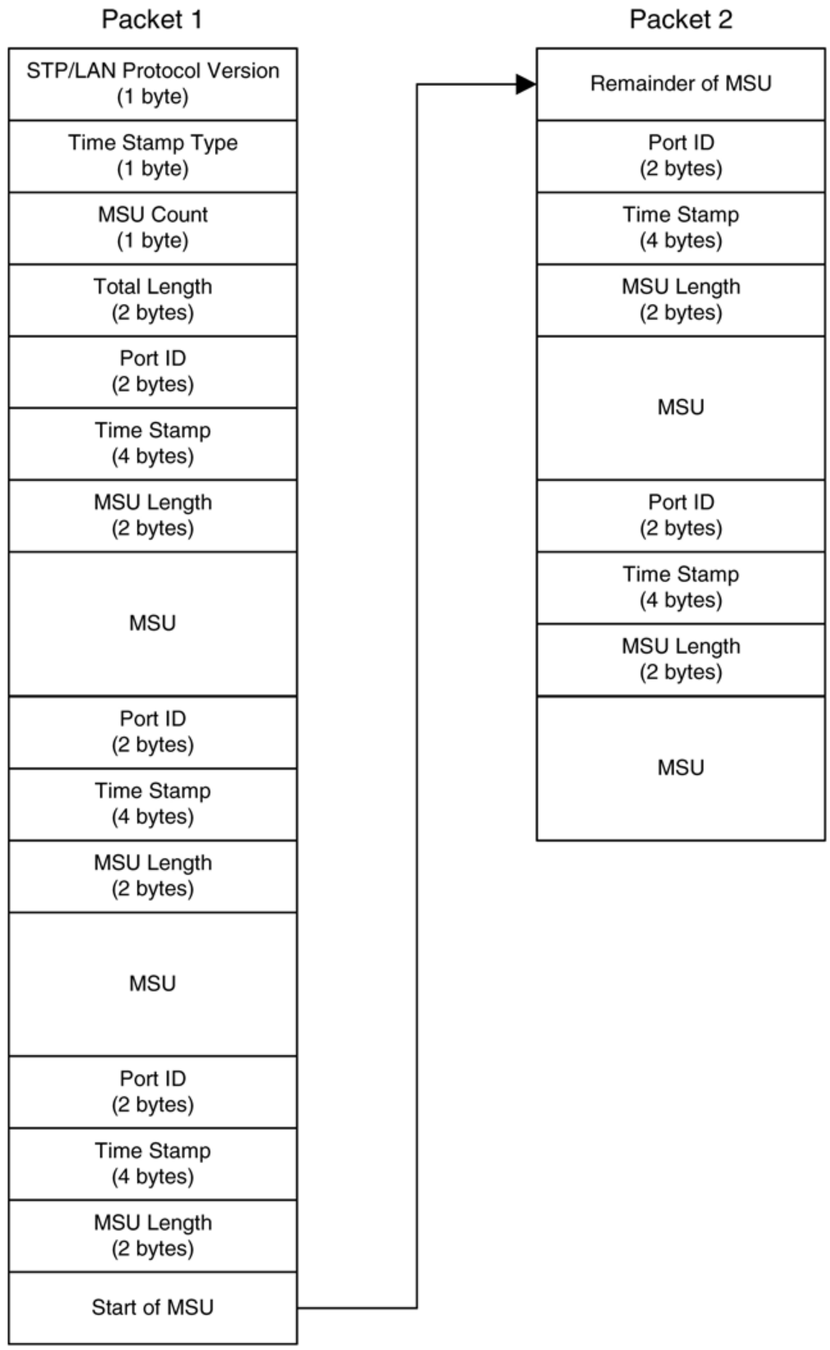
Message Format

Because TCP/IP is a stream-oriented protocol, the host computer can receive multiple messages in a single packet, or the message can be divided among different packets. *Figure 22: STPLAN Messages Embedded in TCP/IP Packets* on page 167 shows an example of both. There are multiple MSUs in the first packet with one of the MSUs divided between the first packet and the second packet.

This list describes the fields used in these packets:

- STP/LAN Protocol Version (a 1-byte value) – The type of EAGLE 5 ISS message being carried from the LIMs to the STPLAN card. The only valid value for this field is 1.
- Time Stamp Type (a 1-byte value) – The type of timestamp that is being used in the message. The only valid value for this field is 1, indicating that the supported timestamp type is the UNIX style timestamp (a 32-bit number containing the time elapsed since 00:00:00 hour, January 1, 1970).
- MSU Count (a 1-byte value) – How many MSUs are actually contained in the packet.
- Total Length (a 2-byte value) – The total length, in bytes, of the data plus the MSU headers embedded inside the packet. This length should not be greater than 485 bytes.
- Port ID (a 2-byte value) – The ID of the port on the LIM which copied the data to the STPLAN card. The valid range for this field is 0–511.
- Timestamp (a 4-byte value) – The actual timestamp at which the message is sent out to the host.
- MSU Length (a 2-byte value) – The length of the actual MSU in bytes. The sum of the MSU lengths of all the MSUs in the packet plus the sum of the sizes of the single MSU headers should be equal to the number contained in the Total Length field.
- MSU – The MSU that is contained in the packet.

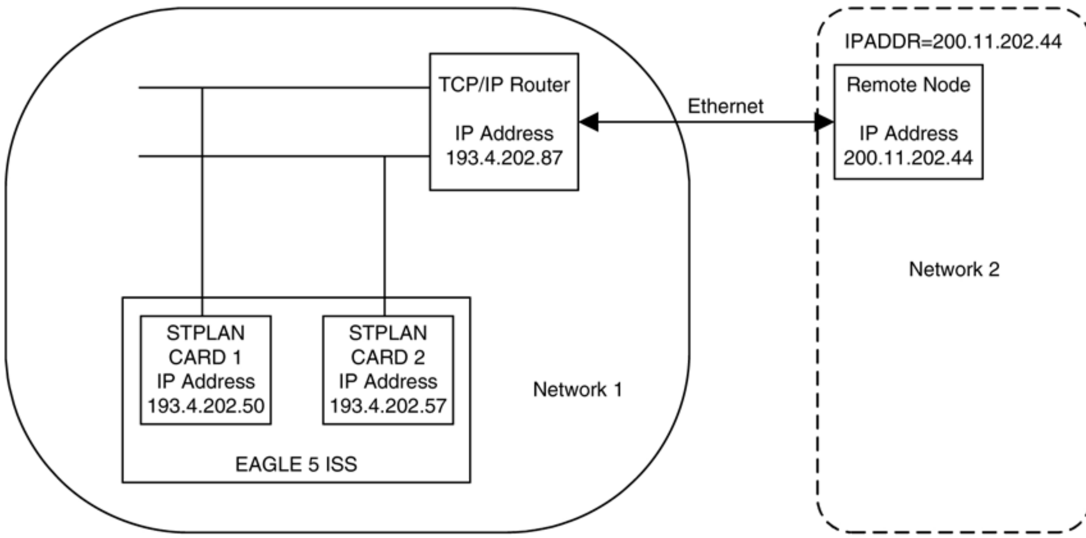
Figure 22: STPLAN Messages Embedded in TCP/IP Packets


Packet 1
STP/LAN Protocol Version (1 byte)
Time Stamp Type (1 byte)
MSU Count (1 byte)
Total Length (2 bytes)
Port ID (2 bytes)
Time Stamp (4 bytes)
MSU Length (2 bytes)
MSU
Port ID (2 bytes)
Time Stamp (4 bytes)
MSU Length (2 bytes)
MSU
Port ID (2 bytes)
Time Stamp (4 bytes)
MSU Length (2 bytes)
Start of MSU
Packet 2
Remainder of MSU
Port ID (2 bytes)
Time Stamp (4 bytes)
MSU Length (2 bytes)
MSU
Port ID (2 bytes)
Time Stamp (4 bytes)
MSU Length (2 bytes)
MSU

TCP/IP Router

A TCP/IP router is used to route STPLAN messages from the EAGLE 5 ISS to a remote host in another network or subnetwork. *Figure 23: STPLAN Network with a TCP/IP Router* on page 169 shows an example of the STPLAN feature using a TCP/IP router.

Figure 23: STPLAN Network with a TCP/IP Router



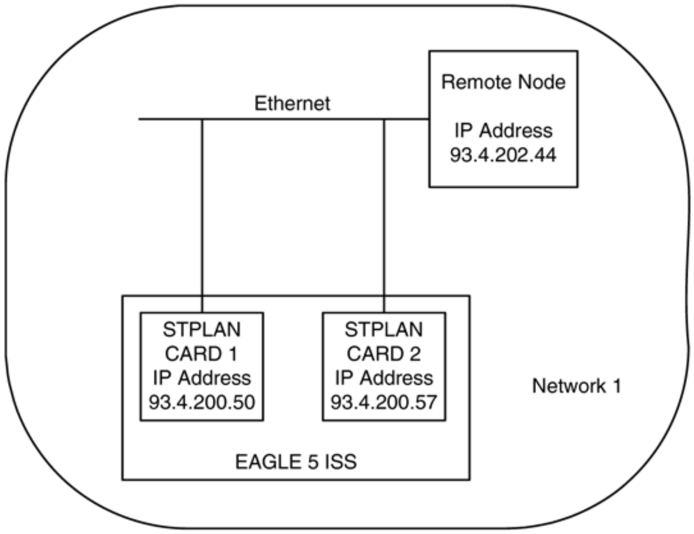
Note:

The term "STPLAN Card" used in *Figure 23: STPLAN Network with a TCP/IP Router* on page 169 refers to either an ACM, DCM, or E5-SLAN card running the `stplan` application.

In this example, STPLAN cards 1 and 2, with IP addresses 193.4.202.50 and 193.4.202.57, need to route their traffic to the remote host at IP address 200.11.202.44. The STPLAN cards and the remote host are in two different networks; the network ID of the STPLAN cards is 193.4.202.67 and the network ID of the remote host is 200.11.202.44. The EAGLE 5 ISS can connect only to TCP/IP nodes that are in the same network as the EAGLE 5 ISS. To permit communication between the STPLAN cards and an external network, a TCP/IP router is placed in between the EAGLE 5 ISS and the remote host. The TCP/IP router is located in the same network as the EAGLE 5 ISS, with the IP address of 193.4.202.87. The messages can now be sent to the remote host through the TCP/IP router.

A TCP/IP default router must be entered into the database when the class and network ID of the data link's IP address and host's IP address do not match or when subnet routing is used. The TCP/IP router is entered into the database with the `ent-ip-node` command. The EAGLE 5 ISS cannot distinguish between a large network and the use of subnet routing, and cannot detect the omission of a TCP/IP router. In a large network, no TCP/IP routers are required because all the nodes are directly connected to a single ethernet. See *Figure 24: STPLAN in a Large Network* on page 169.

Figure 24: STPLAN in a Large Network

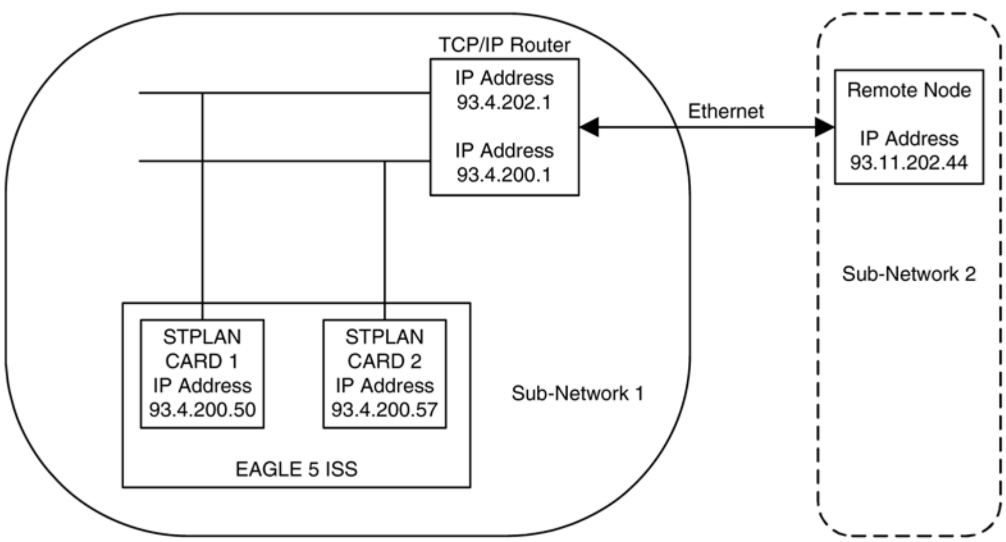


Note:

The term "STPLAN Card" used in *Figure 24: STPLAN in a Large Network* on page 169 refers to either an ACM, DCM, or E5-SLAN card running the `stplan` application.

If a user is using subnet routing and as a result, multiple ethernets, TCP/IP routers are required and must be configured in the EAGLE 5 ISS. See *Figure 25: STPLAN Network with Subnet Routing* on page 170.

Figure 25: STPLAN Network with Subnet Routing



Note:

The term "STPLAN Card" used in *Figure 25: STPLAN Network with Subnet Routing* on page 170 refers to either an ACM, DCM, or E5-SLAN card running the `stplan` application.

For the examples shown in *Figure 24: STPLAN in a Large Network* on page 169 and *Figure 25: STPLAN Network with Subnet Routing* on page 170, the IP addresses of the TCP/IP data links and the remote node are the same. In *Figure 24: STPLAN in a Large Network* on page 169, the remote node is in the same network as the TCP/IP data links, so no TCP/IP router is needed. In *Figure 25: STPLAN Network with Subnet Routing* on page 170, the user is using subnet routing. The remote node is in one subnetwork, and the TCP/IP data links are in another subnetwork. Even though the network portion of the IP addresses of the TCP/IP data links and the remote node are the same (93, a class A IP address), a TCP/IP router is required because the user is using subnet routing.

If, when configuring STPLAN according to the network in *Figure 25: STPLAN Network with Subnet Routing* on page 170, the TCP/IP router is not configured with the `ent-ip-node` command, the EAGLE 5 ISS does not detect that the TCP/IP router has been omitted, and no warnings are given in this case. The EAGLE 5 ISS sees the remote node as a TCP/IP node in the same network as the TCP/IP data links, because of the class of the IP addresses, and does not require the user to specify the `iprte` parameter of the `ent-ip-node` command.

Hardware Requirements

The hardware requirements and configuration include these items:

- The EAGLE 5 ISS supports up to 32 ACMs, DCMs, or E5-SLAN cards.
- Multiple ACM, DCM, or E5-SLAN cards can connect to each each host on different ports. The assignment of the LIMs is done automatically by the EAGLE 5 ISS.
- The TSM and multiple LIM cards can also be used.
- For the ACM, the ethernet cable from the node terminates to an adapter (part number 830-0425-01) and a media access unit (P/N 804-0059-01 for 10base2 ethernet or P/N 804-0144-01 for 10baseT ethernet). Only the A port (the top port) of the ACM is used.
- For the DCM, one of two cables can be used to connect the DCM to the node, a straight-thru cable (P/N 830-0704-XX) or a transmit/receive cross-over cable (P/N 830-0728-XX). The cable from the node terminates directly to the backplane and does not use any adapters. The cable connects to port A (the top port) on the DCM.
- For the E5-SLAN card, one of the two cables can be used to connect the E5-SLAN card to the node, an existing cable used by SSEDCM cards or a standard CAT-5 ethernet cable. The cable used by SSEDCM cards requires a backplane cable adaptor (P/N 830-1103-02) to connect to the E5-SLAN card to the node. The CAT-5 ethernet cable requires a backplane cable adaptor (P/N 830-1102-02) to connect the E5-SLAN card to the node. The cable connects to port A0 on the PMC A ethernet card within the E5-SLAN card.

Refer to the *Hardware Manual - EAGLE 5 ISS* for more information about the ACM, DCM, or E5-SLAN card.

Node Requirements

In order for a node to communicate with the ACM, DCM, or E5-SLAN card, you must configure the node system to perform or include these items:

- The node system must include an ethernet driver, TCP/IP protocol interface, and application software to process the incoming messages.

- The node TCP/IP protocol must be able to accept connections and supply an accurate time/date stamp over UDP port 37. (See RFC 868.)
- If multiple nodes are receiving data, the node application must be able to correlate related messages that are received on different nodes. Because of the load-balancing feature, the EAGLE 5 ISS cannot guarantee a constant LIM-to-node path.

Gateway Screening

Gateway screening tables can be configured to screen messages for certain attributes. The screening process results in a message being accepted or rejected into the network. The criteria for message screening depends on the type of message received by the EAGLE 5 ISS, and the contents of the gateway screening tables.

You can send a copy of the message that has passed all of the screening criteria to a node. To stop the screening process and, at the same time, send a copy of the message to the STPLAN application, the next screening function identifier (`NSFI`) of the screen where the gateway screening process stops must be set to `stop`, and a gateway screening stop action set containing the `copy` gateway screening stop action must be assigned to that screen. The linkset containing the SS7 messages copied to the STPLAN application must have a gateway screening screenset assigned to it and the `gwsa` or `gwsm` parameter must be set to `on`.

CAUTION

CAUTION:

When Gateway Screening is in the screen test mode, as defined by the linkset parameters `gwsa=off` and `gwsm=on`, the gateway screening action in the gateway screening stop action set specified by the `actname` parameter of the gateway screening screen set at the end of the gateway screening process will be performed.

Gateway screening functions are defined using screening tables or screensets which contain a set of rules. Each screenset is uniquely identified by a screenset name. A screenset is a collection of screening references or rules, each assigned a unique screening reference name. Each screening reference belongs to a specific category, which indicates the criteria that is used to either accept or reject an incoming MSU. For example, the category "blkopc" rejects all MSUs with the OPCs specified in the screening reference.

The screening parameters (point codes, routing indicator, subsystem number, and so forth) are used to match information in the SS7 message.

Each group of screening references is referred to as a screen set and is identified by a particular screen set name (`SCRN`). The screen set can then be applied to a particular linkset. This allows, for example, for specific OPCs with particular SIOs and DPCs to be allowed into the network.

There are two basic functions, allow and block. In an allowed screen (for example, allowed DPC), if a match is found and the next screening function identifier (`nsfi`) is equal to anything but `stop`, the next screening reference (`nsr`) is identified and the screening process continues. If the next screening function identifier is `stop`, the message is processed and no further screening takes place. If no match is found, the message is rejected. If the next screening function identifier is `stop` and a gateway screening stop action set that contains the `copy` gateway screening stop action is assigned to the screen, the EAGLE 5 ISS sends a copy of the message to the STPLAN application.

In a blocked screen (for example, blocked DPC):

Table 9: Gateway Screening Action

If...	then...
a match is found and the next screening function identifier is `fail`,	the message is rejected and no further screening takes place.
no match is found and the next screening function identifier is equal to anything but `stop`,	the next screening reference is identified and the screening process continues.
the next screening function identifier is equal to `stop`,	the message is processed and no further screening takes place.
the next screening function identifier is equal to `stop` and a gateway screening stop action containing the copy gateway screening stop action is assigned to the screen	the message is processed and the EAGLE 5 ISS sends a copy of the message to the STPLAN application.

The allowed OPC and DPC screens are useful in the gateway screening process when specifying particular sets of point codes that are allowed to send or receive messages to or from another network. The blocked OPC and DPC screens are useful in the gateway screening process to specify particular sets of point codes that are not allowed to send or receive messages to or from another network.

Congestion Management

If a message reaches the outbound "stop and copy" phase of the gateway screening process, and the LIM that is designated to transmit a copy of the message to the node is congested, the copy of the message is not transmitted to the node. The STP disables the application only on the particular LIM that is experiencing congestion.

Conversely, a message may arrive on an inbound LIM that is in danger of congestion while the outbound LIM is not in danger of congestion. As the message was not screened on the inbound LIM, it is not marked to be copied to the STPLAN card.

Go to the *Database Administration Manual - Gateway Screening* for information on configuring gateway screening entities.

STPLAN Provisioning

The STPLAN application allows the user to selectively copy outbound messages to a remote node for further processing. The messages that are copied to the remote node are actually selected for copying on the inbound linkset by the Gateway Screening feature. The messages that pass the screening criteria set for that linkset are processed by the EAGLE 5 ISS, and are copied prior to being transmitted on the outbound link.

The external connection to the remote node consists of several ACMs or DCMs equipped with Ethernet interfaces using the TCP/IP protocol to communicate to an external processing device running software that receives and processes the messages. Each ACM or DCM card (or STPLAN card) supports a single remote destination node. Each STPLAN card may also support a single default router.

On the EAGLE 5 ISS, the LAN interface is implemented through a pool of STPLAN cards. For reliability, STPLAN cards are provisioned on an “N+1” redundancy basis so that in case of failure of one such card, performance can be maintained during the time required to replace it. Furthermore, the calculations assume that a typical LIM card carries 0.8 Erlang worth of traffic, which would be the case if cards normally carry 0.4 Erlang and a failover situation occurs. Thus, the equations yield a number of STPLAN cards calculated to accommodate worst case traffic situations.

STPLAN cards are provisioned per site based on the total number of cards in the EAGLE 5 ISS which require STPLAN service.

ACM cards and a DCM card are capable of supporting different traffic loads. Systems which are ACM-based, or which contain both ACM- and DCM-based STPLAN cards, must use the first set of provisioning rules. Systems which are purely DCM-based must use the second set of provisioning rules.

To determine the number of STPLAN cards required in a particular site, the following quantities must be determined first.

- LSL = the number of low-speed links in the system
- HSL = the number of high-speed LIM ATMs links in the system
- SE-HSL = the number of high-speed SE-HSL LIM links in the system
- KTPS = the number of thousands of packets per second that IPLIM/IPGWY cards will handle, e.g.: 2 for 2,000 TPS, 4 for 4,000 TPS, etc.
- The estimated average size of MSUs flowing though the system (such as 80 octets per MSU).

ACM-based or Mixed ACM- and DCM-Based Systems

When the average MSU size is 80 octets or less, use this equation:

```
N = roundup(LSL/28 + HSL/3 + KTPS/2 + SE-HSL +1)
```

When the average MSU size is 140 octets, use this equation:

```
N = roundup(LSL/28 + HSL/3 + KTPS/1.5 + SE-HSL + 1)
```

When the average MSU size is 272 octets, use this equation:

```
N = roundup(LSL/18 + HSL/2 + KTPS/0.4 + SE-HSL/0.6 + 1)
```

For example, if an EAGLE 5 ISS were equipped with 200 low-speed LIMs, 13 high-speed ATM LIMs or DCMs, and the average MSU size is 140 octets, the following calculations would be used to determine N+1.

(200 LSL/28 + 13 HSL/3 + 0 KTPS/1.5 + 0 SE-HSL + 1) = 12.5

This would be rounded up to 13 STPLAN cards.

This EAGLE 5 ISS would require 13 STPLAN cards.

If the rate of low-speed LIM traffic per second to be transferred to the STPLAN application is some value other than .4 Erlang, then that portion of the equation may be scaled accordingly.

For example, one card's worth of traffic @ 0.4 Erlang equals the capacity of two cards worth of traffic @ 0.2 Erlang and the number of STPLAN cards could be halved.

Pure DCM-Based Systems

The equations below assume a 100baseT ethernet network which allows for a DCM capacity of 2,500 TPS or SLAN packets per second.

When the average MSU size is 80 octets or less, use this equation:

```
N = roundup(LSL/165 + HSL/18 + KTPS/12 + SE-HSL/6 + 1)
```

When the average MSU size is 140 octets, use this equation:

```
N = roundup(LSL/165 + HSL/19 + KTPS/7 + SE-HSL/5 + 1)
```

When the average MSU size is 272 octets, use this equation:

```
N = roundup(LSL/110 + HSL/12 + KTPS/2 + SE-HSL/4 + 1)
```

For example, if an EAGLE 5 ISS were equipped with 200 low-speed LIMs, 13 high-speed ATM LIMs, and the average MSU size is 140 octets, the following calculations would be used to determine N+1.

```
(200 LSL/165 + 13 HSL/19 + 0 KTPS/7 + 0 SE-HSL/5 + 1) = 2.9
```

This would be rounded up to 3 STPLAN cards.

This EAGLE 5 ISS would require 3 STPLAN cards.

If the rate of low-speed LIM traffic per second to be transferred to the STPLAN application is some value other than .4 Erlang, then that portion of the equation may be scaled accordingly.

For example, one card's worth of traffic @ 0.4 Erlang equals the capacity of two cards worth of traffic @ 0.2 Erlang and the number of STPLAN cards could be halved.

Understanding Firewall and Router Filtering

Firewall protocol filtering for the interface between the EAGLE 5 ISS’s DCM or E5-SLAN card and the host computer is defined in *Table 10: VXWSLAN External Ports and Their Use* on page 175.

Table 10: VXWSLAN External Ports and Their Use

Interface	TCP/IP Port	Use	Inbound	Outbound
10BASE-TX or 100BASE-TX	1024 to 5000[1]	STPLAN Traffic	Yes	Yes
	7	UDP Echo (ping)	Yes	Yes
	37	Time/Date	Yes	Yes

Interface	TCP/IP Port	Use	Inbound	Outbound
	N/A	ARP (Address Resolution Protocol)[2]	Yes	Yes
1. The TCP/IP port is the port number configured with the `ipport` parameter of the `ent-ip-node` command. The value of the `ipport` parameter is shown in the `IPPORT` field of the `rtrv-ip-node` command output. The values for this parameter are in the range 1024–5000. 2. ARP is used to provide TCP communication. The customer network will provide this information as appropriate.				

The VXWSLAN application requires a data pipe of 10 or 100 Mb. The actual percentage of SLAN tranactions that is used (the maximum) is defined by the `cap` parameter of the `ent-ip-node` command. There can be more than one connection from the EAGLE 5 ISS to the node defined by the `ipaddr` (the node's IP address) parameter of the `ent-ip-node` command.

IP Addresses

An IP address contains 32 bits grouped into four segments or octets. Each octet contains eight bits. The range of values for an octet is from 0 (all bits in the octet are 0) to 255 (all bits in the octet are 1). The four octets of an IP address are grouped into three different identifiers: the class ID, the network number and the host number. The value in the class ID determines how the rest of the bits in the ip address are categorized, mainly into the network number and the host number. The value of the class ID are in the first octet. If the first bit in the first octet is 0, the IP address is a class A IP address. If the first two bits in the first octet are 1 and 0, the IP address is a class B IP address. If the first three bits in the first octet are 1, 1, and 0, the IP address is a class C IP address. There are class D and E IP addresses, but these classes of IP addresses are not supported by the EAGLE 5 ISS. The loopback IP addresses (127.*.*.*) are not supported by ACM cards in the EAGLE 5 ISS. Loopback, however, is supported by DCM and E5-SLAN cards..

The network number of the IP address is the part of an IP address that identify the network that the host belongs to. The octets that make up the network number depend on the class of the IP address. For class A IP addresses, the network number is the bits in the first octet minus the class ID bits (the first bit of the first octet). For class B IP addresses, the network number is the bits in the first octet minus the class ID bits (the first two bits of the first octet) plus the bits in the second octet. For class C IP addresses, the network number is the bits in the first octet minus the class ID bits (the first three bits in the first octet) plus the bits in the second and third octets.

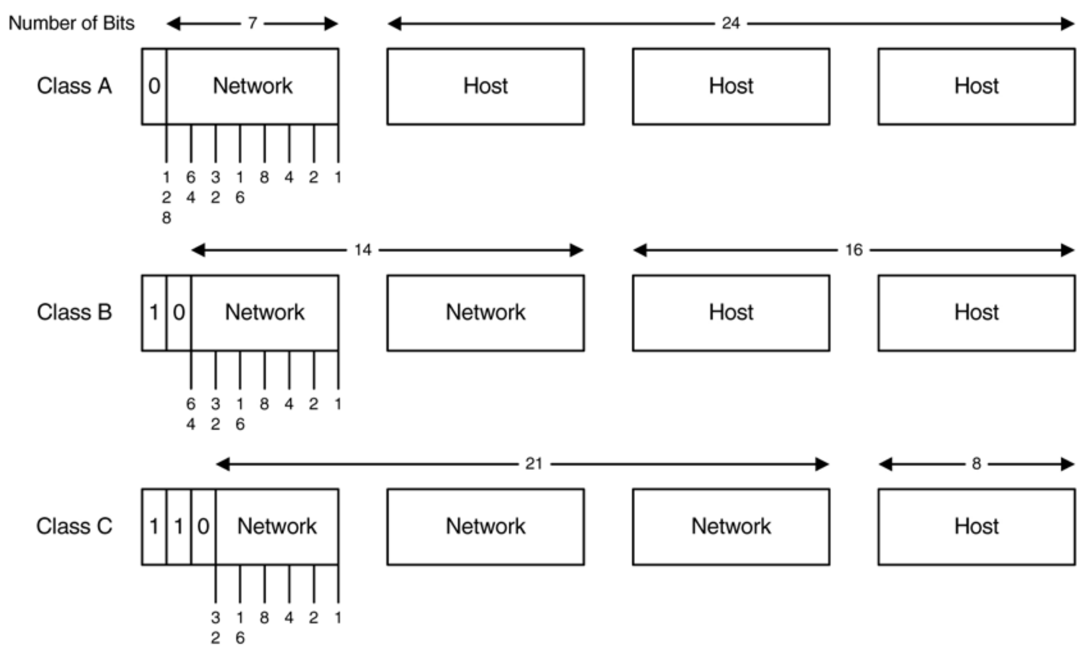
The host number of an IP address is the part of an IP address that identify a specific host on a network. The host number contains all the bits that do not belong to the class ID or the network number. For class A IP addresses, the host number contains all the bits in the second, third and fourth octets. For class B IP addresses, the host number contains all the bits in the third and fourth octets. For class C IP addresses, the host number contains all the bits in the fourth octet.

Table 11: Values of IP Addresses on page 177 summarizes the IP address values for the classes of IP addresses. *Figure 26: IP Address Bit Categorization* on page 177 illustrates the different parts of the IP addresses in each class of IP addresses.

Table 11: Values of IP Addresses

IP Address Class	IP Address Format	Class ID Bits	Range of IP Address Values
A	N.H.H.H	0	1.0.0.1 to 126.255.255.254
B	N.N.H.H	1, 0	128.1.0.1 to 191.254.255.254
C	N.N.N.H	1, 1, 0	192.0.1.1 to 223.255.254.254
N = Network Number, H = Host Number			

Figure 26: IP Address Bit Categorization



The EAGLE 5 ISS does not allow IP addresses to be entered that contain an invalid class ID, network number or host number. Valid class ID values are shown in *Table 11: Values of IP Addresses* on page 177. Valid network numbers and host numbers cannot contain all 0 bits or all 1 bits. For example, the class A IP address 10.0.0.0 is invalid because it contains a host number of '0.0.0'. A class B IP address of 128.0.10.5 is also invalid because the network number is '0.0' (remember the network number for a class B address is the bits in the first octet minus the class ID bits). The class C IP address of 192.0.1.255 is also invalid because it contains a host number of '255' (all ones). One of the error codes shown in *Table 12: Invalid IP Address Error Codes* on page 178 will be generated when an invalid IP address is entered.

Table 12: Invalid IP Address Error Codes

Error Code	Error Message
E2028	Octet 1 is out of range, 1..223
E2071	Network Number Invalid
E2072	Host Number Invalid
E2070	IP Address invalid for Address Class

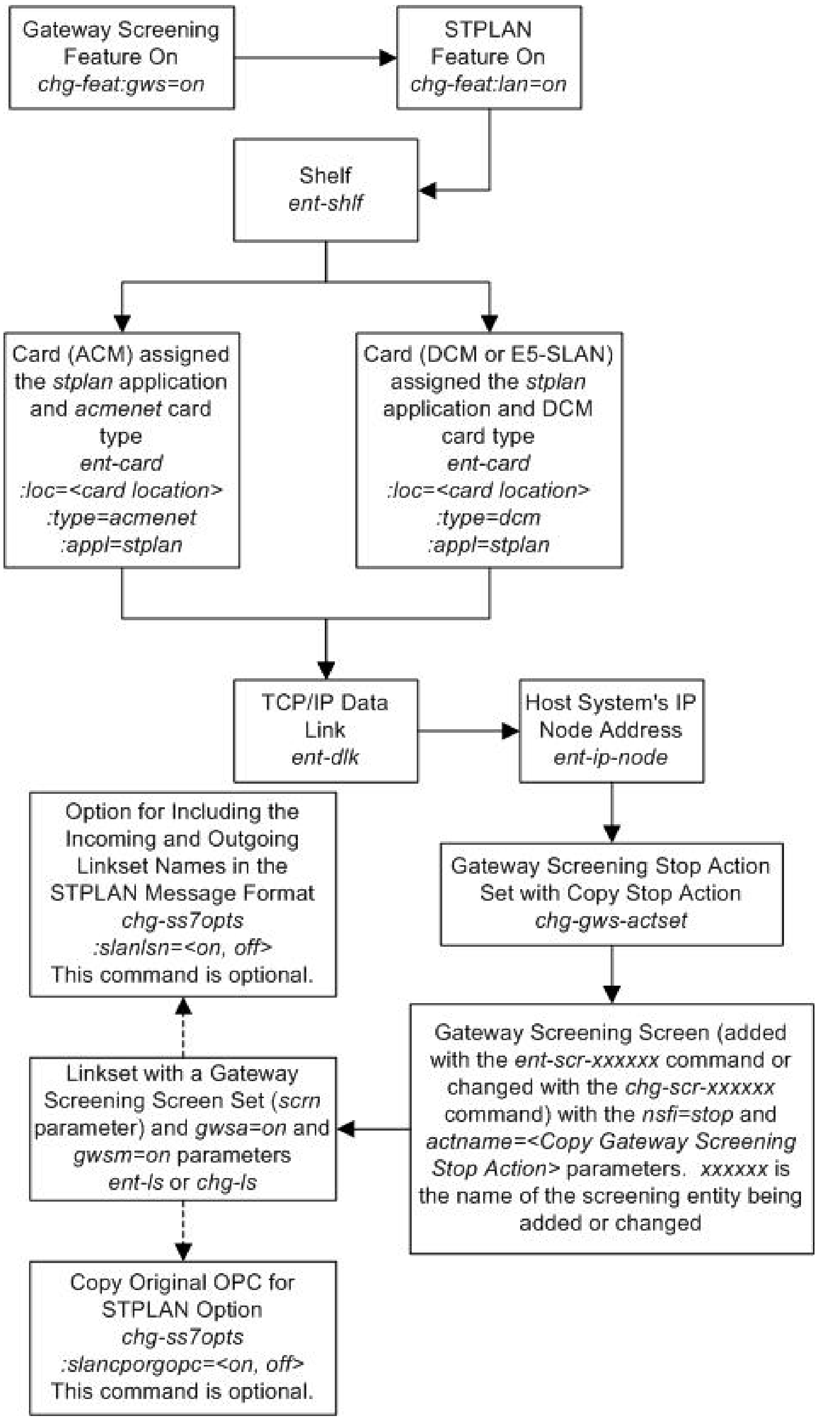
Network Configuration Procedures

To support the STPLAN feature, you must configure these database elements that are specific to the STPLAN feature.

- ACM, DCM, or E5-SLAN card
- TCP/IP Data Link
- IP Node

When the EAGLE 5 ISS is booted, each module gets the configuration information from the database. *Figure 27: STPLAN Database Relationships* on page 178 shows the database elements that must be configured, and the order in which they should be configured.

Figure 27: STPLAN Database Relationships



These procedures use a variety of commands. If you need more information on these commands, refer to the *Commands Manual* to find the required information.

This list describes the database entities (shown in *Figure 27: STPLAN Database Relationships* on page 178) that must be configured for the STPLAN feature.

1. The STPLAN and gateway screening features must be turned on. Verify that these features are turned on with the `rtrv-feat` command. If either of these the features are not on, shown with the entries `GWS = off` (if the gateway screening feature is off), and `LAN = off` (if the STPLAN feature is off), in the `rtrv-feat` command output, enter the `chg-feat:gws=on` command to turn on the gateway screening feature, and the `chg-feat:lan=on` command to turn on the STPLAN feature.

   Note: Once the gateway screening and STPLAN features are turned on with the `chg-feat` command, they cannot be turned off.

2. Make sure that the required shelf is in the database with the `rtrv-shlf` command. If it is not in the database, add it with the `ent-shlf` command.
3. Make sure the cards that the TCP/IP data links will be assigned to are in the database with the `rtrv-card` command. These cards can be either ACMs (card type `acmenet`) or DCMs (card type `dcm`), or E5-SLAN card (card type `dcm`). The ACM, DCM, or E5-SLAN card must have the `stplan` application assigned to it. If these cards are not in the database, add them with the `ent-card` command, specifying an ACM with the `type=acmenet` and `appl=stplan` parameters, or a DCM or E5-SLAN card with the `type=dcm` and `appl=stplan` parameters.
4. The TCP/IP data links needed by the STPLAN feature must be in the database. Verify this by entering the `rtrv-dlk` command. If the necessary TCP/IP data links are not in the database, add them with the `ent-dlk` command. Make sure that the card location specified in the `ent-dlk` command is an ACM, DCM, or E5-SLAN card shown in step 3. If the card is a DCM, you must also select the speed of 10 (default) or 100. If the card is an E5-SLAN card, you must also select the speed of 10 (default) or 100.
5. The TCP/IP nodes used by the STPLAN feature must be in the database. Verify this by entering the `rtrv-ip-node` command. If the necessary TCP/IP nodes are not in the database, add them with the `ent-ip-node` command with a card location assigned to a TCP/IP data link shown in step 4.
6. The GLS card must be provisioned and installed to be able to load card's screen-set
7. The STPLAN feature uses gateway screening to select the messages that are copied and sent to the STPLAN application on an ACM, DCM, or E5-SLAN card. A gateway screening stop action set containing the `COPY` gateway screening stop action must be assigned to the gateway screening entity where the gateway screening process stops (the NSFI of the screen is STOP). Enter the `rtrv-gws-actset` command to display the gateway screening stop action sets in the database. The database contains at least two gateway screening stop actions sets that contain the `COPY` gateway screening stop action as shown in bold in the example output. These gateway screening stop actions are always in the database and cannot be changed or removed.

```
rlghncxa03w 06-10-20 21:16:37 GMT EAGLE5 36.0.0
ACT  ACT    ACT  ACT  ACT  ACT  ACT  ACT  ACT  ACT  ACT  ACT
ID   NAME   1    2    3    4    5    6    7    8    9    10
--   ------ ---- ---- ---- ---- ---- ---- ---- ---- ---- ----
1    copy   copy
2    rdct   rdct
3    cr     copy rdct
GWS action set table is (3 of 16) 19% full
```

8. Verify that the necessary gateway screening entities have been configured with the required gateway screening stop action set, by entering the appropriate gateway screening retrieve command specifying the `actname` parameter with the gateway screening stop action name shown in the `rtrv-gws-actset` command output.

   `rtrv-scrset:actname=copy`

```
rtrv-scr-opc:actname=copy
rtrv-scr-blkopc:actname=copy
rtrv-scr-sio:actname=copy
rtrv-scr-dpc:actname=copy
rtrv-scr-blkdpc:actname=copy
rtrv-scr-destfld:actname=copy
rtrv-scr-cgpa:actname=copy
rtrv-scr-tt:actname=copy
rtrv-scr-cdpa:actname=copy
rtrv-scr-aftpc:actname=copy
rtrv-scr-isup:actname=copy
```

If a gateway screening entity is configured to copy messages to an STPLAN application, the entry `STOP` appears in the `NSFI` field and the `NSR/ACT` field contains the name of the gateway screening stop action set specified in the gateway screening retrieve command (see the following example).

```
rlghncxa03w 06-10-20 21:17:37 GMT EAGLE5 36.0.0
SCREEN = ALLOWED OPC
SR    NI       NC       NCM      NSFI    NSR/ACT
opc1  010      010      010      STOP    COPY
opc1  010      010      012      STOP    COPY
```

If the desired gateway screening entity is not configured to copy messages to the STPLAN application, configure these entities to copy messages to the STPLAN application. Go to the *Database Administration Manual - Gateway Screening* for information on configuring gateway screening entities.

9. The linkset containing the messages copied for the STPLAN application must have a gateway screening assigned to it. Either the `gwsa` or `gwsm` parameters of the linkset must be set to `on`. Verify this with the `rtrv-ls` command. If the desired linkset does not have a gateway screening assigned to it, shown in the `SCRN` field of the `rtrv-ls` output, or the `GWSA` or `GWSM` field is set to `off`, refer to either *Changing an X.25 Linkset* on page 76 or to the Changing an SS7 Linkset procedure in the Database *Administration Manual* - SS7 and change the `scrn`, `gwsa`, and `gwsm` parameters of the desired linkset.

   CAUTION

   CAUTION: When Gateway Screening is in the screen test mode, as defined by the linkset parameters `gwsa=off` and `gwsm=on`, the gateway screening action in the gateway screening stop action set specified by the `actname` parameter of the gateway screening screen set at the end of the gateway screening process will be performed.

10. The copy original OPC for STPLAN option can be configured for the STPLAN feature. Enter the `rtrv-ss7opts` command to verify the status of this option. This option is configured by performing the procedure *Configuring the Copy Original OPC for STPLAN Option* on page 217. Configuring this option is not required for the STPLAN feature.
11. The option for including the incoming and outgoing linkset names in the STPLAN message format can be configured for the STPLAN feature. Enter the `rtrv-ss7opts` command to verify the status of this option. This option is configured by performing the procedure

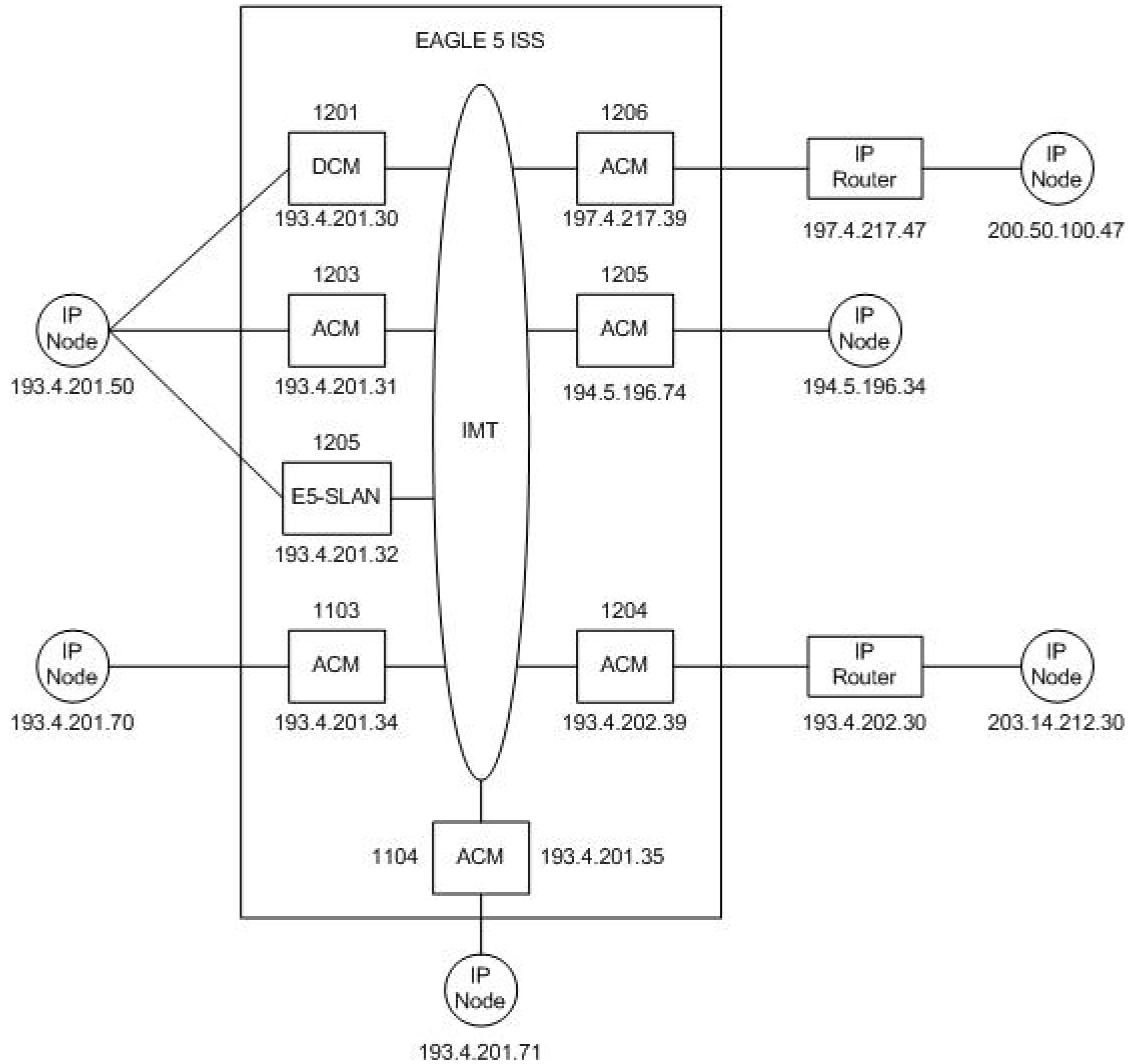
Configuring the Option for Including the Incoming and Outgoing Linkset Names in the STPLAN Message Format on page 220. Configuring this option is not required for the STPLAN feature.

The STPLAN configuration procedures in this chapter use the sample network information shown in *Table 13: STPLAN Configuration Example Database* on page 182. *Figure 28: STPLAN Configuration Example* on page 182 shows a diagram of this sample network.

Table 13: STPLAN Configuration Example Database

Card Location	Interface Address	TCP/IP Router Address	STPLAN Node Address	STPLAN Port ID
1103	193.4.201.34	—	193.4.201.70	1024
1104	193.4.201.35	—	193.4.201.71	1024
1201	193.4.201.30	—	193.4.201.50	1024
1203	193.4.201.31	—	193.4.201.51	1024
1204	193.4.202.39	193.4.202.30	200.50.100.47	2000
1205	193.4.202.32	—	193.4.201.50	3000
1206	197.4.217.39	197.4.217.47	203.14.212.30	4000
1207	194.5.198.74	—	194.5.198.34	4000

Figure 28: STPLAN Configuration Example



Adding an STPLAN Card

This procedure is used to add a card supporting the STPLAN feature, either a DCM, ACM, or E5-SLAN card running the `stplan` to the database using the `ent-card` command. The `ent-card` command uses these parameters:

`:loc` – The location of the card being added to the database.

`:type` – The type of card being added to the database. For this procedure, the value of this parameter is either `dcm` (for the dual-slot DCM or single-slot EDCM) or `acmenet` (for the ACM).

`:appl` – The application software that is assigned to the card. For this procedure, the value of this parameter is `vwxslan` (if the card is a dual-slot DCM or single-slot EDCM) or `stplan` (if the card is an ACM).

`:force` – Allow the LIM to be added to the database even if there are not enough cards running the SCCP or VSCCP GPLs to support the number of LIMs. This parameter is obsolete and is no longer used.

The STPLAN card part numbers are shown in *Table 14: STPLAN Card Part Numbers* on page 184.

Table 14: STPLAN Card Part Numbers

Card Type	Card Name (as shown on the card label)	TYPE Parameter Value	Part Number
ACM	ACM-ENET	acmenet	870-1008-XX
Dual-Slot DCM	DCM	dcm	870-1945-XX 870-1984-01
Single-Slot EDCM	DCM	dcm	870-2372-01
	EDCM-A	dcm	870-2508-XX
E5-SLAN Card	E5-ENET	dcm	870-2212-02

The dual-slot DCM can be inserted only in the odd numbered card slots of the extension shelf. Slot 09 of each shelf contains the HMUX card or HIPR card, thus the DCM cannot be inserted in slot 09. The dual-slot DCM can be inserted in the control shelf, but only in slots 01, 03, 05, and 07. The dual-slot DCM occupies two card slots, so the even numbered card slot adjacent to the odd numbered slot where the dual-slot DCM has been inserted must be empty, as shown in *Table 15: DCM Card Locations* on page 184. The dual-slot DCM is connected to the network through the odd numbered card slot connector.

Table 15: DCM Card Locations

Location of the DCM	Empty Card Location	Location of the DCM	Empty Card Location
Slot 01	Slot 02	Slot 11	Slot 12
Slot 03	Slot 04	Slot 13	Slot 14
Slot 05	Slot 06	Slot 15	Slot 16
Slot 07	Slot 08	Slot 17	Slot 18

Before the card can be configured in the database for the STPLAN feature, the STPLAN and gateway screening features must be turned on with the `chg-feat` command. The gateway screening feature must be on before the STPLAN feature can be turned on. The `rtrv-feat` command can verify that the STPLAN, and gateway screening features are on.

Note: Once the Gateway Screening and STPLAN features are turned on with the `chg-feat` command, they cannot be turned off.

Note: Verify the temperature threshold settings for the E5-SLAN card by performing the “Changing the High-Capacity Card Temperature Alarm Thresholds” procedure in the *Database Administration Manual-SS7*.

The shelf to which the card is to be added must already be in the database. This can be verified with the `rtrv-shlf` command. If the shelf is not in the database, see the "Adding a Shelf" procedure in the *Database Administration Manual – System Management*.

The card cannot be added to the database if the specified card location already has a card assigned to it.

STPLAN Card Provisioning

The following rules apply to provisioning STPLAN cards:

- A minimum of two STPLAN cards must be provisioned in an EAGLE 5 ISS.
- A maximum of 32 STPLAN cards can be provisioned in an EAGLE 5 ISS.
- For shelves containing HMUX cards, the following rules apply to provisioning STPLAN cards.
  - If the shelf containing the STPLAN cards (only ACMs or DCMs, but not E5-SLAN cards) has HMUX cards installed in card slots 9 and 10, the shelf can contain a maximum of three STPLAN cards.
  - The STPLAN cards should be provisioned in shelves adjacent to the shelf containing the cards being monitored - half of the STPLAN cards should be provisioned in the next shelf and the other half of the STPLAN cards should be provisioned in the previous shelf. For example, if the shelf generating the STPLAN traffic is shelf 2100, half of the STPLAN cards should be provisioned in shelf 1300 and the other half of the STPLAN cards should be provisioned in shelf 2200.
- For shelves containing HIPR cards, the STPLAN cards should be provisioned in the same shelves that contain HIPR cards. There is no limit on the number of STPLAN cards that can be provisioned on shelves containing HIPR cards.
- The E5-SLAN card requires that HIPR cards are installed in the card locations 9 and 10 in the shelf that will contain the E5-SLAN card. If HIPR cards are not installed in the shelf that the E5-SLAN card will occupy, the E5-SLAN card will be auto-inhibited when the E5-SLAN card is inserted into the shelf. Enter the `rept-stat-gpl:gpl=hipr` command to verify whether or not `HIPR` cards are installed in the same shelf as the `E5-SLAN` card being provisioned in this procedure.

Note: Contact your Tekelec Sales Representative or Account Representative to determine the number of STPLAN cards that must be provisioned in your EAGLE 5 ISS, and to determine where in the EAGLE 5 ISS these STPLAN cards must provisioned before performing this procedure.

The examples in this procedure are used to add a DCM in card slot 1201 and an ACM in card slot 1204 to the database, and an E5-SLAN card in card slot 1207.

1. Display the cards in the EAGLE 5 ISS using the `rtrv-card` command.

   Cards should be distributed throughout the EAGLE 5 ISS for proper power distribution. Refer to the*Installation Manual* - EAGLE *5* ISS for the shelf power distribution. This is an example of the possible output.

   ```
   rlghncxa03w 06-10-25 09:58:31 GMT EAGLE5 36.0.0
   CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
   ```

```
1101   TSM       SCCP
1102   TSM       GLS
1103   ACMENET   STPLAN
1104   ACMENET   STPLAN
1113   GPSM      EOAM
1114   TDM-A
1115   GPSM      EOAM
1116   TDM-B
1117   MDAL
1203   ACMENET   STPLAN
1205   ACMENET   STPLAN
1206   ACMENET   STPLAN
1211   LIMDS0    SS7ANSI   lsn1          A    0   lsn2          B    1
1212   LIMV35    SS7GX25   lsngwy        A    0
1213   LIMV35    SS7ANSI   lsn2          A    0   lsn1          B    1
1216   LIMDS0    SS7ANSI   sp2           A    0   sp1           B    0
1303   LIMDS0    SS7ANSI   sp3           A    0
1304   LIMDS0    SS7ANSI   sp3           A    1
1306   LIMDS0    SS7ANSI   nsp3          A    1   nsp4          B    1
1307   LIMV35    SS7GX25   nsp1          A    0
1308   LIMV35    SS7GX25   nsp1          A    1
```

If the `APPL` field of the `rtrv-card` command output shows cards assigned to the `STPLAN` application, skip steps 2, 3, and 4, and go to step 5.

2. Verify that the STPLAN and the gateway screening features are on, by entering the `rtrv-feat` command.

   If the STPLAN feature is on, the `LAN` field should be set to `on`. If the gateway screening feature is on, the `GWS` field should be set to `on`. For this example, the STPLAN and gateway screening features are off.

   Note: The `rtrv-feat` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in the *Commands Manual*.

   If the gateway screening and STPLAN features are on, skip steps 3 and 4 and go to step 5. If the gateway screening feature is not on, go to step 3. If the gateway screening feature is on, but the STPLAN feature is off, skip step 3 and go to step 4.

3. If the gateway screening feature is not on, shown by the `GWS = off` entry in the `rtrv-feat` command output in step 2, turn the gateway screening feature on by entering this command.

   `chg-feat:gws=on`

   Note: Once the gateway screening feature is turned on with the `chg-feat` command, it cannot be turned off.

   When the `chg-feat` has successfully completed, this message should appear.

```
rlghncxa03w 06-10-20 21:18:37 GMT EAGLE5 36.0.0
CHG-FEAT: MASP A - COMPLTD
```

4. Turn the STPLAN feature on by entering this command.

   `chg-feat:lan=on`

   Note: Once the STPLAN feature is turned on with the `chg-feat` command, it cannot be turned off.

When the `chg-feat` has successfully completed, this message should appear.

```
rlghncxa03w 06-10-20 21:19:37 GMT EAGLE5 36.0.0
CHG-FEAT: MASP A - COMPLTD
```

5. Verify that the card has been physically installed into the proper location.

   CAUTION: If the versions of the flash GPLs on the STPLAN card does not match the flash GPL versions in the database when the STPLAN is inserted into the card slot, UAM 0002 is generated indicating that these GPL versions do not match. If UAM 0002 has been generated, perform the alarm clearing procedure for UAM 0002 in the *Unsolicited Alarm and Information Messages Manual* before proceeding with this procedure.

   Note: Skip step 6 and go to step 7 if you do not want to enter an E5-SLAN card.

6. Verify whether HIPR cards are installed in the same shelf as the E5-SLAN card to be provisioned using the `rept-stat-gpl:gpl=hipr` command.

```
rlghncxa03w 07-02-01 11:40:26 GMT EAGLE5 37.0.0
GPL     CARD     RUNNING        APPROVED       TRIAL
HIPR    1109   126-002-000   126-002-000   126-003-000
HIPR    1110   126-002-000   126-002-000   126-003-000
HIPR    1209   126-002-000   126-002-000   126-003-000
HIPR    1210   126-002-000   126-002-000   126-003-000
HIPR    1309   126-002-000   126-002-000   126-003-000
HIPR    1310   126-002-000   126-002-000   126-003-000
HIPR    2109   126-002-000   126-002-000   126-003-000
HIPR    2110   126-002-000   126-002-000   126-003-000
Command Completed
```

   If HIPR cards are installed in the shelf containing the E5-SLAN card, go to step 7.

   If HIPR cards are not installed at the card locations 9 and 10 on the shelf where the E5-SLAN card is to be installed, refer to the *Installation Manual - EAGLE 5 ISS* and install the HIPR cards. Once the HIPR cards have been installed, go to step 7.

7. Add the card to the database using the `ent-card` command.

   For this example, enter these commands.

   `ent-card:loc=1201:type=dcm:appl=vwxslan`

   `ent-card:loc=1204:type=acmenet:appl=stplan`

   `ent-card:loc=1207:type=dcm:appl=stplan`

   When each of these commands has successfully completed, this message should appear.

```
rlghncxa03w 06-10-20 21:21:37 GMT EAGLE5 36.0.0
ENT-CARD: MASP A - COMPLTD
```

8. Verify the changes using the `rtrv-card` command with the card location specified.

   For this example, enter these commands.

   `rtrv-card:loc=1201`

   This is an example of the possible output.

```
rlghncxa03w 06-10-20 21:22:37 GMT EAGLE5 36.0.0
```

```
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1201   DCM       VWXSLAN
```

`rtrv-card:loc=1204`

This is an example of the possible output.

```
rlghncxa03w 06-10-20 21:23:37 GMT EAGLE5 36.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1204   ACMENET   STPLAN
```

`rtrv-card:loc=1207`

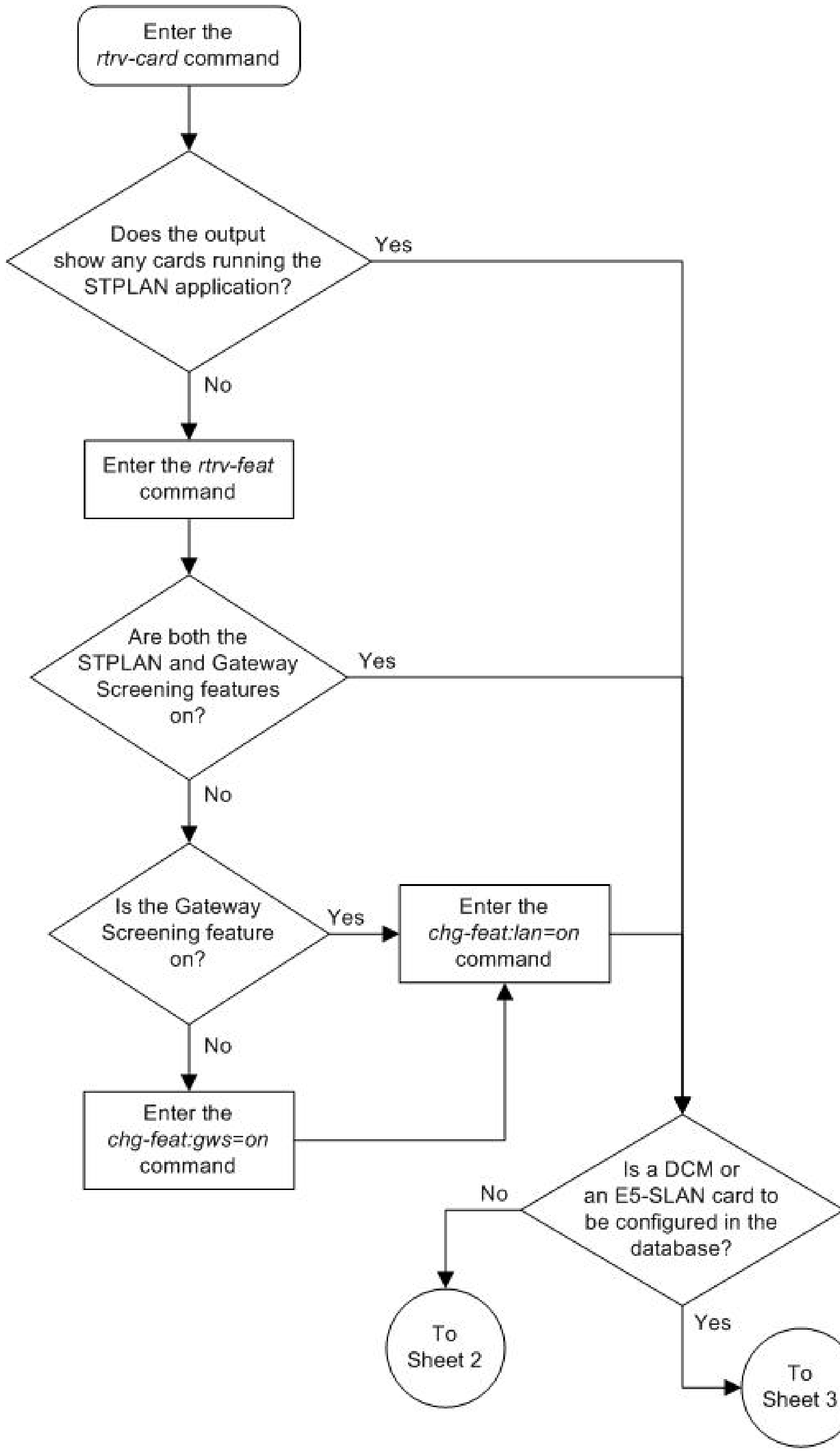
```
rlghncxa03w 06-08-20 21:22:37 GMT EAGLE5 37.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1207   DCM       STPLAN
```

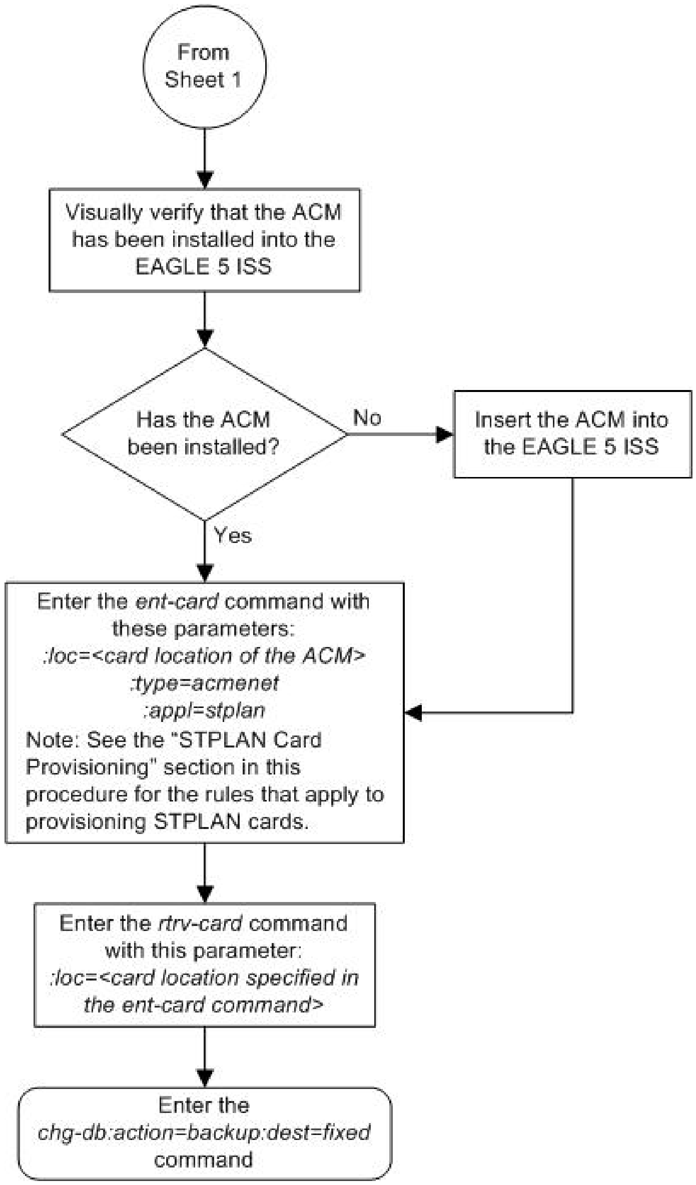
9. Backup the new changes, using the `chg-db:action=backup:dest=fixed` command.

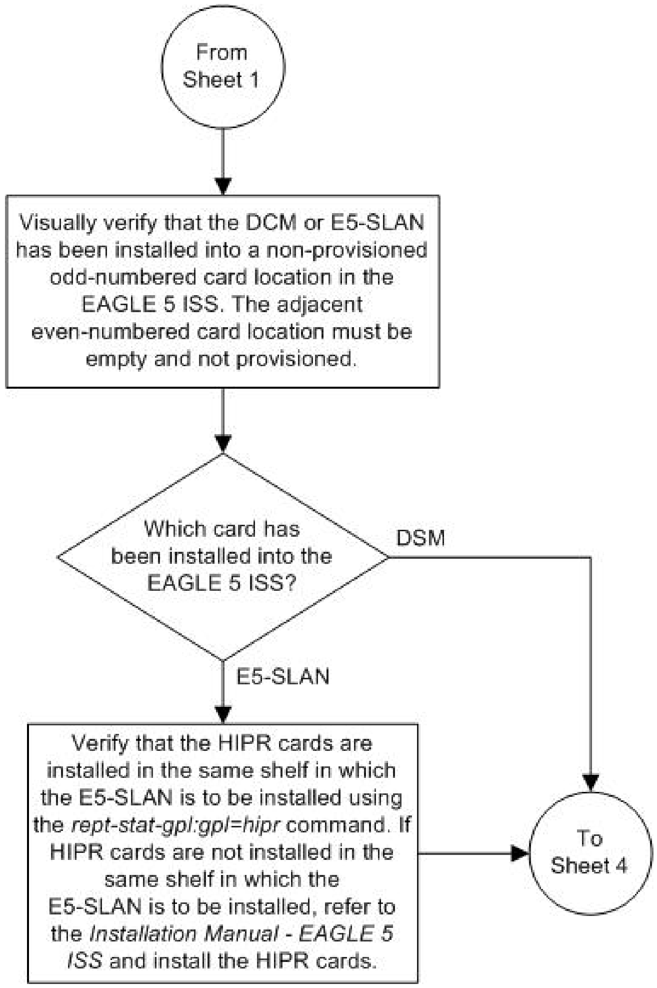
   These messages should appear; the active Maintenance and Administration Subsystem Processor (MASP) appears first.

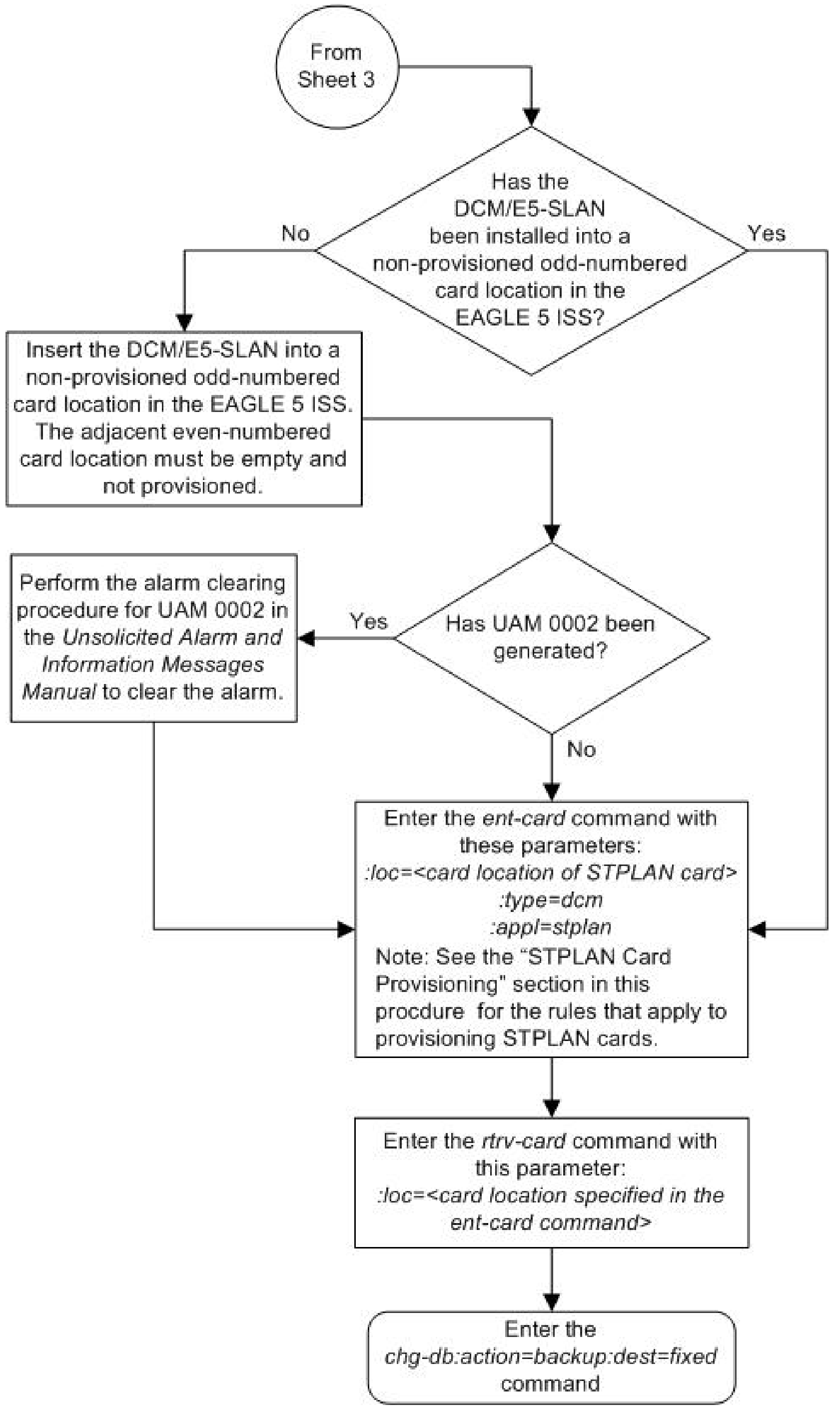
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 29: Adding an STPLAN Card


Enter the rtrv-card command
Does the output show any cards running the STPLAN application?
Yes
No
Enter the rtrv-feat command
Are both the STPLAN and Gateway Screening features on?
Yes
No
Is the Gateway Screening feature on?
Yes
Enter the chg-feat:lan=on command
No
Enter the chg-feat:gws=on command
Is a DCM or an E5-SLAN card to be configured in the database?
No
To Sheet 2
Yes
To Sheet 3


From Sheet 1
Visually verify that the ACM has been installed into the EAGLE 5 ISS
Has the ACM been installed?
No
Insert the ACM into the EAGLE 5 ISS
Yes
Enter the ent-card command with these parameters:
:loc=<card location of the ACM>
:type=acmenet
:appl=stplan
Note: See the "STPLAN Card Provisioning" section in this procedure for the rules that apply to provisioning STPLAN cards.
Enter the rtrv-card command with this parameter:
:loc=<card location specified in the ent-card command>
Enter the chg-db:action=backup:dest=fixed command


From Sheet 1
Visually verify that the DCM or E5-SLAN has been installed into a non-provisioned odd-numbered card location in the EAGLE 5 ISS. The adjacent even-numbered card location must be empty and not provisioned.
Which card has been installed into the EAGLE 5 ISS?
DSM
E5-SLAN
Verify that the HIPR cards are installed in the same shelf in which the E5-SLAN is to be installed using the rept-stat-gpl:gpl=hipr command. If HIPR cards are not installed in the same shelf in which the E5-SLAN is to be installed, refer to the Installation Manual - EAGLE 5 ISS and install the HIPR cards.
To Sheet 4


From Sheet 3
Has the DCM/E5-SLAN been installed into a non-provisioned odd-numbered card location in the EAGLE 5 ISS?
No
Yes
Insert the DCM/E5-SLAN into a non-provisioned odd-numbered card location in the EAGLE 5 ISS. The adjacent even-numbered card location must be empty and not provisioned.
Perform the alarm clearing procedure for UAM 0002 in the Unsolicited Alarm and Information Messages Manual to clear the alarm.
Yes
Has UAM 0002 been generated?
No
Enter the ent-card command with these parameters:
:loc=<card location of STPLAN card>
:type=dcm
:appl=stplan
Note: See the "STPLAN Card Provisioning" section in this procdure for the rules that apply to provisioning STPLAN cards.
Enter the rtrv-card command with this parameter:
:loc=<card location specified in the ent-card command>
Enter the chg-db:action=backup:dest=fixed command

Removing an STPLAN Card

This procedure is used to remove a card supporting the STPLAN feature, either an ACM, DCM, or E5-SLAN card running the `stplan` application, from the database using the `dlt-card` command.

The card cannot be removed if it does not exist in the database.

No TCP/IP data links can be assigned to the card you wish to remove from the database.

CAUTION: If the card being removed from the database is the last in-service card supporting the STPLAN feature (either ACM, DCM, or E5-SLAN card), removing this card from the database will disable the STPLAN feature.

The examples in this procedure are used to remove the DCM in card location 1201 from the database.

1. Display the cards in the database using the `rtrv-card` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:58:31 GMT EAGLE5 36.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1101   TSM       SCCP
1102   TSM       GLS
1103   ACMENET   STPLAN
1104   ACMENET   STPLAN
1113   GPSM      EOAM
1114   TDM-A
1115   GPSM      EOAM
1116   TDM-B
1117   MDAL
1201   DCM       STPLAN
1203   DCM       STPLAN
1204   ACMENET   STPLAN
1205   DCM       STPLAN
1206   DCM       STPLAN
1207   DCM       STPLAN
1211   LIMDS0    SS7ANSI   lsn1          A    0   lsn2          B    1
1212   LIMV35    SS7GX25   lsngwy        A    0
1213   LIMV35    SS7ANSI   lsn2          A    0   lsn1          B    1
1216   LIMDS0    SS7ANSI   sp2           A    0   sp1           B    0
1303   LIMDS0    SS7ANSI   sp3           A    0
1304   LIMDS0    SS7ANSI   sp3           A    1
1306   LIMDS0    SS7ANSI   nsp3          A    1   nsp4          B    1
1307   LIMV35    SS7GX25   nsp1          A    0
1308   LIMV35    SS7GX25   nsp1          A    1
```

   If no STPLAN cards are shown in the `rtrv-card` output, this procedure cannot be performed. STPLAN cards are shown by the entry `STPLAN` in the `APPL` field.

2. Display the status of the TCP/IP data link assigned to the card you wish to remove by entering the `rept-stat-dlk` command with the card location of the STPLAN card being removed. For this example, enter this command.

   `rept-stat-dlk:loc=1201`

This is an example of the possible output.

```
rlghncxa03w 06-10-20 21:17:37 GMT EAGLE5 36.0.0
DLK    PST           SST        AST
1201   IS-NR         Avail      ---
  ALARM STATUS    = No Alarms.
Command Completed.
```

3. If the TCP/IP data link is not in an OOS-MT-DSBLD state, deactivate the TCP/IP data link assigned to the card using the `canc-dlk` command with the card location specified in step 2.

   For this example, enter this command.

   `canc-dlk:loc=1201`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-20 21:18:37 GMT EAGLE5 36.0.0
Deactivate Link message sent to card.
```

4. Inhibit the card using the `rmv-card` command, specifying the card location specified in step 3.

   For this example, enter this command.

   `rmv-card:loc=1201`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-20 21:19:37 GMT EAGLE5 36.0.0
Card has been inhibited.
```

5. Display the TCP/IP nodes in the database by entering the `rtrv-ip-node` command with the card location specified in step 4. For this example, enter this command.

   `rtrv-ip-node=loc=1201`

   This is an example of the possible output.

```
rlghncxa03w 06-10-20 21:20:37 GMT EAGLE5 36.0.0
IPADDR           IPPORT  IPAPPL  LOC   CAP   IPRTE
193.4.201.50     1024    stplan  1201  10%   --
```

6. Remove the TCP/IP node assigned to the card location containing the TCP/IP data link to be removed from the database using the `dlt-ip-node` command with the card location specified in step 5.

   For this example, enter this command.

   `dlt-ip-node:ipaddr=193.4.201.50:loc=1201`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-20 21:21:37 GMT EAGLE5 36.0.0
DLT-IP-NODE: MASP A - COMPLTD
```

7. Remove the data link from the specified card by using the `dlt-dlk` command with the card location specified in step 6.

   For this example, enter this command.

   `dlt-dlk:loc=1201`

When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-20 21:22:37 GMT EAGLE5 36.0.0
DLT-DLK: MASP A - COMPLTD
```

8. Remove the card using the `dlt-card` command with the card location of the card to be removed.

   The `dlt-card` command has only one parameter, `loc`, which is the location of the card. For this example, enter this command.

   `dlt-card:loc=1201`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-20 21:23:37 GMT EAGLE5 36.0.0
DLT-CARD: MASP A - COMPLTD
```

9. Verify the changes using the `rtrv-card` command specifying the card that was removed in step 8.

   For this example, enter this command.

   `rtrv-card:loc=1201`

   When this command has successfully completed, this message should appear.

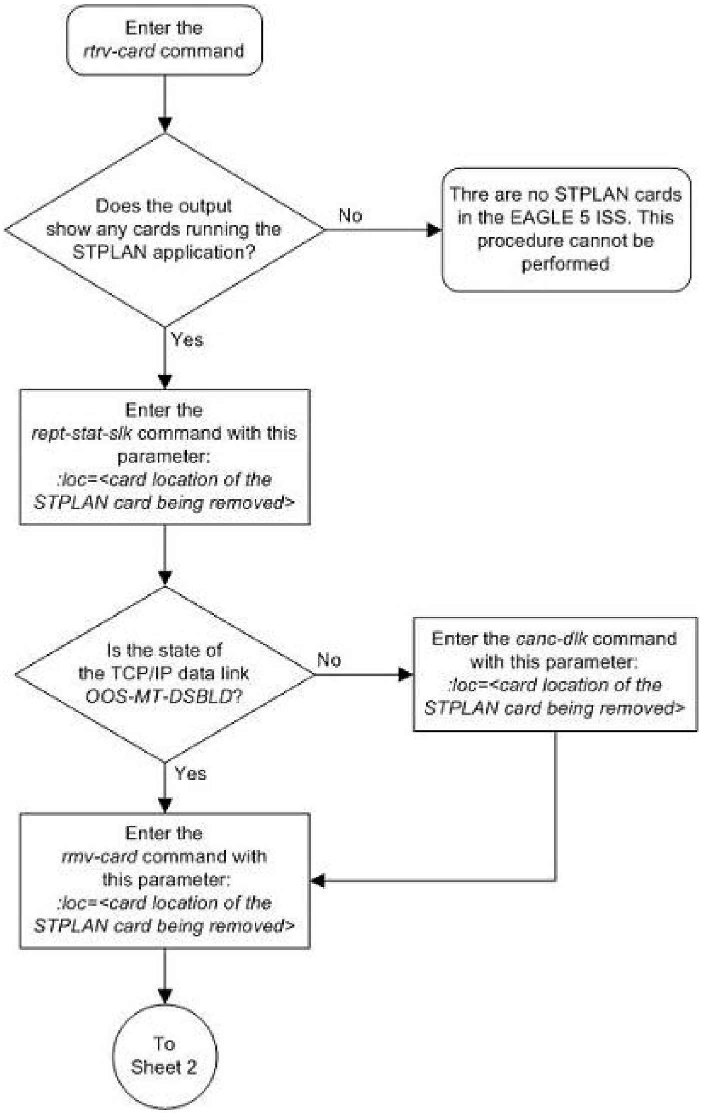
```
E2144 Cmd Rej: Location invalid for hardware configuration
```

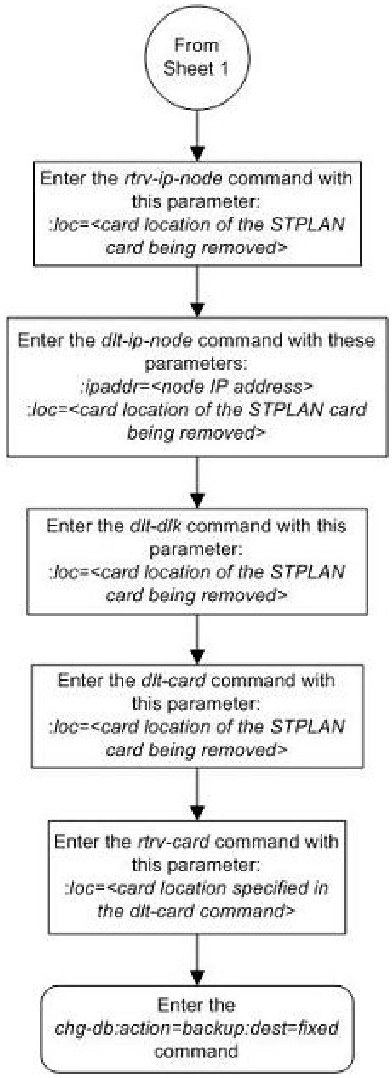
10. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

    These messages should appear; the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 30: Removing an STPLAN Card


Enter the
rtrv-card command
Does the output
show any cards running the
STPLAN application?
No
Thre are no STPLAN cards
in the EAGLE 5 ISS. This
procedure cannot be
performed
Yes
Enter the
rept-stat-slk command with this
parameter:
:loc=<card location of the
STPLAN card being removed>
Is the state of
the TCP/IP data link
OOS-MT-DSBLD?
No
Enter the canc-dlk command
with this parameter:
:loc=<card location of the
STPLAN card being removed>
Yes
Enter the
rmv-card command with
this parameter:
:loc=<card location of the
STPLAN card being removed>
To
Sheet 2



Adding a TCP/IP Data Link

This procedure is used to add a TCP/IP data link to the database using the `ent-dlk` command.

The `ent-dlk` command uses these parameters:

`:loc` – The card location of the ACM, DCM, or E5-SLAN card that the TCP/IP data link will be assigned to.

`:ipaddr` – The TCP/IP data link's IP address

`:duplex` – The mode of operation of the interface. This parameter is valid only for DCMs or E5-SLAN cards running the `STPLAN` application. The value for this parameter is `half` or `full`. The default value is `half`. The value `half` indicates that the mode of operation of the interface is half duplex. The value `full` indicates that the mode of operation of the interface is full duplex.

`:speed` – The transmission rate of the TCP/IP data link, either 10 Mb/s (`speed=10`) or 100 Mb/s (`speed=100`). The default value for this optional parameter is 10. The `speed=100` parameter can be specified only if the application running on the STPLAN card is VXWSLAN. The application running on the card is shown in the `APPL` field of the `rtrv-card` command output.

`:auto` – This parameter specifies whether the hardware automatically determines duplex and speed. This parameter is valid only for DCMs or E5-SLAN cards running the `STPLAN` application. The value for this parameter is `yes` or `no`. The value `yes` indicates that the parameters duplex and speed are automatically determined. Dashes are displayed in the `LINK SPEED` and `DUPLEX` columns in the `rtrv-dlk` output if the `auto` parameter value is `yes`. The value `no` indicates that the parameters `duplex` and `speed` are not determined automatically.

The default value for the `auto` parameter is `yes`, if the `speed` and `duplex` parameters are not specified.

The `speed` and `duplex` parameters can be specified with the `auto` parameter only if the `auto` parameter value is `no`.

If the `speed` and `duplex` parameters are specified and the `auto` parameter is not specified, the default value for the `auto` parameter is `no`.

If either the `duplex` or `speed` parameters are specified, then both the `duplex` and `speed` parameters must be specified.

Note: If the STPLAN card is an ACM (shown in the rtrv-card output with the entry ACMENET in the TYPE column), only the loc and ipaddr parameters can be specified in this procedure. The following values are also displayed in the rtrv-dlk output if the STPLAN card is an ACM.

AUTO – NO LINK

SPEED – 10Mbit

DUPLEX – HALF

This examples used in this procedure are based on the example network shown in *Figure 28: STPLAN Configuration Example* on page 182 and *Table 13: STPLAN Configuration Example Database* on page 182.

The STPLAN and gateway screening features must be turned on. Verify this by entering the `rtrv-feat` command. If either the STPLAN feature or gateway screening feature is off, they can be turned on by entering the `chg-feat:lan=on` command for the STPLAN feature and the `chg-feat:gws=on` command for the gateway screening feature.

Note: Once the gateway screening and STPLAN features are turned on with the `chg-feat` command, they cannot be turned off.

The card that the TCP/IP data link is assigned to must be an ACM running the `stplan` application or a DCMor E5-SLAN card running the `stplan` application. This can be verified in step 2 with the `rtrv-card` command. The ACM is shown by the entries `ACMENET` in the `TYPE` field and `STPLAN` in the `APPL` field of the `rtrv-card` command output. The DCM or E5-SLAN card is shown by the entries `DCM` in the `TYPE` field and `STPLAN` in the `APPL` field of the `rtrv-card` command output. If the STPLAN card is not shown in the `rtrv-card` command output, go to *Adding an STPLAN Card* on page 183 and add the required card to the database.

The specified card cannot have a TCP/IP data link assigned to it, nor can the TCP/IP data link be in the database. This can be verified in step 1.

The IP address to be assigned to the TCP/IP data link cannot be assigned to a TCP/IP node or to a TCP/IP router. Enter the `rtrv-ip-node` command to display the IP addresses of the TCP/IP nodes and the TCP/IP routers. This can be verified in step 2.

1. Display the data links in the database by entering the `rtrv-dlk` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-20 21:16:37 GMT EAGLE5 36.0.0
LOC    IPADDR             LINK SPEED
1103   193.4.201.34       10Mbit
1104   193.4.201.35       10Mbit
```

2. Display the TCP/IP nodes and TCP/IP routers by entering the `rtrv-ip-node` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-20 21:17:37 GMT EAGLE5 36.0.0
IPADDR            IPPORT   IPAPPL   LOC    CAP   IPRTE
193.4.201.70      1024     stplan   1103   10%   --
193.4.201.71      1024     stplan   1104   10%   --
```

   If the IP address being assigned to the TCP/IP data link in this procedure matches any IP address values shown in steps 1 or 2, choose an IP address value that is not shown in steps 1 or 2 and go to step 3.

3. Display the cards in the database by entering the `rtrv-card` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:58:31 GMT EAGLE5 36.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1101   TSM       SCCP
1102   TSM       GLS
1103   ACMENET   STPLAN
1104   ACMENET   STPLAN
1113   GPSM      EOAM
1114   TDM-A
1115   GPSM      EOAM
1116   TDM-B
1117   MDAL
1201   DCM       STPLAN
1203   DCM       STPLAN
1204   ACMENET   STPLAN
1205   DCM       STPLAN
1206   DCM       STPLAN
1207   DCM       STPLAN
1211   LIMDS0    SS7ANSI   lsn1          A    0   lsn2          B    1
1212   LIMV35    SS7GX25   lsngwy        A    0
1213   LIMV35    SS7ANSI   lsn2          A    0   lsn1          B    1
1216   LIMDS0    SS7ANSI   sp2           A    0   sp1           B    0
1303   LIMDS0    SS7ANSI   sp3           A    0
1304   LIMDS0    SS7ANSI   sp3           A    1
1306   LIMDS0    SS7ANSI   nsp3          A    1   nsp4          B    1
1307   LIMV35    SS7GX25   nsp1          A    0
1308   LIMV35    SS7GX25   nsp1          A    1
```

   The STPLAN card that will be specified in step 4 must be shown in the `rtrv-card` output in this step, but cannot be shown in the `loc` column of the `rtrv-dlk` output in step 1.

   If the required STPLAN card is not shown in the `rtrv-card` output, perform *Adding an STPLAN Card* on page 183 and add the STPLAN card to the database.

If the STPLAN card is shown in the `rtrv-dlk` output, either select an STPLAN card that is shown in the `rtrv-card` output, but not shown in the `rtrv-dlk` output, or perform *Adding an STPLAN Card* on page 183 and add the STPLAN card to the database.

The `speed`, `duplex`, and `auto` parameters can be specified with the `ent-dlk` command only if the STPLAN card is a DCM or an E5-SLAN card.

4. Add the data link to the database by entering the `ent-dlk` command.

For this example, enter these commands.

`ent-dlk:loc=1201:ipaddr=193.4.201.50:speed=100:auto=no`

`ent-dlk:loc=1203:ipaddr=193.4.201.51`

`ent-dlk:loc=1204:ipaddr=200.50.100.47`

`ent-dlk:loc=1205:ipaddr=193.4.201.50`

`ent-dlk:loc=1206:ipaddr=203.14.212.30`

`ent-dlk:loc=1207:ipaddr=203.14.212.39`

When each of these commands has successfully completed, this message should appear.

```
rlghncxa03w 06-10-20 21:19:37 GMT EAGLE5 36.0.0
ENT-DLK: MASP A - COMPLTD
```

The `ent-dlk` command assigns the IP address (`ipaddr`) to the STPLAN card. If the network is a private network (not on the Internet), you can assign any unique address. If the STPLAN card is on the Internet, you must obtain an IP address from the Internet Network Information Center (NIC). Refer to *IP Addresses* on page 176 for information on the IP address values used in the `ent-dlk` command.

The default value for the `auto` parameter is `yes`, if the `speed` and `duplex` parameters are not specified.

The `speed` and `duplex` parameters can be specified with the `auto` parameter only if the `auto` parameter value is `no`.

If the `speed` and `duplex` parameters are specified and the `auto` parameter is not specified, the default value for the `auto` parameter is `no`.

If either the `duplex` or `speed` parameters are specified, then both the `duplex` and `speed` parameters must be specified.

Note: If the STPLAN card is an ACM (shown in the `rtrv-card` output with the entry `ACMENET` in the `TYPE` column), only the `loc` and `ipaddr` parameters can be specified in this procedure. The following values are also displayed in the `rtrv-dlk` output if the `STPLAN` card is an `ACM`.

AUTO – NO ; LINK SPEED – 10Mbit; DUPLEX – HALF

5. Verify the changes using the `rtrv-dlk` command with the card location specified in step 4.

For this example, enter these commands.

`rtrv-dlk:loc=1201`

This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:16:37 GMT EAGLE5 37.0.0
```

```
LOC    IPADDR            LINK SPEED  DUPLEX  AUTO
1201   193.4.201.50      100Mbit     HALF    NO
```

`rtrv-dlk:loc=1203`

This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:16:37 GMT EAGLE5 37.0.0
LOC    IPADDR            LINK SPEED  DUPLEX  AUTO
1203   193.4.201.51     -----       ----     YES
```

`rtrv-dlk:loc=1204`

This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:16:37 GMT EAGLE5 37.0.0
LOC    IPADDR            LINK SPEED  DUPLEX  AUTO
1204   200.50.100.47     10Mbit      HALF    NO
```

`rtrv-dlk:loc=1205`

This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:16:37 GMT EAGLE5 37.0.0
LOC    IPADDR            LINK SPEED  DUPLEX  AUTO
1205   193.4.201.50      -----       ----    YES
```

`rtrv-dlk:loc=1206`

This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:16:37 GMT EAGLE5 37.0.0
LOC    IPADDR            LINK SPEED  DUPLEX  AUTO
1206   203.14.212.30     -----       ----    YES
```

`rtrv-dlk:loc=1207`

This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:16:37 GMT EAGLE5 37.0.0
LOC    IPADDR            LINK SPEED  DUPLEX  AUTO
1207   202.14.212.39     -----       ----    YES
```

6. Place the cards into service by entering the `rst-card` command with the card location specified in step 4.

   For this example, enter these commands.

   `rst-card:loc=1201`

   `rst-card:loc=1203`

   `rst-card:loc=1204`

   `rst-card:loc=1205`

   `rst-card:loc=1206`

   `rst-card:loc=1207`

   This message should appear when each command has successfully completed.

```
rlghncxa03w 06-10-20 21:21:37 GMT EAGLE5 36.0.0
Card has been allowed.
```

7. Place the data links into service by entering the `act-dlk` command with the card location specified in step 4.

   For this example, enter these commands.

   `act-dlk:loc=1201`

   `act-dlk:loc=1203`

   `act-dlk:loc=1204`

   `act-dlk:loc=1205`

   `act-dlk:loc=1206`

   `act-dlk:loc=1207`

   This message should appear when each command has successfully completed.

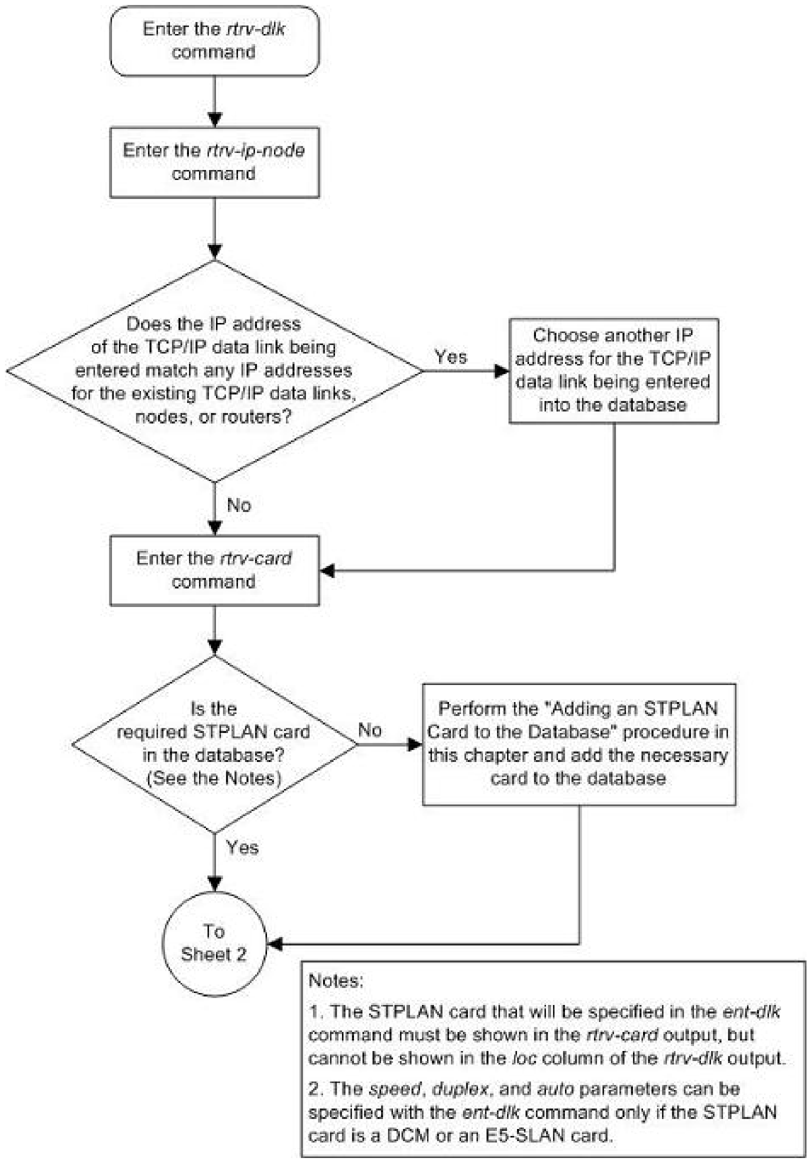
```
rlghncxa03w 06-10-20 21:22:37 GMT EAGLE5 36.0.0
Activate Link message sent to card
```

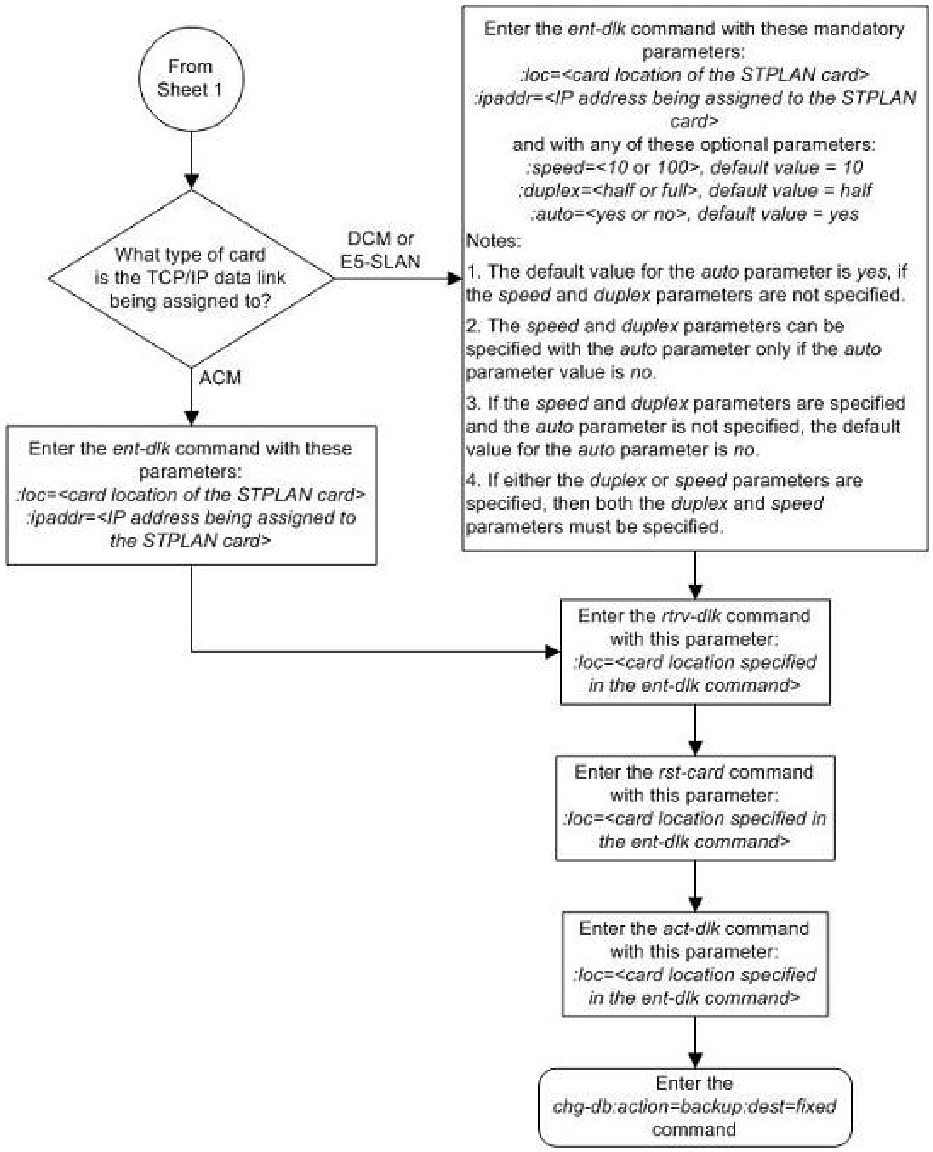
8. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

   These messages should appear; the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 31: Adding a TCP/IP Data Link


Enter the rtrv-dlk command
Enter the rtrv-ip-node command
Does the IP address of the TCP/IP data link being entered match any IP addresses for the existing TCP/IP data links, nodes, or routers?
Yes
Choose another IP address for the TCP/IP data link being entered into the database
No
Enter the rtrv-card command
Is the required STPLAN card in the database? (See the Notes)
No
Perform the "Adding an STPLAN Card to the Database" procedure in this chapter and add the necessary card to the database
Yes
To Sheet 2
Notes:
1. The STPLAN card that will be specified in the ent-dlk command must be shown in the rtrv-card output, but cannot be shown in the loc column of the rtrv-dlk output.
2. The speed, duplex, and auto parameters can be specified with the ent-dlk command only if the STPLAN card is a DCM or an E5-SLAN card.



Removing a TCP/IP Data Link

This procedure is used to remove a TCP/IP data link from the database using the `dlt-dlk` command.

The examples used in this procedure are used to remove the TCP/IP data link on card 1204 from the database.

The card that the TCP/IP data link is assigned to must be an ACM running the `stplan` application or a DCM/E5-SLAN card running the `stplan` application. This can be verified with the `rtrv-card` command. The ACM is shown by the entries `ACMENET` in the `TYPE` field and `STPLAN` in the `APPL` field of the `rtrv-card` command output. The DCM or E5-SLAN card is shown by the entries DCM in the TYPE field and STPLAN in the APPL field of the rtrv-card command output.

The specified card must have a TCP/IP data link assigned to it and the TCP/IP data link must be in the database. This can be verified in step 1.

1. Display the data links in the database by entering the rtrv-dlk command.

   This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:16:37 GMT EAGLE5 37.0.0
LOC    IPADDR           LINK SPEED  DUPLEX  AUTO
1103   193.4.201.70     10Mbit      HALF    NO
1104   193.4.201.71     10Mbit      HALF    NO
1201   193.4.201.50     100Mbit     HALF    NO
1203   193.4.201.51     -----       ----    YES
1204   200.50.100.47    10Mbit      HALF    NO
1205   193.4.201.50     -----       ----    YES
1206   203.14.212.30    -----       ----    YES
1207   202.14.212.39    -----       ----    YES
```

2. Place the TCP/IP data link to be removed out of service using the canc-dlk command, using the output from step 1 to obtain the card location of the TCP/IP data link to be removed.

   For this example, the TCP/IP data link to be removed is assigned to card 1204. Enter this command.

   canc-dlk:loc=1204

   When the command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-20 21:17:37 GMT EAGLE5 36.0.0
Deactivate Link message sent to card.
```

3. Verify that the TCP/IP data link is out of service - maintenance disabled (OOS-MT-DSBLD) using the rept-stat-dlk command.

   For this example, enter this command.

   rept-stat-dlk:loc=1204

   This is an example of the possible output.

```
rlghncxa03w 06-10-20 21:18:37 GMT EAGLE5 36.0.0
DLK    PST           SST        AST
1204   OOS-MT-DSBLD  Unavail    ---
  ALARM STATUS    =
Command Completed.
```

4. Place the card specified in step 3 out of service by using the rmv-card command.

   For this example, enter this command.

   rmv-card:loc=1204

   This message should appear.

```
rlghncxa03w 06-10-20 21:19:37 GMT EAGLE5 36.0.0
Card has been inhibited.
```

5. Display the TCP/IP nodes in the database by entering the rtrv-ip-node command with the card location specified in step 4. For this example enter this command

`rtrv-ip-node:loc=1204`

This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:20:37 GMT EAGLE5 37.0.0
IPADDR           IPPORT  IPAPPL  LOC   CAP   IPRTE
200.50.100.47    1024    stplan  1204  10%   --
```

6. Remove the TCP/IP node assigned to the card location containing the TCP/IP data link to be removed from the database using the `dlt-ip-node` command with the card location specified in step 5.

   For this example, enter this command.

   `dlt-ip-node:ipaddr=200.50.100.47:loc=1204`

   This message should appear.

```
rlghncxa03w 06-10-20 21:21:37 GMT EAGLE5 36.0.0
DLT-IP-NODE: MASP A - COMPLTD
```

7. Remove the data link from the database using the `dlt-dlk` command.

   The `dlt-dlk` command has only one parameter, `loc`, which is the location of the STPLAN card containing the TCP/IP data link. For this example, enter this command.

   `dlt-dlk:loc=1204`

   This message should appear.

```
rlghncxa03w 06-10-20 21:22:37 GMT EAGLE5 36.0.0
DLT-DLK: MASP A - COMPLTD
```

8. Verify the changes using the `rtrv-dlk` command with the card location specified in step 7.

   `rtrv-slk:loc=1204`

   When this command has successfully completed, this message should appear.

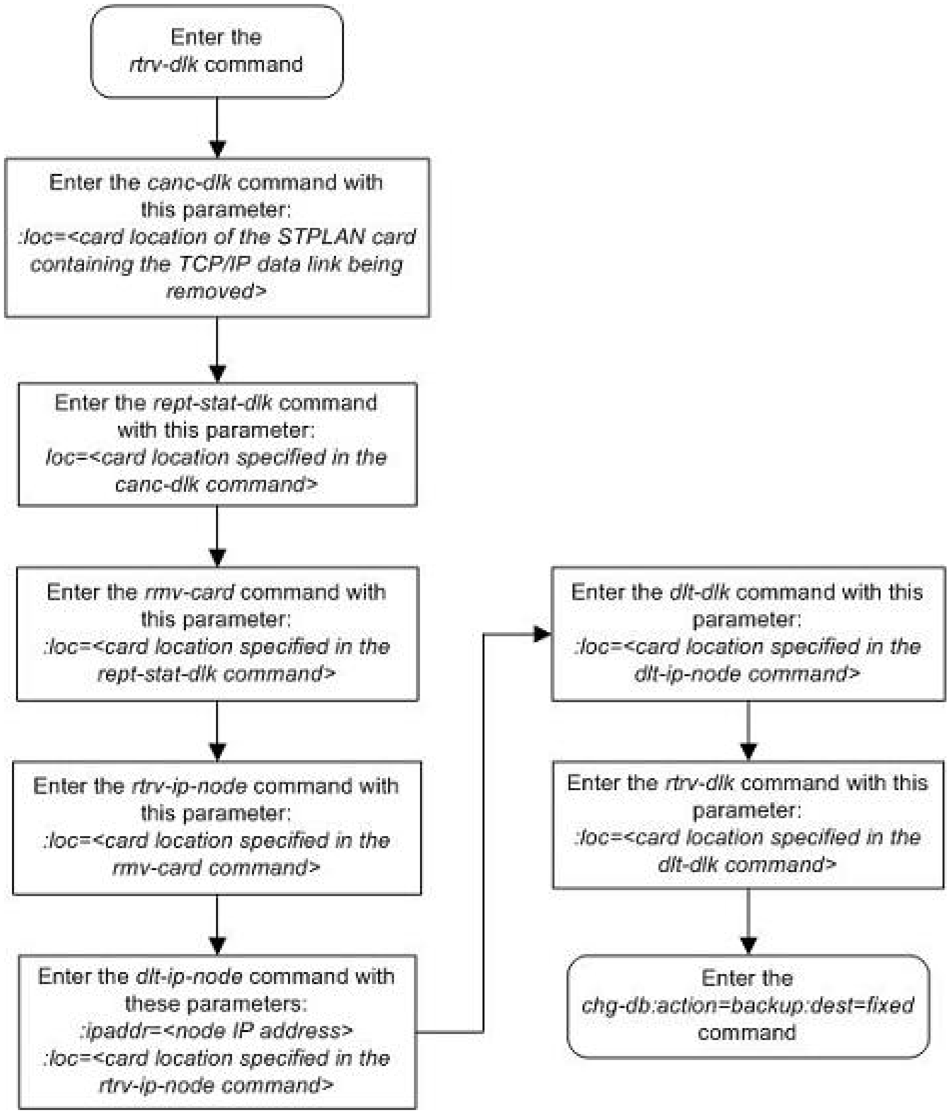
   `E2604 Cmd Rej: Card location not assigned a TCP/IP link`

9. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

   These messages should appear; the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 32: Removing a TCP/IP Data Link



Adding a TCP/IP Node

This procedure is used to add a TCP/IP node to the database using the `ent-ip-node` command.

The `ent-ip-node` command uses these parameters:

`:ipaddr` – The node's IP address.

`:ipappl` – The IP application supported by the node.

`:ipport` – The logical IP port to address the application on the node.

`:loc` – The card location of the STPLAN card that contains the TCP/IP link that will be directly connected to the node.

`:cap` – The maximum percentage of SLAN TPS capacity for this node connection

`:iprte` – The IP address of the TCP/IP router.

This examples used in this procedure are based on the example network shown in *Figure 28: STPLAN Configuration Example* on page 182 and *Table 13: STPLAN Configuration Example Database* on page 182.

The TCP/IP node cannot already be in the database. This can be verified in step 1.

The specified card must have a TCP/IP data link assigned to it. This can be verified in step 2.

The IP address assigned to the TCP/IP node cannot be assigned to any other TCP/IP nodes, TCP/IP routers, or TCP/IP data links.

The class of the IP address (`ipaddr`) must match the class of the assigned TCP/IP data link's IP address only if the `iprte` parameter is not specified with the `ent-ip-node` command. The EAGLE 5 ISS supports three classes of IP addresses, class A, class B, and class C. Class A IP addresses can contain only the values 1 to 126 in the first field of the IP address. Class B IP addresses can contain only the values 128 to 191 in the first field of the IP address. Class C IP addresses can contain only the values 192 to 223 in the first field of the IP address. No IP address can contain the value 127 in the first field of the IP address. These IP addresses are reserved for loopback.

The network portion of the IP address (`ipaddr`) must match the network portion of the IP address assigned to the TCP/IP data link only if the `iprte` parameter is not specified with the `ent-ip-node` command. The network portion of the IP address is based on the class of the IP address. If the IP address is a class A IP address, the first field is the network portion of the IP address. If the IP address is a class B IP address, the first two fields are the network portion of the IP address. If the IP address is a class C IP address, the first three fields are the network portion of the IP address. For example, if the IP address of the TCP/IP data link is 193.5.207.150, a class C IP address, the network portion of the IP address for the TCP/IP node must be 193.5.207.

Refer to the *TCP/IP Router* on page 169 section for more information of the TCP/IP router.

If the `iprte` parameter is specified with the `ent-ip-node` command, the class and network portion of the TCP/IP router's IP address must match the class and network portion of the TCP/IP data link and cannot match the IP address of the TCP/IP node being added to the database. If subnet routing is being used, the `iprte` parameter must be specified with the `ent-ip-node` command. Refer to the *TCP/IP Router* on page 169 section on for more information of the TCP/IP router.

The capacity of all connections to the IP address cannot be greater than 100%. This is shown in the `CAP` field of the `rtrv-ip-node` command output.

1. Display the TCP/IP nodes in the database by entering the `rtrv-ip-node` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-20 21:16:37 GMT EAGLE5 36.0.0
IPADDR           IPPORT  IPAPPL  LOC   CAP  IPRTE
193.4.201.70     1024    stplan  1103  10%  --
193.4.201.71     1024    stplan  1104  10%  --
```

2. Display the TCP/IP data links in the database by entering the `rtrv-dlk` command.

   This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:16:37 GMT EAGLE5 37.0.0
LOC    IPADDR             LINK SPEED  DUPLEX  AUTO
1103   193.4.201.70       10Mbit      HALF    NO
1104   193.4.201.71       10Mbit      HALF    NO
```

```
1201   193.4.201.50      100Mbit     HALF    NO
1203   193.4.201.51      -----       ----    YES
1204   200.50.100.47     10Mbit      HALF    NO
1205   193.4.201.50      -----       ----    YES
1206   203.14.212.30     -----       ----    YES
1207   202.14.212.39     -----       ----    YES
```

If the required TCP/IP data link is not shown in the `rtrv-dlk` output, perform the "Adding a TCP/IP Data Link" procedure on page 3-33 and add the required TCP/IP data link to the database.

3. Add the TCP/IP nodes to the database by entering the `ent-ip-node` command.

   For this example, enter these commands.

   `ent-ip-node:loc=1201:ipaddr=193.4.201.65:ipappl=stplan:ipport=1024:cap=10`

   `ent-ip-node:loc=1203:ipaddr=193.4.201.78:ipappl=stplan:ipport=1024:cap=10`

   `ent-ip-node:loc=1204:ipaddr=200.50.115.101:ipappl=stplan:ipport=2000:cap=40:iprte=193.4.202.30`

   `ent-ip-node:loc=1205:ipaddr=193.4.201.56:ipappl=stplan:ipport=3000:cap=40`

   `ent-ip-node:loc=1206:ipaddr=203.24.212.30:ipappl=stplan:ipport=4000:cap=40:iprte=197.4.217.47`

   `ent-ip-node:loc=1207:ipaddr=205.37.12.63:ipappl=stplan:ipport=3963:cap=40:iprte=198.10.186.53`

   When each of these commands has successfully completed, this message should appear.

```
rlghncxa03w 06-10-20 21:18:37 GMT EAGLE5 36.0.0
ENT-IP-NODE: MASP A - COMPLTD
```

4. Verify the changes using the `rtrv-ip-node` command with the IP address specified in step 3. For this example, enter these commands.

   `rtrv-ip-node:ipaddr=193.4.201.65`

   This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:19:37 GMT EAGLE5 37.0.0
IPADDR           IPPORT  IPAPPL  LOC   CAP  IPRTE
193.4.201.65     1024    stplan  1201  10%  --
193.4.201.65     3000    stplan  1205  40%  --
```

   `rtrv-ip-node:ipaddr=193.4.201.78`

   This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:19:37 GMT EAGLE5 37.0.0
IPADDR           IPPORT  IPAPPL  LOC   CAP  IPRTE
193.4.201.78     1024    stplan  1203  10%  --
```

   `rtrv-ip-node:ipaddr=200.50.115.101`

   This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:19:37 GMT EAGLE5 37.0.0
IPADDR           IPPORT  IPAPPL  LOC   CAP  IPRTE
200.50.115.101   2000    stplan  1204  40%  193.4.202.30
```

```
rtrv-ip-node:ipaddr=203.24.212.30
```

This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:19:37 GMT EAGLE5 37.0.0
IPADDR           IPPORT  IPAPPL  LOC   CAP  IPRTE
203.24.212.30    1024    stplan  1206  40%  197.4.217.47
```

```
rtrv-ip-node:ipaddr=205.37.12.63
```

This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:19:37 GMT EAGLE5 37.0.0
IPADDR           IPPORT  IPAPPL  LOC   CAP  IPRTE
205.37.12.63     3963    stplan  1207  40%  198.10.186.53
```

5. Place the data links into service by entering the `act-dlk` command with the card location shown in step 4.

   For this example, enter these commands.

   `act-dlk:loc=1201`

   `act-dlk:loc=1203`

   `act-dlk:loc=1204`

   `act-dlk:loc=1205`

   `act-dlk:loc=1206`

   `act-dlk:loc=1207`

   This message should appear when each command has successfully completed.

```
rlghncxa03w 06-10-20 21:20:37 GMT EAGLE5 36.0.0
Activate Link message sent to card
```

6. Check the status of the data links using the `rept-stat-dlk` command, specifying the card locations of the data links entered in step 5.

   The link should be in service-normal (IS-NR) after the link has been activated. This is an example of the possible output.

```
rlghncxa03w 06-10-20 21:21:37 GMT EAGLE5 36.0.0
DLK             PST          SST       AST
1103            IS-NR        Avail     ----
1104            IS-NR        Avail     ----
1201            IS-NR        Avail     ----
1203            IS-NR        Avail     ----
1204            IS-NR        Avail     ----
1205            IS-NR        Avail     ----
1206            IS-NR        Avail     ----
1207            IS-NR        Avail     ----
Command Completed.
```

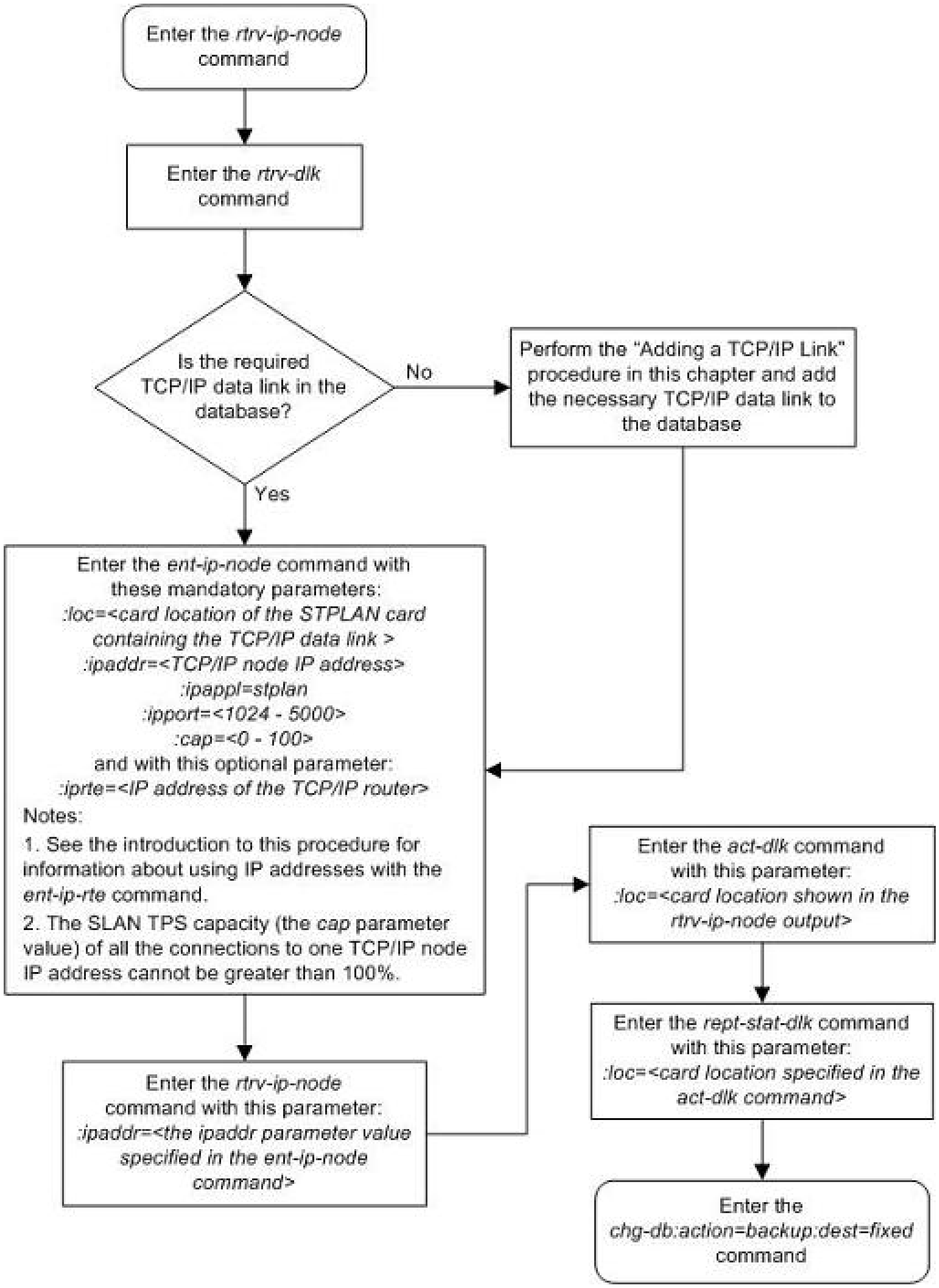
7. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

   These messages should appear; the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
```

```
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 33: Adding a TCP/IP Node



Removing a TCP/IP Node

This procedure is used to remove a TCP/IP node from the database using the `dlt-ip-node` command.

The `dlt-ip-node` command uses these parameters:

`:ipaddr` – The node's IP address.

`:ipappl` – The IP application supported by the node.

`:ipport` – The logical IP port that addresses the application on the node.

`:loc` – The card location of the STPLAN card that contains the TCP/IP link that is directly connected to the node.

`:force` – Whether or not to remove all applications associated with the node, thus removing the entire node from the database.

The examples used in this procedure are used to remove the TCP/IP node with the IP address 193.4.201.71 from the database.

The TCP/IP node must be in the database. This can be verified in step 1.

The specified card must have a TCP/IP data link assigned to it. This can be verified in step 2.

The card that the TCP/IP data link is assigned to must be an ACM running the `stplan` application or a DCM or E5-SLAN card running the `stplan` application. This can be verified with the `rtrv-card` command. The ACM is shown by the entries `ACMENET` in the `TYPE` field and `STPLAN` in the `APPL` field of the `rtrv-card` command output. The DCMor E5-SLAN card is shown by the entries `DCM` in the `TYPE` field and `STPLAN` in the `APPL` field of the `rtrv-card` command output.

If only the `ipaddr` parameter is specified with the `dlt-ip-node` command, all the connections to a TCP/IP node will be removed from the database. To remove all the connections to a TCP/IP node, the `force=yes` parameter must be specified with the `ipaddr` parameter.

The `ipappl` or `ipport` parameters can be specified with the `dlt-ip-node` command, but both parameters cannot be specified with the `dlt-ip-node` command at the same time.

1. Display the TCP/IP nodes in the database by entering the `rtrv-ip-node` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-20 21:16:37 GMT EAGLE5 36.0.0
IPADDR           IPPORT  IPAPPL  LOC   CAP  IPRTE
193.4.201.15     1024    stplan  1103  10%  --
193.4.201.23     1024    stplan  1104  10%  --
193.4.201.65     1024    stplan  1201  10%  --
193.4.201.65     3000    stplan  1205  40%  --
193.4.201.78     1024    stplan  1203  10%  --
200.50.115.101   2000    stplan  1204  40%  193.4.202.30
203.24.212.30    4000    stplan  1206  40%  197.4.217.47
205.37.12.63     3963    stplan  1207  40%  198.10.186.53
```

2. Display the TCP/IP data links in the database by entering the `rtrv-dlk` command.

This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:16:37 GMT EAGLE5 37.0.0
LOC    IPADDR           LINK SPEED  DUPLEX  AUTO
1103   193.4.201.70     10Mbit      HALF    NO
1104   193.4.201.71     10Mbit      HALF    NO
1201   193.4.201.50     100Mbit     HALF    NO
1203   193.4.201.51     -----       ----    YES
1204   200.50.100.47    10Mbit      HALF    NO
1205   193.4.201.50     -----       ----    YES
1206   203.14.212.30    -----       ----    YES
1207   202.14.212.39    -----       ----    YES
```

3. Verify the current state of the TCP/IP data link assigned to the TCP/IP node to be removed from the database using the `rept-stat-dlk` command. For this example, the TCP/IP data link to be placed out of service is assigned to card 1104. For this example, enter this command.

   `rept-stat-dlk:loc=1104`

   This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:21:37 GMT EAGLE5 37.0.0
DLK            PST          SST       AST
1104           IS-NR        Avail     ----
Command Completed.
```

   Note: Skip step 4 and step 5 and go to step 6 if the status of the TCP/IP data link shown in the output of step 3 is `OOS-MT-DSBLD`.

4. Place the TCP/IP data link using the `canc-dlk` command, using the outputs from steps 1 and 2 to obtain the card location (shown in the `LOC` field of both outputs) of the TCP/IP data link to be placed out of service.

   For this example, the TCP/IP data link to be placed out of service is assigned to card 1104. Enter this command.

   `canc-dlk:loc=1104`

   When the command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-20 21:18:37 GMT EAGLE5 36.0.0
Deactivate Link message sent to card.
```

5. Verify that the TCP/IP data link is out of service - maintenance disabled (OOS-MT-DSBLD) using the `rept-stat-dlk` command.

   For this example, enter this command.

   `rept-stat-dlk:loc=1104`

   This is an example of the possible output.

```
rlghncxa03w 06-10-20 21:19:37 GMT EAGLE5 36.0.0
DLK    PST           SST        AST
1104   OOS-MT-DSBLD  Unavail    ---
  ALARM STATUS    =
Command Completed.
```

6. Verify the current state of the card assigned to the TCP/IP data link to be removed using the `rept-stat-card` command. For this example, enter this command.

`rept-stat-card:loc=1104`

This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:19:37 GMT EAGLE5 37.0.0
CARD   VERSION      TYPE      GPL        PST            SST        AST
1104   126-003-002  DCM       VXWSLAN    IS-NR          Active     -----
   ALARM STATUS       = No Alarms.
   BPDCM GPL version  = 126-002-000
   IMT BUS A          = Conn
   IMT BUS B          = Conn
   DLK A   PST        = OOS-MT-DSBLD     SST = Unavail   AST = -----
   SLAN % EAGLE CAPACITY    = 0%
   SLAN % HOST CAPACITY     = 0%

 Command Completed.
```

Note: Skip steps 7 and 8 and go to step 9 if the status of the card shown in the output of step 6 is `OOS-MT-DSBLD`.

7. Place the card assigned to the TCP/IP node to be removed out of service by using the `rmv-card` command, specifying the card location used in step 3.

   For this example, enter this command.

   `rmv-card:loc=1104`

   This message should appear.

```
rlghncxa03w 06-10-20 21:20:37 GMT EAGLE5 36.0.0
Card has been inhibited.
```

8. Verify that the card is out-of service - maintenance disabled (OOS-MT-DSBLD) using the `rept-stat-card` command. For this example, enter this command.

   `rept-stat-card:loc=1104`

   This is an example of the possible output.

```
rlghncxa03w 07-02-20 21:19:37 GMT EAGLE5 37.0.0
CARD   VERSION      TYPE      GPL        PST            SST        AST
1104   126-003-002  DCM       VXWSLAN    OOS-MT-DSBLD   Manual     -----
  ALARM STATUS       = **  0013 Card is isolated from the system
   BPDCM GPL version  = 126-002-000
   IMT BUS A          = Conn
   IMT BUS B          = Conn
   DLK A   PST        = OOS-MT-DSBLD     SST = Unavail   AST = -----
   SLAN % EAGLE CAPACITY    = 0%
   SLAN % HOST CAPACITY     = 0%

Command Completed.
```

9. Remove the TCP/IP node to the database using the `dlt-ip-node` command. For this example, enter this command.

   `dlt-ip-node:ipaddr=193.4.201.71:ipport=1024 :loc=1104`

This message should appear.

```
rlghncxa03w 06-10-20 21:21:37 GMT EAGLE5 36.0.0
DLT-IP-NODE: MASP A - COMPLTD
```

If you wish to remove all the connections to a TCP/IP node, for example, all the connections to the node at IP address 193.4.201.65, enter the `dlt-ip-node` command with the IP address of the node and the `force=yes` parameter, or enter the `dlt-ip-node` command with the IP address of the node and the `ipappl=stplan` parameter. For this example, enter one of these commands.

`dlt-ip-node:ipaddr=193.4.201.65:force=yes`

`dlt-ip-node:ipaddr=193.4.201.65:ipappl=stplan`

10. Verify the changes using the `rtrv-ip-node` command.

    If a single connection to a TCP/IP node was removed in step 9, enter the `rtrv-ip-node` command with the card location specified in step 9. For this example, enter this command.

    `rtrv-ip-node:loc=1104`

    The following message is displayed.

```
rlghncxa03w 07-02-20 21:22:37 GMT EAGLE5 37.0.0
E2622 Cmd Rej: IPADDR not assigned to specified LOC
```

    If all the connections to a TCP/IP node were removed in step 9, enter the `rtrv-ip-node` command with the IP address specified in step 9. For this example, enter this command

    `rtrv-ip-node:ipaddr=193.4.201.65`

    The following message is displayed.

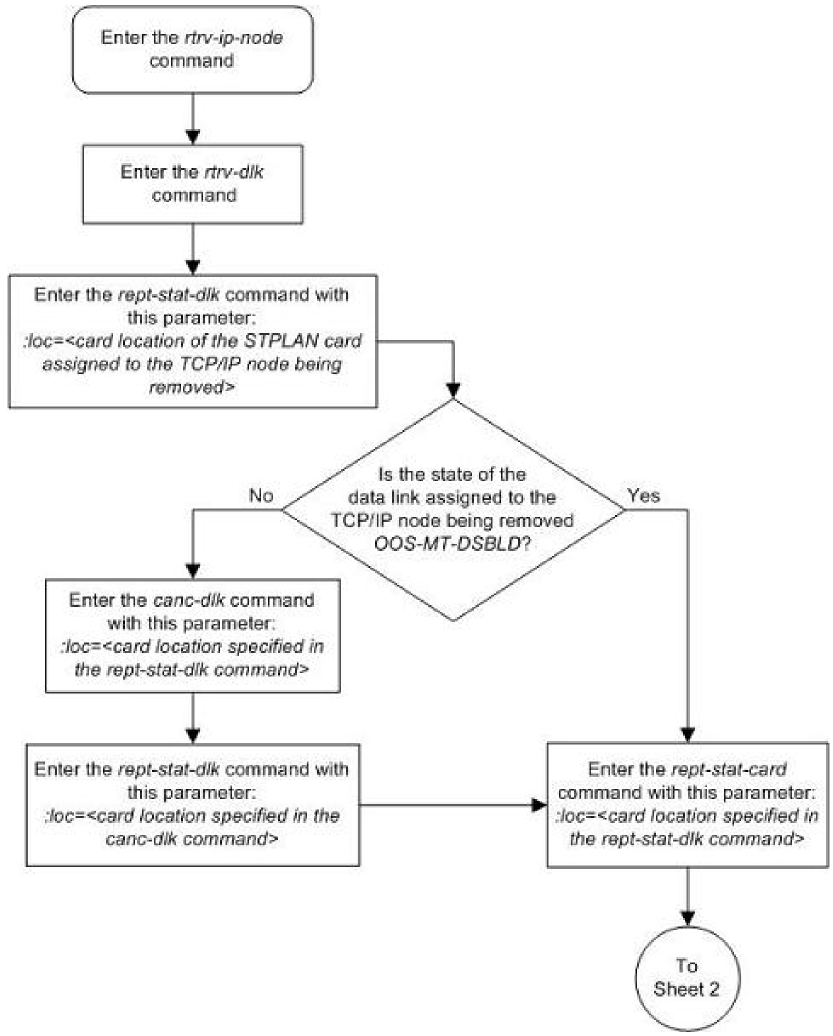
```
rlghncxa03w 07-02-20 21:22:37 GMT EAGLE5 37.0.0
IPADDR           IPPORT  IPAPPL  LOC   CAP   IPRTE

IPADDR not connected to any TCP/IP Link.
```

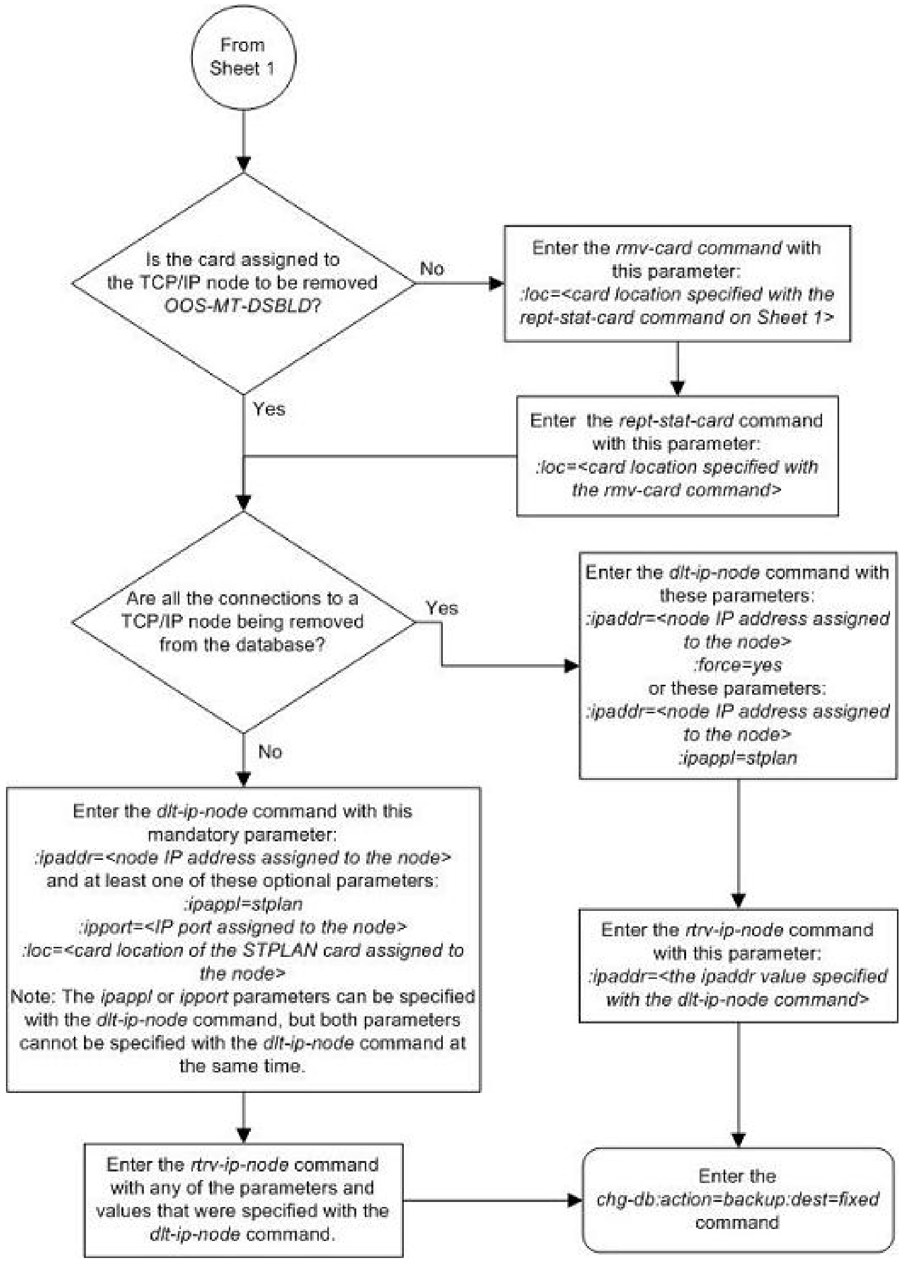
11. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

    These messages should appear; the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 34: Removing a TCP/IP Node


Enter the rtrv-ip-node command
Enter the rtrv-dlk command
Enter the rept-stat-dlk command with this parameter: :loc=<card location of the STPLAN card assigned to the TCP/IP node being removed>
Is the state of the data link assigned to the TCP/IP node being removed OOS-MT-DSBLD?
No
Yes
Enter the canc-dlk command with this parameter: :loc=<card location specified in the rept-stat-dlk command>
Enter the rept-stat-dlk command with this parameter: :loc=<card location specified in the canc-dlk command>
Enter the rept-stat-card command with this parameter: :loc=<card location specified in the rept-stat-dlk command>
To Sheet 2



Configuring the Copy Original OPC for STPLAN Option

This procedure is used to configure the copy original OPC for STPLAN option using the `chg-ss7opts` command with the `slancporgopc` parameter. The `slancporgopc` parameter has two values:

- `on` – After the MSU has been processed by other applications, but before the MSU is copied for the STPLAN application, the OPC of the MSU is replaced by the point code that was the OPC of the MSU when the MSU entered the EAGLE 5 ISS.
- `off` – The OPC of the MSU is not replaced by the point code that was the OPC of the MSU when the MSU entered the EAGLE 5 ISS.

1. Display the existing value for the `slancporgopc` parameter by entering the `rtrv-ss7opts` command. This is an example of the possible output.

```
rlghncxa03w 08-10-17 16:02:05 GMT  EAGLE5 39.2.0

SS7 OPTIONS
-----------------------
SLANCPORGOPC        off
```

Note: The `rtrv-ss7opts` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-ss7opts` command, see the `rtrv-ss7opts` command description in the *Commands Manual*.

If the current `SLANCPORGOPC` value is on, continue the procedure with *Step 3* on page 218.

If the current `SLANCPORGOPC` value is off, continue the procedure with *Step 2* on page 218.

2. Verify that the STPLAN feature is on by entering the `rtrv-feat` command.

If the STPLAN feature is on, the `LAN` field should be set to `on`.

Note: The `rtrv-feat` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in the *Commands Manual*.

If the STPLAN feature is on, continue the procedure with *Step 3* on page 218.

If the STPLAN feature is not on, perform the procedure *Adding an STPLAN Card* on page 183 to turn the STPLAN feature on and to add the required STPLAN cards. After the procedure *Adding an STPLAN Card* on page 183 has been performed, continue the procedure with *Step 3* on page 218.

3. Change the value of the `slancporgopc` parameter.

If the current value of the `slancporgopc` parameter is off, enter this command.

`chg-ss7opts:slancporgopc=on`

If the current value of the `slancporgopc` parameter is on, enter this command.

`chg-ss7opts:slancporgopc=off`

When this command has successfully completed, this message should appear.

```
rlghncxa03w 08-10-07 00:22:57 GMT  EAGLE5 39.2.0
CHG-SS7OPTS: MASP A - COMPLTD
```

4. Verify the changes using the `rtrv-ss7opts` command. This is an example of the possible output.

```
rlghncxa03w 08-10-17 16:02:05 GMT  EAGLE5 39.2.0

SS7 OPTIONS
```

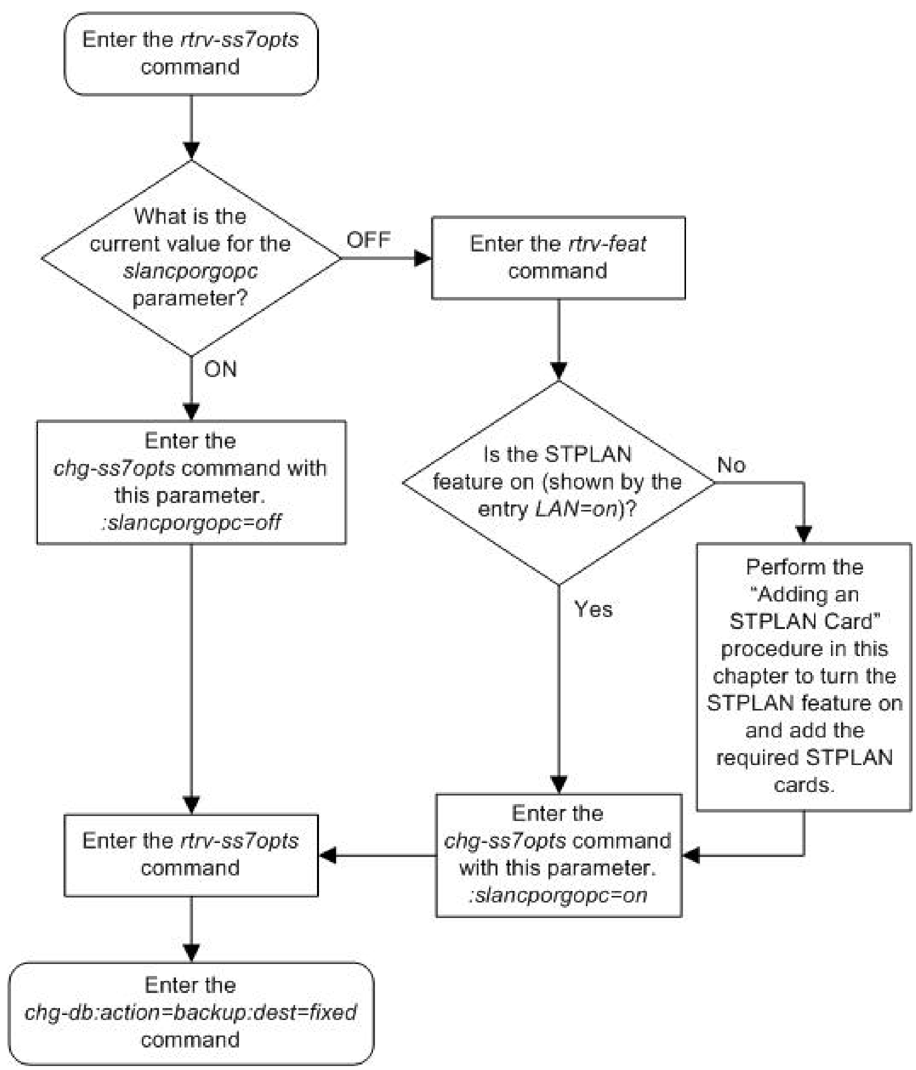
```
-----------------------
SLANCPORGOPC         on
```

Note: The `rtrv-ss7opts` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-ss7opts` command, see the `rtrv-ss7opts` command description in the *Commands Manual*.

5. Back up the new changes using the `chg-db:action=backup:dest=fixed` command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 35: Configuring the Copy Original OPC for STPLAN Option



Configuring the Option for Including the Incoming and Outgoing Linkset Names in the STPLAN Message Format

This procedure is used to configure the option that allows the incoming and outgoing linkset names to be included in the STPLAN message format using the `chg-ss7opts` command with the `slanlsn` parameter. The `slanlsn` parameter has two values:

- `on` – The incoming and outgoing linkset names are copied into the STPLAN message format.
- `off` – The incoming and outgoing linkset names are not copied into the STPLAN message format.

1. Display the existing value for the `slanlsn` parameter by entering the `rtrv-ss7opts` command. This is an example of the possible output.

```
rlghncxa03w 09-03-17 16:02:05 GMT  EAGLE5 40.1.0

SS7 OPTIONS
-----------------------
SLANSLS             off
```

   Note: The `rtrv-ss7opts` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-ss7opts` command, see the `rtrv-ss7opts` command description in the *Commands Manual*.

   If the current `SLANSLS` value is on, continue the procedure with *Step 3* on page 220.

   If the current `SLANSLS` value is off, continue the procedure with *Step 2* on page 220.

2. Verify that the STPLAN feature is on by entering the `rtrv-feat` command.

   If the STPLAN feature is on, the `LAN` field should be set to `on`.

   Note: The `rtrv-feat` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in the *Commands Manual*.

   If the STPLAN feature is on, continue the procedure with *Step 3* on page 220.

   If the STPLAN feature is not on, perform the procedure *Adding an STPLAN Card* on page 183 to turn the STPLAN feature on and to add the required STPLAN cards. After the procedure *Adding an STPLAN Card* on page 183 has been performed, continue the procedure with *Step 3* on page 220.

3. Change the value of the `slanlsn` parameter.

   If the current value of the `slanlsn` parameter is off, enter this command.

   `chg-ss7opts:slanlsn=on`

   If the current value of the `slanlsn` parameter is on, enter this command.

   `chg-ss7opts:slanlsn=off`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 09-03-07 00:22:57 GMT  EAGLE5 40.1.0
CHG-SS7OPTS: MASP A - COMPLTD
```

4. Verify the changes using the `rtrv-ss7opts` command. This is an example of the possible output.

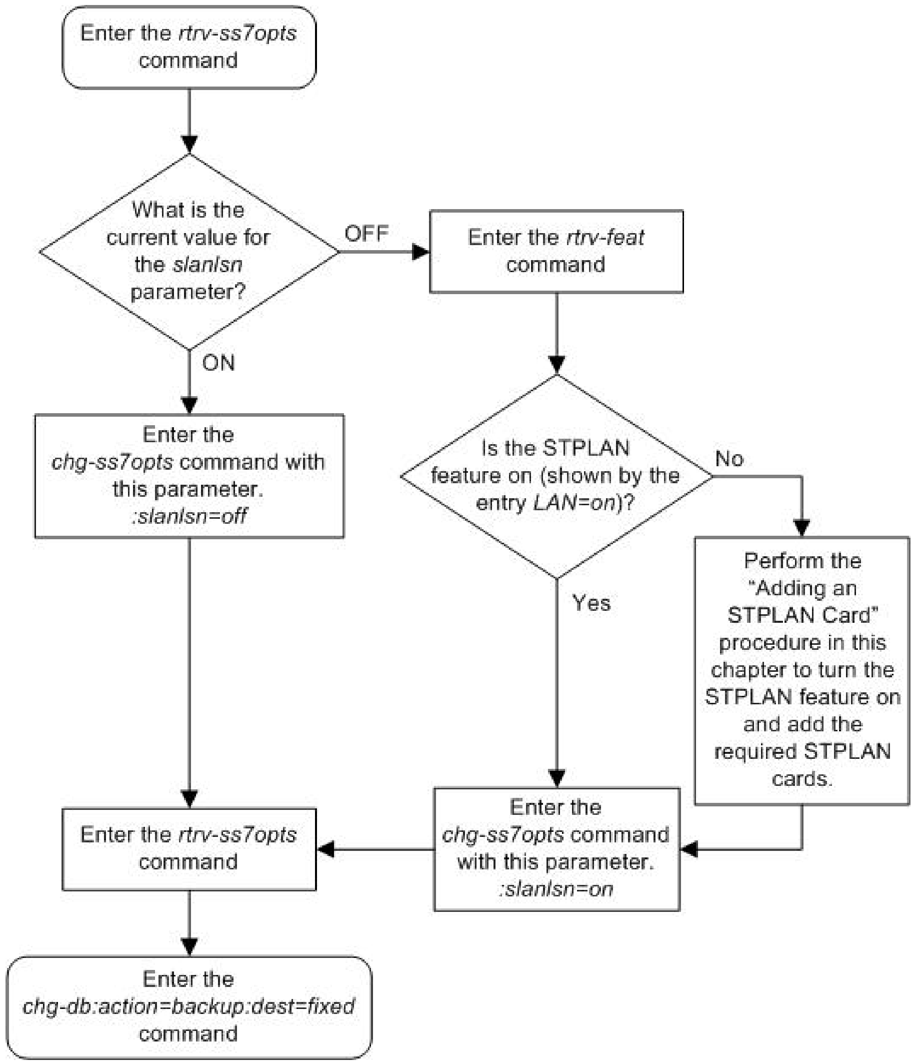
```
rlghncxa03w 09-03-17 16:02:05 GMT  EAGLE5 40.1.0

SS7 OPTIONS
-----------------------
SLANSLS              on
```

Note: The `rtrv-ss7opts` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-ss7opts` command, see the `rtrv-ss7opts` command description in the *Commands Manual*.

5. Back up the new changes using the `chg-db:action=backup:dest=fixed` command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 36: Configuring the Option for Including the Incoming and Outgoing Linkset Names in the STPLAN Message Format


Enter the rtrv-ss7opts command
What is the current value for the slanlsn parameter?
OFF
ON
Enter the rtrv-feat command
Enter the chg-ss7opts command with this parameter. :slanlsn=off
Is the STPLAN feature on (shown by the entry LAN=on)?
No
Yes
Perform the "Adding an STPLAN Card" procedure in this chapter to turn the STPLAN feature on and add the required STPLAN cards.
Enter the rtrv-ss7opts command
Enter the chg-ss7opts command with this parameter. :slanlsn=on
Enter the chg-db:action=backup:dest=fixed command

Chapter 4

Database Transport Access (DTA) Configuration

Topics:

Chapter 4, Database Transport Access (DTA) Configuration, describes the Database Transport Access (DTA) feature and the procedures necessary to configure the EAGLE 5 ISS to support this feature.

DTA Feature Overview

This feature allows data to be routed through the SS7 network using the SCCP protocol without relying on TCAP as the upper level protocol.

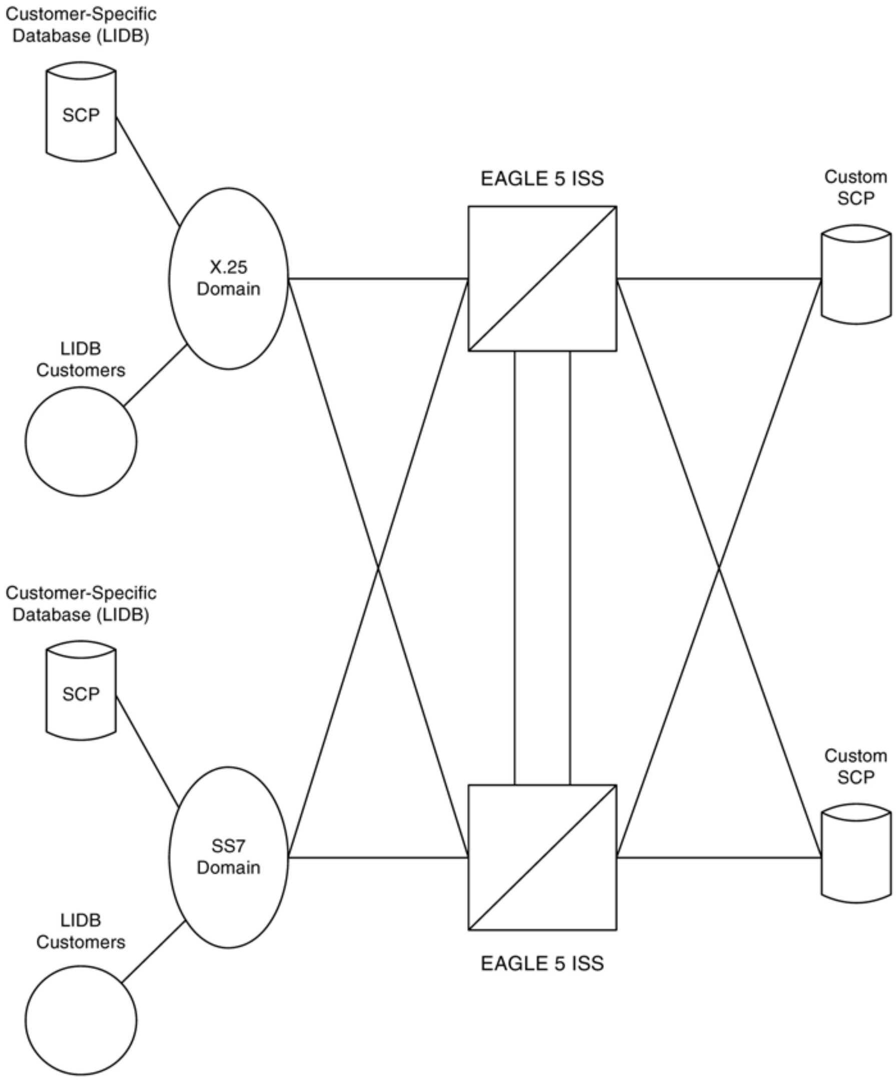
In the case of specialized applications, MSUs containing SCCP and proprietary data must be sent through the network to customer-specific databases. However, these MSUs may need additional processing before being routed to their final destination.

The DTA feature provides a mechanism for the redirection of specific MSUs to a customized database. The EAGLE 5 ISS uses gateway screening to qualify incoming MSUs for redirection.

Once gateway screening is passed, the original MSU is encapsulated into a new MSU and routed to its new destination.

Figure 37: Example of Configuration for the DTA Feature on page 224 shows a typical configuration for the DTA feature.

Figure 37: Example of Configuration for the DTA Feature



The new routing is specified by a redirection table that specifies the destination point code (DPC) and a new called party address. The routing indicator and the subsystem number are defined within the called party address.

The MSU is then passed to the SCP on the specified linkset where the application data is processed for a customized application.

Once the SCP has processed the user data, the SCP sends the MSU back to the EAGLE 5 ISS. At the EAGLE 5 ISS, the MSU is routed to its final destination either in the SS7 network or in the X.25 network. The SCP determines the routing for the MSU, providing it in the routing label of the MTP portion of the MSU and in the SCCP called party address.

The SCP also provides new calling party address information to support billing applications. The SCP is considered as the originator (OPC) and the calling party.

If the original destination is located within an X.25 network, the EAGLE 5 ISS uses its X.25 gateway feature to route the MSU to the X.25 network. The EAGLE 5 ISS selects a logical channel according to an X.25 routing table and sends the MSU on that logical channel.

If the selected logical channel fails, the EAGLE 5 ISS uses enhanced network management to reroute the MSU to a new X.25 logical channel. There are up to 1024 logical channels supported on the X.25/SS7 gateway.

As an optional feature, MSUs that are redirected to an SCP can also be copied using the STPLAN feature. This provides a copy of the redirected MSU to be routed over a TCP/IP interface to an adjunct processor. The copied MSU can then be processed for a variety of applications such as usage measurements.

The EAGLE 5 ISS does not provide any conversion of the copied MSU; it merely provides a copy of the redirected MSU after encapsulation of the original MSU. The copy is conducted by the LIM transmitting the redirected MSU.

If this feature is used, either the Applications Communications Module (ACM), running the STPLAN application, or the Database Communications Module (DCM), running the VXWSLAN application, is required. These cards provide an ethernet interface supporting TCP/IP applications. For more information regarding the STPLAN feature, see *STPLAN Configuration* on page 165.

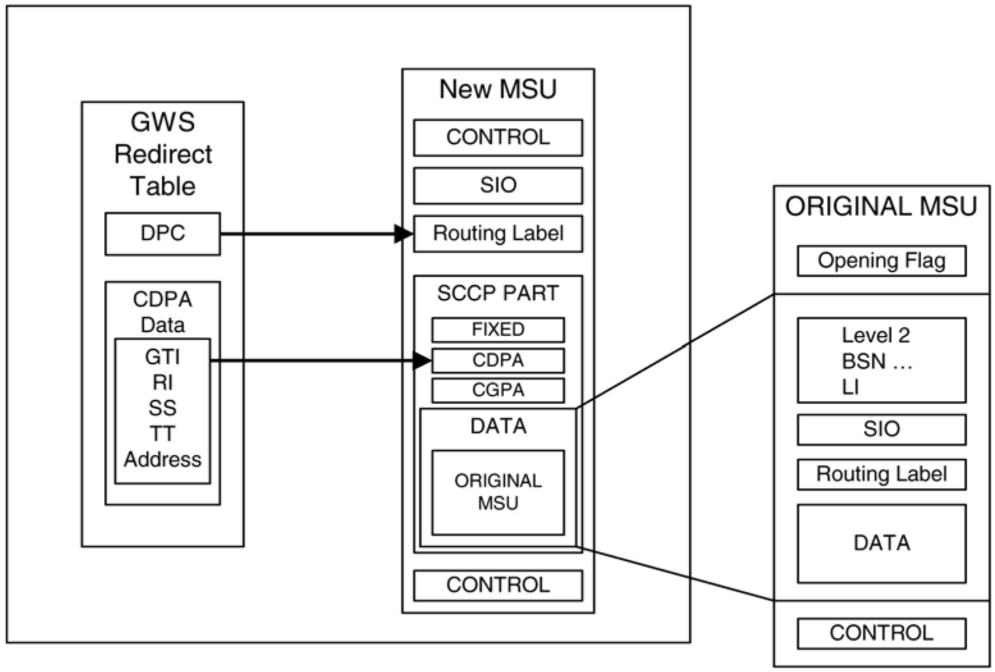
Functional Description

The principal function within the EAGLE 5 ISS for this feature is gateway screening. This feature allows the EAGLE 5 ISS to examine all incoming MSUs and determine whether or not they should be allowed into the network. Gateway screening looks at the routing label of the incoming MSU and matches this information with the EAGLE 5 ISS's gateway screening tables.

To support the DTA feature, a gateway screening stop action set containing the `rdct` (redirect) gateway screening stop action is assigned to the last screen in the screening process. The redirect gateway screening stop action selects the MSU that is redirected for the DTA feature. The screening table for the DTA feature examines the routing label (OPC, DPC) and the SIO fields of the MSU.

Once the MSU has been qualified for redirection by the gateway screening function, the original MSU is encapsulated into the data portion of SCCP within a new SS7 MSU, including all level two and level three headers. A redirect routing table identifies the DPC to be inserted into the routing label of the redirected MSU. In addition, the called party address in the SCCP portion of the MSU is modified according to the parameters set in the redirect routing table. *Figure 38: DTA Encapsulation* on page 226 illustrates the encapsulation process.

Figure 38: DTA Encapsulation



The global title function is used to determine which of the SCPs the MSU is routed to. In the event of subsystem failures, SCCP subsystem management determines which of the SCPs is available. The global title function provides the routing information and routes the MSU to the available SCP.

The global title function require service modules which contains the global title translation tables.

Once the MSU has received its routing information, the MSU can be sent to the appropriate SCP (specified by the EAGLE 5 ISS's redirection table and global title). The SCP then processes the user data contained within the encapsulated MSU. Once processing has been completed, the MSU is sent back to the EAGLE 5 ISS for final routing.

The DTA feature will redirect MSUs to either ANSI or ITU nodes, depending on the value of the DPC in the redirect routing table, but the redirect routing table can contain only one DPC value. If the incoming message type is not the same as the DPC in the redirect routing table, the message is tunneled to the redirect DPC.

The subsystem number in the called party address determines whether the MSU is processed as an ANSI MSU or an ITU MSU. If the subsystem number is 0, the MSU is an ANSI MSU. If the subsystem number is 250, the MSU is an ITU MSU (an MSU containing either a ITU-I point code, 14-bit ITU-N point code, ITU-I Spare point code, or 14-bit ITU-N Spare point code). If the subsystem number is 251, the MSU is an ITU-N24 MSU (an MSU containing a 24-bit ITU-N point code).

Tunneling uses an MTP2/MTP3/SCCP header based on the network type of the DTA DPC to allow any incoming message to be routed to the DTA DPC. A wrapper is placed around the message (an ANSI wrapper around an ITU message, or an ITU wrapper around an ANSI message), and sends the message to the DTA DPC. The destination removes the wrapper and processes the original information.

Discarding MSUs

MSUs can be discarded for these reasons:

- Gateway screening is not available or the MSU does not pass gateway screening.
- The gateway screening redirect function is disabled.
- The MSU is too large to be encapsulated
- The DPC for the gateway screening redirect function is prohibited or congested.
- The EAGLE 5 ISS's SCCP subsystem is prohibited.

The discarding of MSUs is controlled by `gwsd` linkset parameter. If the `gwsd=on` parameter is specified for the linkset, and one or more of the conditions in the previous list are encountered, MSUs on the linkset are discarded. If the `gwsd=off` parameter is specified for the linkset, and one or more of the conditions in the previous list are encountered, MSUs on the linkset are routed to its original destination. Each of the MSU discard conditions are discussed in the following paragraphs.

If gateway screening is not available or the MSU does not pass gateway screening, the MSU is discarded. An unsolicited alarm message (UAM) is not generated. This condition is not dependent on the linkset `gwsd` parameter value. The MSGWSDSLIM measurement is pegged.

If the redirect mode is set to 'off' in the redirect function, either with the `chg-gws-redirect:enabled=off` or `dlt-gws-redirect` commands, and the linkset `gwsd=on` parameter is specified for the linkset, the MSU is discarded, UIM 1084 is generated, and the DTAMSULOST measurement is pegged. If the linkset `gwsd=off` parameter is specified for the linkset, the MSU is routed to its original destination, UIM 1084 is not generated, and the DTAMSULOST measurement is not pegged.

If an MSU is too large to be encapsulated, the MSU may be discarded, depending on the linkset's `gwsd` parameter value. The maximum length of the MSU is dependent on the number of digits contained in the global title address and on the network type of the DPC in the MSU, as shown in *Table 16: Maximum Encapsulation Length per DTA DPC Type* on page 228.

Table 16: Maximum Encapsulation Length per DTA DPC Type

MSU DPC Type	GTA Length - 1 Digit	GTA Length - 21 Digits
ANSI	250 bytes	240 bytes
ITU-I	253 bytes	243 bytes
ITU-I Spare	253 bytes	243 bytes
ITU-N	253 bytes	243 bytes
ITU-N Spare	253 bytes	243 bytes
ITU-N24	250 bytes	240 bytes

MSUs that are too long are discarded based on the linkset `gwsd` parameter value. If the linkset `gwsd=on` parameter is specified for the linkset, the MSU is discarded, UIM 1084 is generated, and the DTAMSULOST measurement is pegged. If the linkset `gwsd=off` parameter is specified for the linkset, the MSU is routed to its original destination, UIM 1085 is generated, but the DTAMSULOST measurement is not pegged.

If the DPC of the gateway screening redirect function is the DPC of an external node, and if the route to this DPC is prohibited, or if this DPC is available, but the congestion level is above the priority of the MSU (for DTA, this priority is always 0), the MSU will not be encapsulated and will be discarded or routed according to the linkset's `gwsd` parameter value. If the linkset's `gwsd` value is `on`, the MSU is discarded, UIM 1084 is generated, and the DTAMSULOST measurement is pegged. If the linkset's `gwsd` value is `off`, the MSU is routed to its original destination, UIM 1084 is not generated, and the DTAMSULOST measurement is not pegged.

If the DPC for the gateway screening redirect function is the EAGLE 5 ISS's point code, the MSU is sent to the EAGLE 5 ISS's SCCP subsystem for GTT processing. If the EAGLE 5 ISS's SCCP subsystem is prohibited, the MSU will not be encapsulated and will be discarded or routed according to the linkset's `gwsd` parameter value. If the linkset's `gwsd` value is `on`, the MSU is discarded, UIM 1084 is generated, and the DTAMSULOST measurement is pegged. If the linkset's `gwsd` value is `off`, the MSU is routed to its original destination, UIM 1084 is not generated, and the DTAMSULOST measurement is not pegged.

UIMs 1084 and 1085 are discussed in greater detail in the *Unsolicited Alarm and Information Messages Manual* .

Measurements

Two measurements are provided to indicate the number of MSUs discarded: DTAMSULOST and MSGWSDSLIM.

The DTAMSULOST measurement counts the number of MSUs discarded because gateway screening is not available. This can be caused by a number of events, including congestion in the EAGLE 5 ISS.

The MSGWSDSLIM counts the number of MSUs discarded because the received MSU was too large to be encapsulated or because the redirect function was disabled.

DTAMSULOST and MSGWSDSLIM are explained in greater detail in the *Measurements Manual* .

Summary of the Gateway Screening Redirect Table Commands

The following set of commands is used to administer the gateway screening redirect table.

Table 17: Commands for the Gateway Screening Redirect Table

Command	Explanation and action
`ent-gws-redirect`	The `ent-gws-redirect` command is used to enter the routing table for redirected MSUs.
`chg-gws-redirect`	The `chg-gws-redirect` command is used to modify the existing redirect routing table.
`dlt-gws-redirect`	The `dlt-gws-redirect` command is used to delete the redirect table from the database.

Command	Explanation and action
`rtrv-gws-redirect`	The `rtrv-gws-redirect` command is used to display the parameters of an existing redirect routing table.

X.25/SS7 Gateway Description

The X.25/SS7 gateway feature allows SCCP traffic to be routed over X.25 networks. X.25 protocol data units (PDUs) received over X.25 links are converted to SS7 MSUs for routing over the SS7 networks.

This protocol conversion does not affect the level four data. SCCP remains intact, with no conversion. This feature can be used for a variety of applications using the SCCP protocol over X.25 networks.

In addition to protocol conversion, the EAGLE 5 ISS also provides route management of X.25 logical channels. Traffic destined to a failed logical channel is diverted to an alternate route without loss of data. The EAGLE 5 ISS uses SS7 network management procedures to divert traffic and maintain data integrity.

The EAGLE 5 ISS supports 1024 logical channels. All X.25 entities are assigned an SS7 point code and SCCP subsystem number. The individual X.25 connections are assigned X.25 addresses, as well as alias point codes.

These are then mapped in the routing table to logical channels. This allows X.25 messages (which use connection-oriented procedures) to be routed and maintained in the SS7 network (which uses connectionless procedures).

Messages originating from the SS7 network destined for the X.25 network can be routed by the DPC assigned to the X.25 entity in the X.25 routing table (called Xpc). This allows SS7 entities to address the X.25 network without knowing X.25 addresses.

The X.25 routing table provides the X.25 address of each X.25 entity, an SS7 point code for each of the X.25 entities, the connection type used by the X.25 route, a subsystem number for SCCP routing, the method of routing to be used (Xpc or normal SS7 routing) and the logical channel to be used between each of the specified X.25 entities and the SS7 entities.

Routing by the X.25 point code assignment allows many SS7 entities to communicate to one X.25 entity without each SS7 entity having to know the X.25 address, and allows all SS7 entities to connect to the X.25 entity over one logical channel.

This provides for easier routing table administration. Without this capability, every possible connection between X.25 and SS7 entities would have to be defined in the X.25 routing table.

For more information on the X.25/SS7 gateway feature, see *X.25 Gateway Configuration* on page 15.

X.25/SS7 Gateway Routing

To support the gateway function, the entities within the X.25 network must be assigned an SS7 point code. This point code is assigned in the X.25 routing table using administration commands.

The routing table specifies the X.25 address, the SS7 point code assigned to both the X.25 entities and any SS7 entities that need to connect to X.25, a subsystem number for the X.25 entities, and the logical channel to be used on the X.25 link for connections between the specified entities.

Each EAGLE 5 ISS connection to the X.25 network is assigned an X.25 address as well. This allows routing of data from the X.25 network to the SS7 network. An SCCP subsystem number is assigned to the X.25 destination to enable global title translation to the X.25 entity.

Logical channels are also assigned in the X.25 routing table. Each X.25 entity must be assigned an SS7 destination to allow logical channel assignments to be made for the connection.

If there are to be several SS7 entities connecting to the X.25 entity over the same logical channel, a 'wild card' entry can be made in the routing table. This allows any SS7 entity to establish a connection over the specified logical channel, but only one connection can be made at any one time.

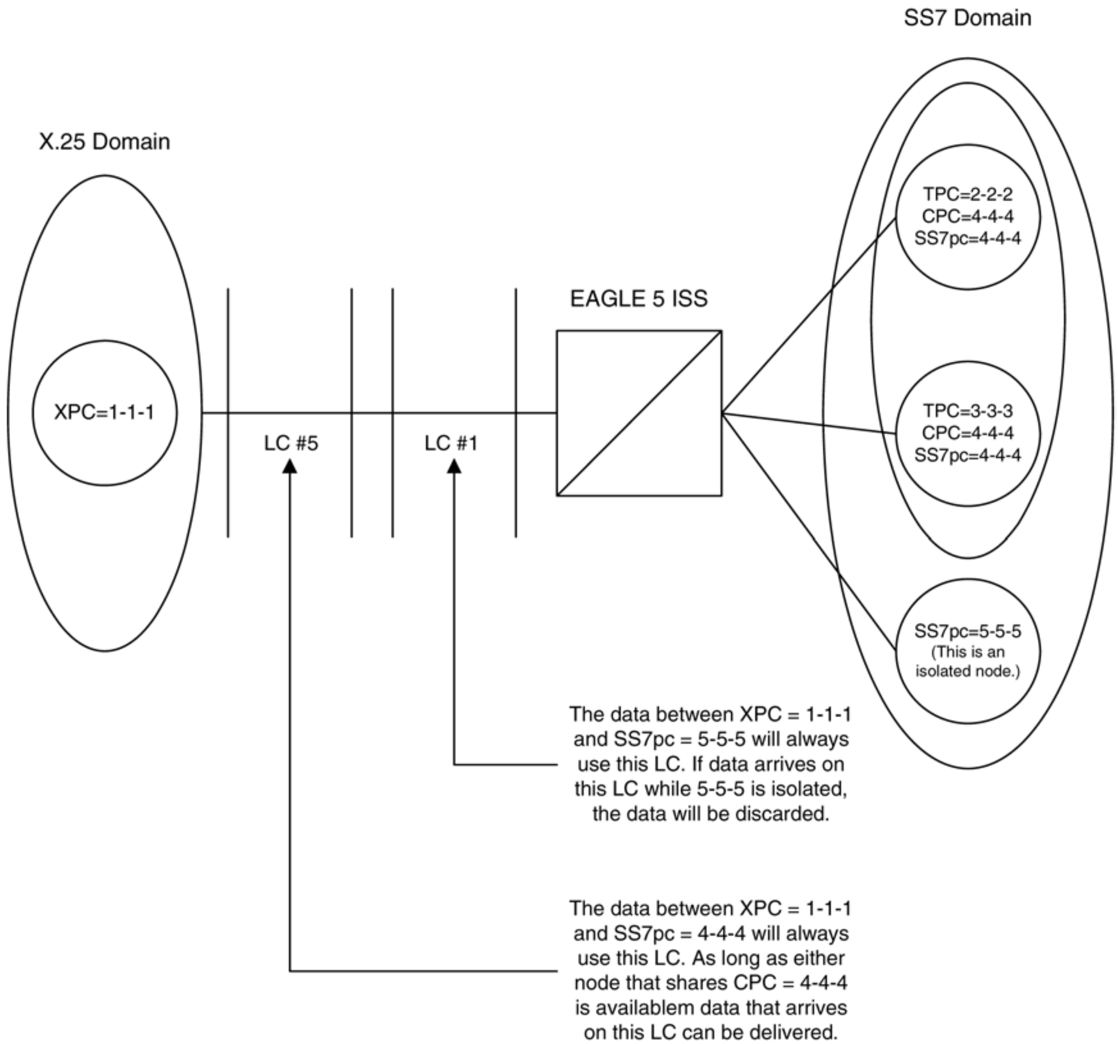
When data arrives on a LC destined for a node in the SS7 domain, the current X.25 gateway layer checks to see if the node is isolated. If so, the data is discarded.

This is shown in *Figure 39: X.25 Routing to a CPC* on page 231. This figure also shows that it is possible to connect an Xpc to an SS7 point code (SS7pc) through an LC, where the SS7pc is a capability point code (CPC). This technique provides a higher availability of service to the Xpc.

Note:

A CPC is a group of individual nodes, where each node is identified by an individual point code. Collectively, when these nodes are grouped by point codes into a CPC, this group of nodes provides a capability. In this case, the capability is global titling.

Figure 39: X.25 Routing to a CPC



Routing Management Mapping

The X.25/SS7 gateway also provides management procedures for failed X.25 logical channels. This feature allows traffic destined for failed logical channels to be rerouted to an alternate route.

When configuring route management mapping, called logical channel to network management mapping, or LC2NM, it must be determined if the X.25 entity will be expecting associated queries and responses to use the same logical channel or if they may be assigned to different logical channels.

If associated queries and responses can be received over different logical channels, then failure recovery through alternate routing can be supported.

If route management mapping is enabled, and the X.25 entity can receive associated queries and responses on different logical channels, data destined to a failed logical channel is diverted by forced rerouting procedures in the EAGLE 5 ISS to the alternate route. All other associated traffic is diverted as well, and the logical channels to which associated traffic is assigned are made unavailable.

If the X.25 entity expects all associated queries and responses to be received on the same logical channel, traffic is still diverted to the alternate route if the logical channel fails. Forced rerouting procedures are not needed in this case.

If the alternate route is not available, the EAGLE 5 ISS uses level three network management procedures. For example, an X.25 Link Interface Module (LIM) determines a logical channel has failed. Network management diverts traffic away from the failed logical channel to a defined terminate route.

No network management messages are sent outside the EAGLE 5 ISS, and therefore should have no adverse effects on the SS7 network. The EAGLE 5 ISS uses SS7 network management procedures in software to divert traffic from the failed X.25 signaling link to another X.25 signaling link.

If route management mapping is not enabled on the X.25 linkset, there is no indication of logical channel failures. An unsolicited alarm message (UAM) output is created, which provides a textual message to indicate failure of an X.25 logical channel. All traffic destined to the failed logical channel is discarded.

If X.25 level 2 should fail within the X.25 LIM, all X.25 routes associated with the LIM are considered unavailable and forced rerouting procedures are used.

In either of the above cases, when the logical channel is restored to service, network management will divert traffic back to the newly restored logical channel.

SCCP Subsystem Management

The EAGLE 5 ISS provides SCCP subsystem management for all transactions sent to an SCP. In the case of the DTA feature, subsystem management is provided for the customized SCP. The customized SCP is deployed in a quad configuration adjacent to the EAGLE 5 ISS. The links connecting the EAGLE 5 ISS and the SCP must be configured in such a way to support SCCP subsystem management. The application supported by the dual SCPs is duplicated in both entities. The applications can be configured in one of the following two modes: dominant or load-shared.

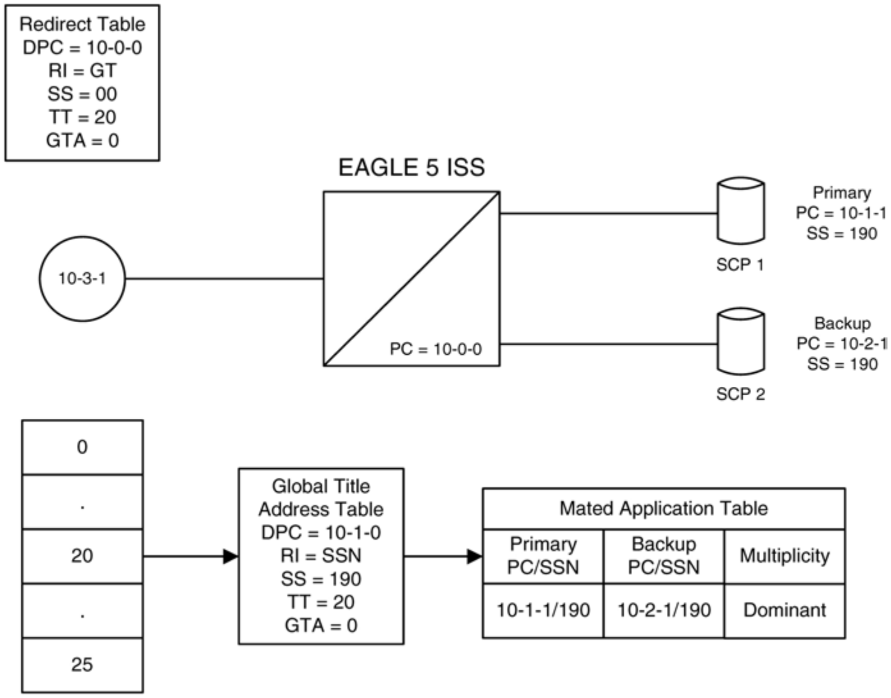
When configured as dominant, one SCP is configured to receive all queries. This assignment is made in EAGLE 5 ISS routing tables. In the event the dominant SCP fails, traffic is diverted by SCCP subsystem management to the mate application.

If load sharing is configured, both SCPs will receive queries. SCCP ensures that all associated transactions are sent to the same SCP. Load sharing allows traffic to be distributed to both SCPs evenly, preventing congestion at one SCP.

If there is a failure in a load sharing configuration, all traffic is diverted by SCCP subsystem management to the mate SCP. When the failed SCP is restored, the EAGLE 5 ISS resumes load sharing.

Figure 40: Configuration of GTT for Routing Management on page 233 shows an EAGLE 5 ISS configured with primary and backup SCPs.

Figure 40: Configuration of GTT for Routing Management



EAGLE 5 ISS Requirements

There are no specific hardware requirements to support the DTA feature. However, if the following specific situations exist, the following cards are required.

Table 18: Cards Required in Specific Situations

If	Required Card
Interworking with an X.25 network with the OCU interface	LIM-OCU*
Interworking with an X.25 network with the DSOA interface	LIM-DS0*
Interworking with an X.25 network with the V.35 interface	LIM-V.35*
STPLAN feature is used	Application Communication Module, DCM, E5-SLAN
Subsystem management is used	TSM-256, TSM-512, TSM-768, TSM-1024, DSM, E5-SM4G

If	Required Card
* A Link Interface Module with the AINF interface (labeled as either LIM or EILA) can also be used. The AINF interface can be configured as either an OCU, DS0, or V.35 interface.	

Configuring the EAGLE 5 ISS for the DTA Feature

This procedure is used to add all the items to the EAGLE 5 ISS's database that are necessary to implement the DTA feature.

The following features must be turned on:

Gateway screening
Global title translation
X.25/SS7 gateway feature

Verify that these features are turned on by entering the `rtrv-feat` command. If any of these features are turned off, they can be turned on by entering one of the following commands:

`chg-feat:gws=on` – if the gateway screening feature is off (`GWS = off` in the `rtrv-feat` command output)
`chg-feat:gtt=on` – if the global title translation feature is off (`GTT = off` in the `rtrv-feat` command output)
`chg-feat:x25g=on` – if the X.25 gateway feature is off (`X25G = off` in the `rtrv-feat` command output)

Note: Once the gateway screening, X.25 gateway, and global title translation features are turned on with the `chg-feat` command, they cannot be turned off.

The following items must be provisioned in the database before the EAGLE 5 ISS can be provisioned for the DTA feature:

- LIMs assigned to the `ss7gx25` application and LIMs assigned to the `ss7ansi` application that are necessary to implement the DTA feature – *Adding an X.25 LIM* on page 25 and "Adding an SS7 LIM" procedure in the Database *Administration Manual – System Management*. The LIMs can be verified by entering the `rtrv-card` command.
- Service modules assigned to either the `sccp` or `vsccp` applications that are necessary to implement the DTA feature - Adding a Service Module procedure in the Database *Administration Manual* – Global Title Translation . The service modules can be verified by entering the `rtrv-card` command.
- If you wish to redirect MSUs on IP cards (cards running the `iplim`, `iplimi`, `ss7ipgw`, `ipgwi`, or `ipsg` applications), then IP cards assigned to the `iplim`, `iplimi`, `ss7ipgw`, `ipgwi`, or `ipsg` applications must be in the database - see the Adding an IPLIMx Card, Adding an IPGWx Card, or Adding an IPSG Card procedures in the *Database Administration Manual - IP⁷ Secure Gateway*. The IP cards can be verified by entering the `rtrv-card` command. If MSUs on IP cards are being redirected, the IP cards must be assigned to SCTP associations, and routing keys, if applicable, according to the application assigned to the IP card. The IP configuration can be verified by entering these commands, as appropriate: `rtrv-appl-rtkey`, `rtrv-as`, `rtrv-assoc`, `rtrv-ip-lnk`, `rtrv-ls`, `rtrv-slk`. Perform the procedures in the *Database*

Administration Manual - IP^{7} Secure Gateway to update the IP^{7} Secure Gateway configuration as necessary.

- X.25 destination point codes (DPCs) and SS7 DPCs that are necessary to implement the DTA feature - "Adding a Destination Point Code" procedure in the Database *Administration Manual* – SS7 . The DPCs can be verified by entering the `rtrv-dstn` command. The SS7 DPCs can be either ANSI, ITU-I, ITU-N, ITU-I Spare, ITU-N Spare, or ITU-N24 point codes. X.25 DPCs must be ANSI point codes.
- X.25 destinations that are necessary to implement the DTA feature – see the *Adding an X.25 Gateway Destination* on page 34 procedure. The X.25 destinations can be verified by entering the `rtrv-x25-dstn` command.
- Linksets whose adjacent point codes (APCs) are in the X.25 domain and linksets whose APCs are in the SS7 domain that are necessary to implement the DTA feature – see one of these procedures: "Adding an SS7 Linkset" procedure in the Database *Administration Manual* – SS7 , *Adding an X.25 Linkset* on page 47, "Adding an SS7 Linkset" procedure in the Database *Administration Manual* – SS7 , or *Changing an X.25 Linkset* on page 76. The APCs of SS7 linksets can be either ANSI, ITU-I, ITU-N, ITU-I Spare, ITU-N Spare, or ITU-N24 point codes. The APCs of X.25 linksets must be ANSI point codes. The linksets can be verified by entering the `rtrv-ls` command. The linksets whose traffic is to be redirected by the DTA feature, must have gateway screening allowed (specify the `gwsa=on` parameter) and must reference a gateway screening screen set. The name of the screen set is shown in the `SCRN` field of the `rtrv-ls` command output. The name of the screen set is specified by the `scrn` parameter in either the `ent-ls` or `chg-ls` commands. The screen set referenced by the linkset must be in the database. All gateway screening entities must be in the database before the necessary linkset can be added to the database or changed to reference the necessary screen set. See the "Gateway Screening Configuration" section to make sure that the necessary gateway screening entities are in the database for this feature. To enhance the reliability of the DTA feature, the gateway screening message discard function should be turned on with the `gwsd=on` parameter.
- Signaling links assigned to linksets containing X.25 APCs and signaling links assigned to linksets containing SS7 APCs that are necessary to implement the DTA feature – "Adding an SS7 Signaling Link" procedure in the Database *Administration Manual* – SS7 and *Adding an X.25 Signaling Link* on page 108. The APCs of SS7 linksets can be either ANSI, ITU-I, ITU-N, ITU-I Spare, ITU-N Spare, or ITU-N24 point codes. The APCs of X.25 linksets must be ANSI point codes. The signaling links can be verified by entering the `rtrv-slk` command.
- Routes assigned to linksets containing X.25 APCs and routes assigned to linksets containing SS7 APCs that are necessary to implement the DTA feature - "Adding a Route Containing an SS7 DPC" and "Adding a Route Containing an X.25 DPC" procedures in the Database *Administration Manual* – SS7 . The DPCs of SS7 routes and APCs of SS7 linksets can be either ANSI, ITU-I, ITU-N, ITU-I Spare, ITU-N Spare, or ITU-N24 point codes. The DPCs of X.25 routes and APCs of X.25 linksets must be ANSI point codes. The routes can be verified by entering the `rtrv-rte` command.
- X.25 routes that are necessary to implement the DTA feature – see *Adding an X.25 Route* on page 123 . The X.25 routes can be verified by entering the `rtrv-x25-rte` command.

Gateway Screening Configuration

The DTA feature uses gateway screening to select the messages that are redirected. A gateway screening stop action set containing the `rdct` (redirect) gateway screening stop action must be assigned to one of these gateway screening entities where the gateway screening process stops (the NSFI of the screen is STOP).

- Allowed OPC
- Blocked OPC

- Allowed SIO
- Allowed DPC
- Blocked DPC
- Allowed Destination Field
- Allowed ISUP Message Type

Enter the `rtrv-gws-actset` command to display the gateway screening stop action sets in the database. The database contains one gateway screening stop action set that contain the `rdct` gateway screening stop action as shown in bold in the example output. This gateway screening stop action is always in the database and cannot be changed or removed.

```
rlghncxa03w 06-10-07 00:17:31 GMT EAGLE5 36.0.0
ACT  ACT    ACT  ACT  ACT  ACT  ACT  ACT  ACT  ACT  ACT  ACT
ID   NAME   1    2    3    4    5    6    7    8    9    10
--   ------ ---- ---- ---- ---- ---- ---- ---- ---- ---- ----
1    copy   copy
2    rdct   rdct
3    cr     copy rdct

GWS action set table is (3 of 16) 19% full
```

For more information on configuring gateway screening stop action sets, see the “Configuring Gateway Screening Stop Action Sets” procedure in the *Database Administration Manual - Gateway Screening*.

CAUTION: Redirecting SLTA/SLTM messages prevents SLTA/SLTM messages from being returned to the EAGLE 5 ISS. The signaling link carrying these messages will fail if these messages are not returned to the EAGLE 5 ISS. To prevent SLTA/SLTM messages from being redirected, gateway screening stop action sets containing the redirect stop action should not be assigned to the following screens:

- Allowed OPC screens containing the adjacent point code of a linkset
- Allowed SIO screens containing the service indicator values 1 (SI=1) or 2 (SI=2)
- Allowed DPC screens containing the EAGLE 5 ISS’s point code.

To verify that the screen set being used with the gateway screening redirect function, enter the `rtrv-scrset:scrn=<screen set name assigned to the linkset being used>` command. If the last screen in the screen set is OPC, BLKOPC, SIO, DPC, BLKDPC, DESTFLD, or ISUP, enter the gateway screening retrieve command corresponding to the last screen in the screen set, with the screening reference name shown in the `rtrv-scrset` output. For example, if the last screen in the screen set is ISUP, enter the `rtrv-scr-isup` command with the `sr` parameter. If the NSR/ACT value shown in the retrieve output is a gateway screening stop action set name that contains the `rdct` stop action, shown in the `rtrv-gws-actset` output, this screen set can be used for the gateway screening redirect function. If you wish to use this screen set, but the `rdct` gateway screening stop action is not assigned to the last screen in the screen set, go to the *Database Administration Manual - Gateway Screening* and perform one of these procedures, as appropriate, to assign the `rdct` gateway screening stop action to the last screen in the screen set.

- “Changing an Allowed ISUP Message Type Screen”
- “Changing an Allowed Affected Destination Field Screen”
- “Changing a Blocked DPC Screen”
- “Changing an Allowed DPC Screen”
- “Changing an Allowed SIO Screen”
- “Changing a Blocked OPC Screen”

- "Changing an Allowed OPC Screen"

If the last screen in the screen set is CGPA, TT, CDPA, or AFTPC, it is recommended that either this screen set is changed so that the last screen in the screen set is OPC, BLKOPC, SIO, DPC, BLKDPC, DESTFLD, or ISUP with the `rdct` gateway screening stop action, or that another screen set with OPC, BLKOPC, SIO, DPC, BLKDPC, DESTFLD, or ISUP as the last screen in the screen set with the `rdct` gateway screening stop action be used. To find another screen set, enter the `rtrv-scrset` command, then enter the `rtrv-scrset` command again with one of the screen set names shown in the first `rtrv-scrset` output. If the last screen in the screen set is OPC, BLKOPC, SIO, DPC, BLKDPC, DESTFLD, or ISUP, enter the gateway screening retrieve command corresponding to the last screen in the screen set, with the screening reference name shown in the `rtrv-scrset` output. Repeat this entering the `rtrv-scrset` commands until a desirable screen set is found. If a desirable screen set cannot be found, either add a new screen set, or change the existing screen set. To add a new screen set, go to the *Database Administration Manual - Gateway Screening* and perform one of these procedures, as appropriate, and assign the `rdct` gateway screening stop action to the last screen in the screen set.

- "Adding an Allowed ISUP Message Type Screen"
- "Adding an Allowed Affected Destination Field Screen"
- "Adding a Blocked DPC Screen"
- "Adding an Allowed DPC Screen"
- "Adding an Allowed SIO Screen"
- "Adding a Blocked OPC Screen"
- "Adding an Allowed OPC Screen"

If you wish to change the existing screen set, go to the *Database Administration Manual - Gateway Screening* and perform one of these procedures, as appropriate. Make sure the last screen in the screen set has the `rdct` gateway screening stop action assigned.

- "Changing an Allowed ISUP Message Type Screen"
- "Changing an Allowed Affected Destination Field Screen"
- "Changing a Blocked DPC Screen"
- "Changing an Allowed DPC Screen"
- "Changing an Allowed SIO Screen"
- "Changing a Blocked OPC Screen"
- "Changing an Allowed OPC Screen"

Verify that the necessary gateway screening entities have been configured with the required gateway screening stop action set, by entering the appropriate gateway screening retrieve command specifying the `actname` parameter with the gateway screening stop action name shown in the `rtrv-gws-actset` command output.

- `rtrv-scr-opc:actname=rdct` – to display the allowed OPC screens
- `rtrv-scr-blkopc:actname=rdct` – to display the blocked OPC screens
- `rtrv-scr-sio:actname=rdct` – to display the allowed SIO screens
- `rtrv-scr-dpc:actname=rdct` – to display the allowed DPC screens
- `rtrv-scr-blkdpc:actname=rdct` – to display the blocked DPC screens
- `rtrv-scr-destfld:actname=rdct` – to display the allowed destination field screens
- `rtrv-scr-isup:actname=rdct` – to display the allowed ISUP message type screens

If a gateway screening entity is configured to redirect, the entry `STOP` appears in the `NSFI` field, the `NSR/ACT` field contains the name of the gateway screening stop action set specified in the gateway screening retrieve command (see the following example).

```
rlghncxa03w 06-10-07 00:17:31 GMT EAGLE5 36.0.0
SCREEN = ALLOWED OPC
SR    NI       NC       NCM      NSFI    NSR/ACT
opc1  010      010      010      STOP    RDCT
opc1  010      010      012      STOP    RDCT
```

If the necessary gateway screening entities are not in the database, add them to the database using one of these procedures in the *Database Administration Manual - Gateway Screening*.

- "Adding an Allowed ISUP Message Type Screen"
- "Adding an Allowed Affected Destination Field Screen"
- "Adding a Blocked DPC Screen"
- "Adding an Allowed DPC Screen"
- "Adding an Allowed SIO Screen"
- "Adding a Blocked OPC Screen"
- "Adding an Allowed OPC Screen"

If the necessary gateway screening entities are in the database, use one these procedures in the *Database Administration Manual - Gateway Screening* to assign the redirect gateway screening stop action to them.

- "Changing an Allowed ISUP Message Type Screen"
- "Changing an Allowed Affected Destination Field Screen"
- "Changing a Blocked DPC Screen"
- "Changing an Allowed DPC Screen"
- "Changing an Allowed SIO Screen"
- "Changing a Blocked OPC Screen"
- "Changing an Allowed OPC Screen"

CAUTION

CAUTION: When Gateway Screening is in the screen test mode, as defined by the linkset parameters `gwsa=off` and `gwsm=on`, the gateway screening action in the gateway screening stop action set specified by the `actname` parameter of the gateway screening screen set at the end of the gateway screening process will be performed.

A screen set is required to start the screening process. Enter the `rtrv-scrset` command to verify that the necessary screen set is in the database. If the necessary screen set is not in the database, use the "Adding a Screen Set" in the in the *Database Administration Manual - Gateway Screening* and add the necessary screen set to the database. If the necessary screen set is in the database and the next screening function identifier (NSFI) needs to be changed, use the "Changing a Screen Set" in the in the *Database Administration Manual - Gateway Screening* to change the NSFI of the screen set.

Canceling the `RTRV-GTT` and `RTRV-GTA` Commands

Because the `rtrv-gtt` and `rtrv-gta`commands used in this procedure can output information for a long period of time, the `rtrv-gtt` and `rtrv-gta`commands can be canceled and the output to the terminal stopped. There are three ways that the `rtrv-gtt` and `rtrv-gta`commands can be canceled.

- Press the `F9` function key on the keyboard at the terminal where the `rtrv-gtt` or `rtrv-gta`commands were entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rtrv-gtt` or `rtrv-gta`commands were entered.
- Enter the `canc-cmd:trm=<xx>`, where `<xx>` is the terminal where the `rtrv-gtt` or `rtrv-gta`commands were entered, from another terminal other that the terminal where the `rtrv-gtt` or `rtrv-gta`commands were entered. To enter the `canc-cmd:trm=<xx>` command, the terminal must allow Security Administration commands to be entered from it and the user must be allowed to enter Security Administration commands. The terminal's permissions can be verified with the `rtrv-secu-trm` command. The user's permissions can be verified with the `rtrv-user` or `rtrv-secu-user` commands.

For more information about the `canc-cmd` command, go to the *Commands Manual*.

1. Verify that the gateway screening redirect function is disabled by entering the `rtrv-gws-redirect` command.

   The following is an example of the possible output.

   ```
   rlghncxa03w 06-10-07 00:17:31 GMT EAGLE5 36.0.0

   ENABLED DPCA          RI   SSN  TT     GTA

   Redirect function data is not provisioned.
   ```

   If the gateway screening redirect function is enabled, the `ent-gws-redirect` command in *Step 2* on page 240 cannot be executed.

2. Provision the gateway screening redirect function by entering the following command.

   This example is using the destination point code (`dpc`) 009-002-001, the routing indicator (`ri`) GT, the subsystem number (`ssn`) 15, the global title translation type (`tt`) 225, the global title address (`gta`) 9105551212, and the `enabled` parameter is equal to `on`.

   ```
   ent-gws-redirect:dpc=009-002-001:ri=gt:ssn=15:tt=225
   :gta=9105551212:enabled=on
   ```

   - :dpc/dpca/dpci/dpcn/dpcn24 – The destination point code, either an ANSI, ITU-I, ITU-N, ITU-I Spare, ITU-N Spare, or ITU-N24 point code, that the message is being redirected to. The point code used for this parameter must be in the database as a destination point code of a route, shown in the rtrv-rte output, or must be the STP's site point code, shown in the rtrv-sid output.

     :dpc/dpca – an ANSI point code

     :dpci – an ITU-I or ITU-I Spare point code

     :dpcn – a 14-bit ITU-N or 14-bit ITU-N Spare point code

     :dpcn24 – a 24-bit ITU-N point code

     If you wish to use a destination point code as a value for this parameter, verify that the destination point code has a route assigned to it by entering the `rtrv-rte` command with the point code value being assigned to the gateway screening redirect function. The `dpc` parameter specified with the `rtrv-rte` command must correspond to the parameter value being specified as shown in the list preceding this paragraph.

For this example, enter the `rtrv-rte:dpca=009-002-001` command. The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:19:31 GMT EAGLE5 36.0.0
DPCA           ALIASI     ALIASN/N24    LSN        RC    APCA
009-002-001 ---------- --------------   ls02       0     009-002-001
                                            RTX:No  CLLI=dtaclli
```

If you wish to use the STP's point code for the dpc parameter, enter the rtrv-sid command to find the STP's point code. The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:20:31 GMT EAGLE5 36.0.0
PCA              PCI             PCN           CLLI            PCTYPE
144-201-001      0-123-1         11211         rlghncxa03w     ANSI
               s-0-123-1       s-11211

CPCA
002-002-002       002-002-003       002-002-004      002-002-005
002-002-006       002-002-007       002-002-008      002-002-009
004-002-001       004-003-003       144-212-003

CPCA (LNP)
005-005-002      005-005-004      005-005-005

CPCI
1-001-1           1-001-2           1-001-3          1-001-4
1-002-1           1-002-2           1-002-3          1-002-4
2-001-1           7-222-7

CPCN
02091             02092             02094             02097
02191             02192             11177
```

The EAGLE 5 ISS's point code is shown in either the PCA, PCI, PCN, or PCN24 fields of the rtrv-sid command output. The rtrv-sid command will show either the PCN or PCN24 fields along with the PCA and PCI fields.

- :ri – The routing indicator for the redirected message.

  If the routing indicator is ssn, the DPC and SSN shown in the output of the rtrv-gws-redirect command, is the final destination of the redirected message. If the routing indicator is gt, additional global title translation is required to determine the final destination of the redirected message.
- :ssn – The CDPA subsystem to which the redirected message is bound for
- :tt – The CDPA translation type of the global title translation
- :gta – The CDPA global title translation address. Hexadecimal digits cannot be specified for the gta parameter. Only decimal digits can be specified for the gta parameter,
- :enabled – Whether the messages that have passed GWS are to be redirected (on) or discarded based on the linkset's gwsd parameter value (off). If the enabled parameter is off and the linkset's gwsd value is on, the MSU is discarded, MRN 1084 is generated, and the DTAMSULOST measurement is pegged. If the enabled parameter is off and the linkset's gwsd value is off, the MSU is routed to its original destination, MRN 1084 is not generated, and the DTAMSULOST measurement is not pegged.

  When the command has been completed successfully, the following message should appear.

```
rlghncxa03w 06-10-07 00:21:31 GMT EAGLE5 36.0.0
ENT-GWS-REDIRECT: MASP A - COMPLTD
```

3. Verify the changes by entering the `rtrv-gws-redirect` command.

   The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:22:31 GMT EAGLE5 36.0.0

ENABLED DPCA         RI  SSN  TT     GTA
on      009-002-001  GT  15   225    9105551212
```

4. Verify if the enhanced global title translation feature is on or off by entering the `rtrv-feat` command.

   If the enhanced global title translation feature is on, the `EGTT` field should be set to `on`.

   Note: The `rtrv-feat` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in the *Commands Manual*.

   If the enhanced global title translation feature is on, the `rtrv-tt`, `ent-tt`, `rtrv-gtt`, and `ent-gtt` commands cannot be executed. Instead, the `rtrv-gttset`, `ent-gttset`, `rtrv-gttsel`, `ent-gttsel`, `rtrv-gta`, and `ent-gta` are used to verify and configure the global title translation data.

   Note: If the enhanced global title translation is on, skip *Step 5* on page 242, and *Step 6* on page 242, and go to *Step 7* on page 243.

5. Verify the global title translation data in the database for the translation type specified in the output of *Step 3* on page 242 by entering the `rtrv-gtt` command with the `type` and `gta` parameters, specifying the values shown in *Step 3* on page 242 in the `TT` and `GTA` fields of the `rtrv-gws-redirect` command output.

   For this example, enter this command.

   `rtrv-gtt:type=225:gta=9105551212`

   The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:24:31 GMT EAGLE5 36.0.0
TYPEA  TTN        NDGT
225    DTA7       10
GTT TABLE IS 10% FULL.    (27000 of 269999)

START GTA             END GTA              XLAT   RI   PCA          SSN  NGT
9105551212                                 DPCSSN GT   009-002-001   15  ---
```

   If the global title translation data is shown in the `rtrv-gtt` command output, no further action is necessary. Go to *Step 9* on page 244.

6. Verify that the global title translation type shown in the output of *Step 3* on page 242, in the `TT` field, is in the database by entering the `rtrv-tt` command with the `type` parameter corresponding to the point code type shown in the `rtrv-gws-redirect` output and shown in *Table 19: Translation Type Parameters* on page 243.

Table 19: Translation Type Parameters

Point Code Type	DPC Parameter shown in the `rtrv-gws-redirect` output	Translation Type Parameter
ANSI	DPC/DPCA	typea
ITU-I or ITU-I Spare	DPCI	typei
ITU-N or ITU-N Spare	DPCN	typen
ITU-N24	DPCN24	typen24

In this example, the global title translation type is `225` and the DPC value is an ANSI point code. The `typea` parameter should be specified with the `rtrv-tt` command. The translation type is shown in the `TYPEA` field. For this example, enter this command.

`rtrv-tt:typea=225`

The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:25:31 GMT EAGLE5 36.0.0
TYPEA   TTN        NDGT
225     DTA7       10
```

If the translation type is shown in the `rtrv-tt` output, perform the "Adding a Global Title Translation" procedure in the Database *Administration Manual* - Global Title Translation and configure a global title translation entry that contains the values shown in the `rtrv-gws-redirect` output in *Step 3* on page 242. This procedure is finished.

If the translation type is not shown in the `rtrv-tt` output, perform the "Adding a Translation Type" and "Adding a Global Title Translation" procedures in the Database *Administration Manual* - Global Title Translation and configure a global title translation entry that contains the values shown in the `rtrv-gws-redirect` output in *Step 3* on page 242. This procedure is finished.

Note: If the enhanced global title translation is off, do not perform *Step 7* on page 243, *Step 8* on page 244, and *Step 9* on page 244. This procedure is finished.

7. Verify that the global title translation type specified in the output of *Step 3* on page 242, in the `TT` field, is in the database by entering the `rtrv-gttsel` command with the `tt` parameter.

   For this example, enter the `rtrv-gttsel:tt=225` command. The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:27:31 GMT EAGLE5 36.0.0
```

```
GTIA  TT   NP       NAI   GTTSN
2     225  --       ---   dta7
```

If the translation type is not in the database, this message is displayed in the scroll area of the terminal display.

```
No GTT Selectors matching the specified criteria were found.
```

If the translation type is shown in the `rtrv-gttsel` command output, go to *Step 8* on page 244 and verify that the global title address data is in the database.

If the translation type is not shown in the `rtrv-gttsel` command output, perform the "Adding a GTT Set," "Adding a GTT Selector," and "Adding Global Title Address Information" procedures in the Database *Administration Manual* - Global Title Translation and configure a global title address entry that contains the values shown in the `rtrv-gws-redirect` output in *Step 3* on page 242. This procedure is finished.

8. The new global title address data must be in the database.

Verify the global title translation data in the database for the translation type specified in the output of *Step 7* on page 243 by entering the `rtrv-gta` command with the `GTTSN` value shown in the output of *Step 7* on page 243, and with the `GTA`, `SSN`, and `DPC` values shown in the output of *Step 3* on page 242. For this example, enter this command.

`rtrv-gta:gttsn=dta7:gta=9195551212:ssn=15:pca=009-002-001`

The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:28:31 GMT EAGLE5 36.0.0
GTTSN      NETDOM  NDGT
dta7       ansi    10
GTA TABLE IS   1 % FULL  (17 of 269999)

START GTA  END GTA    XLAT   RI  PCA          SSN CCGT NTT
```

If the required global title translation data is shown in the `rtrv-gta` command output, no further action is necessary. Go to *Step 9* on page 244.

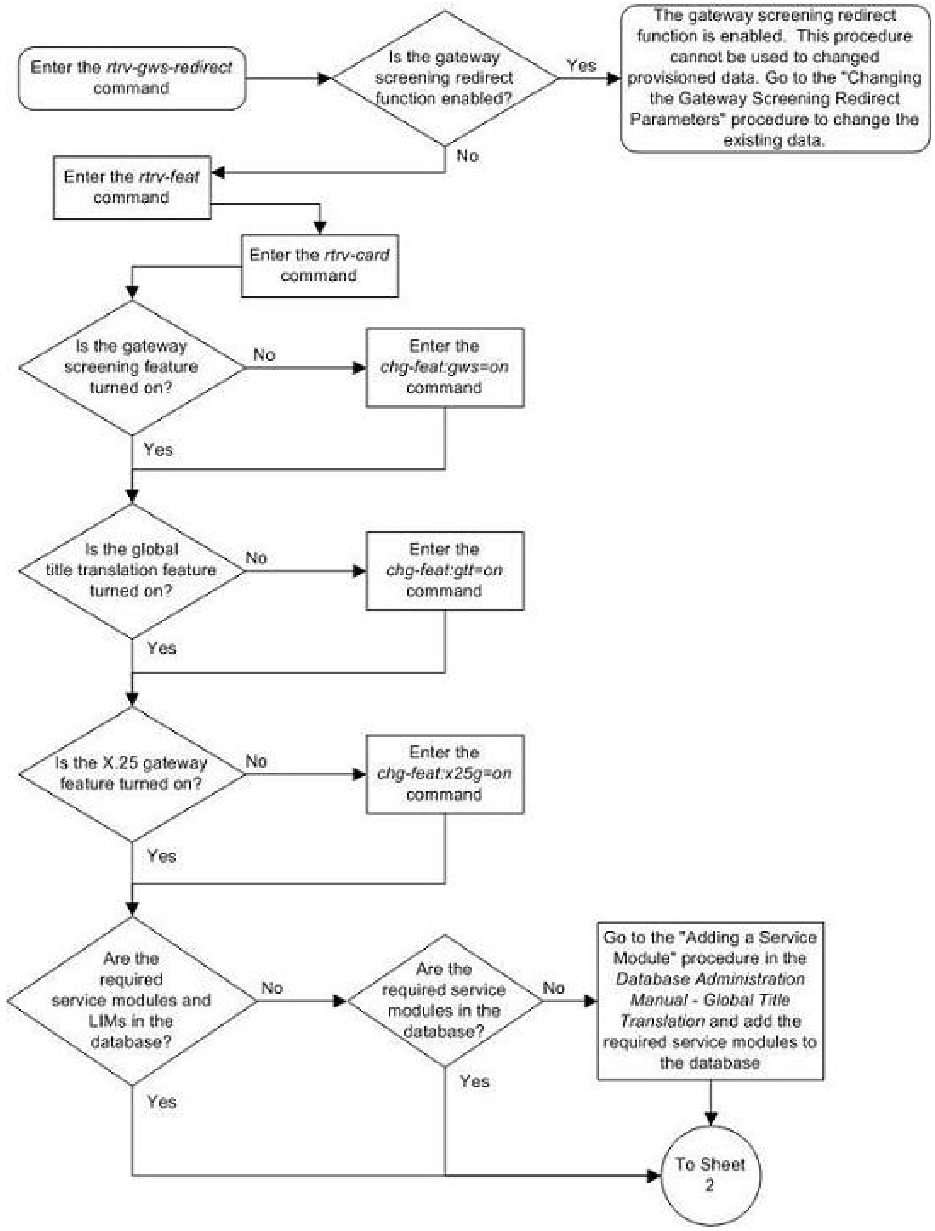
If the required global title translation data is not shown in the `rtrv-gta` command output, perform the "Adding Global Title Address Information" procedure in the Database *Administration Manual* - Global Title Translation and configure a global title address entry that contains the values shown in the `rtrv-gws-redirect` output in *Step 3* on page 242. This procedure is finished.

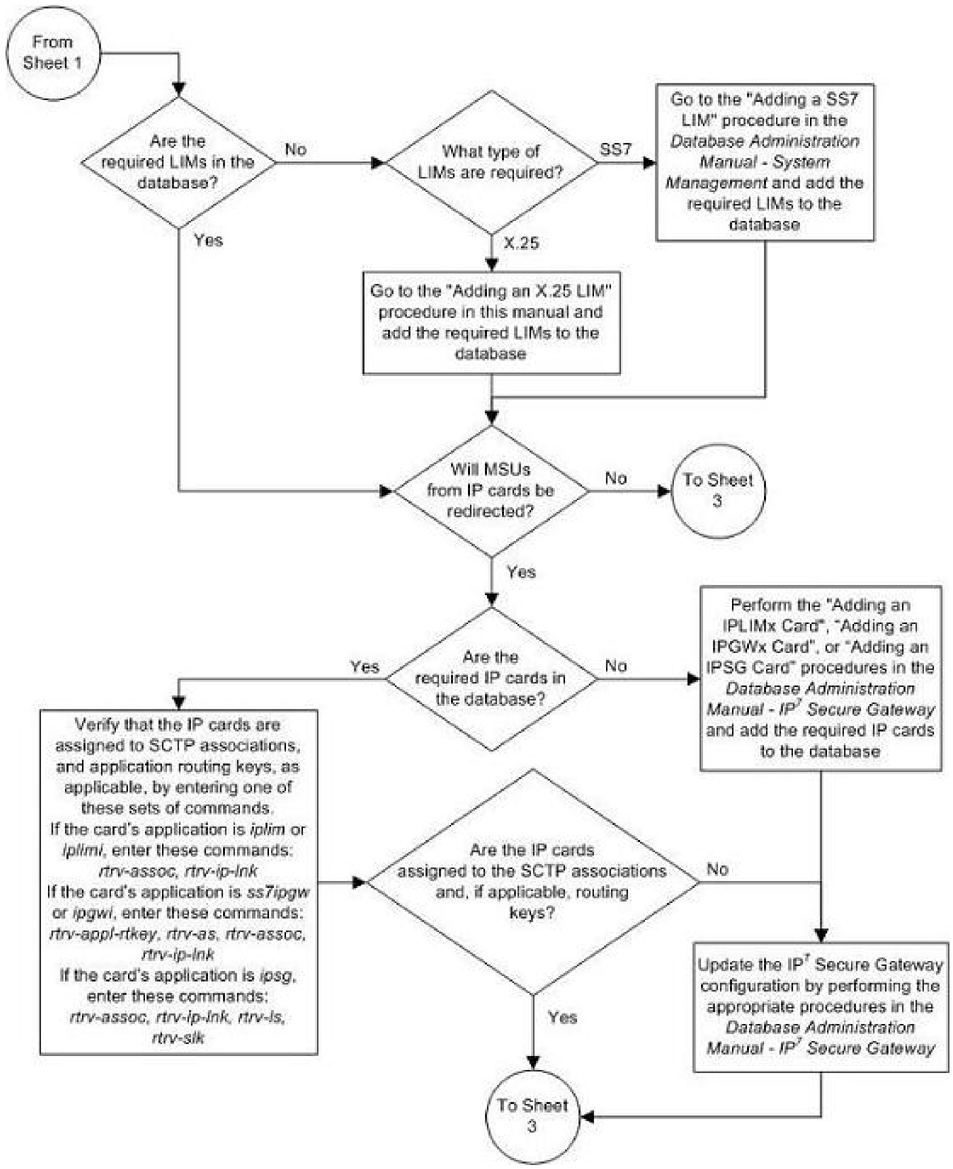
9. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

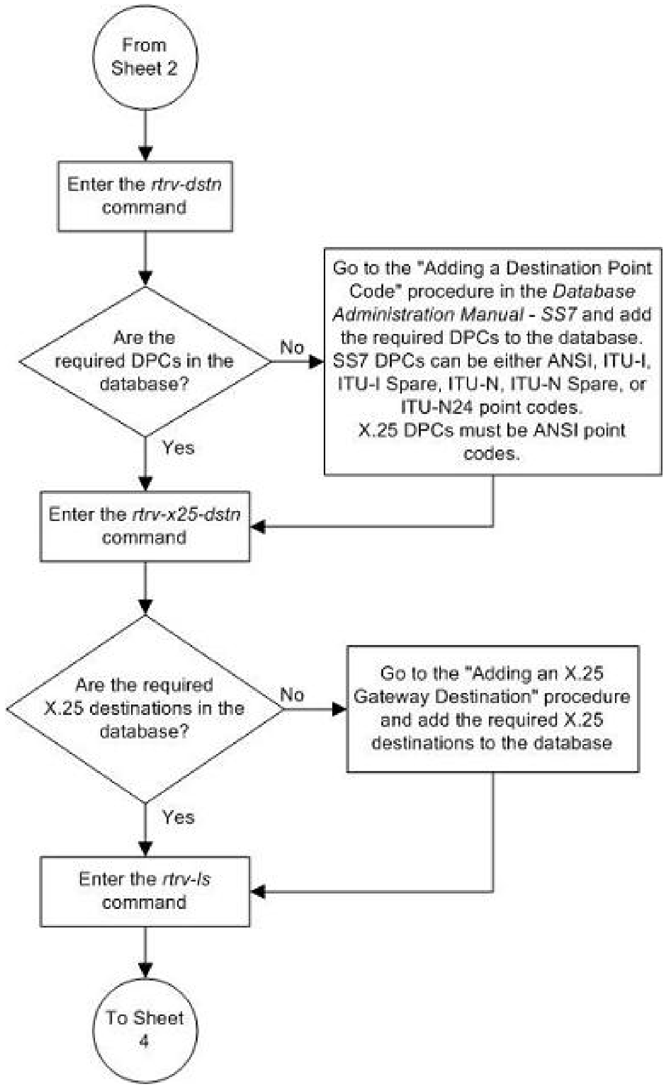
The following messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

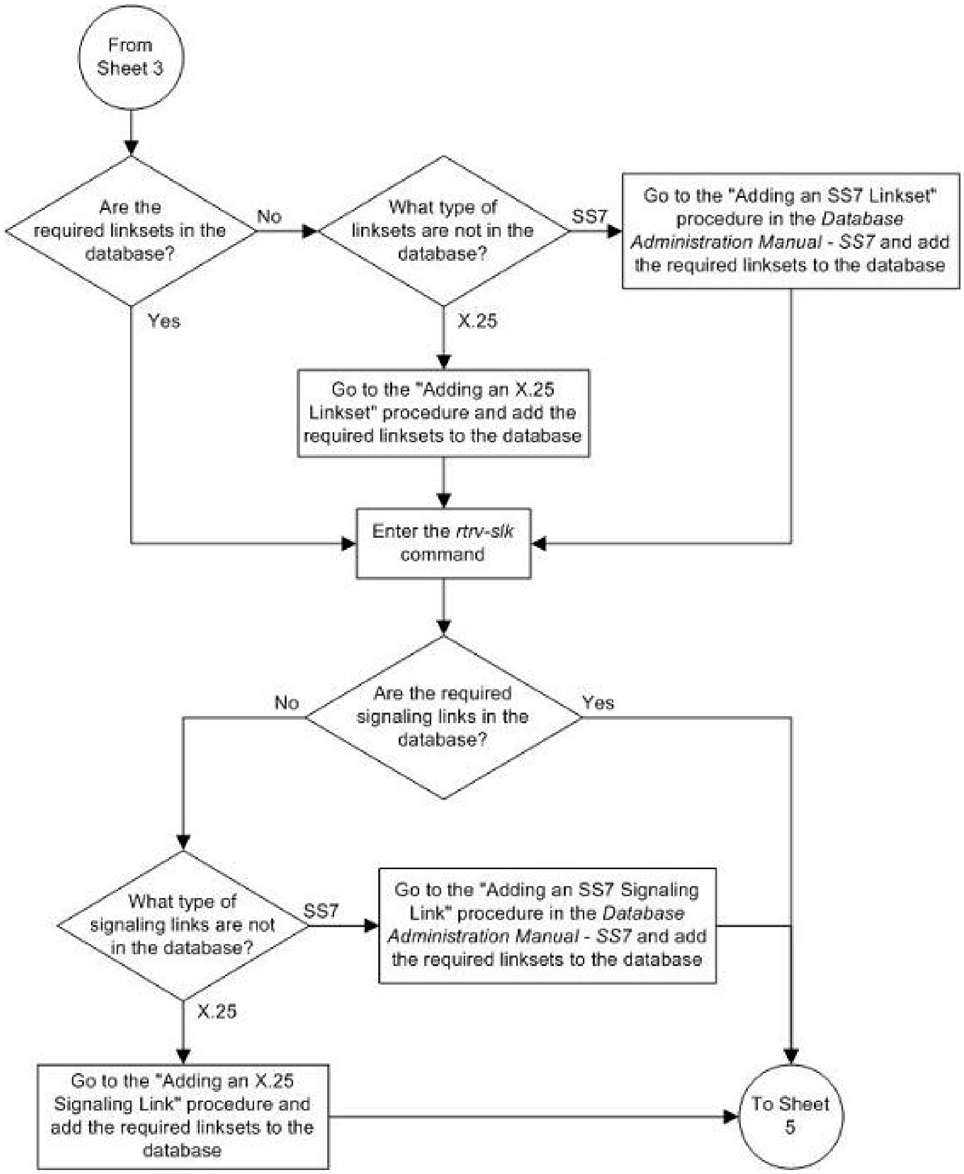
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

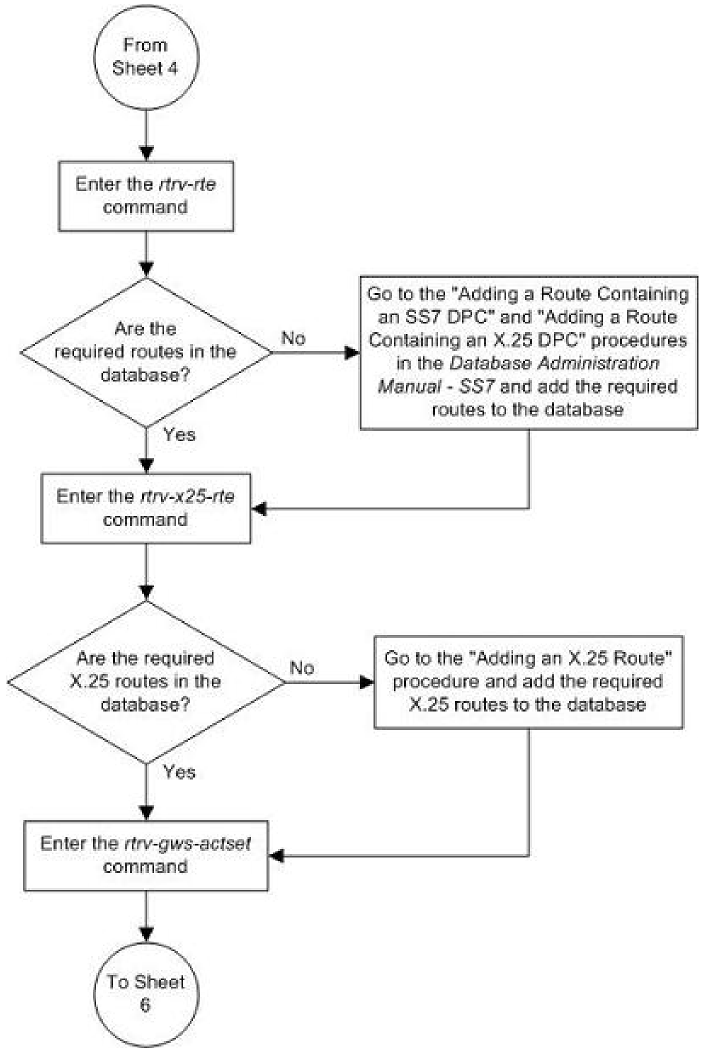
Figure 41: Configuring for the DTA Feature

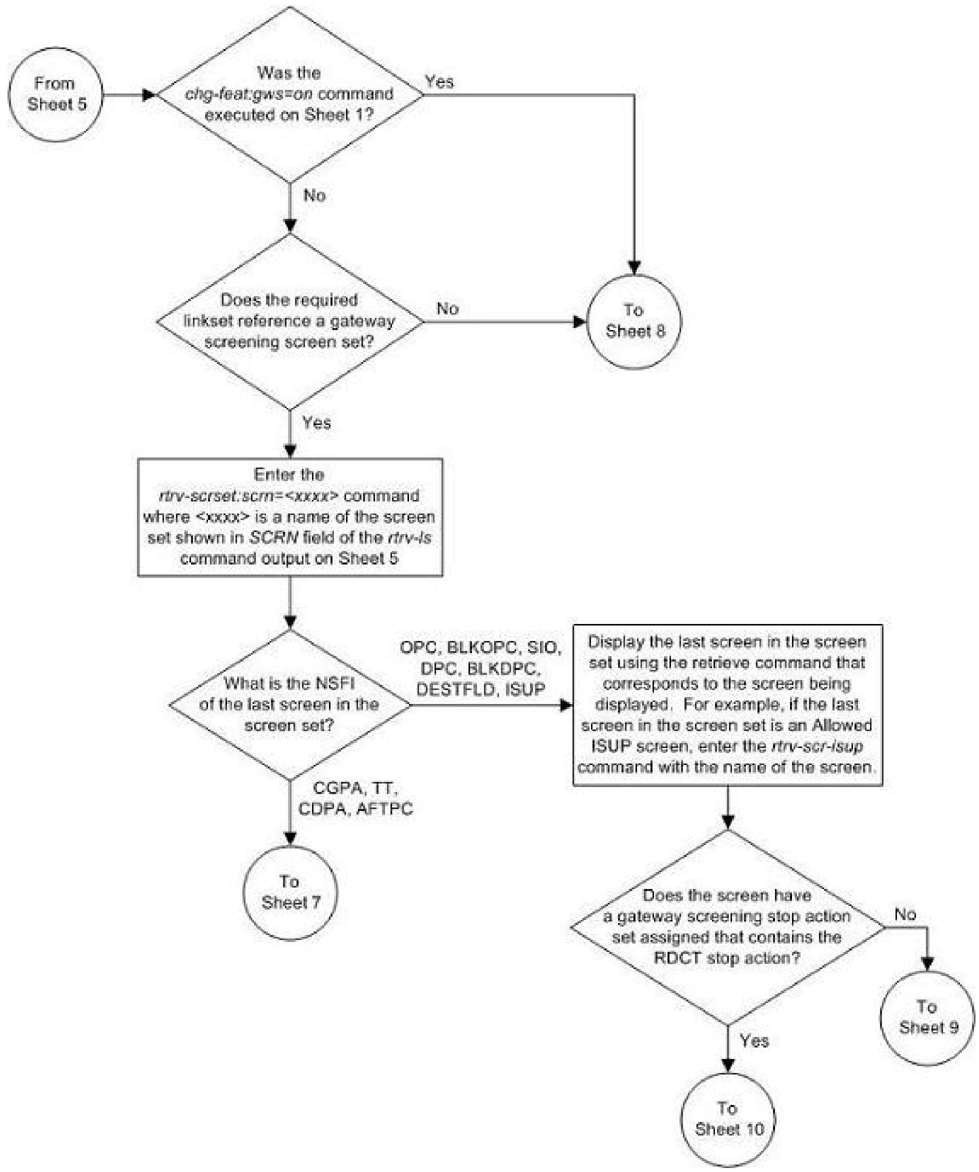

Enter the rtrv-gws-redirect command
Is the gateway screening redirect function enabled?
Yes
The gateway screening redirect function is enabled. This procedure cannot be used to changed provisioned data. Go to the "Changing the Gateway Screening Redirect Parameters" procedure to change the existing data.
No
Enter the rtrv-feat command
Enter the rtrv-card command
Is the gateway screening feature turned on?
No
Enter the chg-feat:gws=on command
Yes
Is the global title translation feature turned on?
No
Enter the chg-feat:gtt=on command
Yes
Is the X.25 gateway feature turned on?
No
Enter the chg-feat:x25g=on command
Yes
Are the required service modules and LIMs in the database?
No
Are the required service modules in the database?
No
Go to the "Adding a Service Module" procedure in the Database Administration Manual - Global Title Translation and add the required service modules to the database
Yes
Yes
To Sheet 2

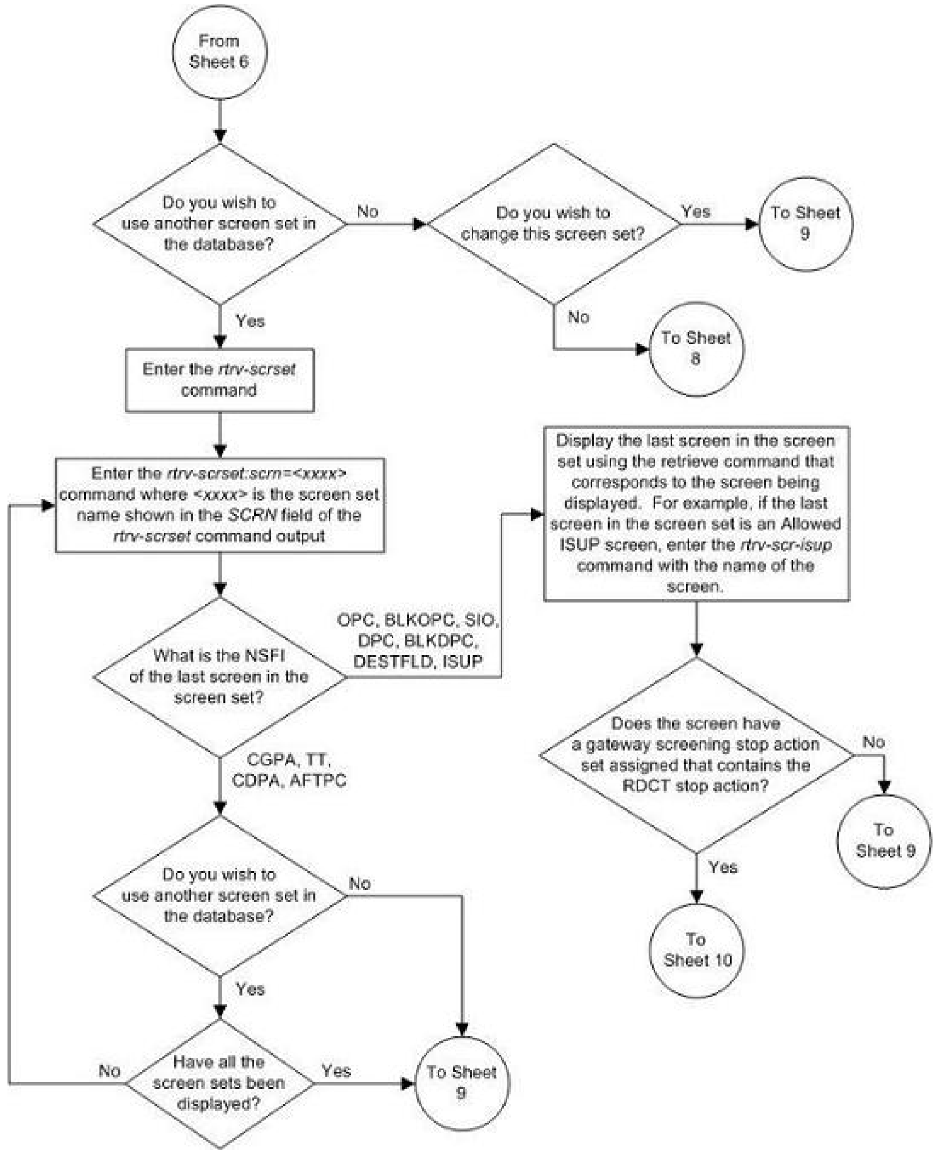

From Sheet 1
Are the required LIMs in the database?
No
What type of LIMs are required?
SS7
Go to the "Adding a SS7 LIM" procedure in the Database Administration Manual - System Management and add the required LIMs to the database
X.25
Go to the "Adding an X.25 LIM" procedure in this manual and add the required LIMs to the database
Yes
Will MSUs from IP cards be redirected?
No
To Sheet 3
Yes
Are the required IP cards in the database?
Yes
No
Perform the "Adding an IPLIMx Card", "Adding an IPGWx Card", or "Adding an IPSG Card" procedures in the Database Administration Manual - IP7 Secure Gateway and add the required IP cards to the database
Verify that the IP cards are assigned to SCTP associations, and application routing keys, as applicable, by entering one of these sets of commands.
If the card's application is iplim or iplimi, enter these commands: rtrv-assoc, rtrv-ip-lnk
If the card's application is ss7ipgw or ipgwi, enter these commands: rtrv-appl-rtkey, rtrv-as, rtrv-assoc, rtrv-ip-lnk
If the card's application is ipsg, enter these commands: rtrv-assoc, rtrv-ip-lnk, rtrv-ls, rtrv-slk
Are the IP cards assigned to the SCTP associations and, if applicable, routing keys?
No
Update the IP7 Secure Gateway configuration by performing the appropriate procedures in the Database Administration Manual - IP7 Secure Gateway
Yes
To Sheet 3

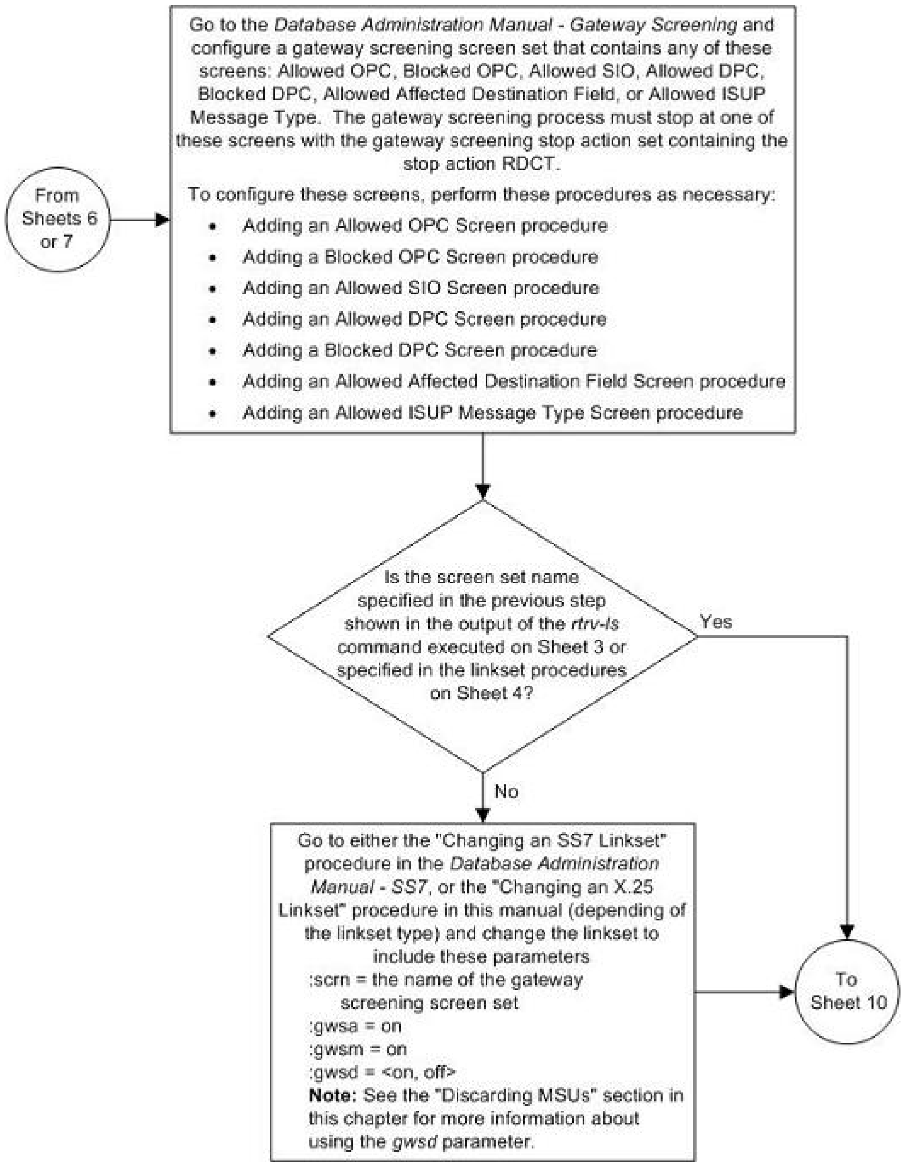

From Sheet 2
Enter the rtrv-dstn command
Are the required DPCs in the database?
No
Go to the "Adding a Destination Point Code" procedure in the Database Administration Manual - SS7 and add the required DPCs to the database. SS7 DPCs can be either ANSI, ITU-I, ITU-I Spare, ITU-N, ITU-N Spare, or ITU-N24 point codes. X.25 DPCs must be ANSI point codes.
Yes
Enter the rtrv-x25-dstn command
Are the required X.25 destinations in the database?
No
Go to the "Adding an X.25 Gateway Destination" procedure and add the required X.25 destinations to the database
Yes
Enter the rtrv-ls command
To Sheet 4

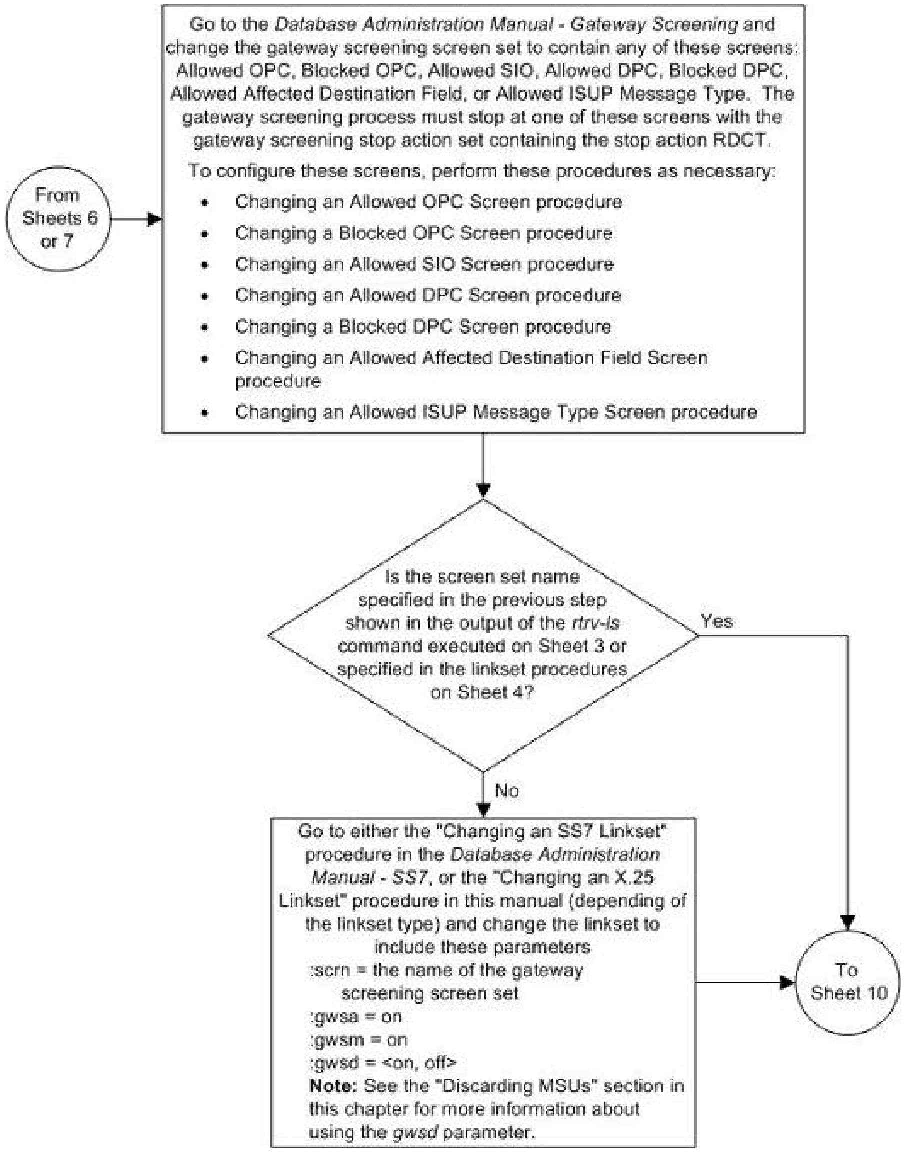

From Sheet 3
Are the required linksets in the database?
No
Yes
What type of linksets are not in the database?
SS7
X.25
Go to the "Adding an SS7 Linkset" procedure in the *Database Administration Manual - SS7* and add the required linksets to the database
Go to the "Adding an X.25 Linkset" procedure and add the required linksets to the database
Enter the *rtrv-slk* command
Are the required signaling links in the database?
No
Yes
What type of signaling links are not in the database?
SS7
X.25
Go to the "Adding an SS7 Signaling Link" procedure in the *Database Administration Manual - SS7* and add the required linksets to the database
Go to the "Adding an X.25 Signaling Link" procedure and add the required linksets to the database
To Sheet 5

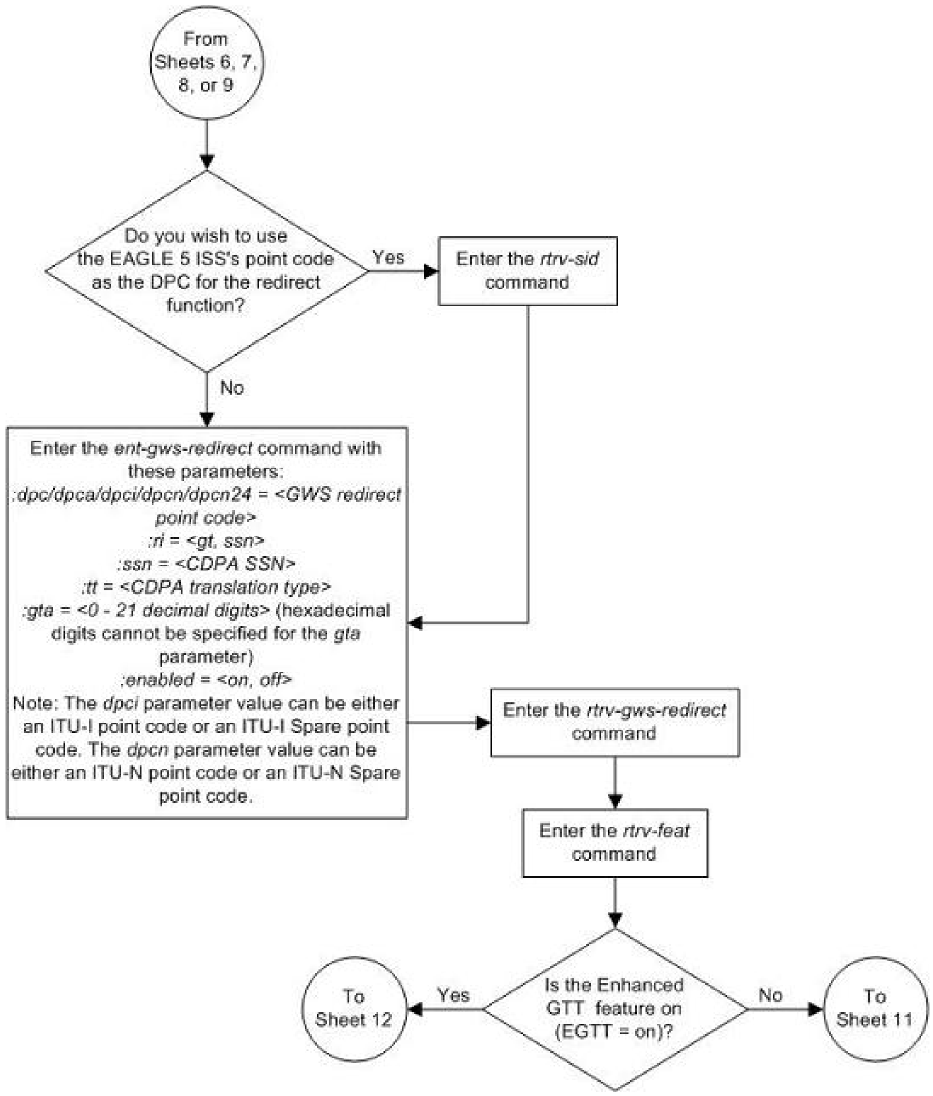

From Sheet 4
Enter the rtrv-rte command
Are the required routes in the database?
No
Go to the "Adding a Route Containing an SS7 DPC" and "Adding a Route Containing an X.25 DPC" procedures in the Database Administration Manual - SS7 and add the required routes to the database
Yes
Enter the rtrv-x25-rte command
Are the required X.25 routes in the database?
No
Go to the "Adding an X.25 Route" procedure and add the required X.25 routes to the database
Yes
Enter the rtrv-gws-actset command
To Sheet 6

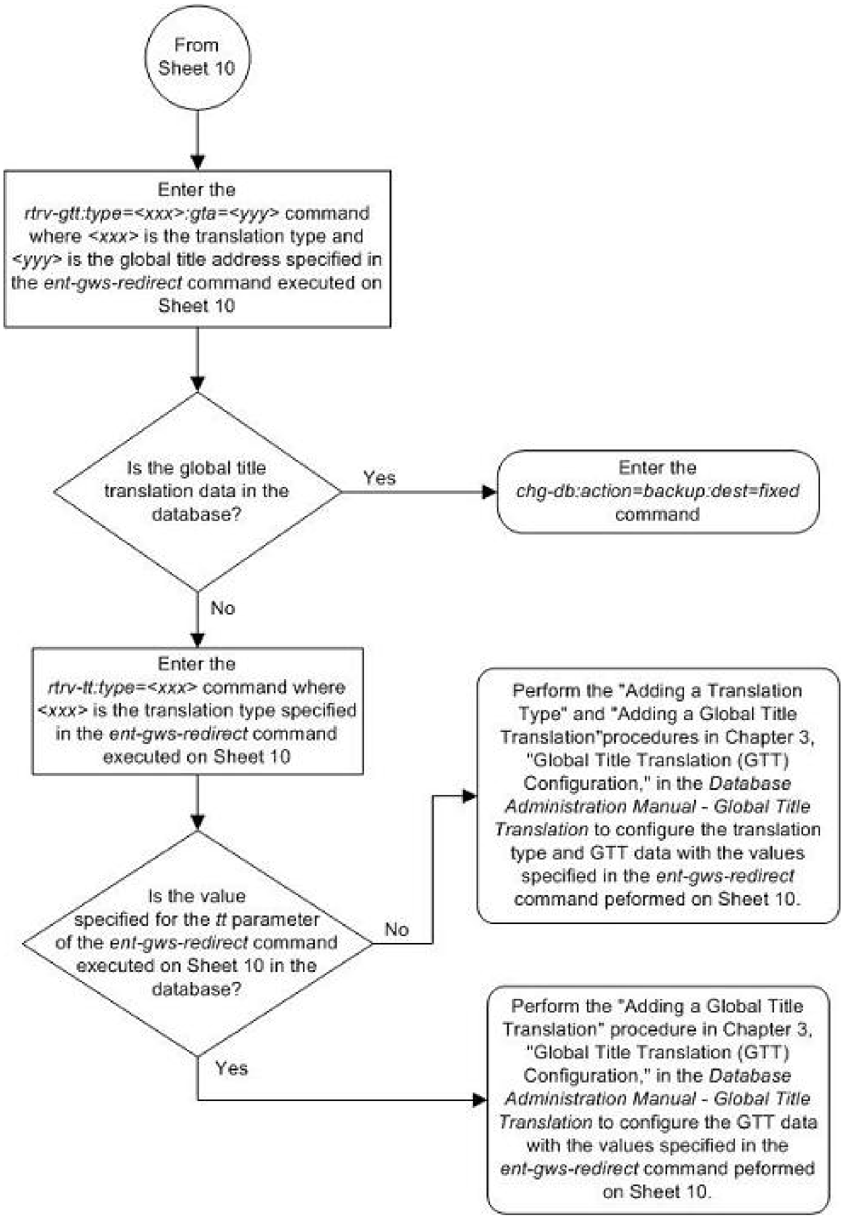

From Sheet 5
Was the chg-feat:gws=on command executed on Sheet 1?
Yes
No
Does the required linkset reference a gateway screening screen set?
No
To Sheet 8
Yes
Enter the rtrv-scrset:scrn=<xxxx> command where <xxxx> is a name of the screen set shown in SCRN field of the rtrv-ls command output on Sheet 5
What is the NSFI of the last screen in the screen set?
OPC, BLKOPC, SIO, DPC, BLKDPC, DESTFLD, ISUP
Display the last screen in the screen set using the retrieve command that corresponds to the screen being displayed. For example, if the last screen in the screen set is an Allowed ISUP screen, enter the rtrv-scr-isup command with the name of the screen.
CGPA, TT, CDPA, AFTPC
To Sheet 7
Does the screen have a gateway screening stop action set assigned that contains the RDCT stop action?
No
To Sheet 9
Yes
To Sheet 10

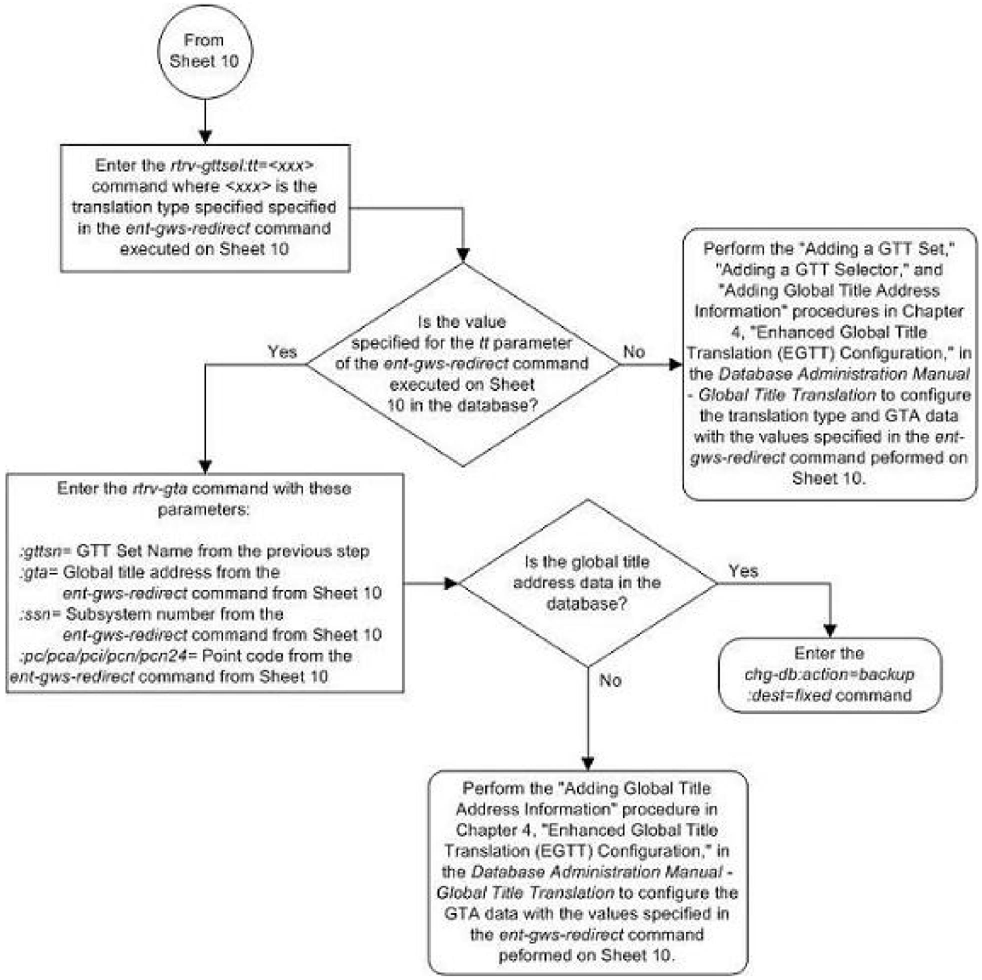

From Sheet 6
Do you wish to use another screen set in the database?
No
Do you wish to change this screen set?
Yes
To Sheet 9
No
To Sheet 8
Yes
Enter the rtrv-scrset command
Enter the rtrv-scrset:scrn=<xxxx> command where <xxxx> is the screen set name shown in the SCRN field of the rtrv-scrset command output
What is the NSFI of the last screen in the screen set?
OPC, BLKOPC, SIO, DPC, BLKDPC, DESTFLD, ISUP
Display the last screen in the screen set using the retrieve command that corresponds to the screen being displayed. For example, if the last screen in the screen set is an Allowed ISUP screen, enter the rtrv-scr-isup command with the name of the screen.
Does the screen have a gateway screening stop action set assigned that contains the RDCT stop action?
No
To Sheet 9
Yes
To Sheet 10
CGPA, TT, CDPA, AFTPC
Do you wish to use another screen set in the database?
No
Yes
Have all the screen sets been displayed?
No
Yes
To Sheet 9


From Sheets 6 or 7
Go to the *Database Administration Manual - Gateway Screening* and configure a gateway screening screen set that contains any of these screens: Allowed OPC, Blocked OPC, Allowed SIO, Allowed DPC, Blocked DPC, Allowed Affected Destination Field, or Allowed ISUP Message Type. The gateway screening process must stop at one of these screens with the gateway screening stop action set containing the stop action RDCT.
To configure these screens, perform these procedures as necessary:
• Adding an Allowed OPC Screen procedure
• Adding a Blocked OPC Screen procedure
• Adding an Allowed SIO Screen procedure
• Adding an Allowed DPC Screen procedure
• Adding a Blocked DPC Screen procedure
• Adding an Allowed Affected Destination Field Screen procedure
• Adding an Allowed ISUP Message Type Screen procedure
Is the screen set name specified in the previous step shown in the output of the *rtrv-ls* command executed on Sheet 3 or specified in the linkset procedures on Sheet 4?
Yes
No
Go to either the "Changing an SS7 Linkset" procedure in the *Database Administration Manual - SS7*, or the "Changing an X.25 Linkset" procedure in this manual (depending of the linkset type) and change the linkset to include these parameters
:scrn = the name of the gateway screening screen set
:gwsa = on
:gwsm = on
:gwsd = <on, off>
Note: See the "Discarding MSUs" section in this chapter for more information about using the *gwsd* parameter.
To Sheet 10


Go to the Database Administration Manual - Gateway Screening and change the gateway screening screen set to contain any of these screens: Allowed OPC, Blocked OPC, Allowed SIO, Allowed DPC, Blocked DPC, Allowed Affected Destination Field, or Allowed ISUP Message Type. The gateway screening process must stop at one of these screens with the gateway screening stop action set containing the stop action RDCT.
To configure these screens, perform these procedures as necessary:
• Changing an Allowed OPC Screen procedure
• Changing a Blocked OPC Screen procedure
• Changing an Allowed SIO Screen procedure
• Changing an Allowed DPC Screen procedure
• Changing a Blocked DPC Screen procedure
• Changing an Allowed Affected Destination Field Screen procedure
• Changing an Allowed ISUP Message Type Screen procedure
From Sheets 6 or 7
Is the screen set name specified in the previous step shown in the output of the rtrv-ls command executed on Sheet 3 or specified in the linkset procedures on Sheet 4?
Yes
No
Go to either the "Changing an SS7 Linkset" procedure in the Database Administration Manual - SS7, or the "Changing an X.25 Linkset" procedure in this manual (depending of the linkset type) and change the linkset to include these parameters
:scrn = the name of the gateway screening screen set
:gwsa = on
:gwsm = on
:gwsd = <on, off>
Note: See the "Discarding MSUs" section in this chapter for more information about using the gwsd parameter.
To Sheet 10


From Sheets 6, 7, 8, or 9
Do you wish to use the EAGLE 5 ISS's point code as the DPC for the redirect function?
Yes
Enter the rtrv-sid command
No
Enter the ent-gws-redirect command with these parameters:
:dpc/dpca/dpci/dpcn/dpcn24 = <GWS redirect point code>
:ri = <gt, ssn>
:ssn = <CDPA SSN>
:tt = <CDPA translation type>
:gta = <0 - 21 decimal digits> (hexadecimal digits cannot be specified for the gta parameter)
:enabled = <on, off>
Note: The dpci parameter value can be either an ITU-I point code or an ITU-I Spare point code. The dpcn parameter value can be either an ITU-N point code or an ITU-N Spare point code.
Enter the rtrv-gws-redirect command
Enter the rtrv-feat command
Is the Enhanced GTT feature on (EGTT = on)?
Yes
To Sheet 12
No
To Sheet 11


From Sheet 10
Enter the rtrv-gtt:type=<xxx>:gta=<yyy> command where <xxx> is the translation type and <yyy> is the global title address specified in the ent-gws-redirect command executed on Sheet 10
Is the global title translation data in the database?
Yes
Enter the chg-db:action=backup:dest=fixed command
No
Enter the rtrv-tt:type=<xxx> command where <xxx> is the translation type specified in the ent-gws-redirect command executed on Sheet 10
Is the value specified for the tt parameter of the ent-gws-redirect command executed on Sheet 10 in the database?
No
Perform the "Adding a Translation Type" and "Adding a Global Title Translation"procedures in Chapter 3, "Global Title Translation (GTT) Configuration," in the Database Administration Manual - Global Title Translation to configure the translation type and GTT data with the values specified in the ent-gws-redirect command peformed on Sheet 10.
Yes
Perform the "Adding a Global Title Translation" procedure in Chapter 3, "Global Title Translation (GTT) Configuration," in the Database Administration Manual - Global Title Translation to configure the GTT data with the values specified in the ent-gws-redirect command peformed on Sheet 10.



Changing the Gateway Screening Redirect Parameters

To change the configuration to support the DTA feature, one or more of the gateway screening redirect function's attributes can be changed using the `chg-gws-redirect` command. This procedure shows the steps necessary to change these attributes.

The gateway screening redirect function's data must be in the database and the gateway screening redirect function must be enabled, shown by the entry `on` in the enabled field of the `rtrv-gws-redirect` command output.

Any of the gateway screening redirect function's attributes can be changed. The new attributes, and any database entities required to support these attributes, must be in the database.

Canceling the `RTRV-GTT` and `RTRV-GTA` Commands

Because the `rtrv-gtt` and `rtrv-gta`commands used in this procedure can output information for a long period of time, the `rtrv-gtt` and `rtrv-gta`commands can be canceled and the output to the terminal stopped. There are three ways that the `rtrv-gtt` and `rtrv-gta`commands can be canceled.

- Press the F9 function key on the keyboard at the terminal where the `rtrv-gtt` or `rtrv-gta`commands were entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rtrv-gtt` or `rtrv-gta`commands were entered.
- Enter the `canc-cmd:trm=<xx>`, where `<xx>` is the terminal where the `rtrv-gtt` or `rtrv-gta`commands were entered, from another terminal other that the terminal where the `rtrv-gtt` or `rtrv-gta`commands were entered. To enter the `canc-cmd:trm=<xx>` command, the terminal must allow Security Administration commands to be entered from it and the user must be allowed to enter Security Administration commands. The terminal's permissions can be verified with the `rtrv-secu-trm` command. The user's permissions can be verified with the `rtrv-user` or `rtrv-secu-user` commands.

For more information about the `canc-cmd` command, go to the *Commands Manual*.

The examples in this procedure are used to change the gateway screening redirect function's attributes to these values. The routing indicator is not being changed.

- `:dpc` – 009-003-001
- `:ssn` – 45
- `:tt` – 175
- `:gta` – 3365841342

1. Verify the gateway screening redirect function attributes by entering the `rtrv-gws-redirect` command.

   The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:17:31 GMT EAGLE5 36.0.0
ENABLED DPCA         RI   SSN  TT     GTA
on      003-175-010  GT   15   225    9105551212
```

   If the DPC, shown in the `DPC` field, is not being changed, skip, *Step 2* on page 257, and *Step 3* on page 257, and go to *Step 4* on page 258.

2. Verify that the new DPC is in the database and has a route assigned to it.

   Note:

   If the DPC is being changed to the EAGLE 5 ISS's point code, skip step 2 and go to step 3.

   Verify this by entering the `rtrv-rte` command with the new DPC, in this example, 009-003-001.

```
rlghncxa03w 06-10-07 00:19:31 GMT EAGLE5 36.0.0
DPCA           ALIASI     ALIASN/N24    LSN        RC    APCA
009-003-001 ---------- --------------   ls02       0     009-001-001
                                            RTX:No  CLLI=dtaclli
```

   If the required route to the DPC is not shown in the `rtrv-rte` command output, go to the "Adding a Route Containing an X.25 DPC" or "Adding a Route Containing an SS7 DPC" procedures in the Database *Administration Manual* - SS7 and add the route to the DPC to the database.

3. Display the EAGLE 5 ISS's point code by entering the `rtrv-sid` command.

   Note:

If the DPC is being changed to a point code in the routing table, shown in the output of step 2, skip step 3 and go to *Step 4* on page 258.

The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:20:31 GMT EAGLE5 36.0.0
PCA               PCI             PCN           CLLI            PCTYPE
144-201-001       0-123-1         11211         rlghncxa03w     ANSI
                s-0-123-1       s-11211

CPCA
002-002-002        002-002-003        002-002-004       002-002-005
002-002-006        002-002-007        002-002-008       002-002-009
004-002-001        004-003-003        144-212-003

CPCA (LNP)
005-005-002       005-005-004       005-005-005

CPCI
1-001-1            1-001-2            1-001-3           1-001-4
1-002-1            1-002-2            1-002-3           1-002-4
2-001-1            7-222-7

CPCN
02091              02092              02094              02097
02191              02192              11177
```

The EAGLE 5 ISS's point code is shown in either the `PCA`, `PCI`, `PCN`, or `PCN24` fields of the `rtrv-sid` command output. The `rtrv-sid` command will show either the `PCN` or `PCN24` fields along with the `PCA` and `PCI` fields.

4. Change the parameters for the gateway screening redirect function by entering the `chg-gws-redirect` command with any of these parameters:

•

For this example, enter this command. In this example, the `ri` parameter is not being changed.

`chg-gws-redirect:dpc=009-003-001:ssn=45:tt=175:gta=3365841342`

When the command has been completed successfully, the following message should appear.

```
rlghncxa03w 06-10-07 00:21:31 GMT EAGLE5 36.0.0
CHG-GWS-REDIRECT: MASP A - COMPLTD
```

5. Verify the changes by entering the `rtrv-gws-redirect` command.

The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:22:31 GMT EAGLE5 36.0.0
ENABLED DPCA          RI  SSN  TT     GTA
on      009-003-001   GT  45   175    3365841342
```

If only the DPC parameter was changed in *Step 4* on page 258, skip *steps 6* on page 258 through 10, go to *step 11* on page 261.

6. Verify if the enhanced global title translation feature is on or off by entering the `rtrv-feat` command.

If the enhanced global title translation feature is on, the `EGTT` field should be set to `on`.

For this example, the enhanced global title translation feature is on.

Note:

The `rtrv-feat` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in the *Commands Manual*.

If the enhanced global title translation feature is on, the `rtrv-tt`, `ent-tt`, `rtrv-gtt`, and `ent-gtt` commands cannot be executed. Instead, the `rtrv-gttset`, `ent-gttset`, `rtrv-gttsel`, `ent-gttsel`, `rtrv-gta`, and `ent-gta` are used to verify and configure the global title translation data.

7. The new global title address data must be in the database.

   Note:

   If the enhanced global title translation is on, skip *steps 7* on page 259 and *8* on page 259, and go to *step 9* on page 260.

   Verify the global title translation data in the database for the translation type specified in the output of *step 5* on page 258 by entering the `rtrv-gtt` command with the `type` and `gta` parameters. For this example, enter this command.

   `rtrv-gtt:type=175:gta=3365841342`

   The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:24:31 GMT EAGLE5 36.0.0
TYPEA  TTN        NDGT
175    DTA7        10
GTT TABLE IS 10% FULL.    (27000 of 269999)

START GTA             END GTA              XLAT   RI   PCA           SSN  NGT
3365841342            ------               DPCSSN GT   009-003-001   45   ---
```

   If the global title translation data is shown in the `rtrv-gtt` command output, no further action is necessary. Go to *step 11* on page 261.

8. The new translation type must be in the database.

   Verify that the global title translation type specified in the `rtrv-gws-redirect` output in *step 5* on page 258 in the `TT` field, is in the database by entering the `rtrv-tt` command with the type parameter corresponding to the point code type shown in the `rtrv-gws-redirect` output in *step 5* on page 258 and *Table 20: Translation Type Parameters* on page 259.

   Table 20: Translation Type Parameters

Point Code Type	DPC Parameter shown in the **`rtrv-gws-redirect`** output	Translation Type Parameter
ANSI	DPC/DPCA	typea
ITU-I or ITU-I Spare	DPCI	typei
ITU-N or	DPCN	typen

Point Code Type	DPC Parameter shown in the `rtrv-gws-redirect` output	Translation Type Parameter
ITU-N Spare		
ITU-N24	DPCN24	typen24

In this example, the new global title translation type is `175`. The `typea` parameter should be specified with the `rtrv-tt` command. The translation type is shown in the `TYPEA` field. For this example, enter this command.

`rtrv-tt:typea=175`

The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:25:31 GMT EAGLE5 36.0.0
TYPEA  TTN        NDGT
175    DTA7       10
```

If the translation type is shown in the `rtrv-tt` output, perform the “Adding a Global Title Translation” procedure in the Database *Administration Manual* - Global Title Translation and configure a global title translation entry that contains the values shown in the `rtrv-gws-redirect` output in *step 5* on page 258. This procedure is finished. If the translation type is not shown in the `rtrv-tt` output, perform the “Adding a Translation Type” and “Adding a Global Title Translation” procedures in the Database *Administration Manual* - Global Title Translation and configure a global title translation entry that contains the values shown in the `rtrv-gws-redirect` output in *step 5* on page 258. This procedure is finished.

9. Verify that the global title translation type specified in the output of *step 5* on page 258, in the `TT` field, is in the database by entering the `rtrv-gttsel` command with the `tt` parameter.

Note:

If the enhanced global title translation is off, do not perform steps 9, 10, and 11. This procedure is finished.

For this example, enter the `rtrv-gttsel:tt=175` command. The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:27:31 GMT EAGLE5 36.0.0
GTIA   TT   NP       NAI   GTTSN
2      175  --       ---   dta7
```

If the translation type is not in the database, this message is displayed in the scroll area of the terminal disp1lay.

```
No GTT Selectors matching the specified criteria were found.
```

If the translation type is shown in the `rtrv-gttsel` command output, go to *step 10* on page 261 and verify that the global title address data is in the database.

If the translation type is not shown in the `rtrv-gttsel` command output, perform the “Adding a GTT Set,” “Adding a GTT Selector,” and “Adding Global Title Address Information” procedures in the Database *Administration Manual* - Global Title Translation and configure a global title address entry that contains the values shown in the `rtrv-gws-redirect` output in step 3. This procedure is finished.

10. The new global title address must be in the database.

    Verify the global title translation data in the database for the translation type specified in the output of *step 5* on page 258 by entering the `rtrv-gta` command with the `GTTSN` value shown in the output of *step 9* on page 260 and with the `GTA`, `SSN`, and `DPC` values shown in the output of *step 5* on page 258. For this example, enter this command.

    `rtrv-gta:gttsn=dta7:gta=3365841342:pca=009-003-001:ssn=45`

```
rlghncxa03w 06-10-07 00:28:31 GMT EAGLE5 36.0.0
GTTSN      NETDOM  NDGT
t800       ansi    10
GTA TABLE IS   1 % FULL  (17 of 269999)

START GTA  END GTA    XLAT   RI  PCA         SSN CCGT NTT
```

    If the required global title translation data is shown in the `rtrv-gta` command output, no further action is necessary. Go to *step 11* on page 261.

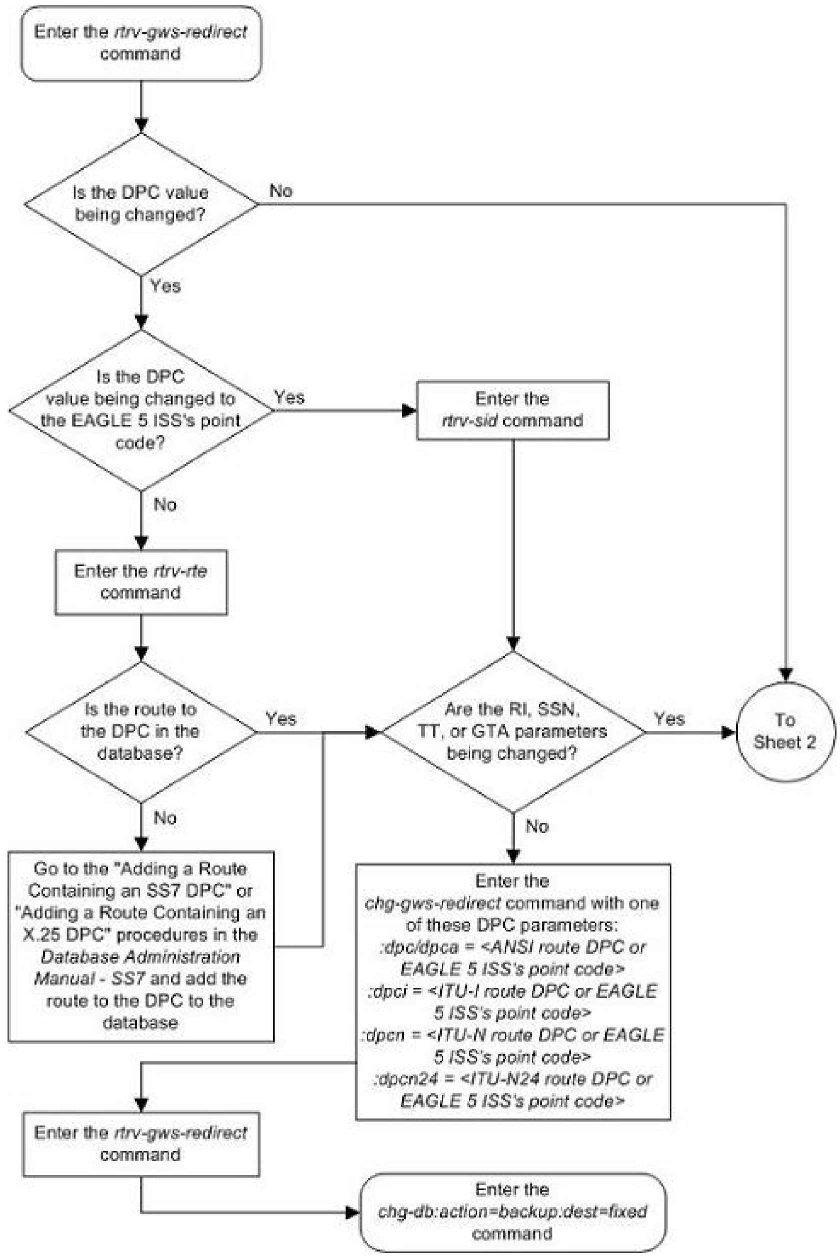
    If the required global title translation data is not shown in the `rtrv-gta` command output, perform the "Adding Global Title Address Information" procedure in the Database *Administration Manual* - Global Title Translation and configure a global title address entry that contains the values shown in the `rtrv-gws-redirect` output in *step 5* on page 258. This procedure is finished.

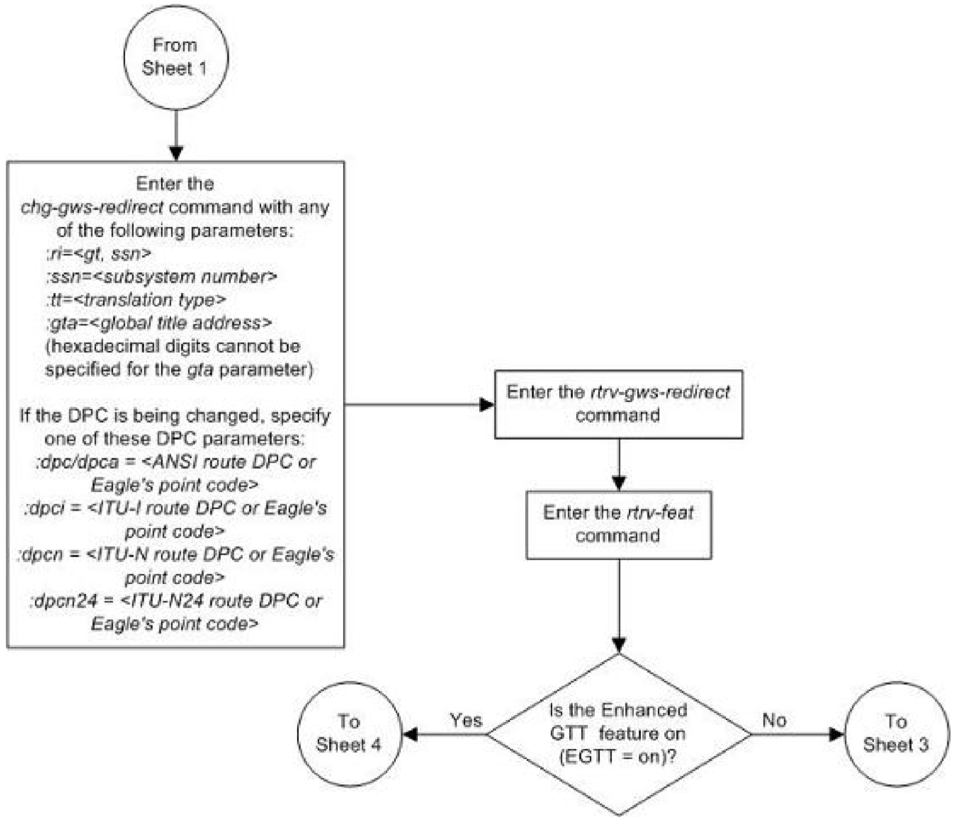
11. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

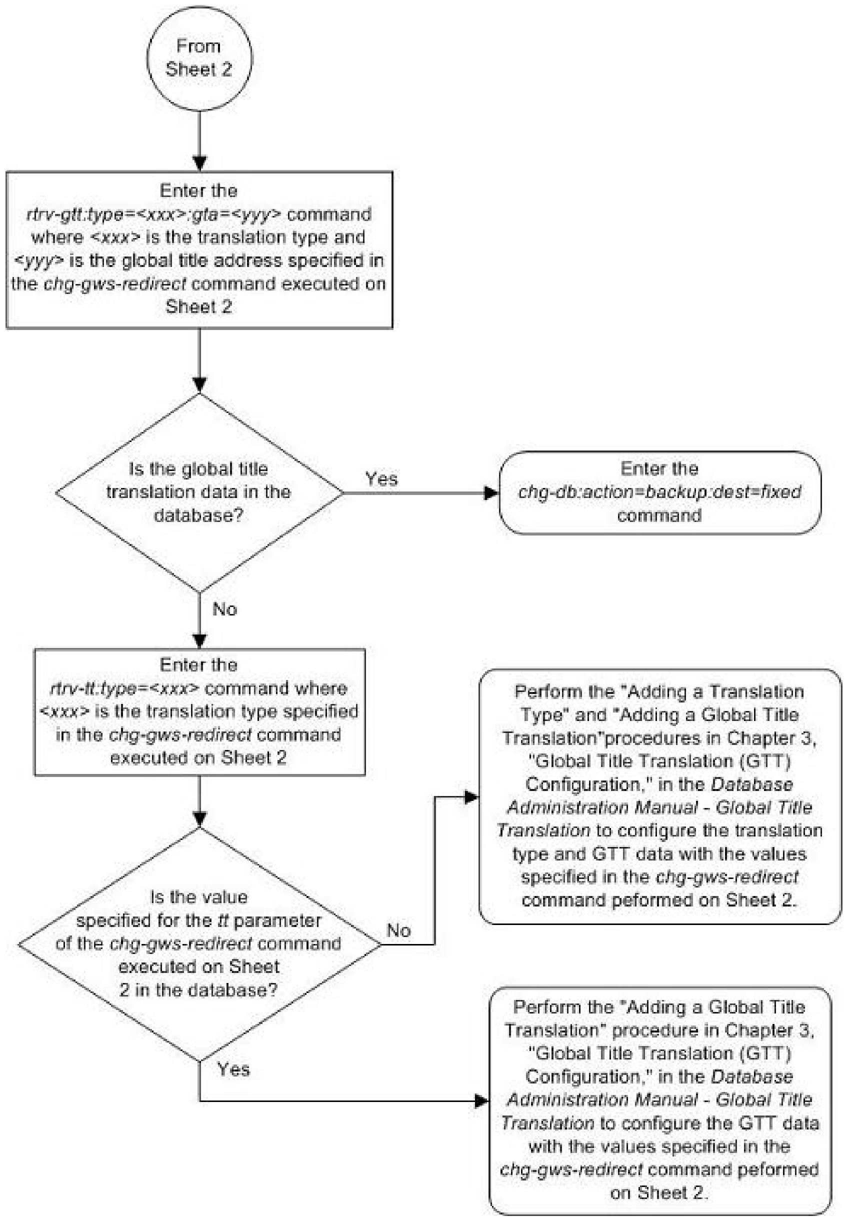
    The following messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

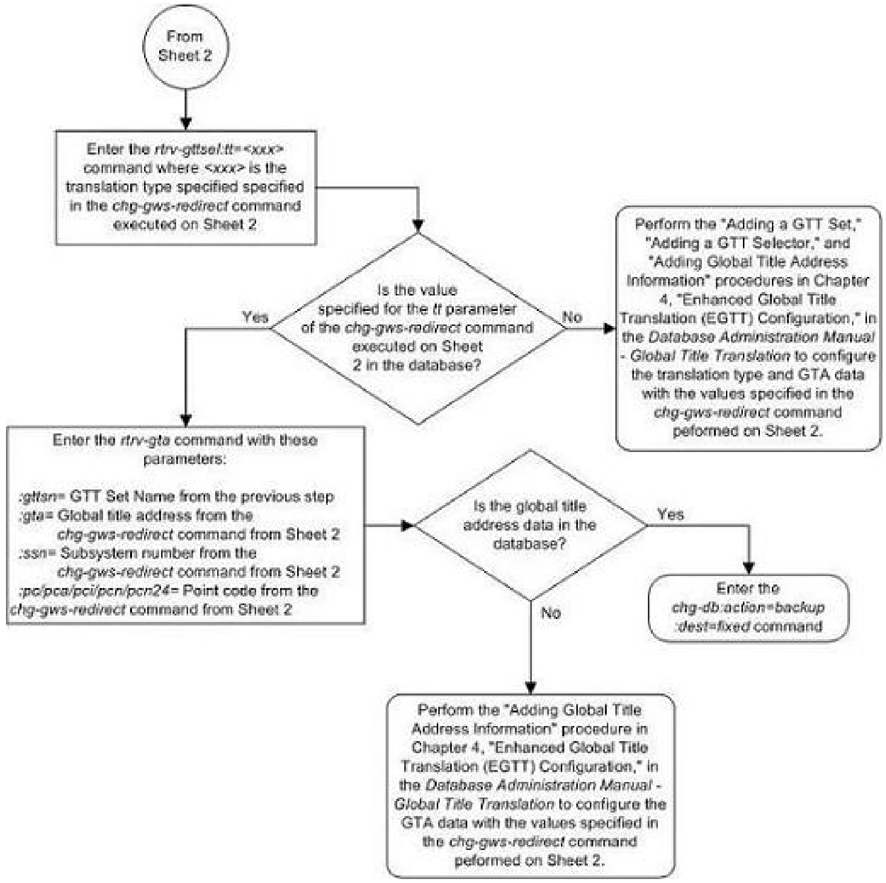
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 42: Changing the Gateway Screening Redirect Parameters


Enter the rtrv-gws-redirect command
Is the DPC value being changed?
No
Yes
Is the DPC value being changed to the EAGLE 5 ISS's point code?
Yes
Enter the rtrv-sid command
No
Enter the rtrv-rte command
Is the route to the DPC in the database?
Yes
Are the RI, SSN, TT, or GTA parameters being changed?
Yes
To Sheet 2
No
Go to the "Adding a Route Containing an SS7 DPC" or "Adding a Route Containing an X.25 DPC" procedures in the Database Administration Manual - SS7 and add the route to the DPC to the database
No
Enter the chg-gws-redirect command with one of these DPC parameters:
:dpc/dpca = <ANSI route DPC or EAGLE 5 ISS's point code>
:dpci = <ITU-I route DPC or EAGLE 5 ISS's point code>
:dpcn = <ITU-N route DPC or EAGLE 5 ISS's point code>
:dpcn24 = <ITU-N24 route DPC or EAGLE 5 ISS's point code>
Enter the rtrv-gws-redirect command
Enter the chg-db:action=backup:dest=fixed command


From Sheet 1
Enter the chg-gws-redirect command with any of the following parameters:
:ri=<gt, ssn>
:ssn=<subsystem number>
:tt=<translation type>
:gta=<global title address>
(hexadecimal digits cannot be specified for the gta parameter)
If the DPC is being changed, specify one of these DPC parameters:
:dpc/dpca = <ANSI route DPC or Eagle's point code>
:dpci = <ITU-I route DPC or Eagle's point code>
:dpcn = <ITU-N route DPC or Eagle's point code>
:dpcn24 = <ITU-N24 route DPC or Eagle's point code>
Enter the rtrv-gws-redirect command
Enter the rtrv-feat command
Is the Enhanced GTT feature on (EGTT = on)?
Yes
To Sheet 4
No
To Sheet 3


From Sheet 2
Enter the rtrv-gtt:type=<xxx>:gta=<yyy> command where <xxx> is the translation type and <yyy> is the global title address specified in the chg-gws-redirect command executed on Sheet 2
Is the global title translation data in the database?
Yes
Enter the chg-db:action=backup:dest=fixed command
No
Enter the rtrv-tt:type=<xxx> command where <xxx> is the translation type specified in the chg-gws-redirect command executed on Sheet 2
Perform the "Adding a Translation Type" and "Adding a Global Title Translation"procedures in Chapter 3, "Global Title Translation (GTT) Configuration," in the Database Administration Manual - Global Title Translation to configure the translation type and GTT data with the values specified in the chg-gws-redirect command peformed on Sheet 2.
Is the value specified for the tt parameter of the chg-gws-redirect command executed on Sheet 2 in the database?
No
Yes
Perform the "Adding a Global Title Translation" procedure in Chapter 3, "Global Title Translation (GTT) Configuration," in the Database Administration Manual - Global Title Translation to configure the GTT data with the values specified in the chg-gws-redirect command peformed on Sheet 2.



Disabling the Gateway Screening Redirect Function

This procedure is used to turn off the gateway screening redirect function using either the `dlt-gws-redirect` or `chg-gws-redirect` commands. Turning off the gateway screening redirect function also turns off the DTA feature.

1. Verify that the gateway screening redirect function is enabled by entering the `rtrv-gws-redirect` command.

   The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:17:31 GMT EAGLE5 36.0.0

ENABLED DPCA         RI  SSN  TT     GTA
on      009-002-001  GT  15   225    9105551212
```

2. Disable the gateway screening redirect function by entering the `dlt-gws-redirect` command or the `chg-gws-redirect:enabled=off` command.

When the `dlt-gws-redirect` command has been completed successfully, the following message should appear.

```
rlghncxa03w 06-10-07 00:18:31 GMT EAGLE5 36.0.0
DLT-GWS-REDIRECT: MASP A - COMPLTD
```

When the `chg-gws-redirect` command has been completed successfully, the following message should appear.

```
rlghncxa03w 06-10-07 00:19:31 GMT EAGLE5 36.0.0
CHG-GWS-REDIRECT: MASP A - COMPLTD
```

3. Display the gateway screening stop action sets in the database by entering the `rtrv-gws-actset` command.

   The entry `rdct` is displayed in the `ACT1` through the `ACT10` fields in any gateway screening stop action sets that have the redirect gateway screening stop action assigned to them. The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:20:31 GMT EAGLE5 36.0.0
ACT  ACT    ACT  ACT  ACT  ACT  ACT  ACT  ACT  ACT  ACT  ACT
ID   NAME   1    2    3    4    5    6    7    8    9    10
--   ------ ---- ---- ---- ---- ---- ---- ---- ---- ---- ----
1    copy   copy
2    rdct   rdct
3    cr     copy rdct
GWS action set table is (3 of 16) 19% full
```

4. All gateway screening entities that have been assigned the redirect function must have the redirect function turned off.

   Check the gateway screening entities for any screening references that have the redirect gateway screening stop action assigned to them.

   Enter each of the following commands with the `actname` parameter specifying the name of the gateway screening stop action set shown in step 3 that contains the redirect gateway screening stop action. If a redirect gateway screening stop action has been assigned to a gateway screening entity, the name of the gateway screening stop action appears after the `NSR/ACT` field.

   If a redirect gateway screening stop action has not been assigned to a gateway screening entity, the command is rejected with this message.

```
E3680 Cmd Rej: No match on ACTNAME parameter during retrieve
```

`rtrv-scr-opc:actname=rdct`

The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:21:31 GMT EAGLE5 36.0.0
SCREEN = ALLOWED OPC
SR    NI       NC       NCM      NSFI    NSR/ACT
DTA1  240      001      010      STOP    RDCT
```

`rtrv-scr-blkopc:actname=rdct`

The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:22:31 GMT EAGLE5 36.0.0
SCREEN = BLOCKED OPC
```

```
SR    NI       NC       NCM      NSFI    NSR/ACT
DTA2  C        C        C        STOP    RDCT
```

`rtrv-scr-sio:actname=rdct`

The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:23:31 GMT EAGLE5 36.0.0
SCREEN = ALLOWED SIO
SR    NIC  PRI  SI  H0     H1     NSFI    NSR/ACT
DTA3  1    3    4   --     --     STOP    RDCT
```

`rtrv-scr-dpc:actname=rdct`

The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:24:31 GMT EAGLE5 36.0.0
SCREEN = ALLOWED DPC
SR    NI       NC       NCM      NSFI    NSR/ACT
DTA4  243      015      001      STOP    RDCT
```

`rtrv-scr-blkdpc:actname=rdct`

The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:25:31 GMT EAGLE5 36.0.0
SCREEN = BLOCKED DPC
SR    NI       NC       NCM      NSFI    NSR/ACT
DTA5  C        C        C        STOP    RDCT
```

`rtrv-scr-destfld:actname=rdct`

The following is an example of the possible output.

```
rlghncxa03w 06-10-07 00:26:31 GMT EAGLE5 36.0.0
SCREEN = ALLOWED DESTFLD
SR    NI       NC       NCM      NSFI   NSR/ACT
DTA6  240      001      010      STOP   RDCT
```

5. If any of the necessary gateway screening entities displayed in step 4 have been assigned a gateway screening stop action containing the redirect gateway screening stop action, change the gateway screening stop action for these entities to a gateway screening stop action displayed in step 3 that does not have the redirect gateway screening stop action assigned to it, or to have no gateway screening stop action set assigned to the gateway screening entity with the `actname=none` parameter.

   These command examples are based on the example outputs shown in step 4.

   `chg-scr-opc:sr=dta1:ni=240:nc=001:ncm=010:actname=none`

   When this command has successfully completed, the following message should appear.

```
rlghncxa03w 06-10-07 00:27:31 GMT EAGLE5 36.0.0
CHG-SCR-OPC: SCREEN SET AFFECTED - DTA1 55% FULL
CHG-SCR-OPC: MASP A - COMPLTD
```

   `chg-scr-blkdpc:sr=dta2:nc=c:ni=c:ncm=c:actname=none`

   When this command has successfully completed, the following message should appear.

```
rlghncxa03w 06-10-07 00:28:31 GMT EAGLE5 36.0.0
```

```
CHG-SCR-BLKOPC: SCREEN SET AFFECTED - DTA2 55% FULL
CHG-SCR-OPC: MASP A - COMPLTD
```

`chg-scr-sio:sr=dta3:nic=1:pri=3:si=4:actname=none`

When this command has successfully completed, the following message should appear.

```
rlghncxa03w 06-10-07 00:29:31 GMT EAGLE5 36.0.0
CHG-SCR-SIO: SCREEN SET AFFECTED - DTA3 55% FULL
CHG-SCR-SIO: MASP A - COMPLTD
```

`chg-scr-dpc:sr=dta4:ni=243:nc=015:ncm=001:actname=none`

When this command has successfully completed, the following message should appear.

```
rlghncxa03w 06-10-07 00:30:31 GMT EAGLE5 36.0.0
CHG-SCR-DPC: SCREEN SET AFFECTED - DTA4 55% FULL
CHG-SCR-DPC: MASP A - COMPLTD
```

`chg-scr-blkdpc:sr=dta5:nc=c:ni=c:ncm=c:actname=none`

When this command has successfully completed, the following message should appear.

```
rlghncxa03w 06-10-07 00:31:31 GMT EAGLE5 36.0.0
CHG-SCR-BLKDPC: SCREEN SET AFFECTED - DTA5 55% FULL
CHG-SCR-BLKDPC: MASP A - COMPLTD
```

`chg-scr-destfld:sr=dta6:ni=240:nc=001:ncm=010:actname=none`

When this command has successfully completed, the following message should appear.

```
rlghncxa03w 06-10-07 00:32:31 GMT EAGLE5 36.0.0
CHG-SCR-DESTFLD: SCREEN SET AFFECTED - DTA6 55% FULL
CHG-SCR-DESTFLD: MASP A - COMPLTD
```

6. Verify that the changes have been made by entering any of the following commands with the `actname` parameter and the name of the gateway screening stop action set used in step 4.

   `rtrv-scr-opc:actname=rdct`

   `rtrv-scr-blkopc:actname=rdct`

   `rtrv-scr-sio:actname=rdct`

   `rtrv-scr-dpc:actname=rdct`

   `rtrv-scr-blkdpc:actname=rdct`

   `rtrv-scr-destfld:actname=rdct`

   None of the screens should contain any entries assigned to the gateway screening redirect function. When each these commands are executed, this message should appear.

```
E3680 Cmd Rej: No match on ACTNAME parameter during retrieve
```

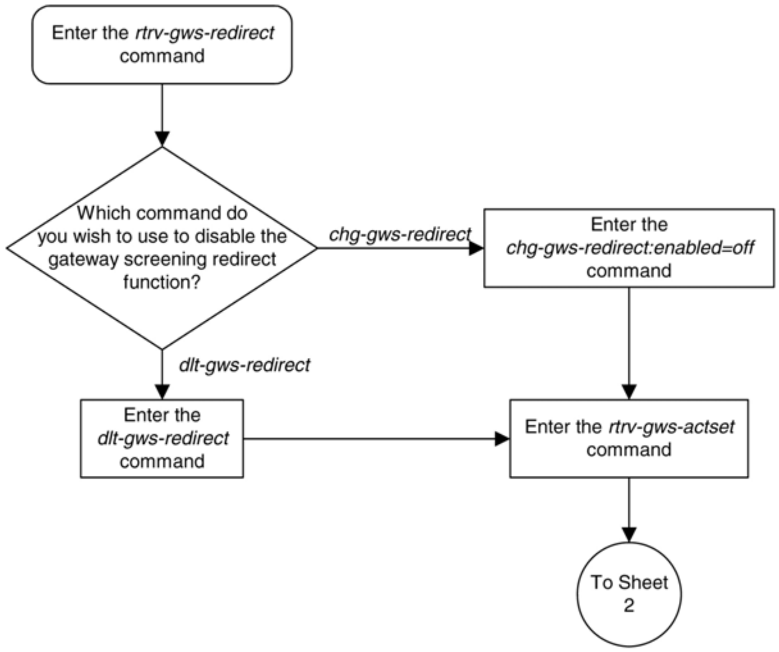
7. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

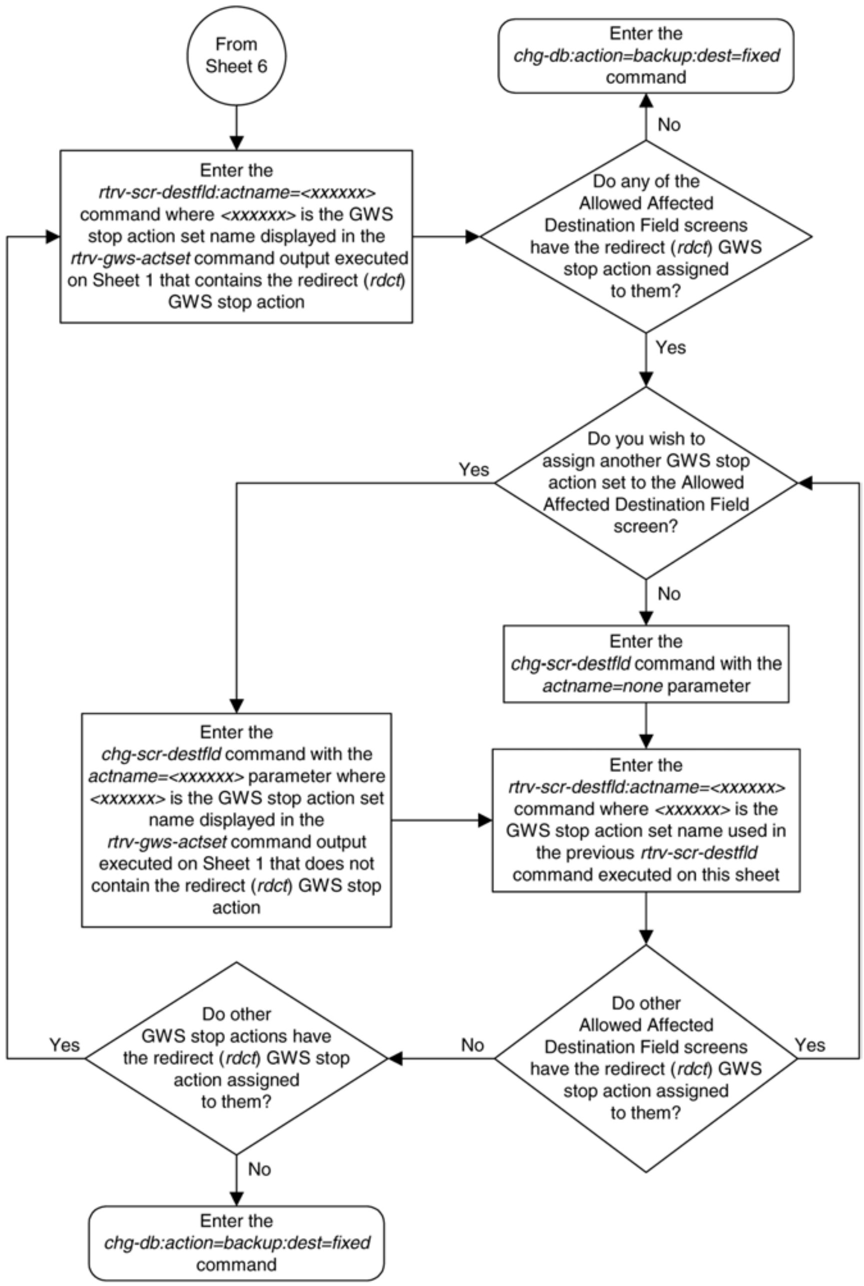
   The following messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
```

```
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 43: Disabling the Gateway Screening Redirect Function




From Sheet 6
Enter the rtrv-scr-destfld:actname=<xxxxxx> command where <xxxxxx> is the GWS stop action set name displayed in the rtrv-gws-actset command output executed on Sheet 1 that contains the redirect (rdct) GWS stop action
Do any of the Allowed Affected Destination Field screens have the redirect (rdct) GWS stop action assigned to them?
No
Enter the chg-db:action=backup:dest=fixed command
Yes
Do you wish to assign another GWS stop action set to the Allowed Affected Destination Field screen?
Yes
No
Enter the chg-scr-destfld command with the actname=none parameter
Enter the chg-scr-destfld command with the actname=<xxxxxx> parameter where <xxxxxx> is the GWS stop action set name displayed in the rtrv-gws-actset command output executed on Sheet 1 that does not contain the redirect (rdct) GWS stop action
Enter the rtrv-scr-destfld:actname=<xxxxxx> command where <xxxxxx> is the GWS stop action set name used in the previous rtrv-scr-destfld command executed on this sheet
Do other Allowed Affected Destination Field screens have the redirect (rdct) GWS stop action assigned to them?
Yes
No
Do other GWS stop actions have the redirect (rdct) GWS stop action assigned to them?
Yes
No
Enter the chg-db:action=backup:dest=fixed command

Chapter 5

GSM MAP Screening Configuration

Topics:

Chapter 5, GSM MAP Screening Configuration, describes the GSM MAP Screening feature and the procedures necessary to configure the EAGLE 5 ISS to support this feature.

Introduction

Traditionally, STP message screening has been limited to the MTP and SCCP levels; this has been sufficient to meet operators' needs. However, GSM mobile operators have an increasing need for screening at the Mobile Application Part (MAP) level. This need is driven by advanced network capabilities and proliferating roaming agreements.

New features that require this enhanced screening capability are Inter-operator Short Message Service (SMS) and Any Time Interrogation (ATI). The GSM MAP Screening feature focuses on solving the screening needs associated with ATI, which is defined in MAP version 3. An ATI message allows an external server to interrogate an HLR and obtain information about the location and/or state of a GSM subscriber. It may be desirable to control which external entities can request this information, and what information they can request before allowing the message to pass through to the HLR.

This feature allow the user to provision which MAP SSNs are affected, which MAP operations codes to screen, which origination points are allowed, and which error messages to use.

Note:

GSM MAP Screening can be used with linksets containing ITU international or ITU national adjacent point codes whether or not the Enhanced GSM MAP Screening feature is enabled and on. GSM MAP Screening can be used with linksets containing ANSI adjacent point codes only if the Enhanced GSM MAP screening feature is enabled and on.

GSM MAP Screening Overview

An SCCP MSU arrives at the EAGLE 5 ISS on a linkset with the `gsmscrn` parameter value set to `on`. If the DPC of the MSU is the EAGLE 5 ISS's point code, the MSU is processed by Global Title Translation and Gateway Screening on the called party address (CDPA). Any applicable SCCP/MTP conversions are also performed on the MSU. The MSU is passed on to GSM MAP Screening. GSM MAP screening is then performed on the MSU before forwarding it to the destination. If the `gsmscrn` parameter of the linkset is set to `off`, GSM MAP Screening is not performed on the MSU.

If the DPC of the MSU is not the EAGLE 5 ISS's point code, the message is routed to its destination using MTP routing. GSM MAP Screening is not performed on the MSU.

If the MTP MAP Screening feature is enabled and turned on, and the DPC of the MSU is not the EAGLE 5 ISS's point code, the MSU (SCCP message types 9 - UDT, or 10 - UDTS only) is sent to GSM MAP Screening without being processed by Global Title Translation and Gateway Screening on the called party address. GSM MAP screening is then performed on the MSU before forwarding the MSU to its destination.

When GSM MAP Screening on the message has completed, the EAGLE 5 ISS performs one of the following actions:

- Route the message to destination
- Discard the message
- Forward the message to a new destination

- Duplicate the message. Send the original message to the original destination, and send the duplicate message to a new destination.
- Duplicate the message and send the duplicate message to a new destination. Discard the original message.
- Return an error message to the originator.

GSM MAP screening first checks to see whether the calling party SSN and called party SSN are present and targeted to be screened or not.

If both SSNs are targeted, it then checks for the MAP operations code of the message to know whether it is targeted to be screened or not. If the MAP operations code is not targeted to be screened, then the EAGLE 5 ISS either discards or routes the message, defined by the `GSMDFLT` parameter of the `chg-stpopts` command. If the MAP operations code is targeted to be screened, GSM MAP screening checks the calling party address of the message to know whether it is targeted for screening or not.

If the CGPA (calling party address) of the message is not targeted for GSM MAP Screening, then the screening action defined in the MAP operations code table by the `dfltact` parameter of the `ent-gsms-opcode` command is performed on the message.

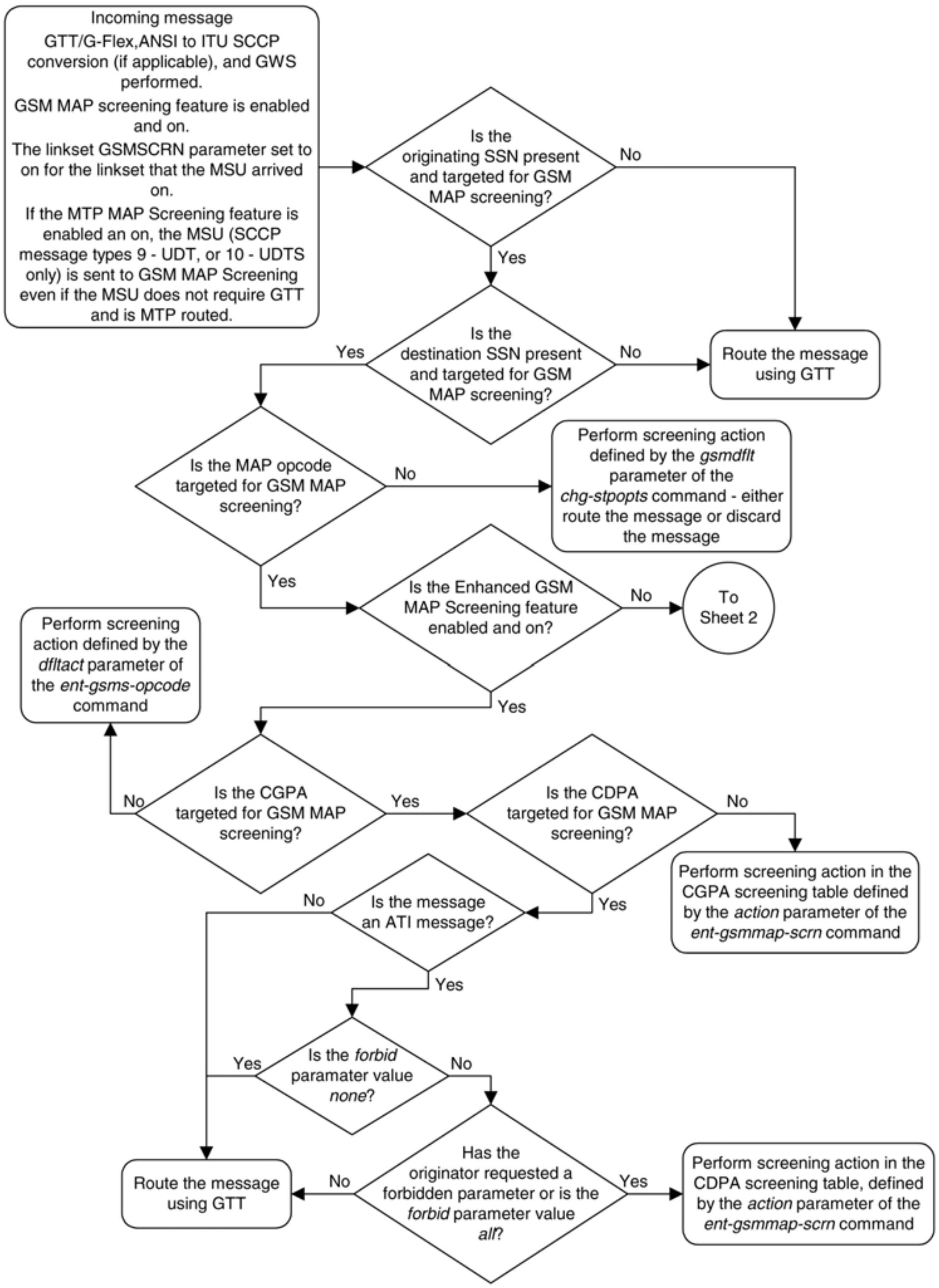
If the CGPA of the message is targeted for screening and the Enhanced GSM MAP Screening feature is enabled and on, GSM MAP Screening checks the CDPA (called party address) of the message to know whether or not it is targeted for screening. If the CDPA of the message is targeted for screening, GSM MAP screening checks to see if the ATI request contains the forbidden parameter value provisioned for the CDPA. If there is no forbidden parameter in the ATI request, the message is not an ATI request, or the provisioned forbidden parameter value for the CDPA is `none`, the message is routed to the destination. If the message is an ATI request and contains the forbidden parameter value provisioned for the CDPA, or the provisioned forbidden parameter value is `all`, GSM MAP screening performs the screening action defined in the CDPA screening table by the `action` parameter of the `ent-gsmmap-scrn` command.

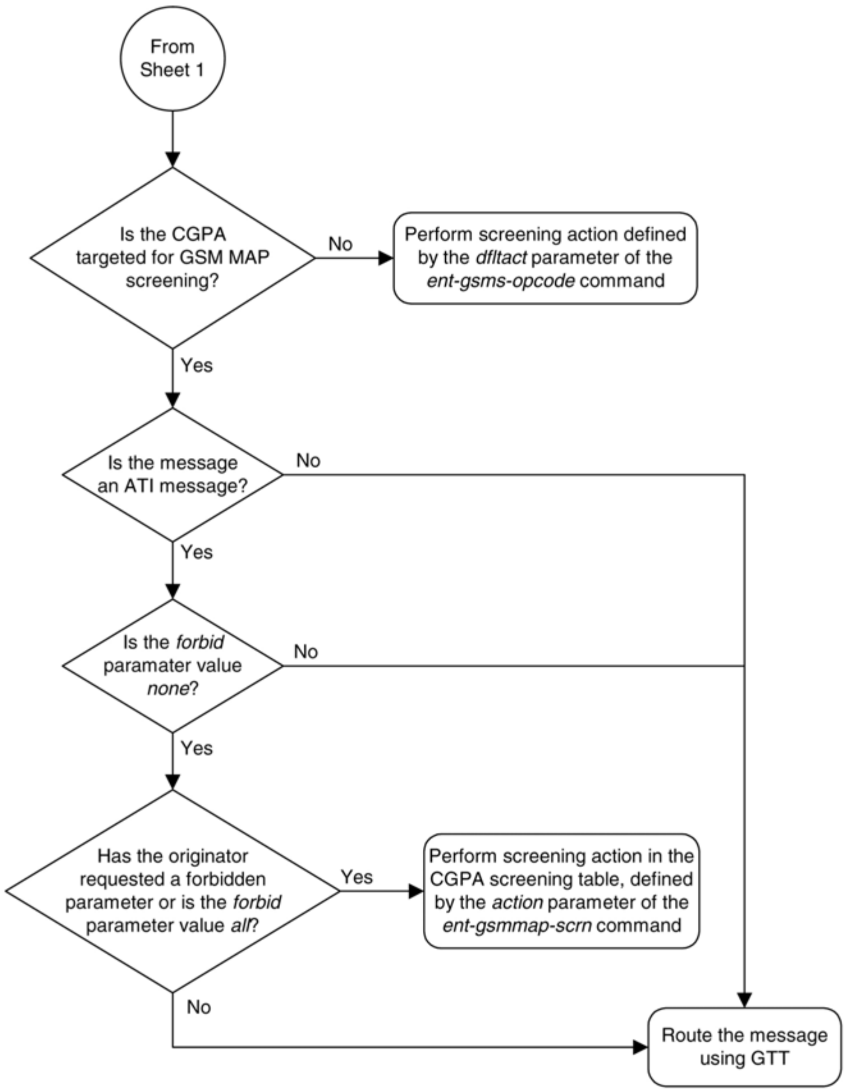
If the CDPA of the message is not targeted for screening, GSM MAP screening checks to see if the ATI request contains the forbidden parameter value provisioned for the CGPA. If there is no forbidden parameter in the ATI request, the message is not an ATI request, or the provisioned forbidden parameter value for the CGPA is `none`, the message is routed to the destination. If the message is an ATI request and contains the forbidden parameter value provisioned for the CGPA, or the provisioned forbidden parameter value is `all`, GSM MAP screening performs the screening action defined in the CGPA screening table by the `action` parameter of the `ent-gsmmap-scrn` command.

If the CGPA of the message is targeted for screening and the Enhanced GSM MAP Screening feature is not enabled and off, GSM MAP Screening checks the CGPA (calling party address) of the message to know whether or not it is targeted for screening. If the CGPA of the message is targeted for screening, GSM MAP screening checks to see if the ATI request contains the forbidden parameter value provisioned for the CGPA. If there is no forbidden parameter in the ATI request, the message is not an ATI request, or the provisioned forbidden parameter value for the CGPA is `none`, the message is routed to the destination. If the message is an ATI request and contains the forbidden parameter value provisioned for the CGPA, or the provisioned forbidden parameter value is `all`, GSM MAP screening performs the screening action defined in the CGPA screening table by the `action` parameter of the `ent-gsmmap-scrn` command.

Figure 44: GSM MAP Screening Overview on page 274 shows overview of GSM MAP screening functionality.

Figure 44: GSM MAP Screening Overview





GSM MAP Screening Details

GSM MAP screening verifies the MAP message format and performs screening before the message is routed to the destination. The following database tables are used in performing GSM MAP screening:

- SSN table
- MAP operations code table
- STP option table
- MAP screening table

GSM MAP Screening is performed in the following stages.

1. The following fields from SCCP message are decoded:

- The SSN from the calling party address
- The SSN from the called party address
- The global title address from the calling party address
- The global title address from the called party address (only if the Enhanced GSM MAP Screening feature is enabled and turned on).

Note: If the MTP MAP Screening is enabled and turned on, the MSU (SCCP message types 9 - UDT, or 10 - UDTS only) is sent to GSM MAP Screening even if the MSU does not require GTT and is MTP routed.

2. GSM MAP Screening performs a lookup in the origination SSN table for an entry with the SSN of calling party address. If an entry is not found, GSM MAP screening is stopped and the message is routed to its destination using global title translation.
3. GSM MAP Screening performs a lookup in the destination SSN table for an entry with the SSN of called party address. If an entry is not found, GSM MAP screening is stopped and the message is routed to its destination using global title translation.
4. GSM MAP Screening checks to see if the CGPA and CDPA GTI values are supported in the EAGLE 5 ISS. The EAGLE 5 ISS supports only these GTI values: for an ANSI message - GTI value of 2; for an ITU message - GTI values of 2 or 4. If the CGPA and CDPA GTI values are supported, the GTA values are decoded. If the GTI values are not supported in the EAGLE 5 ISS, the GTA, NAI, and NP values for the CGPA or CDPA are set to asterisk (*). The asterisk (*) values for the GTA, NAI, and NP parameters allows the action of the provisioned wildcard entries for the CGPA/CDPA MAP screening tables to be performed, or the action for the OPCODE table to be performed (if no wildcard entries are provisioned for the CGPA or CDPA in the GSM MAP screening table).
5. The MAP operations code and parameters are extracted from the MAP message. If the TCAP Package Type of the message is ITU TC-BEGIN, GSM MAP Screening continues.

   If the `GMSTCAPCE` SCCP option is set to on and the TCAP Package Type is either ITU TC-CONTINUE or ITU TC-END, GSM MAP Screening continues. In order for GSM MAP Screening to be performed on these messages, the messges must meet the following requriements:

   - ITU TC-CONTINUE messages must have an Invoke component type.
   - ITU TC-END messages must have a Return-Result (Test) type.

   If the TCAP Package Type of the message is not ITU TC-BEGIN, GSM MAP Screening is stopped and the message is routed to its destination using global title translation, as if the message passed GSM MAP screening.

   If the `GMSTCAPCE` SCCP option is set to `on`, and the TCAP Package Type of the message is not ITU TC-CONTINUE or ITU TC-END, GSM MAP Screening is stopped and the message is routed to its destination using global title translation, as if the message passed GSM MAP screening.

   If the TCAP portion is not in a valid format, the action defined by the GSM MAP screening decode error action from the STP option table (pass or discard) is performed and a UIM is generated indicating that an Invalid TCAP message received.
6. GSM MAP Screening performs a lookup in the MAP screening table for an entry with the MAP operations code of the MAP message. If an entry is not found, the default action from the STP option table is performed. If the default action parameter value is `pass`, the message is routed to its destination. If the default action parameter value is `discard`, the message is discarded.

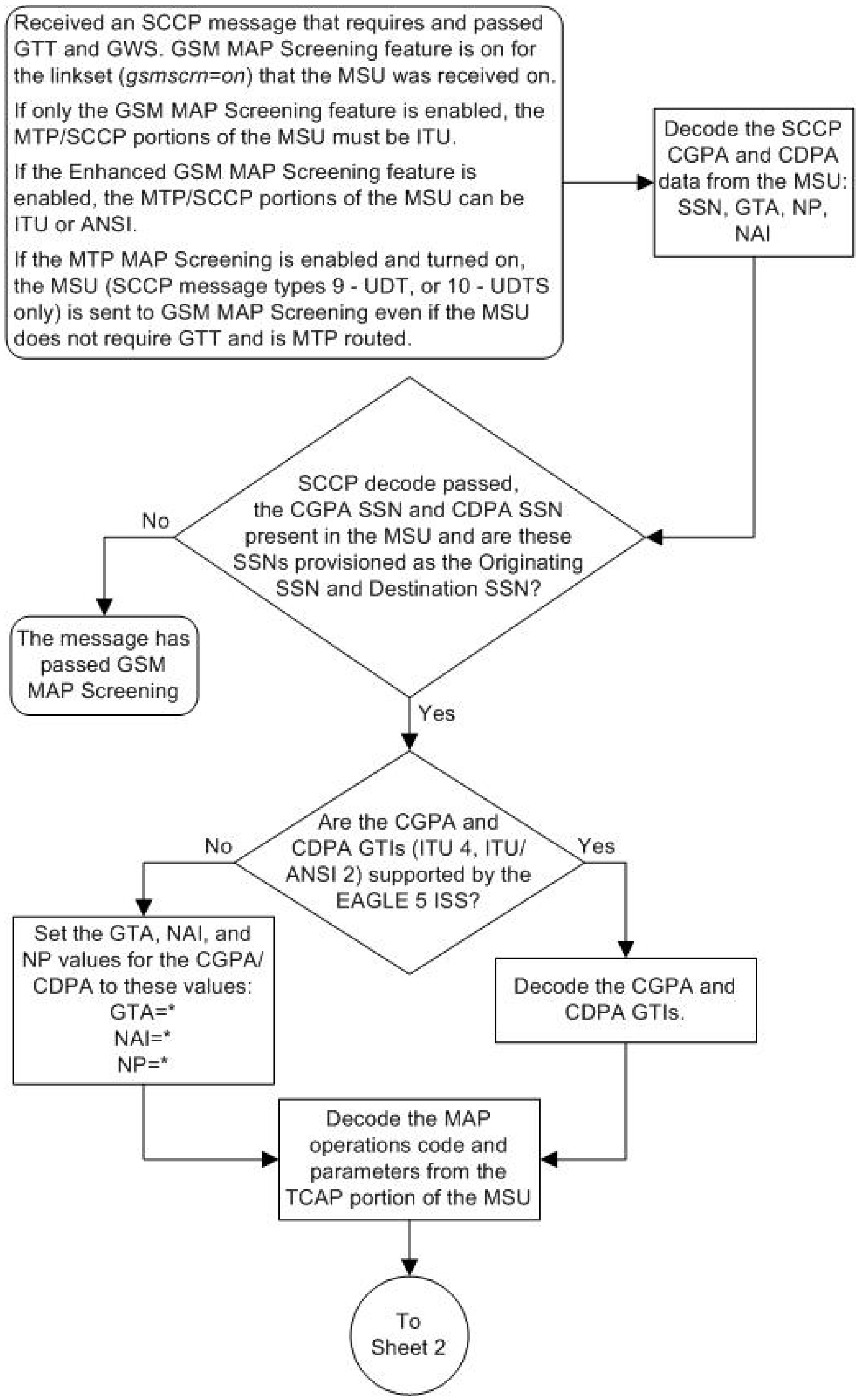
7. GSM MAP Screening performs a lookup in the GSM MAP screening table for an entry containing the global title address of the calling party address. If an entry is not found in the GSM MAP screening table, the screening action defined in the GSM MAP operations code table by the `dfltact` parameter of the `ent-gsms-opcode` command is performed.
8. If the Enhanced GSM MAP Screening feature is enabled and turned on, GSM MAP Screening performs a lookup for an entry for the called party address in the GSM MAP screening table.
9. If an entry is found in the MAP screening table, the forbidden parameter from the GSM MAP screening table is checked. If the forbidden parameter value is `none`, the message is routed to its destination. If the forbidden parameter value is `all`, the screening action defined in the GSM MAP screening table by the `action` parameter of the `ent-gsmmap-scrn` command is performed. For any other forbidden parameter, the parameter list of the message is examined. If the message is an ATI request and the forbidden parameter is found in the parameter list, then the screening action defined in the GSM MAP screening table by the `action` parameter of the `ent-gsmmap-scrn` command is performed.

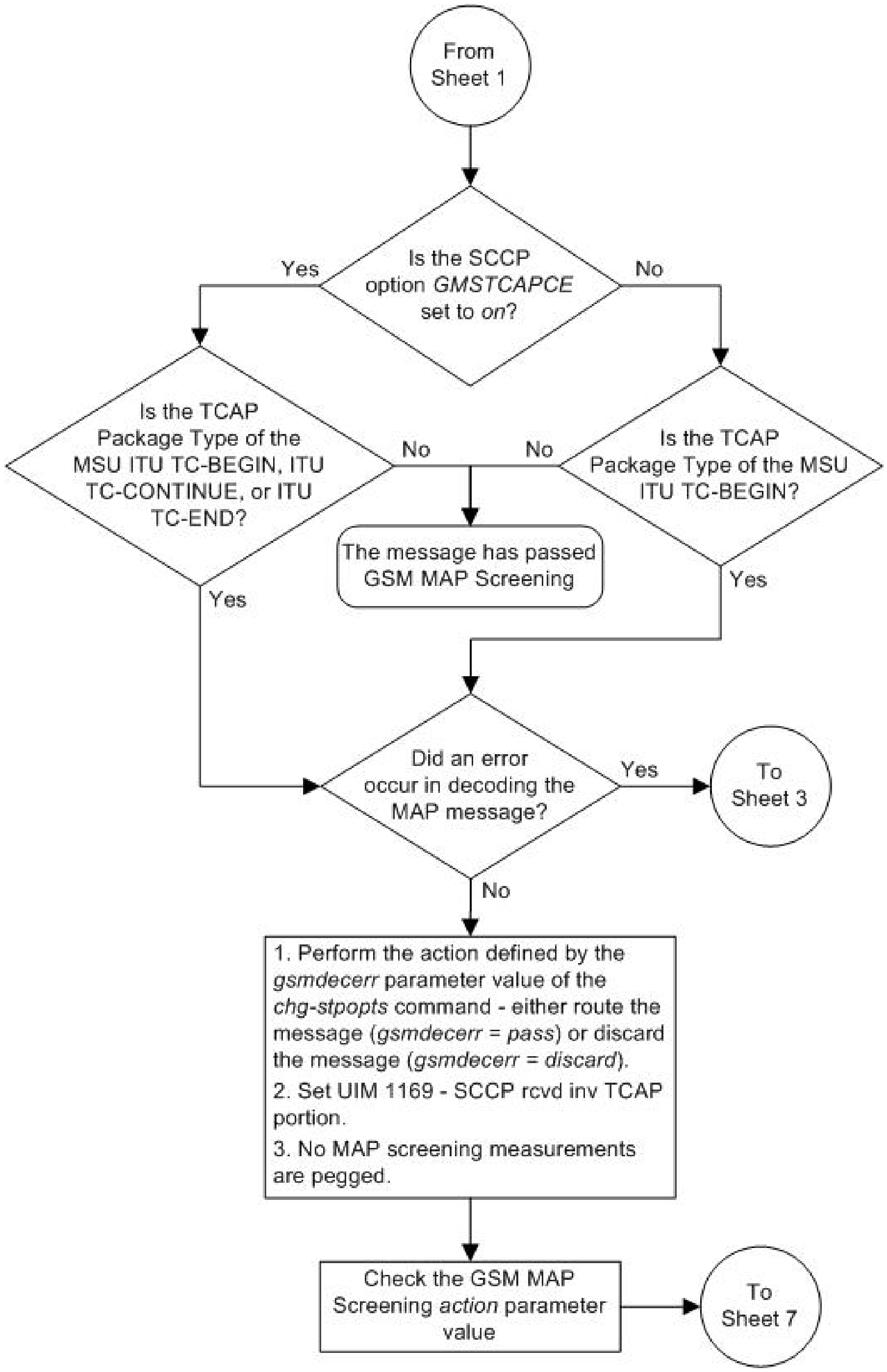
   The screening actions defined by the `dfltact` parameter of the `ent-gsms-opcode` command and the `action` parameter of the `ent-gsmmap-scrn` command are:

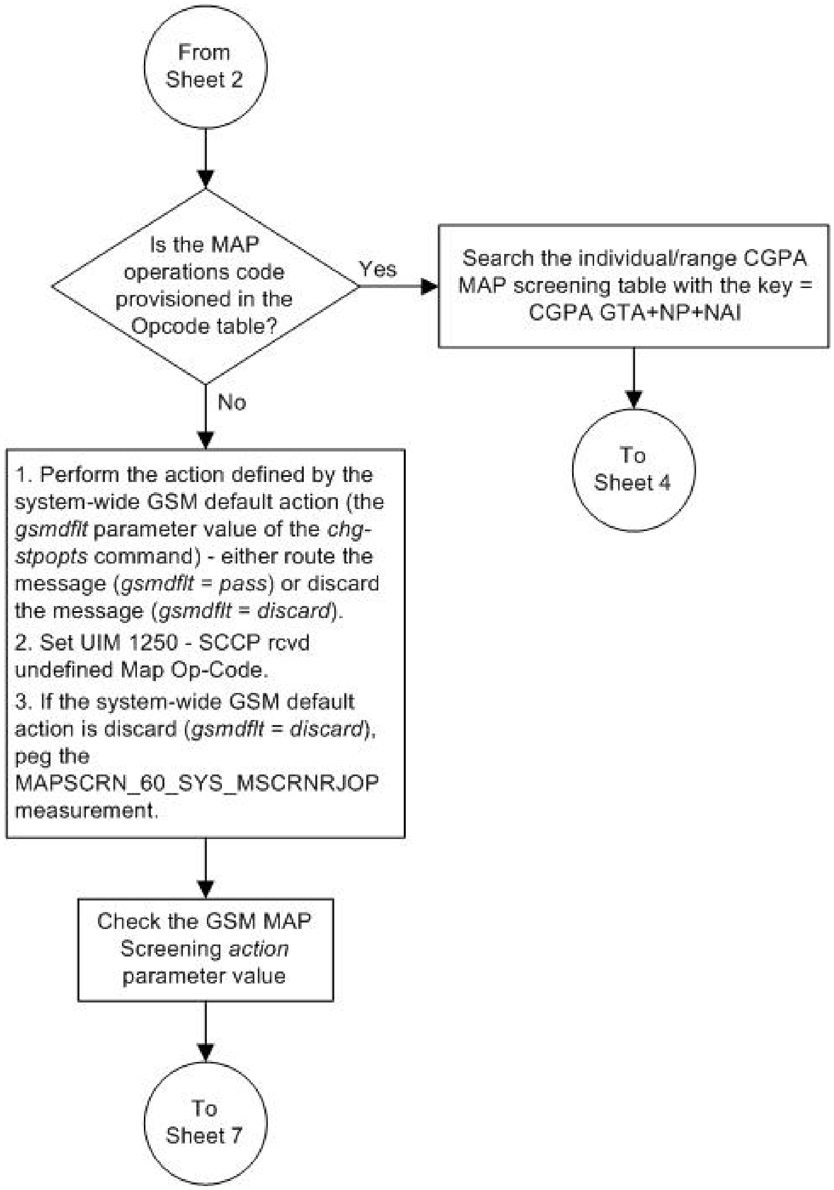
   - DISCARD – do not route the MSU. The MSU is discarded (thrown away) and the appropriate UIM is issued. This is the default action value.
   - PASS – route the message as normal to the destination and the appropriate UIM is issued.
   - ATIERR – do not route the MSU and send a rejection message back to the originator.
   - ROUTE – route the message as normal to the original destination node, defined by global title translation.
   - FORWARD – route the original message to the forward node. The original message is not sent to the original node. If, however, the forwarded node is not available for routing then the MSU is routed to the original node, defined by global title translation.
   - DUPLICATE – route the message as normal to the original destination, defined by global title translation, and route a copy of the original message to the duplicate node. If the MSU fails to route to the duplicate node, then a UIM is generated indicating the duplicate routing failure.
   - DUPLICATE AND DISCARD – route the original message to the duplicate node. The original message is not sent to the original node. If, however, the duplicate node is not available for routing then the MSU is discarded.

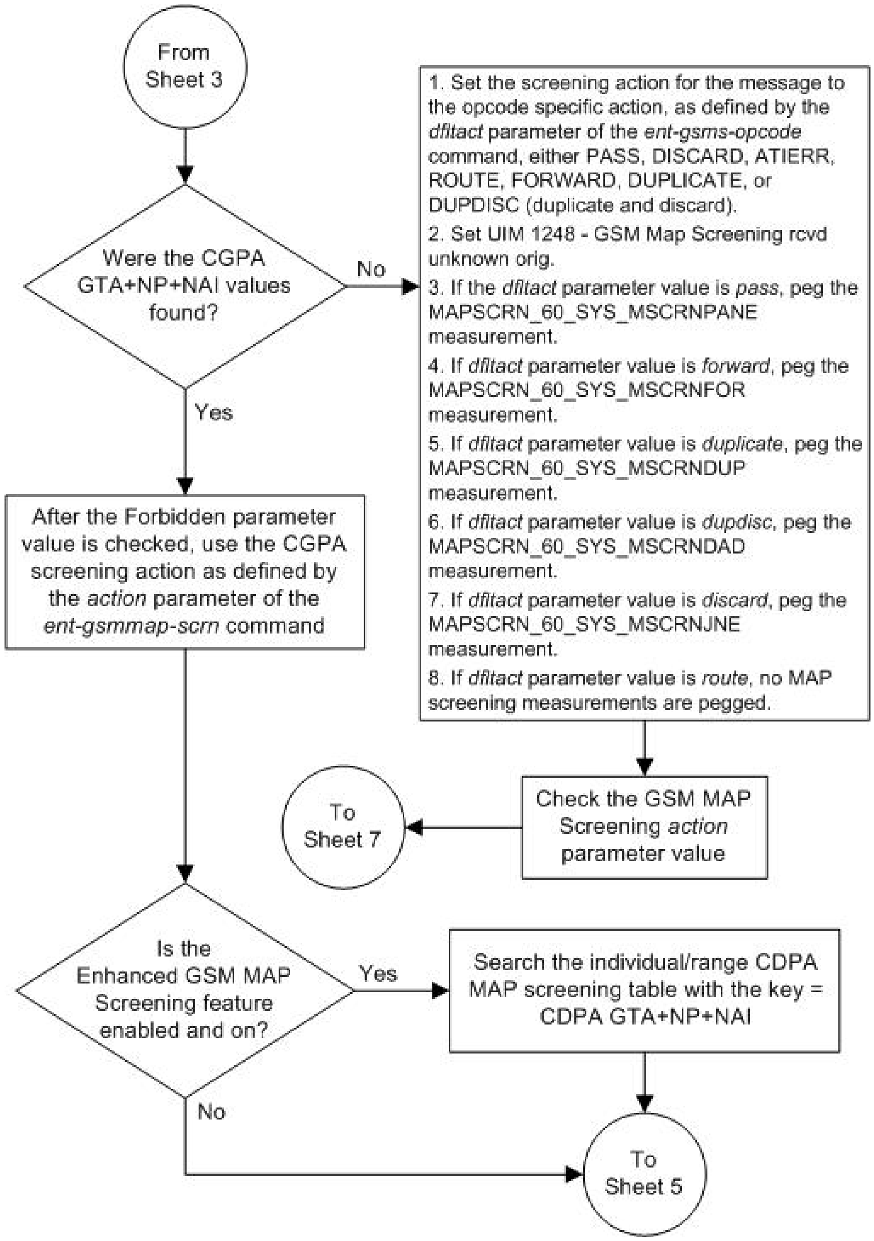
   Figure 45: GSM MAP Screening Details on page 277 shows how GSM MAP screening is performed.

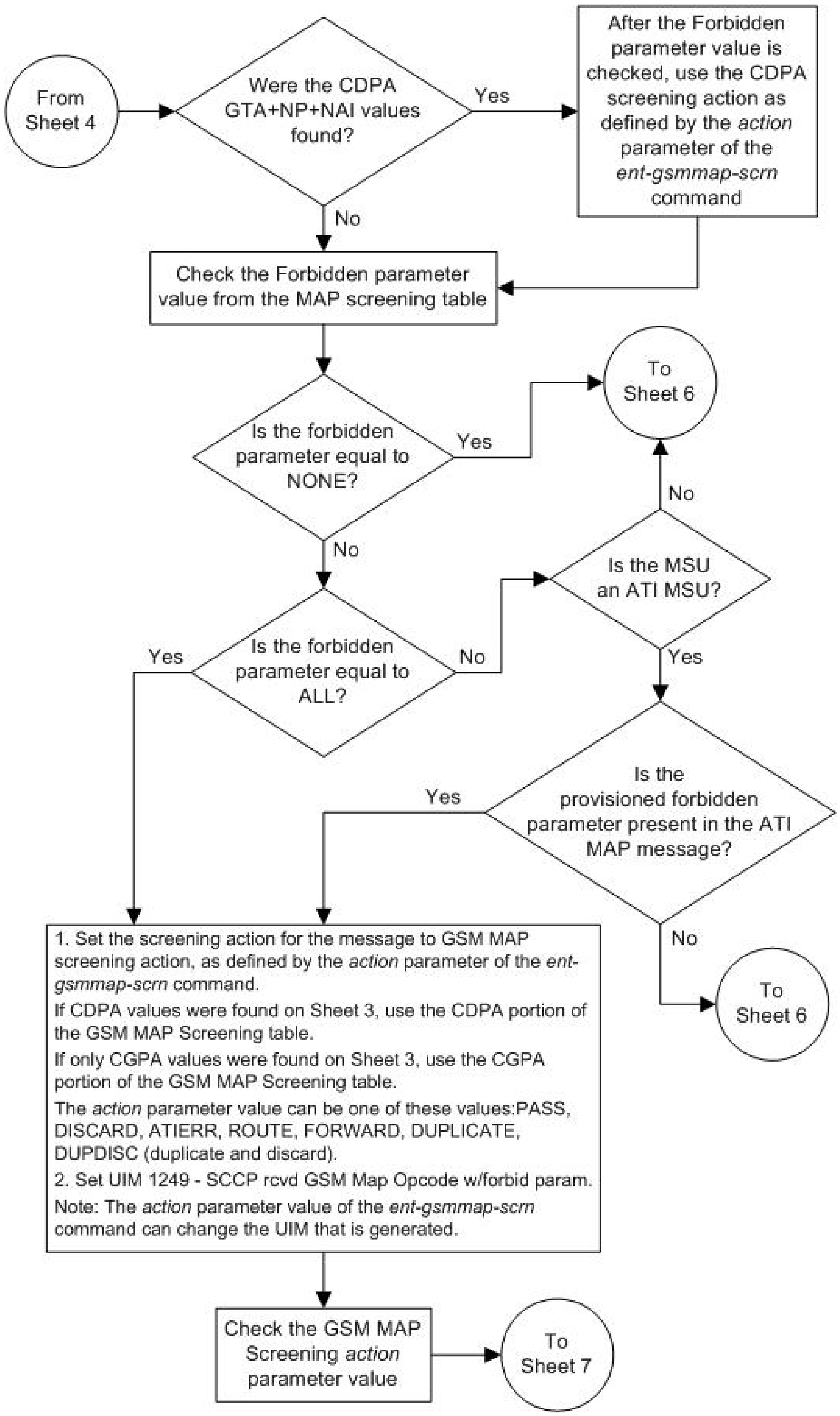
Figure 45: GSM MAP Screening Details

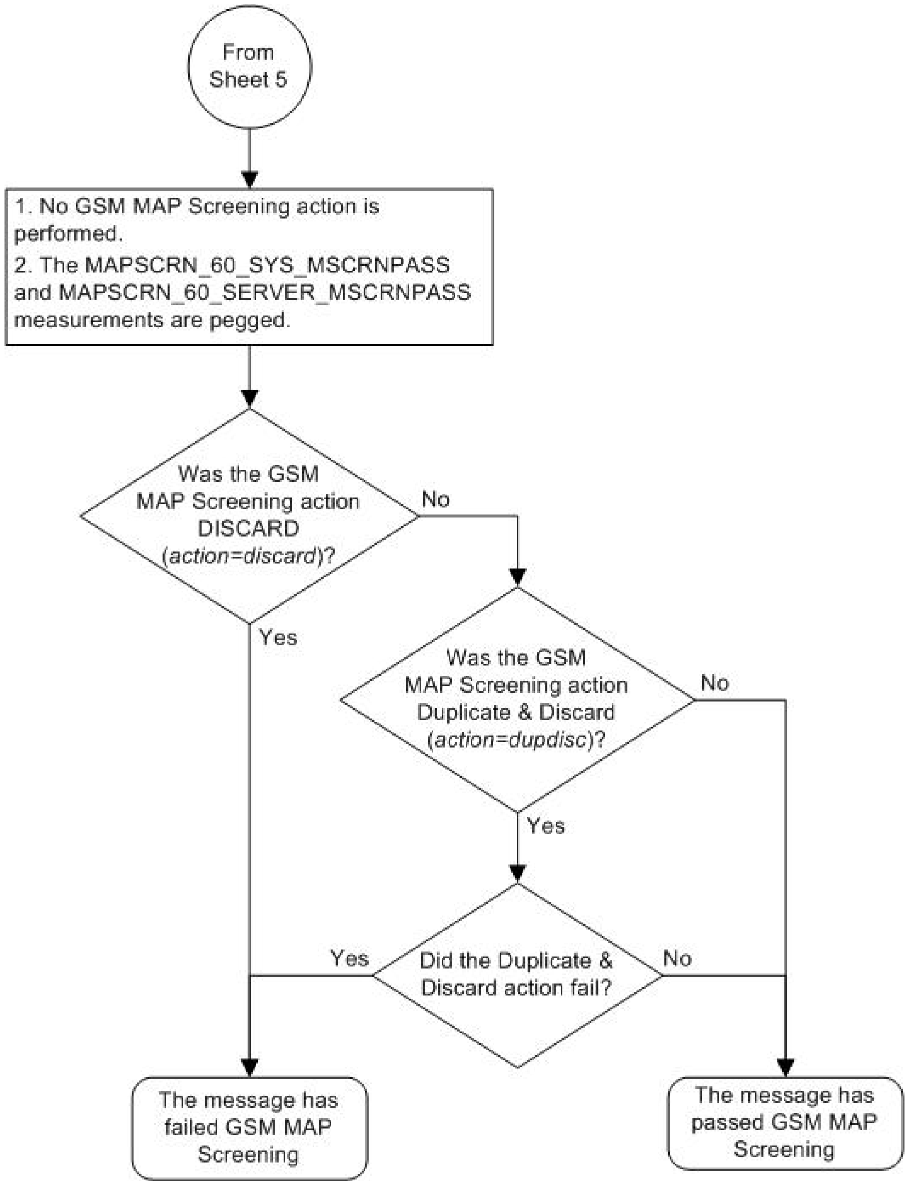

Received an SCCP message that requires and passed GTT and GWS. GSM MAP Screening feature is on for the linkset (gsmscrn=on) that the MSU was received on.
If only the GSM MAP Screening feature is enabled, the MTP/SCCP portions of the MSU must be ITU.
If the Enhanced GSM MAP Screening feature is enabled, the MTP/SCCP portions of the MSU can be ITU or ANSI.
If the MTP MAP Screening is enabled and turned on, the MSU (SCCP message types 9 - UDT, or 10 - UDTS only) is sent to GSM MAP Screening even if the MSU does not require GTT and is MTP routed.
Decode the SCCP CGPA and CDPA data from the MSU: SSN, GTA, NP, NAI
SCCP decode passed, the CGPA SSN and CDPA SSN present in the MSU and are these SSNs provisioned as the Originating SSN and Destination SSN?
No
The message has passed GSM MAP Screening
Yes
Are the CGPA and CDPA GTIs (ITU 4, ITU/ ANSI 2) supported by the EAGLE 5 ISS?
No
Yes
Set the GTA, NAI, and NP values for the CGPA/ CDPA to these values: GTA=* NAI=* NP=*
Decode the CGPA and CDPA GTIs.
Decode the MAP operations code and parameters from the TCAP portion of the MSU
To Sheet 2

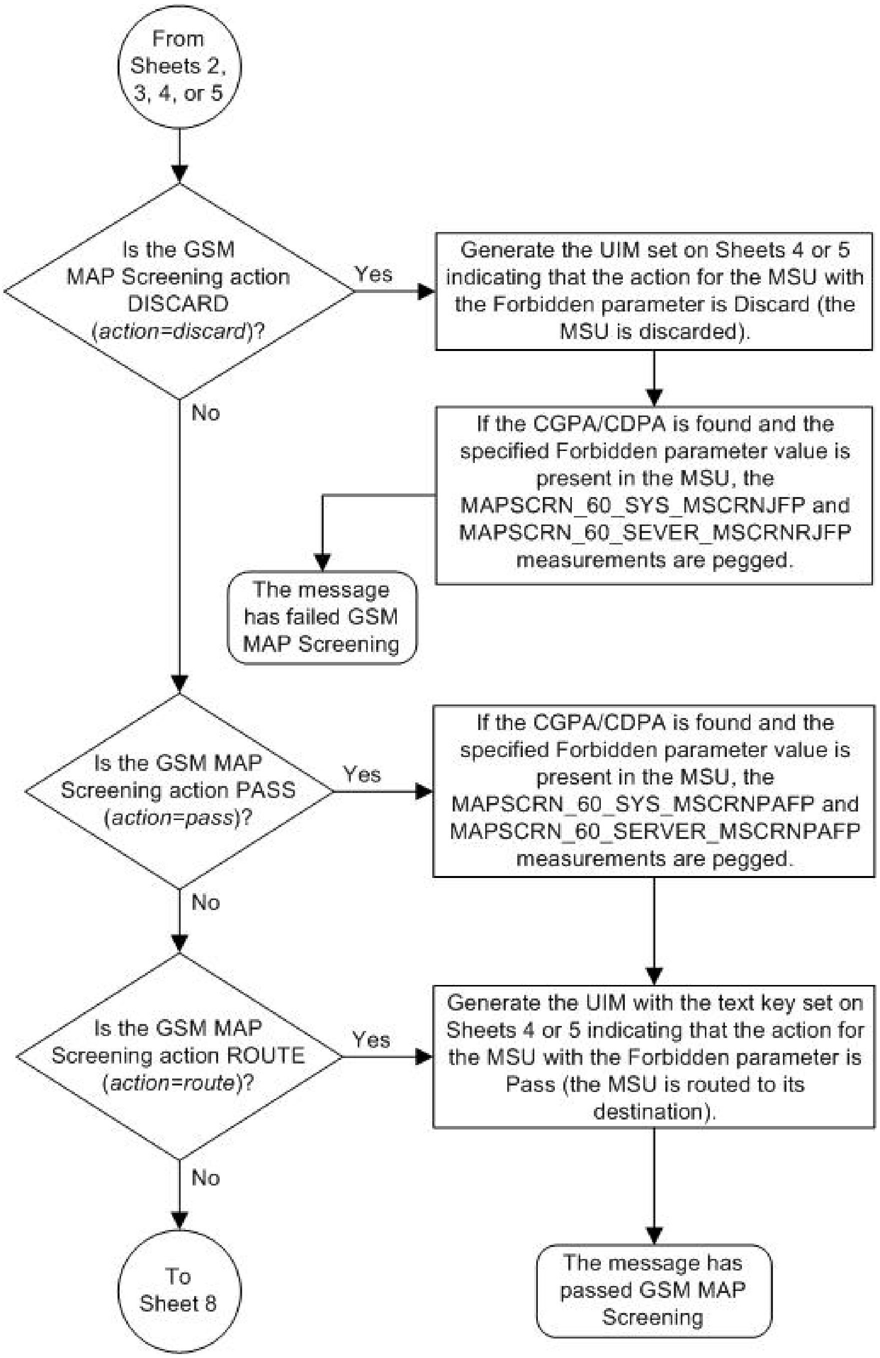

From Sheet 1
Is the SCCP option GMSTCAPCE set to on?
Yes
No
Is the TCAP Package Type of the MSU ITU TC-BEGIN, ITU TC-CONTINUE, or ITU TC-END?
Is the TCAP Package Type of the MSU ITU TC-BEGIN?
No
No
The message has passed GSM MAP Screening
Yes
Yes
Did an error occur in decoding the MAP message?
Yes
To Sheet 3
No
1. Perform the action defined by the gsmdecerr parameter value of the chg-stpopts command - either route the message (gsmdecerr = pass) or discard the message (gsmdecerr = discard).
2. Set UIM 1169 - SCCP rcvd inv TCAP portion.
3. No MAP screening measurements are pegged.
Check the GSM MAP Screening action parameter value
To Sheet 7

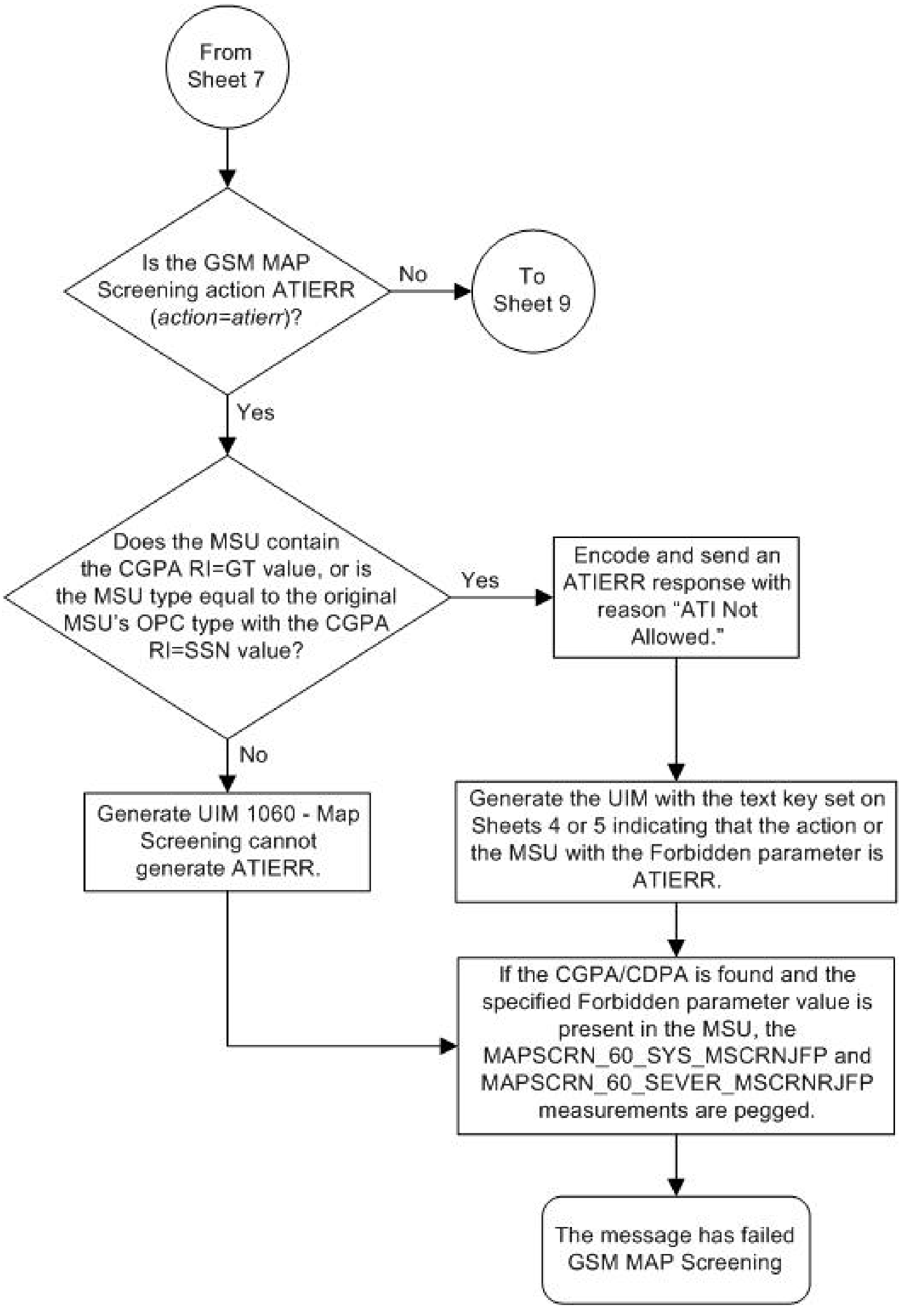

From Sheet 2
Is the MAP operations code provisioned in the Opcode table?
Yes
Search the individual/range CGPA MAP screening table with the key = CGPA GTA+NP+NAI
To Sheet 4
No
1. Perform the action defined by the system-wide GSM default action (the *gsmdflt* parameter value of the *chg-stpopts* command) - either route the message (*gsmdflt = pass*) or discard the message (*gsmdflt = discard*).
2. Set UIM 1250 - SCCP rcvd undefined Map Op-Code.
3. If the system-wide GSM default action is discard (*gsmdflt = discard*), peg the MAPSCRN_60_SYS_MSCRNRJOP measurement.
Check the GSM MAP Screening *action* parameter value
To Sheet 7

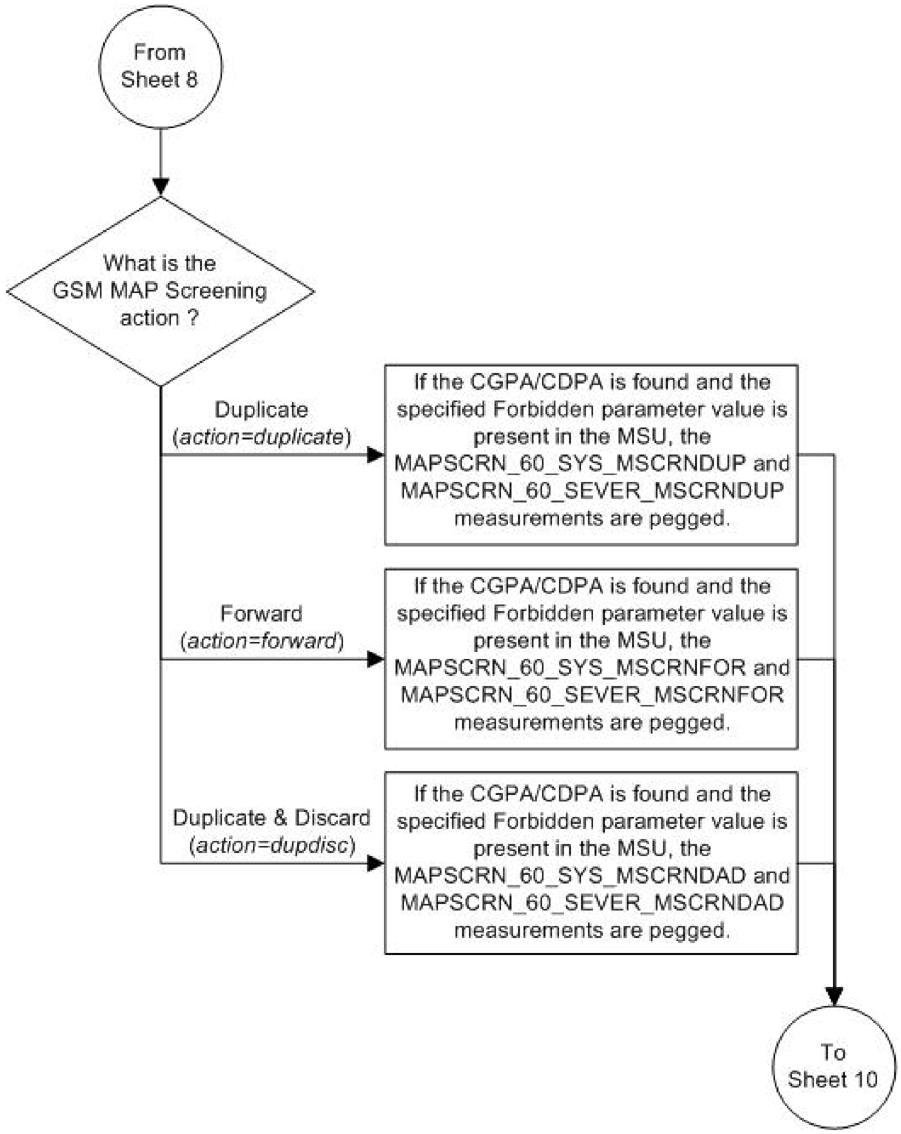

From Sheet 3
Were the CGPA GTA+NP+NAI values found?
No
1. Set the screening action for the message to the opcode specific action, as defined by the *dfltact* parameter of the *ent-gsms-opcode* command, either PASS, DISCARD, ATIERR, ROUTE, FORWARD, DUPLICATE, or DUPDISC (duplicate and discard).
2. Set UIM 1248 - GSM Map Screening rcvd unknown orig.
3. If the *dfltact* parameter value is *pass*, peg the MAPSCRN_60_SYS_MSCRNPANE measurement.
4. If *dfltact* parameter value is *forward*, peg the MAPSCRN_60_SYS_MSCRNFOR measurement.
5. If *dfltact* parameter value is *duplicate*, peg the MAPSCRN_60_SYS_MSCRNDUP measurement.
6. If *dfltact* parameter value is *dupdisc*, peg the MAPSCRN_60_SYS_MSCRNDAD measurement.
7. If *dfltact* parameter value is *discard*, peg the MAPSCRN_60_SYS_MSCRNJNE measurement.
8. If *dfltact* parameter value is *route*, no MAP screening measurements are pegged.
Yes
After the Forbidden parameter value is checked, use the CGPA screening action as defined by the *action* parameter of the *ent-gsmmap-scrn* command
Check the GSM MAP Screening *action* parameter value
To Sheet 7
Is the Enhanced GSM MAP Screening feature enabled and on?
Yes
Search the individual/range CDPA MAP screening table with the key = CDPA GTA+NP+NAI
No
To Sheet 5

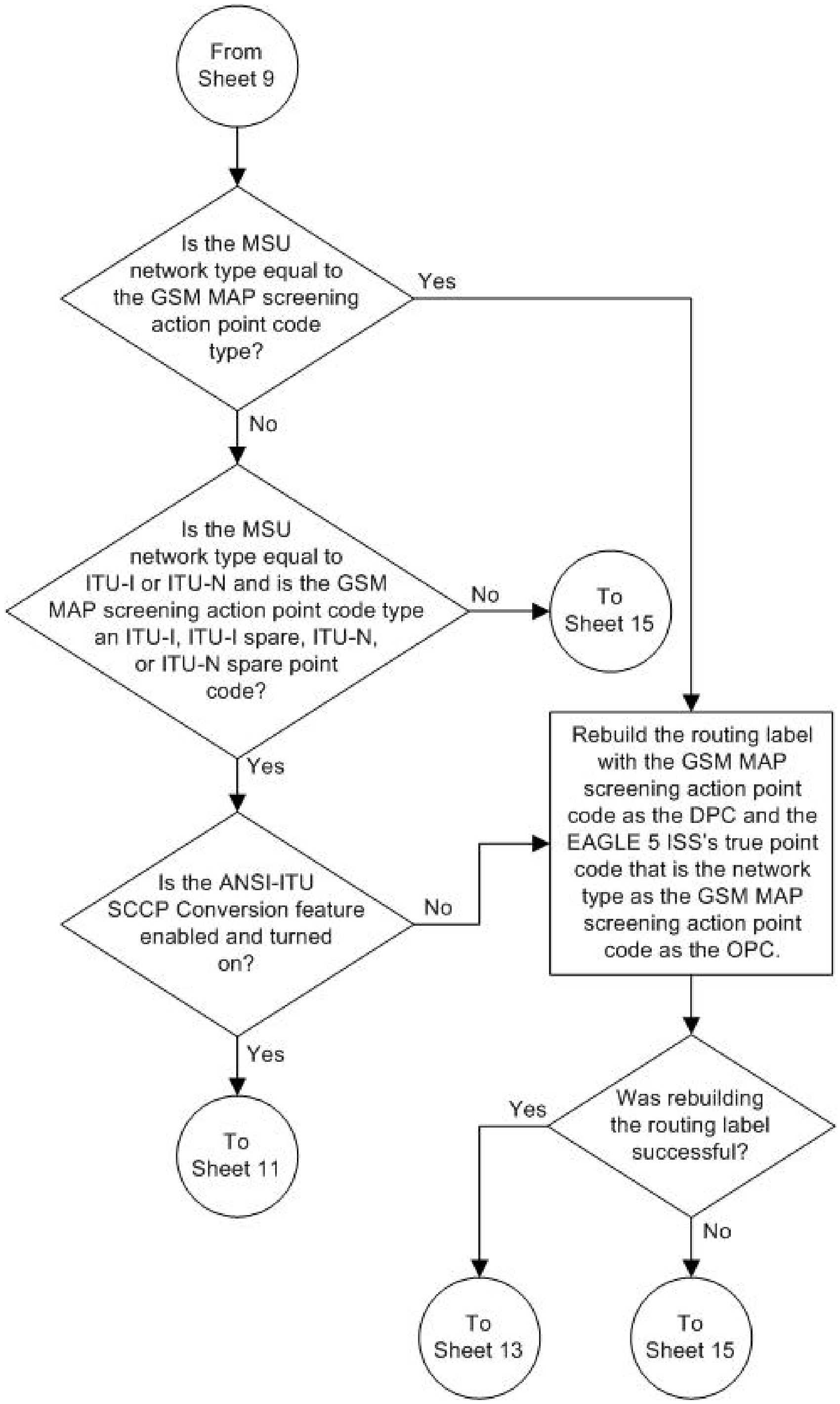

From Sheet 4
Were the CDPA GTA+NP+NAI values found?
Yes
After the Forbidden parameter value is checked, use the CDPA screening action as defined by the action parameter of the ent-gsmmap-scrn command
No
Check the Forbidden parameter value from the MAP screening table
Is the forbidden parameter equal to NONE?
Yes
To Sheet 6
No
Is the MSU an ATI MSU?
No
Is the forbidden parameter equal to ALL?
Yes
No
Yes
Is the provisioned forbidden parameter present in the ATI MAP message?
Yes
No
To Sheet 6
1. Set the screening action for the message to GSM MAP screening action, as defined by the action parameter of the ent-gsmmap-scrn command.
If CDPA values were found on Sheet 3, use the CDPA portion of the GSM MAP Screening table.
If only CGPA values were found on Sheet 3, use the CGPA portion of the GSM MAP Screening table.
The action parameter value can be one of these values:PASS, DISCARD, ATIERR, ROUTE, FORWARD, DUPLICATE, DUPDISC (duplicate and discard).
2. Set UIM 1249 - SCCP rcvd GSM Map Opcode w/forbid param.
Note: The action parameter value of the ent-gsmmap-scrn command can change the UIM that is generated.
Check the GSM MAP Screening action parameter value
To Sheet 7

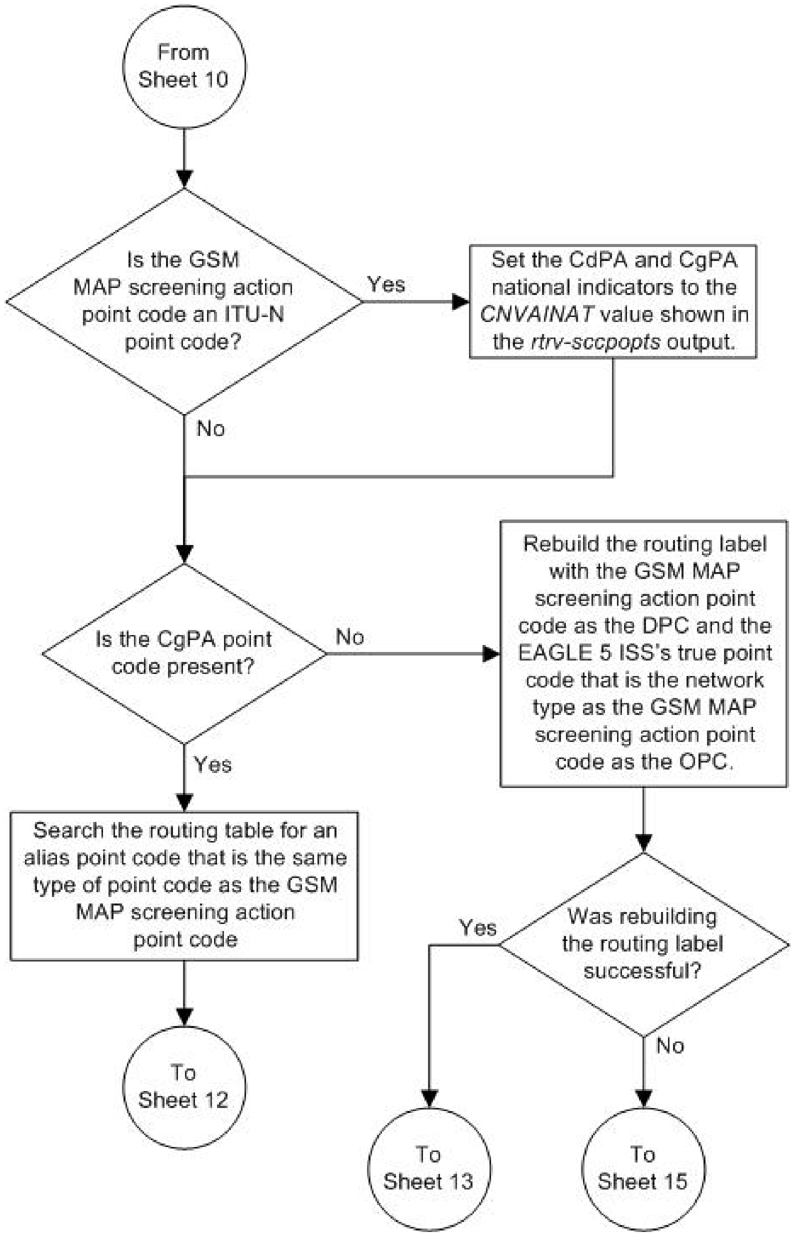

From Sheet 5
1. No GSM MAP Screening action is performed.
2. The MAPSCRN_60_SYS_MSCRNPASS and MAPSCRN_60_SERVER_MSCRNPASS measurements are pegged.
Was the GSM MAP Screening action DISCARD (action=discard)?
No
Yes
Was the GSM MAP Screening action Duplicate & Discard (action=dupdisc)?
No
Yes
Did the Duplicate & Discard action fail?
Yes
No
The message has failed GSM MAP Screening
The message has passed GSM MAP Screening

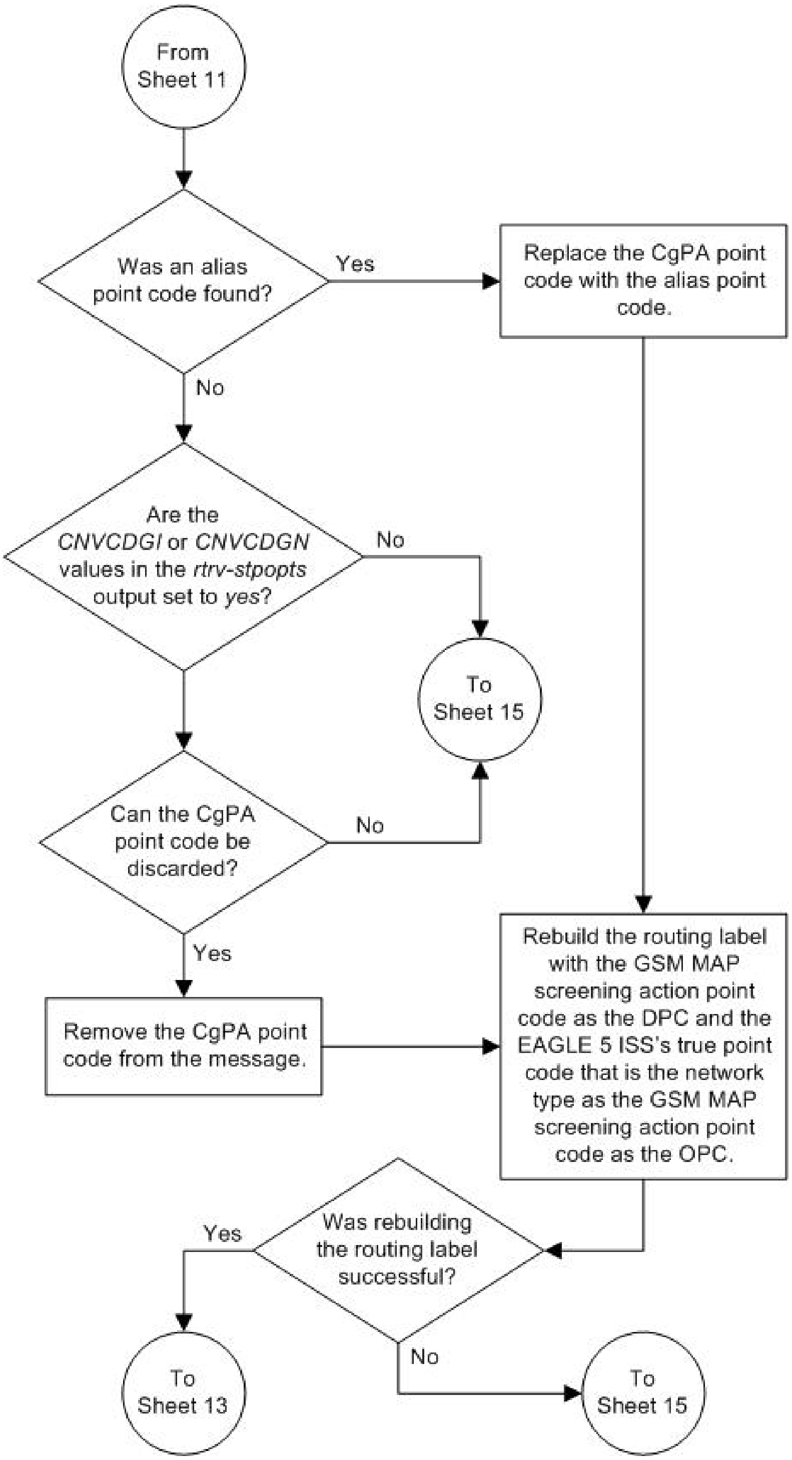

From Sheets 2, 3, 4, or 5
Is the GSM MAP Screening action DISCARD (action=discard)?
Yes
Generate the UIM set on Sheets 4 or 5 indicating that the action for the MSU with the Forbidden parameter is Discard (the MSU is discarded).
If the CGPA/CDPA is found and the specified Forbidden parameter value is present in the MSU, the MAPSCRN_60_SYS_MSCRNJFP and MAPSCRN_60_SEVER_MSCRNRJFP measurements are pegged.
The message has failed GSM MAP Screening
No
Is the GSM MAP Screening action PASS (action=pass)?
Yes
If the CGPA/CDPA is found and the specified Forbidden parameter value is present in the MSU, the MAPSCRN_60_SYS_MSCRNPAFP and MAPSCRN_60_SERVER_MSCRNPAFP measurements are pegged.
No
Is the GSM MAP Screening action ROUTE (action=route)?
Yes
Generate the UIM with the text key set on Sheets 4 or 5 indicating that the action for the MSU with the Forbidden parameter is Pass (the MSU is routed to its destination).
No
To Sheet 8
The message has passed GSM MAP Screening

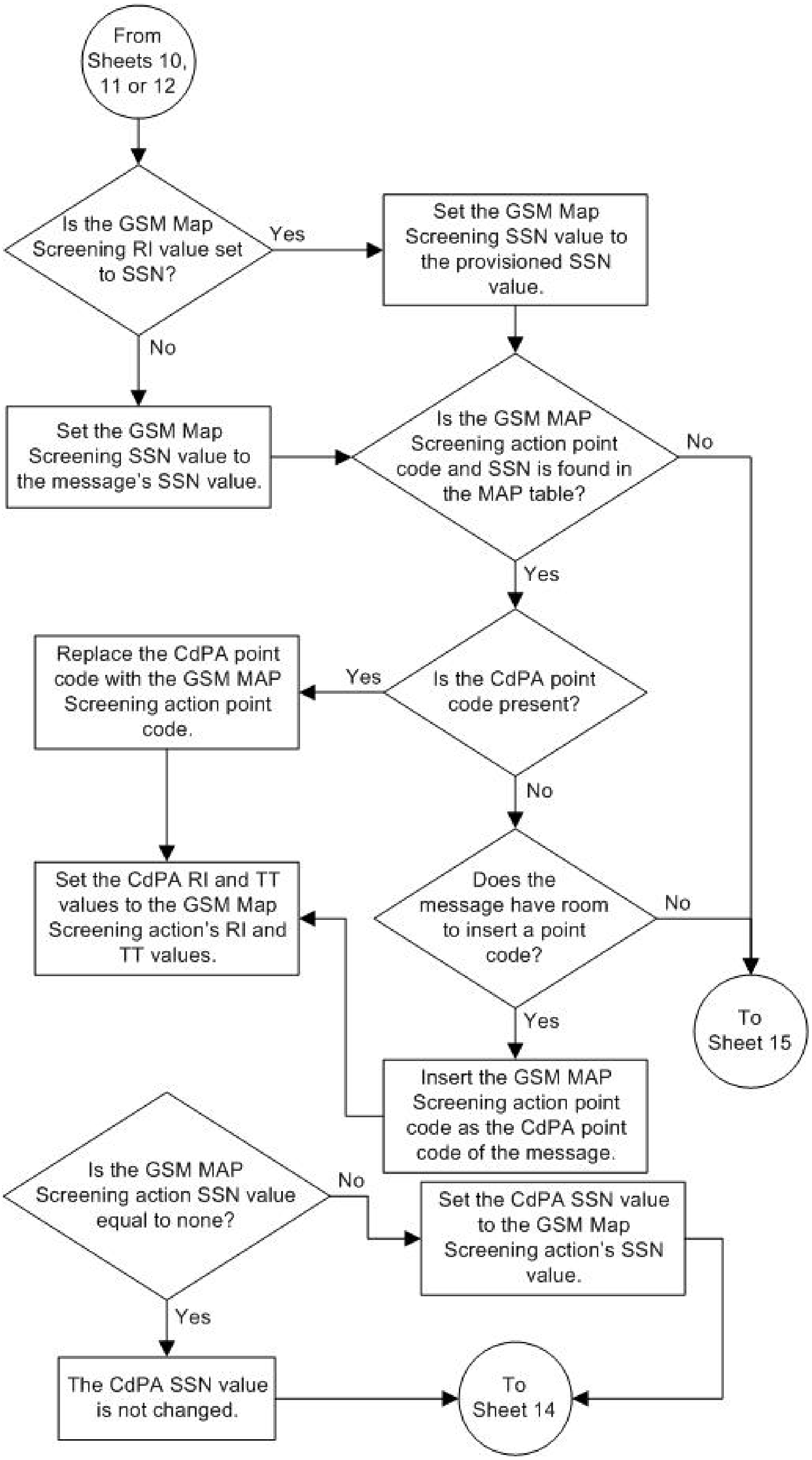

From Sheet 7
Is the GSM MAP Screening action ATIERR (*action=atierr*)?
No
To Sheet 9
Yes
Does the MSU contain the CGPA RI=GT value, or is the MSU type equal to the original MSU's OPC type with the CGPA RI=SSN value?
Yes
Encode and send an ATIERR response with reason "ATI Not Allowed."
No
Generate UIM 1060 - Map Screening cannot generate ATIERR.
Generate the UIM with the text key set on Sheets 4 or 5 indicating that the action or the MSU with the Forbidden parameter is ATIERR.
If the CGPA/CDPA is found and the specified Forbidden parameter value is present in the MSU, the MAPSCRN_60_SYS_MSCRNJFP and MAPSCRN_60_SEVER_MSCRNRJFP measurements are pegged.
The message has failed GSM MAP Screening

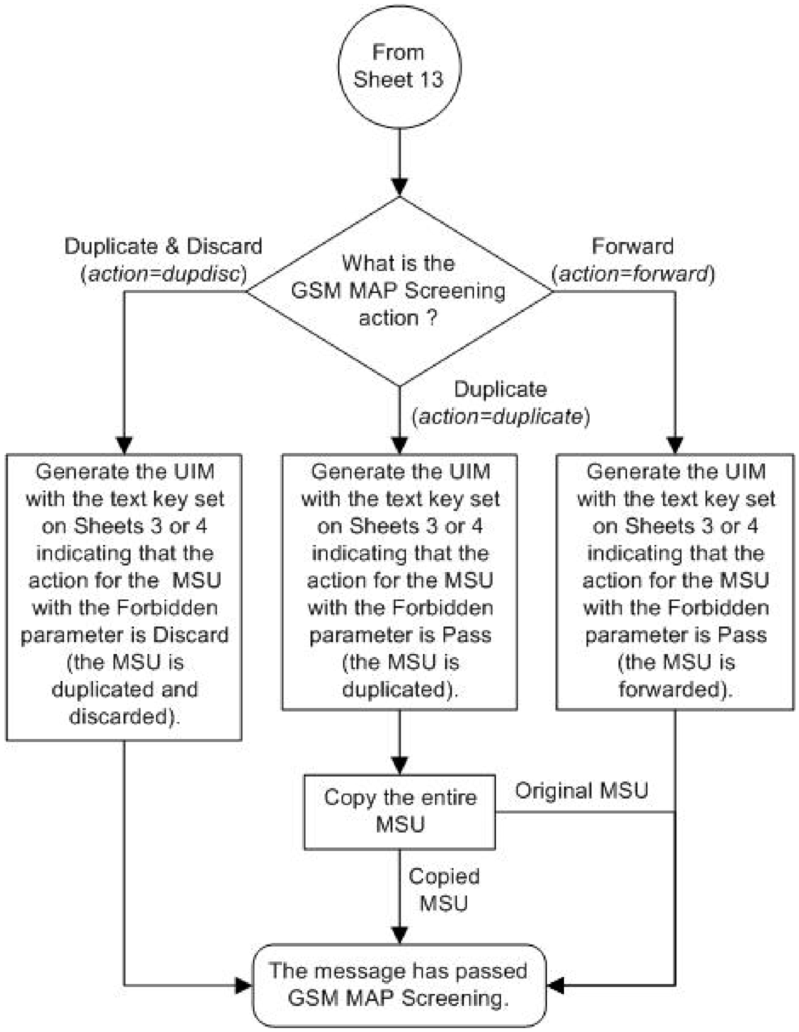

From Sheet 8
What is the GSM MAP Screening action ?
Duplicate (action=duplicate)
If the CGPA/CDPA is found and the specified Forbidden parameter value is present in the MSU, the MAPSCRN_60_SYS_MSCRNDUP and MAPSCRN_60_SEVER_MSCRNDUP measurements are pegged.
Forward (action=forward)
If the CGPA/CDPA is found and the specified Forbidden parameter value is present in the MSU, the MAPSCRN_60_SYS_MSCRNFOR and MAPSCRN_60_SEVER_MSCRNFOR measurements are pegged.
Duplicate & Discard (action=dupdisc)
If the CGPA/CDPA is found and the specified Forbidden parameter value is present in the MSU, the MAPSCRN_60_SYS_MSCRNDAD and MAPSCRN_60_SEVER_MSCRNDAD measurements are pegged.
To Sheet 10

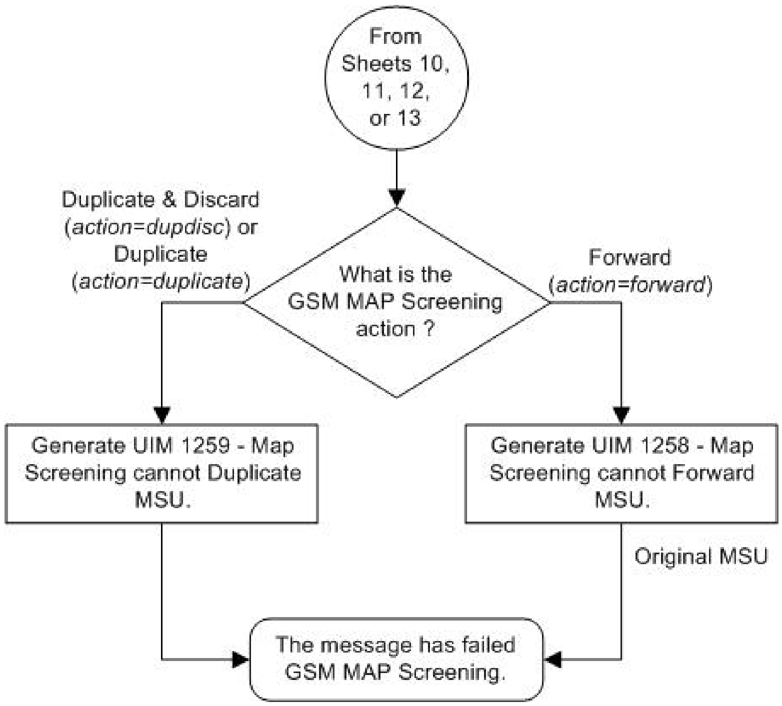

From Sheet 9
Is the MSU network type equal to the GSM MAP screening action point code type?
Yes
No
Is the MSU network type equal to ITU-I or ITU-N and is the GSM MAP screening action point code type an ITU-I, ITU-I spare, ITU-N, or ITU-N spare point code?
No
To Sheet 15
Yes
Is the ANSI-ITU SCCP Conversion feature enabled and turned on?
No
Rebuild the routing label with the GSM MAP screening action point code as the DPC and the EAGLE 5 ISS's true point code that is the network type as the GSM MAP screening action point code as the OPC.
Yes
To Sheet 11
Was rebuilding the routing label successful?
Yes
No
To Sheet 13
To Sheet 15


From Sheet 10
Is the GSM MAP screening action point code an ITU-N point code?
Yes
Set the CdPA and CgPA national indicators to the CNVAINAT value shown in the rtrv-sccpopts output.
No
Is the CgPA point code present?
No
Rebuild the routing label with the GSM MAP screening action point code as the DPC and the EAGLE 5 ISS's true point code that is the network type as the GSM MAP screening action point code as the OPC.
Yes
Search the routing table for an alias point code that is the same type of point code as the GSM MAP screening action point code
Was rebuilding the routing label successful?
Yes
No
To Sheet 12
To Sheet 13
To Sheet 15


From Sheet 11
Was an alias point code found?
Yes
Replace the CgPA point code with the alias point code.
No
Are the CNVCDGI or CNVCDGN values in the rtrv-stpopts output set to yes?
No
To Sheet 15
Can the CgPA point code be discarded?
No
Yes
Remove the CgPA point code from the message.
Rebuild the routing label with the GSM MAP screening action point code as the DPC and the EAGLE 5 ISS's true point code that is the network type as the GSM MAP screening action point code as the OPC.
Was rebuilding the routing label successful?
Yes
No
To Sheet 13
To Sheet 15


From Sheets 10, 11 or 12
Is the GSM Map Screening RI value set to SSN?
Yes
Set the GSM Map Screening SSN value to the provisioned SSN value.
No
Set the GSM Map Screening SSN value to the message's SSN value.
Is the GSM MAP Screening action point code and SSN is found in the MAP table?
No
Yes
Is the CdPA point code present?
Yes
Replace the CdPA point code with the GSM MAP Screening action point code.
No
Does the message have room to insert a point code?
No
To Sheet 15
Yes
Set the CdPA RI and TT values to the GSM Map Screening action's RI and TT values.
Insert the GSM MAP Screening action point code as the CdPA point code of the message.
Is the GSM MAP Screening action SSN value equal to none?
No
Set the CdPA SSN value to the GSM Map Screening action's SSN value.
Yes
The CdPA SSN value is not changed.
To Sheet 14


From Sheet 13
What is the GSM MAP Screening action ?
Duplicate & Discard (action=dupdisc)
Forward (action=forward)
Duplicate (action=duplicate)
Generate the UIM with the text key set on Sheets 3 or 4 indicating that the action for the MSU with the Forbidden parameter is Discard (the MSU is duplicated and discarded).
Generate the UIM with the text key set on Sheets 3 or 4 indicating that the action for the MSU with the Forbidden parameter is Pass (the MSU is duplicated).
Generate the UIM with the text key set on Sheets 3 or 4 indicating that the action for the MSU with the Forbidden parameter is Pass (the MSU is forwarded).
Copy the entire MSU
Original MSU
Copied MSU
The message has passed GSM MAP Screening.



GSM MAP Screening Example

Table 21: Example GSM MAP Screening Table on page 292 shows an example of the GSM MAP screening table.

Table 21: Example GSM MAP Screening Table

Authorized Origination Point (E.164 address)	Numbering Plan	Nature of Address Indicator	MAP Operations Code	Forbidden Parameters	Screening Action
6611273888	1	4	ATI_Request	All	Discard
6611273444	1	4	SRI_for_SM	All	Discard
6611273444	1	4	ATI_Request	Subscriber state	ATI-error
5431111888	1	4	FW_SM	None	----
5431111777	1	4	ATI_Request	All	Pass

In this example,

- Any ATI_Request message from 6611273888 containing the numbering plan value of 1 and nature of address indicator value of 4 would be discarded.
- Any SRI_for_SM from 6611273444 containing the numbering plan value of 1 and nature of address indicator value of 4 would be discarded.
- An ATI_Request message from 6611273444 containing the numbering plan value of 1 and nature of address indicator value of 4 requesting the Location only would be routed. An ATI_Request message from 6611273444 requesting both the Location and Subscriber state would result in an ATI-error message being sent back to the originator. An ATI_Request message from 6611273444 requesting the Subscriber state only would result in an ATI-error message being sent back to the originator.
- A FW_SM message from 5431111888 containing the numbering plan value of 1 and nature of address indicator value of 4 would be routed successfully, because no parameters are forbidden.
- Any ATI_Request from 5431111777 containing the numbering plan value of 1 and nature of address indicator value of 4 would be routed successfully because of the “Pass” screening action. This could be used for testing purposes prior to screening.

Table 22: System-Wide Screening Table on page 293 shows an example of the system-wide screening table. It specifies the action to be taken in the event that a MAP operations code was defined for MAP screening, but no specific entry was found in the MAP screening table.

Table 22: System-Wide Screening Table

MAP Operations Code	Operations Code Specific Screening Action
ATI	ATI-error
SRI_for_SM	Discard

GSM MAP Screening Procedures

The following procedures describe the steps needed to add, remove, or change GSM MAP Screening data in the database.

The items administered in this section are:

- Linkset with GSM MAP Screening enabled
- STP options for GSM MAP Screening
- GSM SSN
- GSM Opcodes
- GSM MAP Screening entries
- An option to enable or disable the processing of GSM MAP Screening TCAP Continue and TCAP End messages.

The procedures shown in this chapter use a variety of commands. For more information on these commands, refer to the *Commands Manual*.

Figure 46: GSM MAP Screening Database Relationships on page 295 shows the relationships of the database elements that are configured in these procedures.

The following is a brief description of the GSM MAP Screening entities. These entities must be configured in the order that they are shown.

1. The Global Title Translation (GTT) feature must be turned on with the `chg-feat` command using the `gtt=on` parameter. The global title translation feature must be on before the GSM MAP Screening feature can be enabled and turned on. Verify that the GTT feature is on using the `rtrv-feat` command.

   Note: Once the Global Title Translation (GTT) feature is turned on with the `chg-feat` command, it cannot be turned off.

   The GTT feature must be purchased before turning on the GTT feature. If you are not sure whether you have purchased the GTT feature, contact your Tekelec Sales Representative or Account Representative.

2. The GSM MAP Screening feature must be enabled with the `enable-ctrl-feat` command, and turned on with the `chg-ctrl-feat` command. Verify the status of the GSM MAP Screening feature with the `rtrv-ctrl-feat` command.

   Note: Once the GSM MAP Screening feature is enabled and turned on, it cannot be disabled or turned off.

3. GSM MAP Screening can process TCAP Continue and TCAP End messages in addition to TCAP Begin messages by setting the SCCP option parameter `GMSTCAPCE` to `on` with the `chg-sccpopts` command. Setting the SCCP option parameter `GMSTCAPCE` to `off` disables the processing of the TCAP Continue and TCAP End messages. The current value of the `GMSTCAPCE` parameter is shown in the `rtrv-sccpopts` output. For more information on setting the SCCP option parameter `GMSTCAPCE`, see the *Changing the GSM MAP Screening TCAP Continue and End Message Processing Option* on page 432 procedure.
4. To use GSM MAP Screening on all types of linksets including ANSI linksets, or to provision CDPA entries in the GSM MAP Screening table, the Enhanced GSM MAP Screening feature must be enabled with the `enable-ctrl-feat` command, and turned on with the `chg-ctrl-feat` command. Verify the status of the Enhanced GSM MAP Screening features with the `rtrv-ctrl-feat` command.

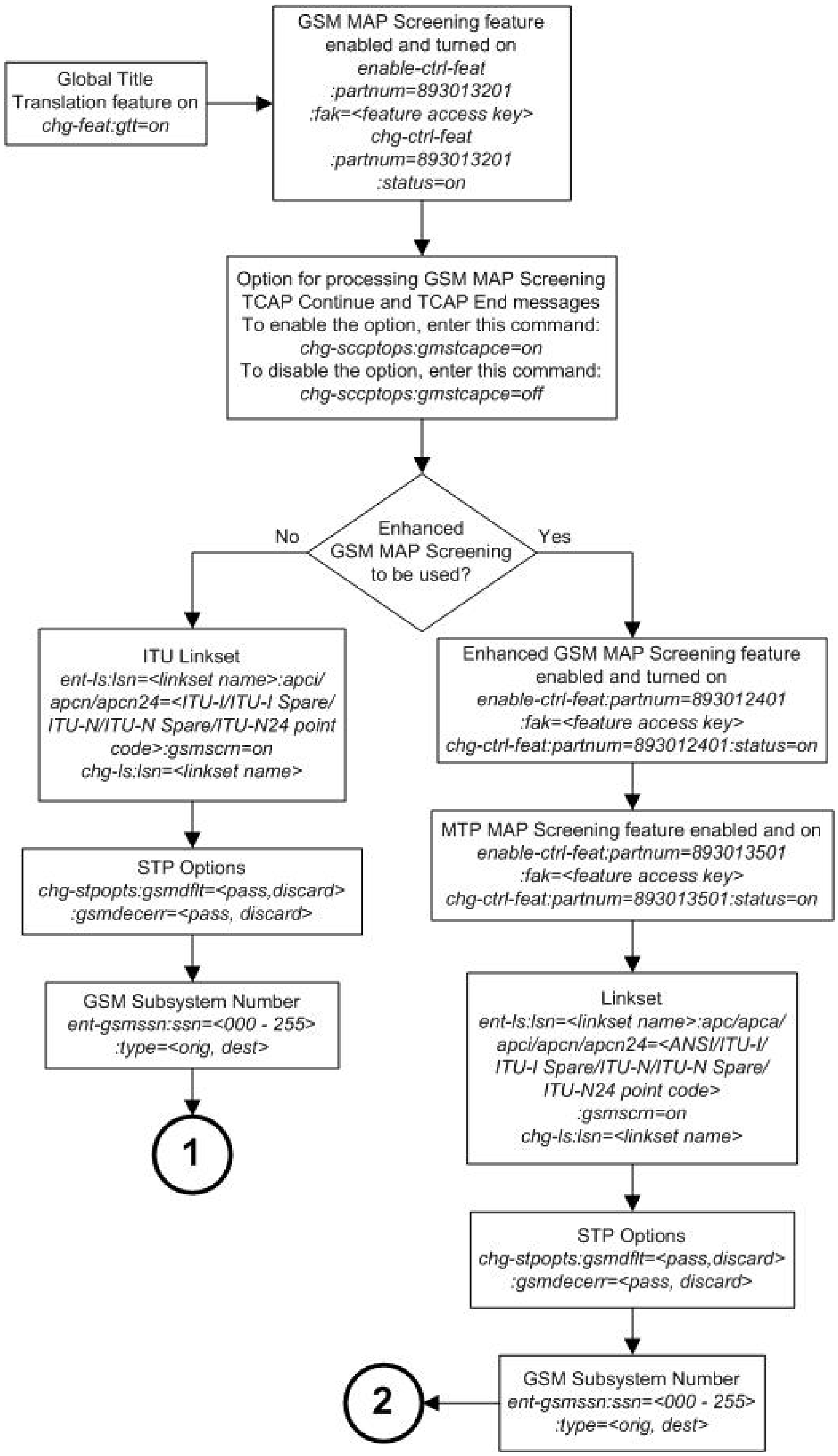
   Note: Once the Enhanced GSM MAP Screening feature is enabled and turned on, it cannot be disabled or turned off.

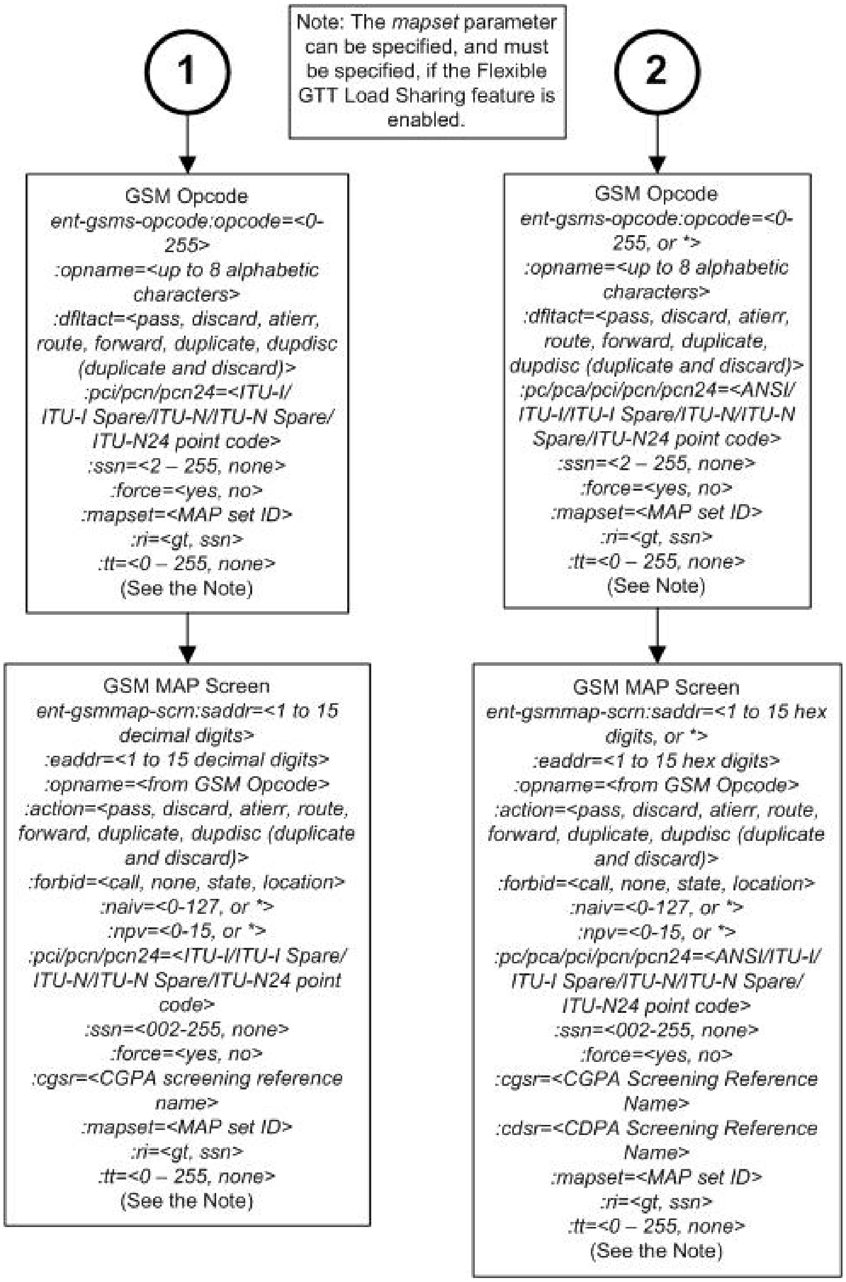
5. MSUs that do not require global title translation and are MTP routed can be sent to GSM MAP Screening only of the MTP MAP Screening feature is enabled with the `enable-ctrl-feat` command, and turned on with the `chg-ctrl-feat` command. The Enhanced GSM MAP Screening feature must be enabled and turned on to enable and turn on the MTP MAP Screening feature.
6. Linksets containing the `gsmscrn=on` parameter must be in the database. The `gsmscrn=on` parameter allows the messages on these linksets to be screened by the GSM MAP Screening feature. Verify this with the `rtrv-ls` command. If the necessary linksets are not in the database, add them with the `ent-ls` command, specifying the `gsmscrn=on` parameter. If the necessary linksets are in the database, but do not contain the `gsmscrn=on` parameter, change these linksets with the `chg-ls` command, specifying the `gsmscrn=on` parameter. If the Enhanced GSM MAP screening feature is enabled and on, the adjacent point code of the linkset can be any type. If the Enhanced GSM MAP screening feature is not enabled and off, the adjacent point code of the linkset can be either an ITU international, ITU international spare, or 14 bit

ITU national, 14-bit ITU national spare, or 24-bit ITU national point code. The EAGLE 5 ISS can contain either 14 bit or 24-bit ITU national point codes, but not both at the same time.

7. The GSM MAP screening options, `gsmdflt` (GSM MAP screening default action) and `gsmdecerr` (GSM MAP screening decode error action), can be changed with the `chg-stpopts` command. The current values for these options can be verified with the `rtrv-stpopts` command. The `GSMDFLT` parameter allows the user to specify the default screening action (PASS or DISCARD) that occurs when a MAP operations code contained in the MSU is not found in the GSM MAP operations code table. The `gsmdecerr` parameter allows the user to specify the default screening action (PASS or DISCARD) that occurs when an error is detected in the TCAP layer of the MSU being screened. Such errors included an invalid value for a parameter, length error, missing data, and so on.
8. The origination and destination subsystem numbers that are being screened using the GSM MAP screening feature need to be provisioned in the database. These subsystem numbers are shown in the `rtrv-gsmssn-scrn` command and provisioned using the `ent-gsmssn-scrn` command.
9. The concerned GSM MAP screening operation codes and the default screening action for the operation code need to be provisioned in the database. These operation codes are shown in the `rtrv-gsms-opcode` command and provisioned using the `ent-gsms-opcode` command. The `ent-gsms-opcode` allows the user to provision a list of all operation codes that the EAGLE 5 ISS uses in performing GSM screening. If a point code and subsystem number is provisioned for the GSM MAP screening operation code, the point code and subsystem number must be shown in the `rtrv-map` output. If the flexible GTT Load Sharing feature is enabled, a MAP set containing the point code and subsystem number must be assigned to the GSM MAP screening operation code. For more information on provisioning GSM MAP screening operation codes, see the *Adding a GSM MAP Screening Operation Code* on page 333 procedure.
10. The GSM MAP screening entries that filter or allow TCAP messages for certain MAP operation codes need to be provisioned in the database. The GSM MAP screening entries are shown in the `rtrv-gsmmap-scrn` command and provisioned using the `ent-gsmmap-scrn` command. The messages are filtered or allowed based on the origination addresses (`saddr/eaddr`), numbering plan value (`npv`), nature of address indicator value (`naiv`), MAP opnames (`opname`), and forbidden (`forbid`) parameters. If the Enhanced GSM MAP Screening feature is enabled and on, the CGPA and CDPA of the messages are checked by the GSM MAP Screening table. If the Enhanced GSM MAP Screening feature is not enabled and off, only the CGPA of the messages are checked by the GSM MAP Screening table. If a point code and subsystem number is provisioned for the GSM MAP screening entry, the point code and subsystem number must be shown in the `rtrv-map` output. If the Flexible GTT Load Sharing feature is enabled, a MAP set containing the point code and subsystem number must be assigned to the GSM MAP screening entry. For more information on provisioning GSM MAP screening operation entries, see the *Adding a GSM MAP Screening Entry* on page 369 procedure.

Figure 46: GSM MAP Screening Database Relationships


Global Title Translation feature on
chg-feat:gtt=on
GSM MAP Screening feature enabled and turned on
enable-ctrl-feat :partnum=893013201 :fak=<feature access key>
chg-ctrl-feat :partnum=893013201 :status=on
Option for processing GSM MAP Screening TCAP Continue and TCAP End messages
To enable the option, enter this command:
chg-sccptops:gmstcapce=on
To disable the option, enter this command:
chg-sccptops:gmstcapce=off
Enhanced GSM MAP Screening to be used?
No
Yes
ITU Linkset
ent-ls:lsn=<linkset name>:apci/ apcn/apcn24=<ITU-I/ITU-I Spare/ ITU-N/ITU-N Spare/ITU-N24 point code>:gsmscrn=on
chg-ls:lsn=<linkset name>
STP Options
chg-stpopts:gsmdflt=<pass,discard> :gsmdecerr=<pass, discard>
GSM Subsystem Number
ent-gsmssn:ssn=<000 - 255> :type=<orig, dest>
1
Enhanced GSM MAP Screening feature enabled and turned on
enable-ctrl-feat:partnum=893012401 :fak=<feature access key>
chg-ctrl-feat:partnum=893012401:status=on
MTP MAP Screening feature enabled and on
enable-ctrl-feat:partnum=893013501 :fak=<feature access key>
chg-ctrl-feat:partnum=893013501:status=on
Linkset
ent-ls:lsn=<linkset name>:apc/apca/ apci/apcn/apcn24=<ANSI/ITU-I/ ITU-I Spare/ITU-N/ITU-N Spare/ ITU-N24 point code> :gsmscrn=on
chg-ls:lsn=<linkset name>
STP Options
chg-stpopts:gsmdflt=<pass,discard> :gsmdecerr=<pass, discard>
GSM Subsystem Number
ent-gsmssn:ssn=<000 - 255> :type=<orig, dest>
2



Activating the GSM MAP Screening Feature

The GSM MAP screening feature is activated by enabling the GSM MAP Screening feature with the `enable-ctrl-feat` command, then by turning the feature on with the `chg-ctrl-feat` command. The status of the GSM MAP Screening feature can be verified with the `rtrv-ctrl-feat` command. Before the GSM MAP Screening feature is activated, the global title translation feature must be on. This can be verified with the `rtrv-feat` command.

Note: Once the global title translation feature is turned on with the `chg-feat` command, it cannot be turned off.

The global title translation feature must be purchased before you turn the feature on with the `chg-feat` command. If you are not sure if you have purchased the global title translation feature, contact your Tekelec Sales Representative or Account Representative.

This procedure can also be used to enable and turn on the Enhanced GSM MAP Screening feature. The `enable-ctrl-feat` and `chg-ctrl-feat` commands are used to enable and turn on the Enhanced GSM MAP Screening feature. The GSM MAP Screening feature must be enabled and turned on before the Enhanced GSM MAP Screening feature is enabled and turned on.

The `enable-ctrl-feat` command enables the feature by inputting the feature's access key and the feature's part number with these parameters:

`:fak` – The feature access key supplied by Tekelec. The feature access key contains 13 alphanumeric characters and is not case sensitive.

`:partnum` – The Tekelec-issued part number of the GSM MAP Screening and Enhanced GSM MAP Screening features.

- The GSM MAP Screening feature, 893013201
- The Enhanced GSM MAP Screening feature, 893012401

The `enable-ctrl-feat` command requires that the database contain a valid serial number for the EAGLE 5 ISS, and that this serial number is locked. This can be verified with the `rtrv-serial-num` command. The EAGLE 5 ISS is shipped with a serial number in the database, but the serial number is not locked. The serial number can be changed, if necessary, and locked once the EAGLE 5 ISS is on-site, with the `ent-serial-num` command. The `ent-serial-num` command uses these parameters.

`:serial` – The serial number assigned to the EAGLE 5 ISS. The serial number is not case sensitive.

`:lock` – Specifies whether or not the serial number is locked. This parameter has only one value, `yes`, which locks the serial number. Once the serial number is locked, it cannot be changed.

Note: To enter and lock the EAGLE 5 ISS's serial number, the `ent-serial-num` command must be entered twice, once to add the correct serial number to the database with the `serial` parameter, then again with the `serial` and the `lock=yes` parameters to lock the serial number. You should verify that the serial number in the database is correct before locking the serial number. The serial number can be found on a label affixed to the control shelf (shelf 1100).

The GSM MAP Screening and Enhanced GSM MAP Screening features cannot be temporarily enabled (with the temporary feature access key).

Once these features have been enabled, the features must be activated with the `chg-ctrl-feat` command. The `chg-ctrl-feat` command uses these parameters:

`:partnum` – The Tekelec-issued part number of the GSM MAP Screening and Enhanced GSM MAP Screening features.

- The GSM MAP Screening feature, 893013201
- The Enhanced GSM MAP Screening feature, 893012401

  `:status=on` – used to activate the features that customer has purchased and enabled.

  Note: Once the GSM MAP Screening and Enhanced GSM MAP Screening features are turned on, they cannot be turned off.

The status of the features in the EAGLE 5 ISS is shown with the `rtrv-ctrl-feat` command.

The GSM MAP Screening feature requires that service modules are installed and provisioned in the EAGLE 5 ISS. The Enhanced GSM MAP Screening feature require that DSMs or E5-SM4G cards are installed and provisioned in the EAGLE 5 ISS. TSMs are shown by the entry `TSM` in the `TYPE` column of the `rtrv-card` output and `SCCP` in the `APPL` column of the `rtrv-card` output. DSMs and E5-SM4G cards are shown by the entry `DSM` in the `TYPE` column of the `rtrv-card` output and `SCCP` in the `APPL` column of the `rtrv-card` output.

If the Enhanced GSM MAP Screening feature is being enabled and turned on, any cards with the TSM card type running the SCCP application in the EAGLE 5 ISS must be replaced by DSMs or E5-SM4G cards. Contact the Customer Care Center before replacing any service modules. Refer to *Customer Care Center* on page 4 for the contact information.

1. Display the status of the controlled features by entering the `rtrv-ctrl-feat` command.

   The following is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
Command Class Management  893005801  on      ----
LNP Short Message Service 893006601  on      ----
Intermed GTT Load Sharing 893006901  on      ----
XGTT Table Expansion      893006101  on      400000
XMAP Table Expansion      893007710  off     ----
Large System # Links      893005910  on      2000
Routesets                 893006401  on      6000
HC-MIM SLK Capacity       893012707  on      64

The following features have been temporarily enabled:

Feature Name              Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

   If the GSM MAP Screening feature (shown in the `rtrv-ctrl-feat` output as `GSM Map Screening (GMS)`) is enabled and on, no further action is necessary. This procedure does not need to be performed.

   If you wish to use the Enhanced GSM MAP Screening feature, and the Enhanced GSM MAP Screening feature (shown in the `rtrv-ctrl-feat` output as `Enhanced GMS (EGMS)`) is enabled and on, no further action is necessary. This procedure does not need to be performed.

   If the GSM MAP Screening feature is enabled and off, skip steps 2 through 7 and go to step 8.

   If the Enhanced GSM MAP Screening feature is enabled and off, skip steps 2 through 10 and go to step 11.

2. Display the cards in the EAGLE 5 ISS using the `rtrv-card` command.

   The GSM MAP Screening feature requires that service modules are in the database. The Enhanced GSM MAP Screening feature requires that DSMs or E5-SM4G cards are in the database. This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:58:31 GMT EAGLE5 36.0.0
```

```
CARD   TYPE      APPL     LSET NAME     LINK SLC LSET NAME     LINK SLC
1113   GPSM      EOAM
1114   TDM-A
1115   GPSM      EOAM
1116   TDM-B
1117   MDAL
1201   LIMDS0    SS7ANSI  sp2           A    0   sp1           B    0
1203   LIMDS0    SS7ANSI  sp3           A    0
1204   LIMDS0    SS7ANSI  sp3           A    1
1206   LIMDS0    SS7ANSI  nsp3          A    1   nsp4          B    1
1207   LIMV35    SS7GX25  nsp1          A    0
1208   LIMV35    SS7GX25  nsp1          A    1
1216   ACMENET   STPLAN
1308   LIMDS0    SS7ANSI  sp6           A    1   sp7           B    0
1314   LIMDS0    SS7ANSI  sp7           A    1   sp5           B    1
1317   ACMENET   STPLAN
```

TSMs are shown by the entry `TSM` in the `TYPE` column and `SCCP` in the `APPL` column of the `rtrv-card` output. DSMs and E5-SM4G cards are shown by the entry `DSM` in the `TYPE` column and `SCCP` in the `APPL` column of the `rtrv-card` output. If the Enhanced GSM MAP Screening feature is being enabled and turned on, and the `rtrv-card` output shows TSM card types in the EAGLE 5 ISS, these cards must be replaced by DSMs or E5-SM4G cards. Contact the Customer Care Center before replacing any service modules. Refer to *Customer Care Center* on page 4 for the contact information.

If no service modules are shown in the `rtrv-card` output, perform the “Adding a Service Module” procedure in the Database *Administration Manual* - Global Title Translation and add the required service modules to the database.

If DSMs or E5-SM4G cards are in the EAGLE 5 ISS, go to step 3.

Note: If the `rtrv-ctrl-feat` output in step 1 shows any controlled features, skip steps 3 through 6, and go to step 7. If the `rtrv-ctrl-feat` output shows only the HC-MIMSLK Capacity feature with a quantity of 64, steps 3 through 6 must be performed.

3. Display the serial number in the database with the `rtrv-serial-num` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
System serial number = nt00001231

System serial number is not locked.

rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
Command Completed
```

   Note: If the serial number is correct and locked, skip steps 4, 5, and 6, and go to step 7. If the serial number is correct but not locked, skip steps 4 and 5, and go to step 6. If the serial number is not correct, but is locked, the GSMMAP Screening and Enhanced GSMMAP Screening features cannot be enabled and the remainder of this procedure cannot be performed. Contact the Customer Care Center to get an incorrect and locked serial number changed. Refer to *Customer Care Center* on page 4 for the contact information. The serial number can be found on a label affixed to the control shelf (shelf 1100).

4. Enter the correct serial number into the database using the `ent-serial-num` command with the `serial` parameter.

   For this example, enter this command.

`ent-serial-num:serial=<EAGLE 5 ISS’s correct serial number>`

When this command has successfully completed, the following message should appear.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
ENT-SERIAL-NUM:  MASP A - COMPLTD
```

5. Verify that the serial number entered into step 4 was entered correctly using the `rtrv-serial-num` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
System serial number = nt00001231

System serial number is not locked.

rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
Command Completed
```

   If the serial number was not entered correctly, repeat steps 4 and 5 and re-enter the correct serial number.

6. Lock the serial number in the database by entering the `ent-serial-num` command with the serial number shown in step 3, if the serial number shown in step 3 is correct, or with the serial number shown in step 5, if the serial number was changed in step 4, and with the `lock=yes` parameter.

   For this example, enter this command.

   `ent-serial-num:serial=<EAGLE 5 ISS’s serial number>:lock=yes`

   When this command has successfully completed, the following message should appear.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
ENT-SERIAL-NUM:  MASP A - COMPLTD
```

7. Enable the GSM MAP Screening feature with the `enable-ctrl-feat` command specifying the part number for the GSM MAP Screening feature and the feature access key.

   Enter this command.

   `enable-ctrl-feat:partnum=893013201:fak=<GSM MAP Screening feature access key>`

   Note: A temporary feature access key cannot be specified to enable this feature.

   Note: The values for the feature access key (the `fak` parameter) are provided by Tekelec. If you do not have the feature access key for the GSM MAP Screening feature, contact your Tekelec Sales Representative or Account Representative.

   When the `enable-ctrl-feat` command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

8. Turn the GSM MAP Screening feature on with the `chg-ctrl-feat` command specifying the part number for the GSM MAP Screening feature and the `status=on` parameter.

   Enter this command.

chg-ctrl-feat:partnum=893013201:status=on

Note: Once the GSM MAP Screening feature is turned on, it cannot be turned off.

When the `chg-ctrl-feat` command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
CHG-CTRL-FEAT: MASP B - COMPLTD
```

9. Verify the changes by entering the `rtrv-ctrl-feat`command with the GSM MAP Screening feature part number.

   Enter this command.

   `rtrv-ctrl-feat:partnum=893013201`

   The following is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
GSM Map Screening (GMS)   893013201  on      ----

The following features have been temporarily enabled:

Feature Name              Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

10. Enable the Enhanced GSM MAP Screening feature with the `enable-ctrl-feat` command specifying the part number for the Enhanced GSM MAP Screening feature and the feature access key.

    Note: If you do not wish to enable and turn on the Enhanced GSM MAP Screening feature, skip steps 10, 11, and 12, and go to step 13.

    Enter this command.`enable-ctrl-feat:partnum=893012401:fak=<Enhanced GSM MAP Screening feature access key>`

    Note: A temporary feature access key cannot be specified to enable this feature.

    Note: The values for the feature access key (the `fak` parameter) are provided by Tekelec. If you do not have the feature access key for the Enhanced GSM MAP Screening feature, contact your Tekelec Sales Representative or Account Representative.

    When the `enable-ctrl-feat` command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

11. Turn the Enhanced GSM MAP Screening feature on with the `chg-ctrl-feat` command specifying the part number for the Enhanced GSM MAP Screening feature and the `status=on` parameter.

    Enter this command.

chg-ctrl-feat:partnum=893012401:status=on

Note: Once the Enhanced GSM MAP Screening feature is turned on, it cannot be turned off.

When the `chg-ctrl-feat` command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
CHG-CTRL-FEAT: MASP B - COMPLTD
```

12. Verify the changes by entering the `rtrv-ctrl-feat`command with the Enhanced GSM MAP Screening feature part number.

    Enter this command.

    `rtrv-ctrl-feat:partnum=893012401`

    The following is an example of the possible output.

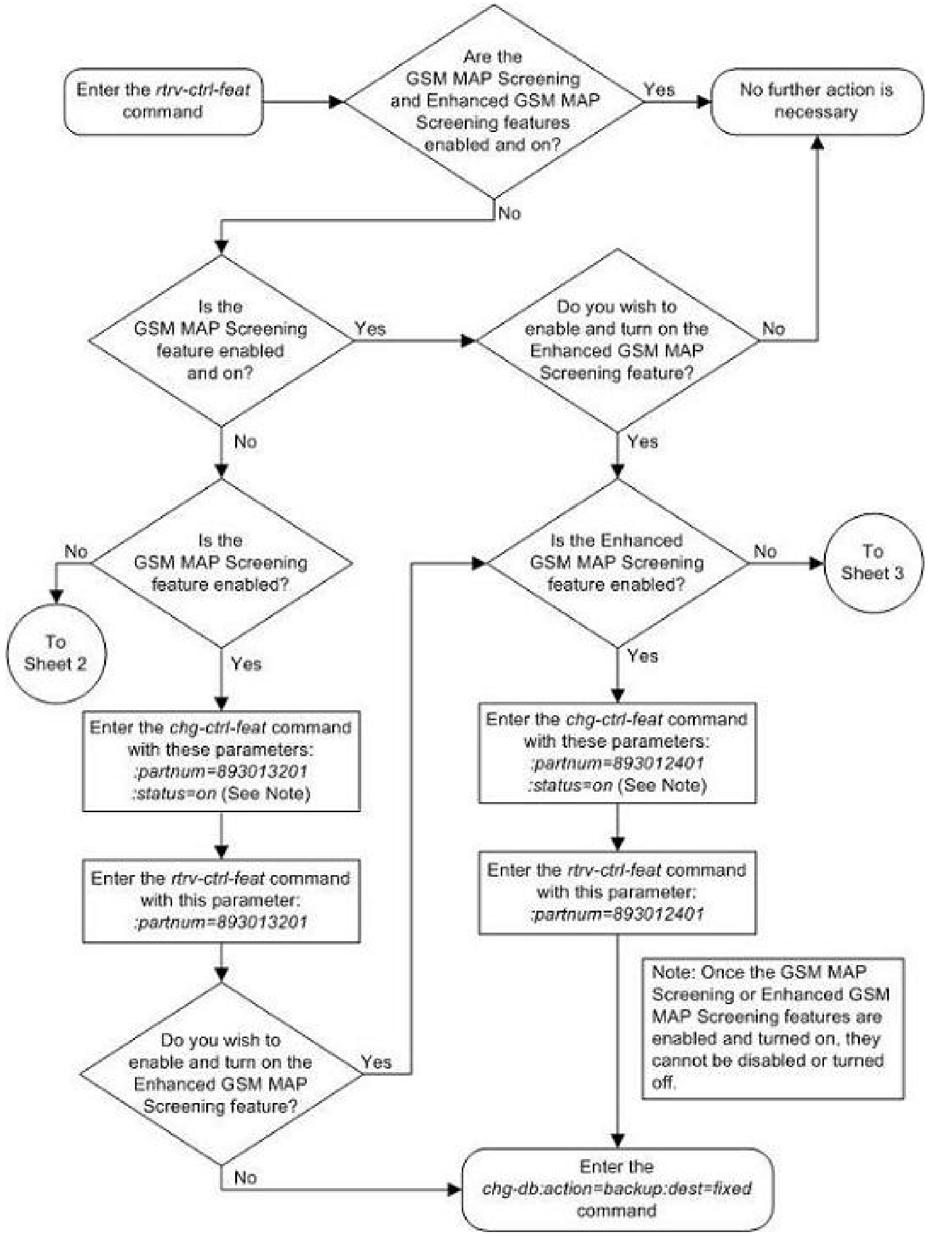
```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
Enhanced GMS (EGMS)       893012401  on      ----

The following features have been temporarily enabled:

Feature Name              Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

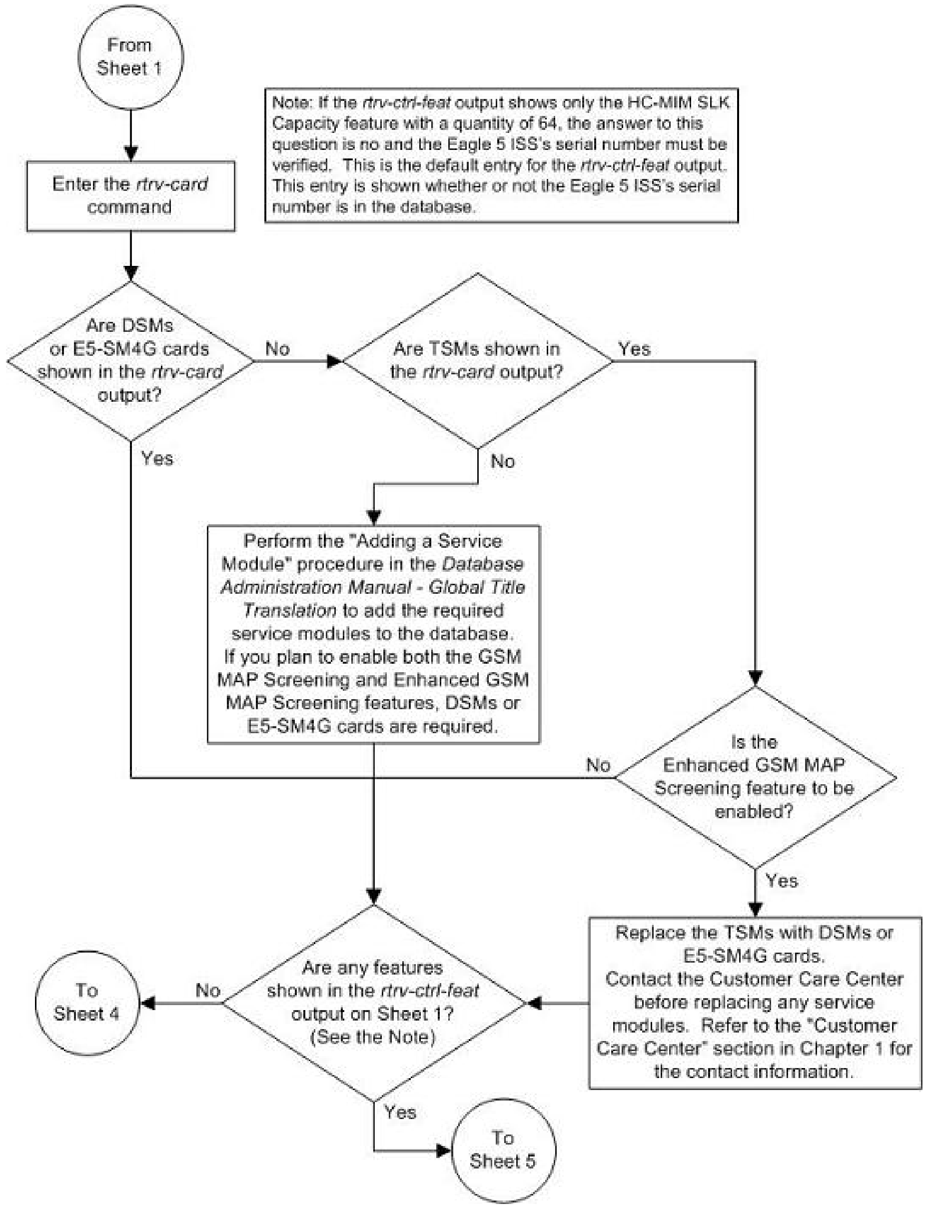
13. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

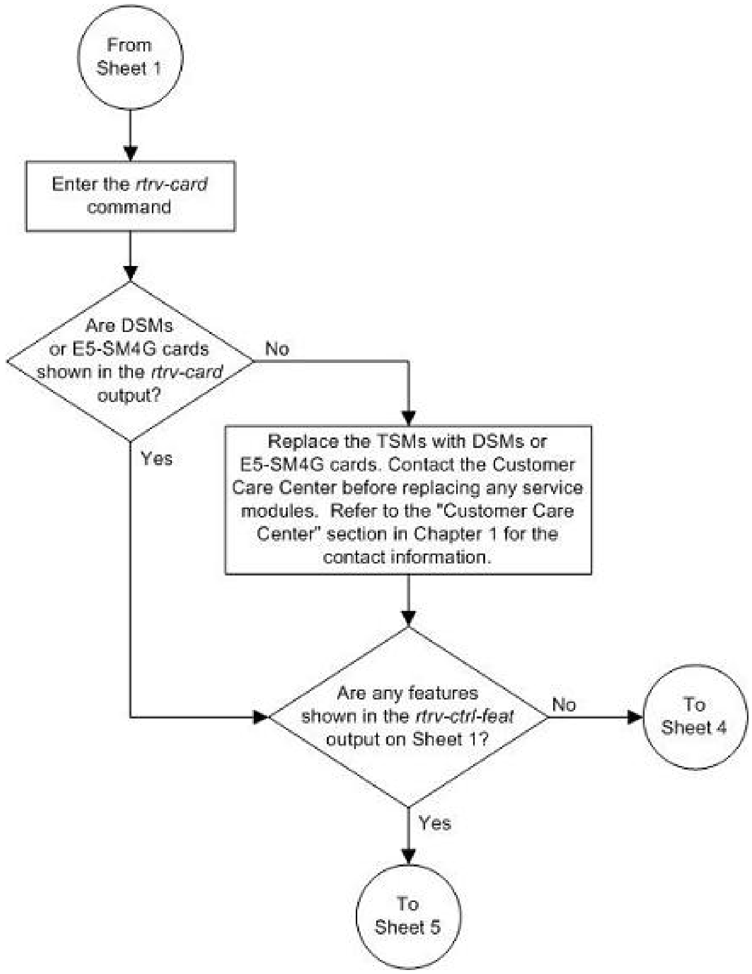
    These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

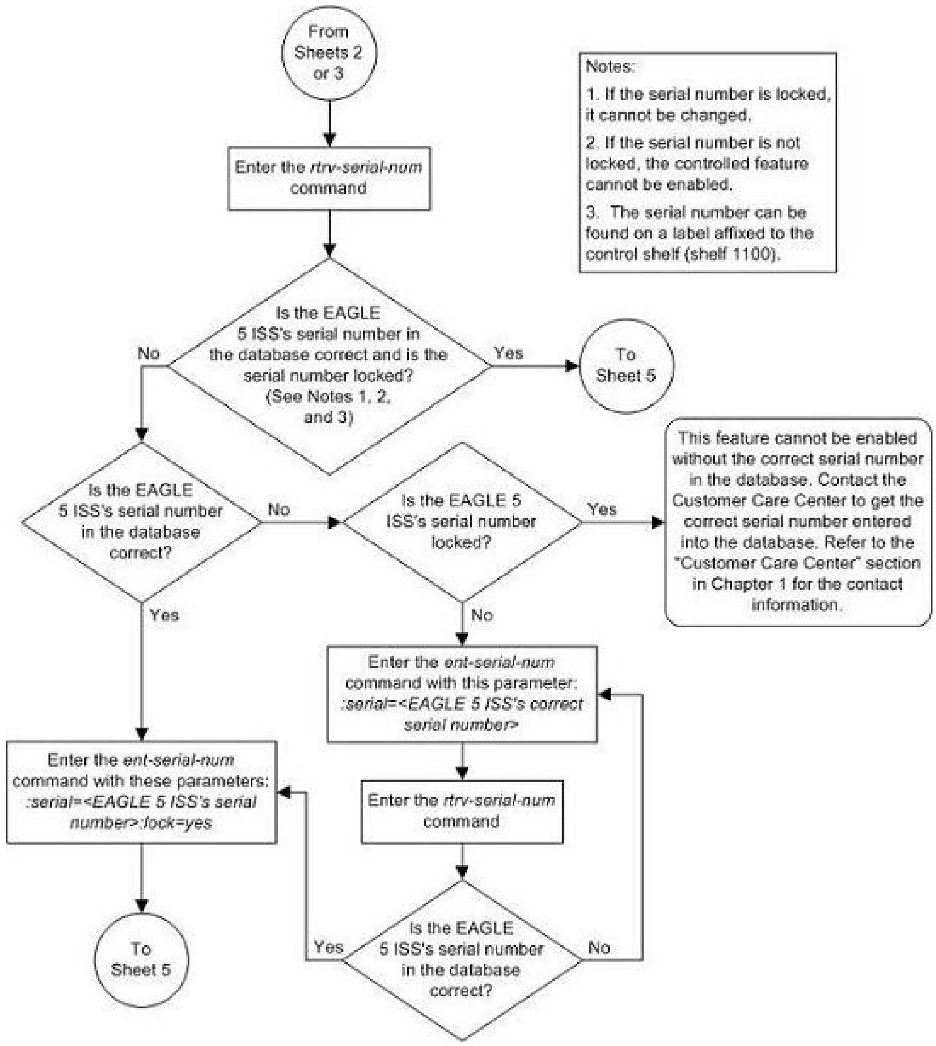
```
BACKUP (FIXED): MASP A - Backup starts on active MASP.
BACKUP (FIXED): MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED): MASP A - Backup starts on standby MASP.
BACKUP (FIXED): MASP A - Backup on standby MASP to fixed disk complete.
```

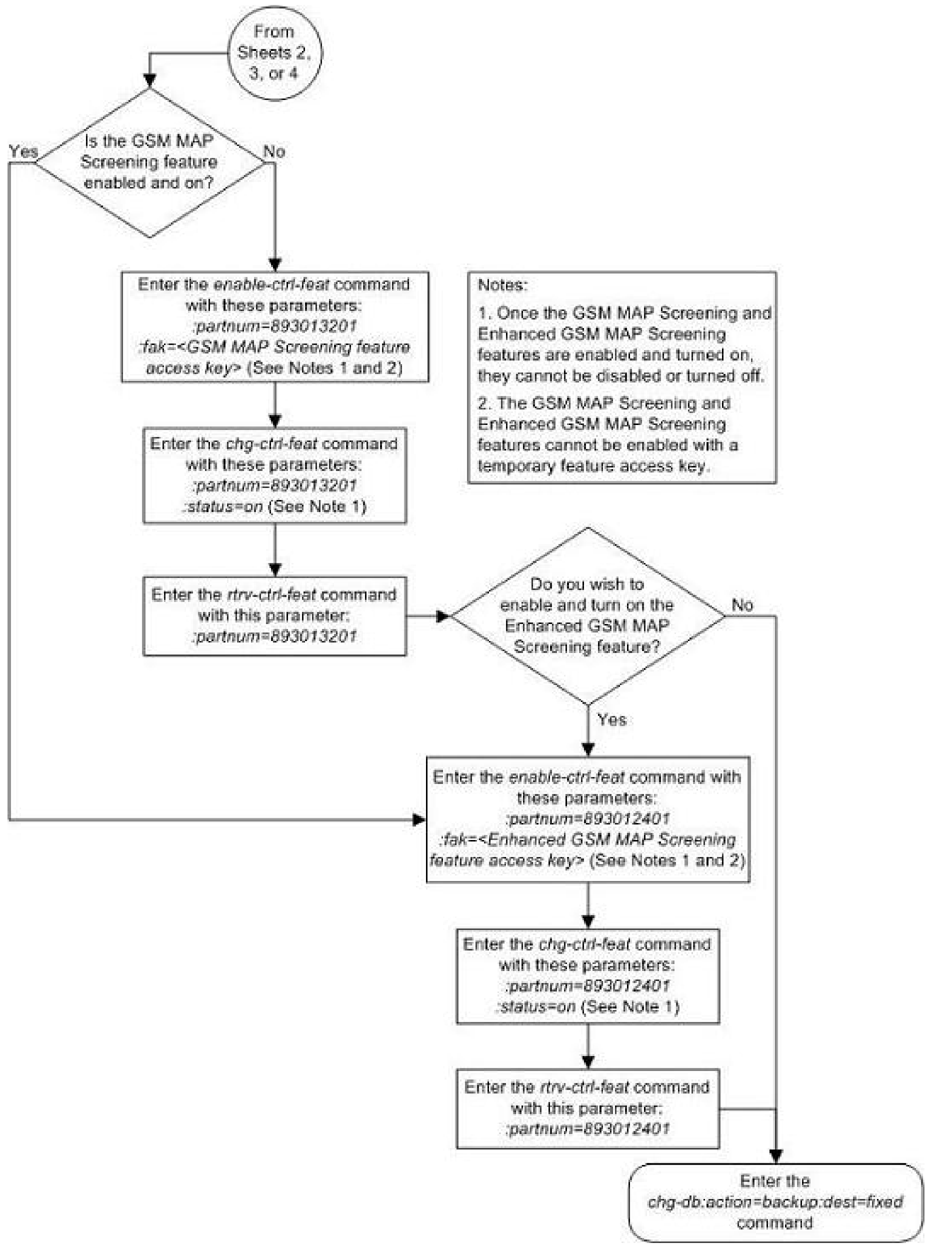
Figure 47: Activating the GSM MAP Screening Feature


Enter the rtrv-ctrl-feat command
Are the GSM MAP Screening and Enhanced GSM MAP Screening features enabled and on?
Yes
No further action is necessary
No
Is the GSM MAP Screening feature enabled and on?
Yes
Do you wish to enable and turn on the Enhanced GSM MAP Screening feature?
No
No
Yes
Is the GSM MAP Screening feature enabled?
No
To Sheet 2
Yes
Is the Enhanced GSM MAP Screening feature enabled?
No
To Sheet 3
Yes
Enter the chg-ctrl-feat command with these parameters: :partnum=893013201 :status=on (See Note)
Enter the chg-ctrl-feat command with these parameters: :partnum=893012401 :status=on (See Note)
Enter the rtrv-ctrl-feat command with this parameter: :partnum=893013201
Enter the rtrv-ctrl-feat command with this parameter: :partnum=893012401
Note: Once the GSM MAP Screening or Enhanced GSM MAP Screening features are enabled and turned on, they cannot be disabled or turned off.
Do you wish to enable and turn on the Enhanced GSM MAP Screening feature?
Yes
No
Enter the chg-db:action=backup:dest=fixed command


From Sheet 1
Enter the rtrv-card command
Note: If the rtrv-ctrl-feat output shows only the HC-MIM SLK Capacity feature with a quantity of 64, the answer to this question is no and the Eagle 5 ISS's serial number must be verified. This is the default entry for the rtrv-ctrl-feat output. This entry is shown whether or not the Eagle 5 ISS's serial number is in the database.
Are DSMs or E5-SM4G cards shown in the rtrv-card output?
No
Yes
Are TSMs shown in the rtrv-card output?
Yes
No
Perform the "Adding a Service Module" procedure in the Database Administration Manual - Global Title Translation to add the required service modules to the database. If you plan to enable both the GSM MAP Screening and Enhanced GSM MAP Screening features, DSMs or E5-SM4G cards are required.
Is the Enhanced GSM MAP Screening feature to be enabled?
No
Yes
Replace the TSMs with DSMs or E5-SM4G cards. Contact the Customer Care Center before replacing any service modules. Refer to the "Customer Care Center" section in Chapter 1 for the contact information.
Are any features shown in the rtrv-ctrl-feat output on Sheet 1? (See the Note)
No
To Sheet 4
Yes
To Sheet 5


From Sheet 1
Enter the rtrv-card command
Are DSMs or E5-SM4G cards shown in the rtrv-card output?
No
Yes
Replace the TSMs with DSMs or E5-SM4G cards. Contact the Customer Care Center before replacing any service modules. Refer to the "Customer Care Center" section in Chapter 1 for the contact information.
Are any features shown in the rtrv-ctrl-feat output on Sheet 1?
No
To Sheet 4
Yes
To Sheet 5


From Sheets 2 or 3
Enter the rtrv-serial-num command
Notes:
1. If the serial number is locked, it cannot be changed.
2. If the serial number is not locked, the controlled feature cannot be enabled.
3. The serial number can be found on a label affixed to the control shelf (shelf 1100).
Is the EAGLE 5 ISS's serial number in the database correct and is the serial number locked? (See Notes 1, 2, and 3)
No
Yes
To Sheet 5
Is the EAGLE 5 ISS's serial number in the database correct?
No
Is the EAGLE 5 ISS's serial number locked?
Yes
This feature cannot be enabled without the correct serial number in the database. Contact the Customer Care Center to get the correct serial number entered into the database. Refer to the "Customer Care Center" section in Chapter 1 for the contact information.
Yes
No
Enter the ent-serial-num command with this parameter: :serial=<EAGLE 5 ISS's correct serial number>
Enter the ent-serial-num command with these parameters: :serial=<EAGLE 5 ISS's serial number>:lock=yes
Enter the rtrv-serial-num command
To Sheet 5
Yes
Is the EAGLE 5 ISS's serial number in the database correct?
No



Configuring the MTP MAP Screening Feature

The MTP MAP screening feature is enabled with the `enable-ctrl-feat` command. Once enabled, the feature can be turned on or off with the `chg-ctrl-feat` command. If the feature is already on, it can only be turned off. If the feature is off, it can only be turned on.

Before the MTP MAP Screening feature is enabled and turned on, the Enhanced GSM MAP Screening feature must be enabled and on. The Measurements Platform must also be enabled.

The status of the MTP MAP Screening and Enhanced GSM MAP Screening features can be verified with the `rtrv-ctrl-feat` command. The `rtrv-measopts` command shows whether the Measurements Platform is enabled or not.

The `enable-ctrl-feat` command enables the feature by inputting the feature's access key and the feature's part number with these parameters:

`:fak` – The feature access key supplied by Tekelec. The feature access key contains 13 alphanumeric characters and is not case sensitive.

`:partnum` – The Tekelec-issued part number of the MTP MAP Screening feature, 893013501

The MTP MAP Screening feature cannot be temporarily enabled (with a temporary feature access key).

The `chg-ctrl-feat` command uses these parameters:

`:partnum` – The Tekelec-issued part number of the MTP MAP Screening feature, 893013501.

`:status=on` – used to turn the MTP MAP Screening feature on.

`:status=off` – used to turn the MTP MAP Screening feature off.

Note: Turning the MTP MAP Screening feature on allows GSM MAP Screening to be performed on all SCCP messages, even if these messages do not require Global Title Translation and are MTP routed. The value of the `GSMSCRN` parameter of the linkset carrying these SCCP messages must be `YES`.

Note: Turning the MTP MAP Screening feature off allows GSM MAP Screening to be performed only on those SCCP messages, on linksets with the `GSMSCRN=YES` value, that have passed Global Title Translation and Gateway Screening.

1. Display the status of the controlled features by entering the `rtrv-ctrl-feat` command.

   The following is an example of the possible output.

   ```
   rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
   The following features have been permanently enabled:

   Feature Name              Partnum    Status  Quantity
   Command Class Management  893005801  on      ----
   LNP Short Message Service 893006601  on      ----
   Intermed GTT Load Sharing 893006901  on      ----
   XGTT Table Expansion      893006101  on      400000
   XMAP Table Expansion      893007710  off     ----
   Large System # Links      893005910  on      2000
   Routesets                 893006401  on      6000
   HC-MIM SLK Capacity       893012707  on      64

   The following features have been temporarily enabled:

   Feature Name              Partnum    Status  Quantity     Trial Period Left
   Zero entries found.

   The following features have expired temporary keys:

   Feature Name              Partnum
   Zero entries found.
   ```

   If the MTP MAP Screening feature (shown in the `rtrv-ctrl-feat` output as `MTP Map Screening`) is enabled and on, and you do not wish to turn the feature off, no further action is necessary. If you wish to turn this feature off, skip steps 2 through 4, and go to step 5.

If the MTP MAP Screening feature is enabled and off, skip steps 2 through 4 and go to step 5 to turn the feature on.

2. If the `rtrv-ctrl-feat` in step 1 shows that the Enhanced GSM MAP Screening feature is enabled and on, skip this step and go to step 3.

   If the `rtrv-ctrl-feat` in step 1 shows that the Enhanced GSM MAP Screening feature is not enabled or off, perform the *Activating the GSM MAP Screening Feature* on page 297 to enable and turn on the Enhanced GSM MAP Screening feature.

3. Verify whether or nor the Measurements Platform option is enabled (`PLATFORMENABLE = on`) using the `rtrv-measopts` command.

```
rlghncxa03w 06-10-01 16:02:05 GMT  EAGLE5 36.0.0

PLATFORMENABLE = on
COLLECT15MIN     = off
CLLIBASEDNAME    = off
----------------------
SYSTOTSTP        = off
SYSTOTTT         = off
```

   Note: The `rtrv-measopts` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-measopts` command, see the `rtrv-measopts` command description in the *Commands Manual*.

   If the Measurements Platform is not enabled, perform the “Configuring the Measurements Platform Feature” procedure in the Database *Administration Manual - System Management* to enabled the Measurements Platform.

4. Enable the MTP MAP Screening feature with the `enable-ctrl-feat` command specifying the part number for the MTP MAP Screening feature and the feature access key.

   Enter this command.

   `enable-ctrl-feat:partnum=893013501:fak=<MTP MAP Screening feature access key>`

   Note: A temporary feature access key cannot be specified to enable this feature.

   Note: The values for the feature access key (the `fak` parameter) are provided by Tekelec. If you do not have the feature access key for the Enhanced GSM MAP Screening feature, contact your Tekelec Sales Representative or Account Representative.

   When the `enable-ctrl-feat` command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

5. Turn the MTP MAP Screening feature on or off with the `chg-ctrl-feat` command specifying the part number for the Enhanced GSM MAP Screening feature and either the `status=on` or `status=off` parameter.

   To turn the MTP MAP Screening feature on, enter this command.

   `chg-ctrl-feat:partnum=893013501:status=on`

   To turn the MTP MAP Screening feature off, enter this command.

   `chg-ctrl-feat:partnum=893013501:status=off`

When the `chg-ctrl-feat` command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
CHG-CTRL-FEAT: MASP B - COMPLTD
```

6. Verify the changes by entering the `rtrv-ctrl-feat`command with the MTP MAP Screening feature part number.

   Enter this command.

   `rtrv-ctrl-feat:partnum=893013501`

   The following is an example of the possible output if the feature was turned on in step 5.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
MTP MAP Screening         893013501  on      ----

The following features have been temporarily enabled:

Feature Name              Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

   The following is an example of the possible output if the feature was turned off in step 5.

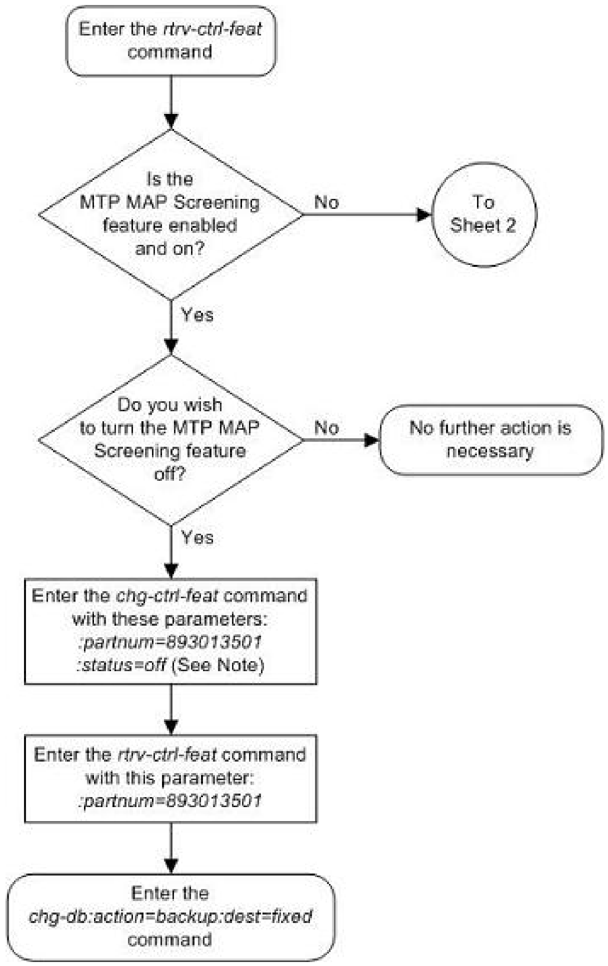
```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
MTP MAP Screening         893013501  off     ----

The following features have been temporarily enabled:

Feature Name              Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

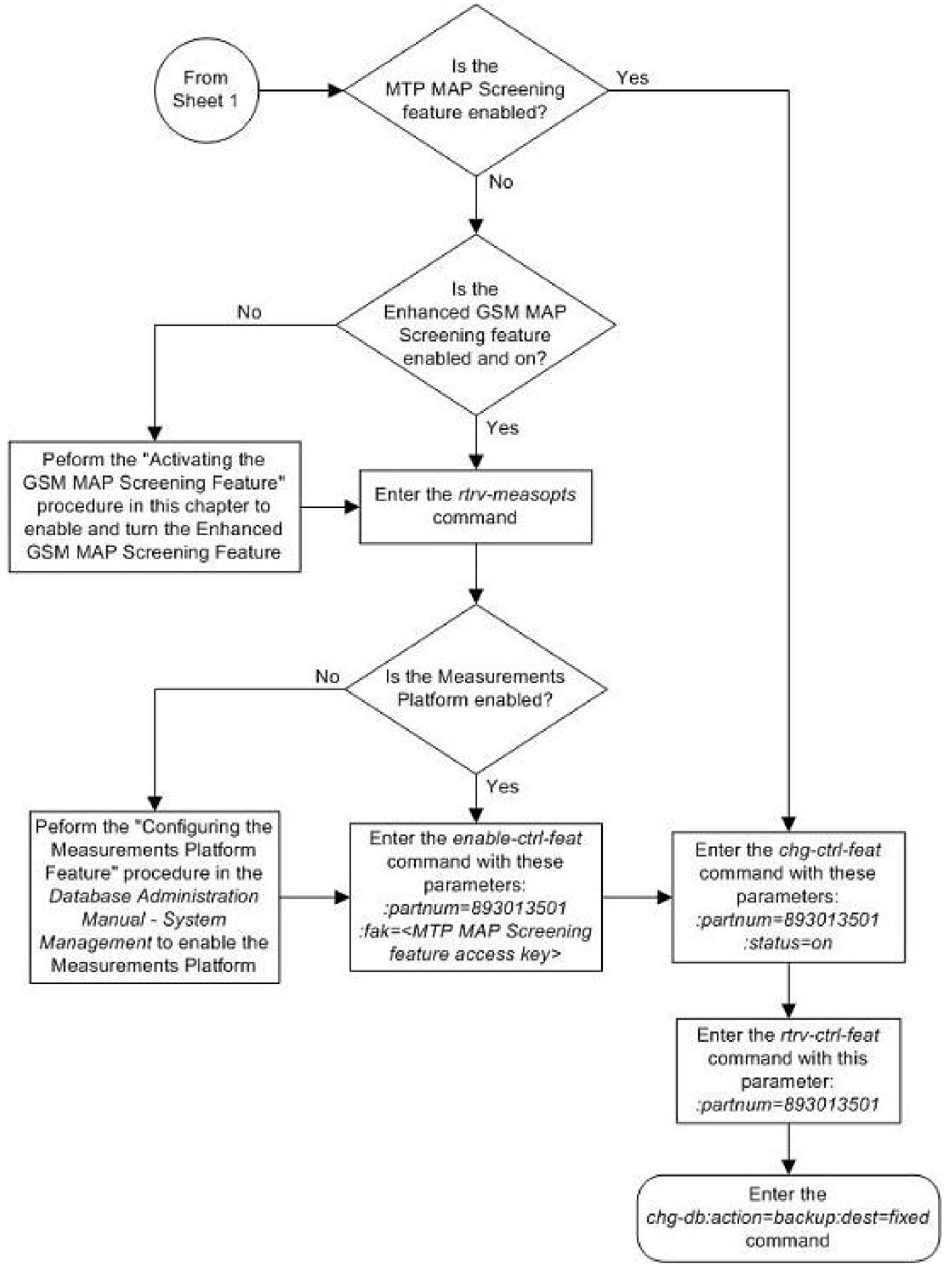
7. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED): MASP A - Backup starts on active MASP.
BACKUP (FIXED): MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED): MASP A - Backup starts on standby MASP.
BACKUP (FIXED): MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 48: Configuring the MTP MAP Screening Feature


Enter the rtrv-ctrl-feat command
Is the MTP MAP Screening feature enabled and on?
No
To Sheet 2
Yes
Do you wish to turn the MTP MAP Screening feature off?
No
No further action is necessary
Yes
Enter the chg-ctrl-feat command with these parameters:
:partnum=893013501
:status=off (See Note)
Enter the rtrv-ctrl-feat command with this parameter:
:partnum=893013501
Enter the chg-db:action=backup:dest=fixed command



Configuring a Linkset for the GSM MAP Screening Feature

This procedure is used to configure SS7 linksets for the GSM MAP Screening feature using the `gsmscrn` parameter of either the `ent-ls` or `chg-ls` command.

The `gsmscrn` parameter specifies whether or not GSM MAP screening is applied to messages arriving on the linkset. This parameter can be applied to all linksets, but this parameter can be specified for linksets with ANSI adjacent point codes only if the Enhanced GSM MAP Screening feature is enabled and on. The values for this parameter are `on` (GSM MAP screening is applied to the linkset) or `off` (GSM MAP screening is not applied to the linkset). GSM MAP screening is used to screen GSM MAP messages to control which external entities can request information about a GSM subscriber and the specific information these entities can request before allowing the GSM MAP message to pass through to the HLR.

Before the `gsmscrn` parameter can be specified for a specific linkset, the GSM MAP screening feature must be enabled and on. The status of the GSM MAP Screening feature, and if applicable the Enhanced GSM MAP screening feature, is shown in the `rtrv-ctrl-feat` command output with the entries `GSM Map Screening (GMS)` (for the GSM MAP Screening feature) and `Enhanced GMS (EGMS)` (for the Enhanced GSM MAP Screening feature). Perform the *Activating the GSM MAP Screening Feature* on page 297 procedure to enable and turn on either of these features as required.

The value of the `gsmscrn` parameter is only displayed in the `rtrv-ls` command output when a specific linkset is being displayed with the `rtrv-ls:lsn=<linkset name>` command.

To configure a linkset for the GSM MAP Screening feature, the `ent-ls` or `chg-ls` commands uses these mandatory parameters in addition to the `gsmscrn` parameter.

`:lsn` – The name of the linkset. The linkset name can contain up to 10 characters, with the first character being a letter.
`:apc/apca/apci/apcn/apcn24` – Adjacent point code – the point code identifying the node that is next to the EAGLE 5 ISS. This parameter is only mandatory for the `ent-ls` command.

Note: See Chapter 2, Configuring Destination Tables in the Database *Administration Manual* - SS7 for a definition of the point code types that are used on the EAGLE 5 ISS and for a definition of the different formats that can be used for ITU national point codes.

Note: The EAGLE 5 ISS can contain a 14-bit ITU-N point code (`apcn`) or a 24-bit ITU-N point code (`apcn24`), but not both at the same time.

`:lst` – The linkset type of the specified linkset This parameter is only mandatory for the `ent-ls` command.

The `ent-ls` and `chg-ls` commands contain other optional parameters that can be used to configure a linkset. These parameters are not shown here because they are not necessary for configuring a linkset for the GSM MAP Screening feature. These parameters are explained in more detail in the Adding an SS7 Linkset procedure or in the Changing an SS7 Linkset procedure in the Database *Administration Manual* - SS7 , or in the `ent-ls` and `chg-ls` command descriptions in the *Commands Manual*.

The EAGLE 5 ISS can contain 1024 linksets, with a maximum of 255 of these linksets being gateway linksets. A gateway linkset is a linkset that contains routes to a different network.

This examples used in this procedure are based on the examples shown in *Table 23: GSM MAP Screening Linkset Configuration Table* on page 314.

Table 23: GSM MAP Screening Linkset Configuration Table

Linkset Names	Linkset APC	LST	GSMSCRN
New Linksets Being Added			

Linkset Names	Linkset APC	LST	GSMSCRN
lsn5	10685	a	on
lsi7	3-150-4	a	on
Existing Linkset Being Changed			
lsn4	N/A	N/A	on

The linkset to be added cannot be in the database. This can be verified in step 1 of this procedure.

Canceling the RTRV-LS and RTRV-DSTN Commands

Because the `rtrv-ls` and `rtrv-dstn` commands used in this procedure can output information for a long period of time, the `rtrv-ls` and `rtrv-dstn` commands can be canceled and the output to the terminal stopped. There are three ways that the `rtrv-ls` and `rtrv-dstn` commands can be canceled.

- Press the `F9` function key on the keyboard at the terminal where the `rtrv-ls` or `rtrv-dstn` commands were entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rtrv-ls` or `rtrv-dstn` commands were entered.
- Enter the `canc-cmd:trm=<xx>`, where `<xx>` is the terminal where the `rtrv-ls` or `rtrv-dstn` commands were entered, from another terminal other that the terminal where the `rtrv-ls` or `rtrv-dstn` commands were entered. To enter the `canc-cmd:trm=<xx>` command, the terminal must allow Security Administration commands to be entered from it and the user must be allowed to enter Security Administration commands. The terminal's permissions can be verified with the `rtrv-secu-trm` command. The user's permissions can be verified with the `rtrv-user` or `rtrv-secu-user` commands.

For more information about the `canc-cmd` command, go to the *Commands Manual*.

1. Display the current linkset configuration using the `rtrv-ls` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0

                                L3T SLT              GWS GWS GWS
LSN          APCA   (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsa1         240-020-000   scr1  1   1   yes a   1    off off off no    off
lsa2         240-030-000   scr2  1   2   no  c   3    on  on  on  yes   off
lsa3         240-040-000   scr3  1   3   yes c   5    off off off yes   off
ls04         001-002-003   scr2  1   1   no  a   4    on  off on  yes   off

                                L3T SLT              GWS GWS GWS
LSN          APCA   (X25)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
ls6          244-010-004   scr4  1   4   no  a   6    off off off ---   off
ls7          244-012-005   scr5  1   5   no  c   3    on  on  on  ---   off
ls8          244-012-006   scr6  1   6   no  c   8    off off off ---   off

                                L3T SLT              GWS GWS GWS
LSN          APCI   (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsi1         1-111-1       scr1  1   1   yes a   1    off off off ---   ---
lsi2         1-111-2       scr2  1   2   no  c   3    on  on  on  ---   ---
```

```
lsi3         1-111-3       scr3  1   3   yes c   5    off off off ---   ---

                                 L3T SLT                  GWS GWS GWS
LSN          APCN   (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsn1         11111         scr1  1   1   yes a   1    on  off off ---   off
lsn2         11112         scr2  1   2   no  c   3    on  on  on  ---   off
lsn3         11113         scr3  1   3   yes c   5    on  off off ---   off
lsn5         10685         scr1  1   3   yes a   4    on  off off ---   off

Link set table is ( 13 of 1024)  1% full
```

2. Display the point code and capability point code of the EAGLE 5 ISS by using the `rtrv-sid` command.

   Note: If the APC of an existing linkset is not being changed, skip steps 2, 3, and 4, and go to step 5.

   This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
PCA              PCI              PCN            CLLI            PCTYPE
001-001-001      3-150-4          13482          rlghncxa03w     OTHER
               s-3-150-4        s-13482
CPCA
002-002-002       002-002-003       002-002-004      002-002-005
002-002-006       002-002-007       002-002-008      002-002-009
004-002-001       004-003-003       144-212-003
CPCA (LNP)
005-005-002      005-005-004      005-005-005
CPCI
1-001-1           1-001-2           1-001-3          1-001-4
CPCN
02091             02092             02094             02097
02191             02192             11177
```

   If you wish to use ITU-I or ITU-N spare point codes with GSMMAP Screening, and the `rtrv-sid` output does not show any ITU-I or ITU-N spare point codes, add ITU-I and ITU-N spare point codes, as necessary, to the self identification of the EAGLE 5 ISS by performing the "Changing the Self-Identification of the EAGLE 5 ISS" procedure in the Database *Administration Manual - SS7*.

3. Display the point codes in the destination point code table by using the `rtrv-dstn` command with the linkset's adjacent point code.

   For this example, enter these commands.

   `rtrv-dstn:dpci=3-150-4`

   This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
DPCI          CLLI        BEI ELEI  ALIASA       ALIASN/N24    DOMAIN
3-150-4       lsi7clli    yes ---   -----------  -----------    SS7

             SPC           NCAI
             -----------   ----
```

   `rtrv-dstn:dpcn=10685`

   This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
DPCN          CLLI        BEI ELEI  ALIASA       ALIASI        DOMAIN
10685         lsn5clli    yes ---   -----------  -------        SS7
```

```
            SPC           NCAI
            -----------  ----
```

If the point code specified in the `rtrv-dstn` command in this step is not in the database, the following message is displayed.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
DPCA          CLLI        BEI ELEI  ALIASI       ALIASN/N24    DOMAIN

No destinations meeting the requested criteria were found

Destination table is (28 of 2000) 1% full
```

If a linkset is being added to the database, or the adjacent point code of the linkset is being changed, and the adjacent point code is not shown in the `rtrv-dstn` command output, go to the "Adding a Destination Point Code" procedure in the Database *Administration Manual* - SS7 and add the adjacent point code to the destination point code table.

Note: An ANSI point code can be used as the APC of a linkset for GSMMAP Screening only if the Enhanced GSMMAP Screening feature is enabled and on.

4. The adjacent point code of the linkset cannot be the DPC of any exception route.

   Note: If the adjacent point code was added in step 3, skip step 4 and go to step 5.

   Verify that the adjacent point code of the new linkset is not the DPC of any exception route by entering the `rtrv-rtx` command with the `dpc/dpca/dpci/dpcn/dpcn24` parameter. The `dpc/dpca/dpci/dpcn/ dpcn24` parameter value is the adjacent point code value that will be specified for the new linkset. For this example, enter this command.

   `rtrv-rtx:dpci=3-150-4`

   This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
    DPCI          RTX-CRITERIA              LSN        RC    APC
    3-150-4       OPCI
                  4-050-1                   lsi2       20    1-111-2
 DESTINATION ENTRIES ALLOCATED:   2000
     FULL DPC(s):                   13
     EXCEPTION DPC(s):               5
     NETWORK DPC(s):                 0
     CLUSTER DPC(s):                 1
     TOTAL DPC(s):                  19
     CAPACITY (% FULL):              1%
 ALIASES ALLOCATED:              12000
     ALIASES USED:                   0
     CAPACITY (% FULL):              0%
 X-LIST ENTRIES ALLOCATED:         500
```

   If the adjacent point code of the linkset is not the DPC of a route exception table entry, no entries are displayed in the `rtrv-rtx` output, but a summary of the point code quanties is displayed, as shown in the following output example.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
    DESTINATION ENTRIES ALLOCATED:   2000
        FULL DPC(s):                   15
        EXCEPTION DPC(s):               5
        NETWORK DPC(s):                 0
        CLUSTER DPC(s):                 1
        TOTAL DPC(s):                  21
        CAPACITY (% FULL):              1%
    ALIASES ALLOCATED:              12000
```

```
         ALIASES USED:                 0
         CAPACITY (% FULL):            0%
     X-LIST ENTRIES ALLOCATED:       500
```

If the point code specified in this step is shown in the `DPCA/DPCI/DPCN/ DPCN24` columns in this step, the point code value cannot be used as an adjacent point code unless one of two actions are taken:

- Choose another adjacent point code value and repeat steps 2, 3, and 4.
- Remove all the entries displayed in this step by performing the "Removing a Route Exception Entry" procedure in the Database *Administration Manual* - SS7.

5. Verify that the GSM MAP Screening feature is enabled and on by entering the `rtrv-ctrl-feat` command with the part number of the GSM MAP Screening feature.

   Enter this command.

   `rtrv-ctrl-feat:partnum=893013201`

   The following is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name               Partnum    Status   Quantity
GSM Map Screening (GMS)    893013201  on       ----

The following features have been temporarily enabled:

Feature Name               Partnum    Status   Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name               Partnum
Zero entries found.
```

   If the GSM MAP screening feature is not enabled or off, go to the *Activating the GSM MAP Screening Feature* on page 297 procedure to enable and turn on the GSM MAP screening feature.

6. Verify that the Enhanced GSM MAP Screening feature is enabled and on by entering the `rtrv-ctrl-feat` command with the part number of the Enhanced GSM MAP Screening feature.

   Note: If ANSI point codes are not being used, skip step 6 and go to step 7.

   Enter this command.

   `rtrv-ctrl-feat:partnum=893012401`

   The following is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name               Partnum    Status   Quantity
Enhanced GMS (EGMS)        893012401  on       ----

The following features have been temporarily enabled:

Feature Name               Partnum    Status   Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:
```

```
Feature Name                Partnum
Zero entries found.
```

If the Enhanced GSM MAP screening feature is not enabled or off, go to the *Activating the GSM MAP Screening Feature* on page 297 procedure to enable and turn on the Enhanced GSM MAP screening feature.

7. Display the current linkset configuration of the linkset to be changed using the `rtrv-ls` command with the linkset name.

   Note: If no existing linksets are being changed, skip step 7 and go to step 8.

   For this example, enter this command.

   `rtrv-ls:lsn=lsn4`

   This is an example of the possible output.

```
rlghncxa03w 06-10-17 11:43:04 GMT EAGLE5 36.0.0

LSN          APCN   (SS7)  SCRN  SET  SET  BEI  LST  LNKS  ACT  MES  DIS  SLSCI  NIS
lsn4         09786         scr3  1    2    no   a    4     on   off  off  no     on

           CLLI         TFATCABMLQ MTPRSE ASL8 SLSRSB ITUTFR GSMSCRN
           lsn4clli     1          ---    ---  1      on     on

           IPGWAPC MATELSN    IPTPS LSUSEALM SLKUSEALM GTTMODE
           no      ---------- ---   ---      ---       CdPA

                                   L2T           L1               PCR   PCR
           LOC   LINK SLC TYPE     SET   BPS    MODE TSET  ECM    N1    N2
           1205  b    0   LIMDS0   1     56000  ---  ---   BASIC  ---   -----
           1213  b    1   LIMOCU   1     56000  ---  ---   BASIC  ---   -----
           1211  a    2   LIMDS0   1     56000  ---  ---   BASIC  ---   -----
           1207  b    3   LIMV35   1     64000  DCE  OFF   BASIC  ---   -----

Link set table is ( 21 of 1024)  2% full
```

8. Add the new linkset to the database using the `ent-ls` command.

   Note: If you are not adding a new linkset to the database, skip step 8 and go to step 9.

   For this example, enter these commands.

   `ent-ls:lsn=lsn5:apcn=10685:lst=a:gsmscrn=on`

   `ent-ls:lsn=lsi7:apci=3-150-4:lst=a:gsmscrn=on`

   Note: An ANSI point code can be used as the APC of a linkset for GSM MAP Screening only if the Enhanced GSM MAP Screening feature is enabled and on.

   The `apci` parameter value can be either an ITU-I point code or an ITU-I spare point code.

   The `apcn` parameter value can be either an ITU-N point code or an ITU-N spare point code.

   When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 06-10-17 16:23:21 GMT  EAGLE5 36.0.0
Link set table is ( 21 of 1024)  2% full
ENT-LS: MASP A - COMPLTD
```

9. Change the `gsmscrn` parameter value in the existing linkset in the database using the `chg-ls` command.

Note: If you are not changing an existing linkset in the database, skip step 9 and go to step 10.

For this example, enter this command.

`chg-ls:lsn=lsn4:gsmscrn=on`

Note: The `gsmscrn` parameter can be specified for a linkset with an ANSI APC only if the Enhanced GSM MAP Screening feature is enabled and on.

When this commands has successfully completed, this message should appear.

```
rlghncxa03w 06-10-17 16:23:21 GMT  EAGLE5 36.0.0
Link set table is ( 21 of 1024)  2% full
CHG-LS: MASP A - COMPLTD
```

10. Verify the changes using the `rtrv-ls` command specifying the linkset name specified in either steps 8 or 9 with the `lsn` parameter.

For this example, enter these commands.

`rtrv-ls:lsn=lsn4`

This is an example of the possible output.

```
rlghncxa03w 06-10-17 11:43:04 GMT EAGLE5 36.0.0

                                     L3T SLT           GWS GWS GWS
LSN          APCN   (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsn4         09786         scr3  1   2   no  a   4    on  off off no    on

           CLLI         TFATCABMLQ MTPRSE ASL8 SLSRSB ITUTFR GSMSCRN
           lsn4clli     1          ---    ---  1      on     on

           IPGWAPC MATELSN    IPTPS LSUSEALM SLKUSEALM GTTMODE
           no      ---------- ---   ---      ---       CdPA

                                  L2T         L1               PCR  PCR
           LOC   LINK SLC TYPE    SET  BPS    MODE TSET  ECM   N1   N2
           1205  b    0   LIMDS0  1    56000  ---  ---   BASIC ---  -----
           1213  b    1   LIMOCU  1    56000  ---  ---   BASIC ---  -----
           1211  a    2   LIMDS0  1    56000  ---  ---   BASIC ---  -----
           1207  b    3   LIMV35  1    64000  DCE  OFF   BASIC ---  -----

Link set table is ( 21 of 1024)  2% full
```

`rtrv-ls:lsn=lsn5`

This is an example of the possible output.

```
rlghncxa03w 06-10-17 11:43:04 GMT EAGLE5 36.0.0

                                     L3T SLT           GWS GWS GWS
LSN          APCN   (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsn5         10685         none  1   2   no  a   0    off off off no    off

           CLLI         TFATCABMLQ MTPRSE ASL8 SLSRSB ITUTFR GSMSCRN
           lsn5clli     1          ---    ---  1      on     on

           IPGWAPC MATELSN    IPTPS LSUSEALM SLKUSEALM GTTMODE
           no      ---------- ---   ---      ---       CdPA

Link set table is ( 21 of 1024)  2% full
```

`rtrv-ls:lsn=lsi7`

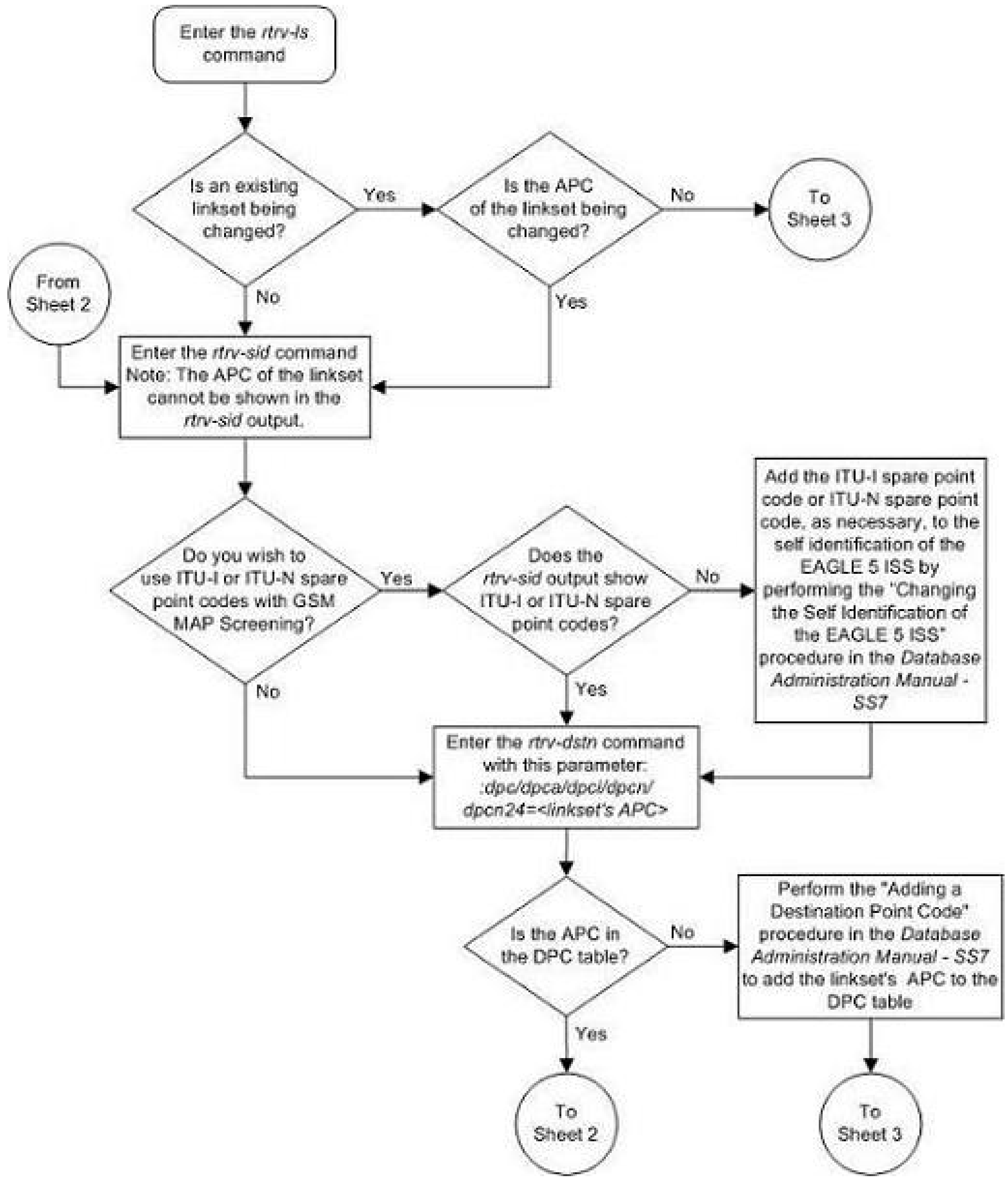
This is an example of the possible output.

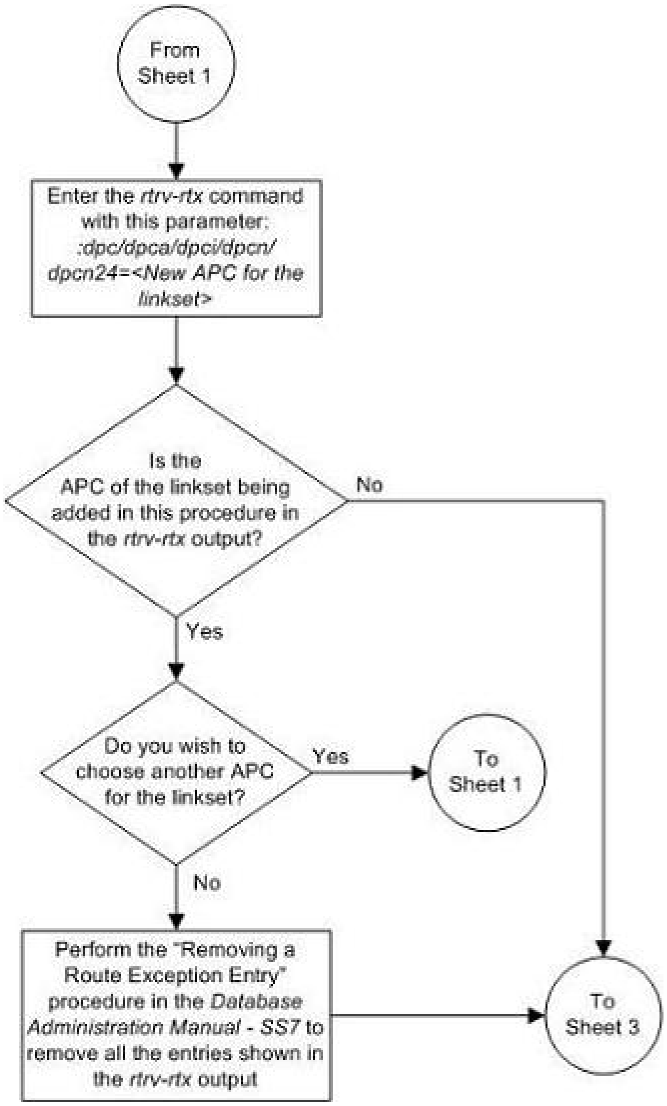
```
rlghncxa03w 06-10-17 11:43:04 GMT EAGLE5 36.0.0

                                     L3T SLT          GWS GWS GWS
LSN          APCI   (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
lsi7         3-150-4       none  1   2   no  a   0    off off off no    off

           CLLI         TFATCABMLQ MTPRSE ASL8 SLSRSB ITUTFR GSMSCRN
           lsn7clli     1          ---    ---  1      off    on

           IPGWAPC MATELSN    IPTPS LSUSEALM SLKUSEALM GTTMODE
           no      ---------- ---   ---      ---       CdPA

Link set table is ( 21 of 1024)  2% full
```

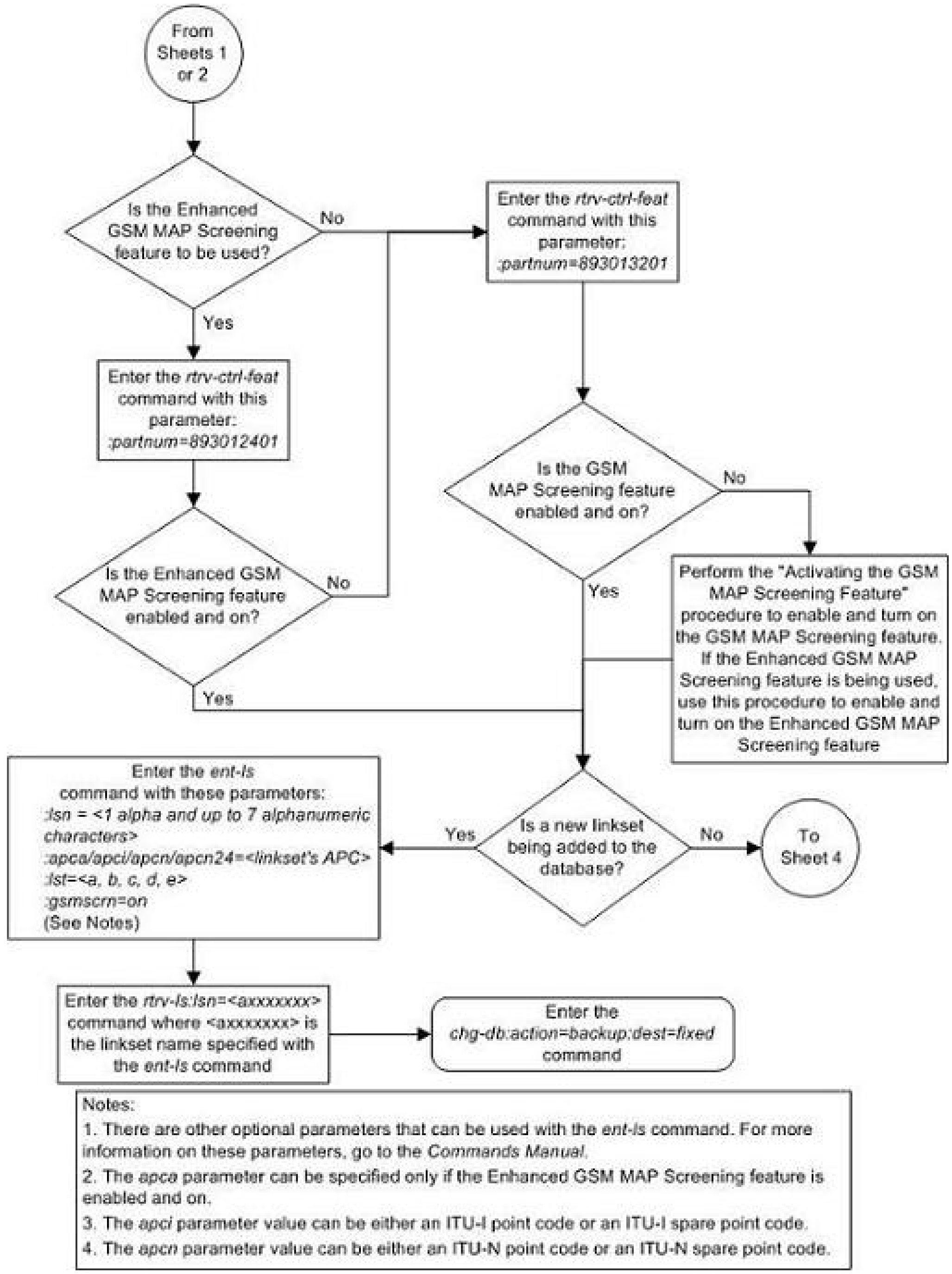
11. Back up the new changes using the `chg-db:action=backup:dest=fixed` command.

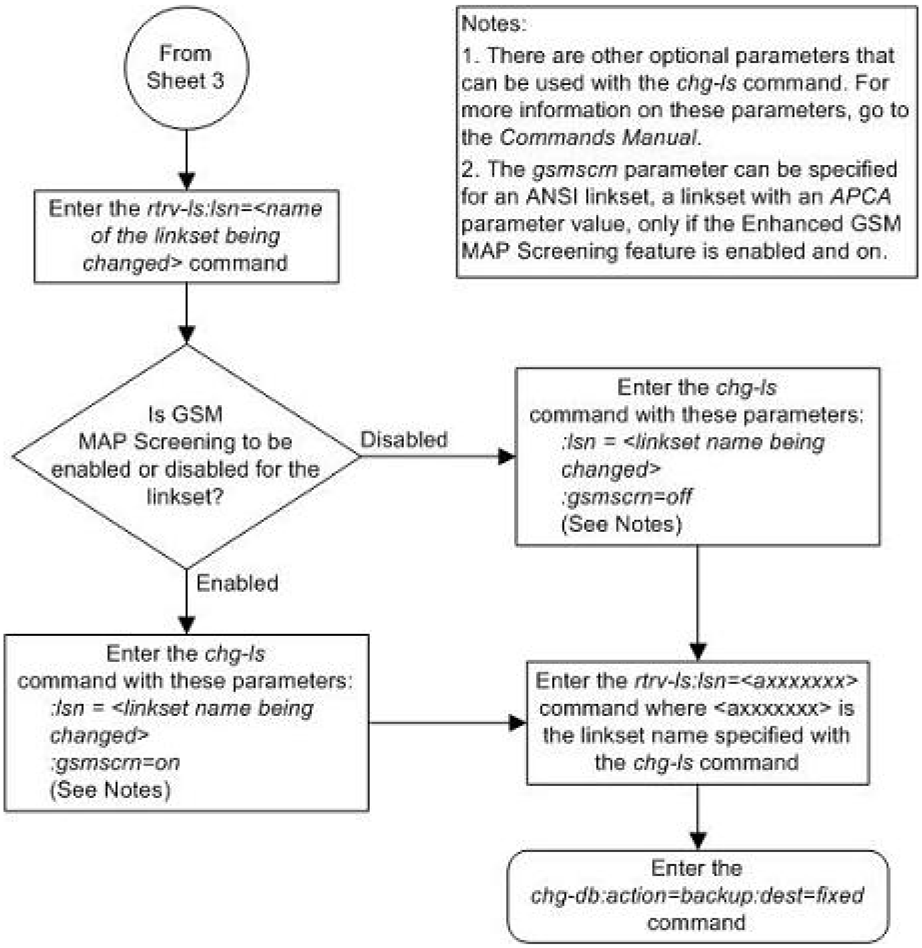
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 49: Configuring a Linkset for the GSM MAP Screening Feature


Enter the rtrv-ls command
Is an existing linkset being changed?
Yes
Is the APC of the linkset being changed?
No
To Sheet 3
From Sheet 2
No
Yes
Enter the rtrv-sid command Note: The APC of the linkset cannot be shown in the rtrv-sid output.
Do you wish to use ITU-I or ITU-N spare point codes with GSM MAP Screening?
Yes
Does the rtrv-sid output show ITU-I or ITU-N spare point codes?
No
Add the ITU-I spare point code or ITU-N spare point code, as necessary, to the self identification of the EAGLE 5 ISS by performing the "Changing the Self Identification of the EAGLE 5 ISS" procedure in the Database Administration Manual - SS7
No
Yes
Enter the rtrv-dstn command with this parameter: :dpc/dpca/dpci/dpcn/dpcn24=<linkset's APC>
Is the APC in the DPC table?
No
Perform the "Adding a Destination Point Code" procedure in the Database Administration Manual - SS7 to add the linkset's APC to the DPC table
Yes
To Sheet 2
To Sheet 3


From Sheet 1
Enter the rtrv-rtx command with this parameter: :dpc/dpca/dpci/dpcn/ dpcn24=<New APC for the linkset>
Is the APC of the linkset being added in this procedure in the rtrv-rtx output?
No
Yes
Do you wish to choose another APC for the linkset?
Yes
To Sheet 1
No
Perform the "Removing a Route Exception Entry" procedure in the Database Administration Manual - SS7 to remove all the entries shown in the rtrv-rtx output
To Sheet 3


From Sheets 1 or 2
Is the Enhanced GSM MAP Screening feature to be used?
No
Yes
Enter the rtrv-ctrl-feat command with this parameter: :partnum=893013201
Enter the rtrv-ctrl-feat command with this parameter: :partnum=893012401
Is the GSM MAP Screening feature enabled and on?
No
Yes
Is the Enhanced GSM MAP Screening feature enabled and on?
No
Yes
Perform the "Activating the GSM MAP Screening Feature" procedure to enable and turn on the GSM MAP Screening feature. If the Enhanced GSM MAP Screening feature is being used, use this procedure to enable and turn on the Enhanced GSM MAP Screening feature
Enter the ent-ls command with these parameters:
:lsn = <1 alpha and up to 7 alphanumeric characters>
:apca/apci/apcn/apcn24=<linkset's APC>
:lst=<a, b, c, d, e>
:gsmscrn=on
(See Notes)
Yes
Is a new linkset being added to the database?
No
To Sheet 4
Enter the rtrv-ls:lsn=<axxxxxxx> command where <axxxxxxx> is the linkset name specified with the ent-ls command
Enter the chg-db:action=backup:dest=fixed command
Notes:
1. There are other optional parameters that can be used with the ent-ls command. For more information on these parameters, go to the Commands Manual.
2. The apca parameter can be specified only if the Enhanced GSM MAP Screening feature is enabled and on.
3. The apci parameter value can be either an ITU-I point code or an ITU-I spare point code.
4. The apcn parameter value can be either an ITU-N point code or an ITU-N spare point code.



Changing the System-Wide GSM MAP Screening Options

The GSM MAP screening options can be changed with the `chg-stpopts` command after the GSM MAP screening feature has been activated. The `chg-stpopts` command contains two options for GSM MAP screening.

- `GSMDFLT` – GSM MAP screening default action – Allows the user to specify the default screening action (PASS or DISCARD) that occurs when a MAP operations code contained in the MSU is not found in the GSM MAP operations code table.
- `gsmdecerr` – GSM MAP screening decode error action – Allows the user to specify the default screening action (PASS or DISCARD) that occurs when an error is detected in the TCAP layer of the MSU being screened. Such errors included an invalid value for a parameter, length error, missing data, and so on.

The GSM MAP Screening feature must be enabled and on before performing this procedure. Use the `rtrv-ctrl-feat` command to verify the status of the GSM MAP Screening feature. If the

GSM MAP Screening feature is not enabled and off, go to the *Activating the GSM MAP Screening Feature* on page 297 procedureto enable and turn on the GSM MAP screening feature.

When the GSM MAP screening feature is activated, the values for the `gsmdflt` and `gsmdecerr` parameters are set to `pass`. The current values for these options can be verified with the `rtrv-stpopts` command.

1. Verify that the GSM MAP Screening feature is enabled and on by entering the `rtrv-ctrl-feat` command with the part number of the GSM MAP Screening feature.

   Enter this command.

   `rtrv-ctrl-feat:partnum=893013201`

   The following is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name               Partnum    Status  Quantity
GSM Map Screening (GMS)    893013201  on      ----

The following features have been temporarily enabled:

Feature Name               Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name               Partnum
Zero entries found.
```

   If the GSMMAP screening feature is not enabled or off, go to the *Activating the GSM MAP Screening Feature* on page 297 procedure to enable and turn on the GSMMAP screening feature.

2. Display the existing values for the `gsmdflt` and `gsmdecerr` parameters by entering the `rtrv-stpopts` command.

   The value for the `gsmdflt` parameter is shown in the `GSMSDFLT` field. The value for the `gsmdecerr` parameter is shown in the `GSMDECERR` field. This is an example of the possible output.

```
rlghncxa03w 06-10-17 16:02:05 GMT  EAGLE5 36.0.0
STP OPTIONS
-----------------------
GSMDFLT             PASS
GSMDECERR           PASS
```

   Note:

   The `rtrv-stpopts` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-stpopts` command, see the `rtrv-stpopts` command description in the *Commands Manual*.

3. Change either the GSM MAP screening default action (`gsmdflt`) and GSM MAP screening decode error action (`gsmdecerr`) options using the `chg-stpopts` command.

   If you wish to change both options, enter the `chg-stpopts` command with the `gsmdflt` and `gsmdecerr` parameters as shown in this example.

   `chg-stpopts:gsmdflt=discard:gsmdecerr=discard`

If you wish to change only one option, enter the `chg-stpopts` command with either the `gsmdflt` and `gsmdecerr` parameters as shown in these examples.

`chg-stpopts:gsmdflt=discard`

`chg-stpopts:gsmdecerr=discard`

For this example, the GSM MAP screening error code action is being changed.

When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-07 00:22:57 GMT  EAGLE5 36.0.0
CHG-STPOPTS: MASP A - COMPLTD
```

4. Verify the changes using the `rtrv-stpopts` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-17 16:02:05 GMT  EAGLE5 36.0.0
STP OPTIONS
-----------------------
GSMDFLT            PASS
GSMDECERR       DISCARD
```

Note:

The `rtrv-stpopts` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-stpopts` command, see the `rtrv-stpopts` command description in the *Commands Manual*.

5. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED): MASP A - Backup starts on active MASP.
BACKUP (FIXED): MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED): MASP A - Backup starts on standby MASP.
BACKUP (FIXED): MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 50: Changing the System-Wide GSM MAP Screening Options

Adding a GSM Subsystem Number Screening Entry

Use this procedure to provision the origination and destination SSNs (subsystem numbers) to be screened with the GSM MAP screening feature using the `ent-gsmssn-scrn` command.

The `ent-gsmssn-scrn` command uses these parameters.

`:ssn` – The subsystem number contained in either the calling party address (CGPA) or the called party address (CDPA) contained in the MAP message.

`:type` – The type of SSN, either an origination SSN (`orig`) or a destination SSN (`dest`). The origination SSN is found in the calling party address of the message. The destination SSN is found in the called party address of the message.

The GSM MAP Screening feature must be enabled and on before performing this procedure. Use the `rtrv-ctrl-feat` command to verify the status of the GSM MAP Screening feature. If the GSM MAP Screening feature is not enabled and off, go to the *Activating the GSM MAP Screening Feature* on page 297 to enable and turn on the GSM MAP screening feature.

You cannot specify an `ssn` and `type` parameter combination that already exists in the database.

This examples used in this procedure are based on the examples shown in *Table 24: Example GSM MAP Screening SSN Configuration Table* on page 329.

Table 24: Example GSM MAP Screening SSN Configuration Table

SSN	TYPE
250	orig
251	dest

1. Verify that the GSM MAP Screening feature is enabled and on by entering the `rtrv-ctrl-feat` command with the part number of the GSM MAP Screening feature.
   Enter this command.
   `rtrv-ctrl-feat:partnum=893013201`
   The following is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
GSM Map Screening (GMS)   893013201  on      ----

The following features have been temporarily enabled:

Feature Name              Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

   If the GSMMAP screening feature is not enabled or off, go to the *Activating the GSM MAP Screening Feature* on page 297 to enable and turn on the GSMMAP screening feature.
2. Display the GSM MAP Screening subsystem numbers in the database using the `rtrv-gsmssn-scrn` command.
   This is an example of the possible output.

```
rlghncxa03w 06-10-07 00:28:31 GMT EAGLE5 36.0.0
SSN  ORIG  DEST
  2   Yes   No
 10   Yes   Yes
GSM Map Screening table is (2 of 512) 1% full
RTRV-GSMSSN-SCRN: MASP A - COMPLTD
```

3. Add the new subsystem numbers to be screened to the database with the `ent-gsmssn-scrn` command.

   For this example, enter these commands:

   `ent-gsmssn-scrn:ssn=250:type=orig`

   `ent-gsmssn-scrn:ssn=251:type=dest`

   When each of these commands has successfully completed, this message appears.

```
rlghncxa03w 06-10-07 00:29:31 GMT EAGLE5 36.0.0
ENT-GSMSSN-SCRN: MASP A - COMPLTD
```

4. Verify the changes using the `rtrv-gsmssn-scrn` command.

   This is an example of the possible output.

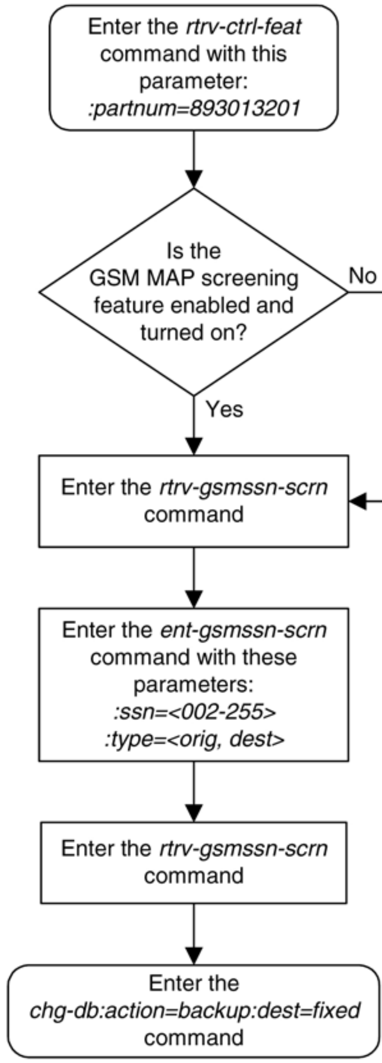
```
rlghncxa03w 06-10-07 00:28:31 GMT EAGLE5 36.0.0
SSN  ORIG  DEST
  2  Yes   No
 10  Yes   Yes
250  Yes   No
251  No    Yes
GSM Map Screening table is (4 of 512) 1% full
RTRV-GSMSSN-SCRN: MASP A - COMPLTD
```

5. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 51: Adding a GSM Subsystem Number Screening Entry



Removing a GSM Subsystem Number Screening Entry

Use this procedure to remove an SSN (subsystem number) from the GSM MAP SSN screening table using the `dlt-gsmssn-scrn` command.

The `dlt-gsmssn-scrn` command uses these parameters.

`:ssn` – The subsystem number contained in either the calling party address (CGPA) or the called party address (CDPA) contained in the MAP message.

`:type` – The type of SSN, either an origination SSN (`orig`) or a destination SSN (`dest`). The origination SSN is found in the calling party address of the message. The destination SSN is found in the called party address of the message.

The `ssn` and `type` parameter combination specified in the `dlt-gsmssn-scrn` command must be in the database.

1. Display the GSM MAP Screening subsystem numbers in the database using the `rtrv-gsmssn-scrn` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-07 00:28:31 GMT EAGLE5 36.0.0
SSN  ORIG  DEST
  2  Yes   No
 10  Yes   Yes
250  Yes   No
251  No    Yes
GSM Map Screening table is (4 of 512) 1% full
RTRV-GSMSSN-SCRN: MASP A - COMPLTD
```

2. Remove the subsystem number from the database with the `dlt-gsmssn-scrn` command.

   For this example, enter this command.

   `dlt-gsmssn-scrn:ssn=010:type=orig`

   `dlt-gsmssn-scrn:ssn=251:type=dest`

   When each of these commands has successfully completed, this message appears.

```
rlghncxa03w 06-10-07 00:29:31 GMT EAGLE5 36.0.0
DLT-GSMSSN-SCRN: MASP A - COMPLTD
```

3. Verify the changes using the `rtrv-gsmssn-scrn` command.

   This is an example of the possible output.

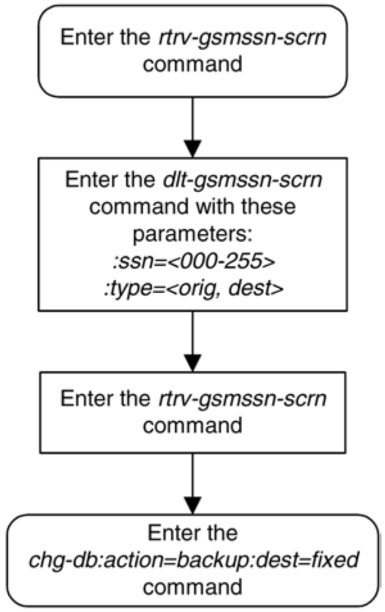
```
rlghncxa03w 06-10-07 00:28:31 GMT EAGLE5 36.0.0
SSN  ORIG  DEST
  2  Yes   No
 10  No    Yes
250  Yes   No
GSM Map Screening table is (3 of 512) 1% full
RTRV-GSMSSN-SCRN: MASP A - COMPLTD
```

4. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 52: Removing a GSM Subsystem Number Screening Entry



Adding a GSM MAP Screening Operation Code

Use this procedure to provision the concerned GSM MAP screening operation codes and the default screening action for the operation code in the database using the `ent-gsms-opcode` command. This procedure allows the user to provision a list of all operation codes that the EAGLE 5 ISS uses in performing GSM screening.

The `ent-gsms-opcode` command uses these parameters.

`:opcode` – The MAP operation code. This parameter refers to the actual decimal value of the MAP operation codes from the TCAP layer of GSM MAP messages.

`:opname` – The name of operation code. This parameter lets the user give a meaningful name to the MAP operation code (`opcode`) entered. This name is then used by subsequent commands such as `dlt-/chg-gsms-opcode` and `ent-/chg-/dlt-/rtrv-gsmmap-scrn`.

`:dfltact` – The default screening action. This parameter lets the user define a default screening action for the MAP operation code (`opcode`) entered. The default screening action is used when a matching CGPA (calling party) address is not found in the GSM MAP screening table or when a CGPA address is found but does not have the correct `npv` and `naiv` parameters as defined by the `ent-gsmmap-scrn` command. One of these actions can be assigned.

- `pass` – Route the message as normal to the destination.
- `discard` – The MSU is to be discarded.
- `atierr` – An ATI (Any Time Interrogation) reject message is generated. This option is only valid for ATI MAP operation codes.
- `route` – Route the message as normal to the original destination node.

- forward – Route the original message to the forward node. The original message is not sent to the original node. If, however, the forwarded node is not available for routing then the MSU is routed to the original node.
- duplicate – Route the message as normal to the original destination and route a copy of the original message to the duplicate node.
- dupdisc – Duplicate and discard – Route the original message to the duplicate node. The original message is not sent to the original node.

:pc/pca/pci/pcn/pcn24 – The ANSI point code (pc/pca), ITU-I point code or ITU-I spare point code (pci), 14-bit ITU-N point code or 14-bit ITU-N spare point code (pcn), or 24-bit ITU-N point code (pcn24) of the node that the MSU is routed to by the forward, duplicate, or dupdisc screening actions. The EAGLE 5 ISS can contain 14-bit ITU-N point codes or 24-bit ITU-N point codes, but not both. To specify the pc/pca parameters, the Enhanced GSM MAP Screening feature must be enabled and on.

:ssn – The subsystem number of the node that the MSU is routed to by the forward, duplicate, or dupdisc screening actions. The values for this parameter are 2 to 255, or the value none. The default value for this parameter is none.

:force – The mated application override. Is the GSM MAP screening operation code to be entered without a mated application in the database (yes or no)?

:mapset – The MAP set ID, shown in the rtrv-map command. This parameter can be specified only if the Flexible GTT Load Sharing feature is enabled. The status of the Flexible GTT Load Sharing feature is shown in the rtrv-ctrl-feat output. To enable the Flexible GTT Load Sharing feature, perform the “Activating the Flexible GTT Load Sharing Feature” procedure in the Database *Administration Manual* - Global Title Translation .

If the Flexible GTT Load Sharing feature is not enabled:

- The mapset parameter cannot be used.
- The pc/pca/pci/pcn/pcn24 and ssn values must be shown in the rtrv-map output, or else the force=yes parameter must be specified.

If the Flexible GTT Load Sharing feature is enabled:

- The mapset parameter can be specified only for GSM OPCODE entries that contain point code and subsystem entries. The dfltact parameter value for these GSM OPCODE entries can be either forward, duplicate, or dupdisc.
- If the dfltact parameter value for the GSM OPCODE entry will be forward, duplicate, or dupdisc, and the pc/pca/pci/pcn/pcn24 and ssn parameters will be specified for the GSM OPCODE entry, the mapset parameter must be specified.
- The force=yes parameter can be used only if the MAP set assigned to the GSM OPCODE entry is the default MAP set.
- If the MAP set assigned to the GSM OPCODE entry is a MAP set other than the default MAP set, the force=yes parameter cannot be used. The point code and subsystem contained in the GSM OPCODE entry must be in the MAP set assigned to the GSM OPCODE entry.
- If the default MAP set is assigned to the GSM OPCODE entry and the force=yes parameter is not specified, the point code and subsystem contained in the GSM OPCODE entry must be in the default MAP set.

:ri - The routing indicator parameter. This parameter specifies whether a subsequent global title translation is required. This parameter has two values.

- gt - subsequent global title translation is required.
- ssn - subsequent global title translation is not required. This is the default value for the ri parameter.

:tt - the translation type that will be assigned to the GSM OPCODE entry. The values for this parameter are 0 to 255, or the value none which specifies that no translation type will be assigned to the GSM OPCODE entry.

The GSM MAP Screening feature must be enabled and on before performing this procedure. Use the rtrv-ctrl-feat command to verify the status of the GSM MAP Screening feature. If the GSM MAP Screening feature is not enabled and off, go to the *Activating the GSM MAP Screening Feature* on page 297 to enable and turn on the GSM MAP screening feature.

The opcode parameter value must be a number between 0 and 255 or an asterisk (*). The opcode=* parameter can be specified only if the Enhanced GSM MAP Screening feature is enabled and on. Use the rtrv-ctrl-feat command to verify the status of the Enhanced GSM MAP Screening feature. If the Enhanced GSM MAP Screening feature is not enabled or off, go to the *Activating the GSM MAP Screening Feature* on page 297 to enable and turn on the Enhanced GSM MAP screening feature.

The opname parameter value must be no more than 8 alphanumeric characters.

The word none cannot be used as a value for the opname parameter.

The dfltact=atierr parameter cannot be specified unless the value of the operation code (opcode) referenced by the opname parameter value is 71. The atierr option is only valid for ATI MAP operation codes; opcode=71 signifies an ATI MAP operation code.

The value specified for the opcode parameter cannot already exist in the GSM MAP operation code table.

The value specified for the opname parameter cannot already be used in the GSM MAP operation code table.

The pc/pca/pci/pcn/pcn24 and ssn values must be shown in the rtrv-map output, or else the force=yes parameter must be specified. If the pc/pca/pci/pcn/pcn24 and ssn values are not shown in the rtrv-map output, and a new mated application is to be added, perform one of the “Provisioning a Mated Application” procedures in the Database *Administration Manual -* Global Title Translation and add the required mated application with the pc/pca/pci/pcn/pcn24 and ssn values:

The force=yes parameter can be specified only with the pc/pca/pci/pcn/pcn24 and ssn parameters.

The dfltact=forward, dfltact=duplicate, or dfltact=dupdisc parameters can be specified only with the pc/pca/pci/pcn/pcn24 and ssn parameters. If the pc/pca/pci/pcn/pcn24 and ssn parameters are specified, the dfltact=forward, dfltact=duplicate, or dfltact=dupdisc parameters must be specified.

The pc/pca/pci/pcn/pcn24 and ssn parameters must be specified together.

The pc/pca/pci/pcn/pcn24 parameter values must be the DPC of a route and a proxy point code cannot be assigned to the point code. The pc/pca parameter value must be a full point code. The pc/pca parameter value can be a member of a cluster point code when that cluster point code is the DPC of a route. This can be verified with the rtrv-rte command. If the `pc/pca/pci/pcn/pcn24` value is not shown in the `rtrv-rte` as the DPC of a route, go to the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual* - SS7 and add a new route containing the `pc/pca/pci/pcn/pcn24` value. To verify whether or not a proxy point code is assigned to the `pc/pca/pci/pcn/pcn24` value, enter the `rtrv-dstn` command with the point code value. If a proxy point code is assigned to the point code, choose another point code.

This examples used in this procedure are based on the examples shown in *Table 25: Example GSM MAP Screening Operation Code Configuration Table* on page 336.

Table 25: Example GSM MAP Screening Operation Code Configuration Table

OPCODE	OPNAME	DFLTACT	PC/PCA/PCI/ PCN/PCN24	SSN	MAPSET
100	pass100	pass	N/A	N/A	N/A
150	discard1	discard	N/A	N/A	N/A
71	ati	atierr	N/A	N/A	N/A
25	route25	route	N/A	N/A	N/A
139	fwd139	forward	3-159-7	128	dflt
187	dup187	duplicate	11519	79	10
93	dd93	dupdisc	5-25-3	200	20
36	for1	forward	002-002-002	10	25
*	star	pass	N/A	N/A	N/A

1. Verify that the GSM MAP Screening feature is enabled and on by entering the `rtrv-ctrl-feat` command with the part number of the GSM MAP Screening feature.
   Enter this command.
   `rtrv-ctrl-feat:partnum=893013201`
   The following is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
GSM Map Screening (GMS)   893013201  on      ----

The following features have been temporarily enabled:

Feature Name              Partnum    Status  Quantity     Trial Period Left
```

```
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

If the GSMMAP screening feature is not enabled or off, go to the *Activating the GSM MAP Screening Feature* on page 297 to enable and turn on the GSMMAP screening feature.

Note: If the `opcode=*` or the `pc/pca` parameters are not being used in this procedure, skip step 2, and go to step 3.

2. Verify that the Enhanced GSM MAP Screening feature is enabled and on by entering the `rtrv-ctrl-feat` command with the part number of the Enhanced GSM MAP Screening feature.

   Enter this command.

   `rtrv-ctrl-feat:partnum=893012401`

   The following is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
Enhanced GMS (EGMS)       893012401  on      ----

The following features have been temporarily enabled:

Feature Name              Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

   If the Enhanced GSMMAP screening feature is not enabled or off, go to the *Activating the GSM MAP Screening Feature* on page 297 to enable and turn on the Enhanced GSMMAP screening feature.

3. Display the GSM MAP screening operation codes in the database using the `rtrv-gsms-opcode` command.

   This is an example of the possible output.

```
rlghncxa03w 08-09-10 11:43:04 GMT EAGLE5 39.2.0

OPCODE  OPNAME    DFLTACT    PCA           SSN    RI   TT

OPCODE  OPNAME    DFLTACT    PCI           SSN    RI   TT

OPCODE  OPNAME    DFLTACT    PCN           SSN    RI   TT

OPCODE  OPNAME    DFLTACT    PCN24         SSN    RI   TT

OPCODE  OPNAME    DFLTACT
 22     sri       disc
 50     pass50    pass
```

```
GSMMS OPCODE Table (2 of 257) is 1% full
```

If the Flexible GTTLoad Sharing feature is enabled, the `MAPSET` field is shown in the `rtrv-gsms-opcode` output. This is an example of the possible output

```
rlghncxa03w 08-09-10 11:43:04 GMT EAGLE5 39.2.0

OPCODE  OPNAME    DFLTACT    PCA          SSN   MAPSET RI  TT

OPCODE  OPNAME    DFLTACT    PCI          SSN   MAPSET RI  TT

OPCODE  OPNAME    DFLTACT    PCN          SSN   MAPSET RI  TT

OPCODE  OPNAME    DFLTACT    PCN24        SSN   MAPSET RI  TT

OPCODE  OPNAME    DFLTACT
 22     sri       disc
 50     pass50    pass

GSMMS OPCODE Table (2 of 257) is 1% full
```

4. Perform one of these actions.

- If the `dfltact` parameter value will be either `pass`, `discard`, `route`, or `atierr`, skip steps 4 through 8, and continue the procedure with step 9.
- If the `dfltact` parameter value will be either `forward`, `duplicate`, or `dupdisc`, perform one of these actions.
  - To use a point code and a MAP set from the mated application table, and MAP sets are not shown in the `rtrv-gsms-opcode` output in step 3, the Flexible GTT Load Sharing Feature must be enabled. Perform the "Activating the Flexible GTT Load Sharing Feature" procedure in the Database *Administration Manual* - Global Title Translation and enable the Flexible GTT Load Sharing feature. After enabling the Flexible GTT Load Sharing feature, skip steps 5 and 6 and continue the procedure with step 7.
  - To use a point code and a MAP set from the mated application table, and MAP sets are shown in the `rtrv-gsms-opcode` output in step 3, skip steps 5 and 6 and continue the procedure with step 7.
  - To use a point code in the mated application table, but without using a MAP set, and MAP sets are not shown in the `rtrv-gsms-opcode` output in step 3, skip steps 5 and 6 and continue the procedure with step 7.
  - To use a point code that is not in the mated application table, the `force=yes` parameter must be specified with the `ent-gsms-opcode` command. A proxy point code cannot be assigned to this point code. If the Flexible GTT Load Sharing feature is enabled, the `force=yes` parameter can be used only if the default MAP set is assigned to the GSM OPCODE entry. Continue the procedure with step 5.

5. Display the destination point codes in the database by entering the `rtrv-dstn` command. This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 37.5.0

   DPCA          CLLI        BEI ELEI  ALIASI       ALIASN         DOMAIN
   001-207-000   ----------- no  ---   -------      -----------    SS7
   001-001-001   ----------- no  ---   -------      -----------    SS7
   001-001-002   ----------- no  ---   -------      -----------    SS7
   001-005-000   ----------- no  ---   -------      -----------    SS7
   001-007-000   ----------- no  ---   -------      -----------    SS7
```

```
   008-012-003   ----------- no  ---   -------      -----------    SS7
   003-002-004   ----------- no  ---   -------      -----------    SS7
   009-002-003   ----------- no  ---   -------      -----------    SS7
   010-020-005   ----------- no  ---   -------      -----------    SS7

   DPCI          CLLI        BEI ELEI  ALIASI       ALIASN         DOMAIN
   1-207-0       ----------- no  ---   -------      -----------    SS7
   0-015-0       ----------- no  ---   -------      -----------    SS7
   0-017-0       ----------- no  ---   -------      -----------    SS7
   1-011-1       ----------- no  ---   -------      -----------    SS7
   1-011-2       ----------- no  ---   -------      -----------    SS7

   DPCN          CLLI        BEI ELEI   ALIASA          ALIASI        DOMAIN

   DPCN24        CLLI        BEI ELEI   ALIASA          ALIASI        DOMAIN

Destination table is (14 of 2000) 1% full
Alias table is (0 of 12000) 0% full
PPC table is (1 of 20) 5% full
```

If the required point code is not shown in the `rtrv-dstn` output, perform the "Adding a Destination Point Code" procedure in the *Database Administration Manual - SS7* to add the required point code. A proxy point code cannot be assigned to the point code.

After the new point code has been added, skip steps 6 through 8 and perform the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual - SS7* and add the required route to the database. After the route has been added, continue the procedure with step 9.

6. Display the point code that will be assigned to the mated application by using the `rtrv-dstn` command and specifying the point code. For this example, enter this command.

   `rtrv-dstn:dpca=010-020-005`

   This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 37.5.0

   DPCA          CLLI        BEI ELEI  ALIASI       ALIASN         DOMAIN
   010-020-005   ----------- no  ---   -------      -----------    SS7

   PPC           NCAI           PRX
   009-002-003   ----           no

Destination table is (14 of 2000) 1% full
Alias table is (0 of 12000) 0% full
PPC table is (1 of 20) 5% full
```

   If the adjacent point code is not shown in the `rtrv-dstn` command output, the following output is displayed.

```
DPCA          CLLI        BEI ELEI  ALIASI       ALIASN/N24    DOMAIN

No destinations meeting the requested criteria were found

Destination table is (14 of 2000) 1% full
Alias table is (0 of 12000) 0% full
PPC table is (1 of 20) 5% full
```

   A proxy point code (a point code value is shown in the PPC column) cannot be assigned to the point code. If a proxy point code is shown in this step, choose another point code from the `rtrv-dstn` output in the previous step and repeat this step.

If the point code is not shown in the `rtrv-dstn` output, perform the “Adding a Destination Point Code” procedure in the Database *Administration Manual* - SS7 and add the adjacent point code to the destination point code table.

After the new point code has been added, skip steps 7 and 8 and perform the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual* - SS7 and add the required route to the database. After the route has been added, continue the procedure with step 9.

7. The point code and subsystem number being assigned to the GSM OPCODE must be in the mated application table.

Enter the `rtrv-map` command with the `pc/pca/pci/pcn/pcn24` and `ssn` values that will be specified with the `ent-gsms-opcode` command in step 9.

If the Flexible GTT Load Sharing feature is not enabled, for this example, enter these commands.

`rtrv-map:pci=3-159-7:ssn=128`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)

PCI          Mate PCI     SSN RC MULT SRM MRC GRP NAME SSO
3-159-7                   128 10  SOL --- --- GRP01    OFF
```

`rtrv-map:pcn=11519:ssn=79`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)

PCN          Mate PCN     SSN RC MULT SRM MRC GRP NAME SSO
11519                      79 10  SOL --- --- GRP01    ON
```

`rtrv-map:pci=5-25-3:ssn=200`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)

PCI          Mate PCI     SSN RC MULT SRM MRC GRP NAME SSO
5-25-3                    200 10  SOL --- --- GRP01    ON
```

`rtrv-map:pca=002-002-002:ssn=10`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0
E2452 Cmd Rej: Remote point code does not exist in MAP table
```

If the Flexible GTTLoad Sharing feature is enabled:

- The `mapset` parameter must be specified with the `ent-gsms-opcode` command in step 9.

- The point code and subsystem contained in the GSM OPCODE entry must be in the MAP set assigned to the GSM OPCODE entry.

For this example, enter these commands.

`rtrv-map:pci=3-159-7:ssn=128`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)

PCI          Mate PCI     SSN RC MULT SRM MRC GRP NAME SSO
MAPSET ID=DFLT
3-159-7                   128 10  SOL --- --- GRP01    OFF
```

`rtrv-map:pcn=11519:ssn=79`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)

PCN          Mate PCN     SSN RC MULT SRM MRC GRP NAME SSO
MAPSET ID=10
11519                      79 10  SOL --- --- GRP01    ON
```

`rtrv-map:pci=5-25-3:ssn=200`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)

PCI          Mate PCI     SSN RC MULT SRM MRC GRP NAME SSO
MAPSET ID=20
5-25-3                    200 10  SOL --- --- GRP01    ON
```

`rtrv-map:pca=002-002-002:ssn=10`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0
E2452 Cmd Rej: Remote point code does not exist in MAP table
```

If the point code and subsystem number is not shown in the `rtrv-map` output, perform one of the “Provisioning a Mated Application” procedures in the Database *Administration Manual* - Global Title Translation and add the required point code and subsystem number to the mated application table.

8. The point code specified with the `ent-gsms-opcode` command must be the DPC of a route.

   If the point code specified with the `ent-gsms-opcode` command is an ANSI point code, the point code can be a member of a cluster point code when that cluster point code is the DPC of a route.

   Enter the `rtrv-rte` command with the `dpc` parameter specifying the point code to be used with the `ent-gsms-opcode` command to verify whether or not the point code is the DPC of a route. For this example, enter these commands.

```
rtrv-rte:dpci=3-159-7
```

This is an example of the possible output.

```
rlghncxa03w 06-10-07 11:43:04 GMT  EAGLE5 36.0.0
DPCI        ALIASN/N24       ALIASA      LSN        RC    APC
3-159-7     12111            240-111-111 ls100001   10    1-234-5
                                         ls100002   10    1-234-6
                                         ls100003   20    1-234-7
                                         ls100004   30    1-234-1
                                         ls100005   40    1-234-2
                                         ls100006   50    1-234-3
                                             RTX:No  CLLI=idp1
```

```
rtrv-rte:dpcn=11519
```

This is an example of the possible output.

```
rlghncxa03w 06-10-07 11:43:04 GMT  EAGLE5 36.0.0
DPCN              ALIASA         ALIASI  LSN        RC    APC
11519             011-222-111    0-001-1 ls200001   10    11111
                                         ls200002   10    11112
                                         ls200003   20    11113
                                         ls200004   30    11114
                                         ls200005   40    11115
                                         ls200006   50    11116
                                             RTX:No  CLLI=ndp1
```

```
rtrv-rte:dpci=5-25-3
```

This is an example of the possible output.

```
rlghncxa03w 06-10-07 11:43:04 GMT  EAGLE5 36.0.0
DPCI        ALIASN/N24       ALIASA      LSN        RC    APC
5-25-3      07659            240-039-150 ls100001   10    5-25-3
                                         ls100002   10    3-250-6
                                         ls100003   20    7-34-7
                                         ls100004   30    6-98-1
                                         ls100005   40    3-142-2
                                         ls100006   50    1-178-3
                                             RTX:No  CLLI=idp1
```

```
rtrv-rte:dpca=002-002-002
```

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0
DPCA            ALIASI     ALIASN/N24    LSN        RC    APCA
002-002-002 ---------- -------------     lsn1       10    002-002-002
                                             RTX:No  CLLI=-----------
```

If the point code is not shown in the `rtrv-rte` output, or, if the point code is an ANSI point code, the point code is not a member of a cluster point code when that cluster point code is the DPC of a route, go to the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual* - SS7 and add the required route to the database.

9. Add the new GSM MAP screening operation codes to the database with the `ent-gsms-opcode` command.

   For this example, enter these commands:

   ```
   ent-gsms-opcode:opcode=100:opname=pass100:dfltact=pass
   ```

   ```
   ent-gsms-opcode:opcode=150:opname=discard1:dfltact=discard
   ```

`ent-gsms-opcode:opcode=71:opname=ati:dfltact=atierr`

`ent-gsms-opcode:opcode=25:opname=route25:dfltact=route`

`ent-gsms-opcode:opcode=139:opname=fwd139:dfltact=forward :pci=3-159-7:ssn=128:mapset=dflt`

`ent-gsms-opcode:opcode=187:opname=dup187:dfltact=duplicate :pcn=11519:ssn=79:mapset=10`

`ent-gsms-opcode:opcode=93:opname=dd93:dfltact=dupdisc :pci=5-25-3:ssn=200:mapset=20`

`ent-gsms-opcode:opcode=36:opname=for1:dfltact=forward :pca=002-002-002:ssn=10:mapset=25`

`ent-gsms-opcode:opcode=*:opname=star1:dfltact=pass`

When each of these commands has successfully completed, this message appears.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
ENT-GSMS-OPCODE: MASP A - COMPLTD
```

Note: See *Figure 53: Adding a GSM MAP Screening Operation Code* on page 345 (Sheet 7) for the rules that apply to the `ent-gsms-opcode` command.

10. Verify the changes using the `rtrv-gsms-opcode` command and specifying the `opcode` parameter value used in step 9.
For this example, enter these commands.

`rtrv-gsms-opcode:opcode=025`

This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
OPCODE  OPNAME    DFLTACT
 25     route25   route

GSMMS OPCODE Table (11 of 257) is 4% full
```

`rtrv-gsms-opcode:opcode=071`

This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
OPCODE  OPNAME    DFLTACT
 71     ati       atierr

GSMMS OPCODE Table (11 of 257) is 4% full
```

`rtrv-gsms-opcode:opcode=093`

This is an example of the possible output.

```
rlghncxa03w 08-09-10 11:43:04 GMT EAGLE5 39.2.0
OPCODE  OPNAME    DFLTACT    PCI          SSN   MAPSET RI  TT
 93     dd93      dupdc      5-25-3       200   20     ssn -

GSMMS OPCODE Table (11 of 257) is 4% full
```

`rtrv-gsms-opcode:opcode=100`

This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
OPCODE  OPNAME    DFLTACT
 100    pass100   pass

GSMMS OPCODE Table (11 of 257) is 4% full
```

`rtrv-gsms-opcode:opcode=139`

This is an example of the possible output.

```
rlghncxa03w 08-09-10 11:43:04 GMT EAGLE5 39.2.0
OPCODE  OPNAME    DFLTACT    PCI          SSN   MAPSET RI  TT
 139    fwd139    fwd        3-159-7      128   DFLT   ssn -

GSMMS OPCODE Table (11 of 257) is 4% full
```

`rtrv-gsms-opcode:opcode=150`

This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
OPCODE  OPNAME    DFLTACT
 150    discard1  disc

GSMMS OPCODE Table (11 of 257) is 4% full
```

`rtrv-gsms-opcode:opcode=187`

This is an example of the possible output.

```
rlghncxa03w 08-09-10 11:43:04 GMT EAGLE5 39.2.0
OPCODE  OPNAME    DFLTACT    PCN          SSN   MAPSET RI  TT
 187    dup187    dupl       11519        79    10     ssn -

GSMMS OPCODE Table (11 of 257) is 4% full
```

`rtrv-gsms-opcode:opcode=36`

This is an example of the possible output.

```
rlghncxa03w 08-09-10 11:43:04 GMT EAGLE5 39.2.0
OPCODE  OPNAME    DFLTACT    PCA          SSN   MAPSET RI  TT
 36     for1      fwd        002-002-002  10    25     ssn -

GSMMS OPCODE Table (11 of 257) is 4% full
```

`rtrv-gsms-opcode:opcode=*`

This is an example of the possible output.

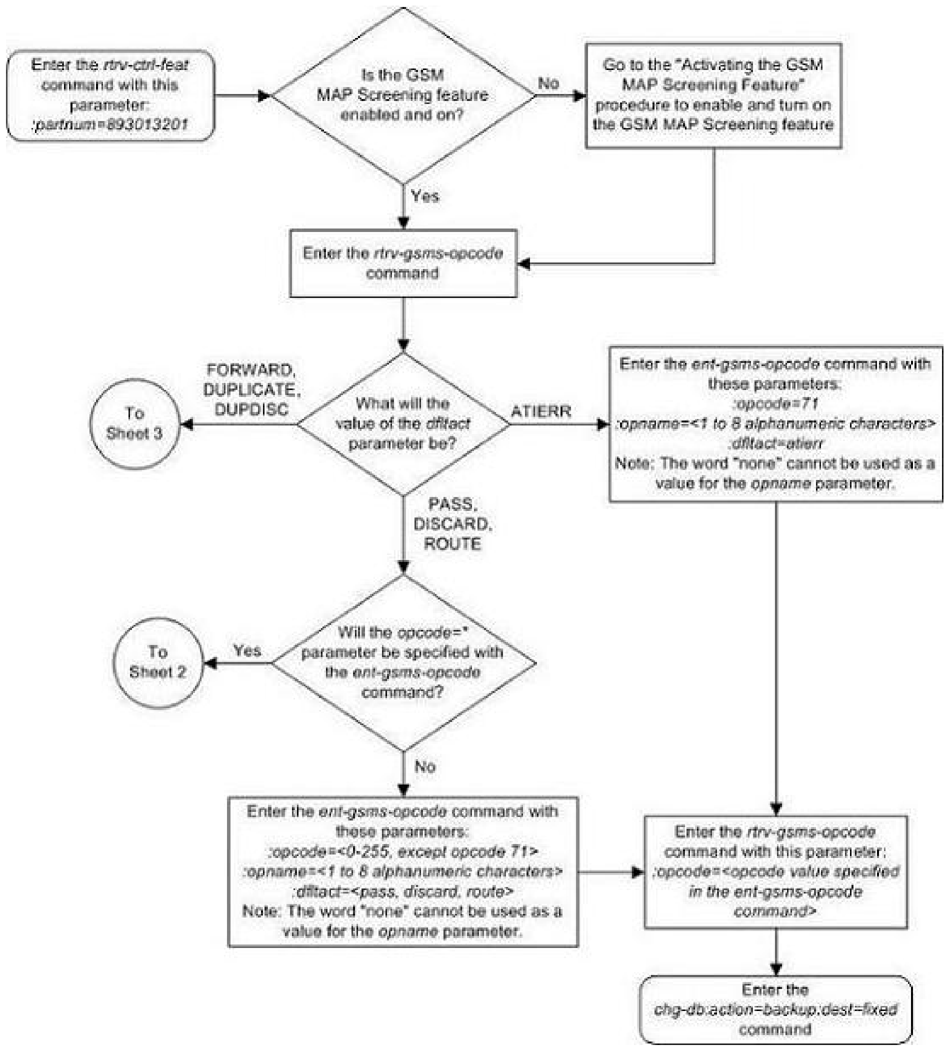
```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
OPCODE  OPNAME    DFLTACT
 *      star      pass

GSMMS OPCODE Table (11 of 257) is 4% full
```

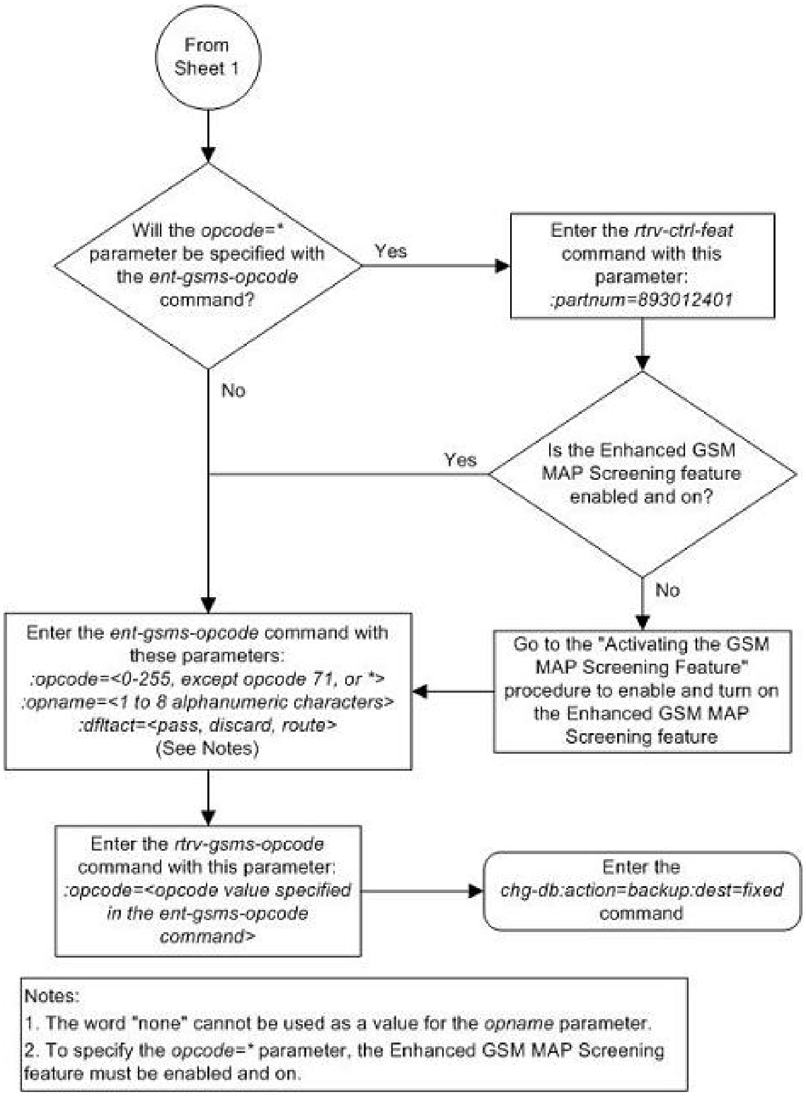
11. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

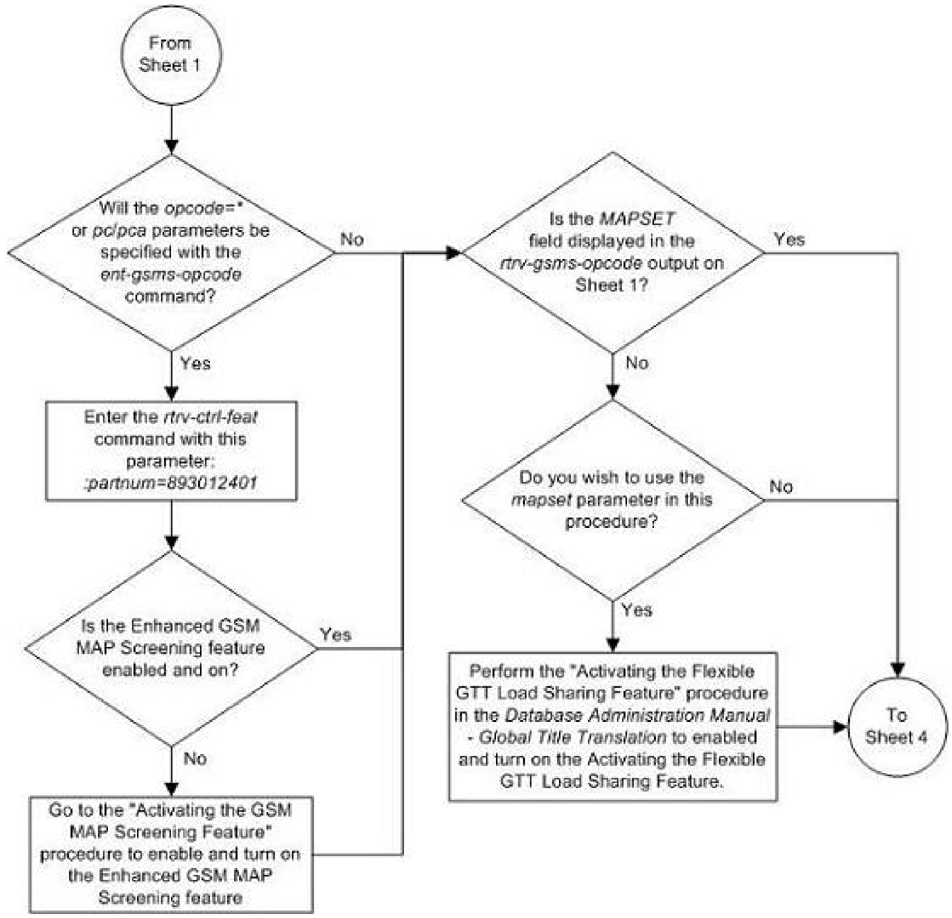
These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

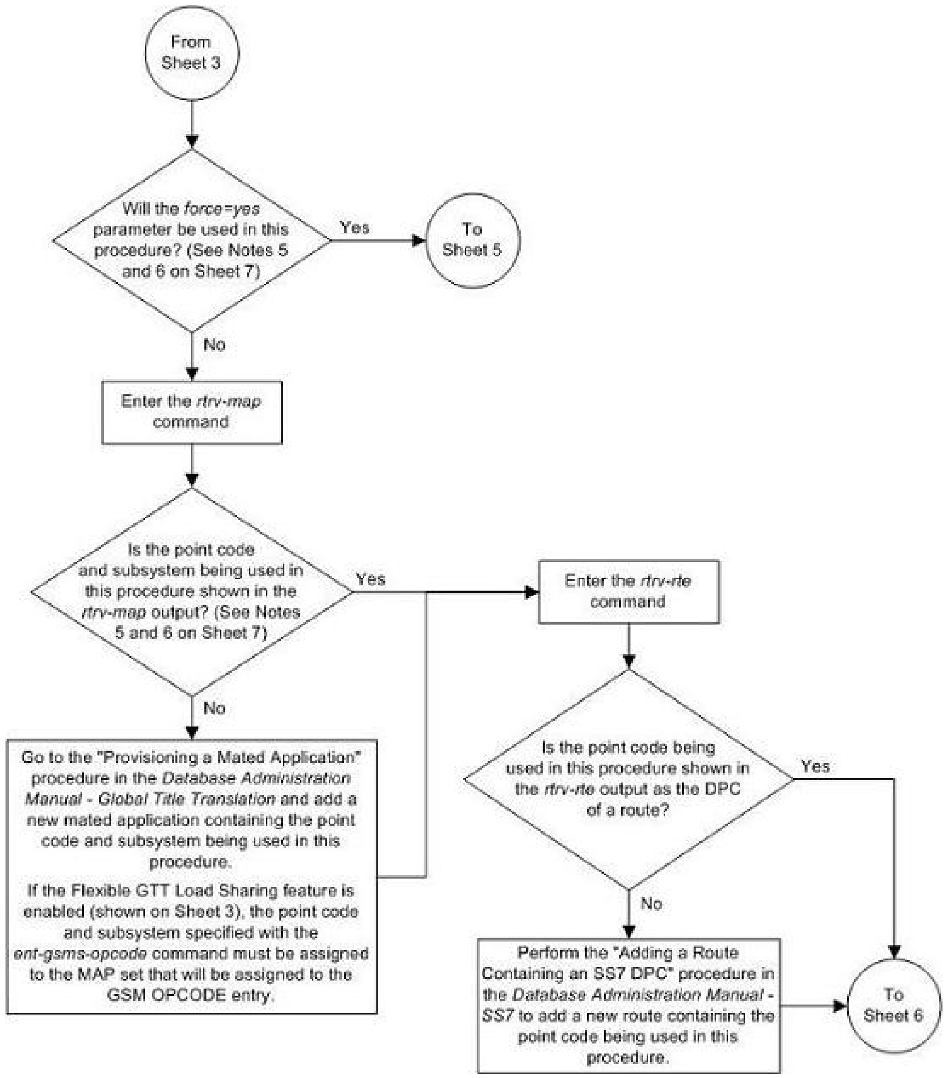
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

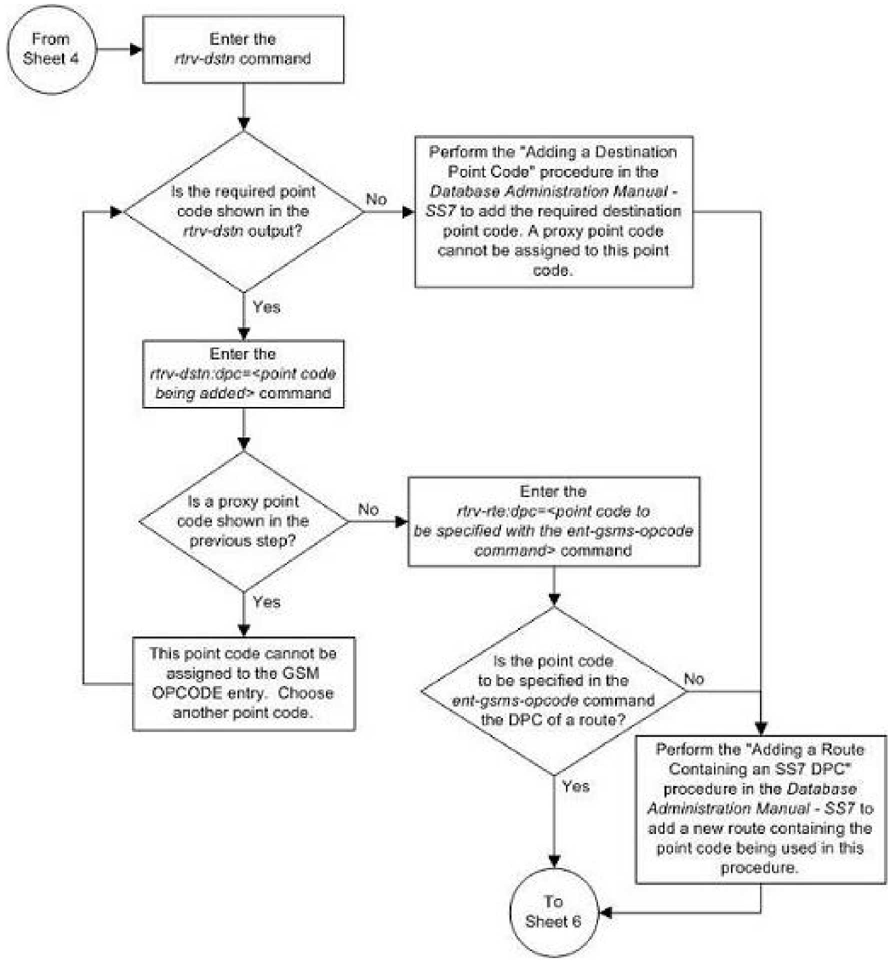
Figure 53: Adding a GSM MAP Screening Operation Code

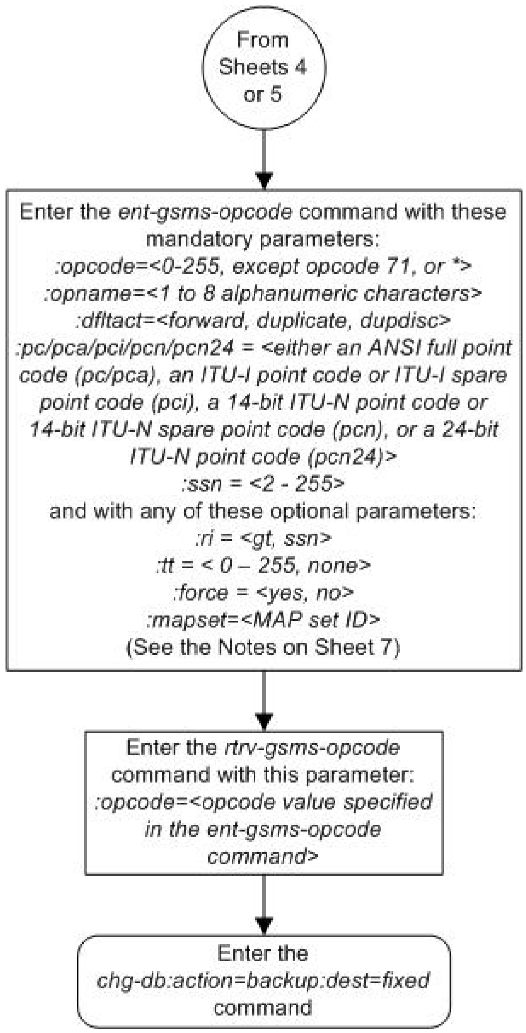



From Sheet 1
Will the opcode=* parameter be specified with the ent-gsms-opcode command?
Yes
No
Enter the rtrv-ctrl-feat command with this parameter: :partnum=893012401
Is the Enhanced GSM MAP Screening feature enabled and on?
Yes
No
Go to the "Activating the GSM MAP Screening Feature" procedure to enable and turn on the Enhanced GSM MAP Screening feature
Enter the ent-gsms-opcode command with these parameters: :opcode=<0-255, except opcode 71, or *> :opname=<1 to 8 alphanumeric characters> :dfltact=<pass, discard, route> (See Notes)
Enter the rtrv-gsms-opcode command with this parameter: :opcode=<opcode value specified in the ent-gsms-opcode command>
Enter the chg-db:action=backup:dest=fixed command
Notes:
1. The word "none" cannot be used as a value for the opname parameter.
2. To specify the opcode=* parameter, the Enhanced GSM MAP Screening feature must be enabled and on.


From Sheet 1
Will the opcode=* or pc/pca parameters be specified with the ent-gsms-opcode command?
No
Yes
Enter the rtrv-ctrl-feat command with this parameter: :partnum=893012401
Is the Enhanced GSM MAP Screening feature enabled and on?
Yes
No
Go to the "Activating the GSM MAP Screening Feature" procedure to enable and turn on the Enhanced GSM MAP Screening feature
Is the MAPSET field displayed in the rtrv-gsms-opcode output on Sheet 1?
Yes
No
Do you wish to use the mapset parameter in this procedure?
No
Yes
Perform the "Activating the Flexible GTT Load Sharing Feature" procedure in the Database Administration Manual - Global Title Translation to enabled and turn on the Activating the Flexible GTT Load Sharing Feature.
To Sheet 4


From Sheet 3
Will the force=yes parameter be used in this procedure? (See Notes 5 and 6 on Sheet 7)
Yes
To Sheet 5
No
Enter the rtrv-map command
Is the point code and subsystem being used in this procedure shown in the rtrv-map output? (See Notes 5 and 6 on Sheet 7)
Yes
Enter the rtrv-rte command
No
Go to the "Provisioning a Mated Application" procedure in the Database Administration Manual - Global Title Translation and add a new mated application containing the point code and subsystem being used in this procedure.
If the Flexible GTT Load Sharing feature is enabled (shown on Sheet 3), the point code and subsystem specified with the ent-gsms-opcode command must be assigned to the MAP set that will be assigned to the GSM OPCODE entry.
Is the point code being used in this procedure shown in the rtrv-rte output as the DPC of a route?
Yes
No
Perform the "Adding a Route Containing an SS7 DPC" procedure in the Database Administration Manual - SS7 to add a new route containing the point code being used in this procedure.
To Sheet 6


From Sheet 4
Enter the rtrv-dstn command
Is the required point code shown in the rtrv-dstn output?
No
Perform the "Adding a Destination Point Code" procedure in the Database Administration Manual - SS7 to add the required destination point code. A proxy point code cannot be assigned to this point code.
Yes
Enter the rtrv-dstn:dpc=<point code being added> command
Is a proxy point code shown in the previous step?
No
Enter the rtrv-rte:dpc=<point code to be specified with the ent-gsms-opcode command> command
Yes
This point code cannot be assigned to the GSM OPCODE entry. Choose another point code.
Is the point code to be specified in the ent-gsms-opcode command the DPC of a route?
No
Perform the "Adding a Route Containing an SS7 DPC" procedure in the Database Administration Manual - SS7 to add a new route containing the point code being used in this procedure.
Yes
To Sheet 6


From Sheets 4 or 5
Enter the ent-gsms-opcode command with these mandatory parameters:
:opcode=<0-255, except opcode 71, or *>
:opname=<1 to 8 alphanumeric characters>
:dfltact=<forward, duplicate, dupdisc>
:pc/pca/pci/pcn/pcn24 = <either an ANSI full point code (pc/pca), an ITU-I point code or ITU-I spare point code (pci), a 14-bit ITU-N point code or 14-bit ITU-N spare point code (pcn), or a 24-bit ITU-N point code (pcn24)>
:ssn = <2 - 255>
and with any of these optional parameters:
:ri = <gt, ssn>
:tt = < 0 – 255, none>
:force = <yes, no>
:mapset=<MAP set ID>
(See the Notes on Sheet 7)
Enter the rtrv-gsms-opcode command with this parameter:
:opcode=<opcode value specified in the ent-gsms-opcode command>
Enter the chg-db:action=backup:dest=fixed command

Notes:

1. The word "none" cannot be used as a value for the *opname* parameter.

2. The *pc/pca/pci/pcn/pcn24* value must be shown in the *rtrv-rte* output on Sheets 4 or 5 as the DPC of a route. The *pc/pca* value must be a full point code value. The *pc/pca* value can be a member of a cluster point code when that cluster point code is the DPC of a route. A proxy point code cannot be assigned to the point code.

3. The EAGLE 5 ISS can contain 14-bit ITU-N point codes or 24-bit ITU-N point codes, but not both.

4. To specify the *opcode=** or *pc/pca* parameters, the Enhanced GSM MAP Screening feature must be enabled and on.

5. If the Flexible GTT Load Sharing feature is not enabled, shown on Sheet 3:

   The *mapset* parameter cannot be used.

   The *pc/pca/pci/pcn/pcn24* and *ssn* values must be shown in the *rtrv-map* output on Sheet 4, otherwise, the *force=yes* parameter must be specified.

6. If the Flexible GTT Load Sharing feature is enabled, shown on Sheet 3:

   The *mapset* parameter must be used.

   The *force=yes* parameter can be used only if the MAP set assigned to the GSM OPCODE entry is the default MAP set.

   If the MAP set assigned to the GSM OPCODE entry is a MAP set other than the default MAP set, the *force=yes* parameter cannot be used. The point code and subsystem contained in the GSM OPCODE entry must be in the MAP set assigned to the GSM OPCODE entry.

   If the default MAP set is assigned to the GSM OPCODE entry and the *force=yes* parameter is not specified, the point code and subsystem contained in the GSM OPCODE entry must be in the default MAP set.

7. If the *ri* or *tt* parameters are not specified, the default values for these parameters are assigned to the GSM OPCODE entry. The default values for these parameters are:

   ri – ssn

   tt – no value is specified. A dash is shown in the *TT* column of the *rtrv-gsms-opcode* output.

8. If the *ri=ssn* parameter is spedified, a numerical value must be specified for the *ssn* parameter.

Removing a GSM MAP Screening Operation Code

Use this procedure to remove GSM MAP screening operation codes and the default screening action for that operation code using the `dlt-gsms-opcode` command.

The `dlt-gsms-opcode` command uses only one parameter, `opname`. The value for the opname parameter is the user-defined name for the operation code shown in the `rtrv-gsms-opcode` command output.

The `opname` value being removed cannot be referenced by any GSM MAP screening entries (shown in the `rtrv-gsmmap-scrn` command output). Use the *Removing a GSM MAP Screening Entry* on page 402 procedure to remove any GSM MAP screening entries that reference the `opname` name value being removed from the database.

1. Display the GSM MAP screening opcodes in the database using the `rtrv-gsms-opcode` command.

This is an example of the possible output.

```
rlghncxa03w 08-09-10 11:43:04 GMT EAGLE5 39.2.0

OPCODE  OPNAME    DFLTACT    PCA          SSN   RI  TT
 36     for1      fwd        002-002-002  10    gt  40

OPCODE  OPNAME    DFLTACT    PCI          SSN   RI  TT
 93     dd93      dupdc      5-25-3       200   ssn 10
 139    fwd139    fwd        3-159-7      128   ssn -

OPCODE  OPNAME    DFLTACT    PCN          SSN   RI  TT
 187    dup187    dupl       11519        79    gt  50

OPCODE  OPNAME    DFLTACT    PCN24        SSN   RI  TT

OPCODE  OPNAME    DFLTACT
 22     sri       disc
 25     route25   route
 50     pass50    pass
 71     ati       atierr
 100    pass100   pass
 150    discard1  disc
 *      star      pass

GSMMS OPCODE Table (11 of 257) is 4% full
```

2. Display the GSM MAP screening entries that reference the `opname` value being removed from the database using the `rtrv-gsmmap-scrn` command specifying the `opname` parameter with the `opname` value being removed from the database. For this example, enter this command.

   `rtrv-gsmmap-scrn:opname=sri`

   This is an example of the possible output if the `rtrv-gsmmap-scrn` output contains no entries that reference the `opname` value being removed.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: sri
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: sri
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR
```

```
GSM Map Screening table is (1500 of 4000) 38% full
```

This is an example of the possible output if the `rtrv-gsmmap-scrn` output contains entries that reference the `opname` value being removed.

`rtrv-gsmmap-scrn:opname=sri`

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: sri
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT  CGSR
919462000000005 1  0   none  pass  sri1

Range CgPA Entries for OPNAME: sri
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR
919461888888888 919461900000000 4  1   all   pass  sri2
919462000000000 919463000000000 *  *   all   disc  sri3

GSM Map Screening table is (1500 of 4000) 38% full
```

If the GSM MAP screening entry in this step contains any CGPA entries, go to the *Removing a GSM MAP Screening Entry* on page 402 procedure to remove the CGPA entries shown in this step.

3. Remove the GSM MAP opname value from the database using the `dlt-gsms-opcode` command.

   For this example, enter this command.

   `dlt-gsms-opcode:opname=sri`

   When this command has successfully completed, this message appears.

```
rlghncxa03w 06-10-07 00:29:31 GMT EAGLE5 36.0.0
DLT-GSMS-OPCODE: MASP A - COMPLTD
```

4. Verify the changes using the `rtrv-gsms-opcode` command with the `opname` parameter value specified in step 3. For this example, enter this command.

   `rtrv-gsms-opcode:opname=sri`

This is an example of the possible output.

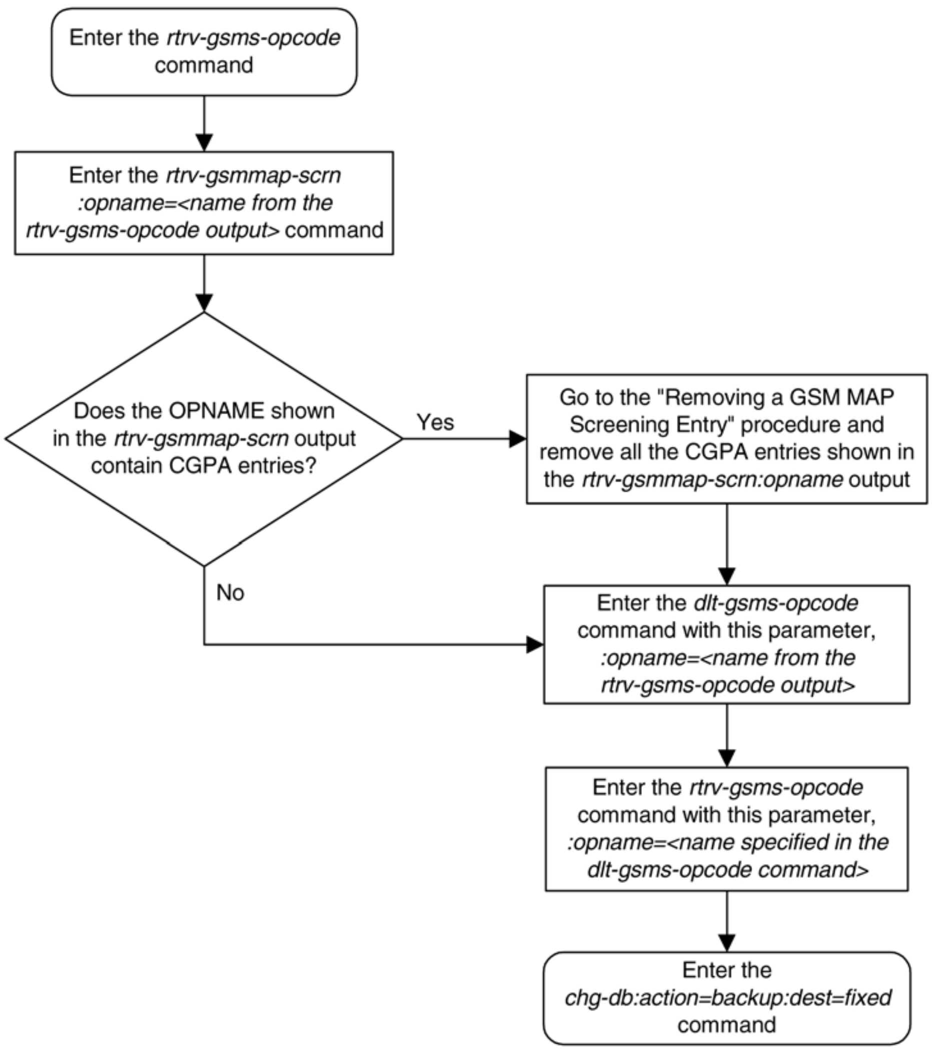
```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
E3892 Cmd Rej: OPNAME does not exist in the database
```

5. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 54: Removing a GSM MAP Screening Operation Code



Changing a GSM MAP Screening Operation Code

Use this procedure to change the attributes of the GSM MAP screening operation codes using the `chg-gsms-opcode` command. The procedure allows you to change the default screening action and the operation-code name for a specific operation code. The `chg-gsms-opcode` command uses these parameters.

`:opname` – The user-defined name for the operation code shown in the `rtrv-gsms-opcode` command output.

`:nopname` – The new user-defined name for the operation code.

`:ndfltact` – The new default screening action.

- `pass` – Route the message as normal to the destination.
- `discard` – The MSU is to be discarded.
- `atierr` – An ATI (Any Time Interrogation) reject message is generated. This option is only valid for ATI MAP operation codes.
- `route` – Route the message as normal to the original destination node.
- `forward` – Route the original message to the forward node. The original message is not sent to the original node. If, however, the forwarded node is not available for routing then the MSU is routed to the original node.
- `duplicate` – Route the message as normal to the original destination and route a copy of the original message to the duplicate node.
- `dupdisc` – Duplicate and discard – Route the original message to the duplicate node. The original message is not sent to the original node.

`:npc/npca/npci/npcn/npcn24` – The new ANSI point code (`npc/npca`), new ITU-I point code or ITU-I spare point code (`npci`), new 14-bit ITU-N point code or 14-bit ITU-N spare point code (`npcn`), or new 24-bit ITU-N point code (`npcn24`) of the node that the MSU is routed to by the `forward`, `duplicate`, or `dupdisc` screening actions. The EAGLE 5 ISS can contain 14-bit ITU-N point codes or 24-bit ITU-N point codes, but not both. The `npc/npca` parameters can be specified only if the Enhanced GSM MAP Screening feature is enabled and on.

`:nssn` – The new subsystem number of the node that the MSU is routed to by the `forward`, `duplicate`, or `dupdisc` screening actions

`:force` – The mated application override. Is the GSM MAP screening operation code to be entered without a mated application in the database (`yes` or `no`)?

`:nmapset` – The new MAP set ID, shown in the `rtrv-map` command. This parameter can be specified only if the Flexible GTT Load Sharing feature is enabled. The status of the Flexible GTT Load Sharing feature is shown in the `rtrv-ctrl-feat` output. To enable the Flexible GTT Load Sharing feature, perform the "Activating the Flexible GTT Load Sharing Feature" procedure in the Database *Administration Manual* - Global Title Translation .

If the Flexible GTT Load Sharing feature is not enabled:

- The `nmapset` parameter cannot be used.
- The `npc/npca/npci/npcn/npcn24` and `nssn` values must be shown in the `rtrv-map` output, or else the `force=yes` parameter must be specified.

If the Flexible GTT Load Sharing feature is enabled:

- If the current dfltact parameter value is either pass, route, discard, or atierr, and the dfltact parameter value is changed to either forward, duplicate, or dupdisc, the GSM OPCODE entry must be assigned to a MAP set with the nmapset=dflt parameter (to assign the GSM OPCODE entry to the default MAP set), or with the nmapset=<numbered MAP set ID> parameter (to assign the GSM OPCODE entry to a MAP set other the default MAP set).
- If the default MAP set will be assigned to the GSM OPCODE entry, the npc/npca/npci/npcn/npcn24 and nssn values must be shown in the default MAP set in the rtrv-map output. If the npc/npca/npci/npcn /npcn24 or nssn values are not shown in the default MAP set in the rtrv-map output, the force=yes parameter must be specified.
- If a MAP set other than the default MAP set will be assigned to the GSM OPCODE entry, the npc/npca/npci/npcn/npcn24 and nssn values must be shown in that MAP set in the rtrv-map output. The force=yes parameter cannot be specified with the chg-gsms-opcode command.
- If the point code and subsystem values are not being changed, the nmapset parameter does not have to be specified unless the MAP set ID assigned to the GSM OPCODE entry is being changed. The new MAP set must contain the point code and subsystem values in the GSM OPCODE entry.

:nri - The new routing indicator parameter. This parameter specifies whether a subsequent global title translation is required. This parameter has two values.

- gt - subsequent global title translation is required.
- ssn - subsequent global title translation is not required.

:ntt - the new translation type that will be assigned to the GSM OPCODE entry. The values for this parameter are 0 to 255, or the value none which removes and existing translation type that is assigned to the GSM OPCODE entry.

The nopname parameter value must be no more than 8 alphanumeric characters.

The reserved word none cannot be used as a value for the nopname parameter.

The ndfltact=atierr parameter cannot be specified unless the value of the operation code (opcode) referenced by the opname parameter value is 71. The atierr option is only valid for ATI MAP operation codes; opcode=71 signifies an ATI MAP operation code.

The npc/npca/npci/npcn/npcn24 and nssn values must be shown in the rtrv-map output, or else the force=yes parameter must be specified. If the npc/npca/npci/npcn/npcn24 and nssn values are not shown in the rtrv-map output, and a new mated application is to be added, perform one of the "Provisioning a Mated Application" procedures in the Database *Administration Manual* - Global Title Translation and add the required mated application with the npc/npca/npci/npcn/npcn24 and nssn values.

The force=yes parameter can be specified only with the npc/npca/npci/ npcn/npcn24 and nssn parameters.

The ndfltact=forward, ndfltact=duplicate, or ndfltact=dupdisc parameters can be specified only with the npc/npca/npci/npcn/npcn24 and nssn parameters. If the npc/npca/npci/npcn/npcn24 and nssn parameters are specified, the ndfltact=forward, ndfltact=duplicate, or ndfltact=dupdisc parameters must be specified.

The npc/npca/npci/npcn/npcn24 and nssn parameters must be specified together.

The `npc/npca/npci/npcn/npcn24` parameter values must be the DPC of a route or a member of a cluster route, and a proxy point code cannot be assigned to the point code. This can be verified with the `rtrv-rte` command. If the `npc/npca/npci/npcn/npcn24` value is not shown in the `rtrv-rte` as the DPC of a route, go to the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual* - SS7 and add a new route containing the `npc/npca/npci/npcn/npcn24` value. To verify whether or not a proxy point code is assigned to the `npc/npca/npci/npcn/npcn24` value, enter the `rtrv-dstn` command with the point code value. If a proxy point code is assigned to the point code, choose another point code.

1. Display the GSM MAP screening operation codes in the database using the `rtrv-gsms-opcode` command.

   If the Flexible GTT Load Sharing feature is not enabled, this is an example of the possible output.

```
rlghncxa03w 08-09-10 11:43:04 GMT EAGLE5 39.2.0

OPCODE  OPNAME    DFLTACT    PCA          SSN  RI  TT
 36     for1      fwd        002-002-002  10   gt  10

OPCODE  OPNAME     DFLTACT   PCI          SSN  RI  TT
 93     dd93       dupdc     5-025-3      200  ssn 40
 139    fwd139     fwd       3-159-7      128  ssn -

OPCODE  OPNAME     DFLTACT   PCN          SSN  RI  TT
 187    dup187     dupl      11519        79   gt  50

OPCODE  OPNAME     DFLTACT   PCN24        SSN

OPCODE  OPNAME    DFLTACT
 22     sri       disc
 25     route25   route
 50     pass50    pass
 71     ati       atierr
 150    discard1  disc
 *      star      pass

GSMMS OPCODE Table (10 of 257) is 4% full
```

   If the Flexible GTT Load Sharing feature is enabled, this is an example of the possible output.

```
rlghncxa03w 08-09-10 11:43:04 GMT EAGLE5 39.2.0

OPCODE  OPNAME    DFLTACT    PCA          SSN   MAPSET RI  TT
 36     for1      fwd        002-002-002  10    25     gt  10

OPCODE  OPNAME     DFLTACT   PCI          SSN   MAPSET RI  TT
 93     dd93       dupdc     5-025-3      200   20     ssn 40
 139    fwd139     fwd       3-159-7      128   DFLT   ssn -

OPCODE  OPNAME     DFLTACT   PCN          SSN   MAPSET RI  TT
 187    dup187     dupl      11519        79    10     gt  50

OPCODE  OPNAME     DFLTACT   PCN24        SSN   MAPSET RI  TT

OPCODE  OPNAME    DFLTACT
 22     sri       disc
 25     route25   route
 50     pass50    pass
 71     ati       atierr
 150    discard1  disc
```

```
 *      star      pass

GSMMS OPCODE Table (10 of 257) is 4% full
```

Note: If the default action parameter value will be changed to either `pass`, `discard`, `route`, or `atierr`, or the `npc/npca/npci/npcn/npcn24` and `nssn` parameters are not to be specified, skip steps 2 through 7, and go to step 8.

Note: If the `npc/npca` parameters are not being used in this procedure, or if the `rtrv-gsms-opcode` output in step 1 shows ANSI point code values (`pc/pca` parameter values) or the `opcode=*` parameter value, skip step 2, and go to step 3.

2. Verify that the Enhanced GSM MAP Screening feature is enabled and on by entering the `rtrv-ctrl-feat` command with the part number of the Enhanced GSM MAP Screening feature.

   Enter this command.

   `rtrv-ctrl-feat:partnum=`893012401

   The following is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
Enhanced GMS (EGMS)       893012401  on      ----

The following features have been temporarily enabled:

Feature Name              Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

   If the Enhanced GSM MAP screening feature is not enabled or off, go to the *Activating the GSM MAP Screening Feature* on page 297 to enable and turn on the Enhanced GSM MAP screening feature.

3. Perform one of these actions.

   - If the `ndfltact` parameter value will be either `pass`, `discard`, `route`, or `atierr`, skip steps 4 through 7, and continue the procedure with step 8.
   - If the point code is not being changed, skip steps 4 through 7, and continue the procedure with step 8. If the point code and subsystem values are not being changed, and the Flexible GTT Load Sharing feature is enabled, the `nmapset` parameter does not have to be specified unless the MAP set ID assigned to the GSM OPCODE entry is being changed. The new MAP set must contain the point code and subsystem values in the GSM OPCODE entry.
   - If the `ndfltact` parameter value will be either `forward`, `duplicate`, or `dupdisc`, perform one of these actions.

     - To use a point code and a MAP set from the mated application table, and MAP sets are not shown in the `rtrv-gsms-opcode` output in step 1, the Flexible GTT Load Sharing Feature must be enabled. Perform the “Activating the Flexible GTT Load Sharing Feature” procedure in the Database *Administration Manual* - Global Title Translation and enable the Flexible GTT Load Sharing feature. After enabling the Flexible GTT Load Sharing feature, skip steps 4 and 5 and continue the procedure with step 6.

- To use a point code and a MAP set from the mated application table, and MAP sets are shown in the `rtrv-gsms-opcode` output in step 1, skip steps 4 and 5 and continue the procedure with step 6.
- To use a point code in the mated application table, but without using a MAP set, and MAP sets are not shown in the `rtrv-gsms-opcode` output in step 1, skip steps 4 and 5 and continue the procedure with step 6.
- To use a point code that is not in the mated application table, the `force=yes` parameter must be specified with the `chg-gsms-opcode` command. A proxy point code cannot be assigned to this point code. If the Flexible GTT Load Sharing feature is enabled, the `force=yes` parameter can be used only if the default MAP set is assigned to the GSM OPCODE entry. Continue the procedure with step 4.

4. Display the destination point codes in the database by entering the `rtrv-dstn` command. This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 37.5.0

   DPCA           CLLI        BEI ELEI  ALIASI       ALIASN         DOMAIN
   001-207-000    ----------- no  ---   -------      -----------    SS7
   001-001-001    ----------- no  ---   -------      -----------    SS7
   001-001-002    ----------- no  ---   -------      -----------    SS7
   001-005-000    ----------- no  ---   -------      -----------    SS7
   001-007-000    ----------- no  ---   -------      -----------    SS7
   008-012-003    ----------- no  ---   -------      -----------    SS7
   003-002-004    ----------- no  ---   -------      -----------    SS7
   009-002-003    ----------- no  ---   -------      -----------    SS7
   010-020-005    ----------- no  ---   -------      -----------    SS7

   DPCI           CLLI        BEI ELEI  ALIASI       ALIASN         DOMAIN
   1-207-0        ----------- no  ---   -------      -----------    SS7
   0-015-0        ----------- no  ---   -------      -----------    SS7
   0-017-0        ----------- no  ---   -------      -----------    SS7
   1-011-1        ----------- no  ---   -------      -----------    SS7
   1-011-2        ----------- no  ---   -------      -----------    SS7

   DPCN           CLLI        BEI ELEI   ALIASA          ALIASI        DOMAIN

   DPCN24         CLLI        BEI ELEI   ALIASA          ALIASI        DOMAIN

Destination table is (14 of 2000) 1% full
Alias table is (0 of 12000) 0% full
PPC table is (1 of 20) 5% full
```

If the required point code is not shown in the `rtrv-dstn` output, perform the "Adding a Destination Point Code" procedure in the *Database Administration Manual - SS7* to add the required point code. A proxy point code cannot be assigned to the point code.

After the new point code has been added, skip steps 5 through 7 and perform the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual* - SS7 and add the required route to the database. After the route has been added, continue the procedure with step 8.

5. Display the point code that will be assigned to the mated application by using the `rtrv-dstn` command and specifying the point code. For this example, enter this command.

`rtrv-dstn:dpca=010-020-005`

This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 37.5.0

   DPCA           CLLI        BEI ELEI  ALIASI       ALIASN         DOMAIN
   010-020-005   ----------- no  ---   -------      -----------    SS7

   PPC            NCAI           PRX
   009-002-003   ----           no

Destination table is (14 of 2000) 1% full
Alias table is (0 of 12000) 0% full
PPC table is (1 of 20) 5% full
```

If the adjacent point code is not shown in the `rtrv-dstn` command output, the following output is displayed.

```
DPCA          CLLI        BEI ELEI  ALIASI       ALIASN/N24    DOMAIN

No destinations meeting the requested criteria were found

Destination table is (14 of 2000) 1% full
Alias table is (0 of 12000) 0% full
PPC table is (1 of 20) 5% full
```

A proxy point code (a point code value is shown in the `PPC` column) cannot be assigned to the point code. If a proxy point code is shown in this step, choose another point code from the `rtrv-dstn` output in the previous step and repeat this step.

If the point code is not shown in the `rtrv-dstn` output, perform the “Adding a Destination Point Code” procedure in the Database *Administration Manual* - SS7 and add the adjacent point code to the destination point code table.

After the new point code has been added, skip steps 6 and 7, and perform the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual* - SS7 and add the required route to the database. After the route has been added, continue the procedure with step 8.

6. The point code and subsystem number being assigned to the GSM operations code must be in the mated application table.

   Enter the `rtrv-map` command with the `npc/npca/npci/npcn/npcn24` and `nssn` values that will be specified with the `chg-gsms-opcode` command in step 8.

   If the Flexible GTT Load Sharing feature is not enabled, for this example, enter these commands.

   For this example, enter this command.

   `rtrv-map:pci=4-038-1:ssn=50`

   This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)
```

```
PCI           Mate PCI     SSN RC MULT SRM MRC GRP NAME SSO
4-038-1                     50 10  SOL --- --- GRP01    ON
```

Note: If the point code and subsystem number is not shown in the `rtrv-map` output, and is not added to the database in one of these procedures, the `force=yes` parameter must be specified with the `chg-gsms-opcode` command in step 5.

If the Flexible GTT Load Sharing feature is enabled and the current `dfltact` parameter value is either `pass`, `route`, `discard`, or `atierr`, and the `dfltact` parameter value is changed to either `forward`, `duplicate`, or `dupdisc`, the GSM OPCODE entry must be assigned to a MAP set with the `nmapset=dflt` parameter (to assign the GSM OPCODE entry to the default MAP set), or with the `nmapset=<numbered MAP set ID>` parameter (to assign the GSM OPCODE entry to a MAP set other the default MAP set).

7. The point code specified with the `chg-gsms-opcode` command must be the DPC of a route.

   If the point code specified with the `chg-gsms-opcode` command is an ANSI point code, the point code can be a member of a cluster point code when that cluster point code is the DPC of a route.

   Enter the `rtrv-rte` command with the `dpc` parameter specifying the point code to be used with the `chg-gsms-opcode` command to verify whether or not the point code is the DPC of a route. For this example, enter these commands.

   `rtrv-rte:dpci=4-038-1`

   This is an example of the possible output.

```
rlghncxa03w 06-10-07 11:43:04 GMT  EAGLE5 36.0.0
DPCI       ALIASN/N24       ALIASA      LSN        RC    APC
4-038-1    12111            240-111-111 ls300001   10    4-038-1
                                        ls300002   10    2-066-7
                                        ls300003   20    5-087-4
                                            RTX:No  CLLI=idp1
```

   If the point code is not shown in the `rtrv-rte` output, if the point code is an ANSI point code, the point code is not a member of a cluster point code when that cluster point code is the DPC of a route, go to the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual* - SS7 and add the required route to the database.

8. Change the attributes of GSM MAP screening operation codes in the database with the `chg-gsms-opcode` command.

   For this example, enter these commands:

   `chg-gsms-opcode:opname=pass100:ndfltact=discard`

   `chg-gsms-opcode:opname=discard1:nopname=pass1:ndfltact=pass`

   `chg-gsms-opcode:opname=sri:nopname=irs`

   `chg-gsms-opcode:opname=fwd139:nopname=fwd1000:npci=4-038-1:nssn=50 :nmapset=18:nri=gt:ntt=60`

   When each of these commands has successfully completed, this message appears.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
```

```
GSM Map Op-Code Table is (8 of 256) 3% full
CHG-GSMS-OPCODE: MASP A - COMPLTD
```

Note: See *Figure 55: Changing a GSM MAP Screening Operation Code* on page 362 (Sheet 7) for the rules that apply to the `chg-gsms-opcode` command.

9. Verify the changes using the `rtrv-gsms-opcode` command with the `opname` parameter value specified in step 8.

   If the `opname` parameter value was changed in step 8, the new `opname` parameter value should be specified with the `rtrv-gsms-opcode` command. For this example, enter these commands.

   `rtrv-gsms-opcode:opname=pass100`

   This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
OPCODE  OPNAME    DFLTACT
100     pass100   discard

GSMMS OPCODE Table (10 of 257) is 4% full
```

   `rtrv-gsms-opcode:opname=pass1`

   This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
OPCODE  OPNAME    DFLTACT
150     pass1     pass

GSMMS OPCODE Table (10 of 257) is 4% full
```

   `rtrv-gsms-opcode:opname=irs`

   This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 36.0.0
OPCODE  OPNAME    DFLTACT
22      irs       disc

GSMMS OPCODE Table (10 of 257) is 4% full
```

   `rtrv-gsms-opcode:opname=fwd1000`

   This is an example of the possible output.

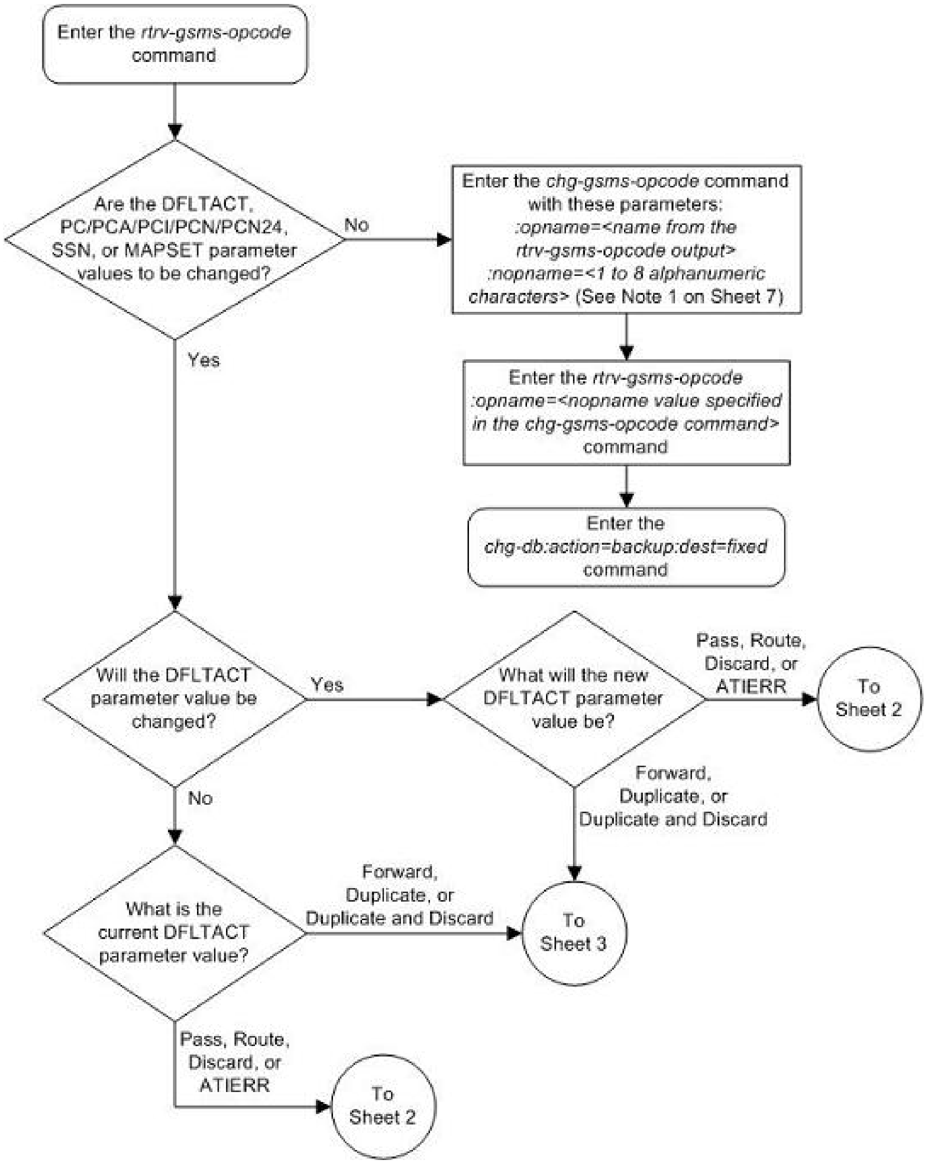
```
rlghncxa03w 08-09-10 11:43:04 GMT EAGLE5 39.2.0
OPCODE  OPNAME    DFLTACT     PCI           SSN    MAPSET RI   TT
139     fwd1000   fwd         4-38-1        50     18     gt   60

GSMMS OPCODE Table (10 of 257) is 4% full
```

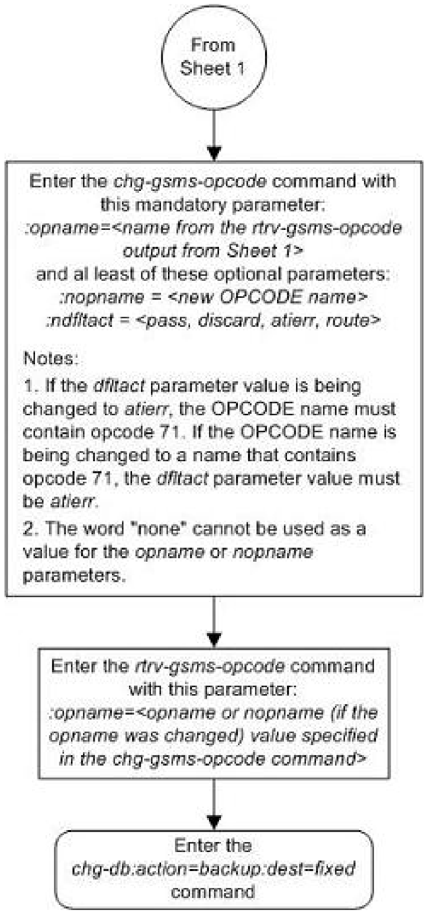
10. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

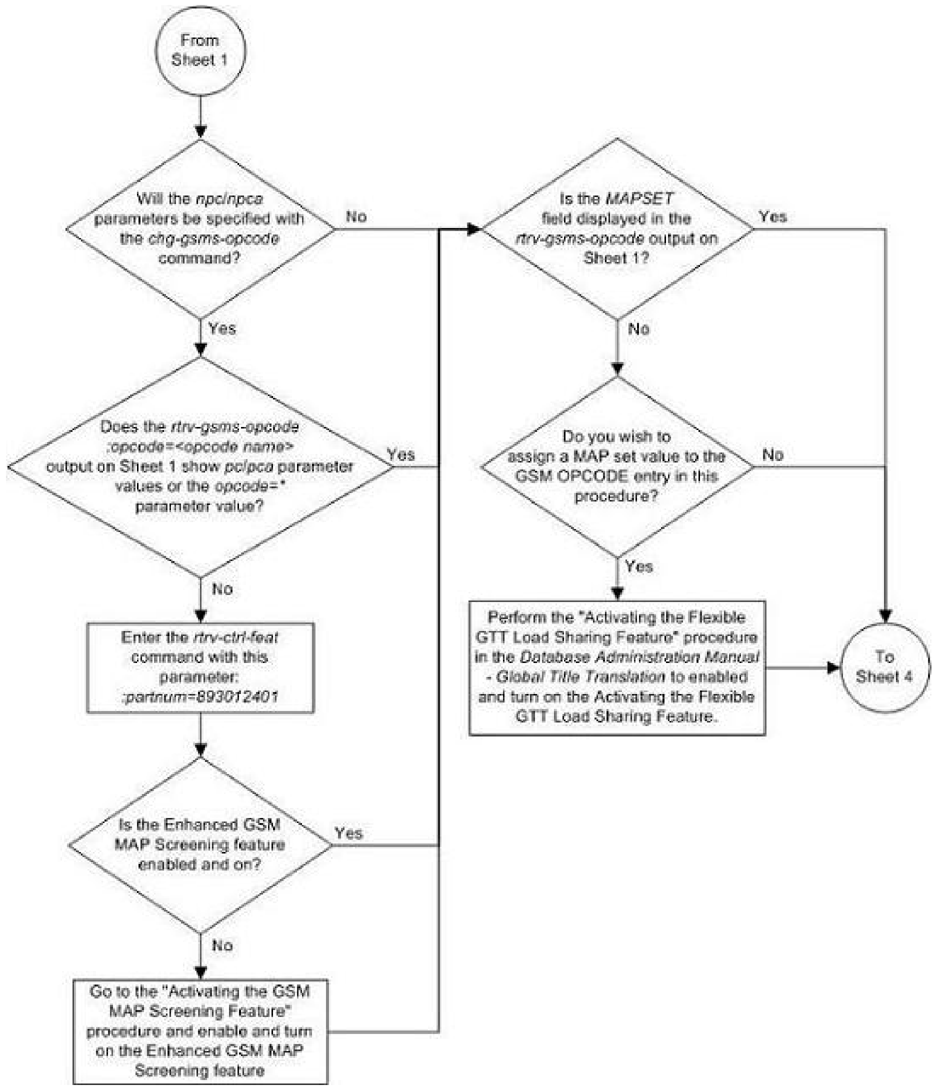
    These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

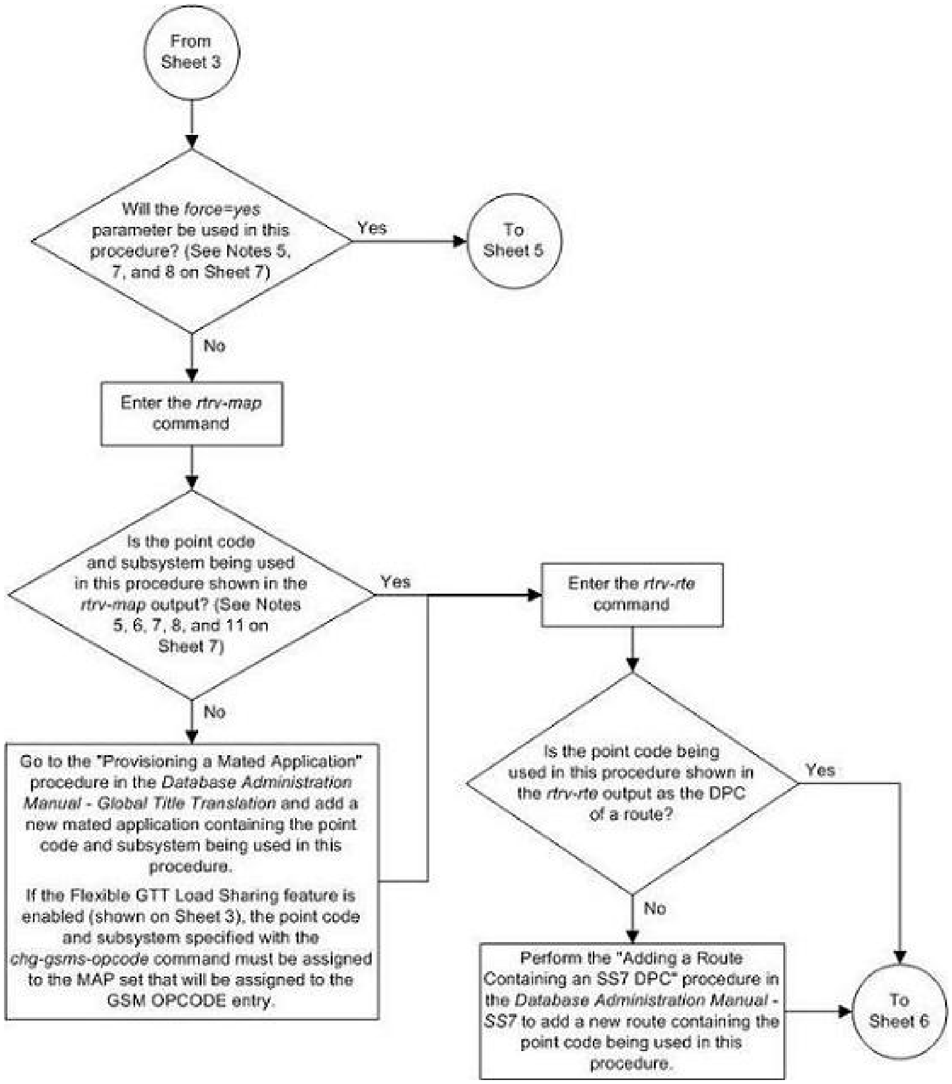
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

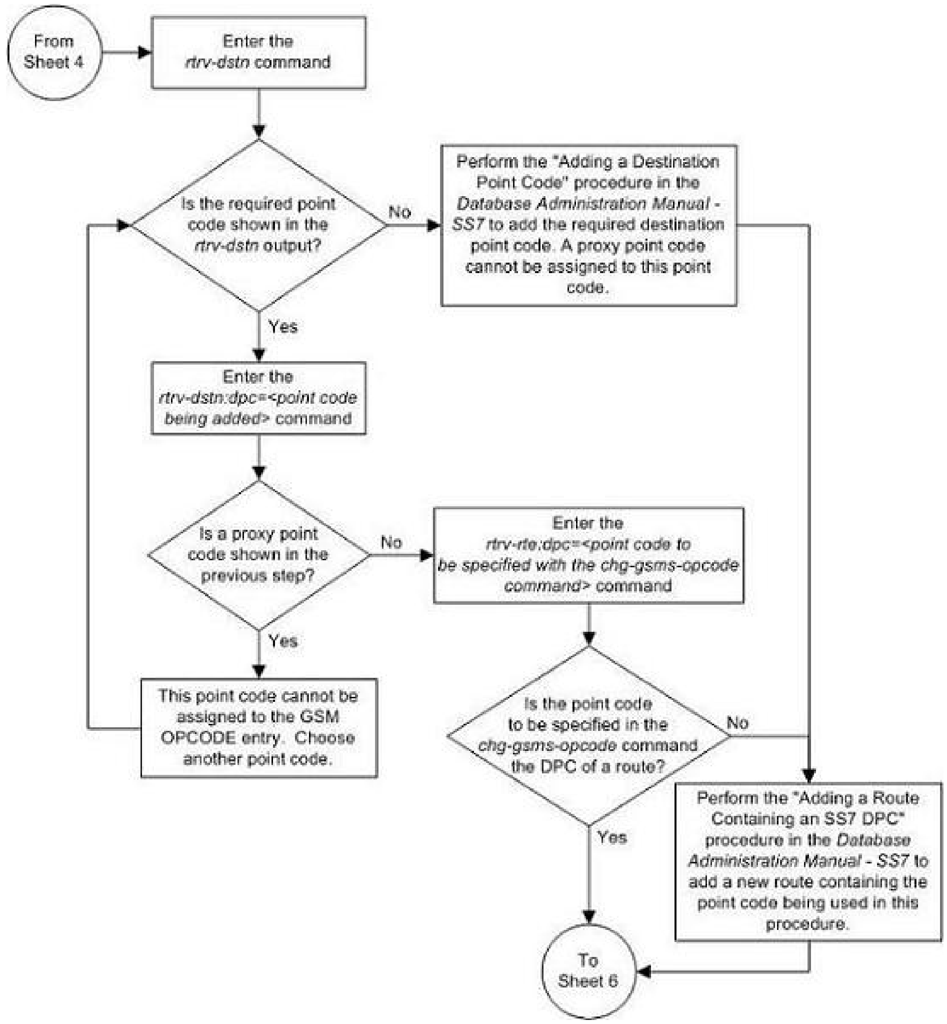
Figure 55: Changing a GSM MAP Screening Operation Code

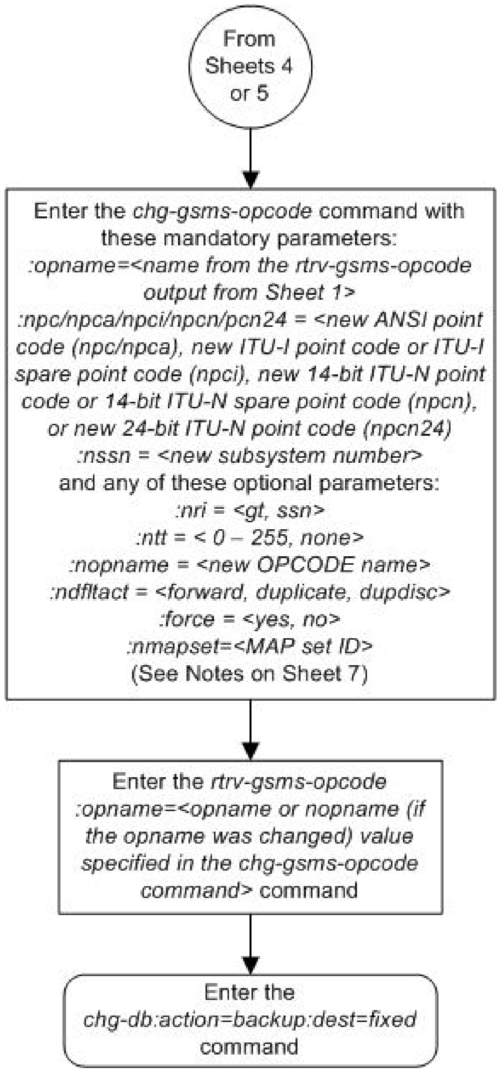

Enter the rtrv-gsms-opcode command
Are the DFLTACT, PC/PCA/PCI/PCN/PCN24, SSN, or MAPSET parameter values to be changed?
No
Enter the chg-gsms-opcode command with these parameters: :opname=<name from the rtrv-gsms-opcode output> :nopname=<1 to 8 alphanumeric characters> (See Note 1 on Sheet 7)
Enter the rtrv-gsms-opcode :opname=<nopname value specified in the chg-gsms-opcode command> command
Enter the chg-db:action=backup:dest=fixed command
Yes
Will the DFLTACT parameter value be changed?
Yes
What will the new DFLTACT parameter value be?
Pass, Route, Discard, or ATIERR
To Sheet 2
Forward, Duplicate, or Duplicate and Discard
No
What is the current DFLTACT parameter value?
Forward, Duplicate, or Duplicate and Discard
To Sheet 3
Pass, Route, Discard, or ATIERR
To Sheet 2


From Sheet 1
Enter the chg-gsms-opcode command with this mandatory parameter:
:opname=<name from the rtrv-gsms-opcode output from Sheet 1>
and al least of these optional parameters:
:nopname = <new OPCODE name>
:ndfltact = <pass, discard, atierr, route>
Notes:
1. If the dfltact parameter value is being changed to atierr, the OPCODE name must contain opcode 71. If the OPCODE name is being changed to a name that contains opcode 71, the dfltact parameter value must be atierr.
2. The word "none" cannot be used as a value for the opname or nopname parameters.
Enter the rtrv-gsms-opcode command with this parameter:
:opname=<opname or nopname (if the opname was changed) value specified in the chg-gsms-opcode command>
Enter the chg-db:action=backup:dest=fixed command


From Sheet 1
Will the npc/npca parameters be specified with the chg-gsms-opcode command?
No
Yes
Does the rtrv-gsms-opcode :opcode=<opcode name> output on Sheet 1 show pc/pca parameter values or the opcode=* parameter value?
Yes
No
Enter the rtrv-ctrl-feat command with this parameter: :partnum=893012401
Is the Enhanced GSM MAP Screening feature enabled and on?
Yes
No
Go to the "Activating the GSM MAP Screening Feature" procedure and enable and turn on the Enhanced GSM MAP Screening feature
Is the MAPSET field displayed in the rtrv-gsms-opcode output on Sheet 1?
Yes
No
Do you wish to assign a MAP set value to the GSM OPCODE entry in this procedure?
No
Yes
Perform the "Activating the Flexible GTT Load Sharing Feature" procedure in the Database Administration Manual - Global Title Translation to enabled and turn on the Activating the Flexible GTT Load Sharing Feature.
To Sheet 4


From Sheet 3
Will the force=yes parameter be used in this procedure? (See Notes 5, 7, and 8 on Sheet 7)
Yes
To Sheet 5
No
Enter the rtrv-map command
Is the point code and subsystem being used in this procedure shown in the rtrv-map output? (See Notes 5, 6, 7, 8, and 11 on Sheet 7)
Yes
Enter the rtrv-rte command
No
Go to the "Provisioning a Mated Application" procedure in the Database Administration Manual - Global Title Translation and add a new mated application containing the point code and subsystem being used in this procedure.
If the Flexible GTT Load Sharing feature is enabled (shown on Sheet 3), the point code and subsystem specified with the chg-gsms-opcode command must be assigned to the MAP set that will be assigned to the GSM OPCODE entry.
Is the point code being used in this procedure shown in the rtrv-rte output as the DPC of a route?
Yes
No
Perform the "Adding a Route Containing an SS7 DPC" procedure in the Database Administration Manual - SS7 to add a new route containing the point code being used in this procedure.
To Sheet 6


From Sheet 4
Enter the rtrv-dstn command
Is the required point code shown in the rtrv-dstn output?
No
Perform the "Adding a Destination Point Code" procedure in the Database Administration Manual - SS7 to add the required destination point code. A proxy point code cannot be assigned to this point code.
Yes
Enter the rtrv-dstn:dpc=<point code being added> command
Is a proxy point code shown in the previous step?
No
Enter the rtrv-rte:dpc=<point code to be specified with the chg-gsms-opcode command> command
Yes
This point code cannot be assigned to the GSM OPCODE entry. Choose another point code.
Is the point code to be specified in the chg-gsms-opcode command the DPC of a route?
No
Perform the "Adding a Route Containing an SS7 DPC" procedure in the Database Administration Manual - SS7 to add a new route containing the point code being used in this procedure.
Yes
To Sheet 6


From Sheets 4 or 5
Enter the chg-gsms-opcode command with these mandatory parameters:
:opname=<name from the rtrv-gsms-opcode output from Sheet 1>
:npc/npca/npci/npcn/pcn24 = <new ANSI point code (npc/npca), new ITU-I point code or ITU-I spare point code (npci), new 14-bit ITU-N point code or 14-bit ITU-N spare point code (npcn), or new 24-bit ITU-N point code (npcn24)
:nssn = <new subsystem number>
and any of these optional parameters:
:nri = <gt, ssn>
:ntt = < 0 – 255, none>
:nopname = <new OPCODE name>
:ndfltact = <forward, duplicate, dupdisc>
:force = <yes, no>
:nmapset=<MAP set ID>
(See Notes on Sheet 7)
Enter the rtrv-gsms-opcode :opname=<opname or nopname (if the opname was changed) value specified in the chg-gsms-opcode command> command
Enter the chg-db:action=backup:dest=fixed command

Notes:

1. The word "none" cannot be used as a value for the *opname* or *nopname* parameters.

2. The EAGLE 5 ISS can contain 14-bit ITU-N point codes or 24-bit ITU-N point codes, but not both.

3. If the point code and subsystem number values are not being changed, the *npc/npca/npci/npcn/npcn24* and *nssn* parameters must be specified with the current values for these parameters.

4. The *npc/npca/npci/npcn/npcn24* value must be shown in the *rtrv-rte* output on Sheets 4 or 5 as the DPC of a route. The *npc/npca* value must be a full point code value. The *npc/npca* value can be a member of a cluster point code when that cluster point code is the DPC of a route. A proxy point code cannot be assigned to the point code.

5. If the Flexible GTT Load Sharing feature is not enabled, shown on Sheet 3, the *npc/npca/npci/npcn/npcn24* and *nssn* values must be shown in the *rtrv-map* output on Sheet 4. If the *npc/npca/npci/npcn/npcn24* or *nssn* values are not shown in the *rtrv-map* output, the *force=yes* parameter must be specified.

6. If the Flexible GTT Load Sharing feature is enabled, shown on Sheet 3, and the current *dfltact* parameter value is either *pass*, *route*, *discard*, or *atierr*, and the *dfltact* parameter value is changed to either *forward*, *duplicate*, or *dupdisc*, the GSM OPCODE entry must be assigned to a MAP set with the *nmapset=dflt* parameter (to assign the GSM OPCODE entry to the default MAP set), or with the *nmapset=<numbered MAP set ID>* parameter (to assign the GSM OPCODE entry to a MAP set other the default MAP set).

7. If the Flexible GTT Load Sharing feature is enabled, shown on Sheet 3, and the default MAP set will be assigned to the GSM OPCODE entry, the *npc/npca/npci/npcn/npcn24* and *nssn* values must be shown in the default MAP set in the *rtrv-map* output on Sheet 4. If the *npc/npca/npci/npcn/npcn24* or *nssn* values are not shown in the default MAP set in the *rtrv-map* output, the *force=yes* parameter must be specified.

8. If the Flexible GTT Load Sharing feature is enabled, shown on Sheet 3, and a MAP set other than the default MAP set will be assigned to the GSM OPCODE entry, the *npc/npca/npci/npcn/npcn24* and *nssn* values must be shown in that MAP set in the *rtrv-map* output on Sheet 4.

9. To specify the *npc/npca* parameters, the Enhanced GSM MAP Screening feature must be enabled and turned on.

10. If only the point code or subsystem number value is being changed, the point code or subsystem number value being changed must be specified with the new value for the parameter being changed. The current value for the point code or subsystem number parameter not being changed must be specified. The *ndfltact* parameter does not have to be specified. For example, if the current point code is *pca=002-002-002* and the subsystem number is 50, and the point code is being changed to *pca=003-003-003* and the substem number is not changing, the *npca* parameter value would be the new point code value (003-003-003) and the *nssn* parameter value would be the current value (50).

11. If the Flexible GTT Load Sharing feature is enabled, shown on Sheet 3, and the point code and subsystem values are not being changed, the *nmapset* parameter does not have to be specified unless the MAP set ID assigned to the GSM OPCODE entry is being changed. The new MAP set must contain the point code and subsystem values in the GSM OPCODE entry.

12. If an optional parameter is not specified, the value for that parameter is not changed.

13. The value *none* for the *tt* parameter removes the existing *tt* parameter value that is assigned to the GSM OPCODE entry. A dash is shown in the *TT* column of the *rtrv-gsms-opcode* output when the *tt* value is removed.

14. If, when the *chg-gsms-opcode* command is completed, the *ri* parameter value is *ssn*, then a numerical value must be assigned to the *ssn* parameter.

Adding a GSM MAP Screening Entry

Use this procedure to provision the GSM MAP screening entries that filter or allow TCAP messages for certain MAP operation codes in the database using the `ent-gsmmap-scrn` command. The messages are filtered or allowed based on the origination addresses (`saddr/eaddr`), numbering plan value (`npv`), nature of address indicator value (`naiv`), MAP opnames (`opname`), and forbidden (`forbid`) parameters.

The `ent-gsmmap-scrn` command uses these parameters.

`:saddr` – The origination address (1 - 15 decimal digits, 1 - 15 hex digits, or *) for a single entry or the starting origination address for a range of entries of the CGPA/CDPA entry to be screened.

`:eaddr` – The ending origination address (1 - 15 decimal digits or 1 - 15 hex digits) for a range of entries of the CGPA/CDPA entry to be screened.

`:action` – The screening action to take if a message is forbidden as defined by the `forbid` parameter. One of these actions can be assigned.

- `pass` – Route the message as normal to the destination.
- `discard` – The MSU is to be discarded.
- `atierr` – An ATI (Any Time Interrogation) reject message is generated. This option is only valid for ATI MAP operation codes.
- `route` – Route the message as normal to the original destination node.
- `forward` – Route the original message to the forward node. The original message is not sent to the original node. If, however, the forwarded node is not available for routing then the MSU is routed to the original node.
- `duplicate` – Route the message as normal to the original destination and route a copy of the original message to the duplicate node.
- `dupdisc` – Duplicate and discard – Route the original message to the duplicate node. The original message is not sent to the original node.

`:pc/pca/pci/pcn/pcn24` – The ANSI point code (`pc/pca`), ITU-I point code or ITU-I spare point code (`pci`), 14-bit ITU-N point code or 14-bit ITU-N spare point code (`pcn`), or 24-bit ITU-N point code (`pcn24`) of the node that the MSU is routed to by the `forward`, `duplicate`, or `dupdisc` screening actions. The EAGLE 5 ISS can contain 14-bit ITU-N point codes or 24-bit ITU-N point codes, but not both. To specify the `pc/pca` parameters, the Enhanced GSM MAP Screening feature must be enabled and on.

`:ssn` – The subsystem number of the node that the MSU is routed to by the `forward`, `duplicate`, or `dupdisc` screening actions. The values for this parameter are 2 to 255, or the value `none`. The default value for this parameter is `none`.

`:force` – The mated application override. Is the GSM MAP screening operation code to be entered without a mated application in the database (`yes` or `no`)?

`:forbid` – The forbidden parameter value. If a forbidden parameter is detected, the message is rejected by the action defined by the `action` parameter. One of four forbidden parameter values can be specified.

- `all` – All parameters are forbidden. Take the specified screening action defined by the `action` parameter for incoming messages that contain the entered address and operation code combination.
- `none` – No parameters are forbidden. Take the specified screening action defined by the `action` parameter for incoming messages that contain the entered address and operation code combination.
- `state` – Take the specified screening action defined by the `action` parameter for incoming messages that contain `state` as the forbidden parameter for the entered address and operation code combination.
- `location` – Take the specified screening action defined by the `action` parameter for incoming messages that contain `location` as the forbidden parameter for the entered address and operation code combination.

Note: The `state` and `location` values are valid only for GSM ATI messages.

`:naiv` – The nature of address value (0 - 15 or *).

`:npv` – The numbering plan value (0 - 127 or *).

`:opname` – The user-defined name for the operation code. The `opname` value references the operation code (`opcode`) shown in the `rtrv-gsms-opcode` command. GSM MAP screening is performed on the specified address or addresses for the referenced operation code.

`:cgsr` – The CGPA screening reference name consisting of 1 alphabetic character and 3 optional alphanumeric characters.

`:cdsr` – The CDPA screening reference name consisting of 1 alphabetic character and 3 optional alphanumeric characters.

`:mapset` – The MAP set ID, shown in the `rtrv-map` command. This parameter can be specified only if the Flexible GTT Load Sharing feature is enabled. The status of the Flexible GTT Load Sharing feature is shown in the `rtrv-ctrl-feat` output. To enable the Flexible GTT Load Sharing feature, perform the "Activating the Flexible GTT Load Sharing Feature" procedure in the Database *Administration Manual* - Global Title Translation .

`:ri` - The routing indicator parameter. This parameter specifies whether a subsequent global title translation is required. This parameter has two values.

- `gt` - subsequent global title translation is required.
- `ssn` - subsequent global title translation is not required. This is the default value for the `ri` parameter.

`:tt` - the translation type that will be assigned to the GSM MAP screening entry. This parameter specifies the value that the translation type for the CdPA is set to as a result of GSM MAP screening. The values for this parameter are 0 to 255, or the value `none` which specifies that no translation type will be assigned to the GSM MAP screening entry.

Table 26: Add GSM MAP Screening Entry Parameter Combinations on page 371 shows the parameter combinations that can be used in this procedure.

Table 26: Add GSM MAP Screening Entry Parameter Combinations

Entry Containing a Point Code and SSN (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry Without a Point Code and SSN (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry containing the Action ATIERR (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry Containing a Point Code and SSN (See Note 1) GSM MAP Screening Feature Enabled and On Only	Entry Without a Point Code and SSN (See Note 1) GSM MAP Screening Feature Enabled and On Only	Entry containing the Action ATIERR (See Note 1) GSM MAP Screening Feature Enabled and On Only
Mandatory Parameters					

Entry Containing a Point Code and SSN (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry Without a Point Code and SSN (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry containing the Action ATIERR (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry Containing a Point Code and SSN (See Note 1) GSM MAP Screening Feature Enabled and On Only	Entry Without a Point Code and SSN (See Note 1) GSM MAP Screening Feature Enabled and On Only	Entry containing the Action ATIERR (See Note 1) GSM MAP Screening Feature Enabled and On Only
:opname = opname value (See Note 2)	:opname = opname value (See Note 2)	:opname = opname value containing opcode=71 (See Note 2)	:opname = opname value (See Note 2)	:opname = opname value (See Note 2)	:opname = opname value containing opcode=71 (See Note 2)
:cgsr = CGSR name (See Note 3)	:cgsr = CGSR name (See Note 3)	:cgsr = CGSR name (See Note 3)	:cgsr = CGSR name (See Note 3)	:cgsr = CGSR name (See Note 3)	:cgsr = CGSR name (See Note 3)
			saddr = 0 - 15 decimal digits (See Notes 4, 5, and 6)	saddr = 0 - 15 decimal digits (See Notes 4, 5, and 6)	saddr = 0 - 15 decimal digits (See Notes 4, 5, and 6)
Optional Parameters					
:saddr = 0 - 15 hex digits, or * (See Notes 4, 5, and 6)	:saddr = 0 - 15 hex digits, or * (See Notes 4, 5, and 6)	:saddr = 0 - 15 hex digits, or * (See Notes 4, 5, and 6)	:eaddr = 0 - 15 decimal digits (See Notes 4, 5, and 6)	:eaddr = 0 - 15 decimal digits (See Notes 4, 5, and 6)	:eaddr = 0 - 15 decimal digits (See Notes 4, 5, and 6)
:eaddr = 0 - 15 hex digits (See Notes 4, 5, 6, and 7)	:eaddr = 0 - 15 hex digits (See Notes 4, 5, 6, and 7)	:eaddr = 0 - 15 hex digits (See Notes 4, 5, 6, and 7)	:forbid = all	:forbid = all, none (See Note 15)	:forbid = state, location
:cdsr = CDSR name (See Note 3)	:cdsr = CDSR name (See Note 3)	:cdsr = CDSR name (See Note 3)	:action = forward, duplicate, dupdisc (See Note 9)	:action = pass, discard, route (See Note 15)	:action = atierr

Entry Containing a Point Code and SSN (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry Without a Point Code and SSN (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry containing the Action ATIERR (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry Containing a Point Code and SSN (See Note 1) GSM MAP Screening Feature Enabled and On Only	Entry Without a Point Code and SSN (See Note 1) GSM MAP Screening Feature Enabled and On Only	Entry containing the Action ATIERR (See Note 1) GSM MAP Screening Feature Enabled and On Only
:forbid = all	:forbid = all, none (See Note 15)	:forbid = state, location	:npv = 0 - 15, or * (See Note 8)	:npv = 0 - 15, or * (See Note 8)	:npv = 0 - 15, or * (See Note 8)
:action = forward, duplicate, dupdisc (See Note 9)	:action = pass, discard, route (See Note 15)	:action = atierr	:naiv = 0 - 127, or * (See Note 8)	:naiv = 0 - 127, or * (See Note 8)	:naiv = 0 - 127, or * (See Note 8)
:npv = 0 - 15, or * (See Note 8)	:npv = 0 - 15, or * (See Note 8)	:npv = 0 - 15, or * (See Note 8)	:pci/pcn/pcn24 = point code value (See Notes 10, 11, 12, 13, and 14)		
:naiv = 0 - 127, or * (See Note 8)	:naiv = 0 - 127, or * (See Note 8)	:naiv = 0 - 127, or * (See Note 8)	:ssn = 0 - 255, none (See Notes 13, 14, and 16)		
:pc/pca/pci/pcn/ pcn24 = point code value (See Notes 10, 11, 12, 13, and 14)			:force=yes (See Notes 13 and 14)		
			:mapset= dflt or numbered MAP set ID (See Notes 13 and 14)		
:ssn = 0 - 255, none (See			:ri = gt, ssn (See Note 16)		

Entry Containing a Point Code and SSN (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry Without a Point Code and SSN (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry containing the Action ATIERR (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry Containing a Point Code and SSN (See Note 1) GSM MAP Screening Feature Enabled and On Only	Entry Without a Point Code and SSN (See Note 1) GSM MAP Screening Feature Enabled and On Only	Entry containing the Action ATIERR (See Note 1) GSM MAP Screening Feature Enabled and On Only
Notes 13, 14, and 16)					
:force=yes (See Notes 13 and 14)			:tt = 0 - 255, none		
:mapset = dflt or numbered MAP set ID (See Notes 13 and 14)					
:ri = gt, ssn (See Note 16)					
:tt = 0 - 255, none					

Notes:

1. When a CGPA entry (`cgsr` parameter is specified without the `cdsr` parameter) is added to the GSM MAP Screening table, a default wild card entry is created for the CGPA entry, thus adding two entries to the GSM MAP Screening table. The default wild card CDPA entry is not shown in the `rtrv-gsmmap-scrn` output. As a result, the GSM MAP Screening table must have at least two free entries in order to provision a CGPA entry in the GSM MAP Screening table. When the first provisioned wildcard (*) CDPA entry is added to a CGPA entry, the number of entries in the GSM MAP Screening table, shown in the GSM MAP Screening command outputs, does not change.

2. The `opname` parameter value must be shown in either the `rtrv-gsms-opcode` or `rtrv-gsmmap-scrn` output.

3. The `cgsr` and `cdsr` parameter values consist of 1 alphabetic character and up to 3 optional alphanumeric characters. If the `cdsr` parameter is not specified, a CGPA entry with a default wild card CDPA entry is created in the GSM MAP Screening table (see Note 1). If the `cdsr` parameter is specified, a CDPA entry is created in the GSM MAP Screening table.

Entry Containing a Point Code and SSN (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry Without a Point Code and SSN (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry containing the Action ATIERR (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry Containing a Point Code and SSN (See Note 1) GSM MAP Screening Feature Enabled and On Only	Entry Without a Point Code and SSN (See Note 1) GSM MAP Screening Feature Enabled and On Only	Entry containing the Action ATIERR (See Note 1) GSM MAP Screening Feature Enabled and On Only

4. If a single entry is specified for the CGPA/CDPA (that is, the `eaddr` parameter is not specified) then the `saddr/npv/naiv/opname` parameter combination cannot exist in the GSM MAP Screening table.

5. If a range of entries is specified for the CGPA/CDPA (that is, the `eaddr` parameter is specified) then the `saddr/eaddr/npv/naiv/opname` parameter combination cannot exist in the GSM MAP Screening table or overlap with another range entry in the GSM MAP Screening table.

6. The `eaddr` parameter value must contain the same number of digits as the `saddr` parameter value. The `eaddr` parameter value must be greater than the `saddr` parameter value. The `saddr` parameter must be specified with the `eaddr` parameter.

7. The `eaddr` parameter cannot be specified with the `saddr=*` parameter.

8. If the Enhanced GSM MAP Screening feature is not enabled or off, and either the `npv` or `naiv` parameters are specified, both the `npv` and `naiv` parameters must be specified. If the asterisk (*) is specified for either the `npv` or `naiv` parameters, the asterisk must be specified for both the `npv` and `naiv` parameters. If numbers are specified for either the `npv` or `naiv` parameters, numbers must be specified for both the `npv` and `naiv` parameters.

9. If the `action` parameter values are either `forward`, `duplicate`, or `dupdisc`, the point code and `ssn` parameters must be specified with the `ent-gsmmap-scrn` command. A proxy point code cannot be assigned to this point code.

10. The point code value must be the DPC of a route or a member of a cluster route. The `pc/pca` value must be a full point code, The `pc/pca` value can be a member of a cluster point code when that cluster point code is the DPC of a route. This can be verified with the `rtrv-rte` command. If the point code value is not shown in the `rtrv-rte` output as the DPC of a route, go to the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual - SS7* and add a new route containing the point code value.

11. The EAGLE 5 ISS can contain 14-bit ITU-N point codes or 24-bit ITU-N point codes, but not both at the same time.

12. If either the point code or `ssn` parameters are specified, then both the point code and `ssn` parameters must be specified.

13. If the Flexible GTT Load Sharing feature is not enabled:

- The `mapset` parameter cannot be specified.
- The point code and subsystem number values specified with the `ent-gsmmap-scrn` command must be shown in the `rtrv-map` output, or else the `force=yes` parameter must be specified.

Entry Containing a Point Code and SSN (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry Without a Point Code and SSN (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry containing the Action ATIERR (See Note 1) Enhanced GSM MAP Screening Feature Enabled and On	Entry Containing a Point Code and SSN (See Note 1) GSM MAP Screening Feature Enabled and On Only	Entry Without a Point Code and SSN (See Note 1) GSM MAP Screening Feature Enabled and On Only	Entry containing the Action ATIERR (See Note 1) GSM MAP Screening Feature Enabled and On Only

If the point code and subsystem number values are not shown in the `rtrv-map` output, and a new mated application is to be added, perform one of the "Provisioning a Mated Application" procedures in the Database *Administration Manual* - Global Title Translation and add the required mated application with the point code and subsystem number values.

14. If the Flexible GTT Load Sharing feature is enabled:

- The `mapset` parameter must be specified.
- • The `force=yes` parameter can be used only if the default MAP set assigned to the GSM MAP screening entry.
- If the MAP set assigned to the GSM MAP screening entry is a MAP set other than the default MAP set, the `force=yes` parameter cannot be used. The point code and subsystem contained in the GSM MAP screening entry must be in the MAP set assigned to the GSM MAP screening entry.
- If the default MAP set is assigned to the GSM MAP screening entry and the `force=yes` parameter is not specified, the point code and subsystem contained in the GSM MAP screening entry must be in the default MAP set.

15. If the `forbid=none` parameter is specified, then the `action=pass` parameter must be specified.

16. If the `ri=ssn` parameter is specified, a numerical value must be specified for the `ssn` parameter.

GSM screening entries can either be single entries or range entries. Single entries have precedence in screening over range entries. Thus the single entry table is searched first and if a match is found, the range table is never searched. Range entries may overlap single entries.

If a message is screened and does not contain matching GTA, NPV, and NAIV values, the message is rejected. The message is rejected with the default action defined by the `ent-gsms-opcode` command for the operation code (`opcode`) parameter entry referenced by the operation name (`opname`) parameter.

This examples used in this procedure are based on the examples shown in *Table 27: Example CGPA GSM MAP Screening Configuration Table* on page 377 and *Table 28: Example CDPA GSM MAP Screening Configuration Table* on page 377.

Table 27: Example CGPA GSM MAP Screening Configuration Table

CGSR	SADDR	EADDR	NPV	NAIV	OPNAME	FORBID
cg01	9194600000	---	5	75	pass50	none
cg02	252555100000	252700000000	12	37	discard1	all
cg03	8284540000	8284600000	---	---	ati	state
cg04	2416546464	---	0	127	route25	none
cg05	854000000	857000000	3	99	dd93	all
cg06	154363000000	155000000000	8	86	sri	all
cg07	368900000	369000000	9	111	dup187	none
CGSR	ACTION	PC/PCA/PCI/ PCN/PCN24	SSN	MAPSET		
cg01	pass	N/A	N/A	N/A		
cg02	discard	N/A	N/A	N/A		
cg03	atierr	N/A	N/A	N/A		
cg04	route	N/A	N/A	N/A		
cg05	forward	3-201-7	100	DFLT		
cg06	duplicate	9384	30	10		
cg07	dupdisc	4-102-6	150	20		

Table 28: Example CDPA GSM MAP Screening Configuration Table

CGSR	CDSR	SADDR	EADDR	OPNAME	NPV	NAIV	FORBID
cg01	cd01	---	---	pass50	6	15	all
cg02	cd15	---	---	discard1	10	15	all

CGSR	CDSR	SADDR	EADDR	OPNAME	NPV	NAIV	FORBID
cg07	cd10	---	---	dup187	11	57	all
CGSR	CDSR	ACTION	PC/PCA/ PCI/PCN/ PCN24	SSN	MAPSET		
cg01	cd01	pass	N/A	N/A	N/A		
cg02	cd15	discard	N/A	N/A	N/A		
cg07	cd10	dupdisc	5-97-2	135	30		

1. Display the GSM MAP screening operation codes in the database using the `rtrv-gsms-opcode` command.

   If the Flexible GTT Load Sharing feature is not enabled, this is an example of the possible output.

```
rlghncxa03w 08-09-10 11:43:04 GMT EAGLE5 39.2.0

OPCODE  OPNAME    DFLTACT    PCA          SSN   RI  TT
 36     for1      fwd        002-002-002  10    gt  40

OPCODE  OPNAME    DFLTACT    PCI          SSN   RI  TT
 93     dd93      dupdc      5-25-3       200   ssn 10
 139    fwd139    fwd        3-159-7      128   ssn -

OPCODE  OPNAME    DFLTACT    PCN          SSN   RI  TT
 187    dup187    dupl       11519        79    gt  50

OPCODE  OPNAME    DFLTACT    PCN24        SSN   RI  TT

OPCODE  OPNAME    DFLTACT
 22     sri       disc
 25     route25   route
 50     pass50    pass
 71     ati       atierr
 150    discard1  disc
 *      star      pass

GSMMS OPCODE Table (10 of 257) is 4% full
```

   If the Flexible GTT Load Sharing feature is enabled, this is an example of the possible output.

```
rlghncxa03w 08-09-10 11:43:04 GMT EAGLE5 39.2.0

OPCODE  OPNAME    DFLTACT    PCA          SSN   MAPSET RI  TT
 36     for1      fwd        002-002-002  10    25     gt  40

OPCODE  OPNAME     DFLTACT   PCI          SSN   MAPSET RI  TT
 93     dd93       dupdc     5-025-3      200   20     ssn 10
 139    fwd139     fwd       3-159-7      128   DFLT   ssn -
```

```
OPCODE   OPNAME      DFLTACT   PCN           SSN   MAPSET RI   TT
 187     dup187      dupl      11519         79    10     gt   50

OPCODE   OPNAME      DFLTACT   PCN24         SSN   MAPSET RI   TT

OPCODE   OPNAME     DFLTACT
 22      sri        disc
 25      route25    route
 50      pass50     pass
 71      ati        atierr
 150     discard1   disc
 *       star       pass

GSMMS OPCODE Table (10 of 257) is 4% full
```

Note:

If the desired GSM MAP screening operation code entry is not shown in the `rtrv-gsms-opcode` output, go to the *Adding a GSM MAP Screening Operation Code* on page 333 and add the required entry. Skip step 2 and go to step 3.

If either the `forbid=state`, `forbid=location`, or `action=atierr` parameters are to be assigned to the GSM MAP screening entry, the GSM MAP screening operation code table must contain an entry containing the operation code value 71.

2. Enter the `rtrv-gsmmap-scrn` command with an `opname` value shown in the `rtrv-gsms-opcode` command output in step 1 to display the GSM MAP screening entries in the database.

   For this example, enter these commands.

   `rtrv-gsmmap-scrn:opname=pass50`

   This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: pass50
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI   TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI   TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI   TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI   TT

SADDR           NP NAI FORBD ACT   CGSR

Range CgPA Entries for OPNAME: pass50
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA
SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR
```

```
GSM Map Screening table is (1500 of 4000) 38% full
```

`rtrv-gsmmap-scrn:opname=discard1`

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: discard1
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: discard1
----------------------------------
SADDR           EADDR          NP NAI FORBD ACT      PCA
SSN CGSR

SADDR           EADDR          NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR          NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR          NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR          NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1500 of 4000) 38% full
```

`rtrv-gsmmap-scrn:opname=ati`

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: ati
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT   CGSR
919462000000005 1  0   locat atier ati1

Range CgPA Entries for OPNAME: ati
----------------------------------
SADDR           EADDR          NP NAI FORBD ACT      PCA
SSN CGSR

SADDR           EADDR          NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR          NP NAI FORBD ACT      PCN           SSN CGSR
```

```
SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR
919461888888888 919461900000000 4  1   locat atier ati2
919462000000000 919463000000000 *  *   locat atier ati3

GSM Map Screening table is (1500 of 4000) 38% full
```

`rtrv-gsmmap-scrn:opname=route25`

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: route25
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: route25
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA
SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1500 of 4000) 38% full
```

`rtrv-gsmmap-scrn:opname=dd93`

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: dd93
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: dd93
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA
SSN CGSR
```

```
SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1500 of 4000) 38% full
```

rtrv-gsmmap-scrn:opname=sri

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: sri
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: sri
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA
SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1500 of 4000) 38% full
```

rtrv-gsmmap-scrn:opname=dup187

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: dup187
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: dup187
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA
```

```
SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1500 of 4000) 38% full
```

If the Flexible GTT Load Sharing feature is enabled, the MAPSET field is shown in the rtrv-gsmmap-scrn output as shown in the following output example.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: dup187
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR MAPSET RI  TT

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: dup187
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA
SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1500 of 4000) 38% full
```

Note:

If any of the following parameters or values are not being used in this procedure, skip step 3 and go to step 4.

- saddr=*
- cdsr
- pc/pca
- The saddr or eaddr parameter values containing hex digits.

If the rtrv-gsmmap-scrn output in this step shows any of the parameters or values listed above, skip step 3, and go to step 4.

3. Verify that the Enhanced GSM MAP Screening feature is enabled and on by entering the rtrv-ctrl-feat command with the part number of the Enhanced GSM MAP Screening feature.

   Enter this command.

`rtrv-ctrl-feat:partnum=893012401`

The following is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
Enhanced GMS (EGMS)       893012401  on      ----

The following features have been temporarily enabled:

Feature Name              Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

If the Enhanced GSM MAP screening feature is not enabled or off, go to the *Activating the GSM MAP Screening Feature* on page 297 to enable and turn on the Enhanced GSM MAP screening feature.

4. Perform one of these actions.
- If the `action` parameter value will be either `pass`, `discard`, `route`, or `atierr`, skip steps 4 through 8, and continue the procedure with step 9.
- If the `action` parameter value will be either `forward`, `duplicate`, or `dupdisc`, perform one of these actions.
  - To use a point code and a MAP set from the mated application table, and MAP sets are not shown in the `rtrv-gsmmap-scrn` output in step 2, the Flexible GTT Load Sharing Feature must be enabled. Perform the "Activating the Flexible GTT Load Sharing Feature" procedure in the Database *Administration Manual* - Global Title Translation and enable the Flexible GTT Load Sharing feature. After enabling the Flexible GTT Load Sharing feature, skip steps 5 and 6 and continue the procedure with step 7.
  - To use a point code and a MAP set from the mated application table, and MAP sets are shown in the `rtrv-gsmmap-scrn` output in step 2, skip steps 5 and 6 and continue the procedure with step 7.
  - To use a point code in the mated application table, but without using a MAP set, and MAP sets are not shown in the `rtrv-gsmmap-scrn` output in step 2, skip steps 5 and 6 and continue the procedure with step 7.
  - To use a point code that is not in the mated application table, the `force=yes` parameter must be specified with the `ent-gsmmap-scrn` command. A proxy point code cannot be assigned to this point code. If the Flexible GTT Load Sharing feature is enabled, the `force=yes` parameter can be used only if the default MAP set is assigned to the GSM MAP screening entry. Continue the procedure with step 5.

5. Display the destination point codes in the database by entering the `rtrv-dstn` command. This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 37.5.0

   DPCA          CLLI        BEI  ELEI   ALIASI        ALIASN         DOMAIN
   001-207-000   ----------- no   ---    -------       -----------    SS7
   001-001-001   ----------- no   ---    -------       -----------    SS7
   001-001-002   ----------- no   ---    -------       -----------    SS7
```

```
   001-005-000   ----------- no  ---   -------      -----------    SS7
   001-007-000   ----------- no  ---   -------      -----------    SS7
   008-012-003   ----------- no  ---   -------      -----------    SS7
   003-002-004   ----------- no  ---   -------      -----------    SS7
   009-002-003   ----------- no  ---   -------      -----------    SS7
   010-020-005   ----------- no  ---   -------      -----------    SS7

   DPCI          CLLI        BEI ELEI  ALIASI       ALIASN         DOMAIN
   1-207-0       ----------- no  ---   -------      -----------    SS7
   0-015-0       ----------- no  ---   -------      -----------    SS7
   0-017-0       ----------- no  ---   -------      -----------    SS7
   1-011-1       ----------- no  ---   -------      -----------    SS7
   1-011-2       ----------- no  ---   -------      -----------    SS7

   DPCN          CLLI        BEI ELEI   ALIASA          ALIASI        DOMAIN

   DPCN24        CLLI        BEI ELEI   ALIASA          ALIASI        DOMAIN

Destination table is (14 of 2000) 1% full
Alias table is (0 of 12000) 0% full
PPC table is (1 of 20) 5% full
```

If the required point code is not shown in the `rtrv-dstn` output, perform the "Adding a Destination Point Code" procedure in the *Database Administration Manual - SS7* to add the required point code. A proxy point code cannot be assigned to the point code.

After the new point code has been added, skip steps 6 through 8 and perform the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual - SS7* and add the required route to the database. After the route has been added, continue the procedure with step 9.

6. Display the point code that will be assigned to the mated application by using the `rtrv-dstn` command and specifying the point code. For this example, enter this command.

`rtrv-dstn:dpca=010-020-005`

This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 37.5.0

   DPCA          CLLI        BEI ELEI  ALIASI       ALIASN         DOMAIN
   010-020-005   ----------- no  ---   -------      -----------    SS7

   PPC           NCAI           PRX
   009-002-003   ----           no

Destination table is (14 of 2000) 1% full
Alias table is (0 of 12000) 0% full
PPC table is (1 of 20) 5% full
```

If the adjacent point code is not shown in the `rtrv-dstn` command output, the following output is displayed.

```
DPCA          CLLI        BEI ELEI  ALIASI       ALIASN/N24    DOMAIN

No destinations meeting the requested criteria were found

Destination table is (14 of 2000) 1% full
```

```
Alias table is (0 of 12000) 0% full
PPC table is (1 of 20) 5% full
```

A proxy point code (a point code value is shown in the `PPC` column) cannot be assigned to the point code. If a proxy point code is shown in this step, choose another point code from the `rtrv-dstn` output in the previous step and repeat this step.

If the point code is not shown in the `rtrv-dstn` output, perform the "Adding a Destination Point Code" procedure in the Database *Administration Manual* - SS7 and add the adjacent point code to the destination point code table.

After the new point code has been added, skip steps 7 and 8 and perform the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual* - SS7 and add the required route to the database. After the route has been added, continue the procedure with step 9.

7. The point code and subsystem number being assigned to the GSM MAP screening entry must be in the mated application table.

Enter the `rtrv-map` command with the `pci/pcn/pcn24` and `ssn` values that will be specified with the `ent-gsmmap-scrn` command in step 9.

If the Flexible GTT Load Sharing feature is not enabled, for this example, enter these commands.

`rtrv-map:pci=3-201-7:ssn=100`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)

PCI           Mate PCI     SSN RC MULT SRM MRC GRP NAME SSO
3-201-5                    100 10  SOL --- --- GRP01    ON
```

`rtrv-map:pcn=9384:ssn=30`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)

PCN           Mate PCN     SSN RC MULT SRM MRC GRP NAME SSO
9384                        30 10  SOL --- --- GRP01    ON
```

`rtrv-map:pci=4-102-6:ssn=150`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)

PCI           Mate PCI     SSN RC MULT SRM MRC GRP NAME SSO
4-102-6                    150 10  SOL --- --- GRP01    ON
```

If the Flexible GTTLoad Sharing feature is enabled:

- The `mapset` parameter must be specified with the `ent-gsmmap-scrn` command in step 9.

- The point code and subsystem contained in the GSM MAP screening entry must be in the MAP set assigned to the GSM MAP screening entry.

For this example, enter these commands.

`rtrv-map:pci=3-201-7:ssn=100`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)

PCI          Mate PCI     SSN RC MULT SRM MRC GRP NAME SSO
MAPSET ID=DFLT
3-201-7                   100 10  SOL --- --- GRP01    ON
```

`rtrv-map:pcn=9384:ssn=30`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)

PCN          Mate PCN     SSN RC MULT SRM MRC GRP NAME SSO
MAPSET ID=10
9384                       30 10  SOL --- --- GRP01    ON
```

`rtrv-map:pci=4-102-6:ssn=150`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)

PCI          Mate PCI     SSN RC MULT SRM MRC GRP NAME SSO
MAPSET ID=20
4-102-6                   150 10  SOL --- --- GRP01    ON
```

If the point code and subsystem number is not shown in the `rtrv-map` output, perform one of the "Provisioning a Mated Application" procedures in the Database *Administration Manual* - Global Title Translation and add the required point code and subsystem number to the mated application table.

8. The point code specified with the `ent-gsmmap-scrn` command must be the DPC of a route.

   If the point code specified with the `ent-gsmmap-scrn` command is an ANSI point code, the point code can be a member of a cluster point code when that cluster point code is the DPC of a route. Enter the `rtrv-rte` command with the `dpc` parameter specifying the point code to be used with the `ent-gsmmap-scrn` command to verify whether or not the point code is the DPC of a route. For this example, enter these commands.

   `rtrv-rte:dpci=3-201-7`

   This is an example of the possible output.

```
rlghncxa03w 06-10-07 11:43:04 GMT  EAGLE5 36.0.0
DPCI       ALIASN/N24       ALIASA      LSN        RC    APC
3-201-7    12111            240-111-111 ls100001   10    1-234-5
                                        ls100002   10    1-234-6
```

```
                                        ls100003   20     1-234-7
                                        ls100004   30     1-234-1
                                        ls100005   40     1-234-2
                                        ls100006   50     1-234-3
                                            RTX:No  CLLI=idp1
```

`rtrv-rte:dpcn=9384`

This is an example of the possible output.

```
rlghncxa03w 06-10-07 11:43:04 GMT  EAGLE5 36.0.0
DPCN             ALIASA         ALIASI  LSN         RC     APC
9384             011-222-111    0-001-1 ls200001    10     11111
                                        ls200002    10     11112
                                        ls200003    20     11113
                                        ls200004    30     11114
                                        ls200005    40     11115
                                        ls200006    50     11116
                                            RTX:No  CLLI=ndp1
```

`rtrv-rte:dpci=4-102-6`

This is an example of the possible output.

```
DPCI        ALIASN/N24       ALIASA       LSN         RC     APC
4-102-6     7659             240-039-150 ls100001    10     5-25-3
                                        ls100002    10     3-250-6
                                        ls100003    20     7-34-7
                                        ls100004    30     6-98-1
                                        ls100005    40     3-142-2
                                        ls100006    50     1-178-3
                                            RTX:No  CLLI=idp1
```

If the point code is not shown in the `rtrv-rte` output, if the point code is an ANSI point code, the point code is not a member of a cluster point code when that cluster point code is the DPC of a route, go to the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual* - SS7 and add the required route to the database.

9. Add the new CGPA GSM MAP screening entries to the database with the `ent-gsmmap-scrn` command.

   Note: If a CDPA entry is being added to an existing CGPA entry, skip steps 9 and 10, and go to step 11.

   See *Table 26: Add GSM MAP Screening Entry Parameter Combinations* on page 371 for the parameter combinations that can be used with the `ent-gsmmap-scrn` command.

   For this example, enter these commands:

   ```
   ent-gsmmap-scrn:saddr=9194600000:npv=5:naiv=75:opname=pass50
   :forbid=none:action=pass:cgsr=cg01
   ```

   ```
   ent-gsmmap-scrn:saddr=252555100000:eaddr=252700000000:npv=12:naiv=37
   :opname=discard1:forbid=all :action=discard:cgsr=cg02
   ```

   ```
   ent-gsmmap-scrn:saddr=8284540000:eaddr=8284600000:opname=ati
   :forbid=state:action=atierr:cgsr=cg03
   ```

   ```
   ent-gsmmap-scrn:saddr=2416546464:opname=route25:forbid=all
   :action=route:npv=0:naiv=127:cgsr=cg04
   ```

```
ent-gsmmap-scrn:saddr=854000000:eaddr=857000000:opname=dd93
:forbid=all:action=forward:npv=3:naiv=99:pci=3-201-7:ssn=100:cgsr=cg05
:mapset=dflt
```

```
ent-gsmmap-scrn:saddr=154363000000:eaddr=155000000000:opname=sri
:forbid=all:action=duplicate:npv=8:naiv=86:pcn=9384:ssn=30:cgsr=cg06
:mapset=10
```

```
ent-gsmmap-scrn:saddr=368900000:eaddr=369000000:opname=dup187
:forbid=all:action=dupdisc:npv=9:naiv=111:pci=4-102-6:ssn=150:cgsr=cg07
:mapset=20
```

When each of these commands has successfully completed, this message appears.

```
rlghncxa03w 06-10-20 09:07:58 GMT  EAGLE5 36.0.0
GSM Map Screening table is (1512 of 4000) 38% full
ENT-GSMMAP-SCRN: MASP A - COMPLTD
```

10. Verify the changes using the `rtrv-gsmmap-scrn` command and specifying the `opname` and `cgsr` parameter values specified in step 9.

    For this example, enter these commands:

    `rtrv-gsmmap-scrn:opname=pass50`

    This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: pass50
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT  CGSR
9194600000      5  75  none  pass cg01

Range CgPA Entries for OPNAME: pass50
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA
SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1512 of 4000) 38% full
```

    `rtrv-gsmmap-scrn:opname=discard1`

    This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0
```

```
Single CgPA Entries for OPNAME: discard1
-----------------------------------
SADDR          NP NAI FORBD ACT      PCA           SSN CGSR  MAPSET RI  TT

SADDR          NP NAI FORBD ACT      PCI           SSN CGSR  MAPSET RI  TT

SADDR          NP NAI FORBD ACT      PCN           SSN CGSR  MAPSET RI  TT

SADDR          NP NAI FORBD ACT      PCN24         SSN CGSR  MAPSET RI  TT

SADDR          NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: discard1
----------------------------------
SADDR          EADDR          NP NAI FORBD ACT      PCA           SSN CGSR

SADDR          EADDR          NP NAI FORBD ACT      PCI           SSN CGSR

SADDR          EADDR          NP NAI FORBD ACT      PCN           SSN CGSR

SADDR          EADDR          NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR          EADDR          NP NAI FORBD ACT   CGSR

252555100000   252700000000   12 37  all   disc  cg02

GSM Map Screening table is (1512 of 4000) 38% full
```

`rtrv-gsmmap-scrn:opname=ati`

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: ati
-----------------------------------
SADDR          NP NAI FORBD ACT      PCA           SSN CGSR  MAPSET RI  TT

SADDR          NP NAI FORBD ACT      PCI           SSN CGSR  MAPSET RI  TT

SADDR          NP NAI FORBD ACT      PCN           SSN CGSR  MAPSET RI  TT

SADDR          NP NAI FORBD ACT      PCN24         SSN CGSR  MAPSET RI  TT

SADDR          NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: ati
----------------------------------
SADDR          EADDR          NP NAI FORBD ACT      PCA           SSN CGSR

SADDR          EADDR          NP NAI FORBD ACT      PCI           SSN CGSR

SADDR          EADDR          NP NAI FORBD ACT      PCN           SSN CGSR

SADDR          EADDR          NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR          EADDR          NP NAI FORBD ACT   CGSR

8284540000     8284600000     *  *   state atier cg03

GSM Map Screening table is (1512 of 4000) 38% full
```

`rtrv-gsmmap-scrn:opname=route25`

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: route25
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT  CGSR

2416546464      0  127 all   route cg04

Range CgPA Entries for OPNAME: ati
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1512 of 4000) 38% full
```

`rtrv-gsmmap-scrn:opname=dd93`

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: dd93
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: dd93
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR
854000000       857000000       3  99  all   fwd      3-201-7       100 cg05
MAPSET = DFLT RI=ssn  TT=-
SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR
```

```
GSM Map Screening table is (1512 of 4000) 38% full
```

`rtrv-gsmmap-scrn:opname=sri`

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: sri
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: sri
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR
1534363000000   155000000000    8  86  all   dupl     9384          30  cg06
MAPSET = 10 RI=ssn  TT=-
SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1512 of 4000) 38% full
```

`rtrv-gsmmap-scrn:opname=dup187`

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: dup187
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR  MAPSET RI  TT

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: dup187
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR
368900000       369000000       9  111 all   dupdc    4-102-6       150 cg07
MAPSET = 20 RI=ssn  TT=-

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR
```

```
SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1512 of 4000) 38% full
```

11. Add the new CDPA GSM MAP screening entries to the database with the `ent-gsmmap-scrn` command.

    Note: If a CDPA entry is not being added, or if the Enhanced GSM MAP Screening feature is not enabled or off (see the `rtrv-ctrl-feat` output in step 3), skip steps 11 and 12, and go to step 13.

    See *Table 26: Add GSM MAP Screening Entry Parameter Combinations* on page 371 for the parameter combinations that can be used with the `ent-gsmmap-scrn` command.

    For this example, enter these commands:

    `ent-gsmmap-scrn:opname=pass50:npv=6:naiv=15:forbid=all:action=pass :cgsr=cg01:cdsr=cd01`

    `ent-gsmmap-scrn:opname=discard1:npv=10:naiv=15:forbid=all:action=discard :cgsr=cg02:cdsr=cd15`

    `ent-gsmmap-scrn:opname=dup187:npv=11:naiv=57:forbid=all:pci=5-97-2 :ssn=135:action=dupdisc:cgsr=cg07:cdsr=cd10:mapset=30`

    When each of these commands has successfully completed, this message appears.

```
rlghncxa03w 06-10-20 09:07:58 GMT  EAGLE5 36.0.0
GSM Map Screening table is (1512 of 4000) 38% full
ENT-GSMMAP-SCRN: MASP A - COMPLTD
```

12. Verify the changes using the `rtrv-gsmmap-scrn` command and specifying the `opname`, `cgsr`, and `cdsr` parameter values specified in step 11.
    For this example, enter these commands:

    `rtrv-gsmmap-scrn:opname=pass50:cgsr=cg01:cdsr=cd01`

    This is an example of the possible output.

```
rlghncxa03w 06-10-20 09:07:58 GMT  EAGLE5 36.0.0

SADDR           NP NAI FORBD ACT   CDSR
*               6  15  all   pass  cd01

GSM Map Screening table is (1512 of 4000) 38% full
```

    `rtrv-gsmmap-scrn:opname=discard1:cgsr=cg02:cdsr=cd15`

    This is an example of the possible output.

```
rlghncxa03w 06-10-20 09:07:58 GMT  EAGLE5 36.0.0

SADDR           NP NAI FORBD ACT   CDSR
*               10 15  all   disc  cd15

GSM Map Screening table is (1512 of 4000) 38% full
```

    `rtrv-gsmmap-scrn:opname=dup187:cgsr=cg07:cdsr=cd10`

This is an example of the possible output.

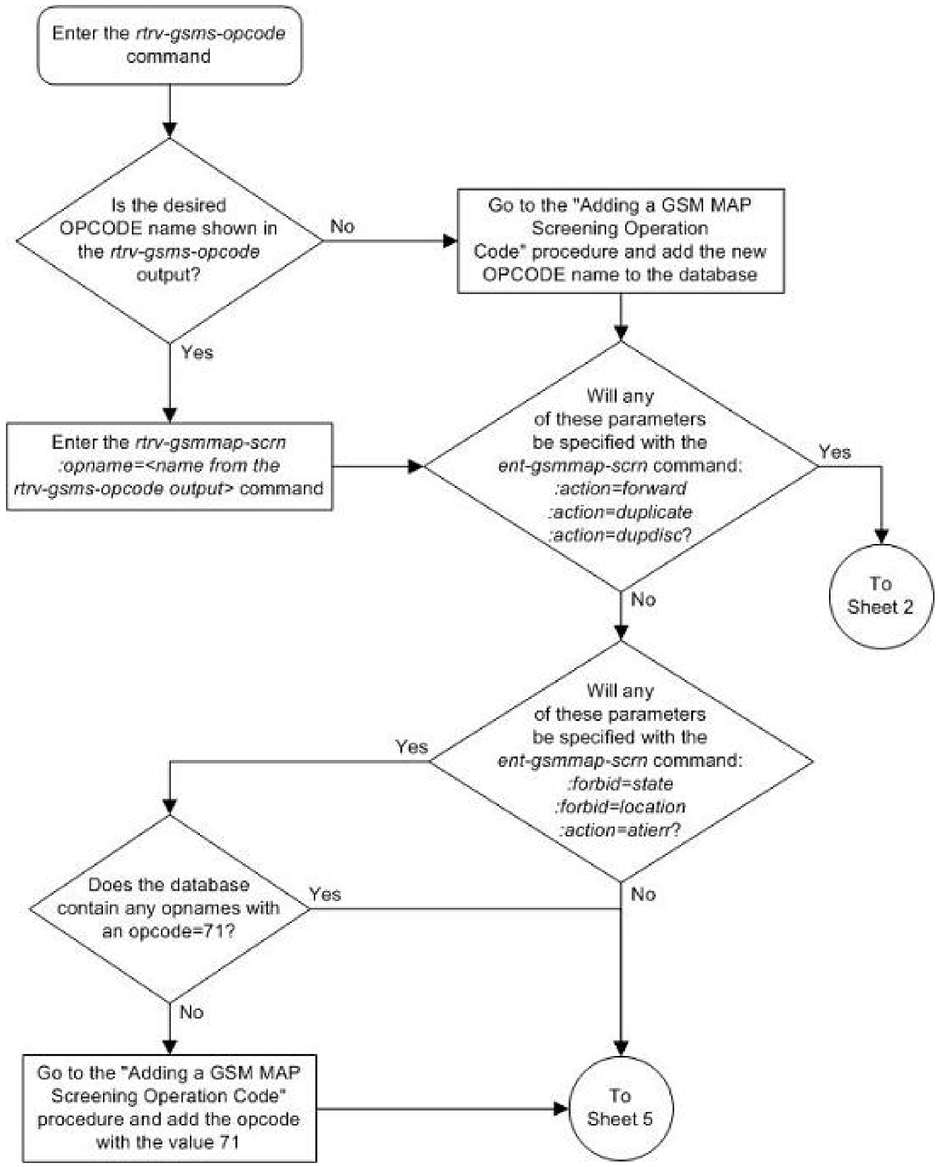
```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

SADDR           NP NAI FORBD ACT      PCI           SSN CDSR  MAPSET RI
*               11 57  all   dupdc    5-97-2        135 cd10  30     ssn
TT=-

GSM Map Screening table is (1512 of 4000) 38% full
```

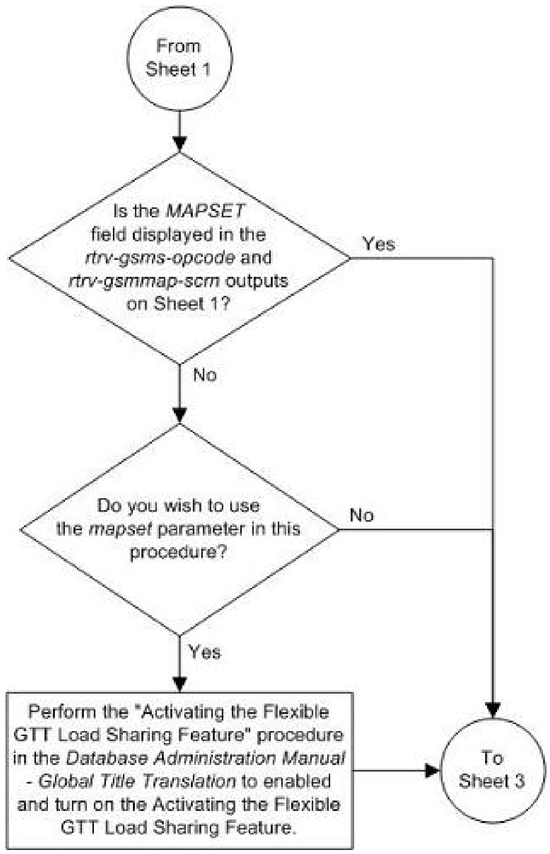
13. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

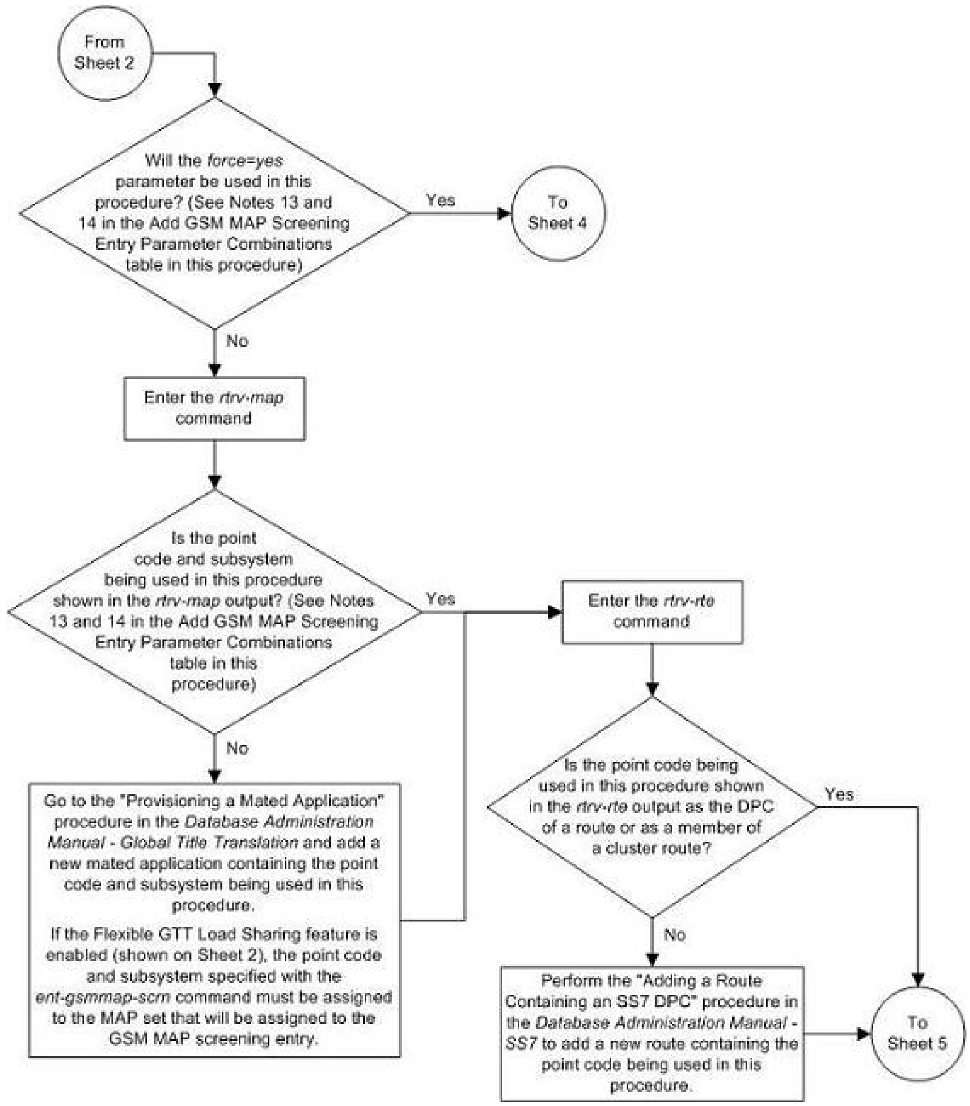
These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

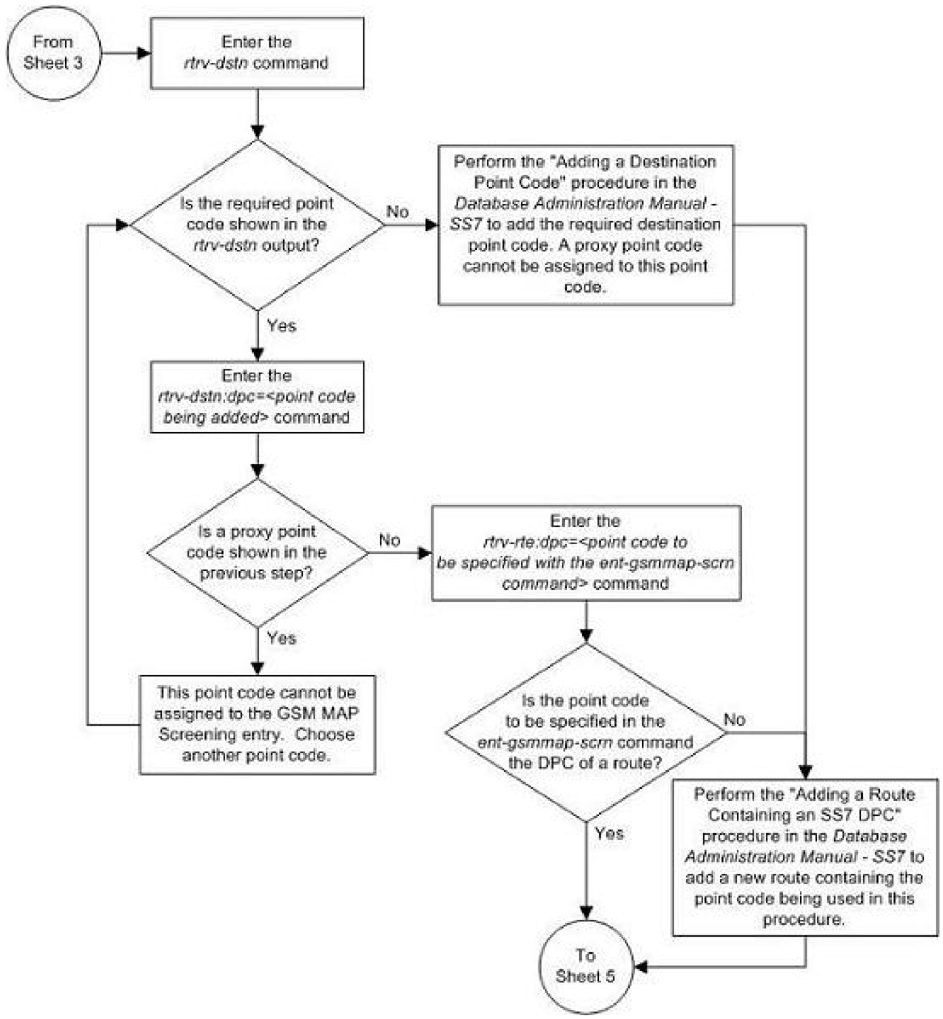
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

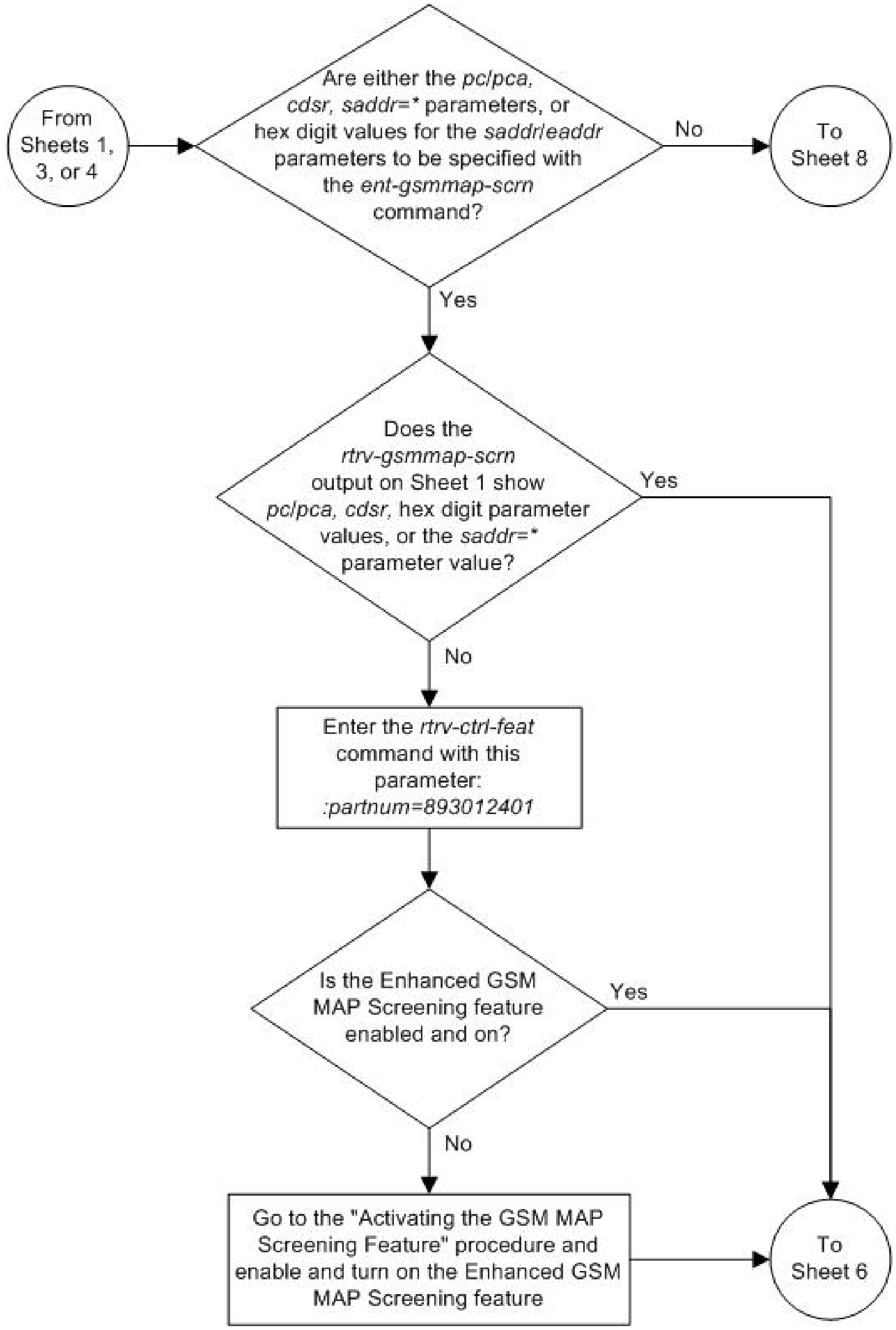
Figure 56: Adding a GSM MAP Screening Entry

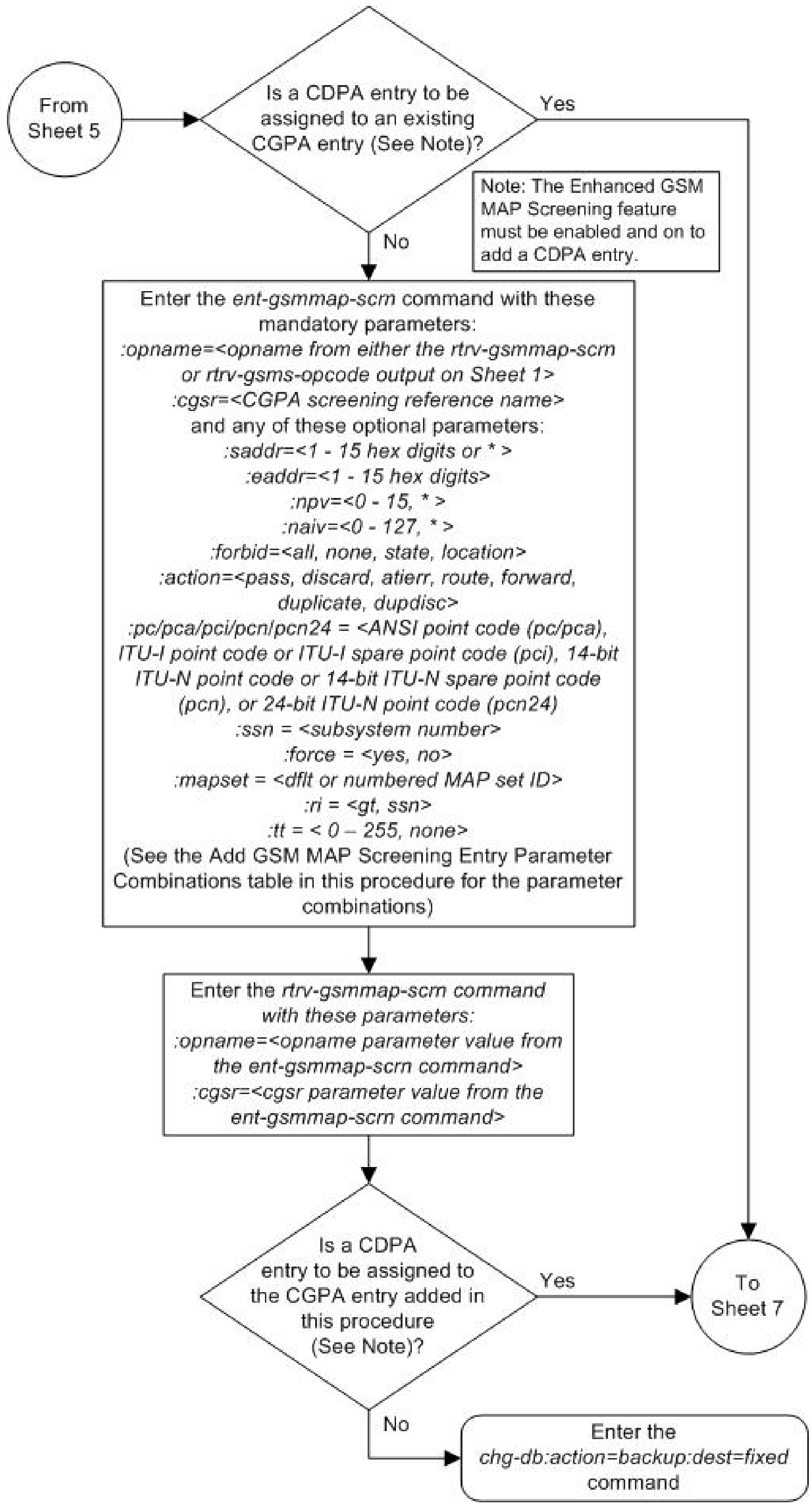

Enter the rtrv-gsms-opcode command
Is the desired OPCODE name shown in the rtrv-gsms-opcode output?
No
Go to the "Adding a GSM MAP Screening Operation Code" procedure and add the new OPCODE name to the database
Yes
Enter the rtrv-gsmmap-scrn :opname=<name from the rtrv-gsms-opcode output> command
Will any of these parameters be specified with the ent-gsmmap-scrn command: :action=forward :action=duplicate :action=dupdisc?
Yes
To Sheet 2
No
Will any of these parameters be specified with the ent-gsmmap-scrn command: :forbid=state :forbid=location :action=atierr?
Yes
Does the database contain any opnames with an opcode=71?
Yes
No
No
Go to the "Adding a GSM MAP Screening Operation Code" procedure and add the opcode with the value 71
To Sheet 5

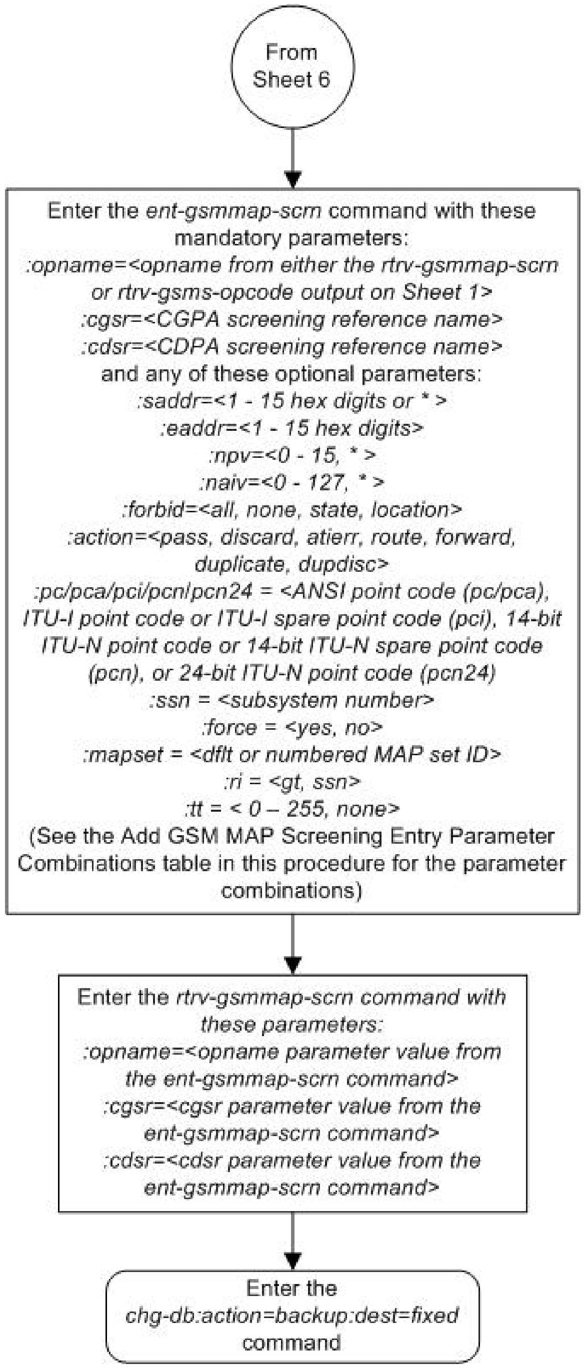

From Sheet 1
Is the MAPSET field displayed in the rtrv-gsms-opcode and rtrv-gsmmap-scrn outputs on Sheet 1?
Yes
No
Do you wish to use the mapset parameter in this procedure?
No
Yes
Perform the "Activating the Flexible GTT Load Sharing Feature" procedure in the Database Administration Manual - Global Title Translation to enabled and turn on the Activating the Flexible GTT Load Sharing Feature.
To Sheet 3

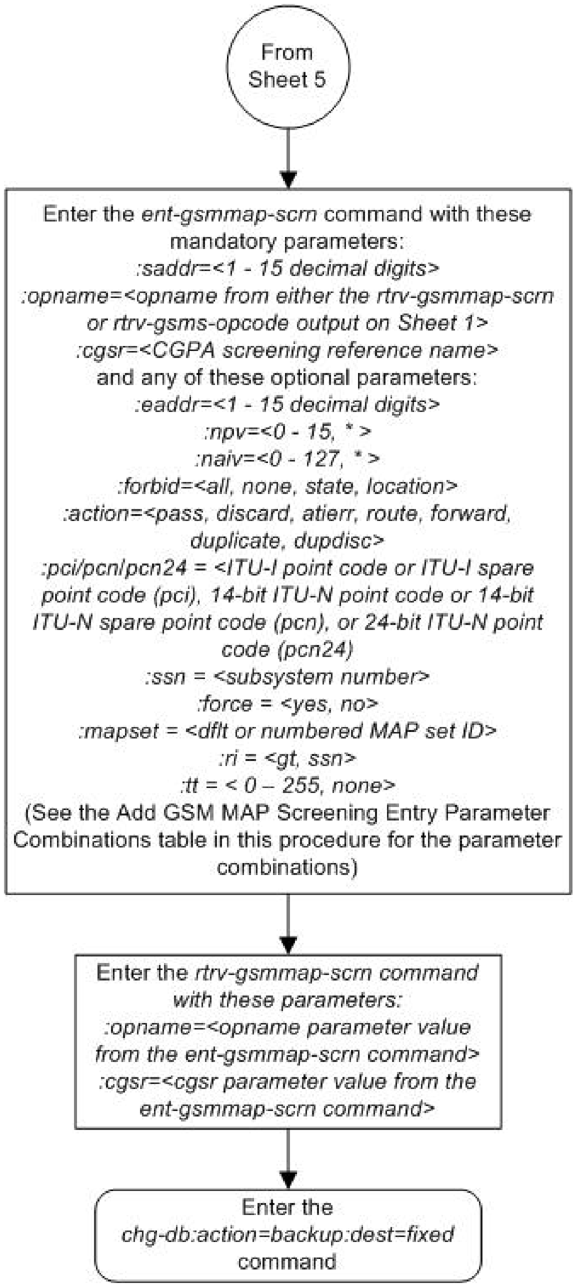

From Sheet 2
Will the force=yes parameter be used in this procedure? (See Notes 13 and 14 in the Add GSM MAP Screening Entry Parameter Combinations table in this procedure)
Yes
To Sheet 4
No
Enter the rtrv-map command
Is the point code and subsystem being used in this procedure shown in the rtrv-map output? (See Notes 13 and 14 in the Add GSM MAP Screening Entry Parameter Combinations table in this procedure)
Yes
Enter the rtrv-rte command
No
Go to the "Provisioning a Mated Application" procedure in the Database Administration Manual - Global Title Translation and add a new mated application containing the point code and subsystem being used in this procedure.
If the Flexible GTT Load Sharing feature is enabled (shown on Sheet 2), the point code and subsystem specified with the ent-gsmmap-scrn command must be assigned to the MAP set that will be assigned to the GSM MAP screening entry.
Is the point code being used in this procedure shown in the rtrv-rte output as the DPC of a route or as a member of a cluster route?
Yes
No
Perform the "Adding a Route Containing an SS7 DPC" procedure in the Database Administration Manual - SS7 to add a new route containing the point code being used in this procedure.
To Sheet 5


From Sheet 3
Enter the rtrv-dstn command
Is the required point code shown in the rtrv-dstn output?
No
Perform the "Adding a Destination Point Code" procedure in the Database Administration Manual - SS7 to add the required destination point code. A proxy point code cannot be assigned to this point code.
Yes
Enter the rtrv-dstn:dpc=<point code being added> command
Is a proxy point code shown in the previous step?
No
Enter the rtrv-rte:dpc=<point code to be specified with the ent-gsmmap-scrn command> command
Yes
This point code cannot be assigned to the GSM MAP Screening entry. Choose another point code.
Is the point code to be specified in the ent-gsmmap-scrn command the DPC of a route?
No
Perform the "Adding a Route Containing an SS7 DPC" procedure in the Database Administration Manual - SS7 to add a new route containing the point code being used in this procedure.
Yes
To Sheet 5


From Sheets 1, 3, or 4
Are either the pc/pca, cdsr, saddr=* parameters, or hex digit values for the saddr/eaddr parameters to be specified with the ent-gsmmap-scrn command?
No
To Sheet 8
Yes
Does the rtrv-gsmmap-scrn output on Sheet 1 show pc/pca, cdsr, hex digit parameter values, or the saddr=* parameter value?
Yes
No
Enter the rtrv-ctrl-feat command with this parameter: :partnum=893012401
Is the Enhanced GSM MAP Screening feature enabled and on?
Yes
No
Go to the "Activating the GSM MAP Screening Feature" procedure and enable and turn on the Enhanced GSM MAP Screening feature
To Sheet 6


From Sheet 5
Is a CDPA entry to be assigned to an existing CGPA entry (See Note)?
Yes
No
Note: The Enhanced GSM MAP Screening feature must be enabled and on to add a CDPA entry.
Enter the ent-gsmmap-scrn command with these mandatory parameters:
:opname=<opname from either the rtrv-gsmmap-scrn or rtrv-gsms-opcode output on Sheet 1>
:cgsr=<CGPA screening reference name>
and any of these optional parameters:
:saddr=<1 - 15 hex digits or * >
:eaddr=<1 - 15 hex digits>
:npv=<0 - 15, * >
:naiv=<0 - 127, * >
:forbid=<all, none, state, location>
:action=<pass, discard, atierr, route, forward, duplicate, dupdisc>
:pc/pca/pci/pcn/pcn24 = <ANSI point code (pc/pca), ITU-I point code or ITU-I spare point code (pci), 14-bit ITU-N point code or 14-bit ITU-N spare point code (pcn), or 24-bit ITU-N point code (pcn24)
:ssn = <subsystem number>
:force = <yes, no>
:mapset = <dflt or numbered MAP set ID>
:ri = <gt, ssn>
:tt = < 0 – 255, none>
(See the Add GSM MAP Screening Entry Parameter Combinations table in this procedure for the parameter combinations)
Enter the rtrv-gsmmap-scrn command with these parameters:
:opname=<opname parameter value from the ent-gsmmap-scrn command>
:cgsr=<cgsr parameter value from the ent-gsmmap-scrn command>
Is a CDPA entry to be assigned to the CGPA entry added in this procedure (See Note)?
Yes
To Sheet 7
No
Enter the chg-db:action=backup:dest=fixed command


From Sheet 6
Enter the ent-gsmmap-scrn command with these mandatory parameters:
:opname=<opname from either the rtrv-gsmmap-scrn or rtrv-gsms-opcode output on Sheet 1>
:cgsr=<CGPA screening reference name>
:cdsr=<CDPA screening reference name>
and any of these optional parameters:
:saddr=<1 - 15 hex digits or * >
:eaddr=<1 - 15 hex digits>
:npv=<0 - 15, * >
:naiv=<0 - 127, * >
:forbid=<all, none, state, location>
:action=<pass, discard, atierr, route, forward, duplicate, dupdisc>
:pc/pca/pci/pcn/pcn24 = <ANSI point code (pc/pca), ITU-I point code or ITU-I spare point code (pci), 14-bit ITU-N point code or 14-bit ITU-N spare point code (pcn), or 24-bit ITU-N point code (pcn24)
:ssn = <subsystem number>
:force = <yes, no>
:mapset = <dflt or numbered MAP set ID>
:ri = <gt, ssn>
:tt = < 0 – 255, none>
(See the Add GSM MAP Screening Entry Parameter Combinations table in this procedure for the parameter combinations)
Enter the rtrv-gsmmap-scrn command with these parameters:
:opname=<opname parameter value from the ent-gsmmap-scrn command>
:cgsr=<cgsr parameter value from the ent-gsmmap-scrn command>
:cdsr=<cdsr parameter value from the ent-gsmmap-scrn command>
Enter the chg-db:action=backup:dest=fixed command



Removing a GSM MAP Screening Entry

Use this procedure to remove the GSM MAP screening entries that filter or allow TCAP messages containing MAP operation codes, origination addresses, and forbidden parameters using the `dlt-gsmmap-scrn` command. The `dlt-gsmmap-scrn` command uses these parameters:

`:opname` – The user-defined name for the operation code. The `opname` value references the operation code (`opcode`) shown in the `rtrv-gsms-opcode` command output.

`:cgsr` – The CGPA screening reference name

`:cdsr` – The CDPA screening reference name

If the GSM MAP Screening entry contains CDPA entries, the individual CDPA entries can be removed without removing the CGPA entry. However, if you wish to remove the CGPA entry, all CDPA entries assigned to the CGPA entry must be removed before the CGPA entry can be removed.

To remove CDPA entries, the `opname`, `cgsr`, and `cdsr` parameters must be specified with the `dlt-gsmmap-scrn` command. To remove CGPA entries, the `opname` and `cgsr` parameters must be specified with the `dlt-gsmmap-scrn` command.

Unlike GTT (Global Title Translation) entries, the GSM MAP screening commands do not support splits of ranges during removing or changing entries.

1. Display the GSM MAP screening operation codes in the database using the `rtrv-gsms-opcode` command.

   This is an example of the possible output.

```
rlghncxa03w 08-09-10 11:43:04 GMT EAGLE5 39.2.0

OPCODE  OPNAME    DFLTACT    PCA          SSN  RI   TT
 36     for1      fwd        002-002-002  10   gt   10

OPCODE  OPNAME    DFLTACT    PCI          SSN  RI   TT
 93     dd93      dupdc      5-25-3       200  ssn 30
 139    fwd139    fwd        3-159-7      128  ssn -

OPCODE  OPNAME    DFLTACT    PCN          SSN  RT   TT
 187    dup187    dupl       11519        79   gt   50

OPCODE  OPNAME    DFLTACT    PCN24        SSN

OPCODE  OPNAME    DFLTACT
 22     sri       disc
 25     route25   route
 50     pass50    pass
 71     ati       atierr
 150    discard1  disc
 *      star      pass

GSMMS OPCODE Table (10 of 257) is 4% full
```

2. Enter the `rtrv-gsmmap-scrn` command with an `opname` value shown in the `rtrv-gsms-opcode` command output in step 1 to display the CGPA GSM MAP screening entries. For this example, enter these commands.

   `rtrv-gsmmap-scrn:opname=pass50`

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: pass50
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI  TT
```

```
SADDR           NP NAI FORBD ACT  CGSR
9194600000      5  75  none  pass  cg01

Range CgPA Entries for OPNAME: pass50
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1512 of 4000) 38% full
```

`rtrv-gsmmap-scrn:opname=ati`

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: ati
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT  CGSR
919462000000005 1  0   locat atier ati1

Range CgPA Entries for OPNAME: ati
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI
SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN
SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR
8284540000      8284600000      *  *   state atier cg03
919461888888888 919461900000000 4  1   locat atier ati2
919462000000000 919463000000000 *  *   locat atier ati3

GSM Map Screening table is (1512 of 4000) 38% full
```

`rtrv-gsmmap-scrn:opname=sri`

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: sri
-----------------------------------
```

```
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: sri
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR
1534363000000   155000000000    8  86  all   dupl     9384          30  cg06
RI=ssn TT=-

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1512 of 4000) 38% full
```

Note: The `rtrv-gsmmap-scrn` output in step 2 shows only the CGPA entries in the MAP screening table for the specified OPNAME. The CGPA entries in step 2 could contain CDPA entries that would have to be removed before the CGPA entry could be removed. CDPA entries can be in the MAP screening table only if the Enhanced GSMMAP Screening feature is enabled and on.

If any of the following parameters or values are shown in the `rtrv-gsmmap-scrn` output in step 2, the Enhanced GSM MAP Screening feature is enabled and on. Skip step 3 and go to step 4.

- `saddr=*`
- `pc/pca`
- The `saddr` or `eaddr` parameter values containing hex digits.

If the `rtrv-gsmmap-scrn` output in step 2 does not show any of these parameters or values, it is possible that the Enhanced GSM MAP Screening feature is enabled and on. Perform step 3 to verify the status of the Enhanced GSM MAP Screening feature.

3. Enter the `rtrv-ctrl-feat` command with the part number of the Enhanced GSM MAP Screening feature.

   Enter this command.

   `rtrv-ctrl-feat:partnum=893012401`

   The following is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
Enhanced GMS (EGMS)       893012401  on      ----

The following features have been temporarily enabled:
```

```
Feature Name              Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

Note: If step 3 shows that the Enhanced GSMMAP Screening feature is not enabled or off, CDPA entries cannot be in the MAP screening table. Skip step 4 and go to step 5.

4. To display the CDPA entries assigned to the CGPA entry shown in step 2, enter the `rtrv-gsmmap-scrn` command with the `opname` and `cgsr` parameter values specified shown in step 2.

   For this example, enter these commands.

   `rtrv-gsmmap-scrn:opname=pass50:cgsr=cg01`

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CdPA Entries for OPNAME: pass50 and CGSR: cg01
--------------------------------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT   CDSR
*               6  15  all   pass  cd01

Range CdPA Entries for OPNAME: pass50 and CGSR: cg01
--------------------------------------------------------
SADDR           EADDR          NP NAI FORBD ACT      PCA           SSN CDSR

SADDR           EADDR          NP NAI FORBD ACT      PCI           SSN CDSR

SADDR           EADDR          NP NAI FORBD ACT      PCN           SSN CDSR

SADDR           EADDR          NP NAI FORBD ACT      PCN24         SSN CDSR

SADDR           EADDR          NP NAI FORBD ACT   CDSR

GSM Map Screening table is (1512 of 4000) 38% full
```

   `rtrv-gsmmap-scrn:opname=ati:cgsr=cg03`

   This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CdPA Entries for OPNAME: ati and CGSR: cg03
--------------------------------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CDSR RI  TT
```

```
SADDR           NP NAI FORBD ACT   CDSR
919461000000130 2  16  locat atier ati5

Range CdPA Entries for OPNAME: ati and CGSR: cg03
--------------------------------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT      PCI
SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT   CDSR
4329290000      5450000000      *  *   state atier cd15
919463000000000 919464000000000 11 95  locat atier ati7
803549000000000 803650000000000 *  *   locat atier ati9

GSM Map Screening table is (1512 of 4000) 38% full
```

`rtrv-gsmmap-scrn:opname=sri:cgsr=cg06`

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: sri and CGSR: cg06
--------------------------------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CDSR

SADDR           NP NAI FORBD ACT      PCI           SSN CDSR

SADDR           NP NAI FORBD ACT      PCN           SSN CDSR

SADDR           NP NAI FORBD ACT      PCN24         SSN CDSR

SADDR           NP NAI FORBD ACT   CDSR

Range CgPA Entries for OPNAME: sri and CGSR: cg06
--------------------------------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT   CDSR

GSM Map Screening table is (1512 of 4000) 38% full
```

5. Remove the GSM MAP screening entries from the database with the `dlt-gsmmap-scrn` command.

   If CDPA entries are being removed, these parameters must be specified with the `dlt-gsmmap-scrn` command: `opname`, `cgsr`, and `cdsr`.

   If the GSM MAP Screening entry contains CDPA entries, the individual CDPA entries can be removed without removing the CGPA entry. However, if you wish to remove the CGPA entry, all CDPA entries assigned to the CGPA entry must be removed before the CGPA entry can be removed.

To remove a CGPA entry, enter the `dlt-gsmmap-scrn` command with the `opname`, and `cgsr` parameter values.

For this example, enter these commands:

`dlt-gsmmap-scrn:opname=pass50:cgsr=cg01:cdsr=cd01`

`dlt-gsmmap-scrn:opname=ati:cgsr=cg03:cdsr=cd15`

`dlt-gsmmap-scrn:opname=sri:cgsr=cg06`

To remove the CGPA entry `cg01` from the opname `pass50` (now that CGPA entry `cg01` has no CDPA entries assigned), enter this command:

`dlt-gsmmap-scrn:opname=pass50:cgsr=cg01`

When each of these commands has successfully completed, this message appears.

```
rlghncxa03w 06-10-20 09:07:58 GMT  EAGLE5 36.0.0
GSM Map Screening table is (1508 of 4000) 38% full
DLT-GSMMAP-SCRN: MASP A - COMPLTD
```

6. Verify the changes using the `rtrv-gsmmap-scrn` command with the `opname` parameter value used in step 5.

   If CDPA entries were removed from CGPA entries without removing the CGPA entry, specify the `opname` and `cgsr` parameter values used in step 5 with the `rtrv-gsmmap-scrn` command.

   For this example, enter these commands:

   `rtrv-gsmmap-scrn:opname=pass50`

   This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: pass50
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: pass50
----------------------------------
SADDR           EADDR          NP NAI FORBD ACT      PCA           SSN CGSR

SADDR           EADDR          NP NAI FORBD ACT      PCI           SSN CGSR

SADDR           EADDR          NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR          NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR          NP NAI FORBD ACT   CGSR
```

```
GSM Map Screening table is (1508 of 4000) 38% full
```

rtrv-gsmmap-scrn:opname=ati:cgsr=cg03

This is an example of the possible output.

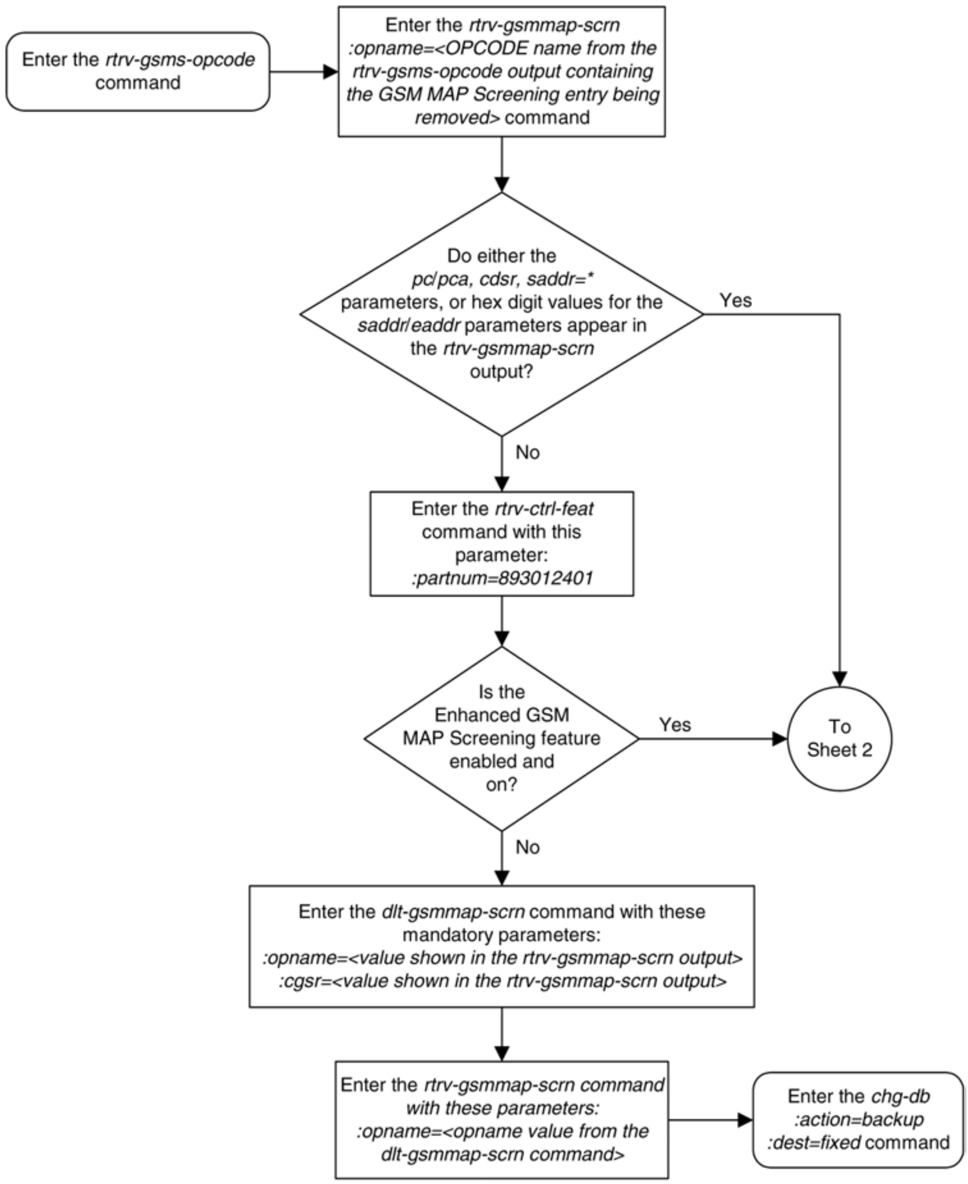
```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CdPA Entries for OPNAME: ati and CGSR: cg03
--------------------------------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT   CDSR
919461000000130 2  16  locat atier ati5

Range CdPA Entries for OPNAME: ati and CGSR: cg03
--------------------------------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT   CDSR
919463000000000 919464000000000 11 95  locat atier ati7
803549000000000 803650000000000 *  *   locat atier ati9

GSM Map Screening table is (1508 of 4000) 38% full
```

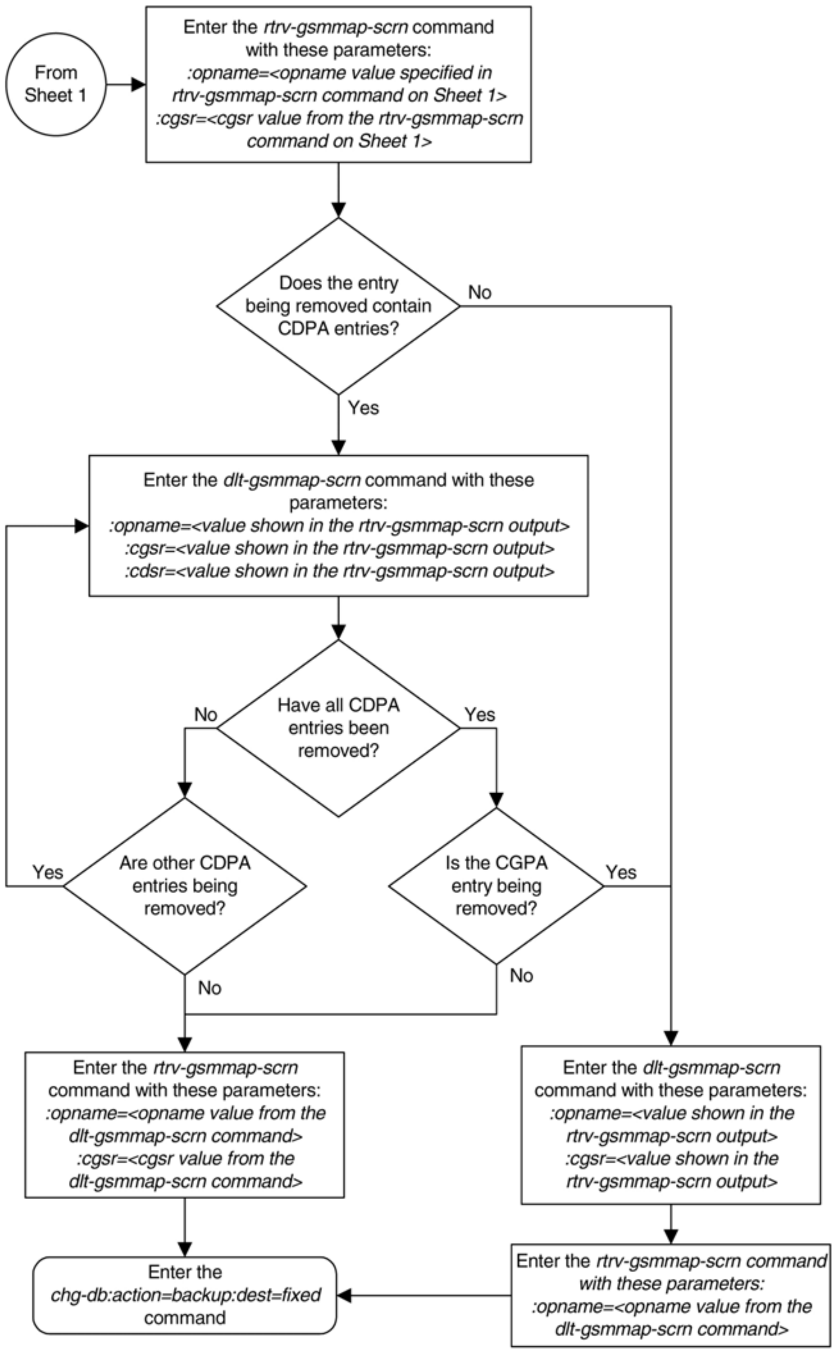
7. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 57: Removing a GSM MAP Screening Entry


Enter the rtrv-gsms-opcode command
Enter the rtrv-gsmmap-scrn :opname=<OPCODE name from the rtrv-gsms-opcode output containing the GSM MAP Screening entry being removed> command
Do either the pc/pca, cdsr, saddr=* parameters, or hex digit values for the saddr/eaddr parameters appear in the rtrv-gsmmap-scrn output?
Yes
No
Enter the rtrv-ctrl-feat command with this parameter: :partnum=893012401
Is the Enhanced GSM MAP Screening feature enabled and on?
Yes
To Sheet 2
No
Enter the dlt-gsmmap-scrn command with these mandatory parameters: :opname=<value shown in the rtrv-gsmmap-scrn output> :cgsr=<value shown in the rtrv-gsmmap-scrn output>
Enter the rtrv-gsmmap-scrn command with these parameters: :opname=<opname value from the dlt-gsmmap-scrn command>
Enter the chg-db :action=backup :dest=fixed command



Changing a GSM MAP Screening Entry

Use this command to change the attributes of the GSM MAP screening entries that filter or allow TCAP messages for certain MAP operation codes using the `chg-gsmmap-scrn` command. The

SCCP messages contain MAP operation codes, origination addresses, numbering plan values, nature of address indicator values, and forbidden parameters.

The `chg-gsmmap-scrn` command uses these parameters.

`:opname` – The user-defined name for the operation code. The `opname` value references the operation code (`opcode`) defined with the `ent-gsms-opcode` command. GSM MAP screening is performed on the specified address or addresses for the referenced operation code.

`:naction` – The new screening action to take if a message is forbidden as defined by the `forbid` parameter value. One of these actions can be assigned.

- `pass` – Route the message as normal to the destination.
- `discard` – The MSU is to be discarded.
- `atierr` – An ATI (Any Time Interrogation) reject message is generated. This option is only valid for ATI MAP operation codes.
- `route` – Route the message as normal to the original destination node.
- `forward` – Route the original message to the forward node. The original message is not sent to the original node. If, however, the forwarded node is not available for routing then the MSU is routed to the original node.
- `duplicate` – Route the message as normal to the original destination and route a copy of the original message to the duplicate node.
- `dupdisc` – Duplicate and discard – Route the original message to the duplicate node. The original message is not sent to the original node.

`:npc/npca/npci/npcn/npcn24` – The new ANSI point code (`npc/npca`), new ITU-I point code or ITU-I spare point code (`npci`), new 14-bit ITU-N point code or 14-bit ITU-N spare point code (`npcn`), or new 24-bit ITU-N point code (`npcn24`) of the node that the MSU is routed to by the `forward`, `duplicate`, or `dupdisc` screening actions. The EAGLE 5 ISS can contain 14-bit ITU-N point codes or 24-bit ITU-N point codes, but not both.

`:nssn` – The new subsystem number of the node that the MSU is routed to by the `forward`, `duplicate`, or `dupdisc` screening actions

`:force` – The mated application override. Is the GSM MAP screening operation code to be entered without a mated application in the database (`yes` or `no`)?

`:nforbid` – The new forbidden parameter value. If a forbidden parameter is detected, the message is rejected by the action defined by the `action` parameter value. One of four forbidden parameter values can be specified.

- `all` – All parameters are forbidden. Take the specified screening action defined by the `naction` parameter for incoming messages that contain the entered address and operation code combination.
- `none` – No parameters are forbidden. Take the specified screening action defined by the `naction` parameter for incoming messages that contain the entered address and operation code combination.
- `state` – Take the specified screening action defined by the `naction` parameter for incoming messages that contain `state` as the forbidden parameter for the entered address and operation code combination.
- `location` – Take the specified screening action defined by the `naction` parameter for incoming messages that contain `location` as the forbidden parameter for the entered address and operation code combination.

`:cgsr` – The current CGPA screening reference name.

`:cdsr` – The current CDPA screening reference name.

`:ncgsr` – The new CGPA screening reference name consisting of 1 alphabetic character and 3 optional alphanumeric characters.

`:ncdsr` – The new CDPA screening reference name consisting of 1 alphabetic character and 3 optional alphanumeric characters.

`:nmapset` – The new MAP set ID, shown in the `rtrv-map` command. This parameter can be specified only if the Flexible GTT Load Sharing feature is enabled. The status of the Flexible GTT Load Sharing feature is shown in the `rtrv-ctrl-feat` output. To enable the Flexible GTT Load Sharing feature, perform the "Activating the Flexible GTT Load Sharing Feature" procedure in the Database *Administration Manual* - Global Title Translation .

`:nri` - The new routing indicator parameter. This parameter specifies whether a subsequent global title translation is required. This parameter has two values.

- `gt` - subsequent global title translation is required.
- `ssn` - subsequent global title translation is not required.

`:ntt` - the new translation type that will be assigned to the GSM MAP screening entry. This parameter specifies the value that the translation type for the CdPA is set to as a result of GSM MAP screening. The values for this parameter are 0 to 255, or the value `none` which specifies removes the existing translation type from to the GSM MAP screening entry.

If a message is screened and does not contain matching `npv` and `naiv` values, the message is rejected. The message is rejected with the default action defined by the `chg-gsms-opcode` command for the operation code (`opcode`) parameter entry referenced by the operation name (`opname`) parameter.

Table 29: Change GSM MAP Screening Entry Parameter Combinations on page 413 shows the parameter combinations that can be used in this procedure.

Table 29: Change GSM MAP Screening Entry Parameter Combinations

Entry Containing a Point Code and SSN Enhanced GSM MAP Screening Feature Enabled and On	Entry Without a Point Code and SSN Enhanced GSM MAP Screening Feature Enabled and On	Entry containing the Action ATIERR Enhanced GSM MAP Screening Feature Enabled and On	Entry Containing a Point Code and SSN GSM MAP Screening Feature Enabled and On Only	Entry Without a Point Code and SSN GSM MAP Screening Feature Enabled and On Only	Entry containing the Action ATIERR GSM MAP Screening Feature Enabled and On Only
Mandatory Parameters					
:opname = current	:opname = current	:opname = current opname value containing	:opname = current opname value (See Note 2)	:opname = current opname value (See Note 2)	:opname = current opname value

Entry Containing a Point Code and SSN Enhanced GSM MAP Screening Feature Enabled and On	Entry Without a Point Code and SSN Enhanced GSM MAP Screening Feature Enabled and On	Entry containing the Action ATIERR Enhanced GSM MAP Screening Feature Enabled and On	Entry Containing a Point Code and SSN GSM MAP Screening Feature Enabled and On Only	Entry Without a Point Code and SSN GSM MAP Screening Feature Enabled and On Only	Entry containing the Action ATIERR GSM MAP Screening Feature Enabled and On Only
opname value (See Note 2)	opname value (See Note 2)	opcode=71 (See Note 2)			containing opcode=71 (See Note 2)
:cgsr = current CGSR value	:cgsr = current CGSR value	:cgsr = current CGSR value	:cgsr = current CGSR value	:cgsr = current CGSR value	:cgsr = current CGSR value
Optional Parameters (See Note 1)					
:cdsr = current CDSR value (See Notes 3 and 4)	:cdsr = current CDSR value (See Notes 3 and 4)	:cdsr = current CDSR value (See Notes 3 and 4)	:nforbid = all	:nforbid = all, none (See Note 13)	:nforbid = state, location
:nforbid = all	:nforbid = all, none (See Note 13)	:nforbid = state, location	:naction = forward, duplicate, dupdisc (See Note 6)	:naction = pass, discard, route (See Note 13)	:naction = atierr
:naction = forward, duplicate, dupdisc (See Note 6)	:naction = pass, discard, route (See Note 13)	:naction = atierr	:ncgsr = new CGSR value	:ncgsr = new CGSR value	:ncgsr = new CGSR value
:ncgsr = new CGSR value (See Notes 4 and 5)	:ncgsr = new CGSR value (See Notes 4 and 5)	:ncgsr = new CGSR value (See Notes 4 and 5)	:npci/npcn/ npcn24 =point code value (See Notes 7, 8, 9, 10, 11, and 12)		
:ncdsr = new CDSR value	:ncdsr = new CDSR value	:ncdsr = new CDSR value	:nssn = 0 - 255, none (See Notes 7, 8, 9,		

Entry Containing a Point Code and SSN Enhanced GSM MAP Screening Feature Enabled and On	Entry Without a Point Code and SSN Enhanced GSM MAP Screening Feature Enabled and On	Entry containing the Action ATIERR Enhanced GSM MAP Screening Feature Enabled and On	Entry Containing a Point Code and SSN GSM MAP Screening Feature Enabled and On Only	Entry Without a Point Code and SSN GSM MAP Screening Feature Enabled and On Only	Entry containing the Action ATIERR GSM MAP Screening Feature Enabled and On Only
(See Notes 3 and 5)	(See Notes 3 and 5)	(See Notes 3 and 5)	10, 11, 12, and 14)		
:npc/npca/npci/ npcn/npcn24 = point code value (See Notes 7, 8, 9, 10, 11, and 12)			:force=yes (See Notes 11 and 12)		
			:nmapset = dflt or numbered MAP set ID (See Notes 11 and 12)		
:nssn = 0 - 255, none (See Notes 7, 8, 9, 10, 11, 12, and 14)			:nri = gt, ssn (See Note 14)		
:force=yes (See Notes 11 and 12)			:ntt = 0 - 255, none (See Note 15)		
:nmapset = dflt or numbered MAP set ID (See Notes 11 and 12)					
:nri = gt, ssn (See Note 14)					
:ntt = 0 - 255, none (See Note 15)					

Entry Containing a Point Code and SSN Enhanced GSM MAP Screening Feature Enabled and On	Entry Without a Point Code and SSN Enhanced GSM MAP Screening Feature Enabled and On	Entry containing the Action ATIERR Enhanced GSM MAP Screening Feature Enabled and On	Entry Containing a Point Code and SSN GSM MAP Screening Feature Enabled and On Only	Entry Without a Point Code and SSN GSM MAP Screening Feature Enabled and On Only	Entry containing the Action ATIERR GSM MAP Screening Feature Enabled and On Only

Notes:

1. At least one optional parameter must be specified with the `chg-gsmmap-scrn` command. If the `cdsr` parameter is specified, at least one other optional parameter must be specified with the `chg-gsmmap-scrn` command.

2. The `opname` parameter value must be shown in the `rtrv-gsms-opcode` output.

3. The `cdsr` parameter must be specified when the `ncdsr` parameter is specified.

4. The `ncgsr` parameter should not be specified when the `cdsr` parameter is specified.

5. The `ncgsr` and `ncdsr` parameters cannot be specified together.

6. The point code value must be the DPC of a route or a member of a cluster route. The `npc/npca` value must be a full point code, The `npc/npca` value can be a member of a cluster point code when that cluster point code is the DPC of a route. This can be verified with the `rtrv-rte` command. If the point code value is not shown in the `rtrv-rte` output as the DPC of a route, go to the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual* - SS7 and add a new route containing the point code value. A proxy point code cannot be assigned to the point code.

7. The EAGLE 5 ISS can contain 14-bit ITU-N point codes or 24-bit ITU-N point codes, but not both at the same time.

8. If the new or current (if unchanged) `action` parameter values are either `forward`, `duplicate`, or `dupdisc`, the point code and `nssn` parameters must be specified with the `chg-gsmmap-scrn` command. If the point code or subsystem number values are not being changed, the point code and subsystem number parameters must be specified with the current values for these parameters.

9. If only the point code or subsystem number value is being changed, the point code or subsystem number value being changed must be specified with the new value for the parameter being changed. The current value for the point code or subsystem number parameter not being changed must be specified. The `naction` parameter does not have to be specified. For example, if the current point code is `pca=002-002-002` and the subsystem number is 50, and the point code is being changed to `pca=003-003-003` and the subsystem number is not changing, the `npca` parameter value would be the new point code value (003-003-003) and the `nssn` parameter value would be the current value (50).

10. To specify the npc/npca parameters, the Enhanced GSM MAP Screening feature must be enabled and turned on.

11. If the Flexible GTT Load Sharing feature is not enabled:

Entry Containing a Point Code and SSN Enhanced GSM MAP Screening Feature Enabled and On	Entry Without a Point Code and SSN Enhanced GSM MAP Screening Feature Enabled and On	Entry containing the Action ATIERR Enhanced GSM MAP Screening Feature Enabled and On	Entry Containing a Point Code and SSN GSM MAP Screening Feature Enabled and On Only	Entry Without a Point Code and SSN GSM MAP Screening Feature Enabled and On Only	Entry containing the Action ATIERR GSM MAP Screening Feature Enabled and On Only

- The `nmapset` parameter cannot be specified.
- The point code and subsystem number values specified with the `chg-gsmmap-scrn` command must be shown in the `rtrv-map` output, or else the `force=yes` parameter must be specified. If the point code and subsystem number values are not shown in the `rtrv-map` output, and a new mated application is to be added, perform one of the "Provisioning a Mated Application" procedures in the Database *Administration Manual* - Global Title Translation and add the required mated application with the point code and subsystem number values.

12. If the Flexible GTT Load Sharing feature is enabled:

- If the current `action` parameter value is either `pass`, `route`, `discard`, or `atierr`, and the `action` parameter value is changed to either `forward`, `duplicate`, or `dupdisc`, the GSM MAP screening entry must be assigned to a MAP set with the `nmapset=dflt` parameter (to assign the GSM MAP screening entry to the default MAP set), or with the `nmapset=<numbered MAP set ID>` parameter (to assign the GSM MAP screening entry to a MAP set other the default MAP set).
- If the default MAP set will be assigned to the GSM MAP screening entry, the `npc/npca/npci/npcn/npcn24` and `nssn` values must be shown in the default MAP set in the `rtrv-map` output. If the `npc/npca/npci/npcn/npcn24` or `nssn` values are not shown in the default MAP set in the `rtrv-map` output, the `force=yes` parameter must be specified.
- If a MAP set other than the default MAP set will be assigned to the GSM MAP screening entry, the `npc/npca/npci/npcn/npcn24` and `nssn` values must be shown in that MAP set in the `rtrv-map` output.
- If the point code and subsystem values are not being changed, the `nmapset` parameter does not have to be specified unless the MAP set ID assigned to the GSM MAP screening entry is being changed. The new MAP set must contain the point code and subsystem values in the GSM MAP screening entry.

13. If the value of the `forbid` parameter is being changed to `none`, and the current value of the `action` parameter is not `pass`, the `naction=pass` parameter must be specified. If the current value of the `forbid` parameter is `none` and will not be changed, the value of the `action` parameter must be `pass` and cannot be changed.

14. If, when the `chg-gsmmap-scrn` command is completed, the `ri` parameter value is `ssn`, then a numerical value must be assigned to the `ssn` parameter.

Entry Containing a Point Code and SSN Enhanced GSM MAP Screening Feature Enabled and On	Entry Without a Point Code and SSN Enhanced GSM MAP Screening Feature Enabled and On	Entry containing the Action ATIERR Enhanced GSM MAP Screening Feature Enabled and On	Entry Containing a Point Code and SSN GSM MAP Screening Feature Enabled and On Only	Entry Without a Point Code and SSN GSM MAP Screening Feature Enabled and On Only	Entry containing the Action ATIERR GSM MAP Screening Feature Enabled and On Only
15. The value `none` for the `tt` parameter removes the existing `tt` parameter value that is assigned to the GSM MAP screening entry. A dash is shown in the `TT` column of the `rtrv-gsmmap-scrn` output when the `tt` value is removed.					

1. Display the GSM MAP screening operation codes in the database using the `rtrv-gsms-opcode` command.

   If the Flexible GTT Load Sharing feature is not enabled, this is an example of the possible output.

   If the Flexible GTT Load Sharing feature is enabled, this is an example of the possible output.

   If the default action for the GSM MAP screening entry will be `atierr`, or the `forbid` parameter value will be `location` or `state`, the `opname` value must contain an `opcode` value of 71.

2. Enter the `rtrv-gsmmap-scrn` command with an `opname` value shown in the `rtrv-gsms-opcode` command output in step 1 to display the CGPA GSM MAP screening entries to change.

   For this example, enter this command.

   `rtrv-gsmmap-scrn:opname=ati`

   This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: ati
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT  CGSR
919462000000005 1  0   locat atier ati1

Range CgPA Entries for OPNAME: ati
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA
SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR
```

```
SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR
8284540000      8284600000      *  *   state atier cg03
919461888888888 919461900000000 4  1   locat atier ati2
919462000000000 919463000000000 *  *   locat atier ati3

GSM Map Screening table is (1512 of 4000) 38% full
```

`rtrv-gsmmap-scrn:opname=dd93`

This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: dd93
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR RI  TT

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: dd93
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR
854000000       857000000       3  99  all   fwd      3-201-7       100 cg05
RI=ssn TT=-

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1512 of 4000) 38% full
```

If the Flexible GTTLoad Sharing feature is enabled, the `MAPSET` field is shown in the `rtrv-gsmmap-scrn` output as shown in the following output example.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: dd93
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR  MAPSET  RI

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR  MAPSET  RI

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR  MAPSET  RI

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR  MAPSET  RI

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: dd93
----------------------------------
```

```
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI
SSN CGSR
854000000       857000000       3  99  all   fwd      3-201-7       100 cg05
MAPSET = DFLT RI=ssn TT=-

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1512 of 4000) 38% full
```

Note: If the `npc/npca` or `ncdsr` parameters are being specified in this procedure, the Enhanced GSMMAP Screening feature must be enabled and on. If these parameters are not being specified in this procedure, skip step 3 and go to step 4.

If any of the following parameters or values are shown in the `rtrv-gsmmap-scrn` output in this step, the Enhanced GSM MAP Screening feature is enabled and on. Skip step 3 and go to step 4.

- `saddr=*`
- `pc/pca`
- The `saddr` or `eaddr` parameter values containing hex digits.

If the `rtrv-gsmmap-scrn` output in this step does not show any of these parameters or values, it is possible that the Enhanced GSM MAP Screening feature is enabled and on. If you wish to use the `npc/npca` or `ncdsr` parameters, perform step 3 to verify the status of the Enhanced GSM MAP Screening feature.

3. Verify that the Enhanced GSM MAP Screening feature is enabled and on by entering the `rtrv-ctrl-feat` command with the part number of the Enhanced GSM MAP Screening feature.
Enter this command.

`rtrv-ctrl-feat:partnum=893012401`

The following is an example of the possible output.

```
rlghncxa03w 06-10-28 21:15:37 GMT EAGLE5 36.0.0
The following features have been permanently enabled:

Feature Name              Partnum    Status  Quantity
Enhanced GMS (EGMS)       893012401  on      ----

The following features have been temporarily enabled:

Feature Name              Partnum    Status  Quantity     Trial Period Left
Zero entries found.

The following features have expired temporary keys:

Feature Name              Partnum
Zero entries found.
```

- If the Enhanced GSMMAP screening feature is not enabled or is turned off, and you wish to use the `npc/npca` or `ncdsr` parameters, perform the *Activating the GSM MAP Screening Feature* on page 297 procedure to enable and turn on the Enhanced GSMMAP Screening feature. After the Enhanced GSM MAP Screening feature has been enabled and turned on, continue the procedure with step 4.

- Skip step 4 and continue the procedure with step 5 if:
  - The Enhanced GSMMAP Screening feature will not be enabled and turned on in this step.
  - The `npc/npca` or `ncdsr` parameters will not be specified in this procedure and the Enhanced GSM MAP Screening feature is enabled and turned on.

4. Enter the `rtrv-gsmmap-scrn` command with an `opname` and `cgsr` values shown in the `rtrv-gsmmap-scrn` command output in step 2 to display the CDPA GSM MAP screening entries to change.

   For this example, enter this command.

   `rtrv-gsmmap-scrn:opname=ati:cgsr=cg03`

   This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CdPA Entries for OPNAME: ati and CGSR: cg03
--------------------------------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT      PCI           SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT   CDSR
919461000000130 2  16  locat atier ati5

Range CdPA Entries for OPNAME: ati and CGSR: cg03
--------------------------------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT      PCN
SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CDSR

SADDR           EADDR           NP NAI FORBD ACT   CDSR
4329290000      5450000000      *  *   state atier cd15
919463000000000 919464000000000 11 95  locat atier ati7
803549000000000 803650000000000 *  *   locat atier ati9

GSM Map Screening table is (1512 of 4000) 38% full
```

   `rtrv-gsmmap-scrn:opname=dd93:cgsr=cg05`

   This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CdPA Entries for OPNAME: dd93 and CGSR: cg05
--------------------------------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CDSR RI  TT
```

```
SADDR           NP NAI FORBD ACT      PCI           SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT      PCN           SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT      PCN24         SSN CDSR RI  TT

SADDR           NP NAI FORBD ACT   CDSR

Range CgPA Entries for OPNAME: dd93 and CGSR: cg05
--------------------------------------------------------
SADDR           EADDR          NP NAI FORBD ACT      PCA           SSN CDSR

SADDR           EADDR          NP NAI FORBD ACT      PCI           SSN CDSR

SADDR           EADDR          NP NAI FORBD ACT      PCN           SSN CDSR

SADDR           EADDR          NP NAI FORBD ACT      PCN24         SSN CDSR

SADDR           EADDR          NP NAI FORBD ACT   CDSR

GSM Map Screening table is (1512 of 4000) 38% full
```

Note: If the Flexible GTTLoad Sharing feature is enabled, the `MAPSET` field is shown in the `rtrv-gsmmap-scrn` output if the `action` parameter value for the GSMMAP screening entry is either `forward`, `duplicate`, or `dupdisc`.

5. Perform one of these actions.
   - If the `naction` parameter value will be either `pass`, `discard`, `route`, or `atierr`, skip steps 6 through 9, and continue the procedure with step 10.
   - If the point code is not being changed, skip steps 6 through 9, and continue the procedure with step 10. If the point code and subsystem values are not being changed, and the Flexible GTT Load Sharing feature is enabled, the `nmapset` parameter does not have to be specified unless the MAP set ID assigned to the GSM MAP screening entry is being changed. The new MAP set must contain the point code and subsystem values in the GSM MAP screening entry.
   - If the `naction` parameter value will be either `forward`, `duplicate`, or `dupdisc`, perform one of these actions.
     - To use a point code and a MAP set from the mated application table, and MAP sets are not shown in the `rtrv-gsmmap-scrn` output in step 4, the Flexible GTT Load Sharing Feature must be enabled. Perform the "Activating the Flexible GTT Load Sharing Feature" procedure in the Database *Administration Manual* - Global Title Translation and enable the Flexible GTT Load Sharing feature. After enabling the Flexible GTT Load Sharing feature, skip steps 6 and 7 and continue the procedure with step 8.
     - To use a point code and a MAP set from the mated application table, and MAP sets are shown in the `rtrv-gsmmap-scrn` output in step 4, skip steps 6 and 7 and continue the procedure with step 8.
     - To use a point code in the mated application table, but without using a MAP set, and MAP sets are not shown in the `rtrv-gsmmap-scrn` output in step 4, skip steps 6 and 7 and continue the procedure with step 8.
     - To use a point code that is not in the mated application table, the `force=yes` parameter must be specified with the `chg-gsmmap-scrn` command. A proxy point code cannot be assigned to this point code. If the Flexible GTT Load Sharing feature is enabled, the `force=yes` parameter can be used only if the default MAP set is assigned to the GSM OPCODE entry. Continue the procedure with step 6.

6. Display the destination point codes in the database by entering the `rtrv-dstn` command. This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 37.5.0

   DPCA          CLLI        BEI ELEI  ALIASI       ALIASN         DOMAIN
   001-207-000   ----------- no  ---   -------      -----------    SS7
   001-001-001   ----------- no  ---   -------      -----------    SS7
   001-001-002   ----------- no  ---   -------      -----------    SS7
   001-005-000   ----------- no  ---   -------      -----------    SS7
   001-007-000   ----------- no  ---   -------      -----------    SS7
   008-012-003   ----------- no  ---   -------      -----------    SS7
   003-002-004   ----------- no  ---   -------      -----------    SS7
   009-002-003   ----------- no  ---   -------      -----------    SS7
   010-020-005   ----------- no  ---   -------      -----------    SS7

   DPCI          CLLI        BEI ELEI  ALIASI       ALIASN         DOMAIN
   1-207-0       ----------- no  ---   -------      -----------    SS7
   0-015-0       ----------- no  ---   -------      -----------    SS7
   0-017-0       ----------- no  ---   -------      -----------    SS7
   1-011-1       ----------- no  ---   -------      -----------    SS7
   1-011-2       ----------- no  ---   -------      -----------    SS7

   DPCN          CLLI        BEI ELEI   ALIASA          ALIASI        DOMAIN

   DPCN24        CLLI        BEI ELEI   ALIASA          ALIASI        DOMAIN

Destination table is (14 of 2000) 1% full
Alias table is (0 of 12000) 0% full
PPC table is (1 of 20) 5% full
```

If the required point code is not shown in the `rtrv-dstn` output, perform the "Adding a Destination Point Code" procedure in the *Database Administration Manual - SS7* to add the required point code. A proxy point code cannot be assigned to the point code.

After the new point code has been added, skip steps 7 through 9 and perform the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual* - SS7 and add the required route to the database. After the route has been added, continue the procedure with step 10.

7. Display the point code that will be assigned to the mated application by using the `rtrv-dstn` command and specifying the point code. For this example, enter this command.

   `rtrv-dstn:dpca=010-020-005`

   This is an example of the possible output.

```
rlghncxa03w 06-10-10 11:43:04 GMT EAGLE5 37.5.0

   DPCA          CLLI        BEI ELEI  ALIASI       ALIASN         DOMAIN
   010-020-005   ----------- no  ---   -------      -----------    SS7

   PPC           NCAI           PRX
   009-002-003   ----           no

Destination table is (14 of 2000) 1% full
Alias table is (0 of 12000) 0% full
PPC table is (1 of 20) 5% full
```

If the adjacent point code is not shown in the `rtrv-dstn` command output, the following output is displayed.

```
DPCA          CLLI        BEI ELEI  ALIASI       ALIASN/N24    DOMAIN
```

```
No destinations meeting the requested criteria were found

Destination table is (14 of 2000) 1% full
Alias table is (0 of 12000) 0% full
PPC table is (1 of 20) 5% full
```

A proxy point code (a point code value is shown in the `PPC` column) cannot be assigned to the point code. If a proxy point code is shown in this step, choose another point code from the `rtrv-dstn` output in the previous step and repeat this step.

If the point code is not shown in the `rtrv-dstn` output, perform the “Adding a Destination Point Code” procedure in the Database *Administration Manual* - SS7 and add the adjacent point code to the destination point code table.

After the new point code has been added, skip steps 8 and 9, and perform the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual* - SS7 and add the required route to the database. After the route has been added, continue the procedure with step 10.

8. The point code and subsystem number being assigned to the GSM MAP screening entry must be in the mated application table.

Enter the `rtrv-map` command with the `npc/npca/npci/npcn/npcn24` and `nssn` values that will be specified with the `chg-gsmmap-scrn` command in step 10.

If the Flexible GTT Load Sharing feature is not enabled, for this example, enter these commands.

`rtrv-map:pci=5-79-2:ssn=89`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)

PCI          Mate PCI     SSN RC MULT SRM MRC GRP NAME SSO
5-79-2                     89 10  SOL --- --- GRP01    ON
```

Note: If the point code and subsystem number is not shown in the `rtrv-map` output, and is not added to the database in one of these procedures, the `force=yes` parameter must be specified with the `chg-gsmmap-scrn` command in step 10.

If the Flexible GTT Load Sharing feature is enabled and the current `action` parameter value is either `pass`, `route`, `discard`, or `atierr`, and the `action` parameter value is changed to either `forward`, `duplicate`, or `dupdisc`, the GSM MAP screening entry must be assigned to a MAP set with the `nmapset=dflt` parameter (to assign the GSM MAP screening entry to the default MAP set), or with the `nmapset=<numbered MAP set ID>` parameter (to assign the GSM MAP screening entry to a MAP set other the default MAP set).

For this example, enter these commands.

`rtrv-map:pci=5-79-2:ssn=89`

This is an example of the possible output.

```
rlghncxa03w 06-10-25 09:42:31  GMT  EAGLE5 36.0.0

MAP TABLE IS   2 % FULL    (20 of 1024)

PCI          Mate PCI     SSN RC MULT SRM MRC GRP NAME SSO
```

```
MAPSET ID=20
5-79-2                     89 10  SOL --- --- GRP01    ON
```

If the point code and subsystem number is not shown in the `rtrv-map` output, perform one of the “Provisioning a Mated Application” procedures in the Database *Administration Manual* - Global Title Translation and add the required point code and subsystem number to the mated application table.

9. The point code specified with the `chg-gsmmap-scrn` command must be the DPC of a route.

   Enter the `rtrv-rte` command with the `dpc` parameter specifying the point code to be used with the `chg-gsmmap-scrn` command to verify whether or not the point code is the DPC of a route. For this example, enter these commands.

   `rtrv-rte:dpci=5-79-2`

   This is an example of the possible output.

```
rlghncxa03w 06-10-07 11:43:04 GMT  EAGLE5 36.0.0
DPCI        ALIASN/N24       ALIASA      LSN        RC    APC
5-79-2      1501             230-101-191 ls100001   10    1-234-5
                                         ls100002   10    3-65-4
                                             RTX:No  CLLI=idp9
```

   If the point code is not shown in the `rtrv-rte` output, go to the "Adding a Route Containing an SS7 DPC" procedure in the Database *Administration Manual - SS7* and add the required route to the database.

10. Change the GSM MAP screening entry with the `chg-gsmmap-scrn` command.

    Table 29: Change GSM MAP Screening Entry Parameter Combinations on page 413 shows the parameter combinations that can be used with the `chg-gsmmap-scrn` command.

    For this example, the Enhanced GSM MAP Screening feature is enabled and on. Enter these commands:

    `chg-gsmmap-scrn:opname=ati:cgsr=cg03:cdsr=cd15:nforbid=none :naction=pass`

    `chg-gsmmap-scrn:opname=dd93:cgsr=cg05:nforbid=none:naction=pass :npci=5-79-2:nssn=89:nmapset=20`

    When this command has successfully completed, this message appears.

```
rlghncxa03w 06-10-20 09:07:58 GMT  EAGLE5 36.0.0
GSM Map Screening table is (1512 of 4000) 38% full
CHG-GSMMAP-SCRN: MASP A - COMPLTD
```

11. Verify the changes using the `rtrv-gsmmap-scrn` command, specifying the `opname` parameter value used in step 10.

    If the `cdsr` parameter was specified in step 10, specify the `cgsr`, and `cdsr` parameter values used in step 10 with the `opname` parameter value. For this example, the Enhanced GSM MAP Screening feature is enabled and on. Enter these commands:

    `rtrv-gsmmap-scrn:opname=ati:cgsr=cg03:cdsr=cd15`

    This is an example of the possible output.

```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

SADDR            EADDR            NP NAI FORBD ACT   CDSR  MAPSET RI
```

```
8284540000      8284600000      *  *   none  pass  cd15  DFLT   ssn
TT=-

GSM Map Screening table is (1512 of 4000) 38% full
```

`rtrv-gsmmap-scrn:opname=dd93`

This is an example of the possible output.

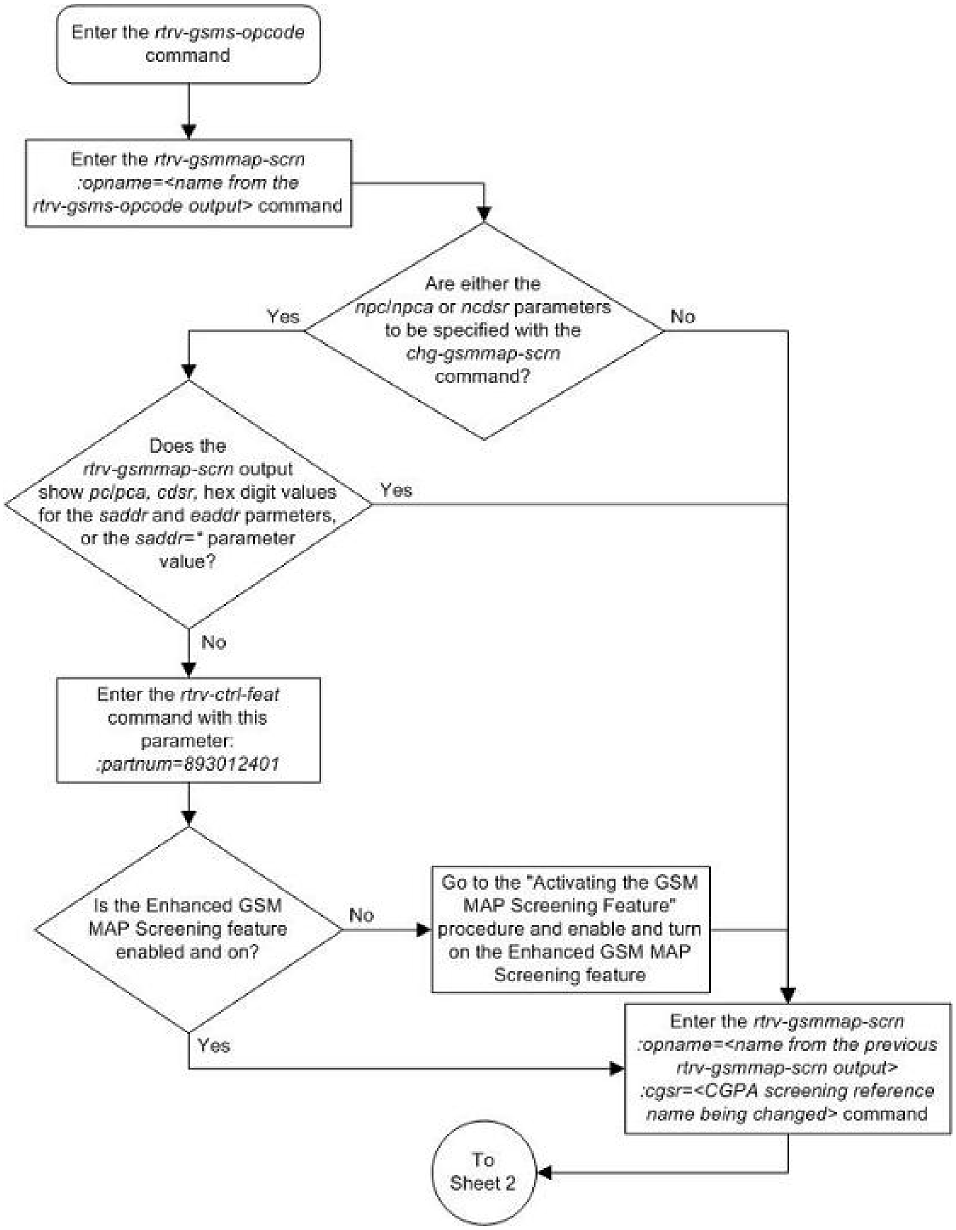
```
rlghncxa03w 08-09-20 09:07:58 GMT  EAGLE5 39.2.0

Single CgPA Entries for OPNAME: dd93
-----------------------------------
SADDR           NP NAI FORBD ACT      PCA           SSN CGSR  MAPSET  RI

SADDR           NP NAI FORBD ACT      PCI           SSN CGSR  MAPSET  RI

SADDR           NP NAI FORBD ACT      PCN           SSN CGSR  MAPSET  RI

SADDR           NP NAI FORBD ACT      PCN24         SSN CGSR  MAPSET  RI

SADDR           NP NAI FORBD ACT  CGSR

Range CgPA Entries for OPNAME: dd93
----------------------------------
SADDR           EADDR           NP NAI FORBD ACT      PCA           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCI           SSN CGSR
854000000       860000000       3  99  none  pass     5-79-2        89  cg05
MAPSET = 20 RI=ssn TT=-

SADDR           EADDR           NP NAI FORBD ACT      PCN           SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT      PCN24         SSN CGSR

SADDR           EADDR           NP NAI FORBD ACT   CGSR

GSM Map Screening table is (1512 of 4000) 38% full
```

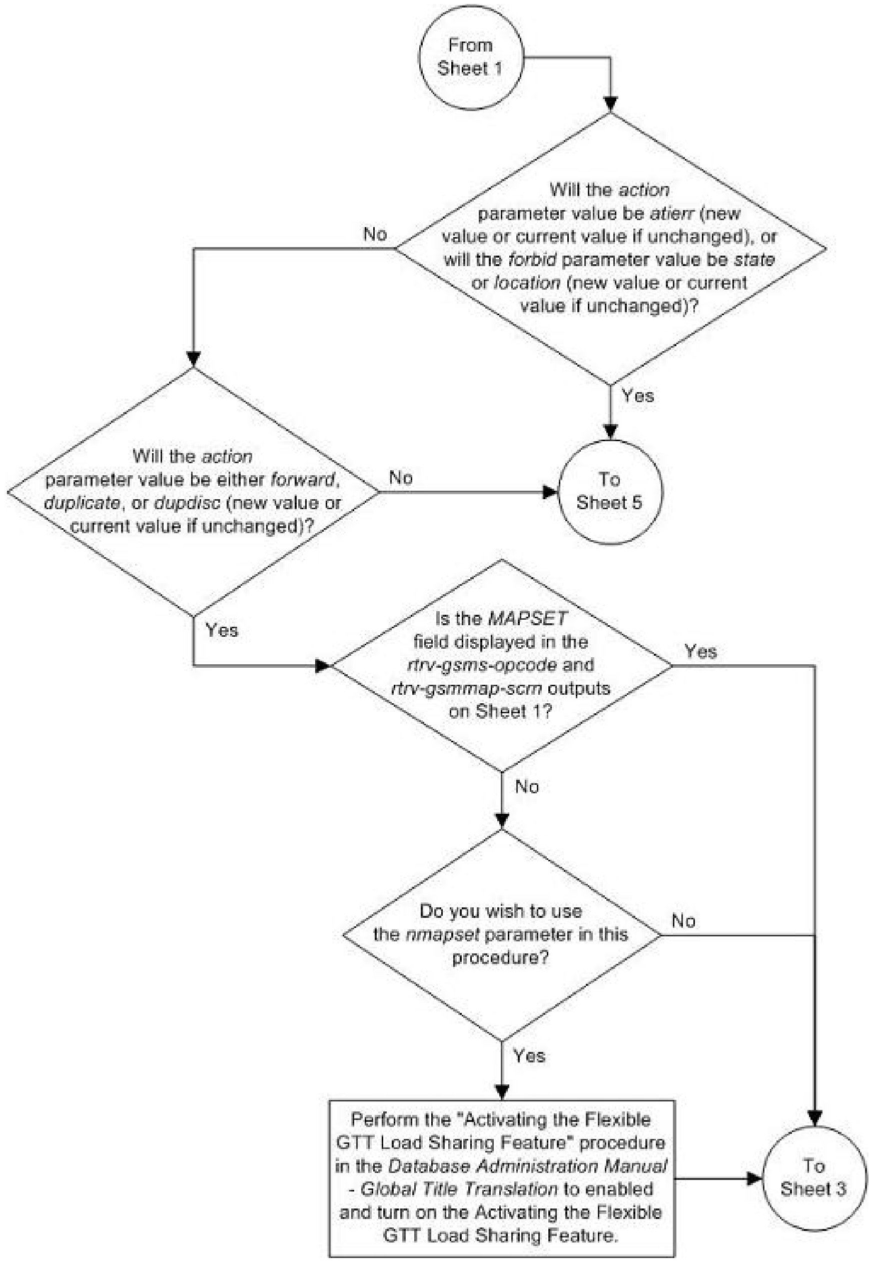
12. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

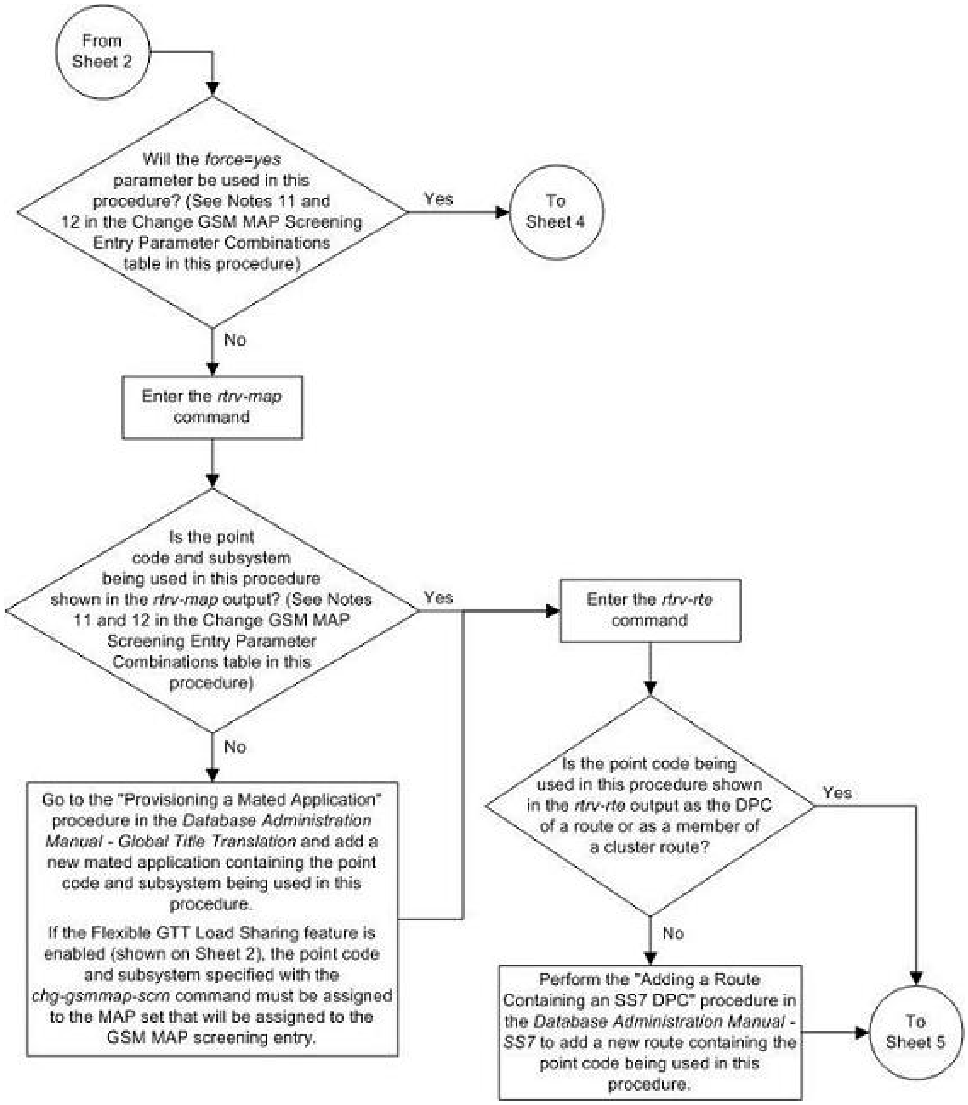
These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

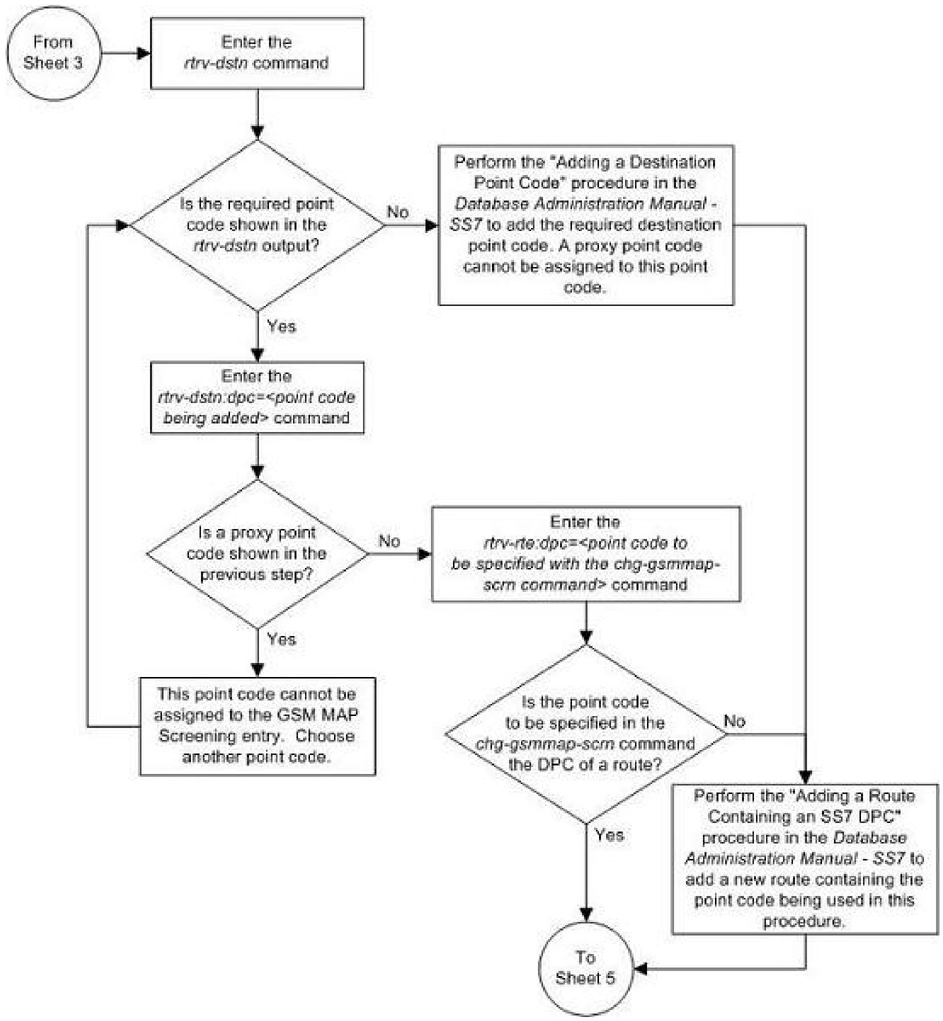
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

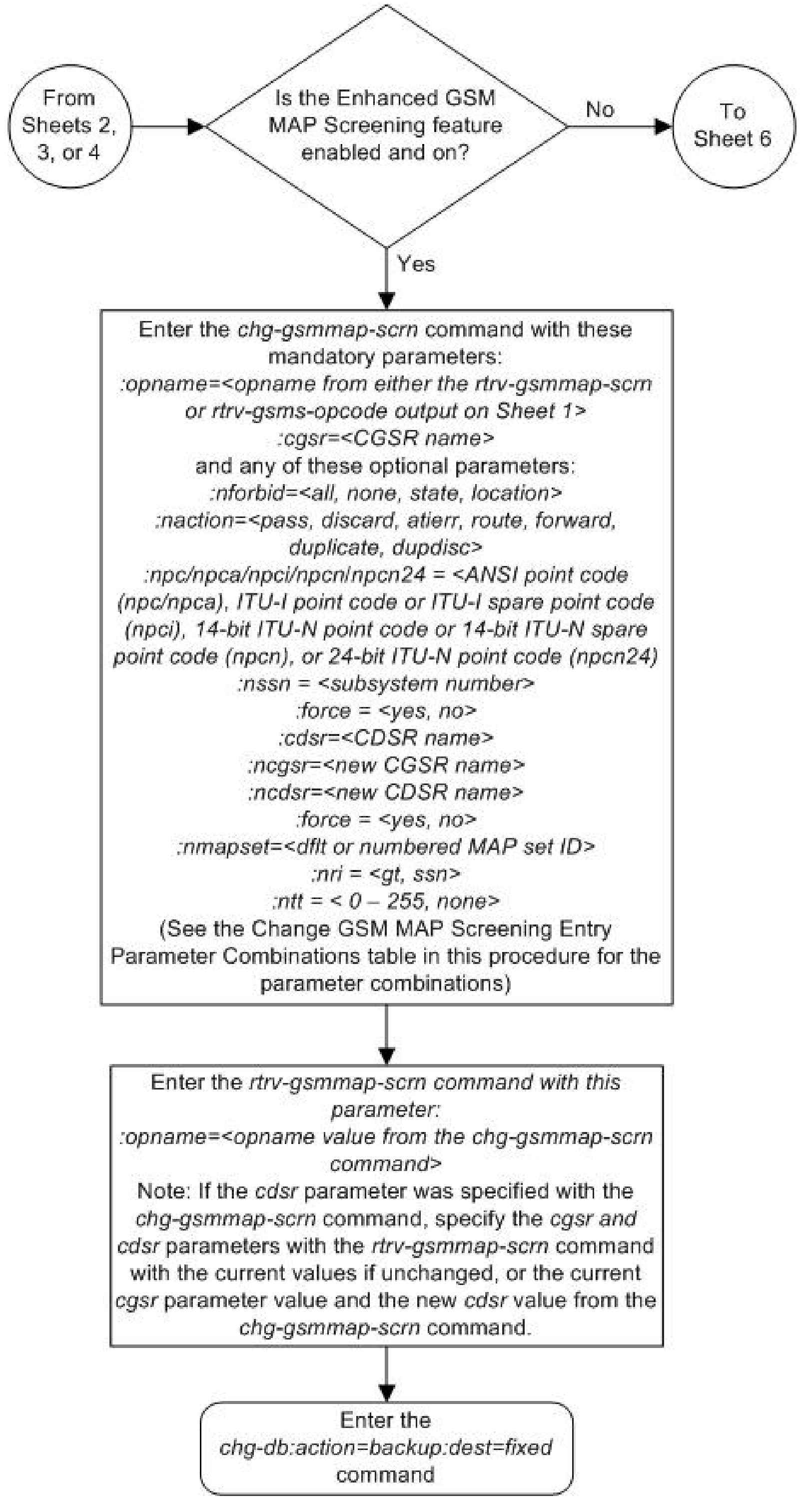
Figure 58: Changing a GSM MAP Screening Entry

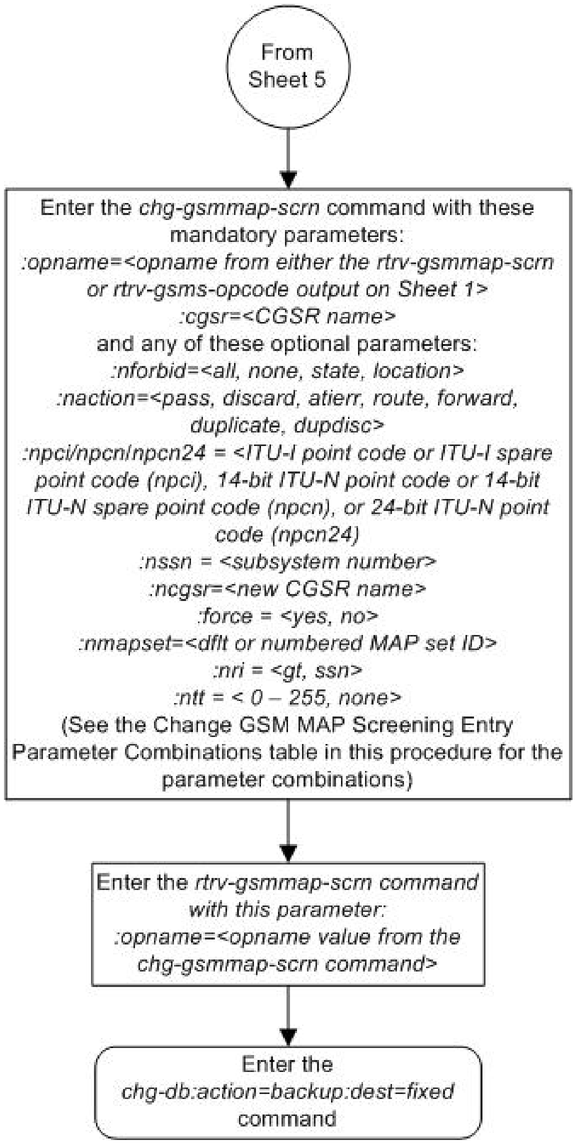

Enter the rtrv-gsms-opcode command
Enter the rtrv-gsmmap-scrn :opname=<name from the rtrv-gsms-opcode output> command
Are either the npc/npca or ncdsr parameters to be specified with the chg-gsmmap-scrn command?
Yes
No
Does the rtrv-gsmmap-scrn output show pc/pca, cdsr, hex digit values for the saddr and eaddr parmeters, or the saddr=* parameter value?
Yes
No
Enter the rtrv-ctrl-feat command with this parameter: :partnum=893012401
Is the Enhanced GSM MAP Screening feature enabled and on?
No
Go to the "Activating the GSM MAP Screening Feature" procedure and enable and turn on the Enhanced GSM MAP Screening feature
Yes
Enter the rtrv-gsmmap-scrn :opname=<name from the previous rtrv-gsmmap-scrn output> :cgsr=<CGPA screening reference name being changed> command
To Sheet 2


From Sheet 1
Will the *action* parameter value be *atierr* (new value or current value if unchanged), or will the *forbid* parameter value be *state* or *location* (new value or current value if unchanged)?
No
Yes
Will the *action* parameter value be either *forward*, *duplicate*, or *dupdisc* (new value or current value if unchanged)?
No
To Sheet 5
Yes
Is the *MAPSET* field displayed in the *rtrv-gsms-opcode* and *rtrv-gsmmap-scrn* outputs on Sheet 1?
Yes
No
Do you wish to use the *nmapset* parameter in this procedure?
No
Yes
Perform the "Activating the Flexible GTT Load Sharing Feature" procedure in the *Database Administration Manual - Global Title Translation* to enabled and turn on the Activating the Flexible GTT Load Sharing Feature.
To Sheet 3


From Sheet 2
Will the force=yes parameter be used in this procedure? (See Notes 11 and 12 in the Change GSM MAP Screening Entry Parameter Combinations table in this procedure)
Yes
To Sheet 4
No
Enter the rtrv-map command
Is the point code and subsystem being used in this procedure shown in the rtrv-map output? (See Notes 11 and 12 in the Change GSM MAP Screening Entry Parameter Combinations table in this procedure)
Yes
Enter the rtrv-rte command
No
Go to the "Provisioning a Mated Application" procedure in the Database Administration Manual - Global Title Translation and add a new mated application containing the point code and subsystem being used in this procedure.
If the Flexible GTT Load Sharing feature is enabled (shown on Sheet 2), the point code and subsystem specified with the chg-gsmmap-scrn command must be assigned to the MAP set that will be assigned to the GSM MAP screening entry.
Is the point code being used in this procedure shown in the rtrv-rte output as the DPC of a route or as a member of a cluster route?
Yes
No
Perform the "Adding a Route Containing an SS7 DPC" procedure in the Database Administration Manual - SS7 to add a new route containing the point code being used in this procedure.
To Sheet 5


From Sheet 3
Enter the rtrv-dstn command
Is the required point code shown in the rtrv-dstn output?
No
Perform the "Adding a Destination Point Code" procedure in the Database Administration Manual - SS7 to add the required destination point code. A proxy point code cannot be assigned to this point code.
Yes
Enter the rtrv-dstn:dpc=<point code being added> command
Is a proxy point code shown in the previous step?
No
Enter the rtrv-rte:dpc=<point code to be specified with the chg-gsmmap-scrn command> command
Yes
This point code cannot be assigned to the GSM MAP Screening entry. Choose another point code.
Is the point code to be specified in the chg-gsmmap-scrn command the DPC of a route?
No
Perform the "Adding a Route Containing an SS7 DPC" procedure in the Database Administration Manual - SS7 to add a new route containing the point code being used in this procedure.
Yes
To Sheet 5


From Sheets 2, 3, or 4
Is the Enhanced GSM MAP Screening feature enabled and on?
No
To Sheet 6
Yes
Enter the chg-gsmmap-scrn command with these mandatory parameters:
:opname=<opname from either the rtrv-gsmmap-scrn or rtrv-gsms-opcode output on Sheet 1>
:cgsr=<CGSR name>
and any of these optional parameters:
:nforbid=<all, none, state, location>
:naction=<pass, discard, atierr, route, forward, duplicate, dupdisc>
:npc/npca/npci/npcn/npcn24 = <ANSI point code (npc/npca), ITU-I point code or ITU-I spare point code (npci), 14-bit ITU-N point code or 14-bit ITU-N spare point code (npcn), or 24-bit ITU-N point code (npcn24)
:nssn = <subsystem number>
:force = <yes, no>
:cdsr=<CDSR name>
:ncgsr=<new CGSR name>
:ncdsr=<new CDSR name>
:force = <yes, no>
:nmapset=<dflt or numbered MAP set ID>
:nri = <gt, ssn>
:ntt = < 0 – 255, none>
(See the Change GSM MAP Screening Entry Parameter Combinations table in this procedure for the parameter combinations)
Enter the rtrv-gsmmap-scrn command with this parameter:
:opname=<opname value from the chg-gsmmap-scrn command>
Note: If the cdsr parameter was specified with the chg-gsmmap-scrn command, specify the cgsr and cdsr parameters with the rtrv-gsmmap-scrn command with the current values if unchanged, or the current cgsr parameter value and the new cdsr value from the chg-gsmmap-scrn command.
Enter the chg-db:action=backup:dest=fixed command



Changing the GSM MAP Screening TCAP Continue and End Message Processing Option

The option for enabling or disabling the processing of GSM MAP screening TCAP Continue and TCAP End messages can be changed with the `chg-sccpopts` command and with the following parameter:

`:gmstcapce` – This parameter has two values:

- `on` – enables the processing of TCAP Continue and TCAP End messages.
- `off` – disables the processing of TCAP Continue and TCAP End messages.

The system default value for this parameter is `off`.

The value of the `gmstcapce` parameter is shown in the `GMSTCAPCE` field of the `rtrv-sccpopts` output. The `GMSTCAPCE` field of the `rtrv-sccpopts` output is shown only when the GSM MAP Screening feature is enabled and turned on. If the `GMSTCAPCE` field is not shown in the `rtrv-sccpopts` output, perforem the *Activating the GSM MAP Screening Feature* on page 297 to enable and turn on the GSM MAP screening feature.

1. Display the existing value for the `gsmtcapce` parameter by entering the `rtrv-sccpopts` command.

   The value for the `gsmtcapce` parameter is shown in the `GSMTCAPCE` field. This is an example of the possible output.

   ```
   rlghncxa03w 06-10-17 16:02:05 GMT  EAGLE5 36.0.0

   SCCP OPTIONS
   -------------------------------
   GSMTCAPCE                    off
   ```

   Note:

   The `rtrv-sccpopts` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-sccpopts` command, see the `rtrv-sccpopts` command description in the *Commands Manual*.

   If the `GSMTCAPCE` field is not shown in the `rtrv-sccpopts` output, perform the *Activating the GSM MAP Screening Feature* on page 297 to enable and turn on the GSMMAP screening feature. After the GSMMAP Screening feature is enabled and turned on, go to step 2.

   If the `GSMTCAPCE` field is shown in the `rtrv-sccpopts` output, go to step 2.

2. Change the `gsmtcapce` parameter value by entering on of the following commands.

   If the current value of the `gsmtcapce` parameter is `off`, or if the GSM MAP Screning feature was enabled and turned on in step 1, enter the following command to enable the processing of TCAP Continue and TCAP End messages.

   `chg-sccpopts:gsmtcapce=on`

   If the current value of the `gsmtcapce` parameter is `on`, enter the following command to disable the processing of TCAP Continue and TCAP End messages.

   `chg-sccpopts:gsmtcapce=off`

   When this command has successfully completed, this message should appear.

   ```
   rlghncxa03w 06-10-07 00:22:57 GMT  EAGLE5 36.0.0
   CHG-SCCPOPTS: MASP A - COMPLTD
   ```

3. Verify the changes using the `rtrv-sccpopts` command.

   This is an example of the possible output.

   ```
   rlghncxa03w 06-10-17 16:02:05 GMT  EAGLE5 36.0.0

   SCCP OPTIONS
   -------------------------------
   GSMTCAPCE                     on
   ```

   Note:

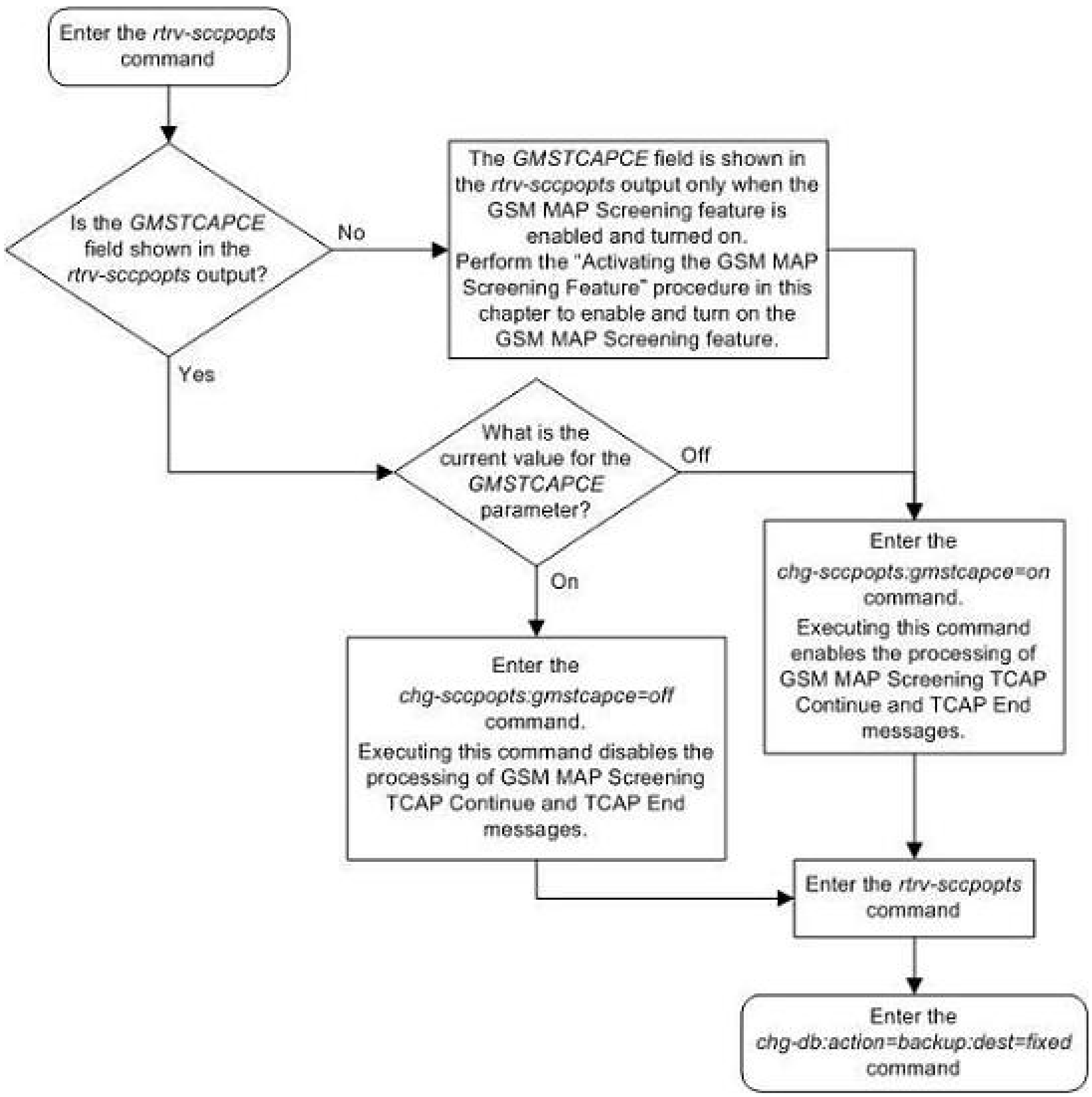
The `rtrv-sccpopts` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-sccpopts` command, see the `rtrv-sccpopts` command description in the *Commands Manual*.

4. Backup the new changes using the `chg-db:action=backup:dest=fixed` command.

   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED): MASP A - Backup starts on active MASP.
BACKUP (FIXED): MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED): MASP A - Backup starts on standby MASP.
BACKUP (FIXED): MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 59: Changing the GSM MAP Screening TCAP Continue and End Message Processing Option



Chapter 6

EAGLE 5 Integrated Monitoring Support Configuration

Topics:

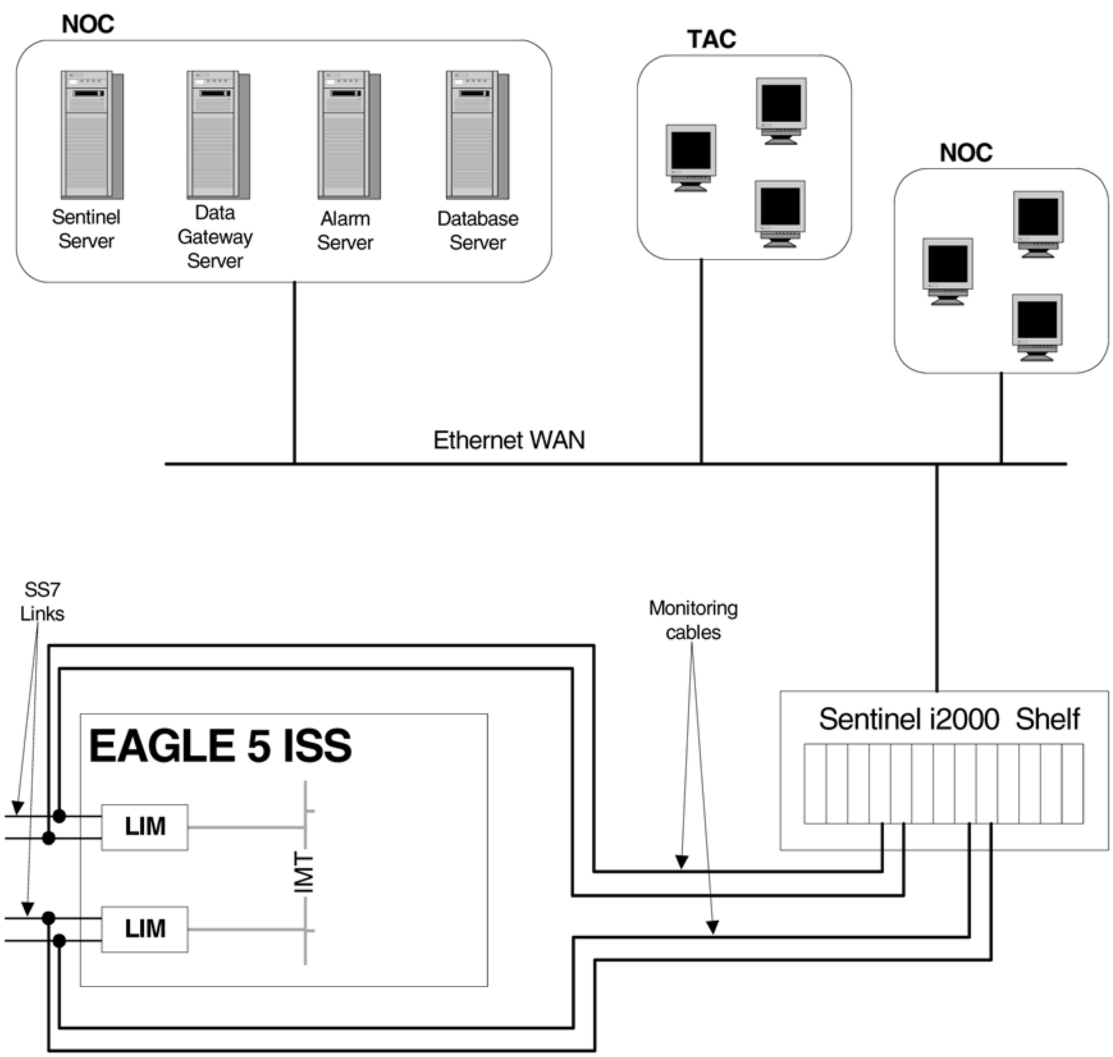
Chapter 6, EAGLE 5 Integrated Monitoring Support Configuration, describes the Eagle 5 Integrated Monitoring Support feature and the procedures necessary to configure the EAGLE 5 ISS to support this feature.

Introduction

The EAGLE 5 Integrated Monitoring Support feature allows the network traffic on the EAGLE 5 ISS's signaling links to be monitored by an ESP (extended services platform) or IMF (integrated message feeder) without additional intrusive cabling.

To monitor the network traffic on the EAGLE 5 ISS's signaling links without this feature requires physical, clamp-on connections to the EAGLE 5 ISS's SS7 signaling links (see *Figure 60: Monitoring via Hardware Connection* on page 436). This monitoring method involves costs for cable installation and maintenance for each SS7 link that is to be monitored.

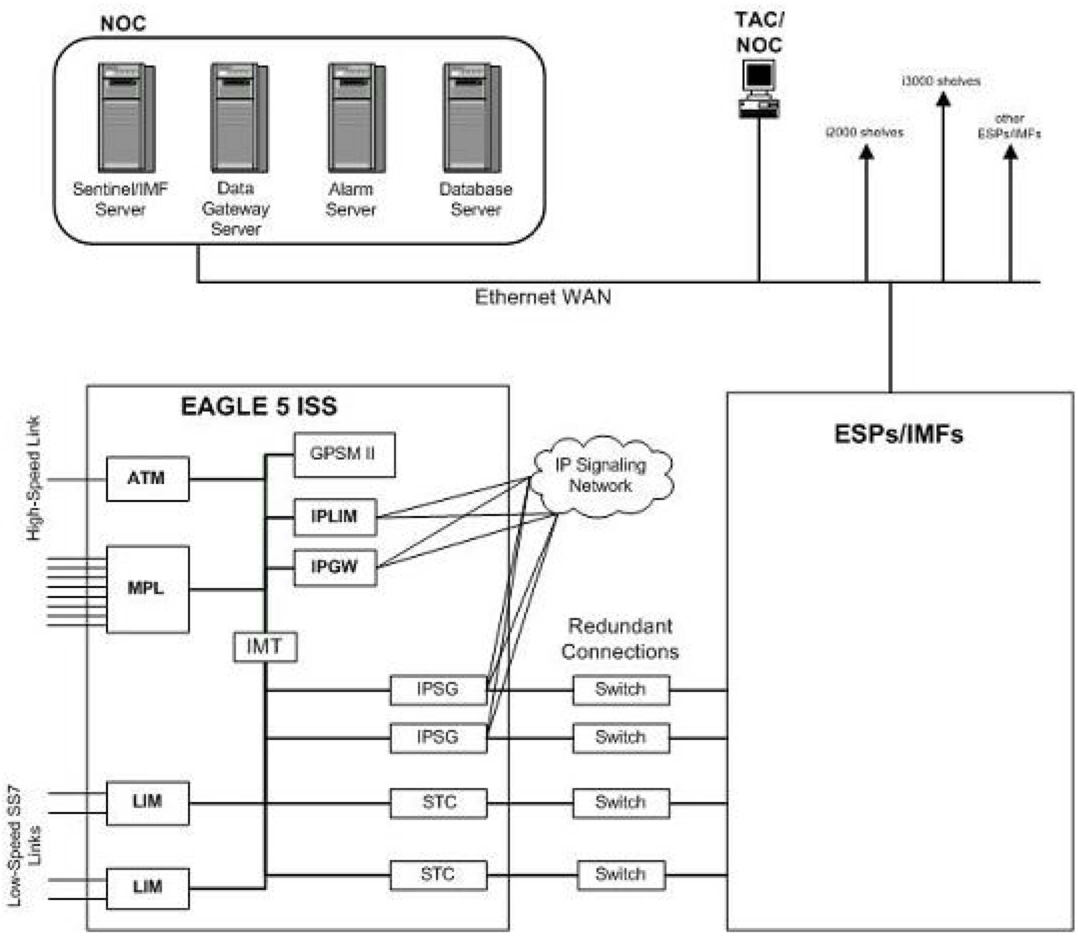
Figure 60: Monitoring via Hardware Connection



This feature eliminates the need to have intrusive hardware for each link that is to be monitored. The monitoring is performed by an Ethernet connection from an STC (Signaling Transport Card) or an FC-capable card to the ESP/IMF (see *Figure 61: EAGLE 5 Integrated Monitoring Support Network Connectivity* on page 437). An FC-capable card is a card that can run the Fast Copy interface.

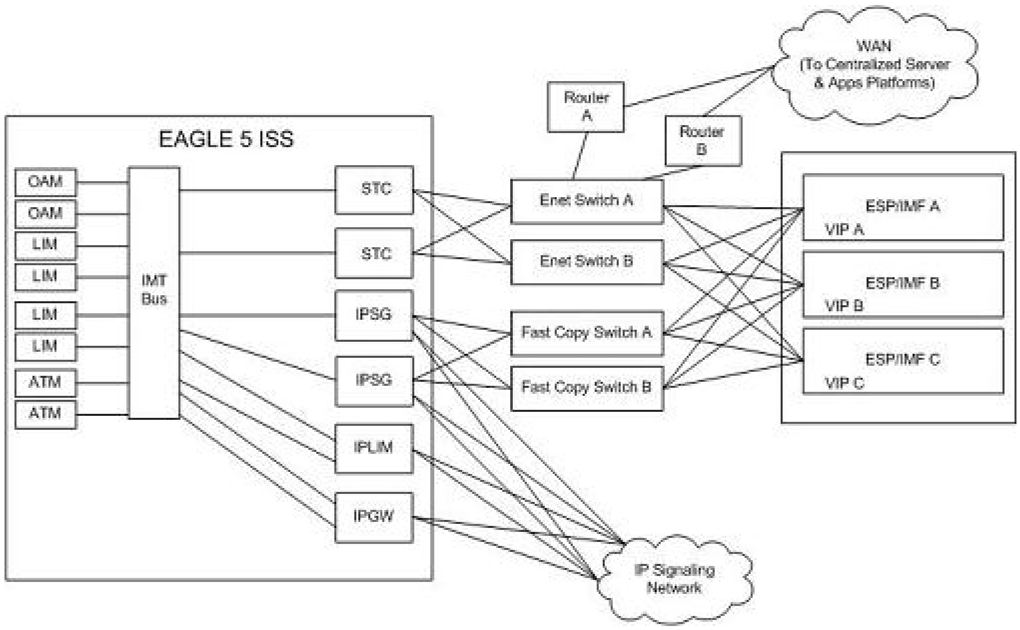
Currently, IPSG cards are the only supported FC-capable cards. Message Signaling Units (MSUs), alarms, and events may be copied to the ESP/IMF subsystem over the Ethernet link to provide the network traffic monitoring.

Figure 61: EAGLE 5 Integrated Monitoring Support Network Connectivity



As can be seen in *Figure 61: EAGLE 5 Integrated Monitoring Support Network Connectivity* on page 437 , this new method of connectivity removes the cabling and clamps from each monitored SS7 link. By incorporating a TCP/IP stack on each LIM and having the STCs or FC-capable cards serve as IP routers, the ESP/IMF subsystem may communicate directly with the SS7 LIMs. *Figure 62: ESP/IMF/EAGLE 5 ISS Network* on page 437 shows the logical communications pathway.

Figure 62: ESP/IMF/EAGLE 5 ISS Network



The STC communicates to the LIM by the IMT bus; the IP messages are simply encapsulated in an IMT wrapper between the cards. The STCs are provisioned in an *n+1* configuration for redundancy. Each STC Ethernet port has a separate connection path to each Ethernet switch in order to provide an alternate path in the event of an Ethernet link failure. Note that the figure depicts a redundant network; this assures that a single network failure will not halt EAGLE 5 ISS or ESP/IMF operations. As shown in *Figure 62: ESP/IMF/EAGLE 5 ISS Network* on page 437 , one or more ESP/IMF may be connected to a single Ethernet switch. The number of STCs required corresponds to the number of SS7 links that are to be associated with the EAGLE 5 Integrated Monitoring Support feature, plus an additional STC for redundancy.

The LIMs are assigned private network addresses. The IP message origination address specified is that of the LIM. The IP message destination address is that of the VIP (virtual IP address) contained within the ESP/IMF server. The STC serves as a router from the LIM to the ESP/IMF servers.

TCP/IP Link Provisioning

The IP communications link, used to transmit copied MSUs between the EAGLE 5 ISS and the ESP/IMF subsystem, is dynamically configured by the Sentinel/IMF. This is performed automatically as part of the operations for coming into service. A special function, part of the card's application software, is to establish communications with the ESP/IMF subsystem by sending a service request message (see *Figure 63: Ethernet Link Establishment - EMP Link Data* on page 438 and *Figure 64: Ethernet Link Establishment - EMP Fast Copy Link PDU* on page 439).

Figure 63: Ethernet Link Establishment - EMP Link Data

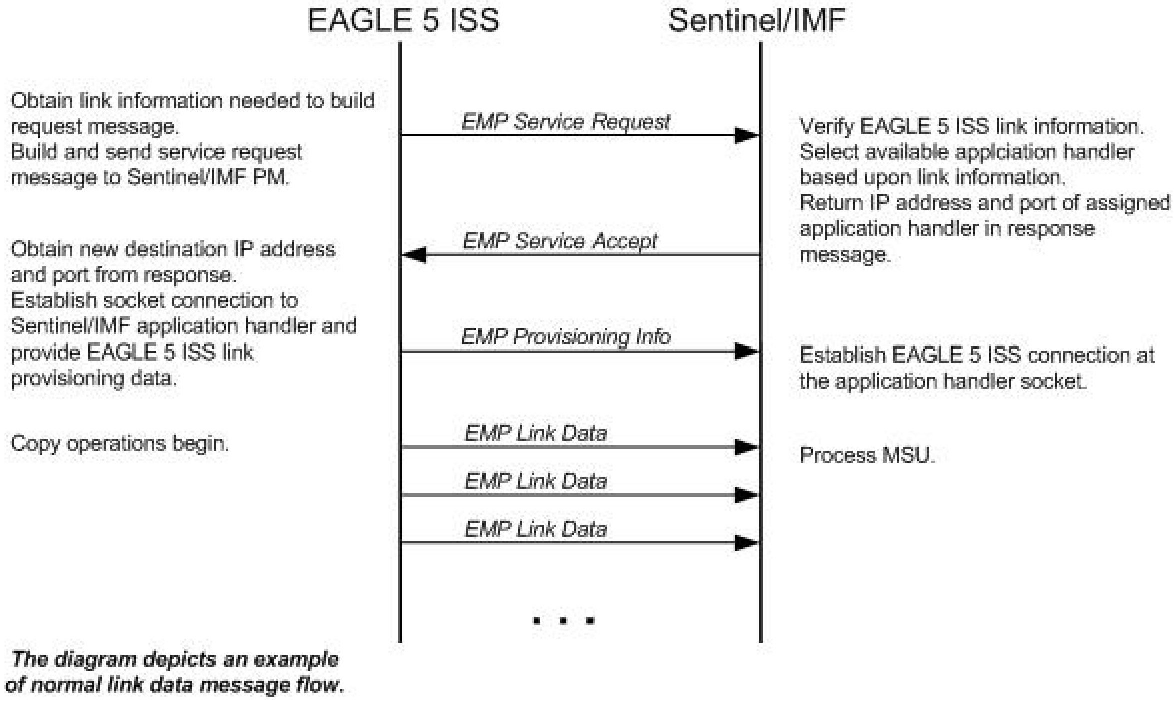
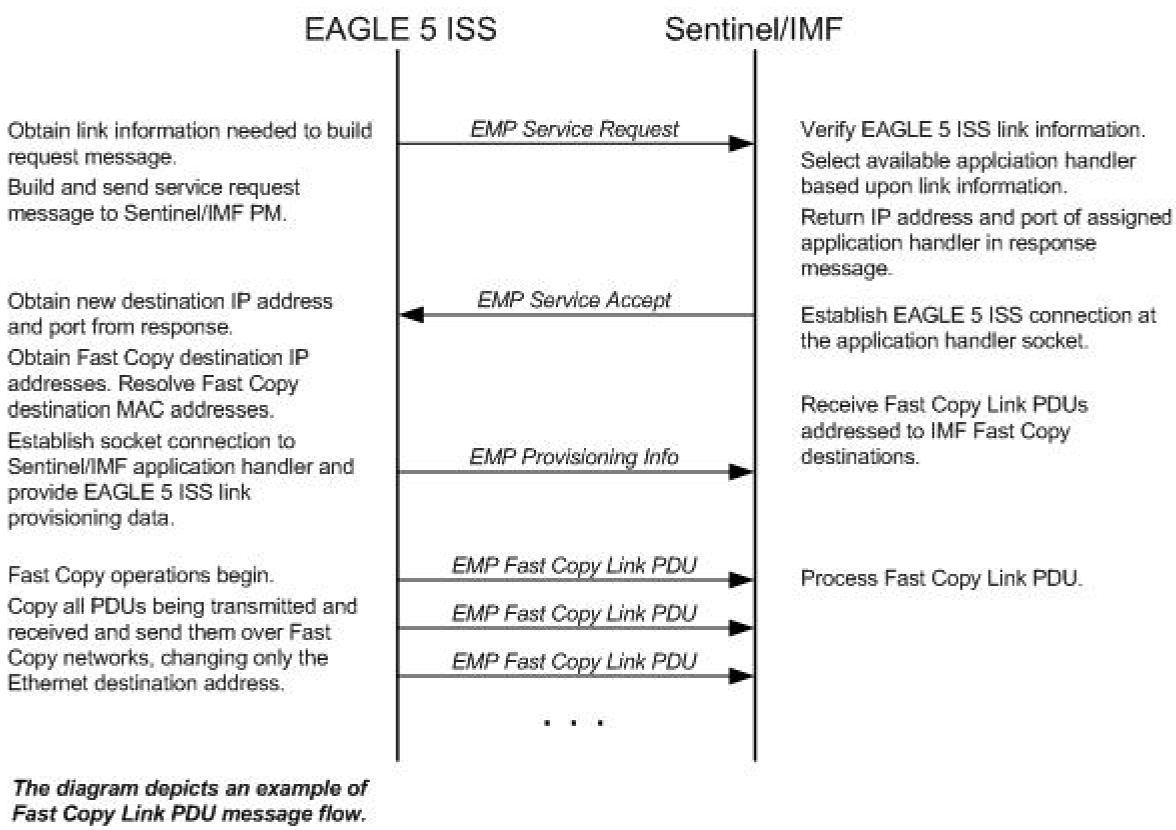


Figure 64: Ethernet Link Establishment - EMP Fast Copy Link PDU



The LIM receiving the service accept response then opens a new socket using the specified IP address and port as the destination using standard TCP/IP socket messaging. The ESP/IMF server configured to service the port responds to the connect request and the socket is now available for normal operations. MSUs are copied from the LIM through the STC or FC-capable cards (if the Fast Copy function is being used) to the ESP/IMF server, then to the Sentinel/IMF.

If the LIM is unsuccessful with its initial link service request, it will reattempt link establishment with the ESP/IMF subsystem after delaying for a short period (that is, approximately 15 seconds). The LIM continuously repeats the link establishment procedure until it is successful. If the LIM ever loses its IP connection to the ESP server, the LIM will automatically begin reestablishment operations.

The STCs use Dynamic Host Configuration Protocol) to provision themselves with IP addresses. The ESP/IMF subsystem contains a DHCP server and a DHCP client resides on the STC. The STC receives its IP address from the DHCP server in accordance with the DHCP standard.

The IP addresses of an FC-capable card is automatically assigned to the card as the card is brought into service. Each card is assigned two IP addresses, one for Fast Copy network A and the other for Fast Copy network B. The network portion of the IP addresses is determined from the `fcna` and `fcnamask` (for the Fast Copy network A IP addresses) and the `fcnb` and `fcnbmask` (for the Fast Copy network B IP addresses) parameters of the `chg-netopts` command. The value of the host portion of the IP address for an FC-capable card is the IMT address of the card+1.

A custom routing protocol, TRP (Tekelec Routing Protocol) manages the multiple redundant links and provides a faster network convergence than is possible with standard routing protocols.

Time Stamping

The MSU information will be delivered to the ESP/IMF subsystem with an accurate time stamp (± 5 milliseconds). This allows the Sentinel/IMF to correlate a call's messages for CDR (Call Detail Record) operations.

EAGLE 5 ISS Provisioning

To provision this feature, these items are required:

- STCs are installed in the EAGLE 5 ISS
- If the Fast Copy function is being used, FC-capable cards (IPSG cards) are installed in the EAGLE 5 ISS.
- The TSC (Time Slot Counter) Synchronization feature is enabled in the EAGLE 5 ISS. TSC synchronization is supplied by the E5-MCAP cards in card locations 1113 and 1115.
- A timing source for the low-speed signaling links and for the TSC (Time Slot Counter) synchronization feature

  If the EAGLE 5 ISS does not contain LIMDS0 cards, but contains TDM part numbers 870-0774-15 or later, the clock source for any low-speed links and for the TSC (Time Slot Counter) synchronization feature used by the Sentinel/IMF can be generated from the high-speed master clock source. An external BITS clock is not required.

If an external BITS clock is connected to an EAGLE 5 ISS without LIMDS0 cards, but with TDM part numbers 870-0774-15 or later, the external BITS clock must be used as the clock source for any low-speed links and for the TSC (Time Slot Counter) synchronization feature.

If LIMDS0 cards are present in the EAGLE 5 ISS, the external BITS clock is required for timing of the DS0 signaling links and for TSC (Time Slot Counter) synchronization used by the Sentinel/IMF. If the EAGLE 5 ISS also contains TDM part numbers 870-0774-15 or later along with the LIMDS0 cards, this procedure can be used to select the source of the high-speed master clock for the high-speed links using external timing. The high-speed master clock source cannot be used to generate the clock source for any low-speed links and for the TSC (Time Slot Counter) synchronization feature.

- A Network Time Protocol (NTP) timing source from the ESP/IMF server
- The EAGLE 5 ISS shelves can contain HMUX or HIPR cards. Shelves containing IPLIMx , IPSG or IPGWx cards that are being monitored must contain HIPR cards.

An "n + 1" STC configuration is required to provide redundancy for this feature.

The connection from the EAGLE 5 ISS to the ESP is an Ethernet connection with a minimum bandwidth of 10 Mbps. The dual-slot STC contains two 10 Mbps Ethernet ports. The single-slot STC contains two 100 Mbps Ethernet ports.

Refer to the *Hardware Manual* - EAGLE 5 ISS for more information about the E5-MCAP cards and STCs.

The *n+1* STC configuration requires that a minimum of two STCs must be provisioned in the database. If single-slot STCs are being provisioned in the database, a minimum of two single-slot STCs must be provisioned.

Table 30: Monitored Card Types on page 441 shows the signaling links on these cards can be monitored by this feature.

Table 30: Monitored Card Types

Card Application (`APPL` Value Used by the `ent-card` Command	Card Type (`TYPE` Value Used by the `ent-card` Command)	Card Name
SS7ANSI, CCS7ITU	LIMDS0	LIM-DS0, EILA, ILA, MPL
	LIMOCU	LIM-OCU, EILA, ILA, MPL
	LIMV35	LIM-V.35, EILA, ILA, MPL
	LIME1	E1/T1 MIM, LIM-E1, HC MIM, E5-E1T1 card
	LIMT1	E1/T1 MIM, HC MIM, E5-E1T1 card
	LIMCH	E1/T1 MIM, LIM-E1

Card Application (`APPL` Value Used by the `ent-card` Command	Card Type (`TYPE` Value Used by the `ent-card` Command)	Card Name
ATMANSI	LIMATM	LIM-ATM , E5-ATM
ATMITU	LIME1ATM	E1-ATM , E5-ATM
IPLIM	DCM	Single-Slot EDCM, E5-ENET card
IPLIMI	DCM	Single-Slot EDCM, E5-ENET card
SS7IPGW	DCM	Single-Slot EDCM, E5-ENET card
IPGWI	DCM	Single-Slot EDCM, E5-ENET card
IPSG	ENET	E5-ENET card

Notes:

Only signaling links assigned to M2PA associations can be monitored on the cards running the IPLIM and IPLIMI applications. This can be verified by entering the `rtrv-assoc:adapter=m2pa` command.

Only signaling links assigned to M3UA associations can be monitored on the cards running the SS7IPGW and IPGWI applications. This can be verified by entering the `rtrv-assoc:adapter=m3ua` command.

Monitoring can be performed on single-slot EDCMs, E5-E1T1 cards, and E5-ENET cards using only the IMF.

Monitoring can be performed on channelized E1 signaling links and unchannelized E1 signaling links (assigned to the LIME1 card type). A channelized E1 signaling link is a signaling link that is assigned to a channelized E1 port, shown by the entry `CHAN` in the `LINKCLASS` field in the `rtrv-e1` output. An unchannelized E1 signaling link is a signaling link that is assigned to an unchannelized E1 port, shown by the entry `UNCHAN` in the `LINKCLASS` field in the `rtrv-e1` output.

The signaling links assigned to the cards running either the `ss7ansi` or `ccs7itu` applications are low-speed signaling links transmitting at either 56 kbps or 64 kbps. Signaling links assigned to the `atmansi` and `atmitu` applications are high-speed signaling links transmitting at 1.544 Mbps (`atmansi`) or 2.048 Mbps (`atmitu`). Signaling links assigned to the `iplim`, `iplimi`, `ss7ipgw`, `ipsg`, and `ipgwi` applications are IP signaling links.

Because the performance of a single-slot STC is higher than a dual-slot STC, a dual-slot STC cannot replace a single-slot STC. If a single-slot STC replaces a dual-slot STC, and it is the only single-slot

STC in the EAGLE 5 ISS, another single-slot STC must be added to the EAGLE 5 ISS. To add the additional single-slot STC, go to *Adding a Signaling Transport Card (STC)* on page 467.

In order to perform the necessary IP routing within the EAGLE 5 ISS switch, a private virtual network (PVN) is incorporated; the PVN represents the internal IP addressing scheme for every STC within the EAGLE 5 ISS switch. Each card has an auto-assigned, default, Class B private IP address (for example, 172.28.60.16).

Note: The EAGLE 5 ISS uses a default value of 172.20.48.0 for the PVN address. You may change the default value by specifying a new network portion of an IP address and a network mask; the host portion is auto-configured. The EAGLE 5 ISS requires use of the lower 10 bits of address space for auto-configuration of internal networking schemes. The entered mask value may be up to 255.255.252.0

Network Considerations

There are three networks used to connect the EAGLE 5 ISS to the ESP/IMF subsystem (see *Figure 62: ESP/IMF/EAGLE 5 ISS Network* on page 437 :

- The EAGLE 5 ISS containing the STCs and FC-capable cards (if the Fast Copy function is being used).
- The two Ethernet switches
- The ESP/IMF servers

The monitored information is sent from the EAGLE 5 ISS to the ESP/IMF servers through the Ethernet switches, then forwarded to the Sentinel/IMF by the isolation routers. Each router will have one Ethernet port designated as the physical demarcation point between the customer network and the ESP/IMF subsystem.

IP Address Provisioning

The ESP/IMF subsystem requires IP addresses for these items:

- ESP/IMF external network:
  - Three IP addresses on the customer network for the ESP/IMF isolation routers, one IP address for HSRP, one IP address for each router (two total)
  - One netmask
  - One IP address for the default router.
- ESP/IMF internal network – Contiguous IP block routed within their network (last octet range 1-67 for 17 servers). The Sentinel/IMF considers each ESP/IMF server a separate processing element, therefore each ESP/IMF server needs its own IP address.
- Routes to their network to route to the VIP network already defined within ESP/IMF subsystem.

CAUTION

CAUTION: These IP addresses can be changed, as well as the PVN IP address in the EAGLE 5 ISS, contact the Customer Care Center (refer to *Customer Care Center* on page 4 for the contact information) before changing these IP addresses.

Route Configuration

No explicit routing tables are provisioned in the ESP/IMF subsystem. Use of the single customer provided default router address is assumed for outgoing traffic. All incoming traffic will use the HSRP address provided by the isolation routers.

Network Limitations

The maximum length of the network cables between the ESP/IMF server frame and the STC cards is limited to 328 feet (100 meters). This limitation is the maximum length that any 10/100BaseT cable can be run.

Enabling the Time Slot Counter Synchronization (TSCSYNC) and EAGLE 5 Integrated Monitoring Support (E5IS) Features

The EAGLE 5 Integrated Monitoring Support feature requires that the Time Slot Counter Synchronization (TSCSYNC) and EAGLE 5 Integrated Monitoring Support (E5IS) features are enabled with the `chg-feat` command using the `tscsync` and `e5is` parameters. This procedure is used to enable these features.

Note: Once the Time Slot Counter Synchronization and EAGLE 5 Integrated Monitoring Support features are turned on with the `chg-feat` command, they cannot be turned off.

The Time Slot Counter Synchronization and EAGLE 5 Integrated Monitoring Support features must be purchased before turning on these features. If you are not sure whether you have purchased the Time Slot Counter Synchronization or EAGLE 5 Integrated Monitoring Support features, contact your Tekelec Sales Representative or Account Representative.

1. Verify that the EAGLE 5 Integrated Monitoring Support feature and Time Slot Counter Synchronization features are on, by entering the `rtrv-feat` command.

   If the EAGLE 5 Integrated Monitoring Support feature is on, the `E5IS` field should be set to `on`. If the Time Slot Counter Synchronization feature is on, the `TSCSYNC` field should be set to `on`.

   Note: The `rtrv-feat` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in the *Commands Manual*.

   If the Time Slot Counter Synchronization and the EAGLE 5 Integrated Monitoring Support features are not turned on, or just the Time Slot Counter Synchronization feature is turned on, continue the procedure with *Step 2* on page 445.

   If both the EAGLE 5 Integrated Monitoring Support feature and Time Slot Counter Synchronization features are on, then no further action is necessary. If you wish to change the EISCOPY and FCMODE values in the `rtrv-eisopts` output, the PVN, PVNMASK, FCNA, and FCNB values in the `rtrv-netopts` output, or add STC cards, perform the following procedures.

   - EISCOPY value - *Configuring the EISCOPY Option for the EAGLE 5 Integrated Monitoring Support Feature* on page 448
   - FCMODE value - *Configuring the FCMODE Option for the EAGLE 5 Integrated Monitoring Support Feature* on page 453

- PVN, PVNMASK, FCNA, FCNB values - *Configuring the IP Addresses for the EAGLE 5 Integrated Monitoring Support Feature* on page 459
- Add STC cards - *Adding a Signaling Transport Card (STC)* on page 467

2. Turn the Time Slot Counter Synchronization and EAGLE 5 Integrated Monitoring Support features on by entering one of these commands, depending on whether or not the `rtrv-feat` output in *Step 1* on page 444 shows that the Time Slot Counter Synchronization feature is on.

   If the Time Slot Counter Synchronization feature is not on, enter this command.

   `chg-feat:tscsync=on:e5is=on`

   If the Time Slot Counter Synchronization feature is on, enter this command.

   `chg-feat:e5is=on`

   Note: Once the Time Slot Counter Synchronization and EAGLE 5 Integrated Monitoring Support features are turned on with the `chg-feat` command, they cannot be turned off.

   The Time Slot Counter Synchronization and EAGLE 5 Integrated Monitoring Support features must be purchased before turning on these features. If you are not sure whether you have purchased the Time Slot Counter Synchronization or EAGLE 5 Integrated Monitoring Support features, contact your Tekelec Sales Representative or Account Representative.

   When the `chg-feat` has successfully completed, this message should appear.

```
rlghncxa03w 06-10-20 21:18:37 GMT EAGLE5 36.0.0
CHG-FEAT: MASP A - COMPLTD
```

3. Verify the changes by entering the `rtrv-feat` command.

   If the EAGLE 5 Integrated Monitoring Support feature is on, the `E5IS` field should be set to `on`. If the Time Slot Counter Synchronization feature is on, the `TSCSYNC` field should be set to `on`.

4. Back up the new changes using the `chg-db:action=backup:dest=fixed` command.

   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

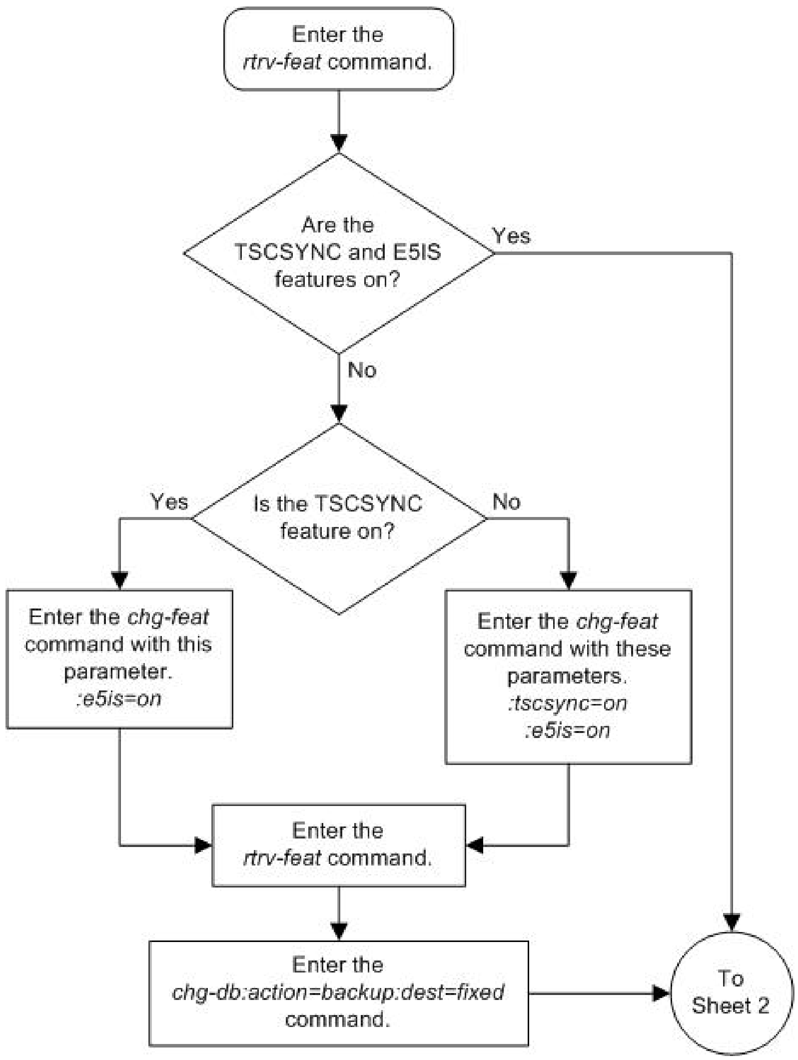
5. When the EAGLE 5 Integrated Monitoring Support feature is turned on, the values for the EISCOPY and FCMODE values in the `rtrv-eisopts` output, and the PVN, PVNMASK, FCNA, and FCNB values in the `rtrv-netopts` output are set to their default values. If you wish to change any of these values or add STC cards, perform the following procedures.

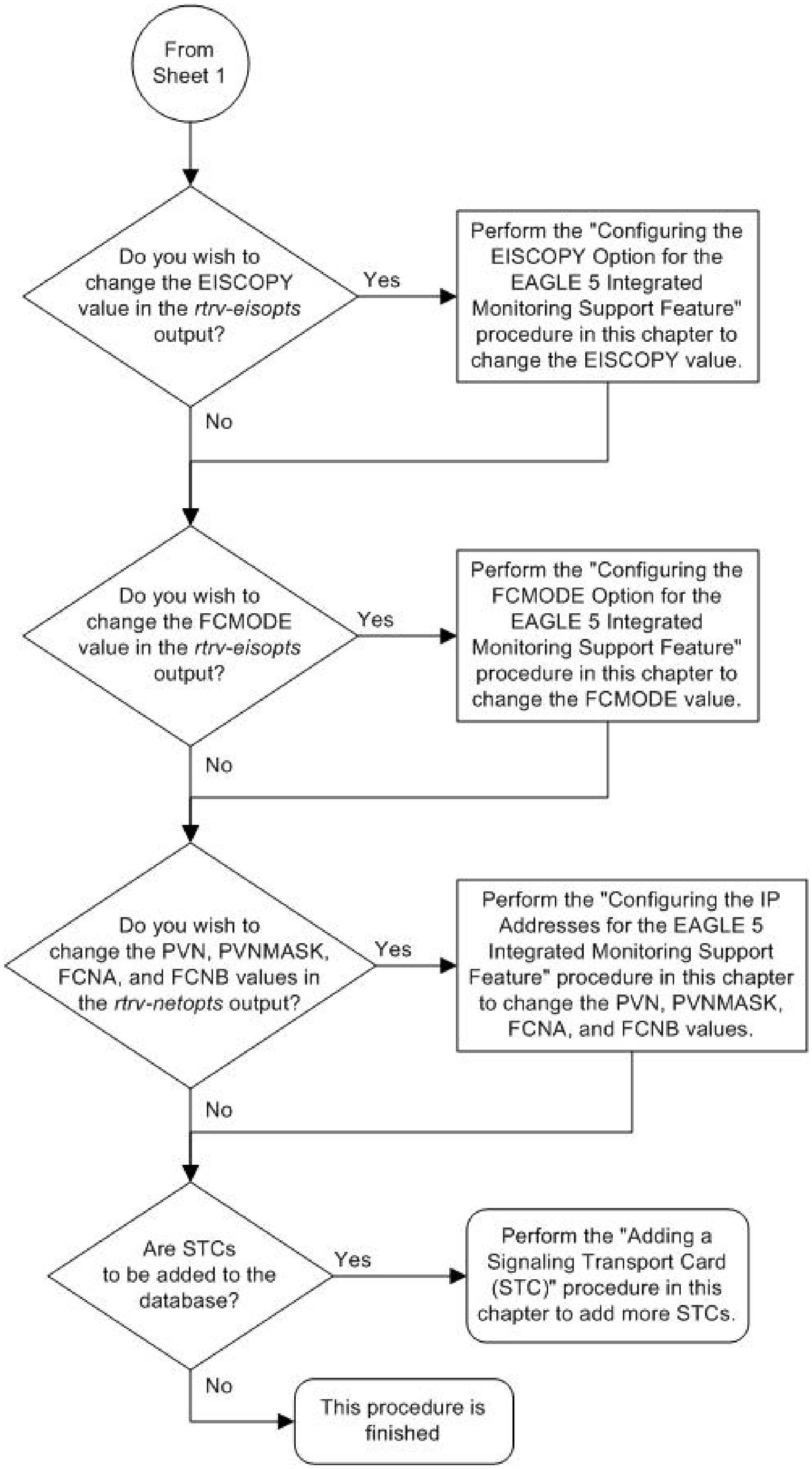
   - EISCOPY value - *Configuring the EISCOPY Option for the EAGLE 5 Integrated Monitoring Support Feature* on page 448
   - FCMODE value - *Configuring the FCMODE Option for the EAGLE 5 Integrated Monitoring Support Feature* on page 453
   - PVN, PVNMASK, FCNA, FCNB values - *Configuring the IP Addresses for the EAGLE 5 Integrated Monitoring Support Feature* on page 459

- Add STC cards - *Adding a Signaling Transport Card (STC)* on page 467

Figure 65: Enabling the TSCSYNC and E5IS Features

Note: Before executing this procedure, make sure you have purchased the Time Slot Counter Synchronization and EAGLE 5 Integrated Monitoring Support features. If you are not sure whether you have purchased the Time Slot Counter Synchronization and EAGLE 5 Integrated Monitoring Support features, contact your Tekelec Sales Representative or Account Representative.




From Sheet 1
Do you wish to change the EISCOPY value in the *rtrv-eisopts* output?
Yes
Perform the "Configuring the EISCOPY Option for the EAGLE 5 Integrated Monitoring Support Feature" procedure in this chapter to change the EISCOPY value.
No
Do you wish to change the FCMODE value in the *rtrv-eisopts* output?
Yes
Perform the "Configuring the FCMODE Option for the EAGLE 5 Integrated Monitoring Support Feature" procedure in this chapter to change the FCMODE value.
No
Do you wish to change the PVN, PVNMASK, FCNA, and FCNB values in the *rtrv-netopts* output?
Yes
Perform the "Configuring the IP Addresses for the EAGLE 5 Integrated Monitoring Support Feature" procedure in this chapter to change the PVN, PVNMASK, FCNA, and FCNB values.
No
Are STCs to be added to the database?
Yes
Perform the "Adding a Signaling Transport Card (STC)" procedure in this chapter to add more STCs.
No
This procedure is finished

Configuring the EISCOPY Option for the EAGLE 5 Integrated Monitoring Support Feature

This procedure is used to configure the EISCOPY option for the EAGLE 5 Integrated Monitoring Support feature using the `chg-eisopts` command with the `eiscopy` parameter.

The `chg-eisopts` command can also be used to configure the `FCMODE` option. Perform *Configuring the FCMODE Option for the EAGLE 5 Integrated Monitoring Support Feature* on page 453 to configure the `FCMODE` option.

The `eiscopy` parameter contains two values, on and off. The `eiscopy=on` parameter enables the EISCOPY function for the EAGLE 5 Integrated Monitoring Support feature. The `eiscopy=off` parameter turns off the EISCOPY function for the EAGLE 5 Integrated Monitoring Support feature. The EISCOPY function allows the EAGLE 5 ISS to copy MSUs to the ESP/IMF subsystem. The default value for the `eiscopy` parameter is `off`.

To change the EISCOPY option, the EAGLE 5 Integrated Monitoring Support feature (`E5IS`) must be turned on.

1. Verify that the EAGLE 5 Integrated Monitoring Support feature is on, by entering the `rtrv-feat` command.

   If the EAGLE 5 Integrated Monitoring Support feature is on, the `E5IS` field should be set to `on`.

   Note: The `rtrv-feat` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in the *Commands Manual*.

   If the EAGLE 5 Integrated Monitoring Support feature is not on, perform *Enabling the Time Slot Counter Synchronization (TSCSYNC) and EAGLE 5 Integrated Monitoring Support (E5IS) Features* on page 444to turn on the EAGLE 5 Integrated Monitoring Support feature. After the EAGLE 5 Integrated Monitoring Support feature is turned on, the `EISCOPY` and `FCMODE` values, shown in the `rtrv-eisopts` output, are `off`. After the EAGLE 5 Integrated Monitoring Support feature is turned on, continue the procedure with *Step 3* on page 448.

   If the EAGLE 5 Integrated Monitoring Support feature is on, continue the procedure with *Step 2* on page 448.

2. Display the EISCOPY option by entering the `rtrv-eisopts` command.

   This is an example of the possible output.

   ```
   rlghncxa03w 09-02-28 09:12:36 GMT EAGLE5 40.1.0
   EIS OPTIONS
   ------------------
   EISCOPY = OFF
   FCMODE  = OFF
   ```

   If the `EISCOPY` value is `OFF`, continue the procedure with *Step 3* on page 448.

   If the `EISCOPY` value is `ON`, continue the procedure with *Step 5* on page 449.

3. Display the STC cards in the database using the `rept-stat-mon` command.

This is an example of the possible output.

```
rlghncxa03w 09-02-01 09:12:36 GMT  EAGLE5 40.1.0

EROUTE SUBSYSTEM REPORT IS-NR         Active     -----
STC Cards Configured= 8  Cards IS-NR= 8
EISCOPY BIT = OFF
System Threshold = 80% Total Capacity
System Peak EROUTE Load:            8000 Buffers/Sec
System Total EROUTE Capacity:       9600 Buffers/Sec

SYSTEM ALARM STATUS = No Alarms.

CARD   VERSION      PST            SST        AST        TVG    CPU
                                                         USAGE  USAGE
------------------------------------------------------------------
1105   126-002-000  IS-NR          Active     -----       35%    52%
1205   126-002-000  IS-NR          Active     -----       35%    52%
1211   126-002-000  IS-NR          Active     -----       35%    52%
1303   126-002-000  IS-NR          Active     -----       35%    52%
1311   126-002-000  IS-NR          Active     -----       35%    52%
1313   126-002-000  IS-NR          Active     -----       35%    52%
2211   126-002-000  IS-NR          Active     -----       35%    52%
2213   126-002-000  IS-NR          Active     -----       35%    52%
------------------------------------------------------------------
EROUTE Service Average TVG Capacity =  35%  Average CPU Capacity =  52%

CARDS DENIED EROUTE SERVICE:

Command Completed.
```

At least two STCs must be shown in the `rept-stat-mon` output. The primary state (`PST` value) of at least two STCs must be `IS-NR`. If two or more STCs are shown in the `rept-stat-mon` output and the primary state of at least two of these STCs is `IS-NR`, continue the procedure with *Step 5* on page 449.

If only one STC, or none of the STCs are shown in the `rept-stat-mon` output, add the necessary STCs by performing *Adding a Signaling Transport Card (STC)* on page 467. After the STCs have been added, continue the procedure with *Step 5* on page 449.

If two or more STCs are shown in the `rept-stat-mon` output and the primary state of only one STC is IS-NR, or primary state of all of the STCs is not IS-NR, continue the procedure with *Step 4* on page 449.

4. Enter the `rst-card` command as necessary so that the primary state of at least two of the STCs shown in *Step 3* on page 448 is `IS-NR`. Specify the card location of the STC that is not `IS-NR`, shown in *Step 3* on page 448, with the `rst-card` command.

   For this example, enter these commands.

   `rst-card:loc=1205`

   `rst-card:loc=1211`

   When this command has successfully completed, this message should appear.

   ```
   rlghncxa03w 09-02-28 09:12:36 GMT EAGLE5 40.1.0
   Card has been allowed.
   ```

5. Change the EISCOPY option by entering one of these commands.

   To turn the EISCOPY option on, enter this command.

`chg-eisopts:eiscopy=on`

If you wish to change the `FCMODE` option to the value, `STC` or `FCOPY`, that was shown in the `rtrv-eisopts` output in *Step 2* on page 448, enter the `fcmode=stc` or `fcmode=fcopy` parameters with the `chg-eisopts` command.

If you wish to change the `FCMODE` option to a value, `STC` or `FCOPY`, other than the value shown in the `rtrv-eisopts` output in *Step 2* on page 448, perform *Configuring the FCMODE Option for the EAGLE 5 Integrated Monitoring Support Feature* on page 453 after this procedure has been completed to change the `FCMODE` value.

To turn the EISCOPY option off, enter this command.

`chg-eisopts:eiscopy=off`

If the `FCMODE` value, shown in the `rtrv-eisopts` output in *Step 2* on page 448, is either `STC` or `FCOPY`, the `fcmode=off` parameter must be specified with the `chg-eisopts` command.

CAUTION

CAUTION: The EAGLE 5 Integrated Monitoring Support feature will be disabled if the EISCOPY option is turned off.

When the `chg-eisopts` has successfully completed, this message should appear.

```
rlghncxa03w 09-02-20 21:18:37 GMT EAGLE5 40.1.0
CHG-EISOPTS: MASP A - COMPLTD
```

6. Verify the changes to the EISCOPY option by entering the `rtrv-eisopts` command.

   This is an example of the possible output.

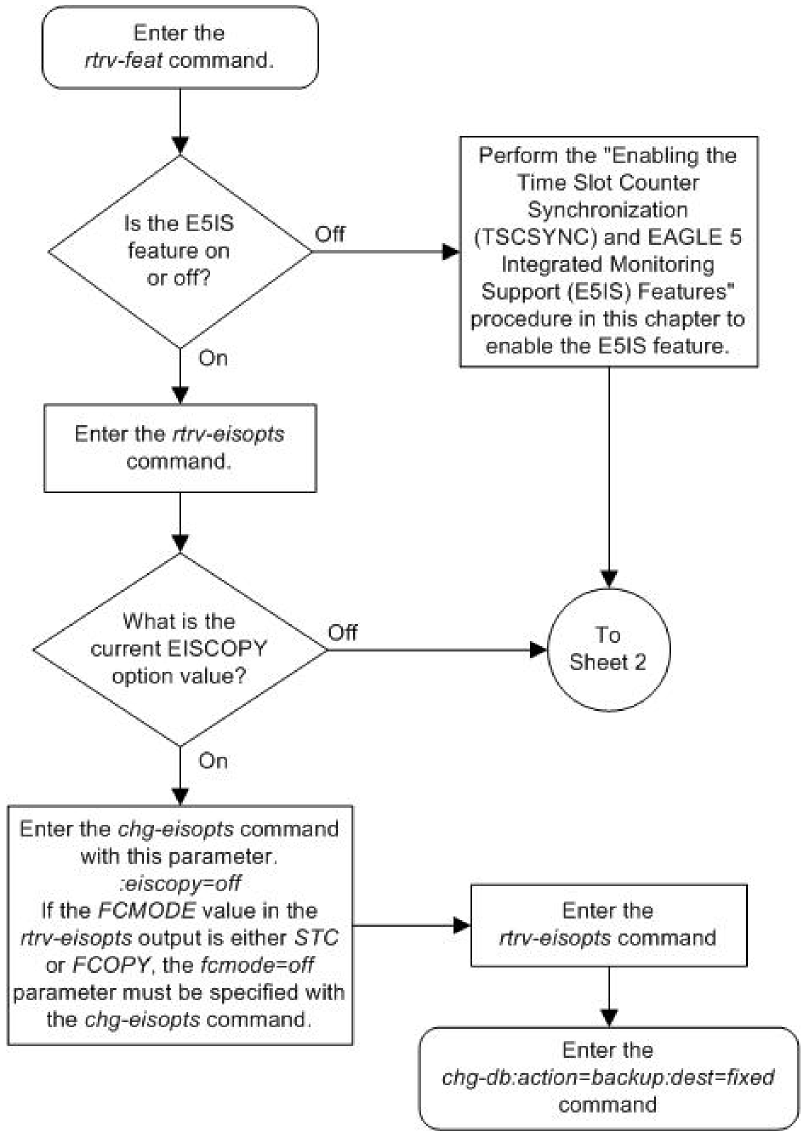
```
rlghncxa03w 09-02-28 09:12:36 GMT EAGLE5 40.1.0
EIS OPTIONS
------------------
EISCOPY = ON
FCMODE  = OFF
```

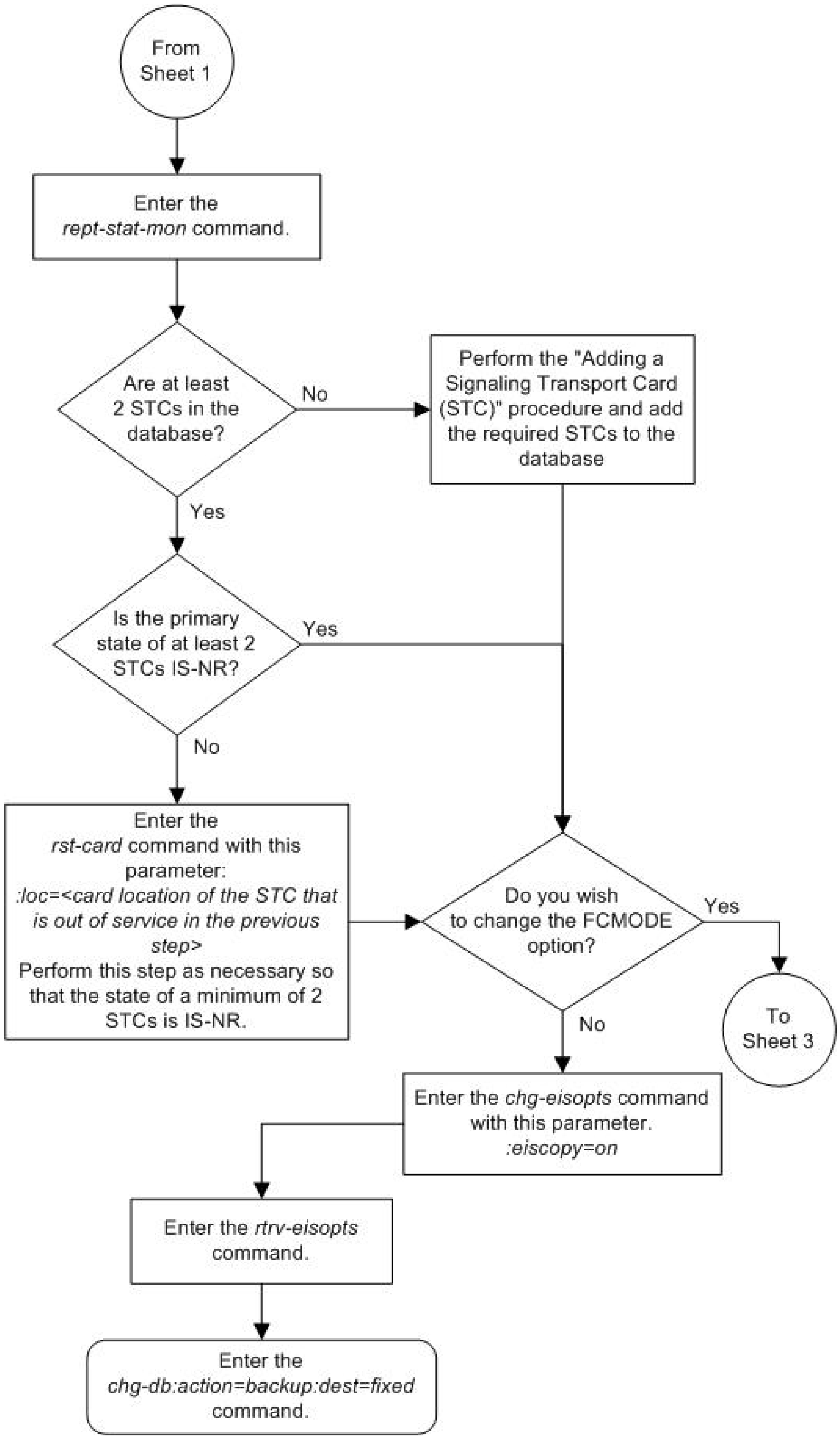
7. Back up the new changes using the `chg-db:action=backup:dest=fixed` command.

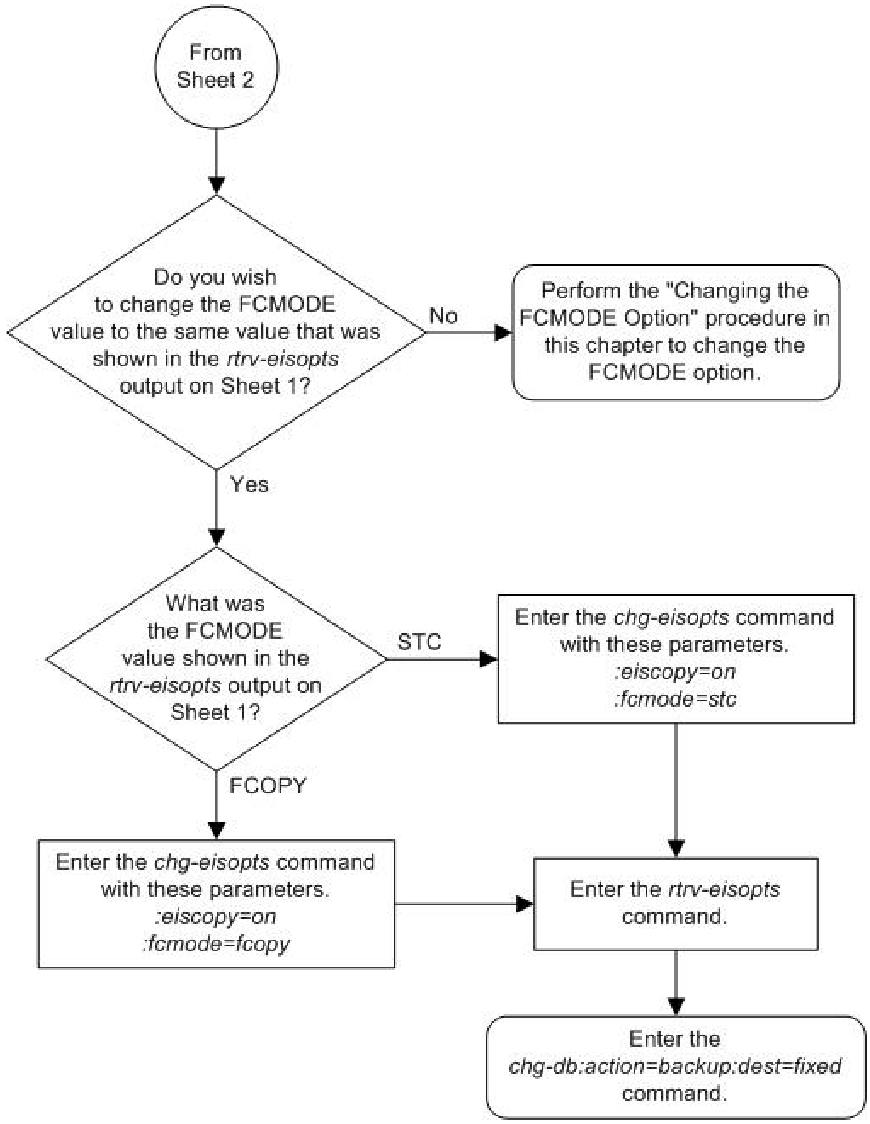
   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 66: Configuring the EISCOPY Option for the EAGLE 5 Integrated Monitoring Support Feature


Enter the rtrv-feat command.
Is the E5IS feature on or off?
Off
Perform the "Enabling the Time Slot Counter Synchronization (TSCSYNC) and EAGLE 5 Integrated Monitoring Support (E5IS) Features" procedure in this chapter to enable the E5IS feature.
On
Enter the rtrv-eisopts command.
What is the current EISCOPY option value?
Off
To Sheet 2
On
Enter the chg-eisopts command with this parameter. :eiscopy=off If the FCMODE value in the rtrv-eisopts output is either STC or FCOPY, the fcmode=off parameter must be specified with the chg-eisopts command.
Enter the rtrv-eisopts command
Enter the chg-db:action=backup:dest=fixed command


From Sheet 1
Enter the rept-stat-mon command.
Are at least 2 STCs in the database?
No
Perform the "Adding a Signaling Transport Card (STC)" procedure and add the required STCs to the database
Yes
Is the primary state of at least 2 STCs IS-NR?
Yes
No
Enter the rst-card command with this parameter:
:loc=<card location of the STC that is out of service in the previous step>
Perform this step as necessary so that the state of a minimum of 2 STCs is IS-NR.
Do you wish to change the FCMODE option?
Yes
To Sheet 3
No
Enter the chg-eisopts command with this parameter.
:eiscopy=on
Enter the rtrv-eisopts command.
Enter the chg-db:action=backup:dest=fixed command.



Configuring the FCMODE Option for the EAGLE 5 Integrated Monitoring Support Feature

This procedure is used to configure the FCMODE option for the EAGLE 5 Integrated Monitoring Support feature with the `fcmode` parameter of the `chg-eisopts` command.

The `fcmode` parameter specifies a system-wide control to enable or disable monitoring on FC-capable cards. A card that can run the Fast Copy interface is referred to as an FC-capable card. Currently, IPSG cards are the only supported FC-capable cards. The `fcmode` parameter has three values.

- `off` - Monitoring is not performed on FC-capable cards.
- `stc` - STC monitoring is performed on FC-capable cards

- `fcopy` - FC monitoring is performed on FC-capable cards

The system default value for the `fcmode` parameter is `off`.

To change the FCMODE option, the EAGLE 5 Integrated Monitoring Support feature (`E5IS`) must be turned on.

1. Verify that the EAGLE 5 Integrated Monitoring Support feature is on, by entering the `rtrv-feat` command.

   If the EAGLE 5 Integrated Monitoring Support feature is on, the `E5IS` field should be set to `on`.

   Note: The `rtrv-feat` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in the *Commands Manual*.

   If the EAGLE 5 Integrated Monitoring Support feature is not on, perform *Enabling the Time Slot Counter Synchronization (TSCSYNC) and EAGLE 5 Integrated Monitoring Support (E5IS) Features* on page 444to turn on the EAGLE 5 Integrated Monitoring Support feature. After the EAGLE 5 Integrated Monitoring Support feature is turned on, the `EISCOPY` and `FCMODE` values, shown in the `rtrv-eisopts` output, are `off`.

   After the EAGLE 5 Integrated Monitoring Support feature is turned on, perform*Configuring the EISCOPY Option for the EAGLE 5 Integrated Monitoring Support Feature* on page 448 to turn the `EISCOPY` option on. When the `EISCOPY` option is turned on, The `FCMODE` value is changed to `STC`.

   If the `FCMODE` value will remain `STC`, this procedure is finished.

   If the `FCMODE` value will be changed to `FCOPY`, continue the procedure with *Step 3* on page 455.

   If the EAGLE 5 Integrated Monitoring Support feature is on, continue the procedure with *Step 2* on page 454.

2. Display the EISCOPY option by entering the `rtrv-eisopts` command.

   This is an example of the possible output.

```
rlghncxa03w 09-02-28 09:12:36 GMT EAGLE5 40.1.0
EIS OPTIONS
------------------
EISCOPY = OFF
FCMODE  = OFF
```

   Continue the procedure by performing one of these steps.

   - If the `FCMODE` value is `OFF`, continue the procedure by performing one of these steps.
     - If the `EISCOPY` value is `ON`, and the `FCMODE` value will be changed to `STC`, continue the procedure with *Step 5* on page 455.
     - If the `EISCOPY` value is `ON`, and the `FCMODE` value will be changed to `FCOPY`, continue the procedure with *Step 4* on page 455.
     - If the `EISCOPY` value is `OFF`, perform*Configuring the EISCOPY Option for the EAGLE 5 Integrated Monitoring Support Feature* on page 448 to turn the `EISCOPY` option on. When the `EISCOPY` option is turned on, The `FCMODE` value is changed to `STC`.

       If the `FCMODE` value will remain `STC`, this procedure is finished.

If the `FCMODE` value will be changed to `FCOPY`, continue the procedure with *Step 3* on page 455.

- If the `FCMODE` value is either `STC` or `FCOPY`, continue the procedure with *Step 3* on page 455.

3. Turn the FCMODE option off by entering this command.

   `chg-eisopts:fcmode=off`

   CAUTION

   CAUTION: When the `FCMODE` option is turned off, monitoring is not performed on FC-capable cards.

   When the `chg-eisopts` has successfully completed, this message should appear.

```
rlghncxa03w 09-02-20 21:18:37 GMT EAGLE5 40.1.0
CHG-EISOPTS: MASP A - COMPLTD
```

   If the `FCMODE` value will not be changed to `STC` or `FCOPY`, continue the procedure with *Step 6* on page 456.

   If the `FCMODE` value will be changed to `STC`, continue the procedure with *Step 5* on page 455.

   If the `FCMODE` value will be changed to `FCOPY`, continue the procedure with *Step 4* on page 455.

4. Display the FC-capable cards in the database by entering this command.

   `rtrv-card:links=ipsg`

   This is an example of the possible output.

```
rlghncxa03w 09-02-28 09:12:36 GMT EAGLE5 40.1.0
CARD   TYPE      APPL     LSET NAME   LINK SLC   SLKTPS
1101   ENET      IPSG     lsnipsg1    A    0     500
                 Total SLKTPS is ( 500 of 5000) 10%
1102   ENET      IPSG     lsnipsg2    A    0     500
                 Total SLKTPS is ( 500 of 5000) 10%
```

   If no IPSG signaling links are shown in the `rtrv-card` output, perform the procedures in the *Database Administration Manual - IP7 Secure Gateway* to provision the necessary IPSG cards, IPSG linksets, IPSG signaling links, and IPSG associations. After the IPSG signaling links have been provisioned, continue the procedure with *Step 5* on page 455.

   If IPSG signaling links are shown in the `rtrv-card` output, continue the procedure with *Step 5* on page 455.

5. Change the FCMODE option by entering one of these commands.

   To change the FCMODE option to `STC`, enter this command.

   `chg-eisopts:fcmode=stc`

   To change the FCMODE option to `FCOPY`, enter this command.

   `chg-eisopts:fcmode=fcopy`

   When the `chg-eisopts` has successfully completed, this message should appear.

```
rlghncxa03w 09-02-20 21:18:37 GMT EAGLE5 40.1.0
CHG-EISOPTS: MASP A - COMPLTD
```

6. Verify the changes to the FCMODE option by entering the `rtrv-eisopts` command.

   This is an example of the possible output.

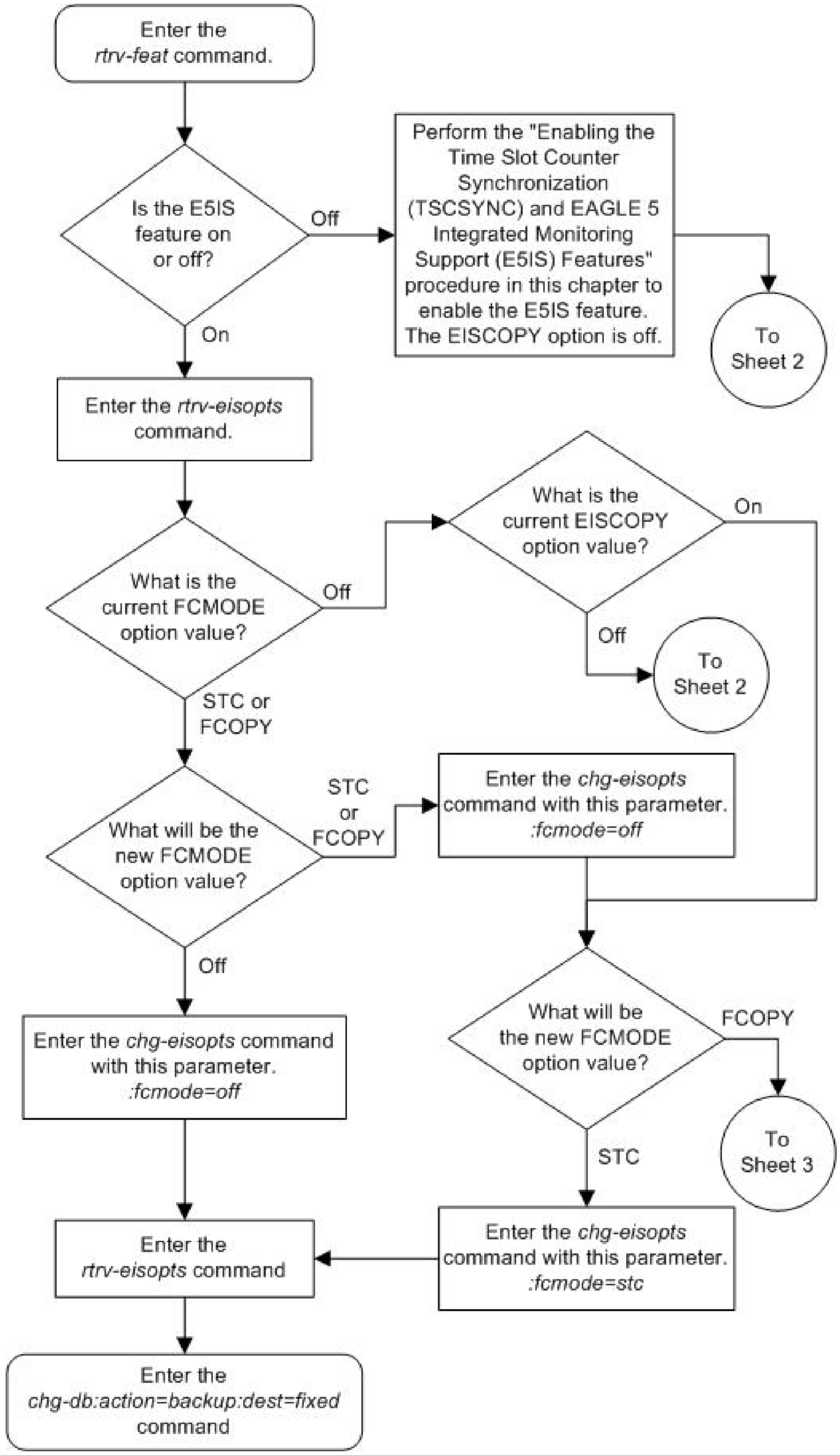
```
rlghncxa03w 09-02-28 09:12:36 GMT EAGLE5 40.1.0
EIS OPTIONS
------------------
EISCOPY = ON
FCMODE  = FCOPY
```

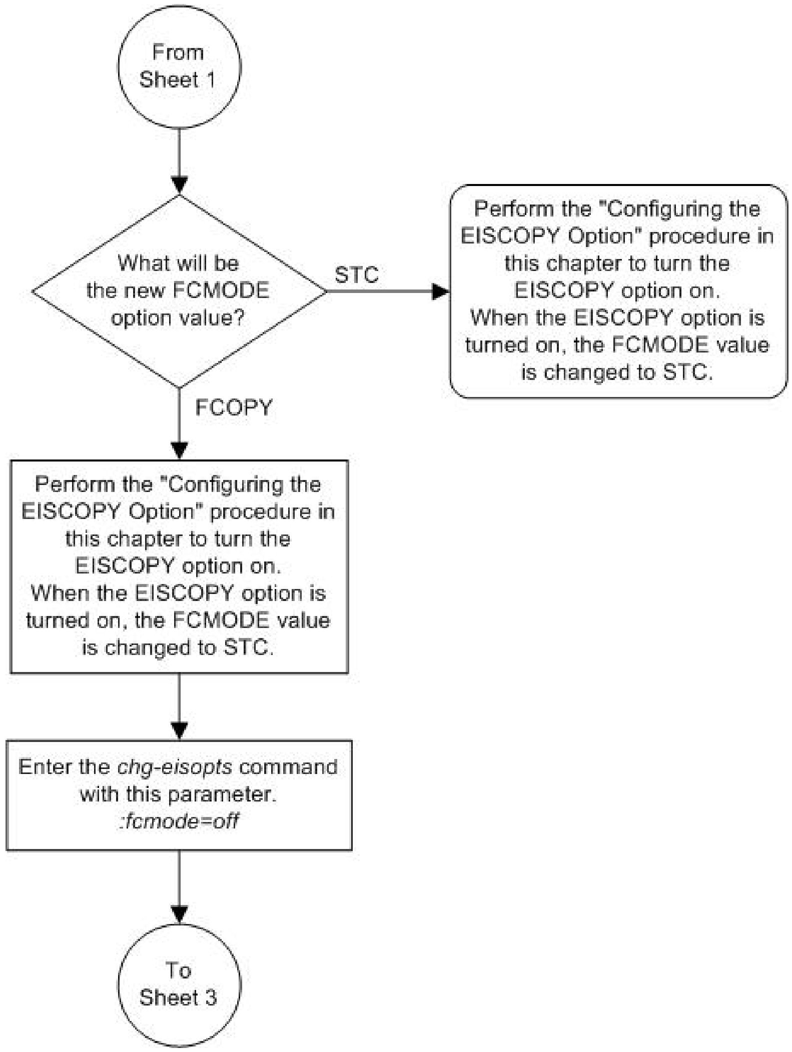
7. Back up the new changes using the `chg-db:action=backup:dest=fixed` command.

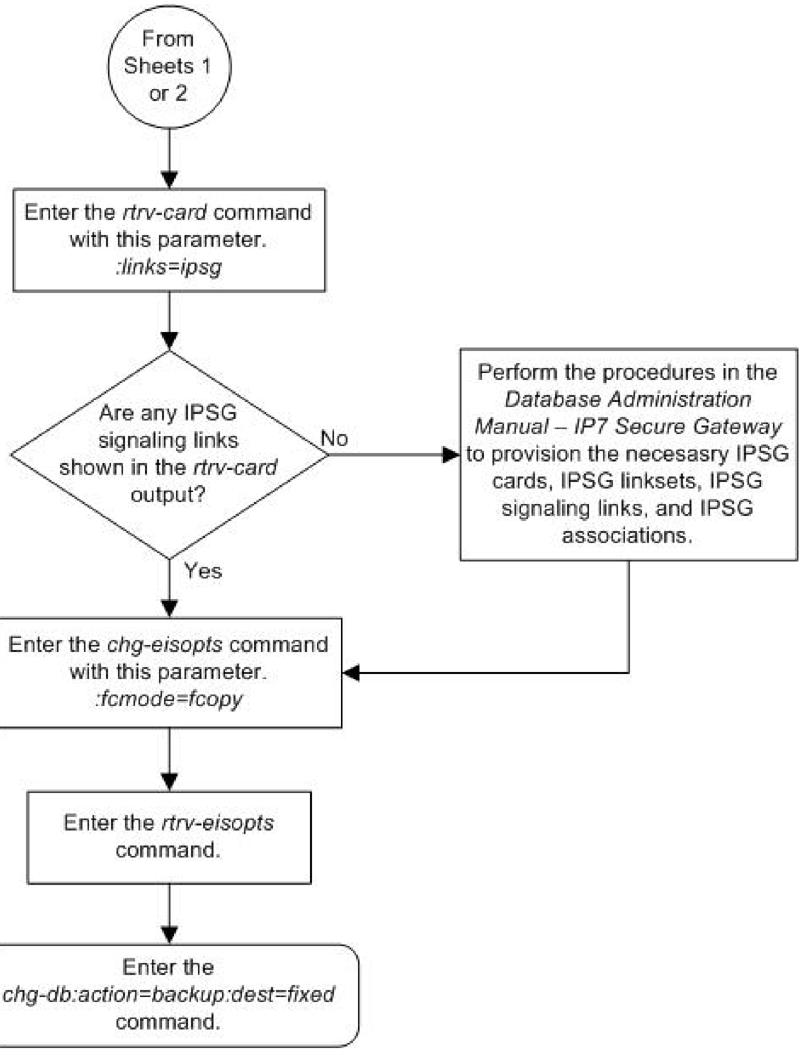
   These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 67: Configuring the FCMODE Option for the EAGLE 5 Integrated Monitoring Support Feature


Enter the rtrv-feat command.
Is the E5IS feature on or off?
Off
Perform the "Enabling the Time Slot Counter Synchronization (TSCSYNC) and EAGLE 5 Integrated Monitoring Support (E5IS) Features" procedure in this chapter to enable the E5IS feature. The EISCOPY option is off.
To Sheet 2
On
Enter the rtrv-eisopts command.
What is the current FCMODE option value?
Off
What is the current EISCOPY option value?
On
Off
To Sheet 2
STC or FCOPY
What will be the new FCMODE option value?
STC or FCOPY
Enter the chg-eisopts command with this parameter. :fcmode=off
Off
Enter the chg-eisopts command with this parameter. :fcmode=off
What will be the new FCMODE option value?
FCOPY
To Sheet 3
STC
Enter the chg-eisopts command with this parameter. :fcmode=stc
Enter the rtrv-eisopts command
Enter the chg-db:action=backup:dest=fixed command


From Sheet 1
What will be the new FCMODE option value?
STC
Perform the "Configuring the EISCOPY Option" procedure in this chapter to turn the EISCOPY option on.
When the EISCOPY option is turned on, the FCMODE value is changed to STC.
FCOPY
Perform the "Configuring the EISCOPY Option" procedure in this chapter to turn the EISCOPY option on.
When the EISCOPY option is turned on, the FCMODE value is changed to STC.
Enter the *chg-eisopts* command with this parameter.
:fcmode=off
To Sheet 3



Configuring the IP Addresses for the EAGLE 5 Integrated Monitoring Support Feature

This procedure is used to configure the IP addresses and the `PVNMASK` value used for the EAGLE 5 Integrated Monitoring Support feature using the `chg-netopts` command with the `pvn`, `pvnmask`, `fcna`, and `fcnb` parameters.

The `pvn` and `pvnmask` parameters define the network used by the STCs to transmit copied MSUs between the EAGLE 5 ISS and the ESP/IMF subsystem. The IP communications link to the ESP/IMF subsystem is dynamically configured by the Sentinel/IMF. The LIMs are assigned Class B private network IP addresses (for example, 172.28.60.16), creating a PVN). The IP message origination address is the address of the LIM. The IP message destination address is that of the VIP (virtual IP address) contained within the ESP/IMF server.

The EAGLE 5 ISS uses a default value of 172.20.48.0 for the PVN address (`pvn` parameter). The default value may be changed by specifying a new network portion of an IP address and a network mask. The host portion of these PVN addresses are configured automatically. The default value for the `pvnmask` parameter is 255.255.252.0.

To change the network portion of the PVN address and the PVN submask used by the PVN addresses within the EAGLE 5 ISS, enter the `chg-netopts` command with the `pvn` and `pvnmask` parameters. The EISCOPY function must be disabled (`eiscopy=off`) in order to make these changes.

The `fcna` and `fcnb` parameters define, along with the `FCNAMASK` and `FCNBMASK` values shown in the `rtrv-netopts` output, the network used by the Fast Copy networks A and B. The IP address is assigned to the FC-capable cards dynamically based on the fcna and fcnb parameter values. A card that can run the Fast Copy interface is referred to as an FC-capable card. Currently, IPSG cards are the only supported FC-capable cards. The default value for the `fcna` parameter is 172.21.48.0. The default value for the `fcnb` parameter is 172.22.48.0. The `FCNAMASK` and `FCNBMASK` values ares 255.255.254.0 and cannot be changed. To change the `fcna` and `fcnb` parameter values, the FCMODE value must be either `off` or `stc`. The `fcna` and `fcnb` parameter values can be a Class A, B, or C IP address. The third segment of the IP address can only contain an even number. The value of the fourth segment of the IP address must be 0 (zero).

The subnet address that results from the `PVN` and `PVNMASK`, `FCNA` and `FCNAMASK`, or `FCNB` and `FCNBMASK` values cannot be the same as the subnet address resulting from the `ipaddr` and `submask` parameter values of the `chg-ip-lnk` command, or the `dest` and `submask` parameter values of the `ent-ip-rte` command.

This interaction applies to the `PVN` and `PVNMASK` values only if the `ipaddr` or `dest` parameter values are Class B IP addresses.

The `ipaddr`, `dest`, and `submask` parameter values can be verified by entering the `rtrv-ip-lnk` and `rtrv-ip-rte` commands. Choose `pvn` and `pvnmask`, `fcna`, or `fcnb` parameter values whose resulting subnet address is not be the same as the subnet address resulting from the `ipaddr` and `submask` parameter values of the `chg-ip-lnk` command, or the `dest` and `submask` parameter values of the `ent-ip-rte` command.

To change the IP addresses and the `PVNMASK` value, the EAGLE 5 Integrated Monitoring Support feature (`E5IS`) must be enabled.

1. Verify that the EAGLE 5 Integrated Monitoring Support feature is on, by entering the `rtrv-feat` command.

   If the EAGLE 5 Integrated Monitoring Support feature is on, the `E5IS` field should be set to `on`.

   Note: The `rtrv-feat` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in the *Commands Manual*.

   If the EAGLE 5 Integrated Monitoring Support feature is not on, perform *Enabling the Time Slot Counter Synchronization (TSCSYNC) and EAGLE 5 Integrated Monitoring Support (E5IS) Features* on page 444 to turn on the EAGLE 5 Integrated Monitoring Support feature. After the EAGLE 5 Integrated Monitoring Support feature is turned on, the `EISCOPY` and `FCMODE` values, shown in the `rtrv-eisopts` output, are `off`. After the EAGLE 5 Integrated Monitoring Support feature is turned on, continue the procedure with *Step 4* on page 462.

If the EAGLE 5 Integrated Monitoring Support feature is on, continue the procedure with *Step 2* on page 461.

2. Display the EISCOPY and FCMODE options by entering the `rtrv-eisopts` command.

   This is an example of the possible output.

```
rlghncxa03w 09-02-28 09:12:36 GMT EAGLE5 40.1.0
EIS OPTIONS
------------------
EISCOPY = OFF
FCMODE  = OFF
```

   To change the `PVN` and `PVNMASK` values, the `EISCOPY` value must be `OFF`.

   To change the `FCNA` and `FCNB` values, the `FCMODE` value must be either `OFF` or `STC`.

   Continue the procedure by performing one of these steps.

   - Continue the procedure with the *Step 4* on page 462, if any of these conditions are shown in the `rtrv-eisopts` output.
     - The `EISCOPY` value is `OFF`. If the `EISCOPY` value is `OFF`, the `FCNA` and `FCNB` values can also be changed.
     - If only the `FCNA` or `FCNB` values are being changed and the `FCMODE` value is either `OFF` or `STC`.
   - Continue the procedure with *Step 3* on page 461 if any of these conditions are present.
     - If the `PVN` and `PVNMASK` values are being changed and the `EISCOPY` value is `ON`.
     - If the `FCNA` or `FCNB` values are being changed and the `FCMODE` value is `FCOPY`.

3. Change the `EISCOPY` or `FCMODE` values by entering the `chg-eisopts` command.

   Turn the EISCOPY option off by entering this command.

   `chg-eisopts:eiscopy=off`

   Note: if the `FCMODE` value shown in *Step 2* on page 461 is either `STC` or `FCOPY`, the `fcmode=off` parameter must be specified with the `chg-eisopts` command.

   CAUTION

   CAUTION: The EAGLE 5 Integrated Monitoring Support feature will be disabled if the EISCOPY option is turned off.

   Change the `FCMODE` option by entering one of this command.

   `chg-eisopts:fcmode=off`

   CAUTION

   CAUTION: When the `FCMODE` option is turned off, monitoring is not performed on FC-capable cards.

   When the `chg-eisopts` has successfully completed, this message should appear.

```
rlghncxa03w 09-02-20 21:18:37 GMT EAGLE5 40.1.0
CHG-EISOPTS: MASP A - COMPLTD
```

4. Display the IP addresses and the PVN subnet mask by entering the `rtrv-netopts` command.

   This is an example of the possible output.

```
rlghncxa03w 09-02-28 09:12:36 GMT EAGLE5 40.1.0
NETWORK OPTIONS
-----------------
PVN      = 172.20.48.0
PVNMASK  = 255.255.252.0
FCNA     = 172.21.48.0
FCNAMASK = 255.255.254.0
FCNB     = 172.22.48.0
FCNBMASK = 255.255.254.0
```

5. Display the current link parameters associated with the IP card in the database by entering the `rtrv-ip-lnk` command.

   The following is an example of the possible output.

```
rlghncxa03w 09-02-28 21:14:37 GMT EAGLE5 40.1.0
LOC   PORT IPADDR          SUBMASK         DUPLEX  SPEED MACTYPE AUTO MCAST
1201  A    192.1.1.1       255.255.255.128 HALF    10    802.3   NO   NO
1203  A    192.1.1.12      255.255.255.0   ----    ---   DIX     YES  NO
1205  A    192.1.1.14      255.255.255.0   FULL    100   DIX     NO   NO
```

6. Display the IP routes in the database with the `rtrv-ip-rte` command.

   This is an example of the possible output.

```
rlghncxa03w 09-02-28 09:12:36 GMT EAGLE5 40.1.0
LOC   DEST             SUBMASK          GTWY
1301  128.252.10.5     255.255.255.255  140.188.13.33
1301  128.252.0.0      255.255.0.0      140.188.13.34
1301  150.10.1.1       255.255.255.255  140.190.15.3
1303  192.168.10.1     255.255.255.255  150.190.15.23
1303  192.168.0.0      255.255.255.0    150.190.15.24

IP Route table is  (5 of 1024) 1% full
```

7. The subnet address that results from the `pvn` and `pvnmask`, `fcna` and `fcnamask`, or `fcnb` and `fcnbmask` parameter values cannot be the same as the subnet address resulting from the `ipaddr` and `submask` parameter values of the `chg-ip-lnk` command, or the `dest` and `submask` parameter values of the `ent-ip-rte` command.

   This interaction applies to the `PVN` and `PVNMASK` values only if the `ipaddr` or `dest` parameter values are Class B IP addresses. The `ipaddr`, `dest`, and `submask` parameter values can be verified by entering the `rtrv-ip-lnk` and `rtrv-ip-rte` commands in *Step 5* on page 462 and *Step 6* on page 462.

   Choose `pvn` and `pvnmask`, `fcna`, or `fcnb` parameter values for the `chg-netopts` command whose resulting subnet address is not be the same as the subnet address resulting from the `ipaddr` and `submask` values shown in the `rtrv-ip-lnk` command in *Step 5* on page 462, or the `dest` and `submask` values of the `rtrv-ip-rte` command in *Step 6* on page 462. Continue the procedure with *Step 8* on page 462.

8. Change the `PVN` and `PVNMASK`, `FCNA`, or `FCNB` values by entering the `chg-netopts` command.

   To change the `PVN` and `PVNMASK` values, for this example, enter this command.

   `chg-netopts:pvn=158.30.75.133:pvnmask=255.255.252.0`

To change either the FCNA, FCNB, or both the FCNA and FCNB values, for this example, enter one of these commands.

`chg-netopts:fcna=180.37.56.0`

`chg-netopts:fcnb=181.37.56.0`

`chg-netopts:fcna=180.37.56.0:fcnb=181.37.56.0`

To change the PVN, PVNMASK, FCNA, and FCNB values, for this example, enter this command.

`chg-netopts:pvn=158.30.75.133:pvnmask=255.255.252.0:fcna=180.37.56.0:fcnb=181.37.56.0`

Notes:

- At least one of the pvn and pvnmask, fcna, or fcnb parameters must be specified with the chg-netopts command.
- The pvn parameter value must be a Class B IP address.
- If either the pvn or pvnmask parameters are specified with the chg-netopts command, both parameters must be specified.
- The third segment of the IP address specified for the fcna and fcnb parameters can only contain an even number. The value of the fourth segment of the IP address must be 0 (zero).
- The FCNAMASK and FCNBMASK values shown in the rtrv-netopts output in *Step 4* on page 462 cannot be changed.

When the chg-netopts has successfully completed, this message should appear.

```
rlghncxa03w 09-02-20 21:18:37 GMT EAGLE5 40.1.0
CHG-NETOPTS: MASP A - COMPLTD
```

9. Verify the changes using the rtrv-netopts command.

This is an example of the possible output.

```
rlghncxa03w 09-02-28 09:12:36 GMT EAGLE5 40.1.0
NETWORK OPTIONS
-----------------
PVN      = 158.30.75.133
PVNMASK  = 255.255.252.0
FCNA     = 180.37.56.0
FCNAMASK = 255.255.254.0
FCNB     = 181.37.56.0
FCNBMASK = 255.255.254.0
```

10. Back up the new changes using the chg-db:action=backup:dest=fixed command.

These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

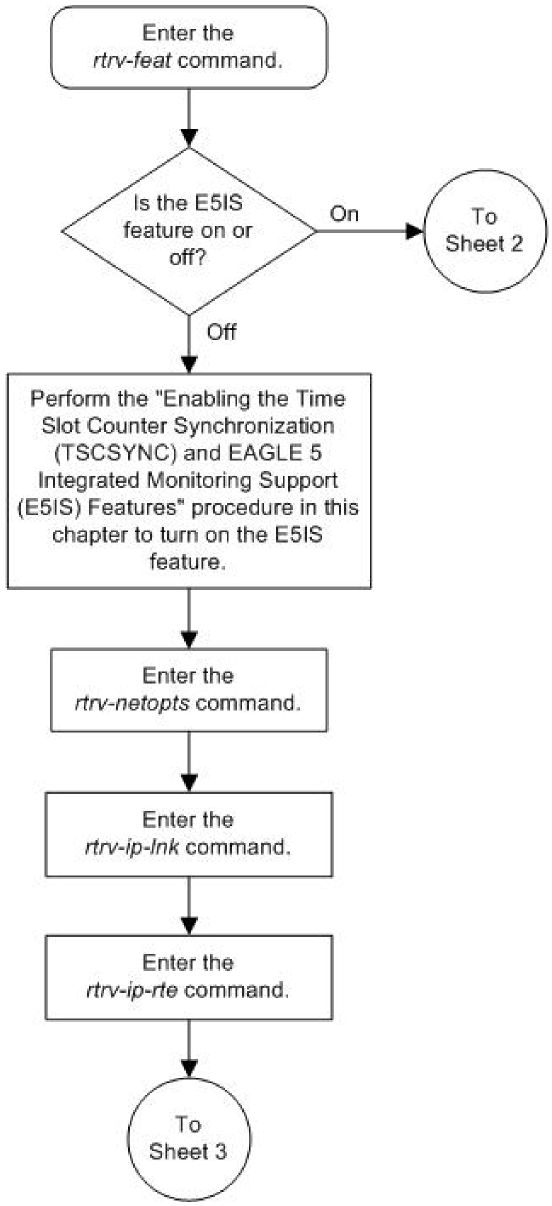
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

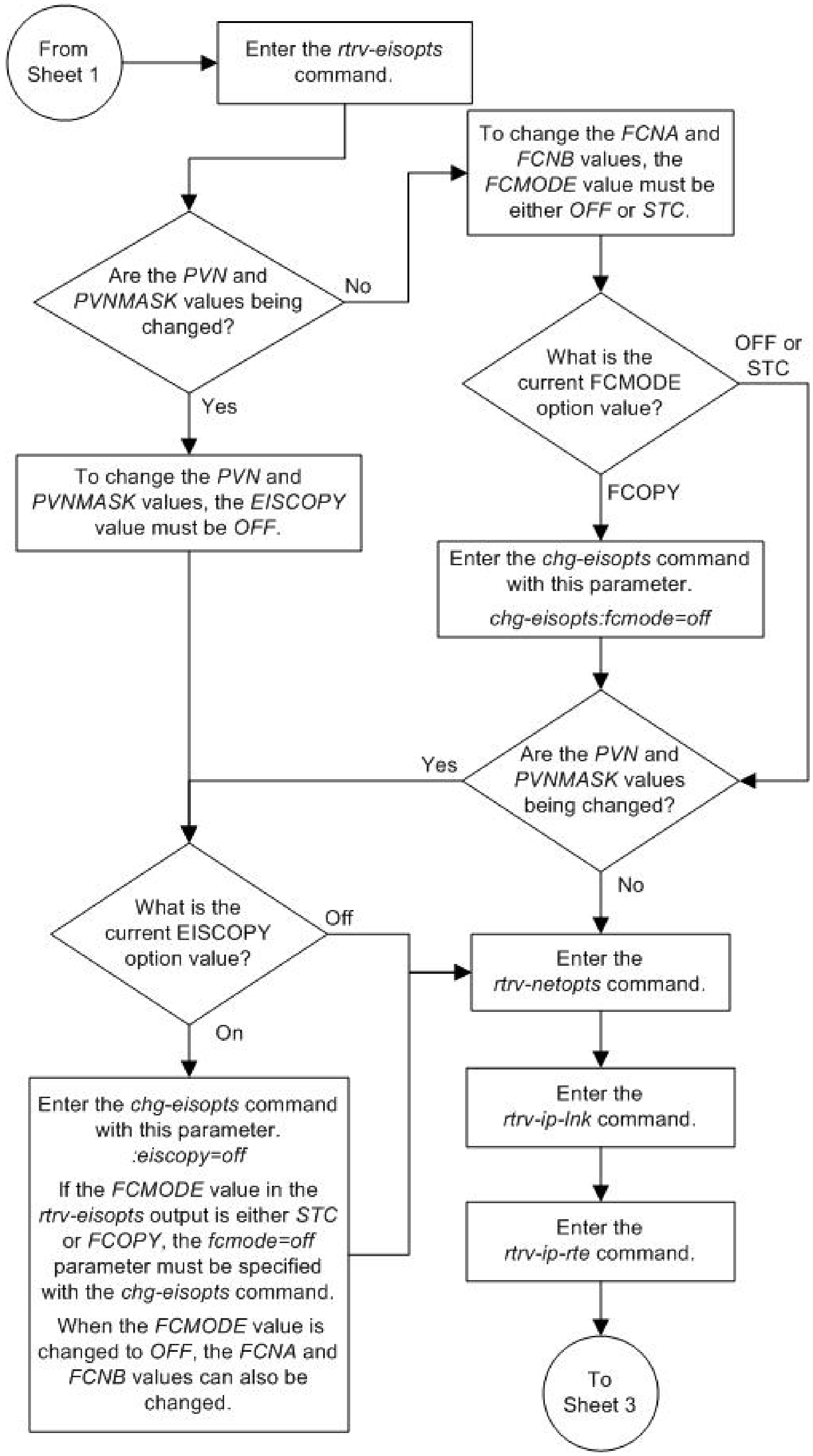
If you do not wish to turn the EISCOPY option on or change the FCMODE option, this procedure is finished.

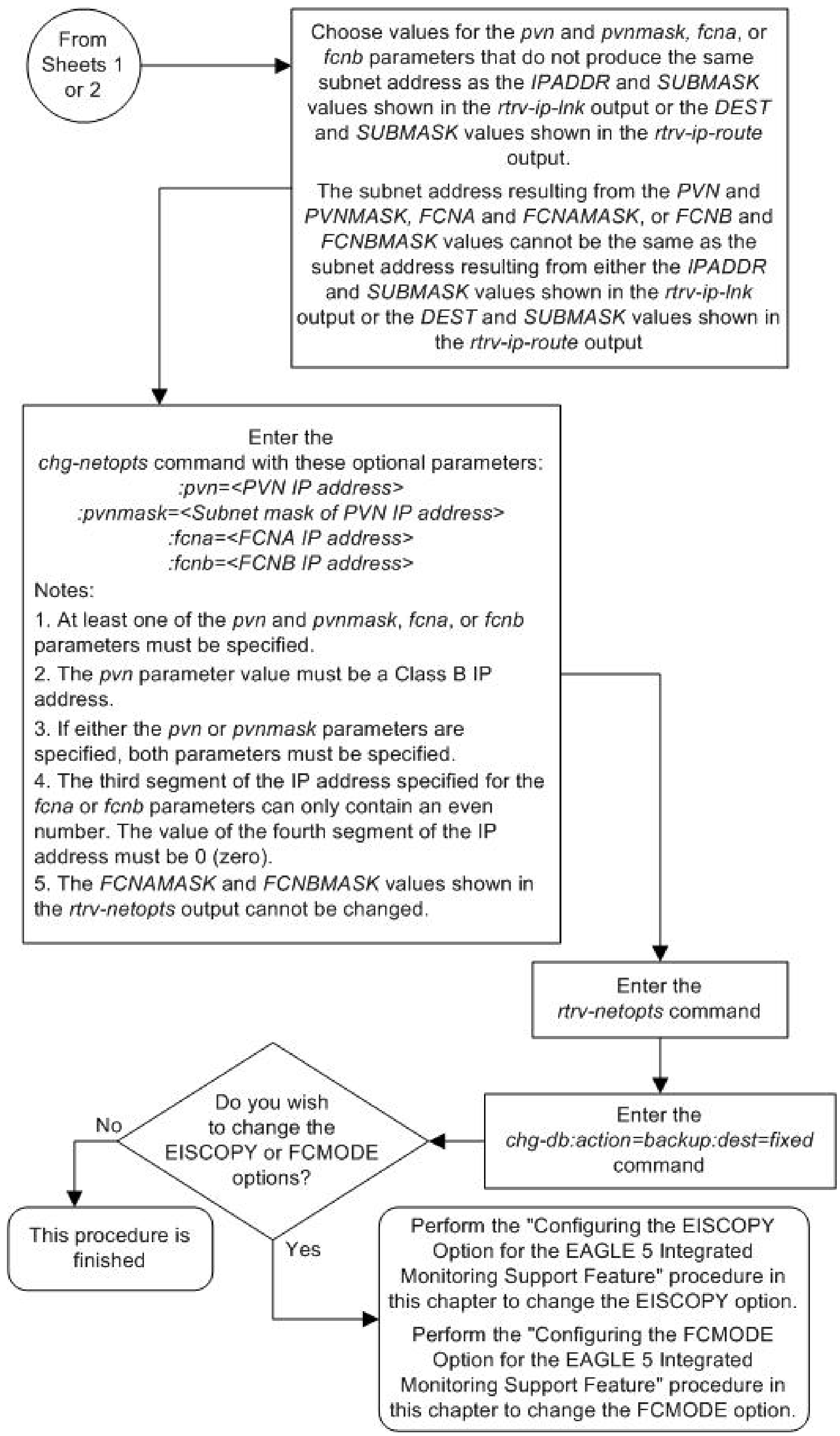
If you wish to turn the EISCOPY option on, perform *Configuring the EISCOPY Option for the EAGLE 5 Integrated Monitoring Support Feature* on page 448.

If you wish to change the FCMODE option, perform *Configuring the FCMODE Option for the EAGLE 5 Integrated Monitoring Support Feature* on page 453.

Figure 68: Configuring the IP Addresses for the EAGLE 5 Integrated Monitoring Support Feature




From Sheet 1
Enter the rtrv-eisopts command.
Are the PVN and PVNMASK values being changed?
No
Yes
To change the FCNA and FCNB values, the FCMODE value must be either OFF or STC.
What is the current FCMODE option value?
OFF or STC
FCOPY
Enter the chg-eisopts command with this parameter.
chg-eisopts:fcmode=off
To change the PVN and PVNMASK values, the EISCOPY value must be OFF.
Are the PVN and PVNMASK values being changed?
Yes
No
What is the current EISCOPY option value?
Off
On
Enter the chg-eisopts command with this parameter.
:eiscopy=off
If the FCMODE value in the rtrv-eisopts output is either STC or FCOPY, the fcmode=off parameter must be specified with the chg-eisopts command.
When the FCMODE value is changed to OFF, the FCNA and FCNB values can also be changed.
Enter the rtrv-netopts command.
Enter the rtrv-ip-lnk command.
Enter the rtrv-ip-rte command.
To Sheet 3


From Sheets 1 or 2
Choose values for the pvn and pvnmask, fcna, or fcnb parameters that do not produce the same subnet address as the IPADDR and SUBMASK values shown in the rtrv-ip-lnk output or the DEST and SUBMASK values shown in the rtrv-ip-route output.
The subnet address resulting from the PVN and PVNMASK, FCNA and FCNAMASK, or FCNB and FCNBMASK values cannot be the same as the subnet address resulting from either the IPADDR and SUBMASK values shown in the rtrv-ip-lnk output or the DEST and SUBMASK values shown in the rtrv-ip-route output
Enter the chg-netopts command with these optional parameters:
:pvn=<PVN IP address>
:pvnmask=<Subnet mask of PVN IP address>
:fcna=<FCNA IP address>
:fcnb=<FCNB IP address>
Notes:
1. At least one of the pvn and pvnmask, fcna, or fcnb parameters must be specified.
2. The pvn parameter value must be a Class B IP address.
3. If either the pvn or pvnmask parameters are specified, both parameters must be specified.
4. The third segment of the IP address specified for the fcna or fcnb parameters can only contain an even number. The value of the fourth segment of the IP address must be 0 (zero).
5. The FCNAMASK and FCNBMASK values shown in the rtrv-netopts output cannot be changed.
Enter the rtrv-netopts command
Enter the chg-db:action=backup:dest=fixed command
Do you wish to change the EISCOPY or FCMODE options?
No
This procedure is finished
Yes
Perform the "Configuring the EISCOPY Option for the EAGLE 5 Integrated Monitoring Support Feature" procedure in this chapter to change the EISCOPY option.
Perform the "Configuring the FCMODE Option for the EAGLE 5 Integrated Monitoring Support Feature" procedure in this chapter to change the FCMODE option.

Adding a Signaling Transport Card (STC)

This procedure is used to add an STC (Signaling Transport Card) to the database using the `ent-card` command. The STC provides an interface between the EAGLE 5 ISS and the ESP (EAGLE 5 Integrated Monitoring Support feature. The STC allows the ESP subsystem to monitor the EAGLE 5 ISS's signaling links without additional intrusive cabling.

The `ent-card` command uses these parameters.

`:loc` – The location of the card being added to the database.

`:type` – The type of card being added to the database. For this procedure, the value of this parameter is `stc`.

`:appl` – The application software that is assigned to the card. For this procedure, the value of this parameter is `eroute`.

`:force` – Allow the LIM to be added to the database even if there are not enough service modules to support the number of LIMs in the EAGLE 5 ISS. This parameter is obsolete and is no longer used.

The STC can be either a single-slot STC, a dual-slot STC, or an E5-STC card as shown in *Table 31: STC Part Numbers* on page 467.

Table 31: STC Part Numbers

Card Type	Card Name (as shown on the card Label)	Part Number
Dual-Slot STC	DCM	870-1945-XX 870-1984-01
Single-Slot STC	DCM	870-2372-01
	EDCM-A	870-2508-XX
E5-STC	E5-ENET	870-2212-02

The dual-slot STC can be inserted only in the odd numbered card slots of the extension shelf. Slot 9 of each shelf contains the HMUX card or HIPR card, thus the dual-slot STC cannot be inserted in slot 09. The dual-slot STC can be inserted in the control shelf, but only in slots 1101, 1103, 1105, 1107, and 1111. Slots 1113, 1115 and 1117 are reserved for MASPs A and B and the MDAL card. The dual-slot STC occupies two card slots, so the even numbered card slot must be empty and not provisioned in the database, as shown in *Table 32: Dual-Slot STC Locations* on page 467. The dual-slot STC is connected to the network through the odd numbered card slot connector.

Table 32: Dual-Slot STC Locations

Location of the STC	Empty Card Location	Location of the STC	Empty Card Location
Slot 01	Slot 02	Slot 11	Slot 12
Slot 03	Slot 04	Slot 13	Slot 14

Location of the STC	Empty Card Location	Location of the STC	Empty Card Location
Slot 05	Slot 06	Slot 15	Slot 16
Slot 07	Slot 08	Slot 17	Slot 18

The single-slot STC can be inserted into any card slot, except an even numbered card slot adjacent to a dual-slot card, shown in *Table 32: Dual-Slot STC Locations* on page 467, slots 9 and 10 in each shelf, and slots 1113 through 1118.

The shelf to which the card is to be added, must already be in the database. This can be verified with the `rtrv-shlf` command. If the shelf is not in the database, see the "Adding a Shelf" procedure in the Database *Administration Manual - System Management*.

In order to enable the EISCOPY option, with the `chg-eisopts` command, and to comply with the *n+1* STC configuration requirement, a minimum of two STCs must be provisioned in the database. A minimum of two STCs must be provisioned.

The number of SS7 signaling links that can be monitored by an STC varies depending the following criteria:

- Whether the STC is a dual-slot STC or single-slot STC
- The type of signaling link (defined by the application running on the card the signaling link is assigned to)
- The amount of traffic and the size of the MSUs being handled by the EAGLE 5 ISS

Note: Verify the temperature threshold settings for the E5-STC card by performing the "Changing the High-Capacity Card Temperature Alarm Thresholds" procedure in the *Database Administration Manual-SS7*.

STC Provisioning

The following rules apply to provisioning STCs:

- A minimum of two STCs must be provisioned in an EAGLE 5 ISS.
- The maximum number of STCs that can be provisioned in an EAGLE 5 ISS is 32.
- For shelves containing HMUX cards, the following rules apply to provisioning STCs.
    - If the shelf containing the STCs (only single/double slot STCs but not E5-STC) has HMUX cards installed in card slots 9 and 10, the shelf can contain a maximum of three STCs.
    - The STCs should be provisioned in shelves adjacent to the shelf containing the cards being monitored - half of the STCs should be provisioned in the next shelf and the other half of the STCs should be provisioned in the previous shelf. For example, if the shelf containing the cards being monitored is shelf 2100, half of the STCs monitoring shelf 2100 should be provisioned in shelf 1300 and the other half of the STCs monitoring shelf 2100 should be provisioned in shelf 2200.
- STCs should be provisioned in the same shelf containing the cards being monitored if that shelf has HIPR cards installed in card slots 9 and 10.
- If the shelf being monitored has HIPR cards installed in card slots 9 and 10, more than three STCs can be provisioned in the shelf, depending on the number of empty card slots that shelf has.
- If the IP signaling links assigned to single-slot EDCMs or E5-ENET cards are being monitored, HIPR cards must be installed in card slots 9 and 10 of the shelf containing the single-slot EDCMs or E5-ENET cards.

- If E1 or T1 signaling links assigned to HC MIMs or E5-E1T1 cards are being monitored, HIPR cards must be installed in card locations 9 and 10 of the shelf that the HC MIM or E5-E1T1 will occupy.
- If IP signaling links are being monitored, the EAGLE 5 ISS can have only single-slot STCs provisioned and installed. Dual-slot STCs cannot be installed or provisioned.
- The E5-STC requires that HIPR cards are installed in the card locations 9 and 10 in the shelf that will contain the E5-STC. There is no limit on the number of E5-STCs that can be provisioned on shelves containing HIPR cards.

Note: Contact your Tekelec Sales Representative or Account Representative to determine the number of STCs that must be provisioned in your EAGLE 5 ISS, and to determine where in the EAGLE 5 ISS these STCs must provisioned before performing this procedure.

The examples in this procedure are used to add an STC in these card locations: 1303, 2101, and 2102.

1. Display the cards in the database using the `rtrv-card` command. This is an example of the possible output.

```
rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1102   TSM       GLS
1113   GPSM      EOAM
1114   TDM-A
1115   GPSM      EOAM
1116   TDM-B
1117   MDAL
1201   LIMDS0    SS7ANSI   sp2           A    0   sp1           B    0
1203   LIMDS0    SS7ANSI   sp3           A    0
1204   LIMDS0    SS7ANSI   sp3           A    1
1206   LIMDS0    SS7ANSI   nsp3          A    1   nsp4          B    1
1207   LIMV35    SS7GX25   nsp1          A    0
1208   LIMV35    SS7GX25   nsp1          A    1
1216   ACMENET   STPLAN
1301   TSM       SCCP
1308   LIMDS0    SS7ANSI   sp6           A    1   sp7           B    0
1314   LIMDS0    SS7ANSI   sp7           A    1   sp5           B    1
1317   ACMENET   STPLAN
```

   The cards should be distributed throughout the EAGLE 5 ISS for proper power distribution. Refer to the *Installation Manual* - EAGLE 5 ISS for the shelf power distribution.

2. Verify that the EAGLE 5 Integrated Monitoring Support feature is on, by entering the `rtrv-feat` command. If the EAGLE 5 Integrated Monitoring Support feature is on, the `E5IS` field should be set to `on`.

   Note: The `rtrv-feat` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in the *Commands Manual*.

   Note: If the EAGLE 5 Integrated Monitoring Support feature is not on, go to the *Enabling the Time Slot Counter Synchronization (TSCSYNC) and EAGLE 5 Integrated Monitoring Support (E5IS) Features* on page 444 procedure and enable the EAGLE 5 Integrated Monitoring Support feature.

   Note: If HIPR cards are not required for provisioning STC cards, refer to the “STC Provisioning” section, skip step 3 and go to step 4.

3. Verify that the HIPR cards are installed in card locations 9 and 10 in the shelf before adding the STCs cards in this procedure. Enter this command.

`rept-stat-gpl:gpl=hipr`

This is an example of the possible output.

```
rlghncxa03w 07-02-01 11:40:26 GMT  EAGLE5 37.0.0
GPL         CARD      RUNNING            APPROVED      TRIAL
HIPR        1109      126-002-000        126-002-000   126-003-000
HIPR        1110      126-002-000        126-002-000   126-003-000
HIPR        1209      126-002-000        126-002-000   126-003-000
HIPR        1210      126-002-000        126-002-000   126-003-000
HIPR        1309      126-002-000        126-002-000   126-003-000
HIPR        1310      126-002-000        126-002-000   126-003-000
HIPR        2109      126-002-000        126-002-000   126-003-000
HIPR        2110      126-002-000        126-002-000   126-003-000
Command Completed
```

If HIPR cards are installed in the shelf containing STC cards go to step 4.

If HIPR cards are not installed on the shelf containing the STC cards go to the *Installation Manual - EAGLE 5 ISS* and install the HIPR cards. Once the HIPR cards have been installed, go to step 4.

4. Add the STC using the `ent-card` command. Refer to the “STC Provisioning” section for the rules for provisioning STC cards. A dual-slot STC can be inserted only in an odd numbered slot and the adjacent even card slot must be empty, as shown in *Table 32: Dual-Slot STC Locations* on page 467. A single-slot STC can be inserted into any card slot except an even numbered card slot adjacent to a dual-slot card, slots 09 and 10 in each shelf, and slots 1113 through 1118. For this example, enter these commands.

   `ent-card:loc=1303:type=stc:appl=eroute`

   `ent-card:loc=2101:type=stc:appl=eroute`

   `ent-card:loc=2102:type=stc:appl=eroute`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-10-12 09:12:36 GMT  EAGLE5 36.0.0
ENT-CARD: MASP A - COMPLTD
```

5. Verify the changes using the `rtrv-card` command with the card location specified in step 4. For this example, enter these commands.

   `rtrv-card:loc=1303`

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1303   STC       EROUTE
```

   `rtrv-card:loc=2101`

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
2101   STC       EROUTE
```

   `rtrv-card:loc=2102`

   This is an example of the possible output.

```
rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
2102   STC       EROUTE
```

6. Verify that the card to be entered has been physically installed into the card location specified in step 4.

   CAUTION: If the version of the flash GPLs on the STC does not match the flash GPL versions in the database when the STC is inserted into the card slot, UAM 0002 is generated indicating that these GPL versions do not match. If UAM 0002 has been generated, perform the alarm clearing procedure for UAM 0002 in the *Unsolicited Alarm and Information Messages Manual* before proceeding with this procedure.

7. Put the STC added in step 4 into service using the `alw-card` command specifying the card location specified in step 4. For this example, enter these commands.

   `alw-card:loc=1303`

   `alw-card:loc=2101`

   `alw-card:loc=2102`

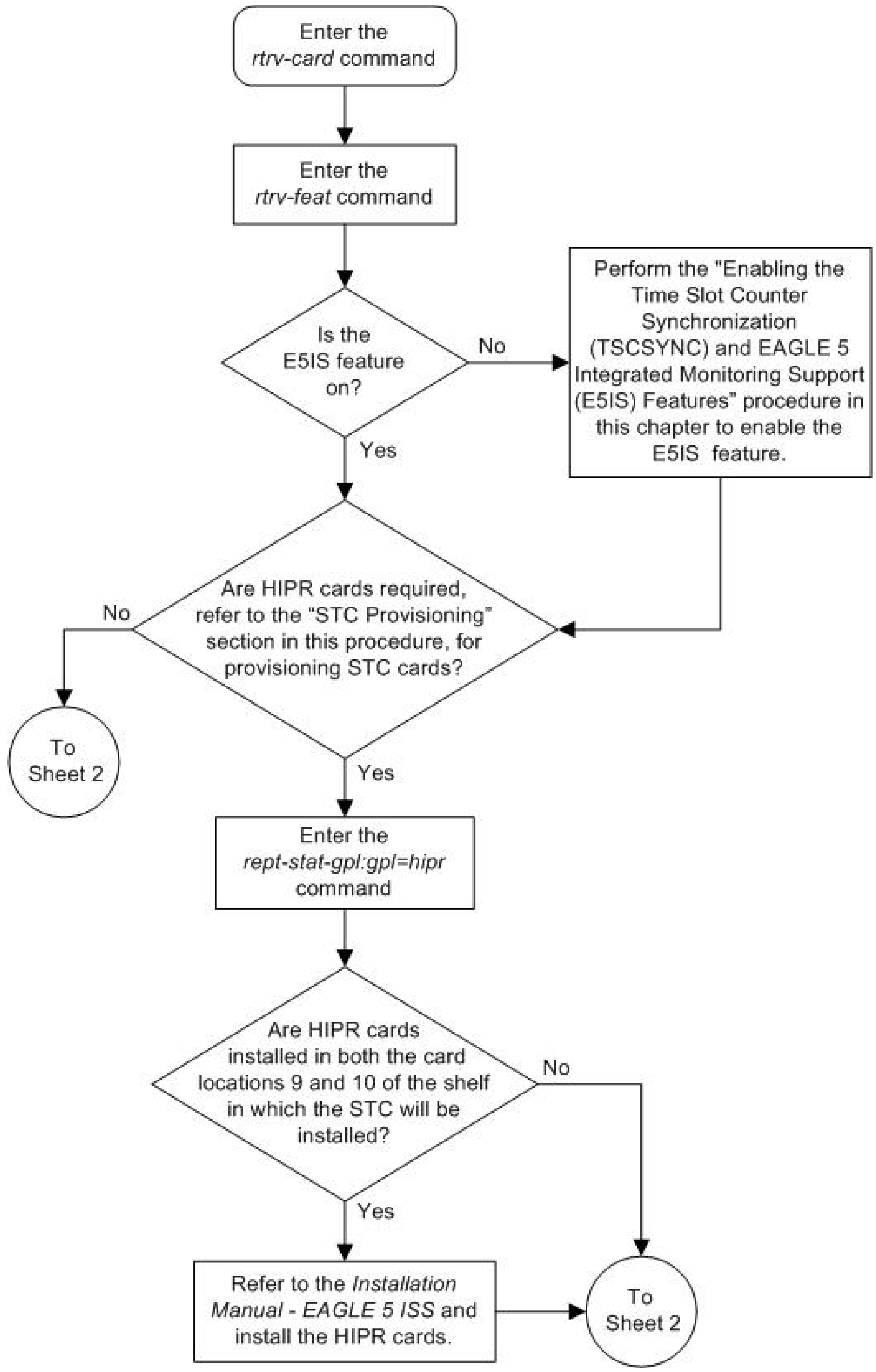
   When the `alw-card` command has successfully completed, this message should appear.

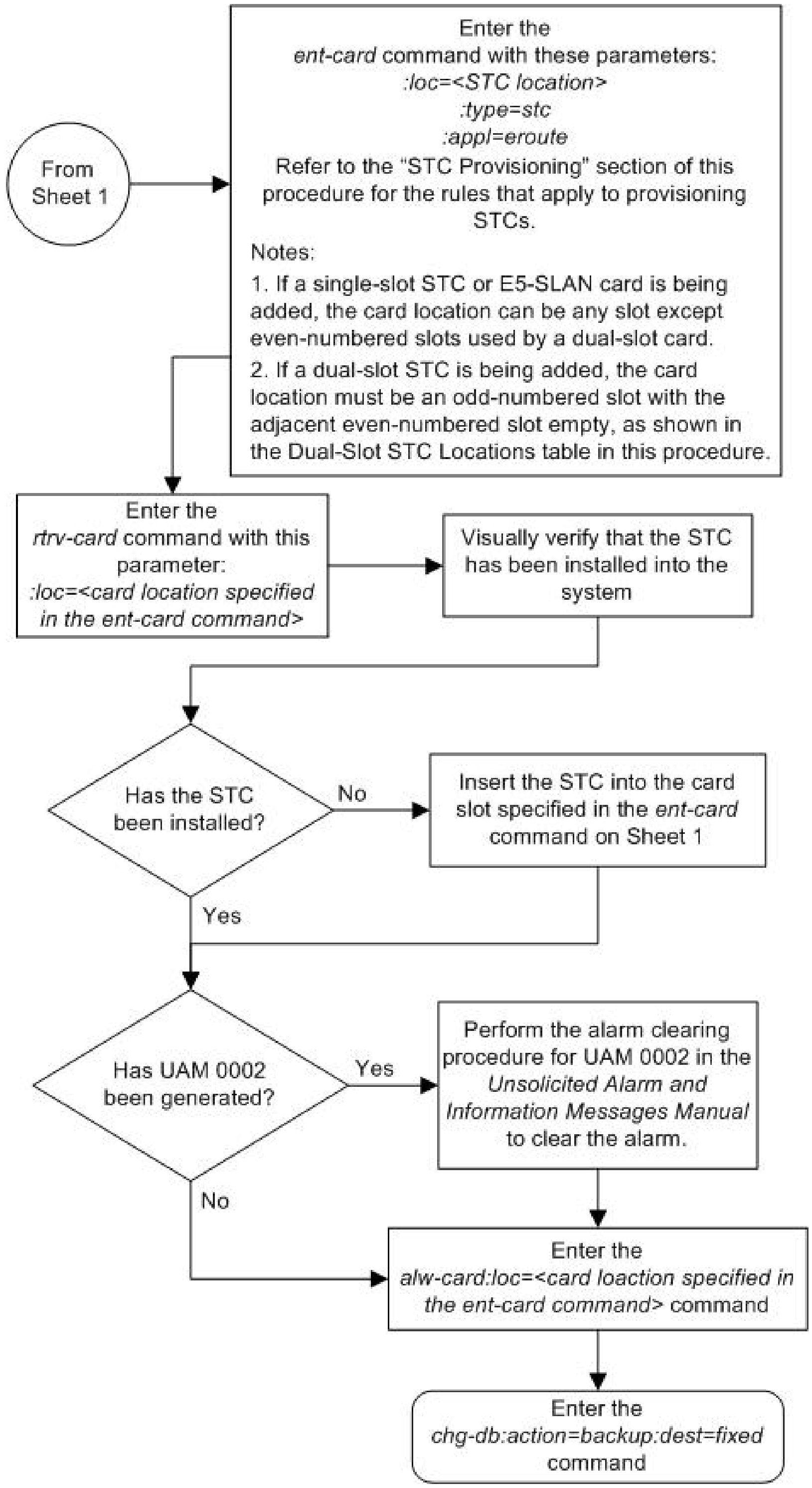
```
rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
Card has been allowed.
```

8. Back up the new changes using the `chg-db:action=backup:dest=fixed` command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 69: Adding a Signaling Transport Card (STC)


Enter the rtrv-card command
Enter the rtrv-feat command
Is the E5IS feature on?
No
Perform the "Enabling the Time Slot Counter Synchronization (TSCSYNC) and EAGLE 5 Integrated Monitoring Support (E5IS) Features" procedure in this chapter to enable the E5IS feature.
Yes
Are HIPR cards required, refer to the "STC Provisioning" section in this procedure, for provisioning STC cards?
No
To Sheet 2
Yes
Enter the rept-stat-gpl:gpl=hipr command
Are HIPR cards installed in both the card locations 9 and 10 of the shelf in which the STC will be installed?
No
Yes
Refer to the Installation Manual - EAGLE 5 ISS and install the HIPR cards.
To Sheet 2


From Sheet 1
Enter the ent-card command with these parameters:
:loc=<STC location>
:type=stc
:appl=eroute
Refer to the "STC Provisioning" section of this procedure for the rules that apply to provisioning STCs.
Notes:
1. If a single-slot STC or E5-SLAN card is being added, the card location can be any slot except even-numbered slots used by a dual-slot card.
2. If a dual-slot STC is being added, the card location must be an odd-numbered slot with the adjacent even-numbered slot empty, as shown in the Dual-Slot STC Locations table in this procedure.
Enter the rtrv-card command with this parameter:
:loc=<card location specified in the ent-card command>
Visually verify that the STC has been installed into the system
Has the STC been installed?
No
Insert the STC into the card slot specified in the ent-card command on Sheet 1
Yes
Has UAM 0002 been generated?
Yes
Perform the alarm clearing procedure for UAM 0002 in the Unsolicited Alarm and Information Messages Manual to clear the alarm.
No
Enter the alw-card:loc=<card loaction specified in the ent-card command> command
Enter the chg-db:action=backup:dest=fixed command

Removing a Signaling Transport Card (STC)

This procedure is used to remove an STC from the database using the `dlt-card` command.

CAUTION: If the STC is the last STC in service, removing this card from the database will disable the EAGLE 5 Integrated Monitoring Support feature.

CAUTION: If removing the STC reduces the quantity of STCs in the EAGLE 5 ISS below number of STCs required by the ESP subsystem, the performance of the EAGLE 5 Integrated Monitoring Support feature will be degraded.

The examples in this procedure are used to remove the STC in card location 1303.

Canceling the `REPT-STAT-CARD` Command

Because the `rept-stat-card` command used in this procedure can output information for a long period of time, the `rept-stat-card` command can be canceled and the output to the terminal stopped. There are three ways that the `rept-stat-card` command can be canceled.

- Press the F9 function key on the keyboard at the terminal where the `rept-stat-card` command was entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rept-stat-card` command was entered.
- Enter the `canc-cmd:trm=<xx>`, where <xx> is the terminal where the `rept-stat-card` command was entered, from another terminal other that the terminal where the `rept-stat-card` command was entered. To enter the `canc-cmd:trm=<xx>` command, the terminal must allow Security Administration commands to be entered from it and the user must be allowed to enter Security Administration commands. The terminal's permissions can be verified with the `rtrv-secu-trm` command. The user's permissions can be verified with the `rtrv-user` or `rtrv-secu-user` commands.

For more information about the `canc-cmd` command, go to the *Commands Manual*.

1. Display the cards in the database using the `rtrv-card` command. This is an example of the possible output.

```
rlghncxa03w 06-08-28 09:12:36 GMT EAGLE5 37.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1101   TSM       SCCP
1103   DCM       STPLAN
1113   GPSM      EOAM
1114   TDM-A
1115   GPSM      EOAM
1116   TDM-B
1117   MDAL
1201   LIMDS0    SS7ANSI   sp2           A    0   sp1           B    0
1202   LIMDS0    SS7ANSI   sp2           A    1   nsp3          B    0
1202   LIMV35    SS7GX25   lsngwy        A    0
1203   LIMDS0    SS7ANSI   sp3           A    0
1204   LIMDS0    SS7ANSI   sp3           A    1
1205   LIMOCU    CCS7ITU   itu1          A    0
1206   LIMDS0    SS7ANSI   nsp3          A    1   nsp4          B    0
1207   LIMV35    SS7GX25   nsp1          A    0
1208   LIMV35    SS7GX25   nsp1          A    1
```

```
1212   TSM       SCCP
1214   TSM       GLS
1215   DCM       STPLAN
1301   LIMATM    ATMANSI   lsnatm1       A    0
1303   STC       EROUTE
1305   DCM       STPLAN
1308   LIMDS0    SS7ANSI   sp6           A    0   sp7           B    0
1311   LIMDS0    SS7ANSI   sp2           A    2   sp1           B    1
                           sp7           A1   1   sp3           B1   2
1315   LIMDS0    SS7ANSI   sp7           A    2   sp5           B    0
1318   LIMATM    ATMANSI   lsnatm1       A    1
2101   STC       EROUTE
2102   STC       EROUTE
2105   STC       EROUTE
```

An STC is identified by the entries `STC` in the `TYPE` field and `EROUTE` in the `APPL` field.

2. Display the status of the STC being removed with the `rept-stat-card` command with the location of the STC. For this example, enter this command.

   `rept-stat-card:loc=1303`

   This is an example of the possible output.

```
rlghncxa03w 06-08-27 16:43:42 GMT  EAGLE5 37.0.0
CARD   VERSION      TYPE      GPL        PST            SST       AST
1303   113-003-000  STC       EROUTE     IS-NR          Active    -----
  ALARM STATUS       = No Alarms.
  BP GPL version = 002-108-000
  IMT BUS A          = Conn
  IMT BUS B          = Conn
  EROUTE % OCCUP     = 50%
  NTP broadcast = VALID

  STC IP PORT A:                         IS-NR          Active    -----
      ALARM STATUS  = No Alarms.
  STC IP PORT B:                         IS-NR          Active    -----
      ALARM STATUS  = No Alarms.
Command Completed.
```

3. Inhibit the card using the `rmv-card` command, specifying the card location. For this example, enter this command.

   `rmv-card:loc=1303`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-08-12 09:12:36 GMT  EAGLE5 37.0.0
Card has been inhibited.
```

4. Remove the card using the `dlt-card` command. The `dlt-card` command has only one parameter, `loc`, which is the location of the card. For this example, enter this command.

   `dlt-card:loc=1303`

   When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-08-12 09:12:36 GMT  EAGLE5 37.0.0
DLT-CARD: MASP A - COMPLTD
```

5. Verify the changes using the `rtrv-card` command specifying the card that was removed in step 4. For this example, enter this command.

   `rtrv-card:loc=1303`

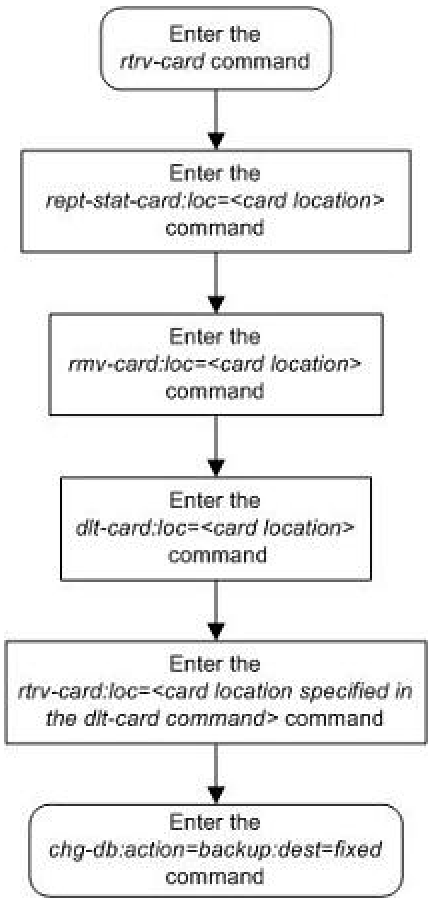
When this command has successfully completed, this message should appear.

```
E2144 Cmd Rej: Location invalid for hardware configuration
```

6. Back up the new changes using the `chg-db:action=backup:dest=fixed` command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Figure 70: Removing a Signaling Transport Card (STC)



Glossary

A

ACM	Application Communications Module A card in the EAGLE 5 ISS that provides a communications interface to a remote host across an Ethernet LAN.
ACT	Activate
AFTPC	Affected Point Code The point code in subsystem-prohibited (SSP), subsystem-status-test (SST), and subsystem-allowed (SSA) SCCP management messages used by gateway screening to determine if the messages containing these point codes are allowed in to the network. This point code is in the SCMG Data (SCCP Management) portion of the signaling information field in the MSU.
AINF	Application Interface Appliqué An integrated appliqué that supports the DS0A, DSCS and V.35 interfaces on the same appliqué. The AINF appliqué can be configured as either a DS0A, OCU, or V.35 interface from the user terminal.
Allowed Affected Destination Field	The gateway screening entity that identifies the point code in the affected destination field (the concerned signaling point code) of incoming MTP network management messages from another network that are allowed

A

	into the EAGLE 5 ISS. Messages containing the specified point code are allowed into the network.
Allowed DPC	The gateway screening entity that identifies the destination point codes that are allowed to receive SS7 messages from the EAGLE 5 ISS. Messages containing the specified destination point codes go on to the next step in the gateway screening process, or are allowed into the network if the gateway screening process stops with this entity.
Allowed ISUP	The gateway screening entity that identifies the ISUP or TUP message types that are allowed into the network.
Allowed OPC	The gateway screening entity that identifies the originating point codes that are allowed to send SS7 messages into the network. Messages containing the specified originating point codes go on to the next step in the gateway screening process, or are allowed into the network if the gateway screening process stops with this entity.
Allowed SIO	The gateway screening entity that identifies the type of MSUs (ISUP, TUP, TCAP, and so forth) that are allowed into the network. The message type is determined by the network indicator code (NIC), priority (PRI), and service indicator (SI) fields of the signaling information octet (SIO) field in the MSU, and the H0 and H1 heading codes of the signaling information field of the MSU. Messages

A

	containing the specified message type go on to the next step in the gateway screening process, or are allowed into the network if the gateway screening process stops with this entity.
ANSI	American National Standards Institute An organization that administers and coordinates the U.S. voluntary standardization and conformity assessment system. ANSI develops and publishes standards. ANSI is a non-commercial, non-government organization which is funded by more than 1000 corporations, professional bodies, and enterprises.
APC	Adjacent Point Code The point code that identifies a node adjacent to the EAGLE 5 ISS. This term is used in link sets and routes.
API	Application Interface
ARP	Address Resolution Protocol
ATI	Any Time Interrogation An ATI message allows an external server to interrogate an HLR and obtain information about the location and/or state of a GSM subscriber.
ATM	Asynchronous Transfer Mode A packet-oriented transfer mode that uses an asynchronous time

A

	division multiplexing technique to multiplex information flow in fixed blocks, called cells. A high-bandwidth, low-delay switching, and multiplexing technology to support applications that include high-speed data, local area network interconnection, multimedia application and imaging, and residential applications such as video telephony and other information-based services.
ATMANSI	The application used for high-speed ANSI ATM signaling links.
ATMITU	The application used for high-speed E1 ATM signaling links.

B

BITS	Building Integrated Timing System The Building Integrated Timing System (BITS) clocks come directly from the central office BITS clock source or indirectly from an optional holdover clock installed in the system.
BLKDPC	Blocked Destination Point Code The point code that the gateway screening uses to keep MSUs bound for a specific point code out of the network where the EAGLE 5 ISS is located. This point code is in the routing label portion of the signaling information field in the MSU. Messages that do not contain the specified destination point code go on to the next step in the gateway screening process, or are allowed into the network if the

B

	gateway screening process stops with this entity.
BLKOPC	Blocked Originating Point Code The point code that gateway screening uses to keep MSUs coming from a specific point code out of the network where the EAGLE 5 ISS is located. This point code is in the routing label portion of the signaling information field in the MSU. Messages that do not contain the specified originating point code go on to the next step in the gateway screening process, or are allowed into the network if the gateway screening process stops with this entity.
BPS	Bits per Second The transmission rate of the signaling links on the EAGLE 5 ISS expressed in bits per second.

C

CCS7ITU	The generic program load and application for the ITU SS7 signaling links that is used with card types `limds0, limch, limocu, limv35, lime1, and limt1`.
CdPA	Called Party Address The portion of the MSU that contains the additional addressing information of the destination of the MSU. Gateway screening uses this additional information to determine if MSUs that contain the DPC in the routing label and the subsystem number in the called party address portion of the MSU are allowed in the network where the EAGLE 5 ISS is located.

C

CDR	Call Detail Record This refers to the recording of all connections in a database to permit activities such as billing connection charges or network analysis. CDR files are used in public switched networks, IP networks, for IP telephony, and mobile communications networks.
CgPA	Calling Party Address The point code and subsystem number that originated the MSU. This point code and subsystem number are contained in the calling party address portion of the signaling information field of the MSU. Gateway screening uses this information to determine if MSUs that contain this point code and subsystem number area allowed in the network where the EAGLE 5 ISS is located.
CLLI	Common Language Location Identifier The CLLI uniquely identifies the STP in terms of its physical location. It is usually comprised of a combination of identifiers for the STP's city (or locality), state (or province), building, and traffic unit identity. The format of the CLLI is: The first four characters identify the city, town, or locality. The first character of the CLLI must be an alphabetical character. The fifth and sixth characters identify state or province. The seventh and eighth characters identify the building.

C

	The last three characters identify the traffic unit.
Cluster	A group of signaling points whose point codes have identical values for the network and cluster fields of the point codes. A cluster entry in the routing table is shown as an asterisk (*) in the member field of the point code, for example, 111-011-*. Cluster entries can be provisioned only as ANSI destination point codes.
control cards	Cards that occupy slots 1113 through 1118 of the control shelf on an EAGLE 5 ISS and perform OAM, TDM, and database functions for the EAGLE 5 ISS. The legacy set consists of the single-slot GPSM-II card running the OAM application and EOAM GPL, the single-slot TDM card, and the dual-slot MDAL card. The E5-based set consists of the dual-slot E5-MASP card (the E5-MCAP module and the E5-TDM module) and the dual-slot E5-MDAL card.
CPC	Capability Point Code A capability point code used by the SS7 protocol to identify a group of functionally related STPs in the signaling network.
credit card drive	Flash memory credit card-shaped drive used in the flush-mounted USB port on an E5-MCAP card for upgrade; it could be used for disaster recovery.

D

D

Database	All data that can be administered by the user, including cards, destination point codes, gateway screening tables, global title translation tables, links, LNP services, LNP service providers, location routing numbers, routes, shelves, subsystem applications, and 10 digit telephone numbers.
DCE	Data Communication Equipment The data communication equipment associated with the transmission of data from one device to another. Examples of data communication equipment are modems, remote terminals, and communications processors.
DCM	Database Communication Module The DCM provides IP connectivity for applications. Connection to a host is achieved through an ethernet LAN using the TCP/IP protocol.
DESTFLD	The point code in the affected destination field (the concerned signaling point code) of incoming MTP network management messages from another network that are allowed into the EAGLE 5 ISS.
Destination	The node to which the signaling link traffic is routed. This destination is identified by a point code, either a full point code or a cluster point code.
DHCP	Dynamic Host Configuration Protocol

D

DPC	Destination Point Code DPC refers to the scheme in SS7 signaling to identify the receiving signaling point. In the SS7 network, the point codes are numeric addresses which uniquely identify each signaling point. This point code can be adjacent to the EAGLE 5 ISS, but does not have to be.
DPCA	Destination Point Code ANSI
DPCI	Destination Point Code International
DPCN	Destination Point Code National
DS0	Digital Signal Level-0 (64 Kbits/sec or 56 Kbits/sec) A basic digital signaling rate of 64 Kbits/sec, corresponding to the capacity of one voice-frequency-equivalent channel.
DS0A	Digital Signal Level - 0 The interface used with the LIMDS0 card.
DSM	Database Service Module. The DSM provides large capacity SCCP/database functionality. The DSM is an application card that supports network specific functions such as EAGLE Provisioning Application Processor (EPAP), Global System for Mobile Communications (GSM), EAGLE Local Number Portability (ELAP),

D

	and interface to Local Service Management System (LSMS).
DTA	Database Transport Access A feature in the EAGLE 5 ISS that encapsulates specific MSUs into the data portion of SCCP within a new SS7 MSU and sends the new MSU to the destination using global title translation. The EAGLE 5 ISS uses gateway screening to determine which MSUs are used by the DTA feature.
DTE	Data Terminal Equipment The equipment associated with the entering and retrieving data from a computer system or a data communications system. A video display terminal is an example of data terminal equipment.

E

E1	The European equivalent of T1 that transmits digital data over a telephone network at 2.048 Mbps.
E5-E1T1	EPM-based E1/T1 Multi-Channel Interface Module An EPM-based card that provides E1 and T1 connectivity. The E5 indicates the card is for existing EAGLE 5 control and extension shelves. E1T1 is an abbreviation for the ITU E1 and ANSI T1 interfaces. Thus the nomenclature defines the shelves where the card can be used and the physical interface that it provides.
E5-MASP card	E5-based dual-slot card that consists of the E5-MCAP module

E

	(occupies slot 1113 and slot 1115) and the E5-TDM module (occupies slot 1114 and slot 1116) in an EAGLE 5 ISS control shelf. Used when the E5-MDAL card is used.
E5-MCAP card	The module contains the Communications Processor and Applications Processor and provides connections to the IMT bus. Controls the maintenance and database administration activity and performs both application and communication processing. Runs the OAM application and OAMHC GPL. Occupies slot 1113 and slot 1115 in an EAGLE 5 ISS control shelf. Used when the E5-MDAL card is used. Contains two USB ports.
E5-MDAL card	The E5 MDAL card processes alarm requests, provides general purpose relays, and provides fan control. Occupies slots 1117 and 1118 in an EAGLE 5 ISS Control Shelf. Used with E5-MASP cards. Does NOT contain a drive for removable cartridges.
E5-ENET	EPM-based Ethernet card A high capacity single-slot IP signaling card (EPM card plus Gig Ethernet PMC cards).
E5IS	EAGLE 5 Integrated Monitoring Support The EAGLE 5 Integrated Monitoring Support feature allows the network traffic on the EAGLE 5 ISS's signaling links to be monitored by an ESP (extended

E

	services platform) or IMP (integrated message feeder) without additional intrusive cabling. Message Signaling Units (MSUs), alarms, and events are copied to the Sentinel/IMF to provide the network traffic monitoring. The monitored traffic is delivered to the Sentinel/IMF using the EAGLE'S STCs (Signaling Transport Cards) which are connected to the ESP/IMF subsystem by Ethernet links. The ESP/IMF subsystem delivers the monitored traffic to the Sentinel/IMF.
E5-TDM card	The E5-TDM card provides the EAGLE 5 ISS with 16 ports for user terminals, contains fixed disk storage and distributes Composite Clocks and High Speed Master clocks throughout the EAGLE 5 ISS. Occupies slot 1114 and slot 1116 in an EAGLE 5 ISS Control Shelf. Used when the E5-MDAL card is used.
EDCM	Enhanced Database Communication Module
EILA	Enhanced Integrated LIM Appliqué
ENET	Can refer to a generic hardware type that supports one or more Ethernet interfaces.
ESP	Expanded Services Platform The Sentinel system with the hardware and software platform that provides the interface to the Integrated EAGLE and Sentinel

E

monitoring system. The ESP hardware and software platform runs on the model 120 server.

F

fixed disk drive
: Hard drive on the TDM card and the E5-TDM card.

flush-mounted USB port
: USB port on the E5-MCAP card; used with credit card flash memory drives for installation and backup of customer data.

FTP
: File Transfer Protocol

  A client-server protocol that allows a user on one computer to transfer files to and from another computer over a TCP/IP network.

G

GLS
: Generic Loading Services

  An application that is used by the TSM cards for downloading gateway screening to LIM cards.

GPL
: Generic Program Load

  Software that allows the various features in the system to work. GPLs and applications are not the same software.

GPSM-II card
: General Purpose Service Module II

  Contains the communications processor and applications processor and provides connections to the Interprocessor Message Transport (IMT) bus. The GPSM-II card can run on the OAM, IPS, or MCP applications.

G

	This card runs various GPLs and applications in the EAGLE 5 ISS. As a control card, it runs the OAM application and EOAM GPL. Used when the legacy TDM cad and MDAL card are used.
GRT	Gateway Routing Table
GSM	Global System for Mobile Communications
GSMSCRN	GSM MAP Screening. A feature that allows the user to provision which MAP subsystem numbers are affected, which MAP operations codes to screen, which origination points are allowed, and which error messages to use.
GT	Global Title Routing Indicator
GTA	Global Title Address
GTI	Global Title Indicator
GTT	Global Title Translation A feature of the signaling connection control part (SCCP) of the SS7 protocol that the EAGLE 5 ISS uses to determine which service database to send the query message when an MSU enters the EAGLE 5 ISS and more information is needed to route the MSU. These service databases also verify calling card numbers and credit card numbers. The service databases are identified in the SS7 network by a point code and a subsystem number.

G

GWS	Gateway Screening Used at gateway STPs to limit access into the network to authorized users. A gateway STP performs inter-network routing and gateway screening functions. GWS controls access to nonhome SS7 networks. Only an MSU that matches predefined criteria in the EAGLE 5 ISS's database is allowed to enter the EAGLE 5 ISS.
GWSA	Gateway Screening Action Gateway Screening Application
GWSD	Gateway Screening Message Discard

H

HC-MIM	High Capacity Multi-Channel Interface Module A card that provides access to eight E1/T1 ports residing on backplane connectors A and B. Each data stream consists of 24 T1 or 31 E1 DS0 signaling links assigned in a time-division multiplex (TDM) manner. Each channel occupies a unique timeslot in the data stream and can be selected as a local signaling link on the interface card. Each card has 8 E1 or 8 T1 port interfaces with a maximum of 64 signaling links provisioned among the 8 E1/T1 ports.
HIPR	High-Speed IMT Packet Router A card that provides increased system throughput and traffic capacity. HIPR moves EAGLE from an intra-shelf ring topology to an intra-shelf switch topology. HIPR acts as a gateway between

H

	the intra-shelf IMT BUS, running at 125Mbps, and the inter-shelf operating at 1.0625Gbps. The HIPR card will seat in the same slot as an HMUX card (slots xx09 & xx10 of each shelf).
HLR	Home Location Register
HMUX	High-Speed Multiplexer A card that supports the requirements for up to 1500 links, allowing communication on IMT buses between cards, shelves and frames. HMUX cards interface to 16 serial links, creating a ring from a series of point to point links. Each HMUX card provides a bypass multiplexer to maintain the ring's integrity as cards are removed and inserted into an operational shelf. High-Speed IMT Multiplexer, a replacement card for the IPMX.
HSL	High-Speed Link

I

ICMP	Internet Control Message Protocol
ID	Identity, identifier
ILA	Integrated LIM Appliqué
IMF	Integrated Message Feeder The IMF sits on the EAGLE and replicates the signaling data that is processed through the EAGLE to send to an off-board processor (the IXP in the case of IAS). Because it replicates the data (and doesn't

I

	introduce a new element in the path) it does not introduce any delay to the signaling and it does not create a separate footprint for a “probe” system.
IMT	Inter-Module-Transport The communication software that operates the inter-module-transport bus on all cards except the LIMATM, DCM, DSM, and HMUX.
IP	Internet Protocol IP specifies the format of packets, also called datagrams, and the addressing scheme. The network layer for the TCP/IP protocol suite widely used on Ethernet networks, defined in STD 5, RFC 791. IP is a connectionless, best-effort packet switching protocol. It provides packet routing, fragmentation and re-assembly through the data link layer.
IP Address	The location of a device on a TCP/IP network. The IP Address is a number in dotted decimal notation which looks something like [192.168.1.1].
IPGWI	An application that is used by the SSEDCM/E5-ENET card for IP point-to-multi-pointconnectivity within an ITU-I or ITU-N network. The system allows a maximum of 64 cards to be assigned the IPGWI application.
IPGWx	Point-to-multipoint MTP-User signaling (e.g. ISUP, TCAP) over IP capability. Typicallyused for A

I

	link connectivity which require routing keys. Far End not required to support MTP3. The IPGWx GPL (IPGWI, SS7IPGW) run on the SSEDCM/E5-ENET hardware.
IPLIM	The application used by the SSEDCM/E5-ENET card for IP point-to-point connectivity for ANSI point codes.
IPLIMI	The application used by the SSEDCM/E5-ENET card for IP point-to-point connectivity for ITU point codes.
IPLIMx	Point-to-point MTP3 and MTP3-User signaling over IP capability. Typically used for B-C-D links but can be used for A links but does not have routing key functionality. Far End required to support MTP3. The IPLIMx GPL (IPLIMI, IPLIM) run on the SSEDCM/E5-ENET hardware.
IS	Information Services
IS-NR	In Service - Normal
ISS	Integrated Signaling System
ISUP	ISDN User Part
ITU	International Telecommunications Union

L

LAN	Local Area Network

L

	A private data network in which serial transmission is used for direct data communication among data stations located in the same proximate location. LAN uses coax cable, twisted pair, or multimode fiber. See also STP LAN.
latched USB port	On the E5-MCAP card, a USB port with a lockable latch. Used with removable media (flash memory ”thumb” drives) to install and back up customer data.
LC	Logical Channel A virtual circuit or a connection used by the X.25 network. There are two types of logical channels used in the X.25 network, PVCs (permanent virtual circuits) and SVCs (switched virtual circuits). A PVC is a direct connection to an X.25 node. The EAGLE 5 ISS uses two types of SVCs, an automatic switched virtual circuit (SVCA) and a remote switched virtual circuit (SVCR). An SVCA is a connection to an X.25 node established by the EAGLE 5 ISS as soon as the X.25 LIM (a LIM that is running the `ss7gx25` application assigned to it) initializes. An SVCR is a connection to an X.25 node established by the far end X.25 user.
LC2NM	Logical Channel to Network Management A function of the SS7/X.25 gateway feature that allows SS7 network management to reroute

L

	traffic destined for failed X.25 logical channels to an alternate route, and reroutes traffic back to the original X.25 logical channels when the X.25 logical channels are back in service.
LIM	Link Interface Module Provides access to remote SS7, X.25, IP and other network elements, such as a Signaling Control Point (SCP) through a variety of signaling interfaces (V.35, OCU, DS0, MPL, E1/T1 MIM, LIM-ATM, E1-ATM, IPLIMx, IPGWx). The LIMs consist of a main assembly and possibly, an interface appliqué board. These appliqués provide level one and some level two functionality on SS7 signaling links.
LIM-AINF	A link interface module (LIM) with the AINF interface.
LIM-DS0	A link interface module (LIM) with the DS0A Appliqué.
LIM-OCU	A link interface module (LIM) with the OCU Appliqué.
LIM-OCU	LIM-Office Channel Unit Applique
Link	Signaling Link
Load Sharing	A type of routing used by global title translation to route MSUs This type of routing is used when a second point code and subsystem is defined for the primary point code and subsystem. Traffic is

L

	shared equally between the replicated point codes and subsystems.
LSL	Low-speed Link
LSN	Link Set Name The name of the link set.
LST	Link Set Type

M

M2PA	SS7 MTP2-User Peer-to-Peer Adaptation Layer
M3UA	SS7 MTP3-User Adaptation Layer
MAP	Mobile Application Part
MAS	Maintenance and Administration Subsystem A set of cards located in the Control Shelf, used to provide a central management point for the EAGLE 5 ISS. The MAS provides user interface, maintenance communication, peripheral services, alarm processing, system disk interface, and measurements using the following three subassemblies: GPSM-II, TDM, and MDAL.
MASP	Maintenance and Administration Subsystem Processor The Maintenance and Administration Subsystem Processor (MASP) function is a logical pairing of the GPSM-II card and the TDM card. The GPSM-II

M

	card is connected to the TDM card by means of an Extended Bus Interface (EBI) local bus. The MDAL card contains the removable cartridge drive and alarm logic. There is only one MDAL card in the Maintenance and Administration Subsystem (MAS) and it is shared between the two MASPs.
Mated Application	The point codes and subsystem numbers of the service databases that messages are routed to for global title translation.
MAU	Media Access Unit An industry standard single port Ethernet transceiver that connects the ACM to the Ethernet.
MDAL	Maintenance Disk and Alarm
MIM	Multi-Channel Interface Module
MPL	Multi-port LIM
MRN	Message Reference Number An unsolicited numbered message (alarm or information) that is displayed in response to an alarm condition detected by the system or in response to an event that has occurred in the system. Mated Relay Node A mated relay node (MRN) group is provisioned in the database to identify the nodes that the traffic is load shared with, and the type of routing, either dominant, load

M

	sharing, or combined dominant/load sharing.
MSC	Mobile Switching Center
MSU	Message Signaling Unit The SS7 message that is sent between signaling points in the SS7 network with the necessary information to get the message to its destination and allow the signaling points in the network to set up either a voice or data connection between themselves. The message contains the following information: • The forward and backward sequence numbers assigned to the message which indicate the position of the message in the traffic stream in relation to the other messages. • The length indicator which indicates the number of bytes the message contains. • The type of message and the priority of the message in the signaling information octet of the message. • The routing information for the message, shown in the routing label of the message, with the identification of the node that sent message (originating point code), the identification of the node receiving the message (destination point code), and the signaling link selector which the EAGLE 5 ISS uses to pick which link set and signaling link to use to route the message.

M

MTP	The levels 1, 2, and 3 of the SS7 protocol that control all the functions necessary to route an SS7 MSU through the network.
MTP2	Message Transfer Part, Level 2

N

NAI	Nature of Address Indicator Standard method of identifying users who request access to a network.
NAIV	NAI Value
NIC	Network Identifier Code Network Information Center Network Interface Card Computer hardware that enables computers to communicate with one another over a computer network. Also called a network card or a network adapter.
NP	Number Plan
NPV	Numbering Plan Value
NSR	Next Screening Reference
NTP	Network Time Protocol

O

OCU	Office Channel Unit The interface used with the LIMOCU card.

O

OOS-MT	Out of Service - Maintenance The entity is out of service and is not available to perform its normal service function. The maintenance system is actively working to restore the entity to service.
OOS-MT-DSBLD	Out of Service - Maintenance Disabled The entity is out of service and the maintenance system is preventing the entity from performing its normal service function.
OPC	Originating Point Code

P

PC

Point Code

The identifier of a signaling point or service control point in a network. The format of the point code can be one of the following types:

- ANSI point codes in the format network indicator-network cluster-network cluster member (**ni-nc-ncm**).
- Non-ANSI domestic point codes in the format network indicator-network cluster-network cluster member (**ni-nc-ncm**).
- Cluster point codes in the format network indicator-network cluster-* or network indicator-*-*.
- ITU international point codes in the format **zone-area-id**.
- ITU national point codes in the format of a 5-digit number (**nnnnn**), or 2, 3, or 4 numbers (members) separated by dashes

P

(**m1-m2-m3-m4**) as defined by the Flexible Point Code system option. A group code is required (**m1-m2-m3-m4-gc**) when the ITUDUPPC feature is turned on.

- 24-bit ITU national point codes in the format main signaling area-subsignaling area-service point (**msa-ssa-sp**).

The EAGLE 5 ISS LNP uses only the ANSI point codes and Non-ANSI domestic point codes.

PCA

Point Code ANSI

PCI

Peripheral Component Interface

Point Code International

Protocol Control Information

Peripheral Component Interconnect

PCN

Point Code National

Product Change Notice

PCR

A method of error correction used for the SS7 protocol. PCR is an error correction method that keeps a copy of each message signal unit transmitted on a signaling link in a retransmission buffer. If the receiving end of the signaling link receives the MSU with no errors, positive acknowledgment message is sent to the transmitting end of the signaling link. The MSU is then discarded from the retransmission buffer. If the transmitting end of the signaling link does not receive positive acknowledgment from the receiving end of the signaling link,

P

	the MSU is retransmitted until positive acknowledgment is received. The PCR error correction method is assigned to SS7 signaling links using the `ent-slk` command. The PCR method of error correction cannot be assigned to X.25 signaling links.
PDN	Public Data Network A data network that uses the X.25 protocol to provide the connectivity.
PVC	Permanent Virtual Circuit A direct connection to an X.25 node that is configured in the EAGLE 5 ISS's database and can only be changed through database administration.
PVN	Private Virtual Network Private Virtual Network represents the internal IP addressing scheme for every card within the EAGLE 5 ISS switch. Each card has an auto-assigned, default, Class B private IP address.

R

removable cartridge	MO cartridge used in the drive on the legacy MDAL card.
removable cartridge drive	Media drive for removable MO cartridges on the legacy MDAL card.
removable media	Flash memory or "thumb" drives used in the latched USB port on an E5-MCAP card for installation and backup of customer data.

R

RFC	Request for Comment RFCs are standards-track documents, which are official specifications of the Internet protocol suite defined by the Internet Engineering Task Force (IETF) and its steering group the IESG.
Route	A path to another signaling point.

S

SCCP	Signaling Connection Control Part
SCP	Service Control Point Service Control Points (SCP) are network intelligence centers where databases or call processing information is stored. The primary function of SCPs is to respond to queries from other SPs by retrieving the requested information from the appropriate database, and sending it back to the originator of the request. Secure Copy
Screen Set	A gateway screening table containing a list of rules, or screening references. The screening references indicate the screening action that is to be performed on a message in a specific linkset.
SCRN	Screen Set Name
SE-HSL	Synchronous E1 High Speed Link Format for E1 high-speed signaling links where time-slot 0 is used for framing and error control. The remainder of bandwidth,

S

	equivalent to 31 channels of 64Kbps data, is used as a single data link yielding a total capacity of 1.984 Mbps. Also known as Unchannelized E1.
SEAS	Signaling Engineering and Administration System An interface defined by Bellcore and used by the Regional Bell Operating Companies (RBOCs), as well as other Bellcore Client Companies (BCCs), to remotely administer and monitor the signaling points in their network from a central location.
SI	Service Indicator
Signaling Link	The transmission path connecting the EAGLE 5 ISS to other signaling points in the network and providing access to ANSI SS7, ITU SS7, and X.25 network elements. The signaling link is connected to the EAGLE 5 ISS at the link interface module (LIM). A generic program load application that is loaded on the LIM to allow the LIM to access a particular network element.
SIO	Service Information Octet. The network indicator code (NIC), priority (PRI), and service indicator (SI) in the SIO field in the message signaling unit (MSU). This information identifies the type of MSU (ISUP, TCAP, and so forth) that is allowed in the network where the EAGLE 5 ISS is located.

S

SLAN	Signaling Transfer Point Local Area Network A feature in the EAGLE 5 ISS that copies MSUs selected through the gateway screening process and sends these MSUs over the Ethernet to an external host computer for further processing.
SLC	Signaling Link Code
SLS	Signaling Link Selector
SLTA	Signaling Link Test Acknowledgment
SLTM	Signal Link Test Message
SMS	Short Message Service
SRI	Send_Route_Information Message
SS7	Signaling System #7
SS7ANSI	SS7 ANSI An application used by the LIM cards and the E1/T1 MIM card for the MTP functionality.
SS7IPGW	SS7 IP Gateway An application used by the DCM/SSEDCM card for IP point-to-multipoint capability within an ANSI network.
SSEDCM	Single Slot Enhanced Data Communications Module

S

SSN	Subsystem Number The subsystem number of a given point code. The subsystem number identifies the SCP application that should receive the message or the subsystem number of the destination point code to be assigned to an X.25 address or the LNP subsystem of the EAGLE 5 ISS. A value of the routing indicator portion of the global title translation data commands indicating that no further global title translation is required for the specified entry.
STC	Signaling Transport Card The Signaling Transport Card (STC) is a member of the DCM card family with an “eroute” generic program load (GPL) installed. The STCs provide the IP interface between the LIM cards on the IMT bus and the Signaling Extended Services Platform (ESP) subassembly. The STC is used for sending MSU data to the ESP/IMF.
STP	Signal Transfer Point STPs are ultra-reliable, high speed packet switches at the heart of SS7 networks, which terminate all link types except F-links. STPs are nearly always deployed in mated pairs for reliability reasons. Their primary functions are to provide access to SS7 networks and to provide routing of signaling messages within and among signaling networks.
STPLAN	Signaling Transfer Point Local Area Network

S

The generic program load and application used by the ACM card to support the STP LAN application. This GPL does not support 24-bit ITU-N point codes.

SVC

Switched Virtual Circuit

A temporary virtual circuit that is set up and used only as long as data is being transmitted. Once the communication between the two hosts is complete, the SVC disappears. In contrast, a permanent virtual circuit (PVC) remains available at all times.

SVCA

Automatic Switched Virtual Circuit

A connection to an X.25 node established by the EAGLE 5 ISS as soon as the X.25 LIM (a LIM that has the `ss7gx25` application assigned to it) initializes.

SVCR

Remote Switched Virtual Circuit

A connection to an X.25 node established by the far end X.25 user.

T

T1

Transmission Level 1

A T1 interface terminates or distributes T1 facility signals for the purpose of processing the SS7 signaling links carried by the E1 carrier.

A leased-line connection capable of carrying data at 1,544,000 bits-per-second.

TC

Table Copy

Transaction Capabilities

T

TCAP	Transaction Capabilities Application Part
TCP	Transfer Control Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol
TDM	Terminal Disk Module Time Division Multiplexing
TFA	TransFer Allowed (Msg)
TFP	TransFer Prohibited (Msg) A procedure included in the signaling route management (functionality) used to inform a signaling point of the unavailability of a signaling route.
TPS	Transactions Per Second
TSC	Time Slot Counter
TSCSYNC	Time Slot Counter Synchronization The Time Slot Counter (TSC) Synchronization feature allows the system's A (Active) and B (Standby) internal clocks to be synchronized by the standby OAM GPSM-II card.
TSM	Translation Services Module Provides SCCP functionality or GLS functionality for Local Number Portability (LNP)/SCCP (GTT). The SCCP software allows

T

	the TSM to be used as a memory board for Global Title Translation (GTT).
TT	Translation Type. Resides in the Called Party Address (CdPA) field of the MSU and determines which service database is to receive query messages. The translation type indicates which Global Title Translation table determines the routing to a particular service database.
TX	Transmit

U

UAM	Unsolicited Alarm Message.
UDP	User Datagram Protocol
UDT	Unit Data Transfer
UDTS	Unitdata Service message
UIM	Unsolicited Information Message
USB port	Receptacle for flash memory drives on personal computers. On the E5-MDAL card, a flush-mounted USB port used with credit card flash memory drives for upgrade. On the E5-MCAP card, a latched USB port for use with flash memory ”thumb” drives for installation and backup of customer data.

V

V.35	ITU Interface Recommendation, V.35 The interface used with the LIMV35 card.
VIP	Virtual IP Address Virtual IP is a layer-3 concept employed to provide HA at a host level. A VIP enables two or more IP hosts to operate in an active/standby HA manner. From the perspective of the IP network, these IP hosts appear as a single host.
VSCCP	VxWorks Signaling Connection Control Part The application used by the Service Module card to support the G-Flex, G-Port, INP, AINPQ, EIR, A-Port, IGM, V-Flex, and LNP features. If the G-Flex, G-Port, INP, AINPQ, EIR, A-Port, IGM, V-Flex, or LNP feature is not turned on, and a Service Module card is present, the VSCCP GPL processes normal GTT traffic.
VXWSLAN	An application used by the DCM card to support the STP LAN application. This GPL does not support 24-bit ITU-N point codes.

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