

# *Tekelec EAGLE<sup>®</sup> 5 Integrated Signaling System*

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## **LNP Feature Activation Guide**

910-5069-001 Revision B

November 2007



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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

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## Overview

The *LNP Feature Activation Guide* describes the procedures necessary for database administration personnel or translations personnel to configure the EAGLE 5 ISS to implement the local number portability (LNP) feature and to implement these parts of the LNP feature on the EAGLE 5 ISS:

- LNP services
- LNP options
- LNP subsystem application
- Automatic call gapping
- Triggerless LNP feature
- Mapping LNP translation types
- Increasing the LRN and NPANXX Quantities on the EAGLE 5 ISS
- Activating and Deactivating the LNP Short Message Service (SMS) feature.

**NOTE:** EAGLE 5 ISS database administration privileges are password restricted. Only those persons with access to the command classes “ Database Administration,” “ LNP Basic,” “ LNP Database Administration,” and “LNP Subscription” can execute the LNP administrative functions.

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.

## Manual Organization

Throughout this manual, 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 these sections.

[Chapter 1 Introduction](#) contains general information about the database and the organization of this manual.

[Chapter 2 LNP Feature Activation](#) describes how to activate the LNP feature.

[Chapter 3 LNP Services Configuration](#) describes the procedures necessary to configure the following elements of the EAGLE 5 ISS:

- LNP Services
- LNP Subsystem Applications
- LNP Options
- Mapping LNP translation types
- Increasing the LRN and NPANXX Quantities on the EAGLE 5 ISS
- Activating and Deactivating the LNP Short Message Service (SMS) feature
- The Triggerless LNP feature.

[Chapter 4 Automatic Call Gapping \(ACG\) Configuration](#) describes the procedures used to configure automatic call gapping for the LNP feature.

## Document Conventions

In order to clearly differentiate between references to objects, actions, literal entries, and user-supplied information, the following conventions are used in this manual:

- Menu selections and buttons are shown in bold, and the steps in a menu path are represented with “>”. For example:  
From **ELAP Menu**, select **Maintenance > Display Release Levels** to verify that the ELAP version is 3.5.  
Click the **Disable LSMS Connection** button.
- Commands, entries that must be entered exactly as shown in this document, and filenames are shown in the Courier bold font. For example:

- `pass:cmd="ping 192.168.120.1":loc=1101`
- Enter the `cd /ccsosmr` command to go to the `ccsosmr` directory.
- `/opt/TKLCplat/bin/syscheck -v -m local lsmshc proc`
- Output examples and command prompts are shown in the Courier font. For example:
  - ```
rlghncxa03w 06-08-01 21:20:37 GMT EAGLE5 35.1.0
Card has been allowed
```
  - Enter Choice: **13** (Enter Choice: is the command prompt in this example)
- Keys on the keyboard are represented by the text on the key enclosed in “<>” and shown in bold. For example: the Control, ALT, and Delete keys are shown as **<Ctrl>** **<Alt>** **<Delete>**.

## 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 that is 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 a CD-ROM. 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. This site allows for 24-hour access to the most up-to-date documentation.

Printed documentation is available for GA releases on request only and with a lead time of 4 weeks. The printed documentation set includes pocket guides for commands and alarms. Pocket guides may also be ordered as a set or individually. Exceptions to printed documentation are:

- Hardware or Installation manuals are printed only without the linked attachments found in the electronic version of the manuals.
- The Release Notice is available only on the Customer Support site.

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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.

Content changes are indicated with change bars, the revision of the manual part number is incremented, and the month of publication is updated.

## 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.

|                                                                                   |                                                                                                          |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|  | <p><b>DANGER:</b><br/>(This icon and text indicate the possibility of <i>personal injury</i>.)</p>       |
|  | <p><b>WARNING:</b><br/>(This icon and text indicate the possibility of <i>equipment damage</i>.)</p>     |
|  | <p><b>CAUTION:</b><br/>(This icon and text indicate the possibility of <i>service interruption</i>.)</p> |

## Customer Care Center

The Tekelec Customer Care Center offers a point of contact for product and service support through highly trained engineers or service personnel. The Tekelec Customer Care Center is available 24 hours a day, 7 days a week at the following locations:

- Tekelec, USA  
 Phone:  
 +1 888 367 8552 (US and Canada only)  
 +1 919 460 2150 (international)  
 Email: [support@tekelec.com](mailto:support@tekelec.com)
- Tekelec, Europe  
 Phone: +44 1784 467804  
 Email: [ecsc@tekelec.com](mailto:ecsc@tekelec.com)

When a call is received, a Customer Service Report (CSR) is issued to record the request for service. Each CSR includes an individual tracking number.

Once a CSR is issued, the Customer Care Center determines the classification of the trouble. If a critical problem exists, emergency procedures are initiated. If the problem is not critical, information regarding the serial number of the system, COMMON Language Location Identifier (CLLI), initial problem symptoms (includes outputs and messages) is recorded. A primary Customer Care Center engineer is also assigned to work on the CSR and provide a solution to the problem. The CSR is closed when the problem is resolved.

## Emergency Response

In the event of a critical service situation, emergency response is offered by Tekelec Technical Services twenty-four hours a day, seven 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 Tekelec Technical Services.

## Maintenance and Administration Subsystem

The maintenance and administration subsystem consists of two processors, MASP (maintenance and administration subsystem processor) A and MASP B.

Each MASP is made up of two cards, the GPSM-II card (general purpose service module) and the TDM (terminal disk module).

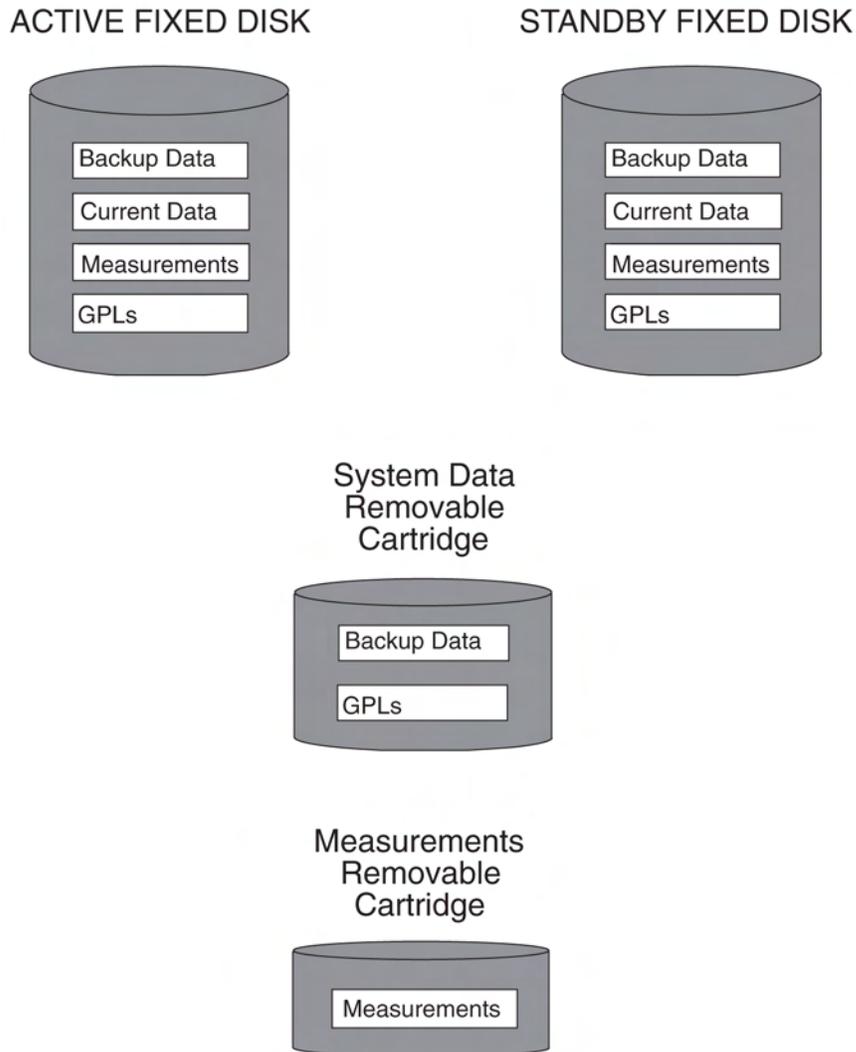
The GPSM-II card contains the communications processor and applications processor and provides connections to the IMT bus. The GPSM-II controls the maintenance and database administration activity.

The TDM contains the fixed disk drive, the terminal processor for the 16 serial I/O ports and interfaces to the MDAL (maintenance disk and alarm) card which contains the removable cartridge drive and alarm logic. There is only one MDAL card in the maintenance and administration subsystem and it is shared between the two MASPs.

For more information on these cards, go to the *Hardware Manual - EAGLE 5 ISS* .

## 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 1-1](#) .

**Figure 1-1.** EAGLE 5 ISS Database Partitions

### 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

A removable cartridge 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 cannot store all of the data in the database, GPL and measurements partitions.

To use a removable cartridge to hold the system data, it must be formatted for system data. To use a removable cartridge 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 for either of these purposes. A removable cartridge 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 drives can be found in the *Hardware Manual - EAGLE 5 ISS*.

The removable cartridge drive is located on the MDAL card in card location 1117.

Additional and preformatted removable cartridges are available from the .



## LNP Feature Activation

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## Introduction

This chapter describes how to activate the LNP feature.

The following hardware is required for the LNP feature:

- DSM cards must be configured and installed in the EAGLE 5 ISS.  
**NOTE: Unless DSM cards or E5-SM4G cards are specifically indicated, either DSM cards or E5-SM4G cards can be used when "DSM cards" are required.**
- TSMs running the SCCP application cannot be in the database and cannot be physically installed in the EAGLE 5 ISS. The EAGLE 5 ISS must be running release 35.0 or greater.
- The LSMS running release 8.5 or greater to use the maximum capacity of 228 million LNP telephone numbers. LSMS releases 7.0 and 8.0 can be used with the EAGLE 5 ISS release 35.0 or greater, but with the following limitations:
  - LSMS 7.0 supports a maximum capacity of 120 million LNP telephone numbers.
  - LSMS 8.0 supports a maximum capacity of 192 million LNP telephone numbers.
- The ELAP (EAGLE LNP Application Processor) running on the MPS platform. The ELAP must be running release 5.0 or greater.

If any of these systems are not running the required release, contact the Customer Care Center. Refer to [Customer Care Center](#) for the contact information.

The LNP telephone number quantity for the EAGLE 5 ISS is set with feature access keys corresponding to the quantity. To configure a particular LNP telephone number quantity in the EAGLE 5 ISS, the EAGLE 5 ISS must contain DSC cards with a minimum amount of RAM. [Table 2-1](#) shows the LNP telephone number quantities, the part numbers that correspond to these quantities, and the DSC card requirements for that LNP telephone number quantity. Perform the [Activating the LNP Feature on the EAGLE 5 ISS](#) procedure for more information on setting these quantities.

**Table 2-1. LNP Hardware and Part Number Configuration Table**

| LNP Telephone Number Quantity | LNP Telephone Number Part Number | Minimum Hardware Required for the LNP Telephone Number Quantity |
|-------------------------------|----------------------------------|-----------------------------------------------------------------|
| 2 Million                     | 893-0110-01                      | 1 GB DSM                                                        |
| 4 Million                     | 893-0110-02                      | 1 GB DSM                                                        |

| LNP Telephone Number Quantity                                                                                        | LNP Telephone Number Part Number | Minimum Hardware Required for the LNP Telephone Number Quantity |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------|
| 6 Million                                                                                                            | 893-0110-03                      | 1 GB DSM                                                        |
| 8 Million                                                                                                            | 893-0110-04                      | 1 GB DSM                                                        |
| 12 Million                                                                                                           | 893-0110-05                      | 1 GB DSM                                                        |
| 24 Million                                                                                                           | 893-0110-06                      | 2 GB DSM                                                        |
| 36 Million                                                                                                           | 893-0110-07                      | 3 GB DSM                                                        |
| 48 Million                                                                                                           | 893-0110-08                      | 4 GB DSM                                                        |
| 60 Million                                                                                                           | 893-0110-09                      | 4 GB DSM                                                        |
| 72 Million                                                                                                           | 893-0110-10                      | 4 GB DSM                                                        |
| 84 Million                                                                                                           | 893-0110-11                      | 4 GB DSM                                                        |
| 96 Million                                                                                                           | 893-0110-12                      | 4 GB DSM                                                        |
| 108 Million                                                                                                          | 893-0110-13                      | 4 GB DSM                                                        |
| 120 Million                                                                                                          | 893-0110-14                      | 4 GB DSM                                                        |
| 132 Million                                                                                                          | 893-0110-15                      | 4 GB DSM                                                        |
| 144 Million                                                                                                          | 893-0110-16                      | 4 GB DSM                                                        |
| 156 Million                                                                                                          | 893-0110-17                      | 4 GB DSM                                                        |
| 168 Million                                                                                                          | 893-0110-18                      | 4 GB DSM                                                        |
| 180 Million                                                                                                          | 893-0110-19                      | 4 GB DSM                                                        |
| 192 Million                                                                                                          | 893-0110-20                      | 4 GB DSM                                                        |
| 204 Million                                                                                                          | 893-0110-21                      | 4 GB DSM (See Note)                                             |
| 216 Million                                                                                                          | 893-0110-22                      | 4 GB DSM (See Note)                                             |
| 228 Million                                                                                                          | 893-0110-23                      | 4 GB DSM (See Note)                                             |
| <b>NOTE: If the EAGLE 5 ISS contains any E5-SM4G cards, these LNP telephone number quantities cannot be enabled.</b> |                                  |                                                                 |

The LNP data is collected at the LSMS from the NPAC (for subscription data) and from local provisioning on the LSMS (for default NPANXX, split NPANXX and other types of LNP records). This data is sent to the active ELAP, on the MPS platform, at an EAGLE 5 ISS across a TCP/IP connection in the customer's network. The ELAP stores the data and replicates it to the mate ELAP. The LNP data is sent to the DSC cards of the EAGLE 5 ISS from the ELAP using two dedicated Ethernet networks between the MPS platform and the DSC cards of the EAGLE 5 ISS.

When the LNP feature is enabled for the first time, the LRN (location routing number) and NPANXX quantities are set at 100,000 (for LRNS) and 150,000 (for NPANXXs). These quantities can be increased to 150,000 LRNs and 300,000 NPANXXs, but only when the LNP telephone number quantity is 60 million or greater. See the [Increasing the LRN and NPANXX Quantities on the EAGLE 5 ISS](#) procedure.

# Activating the LNP Feature Overview

To activate this feature, actions need to be taken at the LSMS, the ELAP, as well as at the EAGLE 5 ISS.

This procedure contains the basic steps necessary to activate the LNP feature. Some of these basic steps reference more detailed procedures contained in this guide.

At the EAGLE 5 ISS:

## Procedure

---

1. Verify these items in the EAGLE 5 ISS's database by entering these commands:
  - a. **rtrv-ctrl-feat** – to verify whether or not the following features are enabled:
    - LNP telephone number quantity and the LNP ELAP Configuration feature
    - INP
    - G-Port
    - ANSI-41 INP Query
    - EIR
    - A-Port
    - IS41 GSM Migration
    - E5-SM4G Throughput Capacity
    - PPSMS (Prepaid SMS)

If the **rtrv-ctrl-feat** output shows that an LNP telephone number quantity or the EAGLE 5 ISS's LNP ELAP Configuration feature is enabled, and what executing the **rtrv-feat** command in substep b is not necessary.

For an LNP telephone number quantity to be shown in the **rtrv-ctrl-feat** output, or for the EAGLE 5 ISS's LNP ELAP Configuration feature to be enabled, these features cannot be enabled:

- G-Port
- INP
- ANSI-41 INP Query
- EIR
- A-Port, IS41 GSM Migration
- E5-SM4G Throughput Capacity
- PPSMS (Prepaid SMS)



**CAUTION:** If any of the features shown in the previous list are enabled, the LNP feature cannot be enabled and this procedure cannot be performed. If you wish to enable the LNP feature, contact the Customer Care Center (refer to [Customer Care Center](#) for contact information).

- b. **rtrv-feat** – to verify whether the GFLEX feature is off.

If the **rtrv-ctrl-feat** output shows that an LNP telephone number quantity or the EAGLE 5 ISS's LNPELAP Configuration feature is enabled, executing this command is not necessary. For an LNP telephone number quantity to be shown in the **rtrv-ctrl-feat** output, or for the EAGLE 5 ISS's LNPELAP Configuration feature to be enabled, the GPORT feature must be off.



**CAUTION:** If the G-Flex feature is on, the LNP feature cannot be enabled and this procedure cannot be performed. If you wish to enable the LNP feature, contact the Customer Care Center (refer to [Customer Care Center](#) for contact information).

- c. **rtrv-ip-lnk** – to verify the DSM card Ethernet configuration to the ELAPs
- d. **rept-stat-card** – to verify the state and location of the cards running the EBDADCM, EBDABLM, VSCCP, and SCCP applications.
- e. **rept-stat-sccp** – to verify the number of SCCP cards currently provisioned in the EAGLE 5 ISS.

Record the values displayed in these steps.



**CAUTION:** Verify the number of SCCP cards in the EAGLE 5 ISS by entering the **rept-stat-sccp** command. The number of SCCP cards is shown in the **SCCP Cards Configured** field of the **rept-stat-sccp** output. If the number of SCCP cards is 26 to 32, the LNP feature cannot be enabled. If the LNP feature is enabled, the maximum number of SCCP cards the EAGLE 5 ISS can have is 25. To enable the LNP feature, perform the [Removing an SCCP Card](#) procedure, to reduce the number of SCCP cards to 25 or less. Total GTT capacity for the EAGLE 5 ISS will be reduced to a maximum of 40,800 transactions per second by removing SCCP cards in order to enable the LNP feature.

**NOTE:** If the **rtrv-ctrl-feat** output in [Substep a](#) shows that the EAGLE 5 ISS's LNP ELAP Configuration feature is enabled, skip [Step 2](#) through [Step 4](#) , and go to [Step 5](#) .

2. If [Substep d](#) shows no cards running the VSCCP application (DSM cards), perform the [Adding a DSM Card](#) procedure to make sure that DSM cards are configured and installed in the EAGLE 5 ISS according to the hardware requirements shown in [Table 2-1](#) .
3. If [Substep d](#) shows cards running the SCCP application (TSMs), perform the [Removing an SCCP Card](#) procedure to make sure that any TSMs are removed.
4. If [Substep d](#) shows cards running the EBDA DCM and EBDA BLM applications, perform the [Removing the DCM Applied to LSMS BLM-Based Operations](#) procedure and [Removing the BLM Applied to LSMS BLM-Based Operations](#) procedure to make sure that these cards are removed from the EAGLE 5 ISS.

**NOTE:** If [Step 2](#) through [Step 4](#) were performed, skip [Step 5](#) , and go to [Step 6](#) .

5. Verify the memory installed on the DSM card is enough based on the LNP telephone number quantity being assigned (see [Table 2-1](#) ).

Enter the **rept-stat-card** command specifying the location of a DSM card with the **mode=full** parameter. The amount of memory is shown in the **DBD MEMORY SIZE** field and is measured in megabytes.

```

rlghncxa03w 07-05-01 10:09:55 GMT EAGLE5 35.1.0
CARD  VERSION      TYPE      APPL      PST          SST          AST
1301  123-002-001    DSM       VSCCP     IS-NR       Active       -----
ALARM STATUS      = No Alarms.
IMT  VERSION      = 123-002-000
PROM  VERSION     = 002-125-002
IMT BUS A         = Conn
IMT BUS B         = Conn
CLOCK A          = Idle
CLOCK B          = Idle
CLOCK I          = Active
MBD BIP STATUS   = valid
DB STATUS        = valid DBD MEMORY SIZE = 1024M
HW VERIFICATION CODE = ----
SCCP % OCCUP     = 0%
SNM   TVG RESULT = 24 hr: -----, 5 min: -----
Command Completed.

```

If the amount of memory is not enough to support the new LNP telephone number quantity, perform the [Adding a DSM Card](#) procedure and add a DSM card with the correct amount of memory (see [Table 2-1](#) ).

). After the new DSM card has been added, perform the [Removing an SCCP Card](#) procedure and remove the DSM card specified in this step from the database. Repeat this step for every DSM card shown in [Substep d](#).

6. If [Substep c](#) does not show IP links from the DSM cards to the MPS, or if DSM cards were configured in [Step 2](#) or [Step 5](#), configure the IP Link from the DSM cards to MPS A and B using the [Configuring the DSM Card Ethernet Link to the MPS](#) procedure.
7. If [Step 6](#) was not performed, enter the `rept-stat-sccp` command to verify that the state of all DSMs is IS-NR (In-Service Normal).

The state of the DSMs is shown in the **PST** column of the output.

```
rlghncxa03w 07-05-01 09:12:36 GMT EAGLE5 37.0.0
CARD   VERSION      PST           SST           AST           MSU   CPU
                USAGE        USAGE
-----
1301   123-002-001   IS-NR         Active        -----      33%   46%
1303   123-002-001   IS-NR         Active        -----      34%   50%
1305   123-002-001   IS-NR         Active        -----      21%   29%
1307   123-002-001   IS-NR         Active        -----      35%   52%
1311   123-002-001   IS-NR         Active        -----      15%   20%
-----
SCCP Service Average MSU Capacity = 28% Average CPU Capacity = 40%
Command Completed.
```

**NOTE:** The `rept-stat-sccp` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rept-stat-sccp` command, see the `rept-stat-sccp` command description in the *EAGLE 5 ISS Commands Manual*.

8. If the state any of the DSM cards shown in [Substep c](#), [Step 5](#), or [Step 7](#) are not IS-NR, place these cards back into service with the `rst-card` command and specifying the card location of the card shown in [Substep c](#), [Step 5](#), or [Step 7](#) that is not IS-NR.

For this example, enter this command. `rst-card:loc=1301` When this command has successfully completed, these messages should appear.

```
rlghncxa03w 07-05-01 21:20:37 GMT EAGLE5 37.0.0
Card has been allowed.
```

9. Test port A of one of the DSM cards using the `ping` pass command with the card location of the DSM card recorded in step 1 and the IP address for port A of that DSM card shown in either [Substep c](#) or [Step 6](#).  
`pass:cmd="ping 192.168.120.1":loc=1301`

```
Command Accepted - Processing
rlghncxa03w 07-08-27 08:30:44 GMT EAGLE5 37.0.0
pass: loc=1301: cmd="ping 192.168.120.1"
Command entered at terminal #1.
;
rlghncxa03w 07-08-27 08:30:44 GMT EAGLE5 37.0.0
PASS: Command sent to card
;
rlghncxa03w 07-08-27 08:30:44 GMT EAGLE5 37.0.0
PING command in progress
;
rlghncxa03w 07-08-27 08:30:46 GMT EAGLE5 37.0.0
PING 192.168.120.1: 56 data bytes
64 bytes from tekral.nc.tekelec.com (192.168.120.1):icmp_seq=0.time=5. ms
64 bytes from tekral.nc.tekelec.com (192.168.120.1):icmp_seq=1.time=0. ms
64 bytes from tekral.nc.tekelec.com (192.168.120.1):icmp_seq=2.time=0. ms
----192.168.120.1 PING Statistics----
3 packets transmitted, 3 packets received, 0% packet loss
round-trip (ms) min/avg/max = 0/1/5
PING command complete
```

10. Test port B of the DSM card specified in [Step 9](#) using the `ping` pass command with the card location of the DSM card specified in [Step 9](#) and the IP address for port B shown in either [Substep c](#) or [Step 6](#).

```
pass:cmd="ping 192.168.121.1":loc=1301
```

```
Command Accepted - Processing
  rlghncxa03w 07-08-27 08:30:44 GMT EAGLE5 37.0.0
  pass: loc=1301: cmd="ping 192.168.121.1"
  Command entered at terminal #1.
;
  rlghncxa03w 07-08-27 08:30:44 GMT EAGLE5 37.0.0
  PASS: Command sent to card
;
  rlghncxa03w 07-08-27 08:30:44 GMT EAGLE5 37.0.0
  PING command in progress
;
rlghncxa03w 07-08-27 08:30:46 GMT EAGLE5 37.0.0
PING 192.168.121.1: 56 data bytes
64 bytes from tekral.nc.tekelec.com (192.168.121.1):icmp_seq=0.time=5. ms
64 bytes from tekral.nc.tekelec.com (192.168.121.1):icmp_seq=1.time=0. ms
64 bytes from tekral.nc.tekelec.com (192.168.121.1):icmp_seq=2.time=0. ms
----192.168.121.1 PING Statistics----
  3 packets transmitted, 3 packets received, 0% packet loss
  round-trip (ms)  min/avg/max = 0/1/5
  PING command complete
```

11. Repeat [Step 9](#) and [Step 10](#) for all other DSM cards in the EAGLE 5 ISS.

**At the MPS (ELAP A or B):**

12. Log into ELAP A or B.
13. From ELAP Menu, select **Maintenance> Display Release Levels** to verify that the ELAP version is correct (see [Table 2-1](#) ).

If the ELAP version is not correct, contact the Customer Care Center (refer to [Customer Care Center](#) for the contact information) before performing the [ELAP Configuration Procedure](#) procedure.

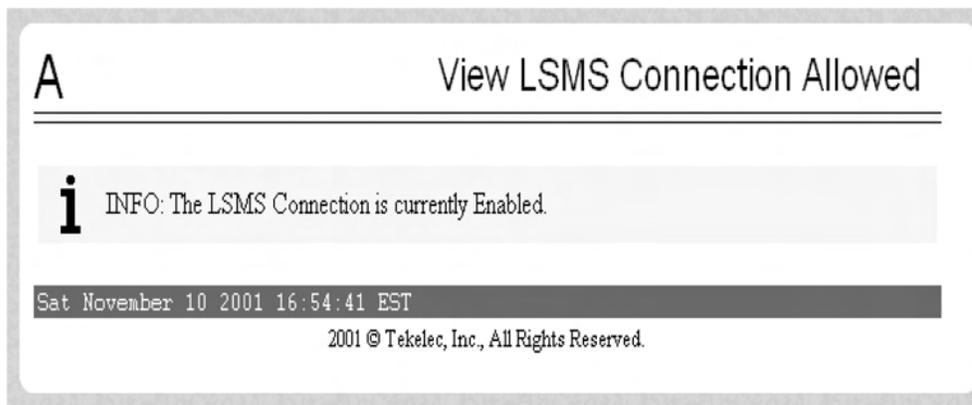
14. Perform a health check of the MPS.

Perform the [MPS Health Check Procedure](#) procedure.

15. Disable the LSMS Connection.

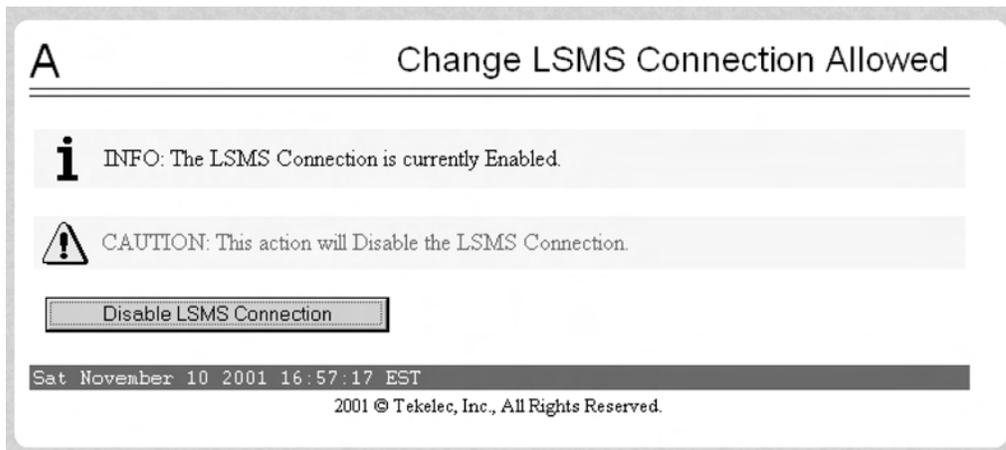
Select **Maintenance> LSMS Connection> View Allowed** . The View LSMS Connection Allowed dialog displays, showing connection enabled.

**Figure 2-1.** View LSMS Connection Allowed Dialog



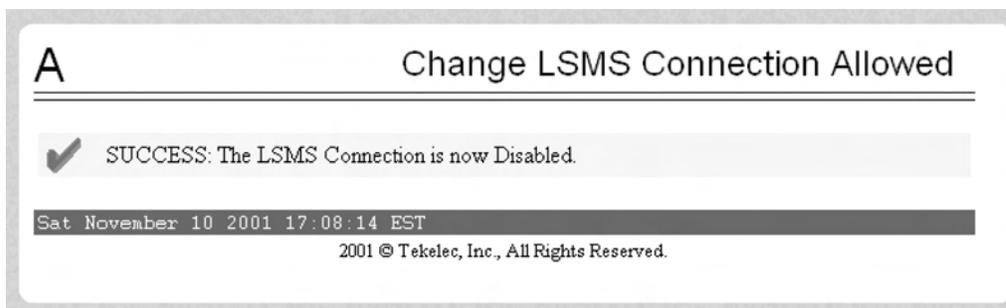
If the connection is disabled, no action is necessary. Go to [Step 16](#) . If the connection is enabled, select **Maintenance> LSMS Connection > Change Allowed** . The Change LSMS Connection Allowed dialog displays, showing **Disable LSMS Connection** button.

Figure 2-2. Change LSMS Connection Allowed Dialog



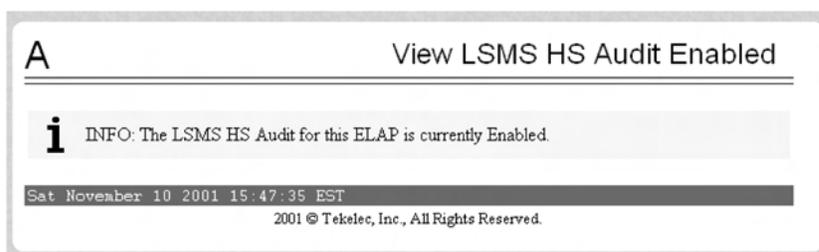
Click the **Disable LSMS Connection** button. The Change LSMS Connection Allowed dialog is displayed, showing connection successfully disabled.

Figure 2-3. Change LSMS Connection Allowed - Disable Success Dialog

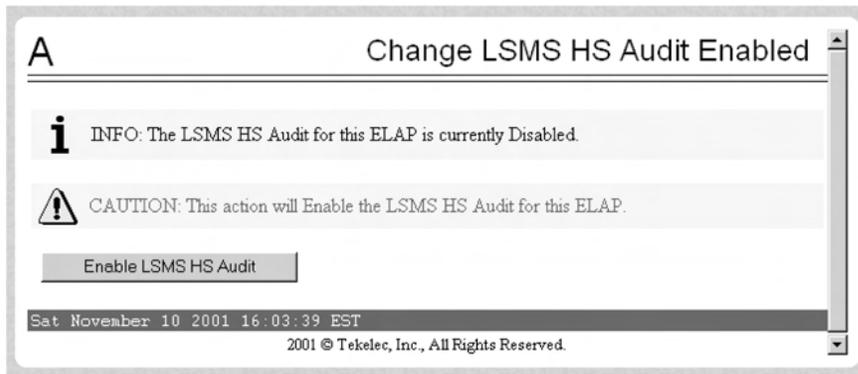


16. Verify that the LSMS High-Speed Audit is on.  
 Select **Maintenance> LSMS HS Audit> View Enabled** . The View LSMS HS Audit Enabled dialog is displayed, showing LSMS HS Audit enabled.

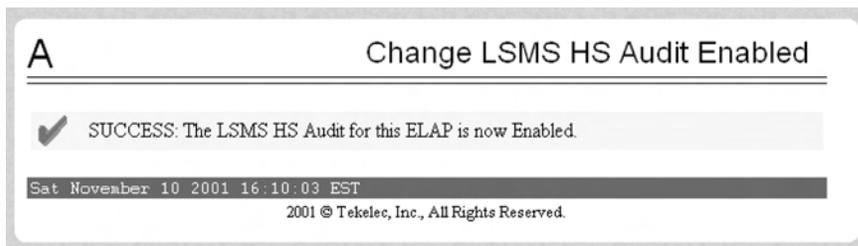
Figure 2-4. View LSMS HS Audit Enabled Dialog



If the LSMS High-Speed Audit is enabled, no action is necessary. Go to [Step 17](#) . If the LSMS High-Speed Audit is disabled, select **Maintenance> LSMS HS Audit > Change Enabled** . The Change LSMS HS Audit Enabled dialog is displayed, showing the **Enable LSMS HS Audit** button.

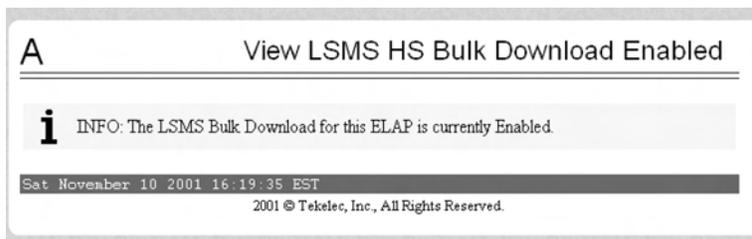
**Figure 2-5.** Change LSMS HS Audit Enabled Dialog

Click the **Enable LSMS HS Audit** button. The Change LSMS HS Audit Enabled dialog is displayed, showing enable success.

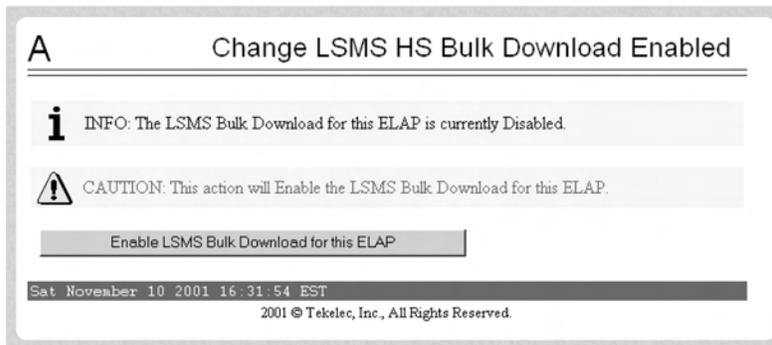
**Figure 2-6.** Change LSMS HS Audit Enabled Dialog

17. Verify that the LSMS High-Speed Bulk Download/High-Speed Resynch is enabled for the ELAP and its Mate.

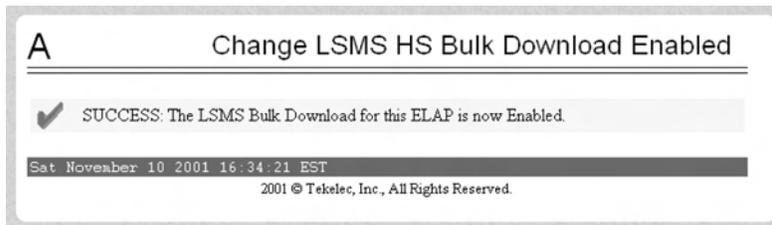
Select **Maintenance> LSMS HS Bulk Download> View Enabled** . The View LSMS HS Bulk Download View dialog displays, showing LSMS bulk download enabled.

**Figure 2-7.** View LSMS HS Bulk Download View - Bulk Download enabled Dialog

If the LSMS High-Speed Bulk Download is enabled, no action is necessary. Go to [Step 18](#) . If the LSMS High-Speed Bulk Download is disabled, select **Maintenance> LSMS HS Bulk Download> Change Enabled** . The Change LSMS HS Bulk Download Enabled dialog is displayed, showing the **Enable LSMS Bulk Download for this ELAP** button.

**Figure 2-8.** Change LSMS HS Bulk Download Enabled Dialog

Click the **Enable LSMS Bulk Download for this ELAP** button. The Change LSMS HS Bulk Download Enabled dialog is displayed, showing enable success.

**Figure 2-9.** Change LSMS HS Bulk Download Enabled Dialog - Enable Success

18. Repeat [Step 12](#) through [Step 17](#) for the other ELAP.
19. Verify the telephone number quantity on the ELAP.

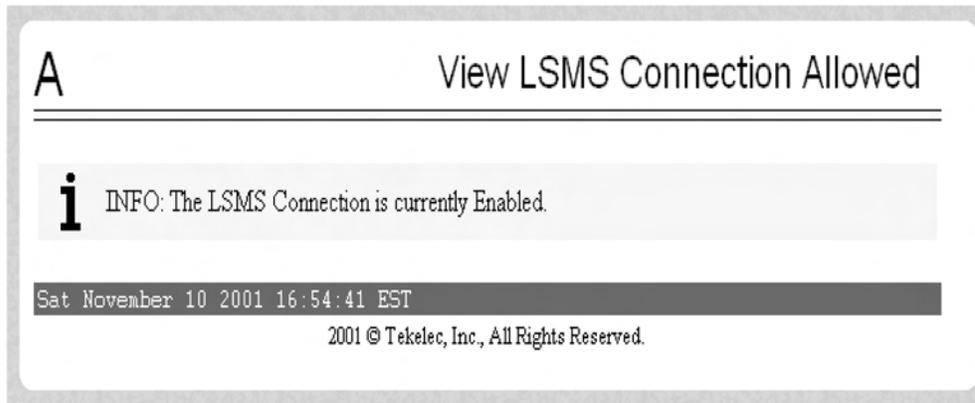
Perform the [Verifying RTDB Status at the Eagle 5 ISS Terminal](#) procedure. The number of telephone numbers on the ELAP must be less than the configured quantity on the EAGLE 5 ISS. The EAGLE 5 ISS quantity is shown in the `rtrv-ctrl-feat` command output performed in [Substep a](#) . If the telephone number quantity on the ELAP is less than the quantity shown in the `rtrv-ctrl-feat` output, or is less than the quantity that will be configured in [Step 20](#) , go to [Step 20](#) . If the telephone number quantity on the ELAP is greater than the quantity shown in the `rtrv-ctrl-feat` output, the ELAP RTDB is not loaded onto the entire set of DSM cards on the EAGLE 5 ISS. Some of the DSM cards load the ELAP RTDB to provide a restricted level of GTT/LNP service. The remainder of the DSM cards are put into a restricted state. UIM 1323 is generated at the EAGLE 5 ISS. To avoid this situation, make sure when performing [Step 20](#) that the telephone number quantity configured on the EAGLE 5 ISS is greater than the ELAP telephone number quantity.

**At the EAGLE 5 ISS:**

20. Activate the LNP feature for the desired LNP telephone number quantity.  
Perform the [Activating the LNP Feature on the EAGLE 5 ISS](#) procedure. At the LSMS:
21. Contact the Customer Care Center to enable the LNP telephone quantity on the LSMS.  
Refer to [Customer Care Center](#) for the contact information.
22. Create a new EMS for the new MPSs by performing the [Creating an EMS Configuration Component](#) procedure.
23. Configure new MPSs in the EMS Routing window.  
Perform the [EMS Routing](#) procedure. At the MPS (ELAP A or B):
24. Enable the LSMS Connection.

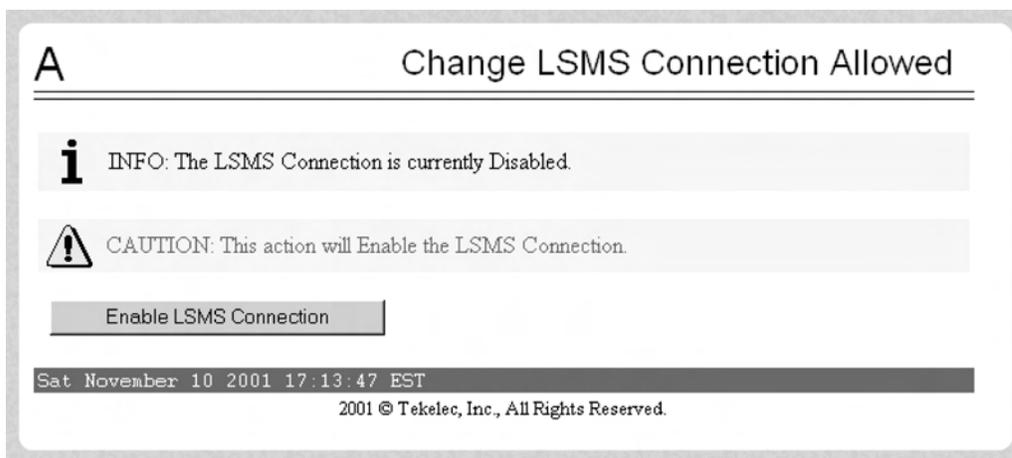
Select **Maintenance> LSMS Connection> View Allowed** . The View LSMS Connection Allowed dialog is displayed, showing connection enabled.

**Figure 2-10.** View LSMS Connection Allowed - Connection Enabled Dialog



If the connection is enabled, no action is necessary. Go to [Step 25](#) . If the connection is disabled, select **Maintenance> LSMS Connection> Change Allowed** . The Change LSMS Connection Allowed dialog is displayed, showing the **Enable LSMS Connection** button.

**Figure 2-11.** Change LSMS Connection Allowed - Connection Disabled Dialog



Click the **Enable LSMS Connection** button. The Change LSMS Connection Allowed dialog is displayed, showing enable success.

**Figure 2-12.** Change LSMS Connection Allowed - Enable Success Dialog

Repeat [Step 24](#) for the other ELAP.

**At the LSMS:**

25. Perform a bulk download to one of the ELAPs.  
Perform the procedures in the [Bulk Load Procedure](#) section.

**At the MPS (the ELAP specified in [Step 25](#) ):**

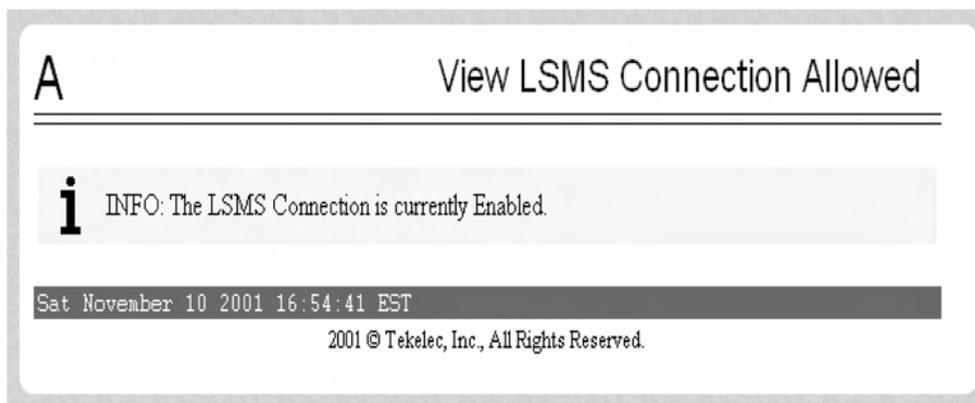
26. Copy the bulk down loaded database to the other ELAP.  
Perform the procedures in the [Copying One RTDB to Another RTDB](#) section.
27. Perform a health check of the MPS.  
Perform the [MPS Health Check Procedure](#) section.

**At the EAGLE 5 ISS:**

28. Distribute the RTDB database to each DSM card in the EAGLE 5 ISS.  
Perform the procedures in the [Distributing the LNP Database after LSMS-Based Operation or RTDB Copy](#) section.

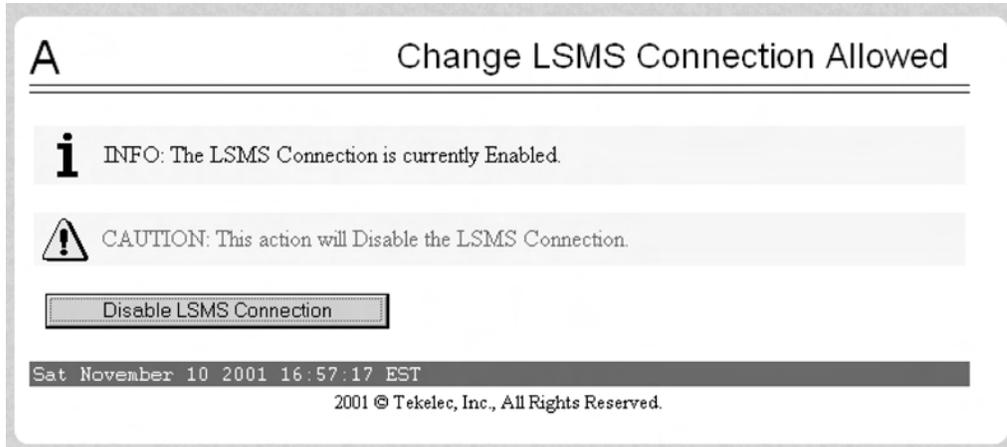
**At the MPS (ELAP A or B):**

29. Disable the LSMS Connection.  
Select **Maintenance > LSMS Connection > View Allowed** . The View LSMS Connection Allowed dialog is displayed, showing connection enabled.

**Figure 2-13.** View LSMS Connection Allowed - Connection Enabled Dialog

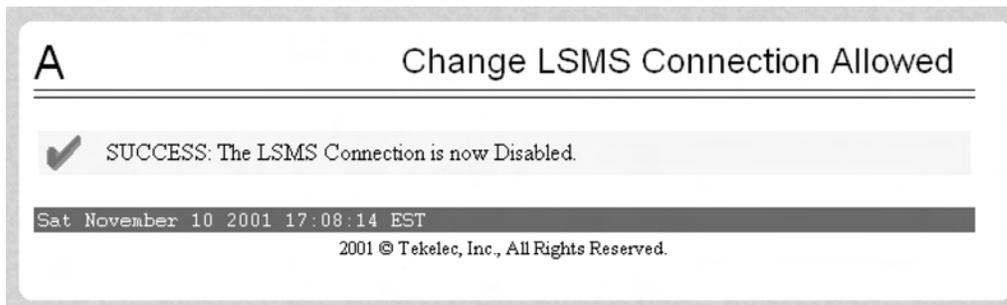
If the connection is disabled, no action is necessary. Go to [Step 30](#) . If the connection is enabled, select **Maintenance> LSMS Connection> Change Allowed** . The Change LSMS Connection Allowed dialog is displayed, showing the **Disable LSMS Connection** button.

**Figure 2-14.** Change LSMS Connection Allowed - Connection Enabled Dialog



Click the **Disable LSMS Connection** button. The Change LSMS Connection Allowed dialog is displayed, showing disable success.

**Figure 2-15.** Change LSMS Connection Allowed - Disable Success Dialog



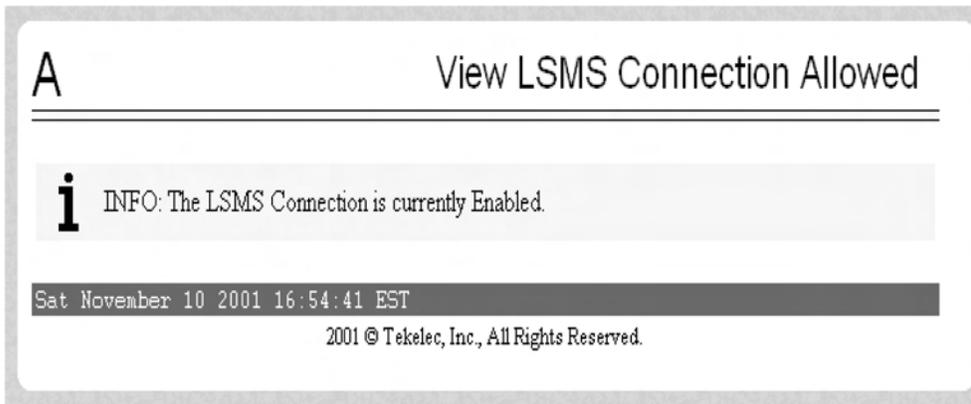
Repeat [Step 29](#) for the other ELAP.

**At the MPS (ELAP A or B):**

**30.** Enable LSMS Connection.

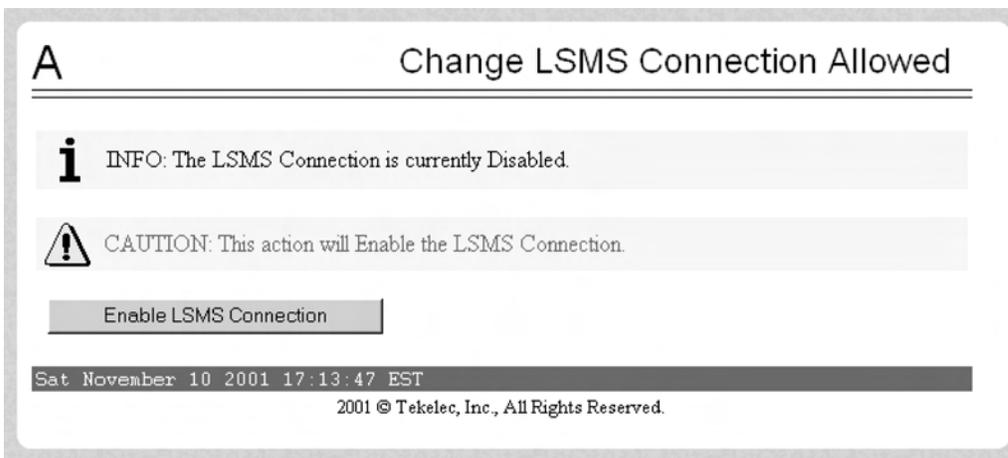
Select **Maintenance> LSMS Connection> View Allowed** . The View LSMS Connection Allowed dialog is displayed, showing connection enabled.

**Figure 2-16.** View LSMS Connection Allowed - Connection Enabled Dialog



If the connection is enabled, no action is necessary. Go to [Step 31](#) . If the connection is disabled, select **Maintenance> LSMS Connection> Change Allowed** . The Change LSMS Connection Allowed dialog is displayed, showing the **Enable LSMS Connection** button.

**Figure 2-17.** Change LSMS Connection Allowed - Connection Disabled Dialog



Click the **Enable LSMS Connection** button. The Change LSMS Connection Allowed dialog is displayed, showing enable success.

**Figure 2-18.** Change LSMS Connection Allowed - Enabled Success Dialog



Repeat [Step 30](#) for the other ELAP. **At the LSMS:**

**31.** Verify that both EMSs are associated with the LSMS.

The EMS Status area in the LSMS Console window should show that the EMSs connected to the LSMS are green.

The procedure is completed.

## Adding a DSM Card

This procedure is used to add a DSM card to support the LNP feature using the **ent-card** command. One of four DSM cards can be used, depending on the amount of memory installed on the DSM card.

- DSM 1G – A DSM with 1 GB of memory installed
- DSM 2G – A DSM with 2 GB of memory installed
- DSM 3G – A DSM with 3 GB of memory installed
- DSM 4G – A DSM with 4 GB of memory installed
- E5-SM4G – An E5-SM4G with 4GB of memory installed

The DSM card can be inserted only in the odd numbered card slots of the extension shelf. The DSM card cannot be inserted in slot 09. Slot 09 of each shelf contains the HMUX card or HPR card (EAGLE 5 ISS release 33.0 or later). The DSM card can be inserted in the control shelf, but only in slots 01, 03, 05, 07, and 11. The DSM card occupies two card slots, so the even numbered card slot adjacent to the odd numbered slot where the DSM card has been inserted must be empty. The DSM card is connected to the network through the odd numbered card slot connector.

**Table 2-2. DSM Card Card Locations**

| Location of DSM card | Empty Card Location | Location of DSM card | 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             |

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 **dsm**.

**:appl**

The application software or GPL that is assigned to the card. For this procedure, the value of this parameter is **vsccp**.

**:force**

Allow the LIM card to be added to the database even if there are not enough DSM cards 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 *EAGLE 5 ISS 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 the DSM card can be configured in the database for the LNP feature, the global title translation feature must be turned on with the **chg-feat** command. The **rtrv-feat** command can verify that the global title translation feature is on.

**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.**

The EAGLE 5 ISS can contain a maximum of 25 DSM cards.

**NOTE: If you want to add an E5-SM4G card as the DSM card, verify the temperature threshold settings for the E5-SM4G card by performing the “Changing the High-Capacity Card Temperature Alarm Thresholds” procedure in the Database Administration Manual – SS7.**



**CAUTION: If the current LNP telephone number quantity is greater than 192 million telephone numbers, E5-SM4G cards cannot be installed into the EAGLE 5 ISS. The E5-SM4G card will be auto-inhibited if the E5-SM4G card is installed when the LNP telephone number quantity is greater than 192 million telephone numbers.**

1. Verify that the GTT feature is on by entering the **rtrv-feat** command.

If the GTT feature is on, the **GTT** field should be set to **on**.

**NOTE 1: 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 EAGLE 5 ISS Commands Manual.**

**NOTE: If the GTT feature is on, shown by the entry**

**GTT = on**

**in the rtrv-feat command output in step 1, skip this step and go to step 3.**

2. Turn the global title translation feature on by entering the **chg-feat:gtt=on** command.

**chg-feat**

```
r1ghncxa03w 07-08-01 09:57:41 GMT EAGLE5 37.0.0
CHG-FEAT: MASP A - COMPLTD
```

**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 it on. If you are not sure whether you have purchased the GTT feature, contact your Tekelec Sales Representative or Account Representative.**

3. Display the cards in the EAGLE 5 ISS using the **rtrv-card** command.

```
r1ghncxa03w 07-08-01 09:58:31 GMT EAGLE5 37.0.0
CARD   TYPE     APPL      LSET NAME      LINK SLC LSET NAME      LINK SLC
1101   TSM       DSM
1102   TSM       GLS
1113   GPMS      EOAM
1114   TDM-A
1115   GPMS      EOAM
1116   TDM-B
1117   MDAL
1201   LIMDS0    SS7ANSI    sp2             A      0      sp1             B      0
```

|      |         |         |      |   |   |      |   |   |  |
|------|---------|---------|------|---|---|------|---|---|--|
| 1203 | LIMDS0  | SS7ANSI | sp3  | A | 0 |      |   |   |  |
| 1204 | TSM     | DSM     |      |   |   |      |   |   |  |
| 1206 | LIMDS0  | SS7ANSI | nsp3 | A | 1 | nsp4 | B | 1 |  |
| 1207 | LIMV35  | SS7GX25 | nsp1 | A | 0 |      |   |   |  |
| 1208 | LIMV35  | SS7GX25 | nsp1 | A | 1 |      |   |   |  |
| 1215 | TSM     | EBDABLM |      |   |   |      |   |   |  |
| 1216 | ACMENET | STPLAN  |      |   |   |      |   |   |  |
| 1217 | DCM     | EBDADCM |      |   |   |      |   |   |  |
| 1308 | LIMDS0  | SS7ANSI | sp6  | A | 1 | sp7  | B | 0 |  |
| 1314 | LIMDS0  | SS7ANSI | sp7  | A | 1 | sp5  | B | 1 |  |
| 1317 | ACMENET | STPLAN  |      |   |   |      |   |   |  |
| 2101 | TSM     | DSM     |      |   |   |      |   |   |  |
| 2105 | TSM     | DSM     |      |   |   |      |   |   |  |
| 2112 | TSM     | DSM     |      |   |   |      |   |   |  |

**NOTE:** 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.

- To verify HIPR card installation, go to the next step.
  - If you want to install a DSM, go to [Step 5](#).
4. Verify that HIPR cards are installed in card locations 9 and 10 in the shelf containing the E5-SM4G card being added in this procedure. Enter this command.

**rept-stat-gpl:gpl=hipr**

```
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-SM4G card, go to the next step.
  - If HIPR cards are not installed at (either or both) card locations 9 and 10 on the shelf containing the E5-SM4G card, refer the *Installation Manual - EAGLE 5 ISS* and install the HIPR cards. Once the HIPR cards have been installed, go to the next step.
5. Verify that the DSM card has been physically installed into the proper location.



**CAUTION:** If the versions of the flash GPLs on the DSM card do not match the flash GPLs version in the database when the DSM card 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 *EAGLE 5 ISS Maintenance Manual* before proceeding with this procedure.

6. Add the DSM card to the database using the **ent-card** command.

**ent-card:loc=1301:type=dsm:appl=vDSM**

```
rlghncxa03w 07-08-01 09:57:51 GMT EAGLE5 37.0.0
ENT-CARD: MASP A - COMPLTD
```

7. Verify the changes using the **rtrv-card** command (specify card location).

**rtrv-card:loc=1301**

```
rlghncxa03w 07-08-01 09:58:31 GMT EAGLE5 37.0.0
CARD  TYPE      APPL      LSET NAME      LINK SLC  LSET NAME      LINK SLC
1301  DSM          VDSM
```

8. Repeat this procedure to add other DSM cards to the EAGLE 5 ISS.

- 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.
```

You have now completed this procedure.

## Removing an SCCP Card

This procedure is used to remove SCCP cards that do not meet the hardware requirements for the desired LNP telephone number quantity from the database, using the `dlt-card` command. The hardware requirements for SCCP cards and LNP telephone number quantities are shown in [Table 2-1](#).

These card locations were recorded in [Substep d](#) (TSMs), or shown in the `rept-stat-card` output in [Step 5](#) (SCCP cards that do not contain enough memory for the desired LNP telephone number quantity) of the [Activating the LNP Feature Overview](#) procedure. These cards cannot be in the EAGLE 5 ISS when the LNP feature is activated for the desired LNP telephone number quantity. The card cannot be removed if it does not exist in the database.



**CAUTION:** If the SCCP card is the last SCCP card in service, removing this card from the database will cause global title translation and local number portability traffic to be lost.

The examples in this procedure are used to remove the SCCP card in card location 1204.

- Display the status of the SCCP cards by entering the `rept-stat-sccp` command.

```
rlghncxa03w 07-08-01 09:12:36 GMT EAGLE5 37.0.0
CARD  VERSION      PST           SST           AST           MSU   CPU
                   USAGE        USAGE
-----
1101  123-002-001  IS-NR        Active        -----      33%   40%
1204  123-002-001  IS-NR        Active        -----      21%   25%
2101  123-002-001  IS-NR        Active        -----      15%   14%
2105  123-002-001  IS-NR        Active        -----      25%   26%
2112  123-002-001  IS-NR        Active        -----      40%   35%
1301  123-002-001  IS-NR        Active        -----      20%   23%
1303  123-002-001  IS-NR        Active        -----      11%   14%
1305  123-002-001  IS-NR        Active        -----      10%   12%
1307  123-002-001  IS-NR        Active        -----      16%   18%
1311  123-002-001  IS-NR        Active        -----      24%   30%
-----
SCCP Service Average MSU Capacity = 22% Average CPU Capacity = 24%
Command Completed.
```

**NOTE:** The `rept-stat-sccp` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rept-stat-sccp` command, see the `rept-stat-sccp` command description in the *EAGLE 5 ISS Commands Manual*.

- Remove the card from service using the `rmv-card` command and specifying the card location, recorded in [Substep d](#) or shown in [Step 5](#) of the [Activating the LNP Feature Overview](#) procedure.

If the SCCP card to be inhibited is the only SCCP card in service, the `force=yes` parameter must also be specified. The cards that are in service are shown by the entry

**IS-NR**

in the **PST** field in the output in step 1.

```
rmv-card:loc=1204
```

```
rlghncxa03w 07-08-01 09:12:36 GMT EAGLE5 37.0.0
Card has been inhibited.
```

3. Remove the card from the database using the **dlt-card** command.

The **dlt-card** command has only one parameter, **loc**, which is the location of the card.

```
dlt-card:loc=1204
```

```
rlghncxa03w 07-08-01 09:12:36 GMT EAGLE5 37.0.0
DLT-CARD: MASP A - COMPLTD
```

4. Verify the changes using the **rtrv-card** command specifying the card that was removed in step 3.

```
rtrv-card:loc=1204
```

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

5. Remove the card specified in step 3 from the shelf.
6. Repeat this procedure for all other SCCP cards in the EAGLE 5 ISS that do not meet the hardware requirements for the desired LNP telephone number quantity.
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.
```

You have now completed this procedure.

## Removing the DCM Applied to LSMS BLM-Based Operations

This procedure is used to remove the DCM running the **ebdadcm** application from the database, recorded in [Substep d](#) of the [Activating the LNP Feature Overview](#) procedure, using the **dlt-card** command. The DCM running the **ebdadcm** application supports BLM-based operations performed from the LSMS. When the LNP feature is activated, BLM-based operations cannot be performed. As a result, this card cannot be in the EAGLE 5 ISS when the LNP feature is activated.

The DCM is shown in the database with the entries DCM in the **TYPE** field and **EBDADCM** in the **APPL** field of the **rept-stat-card** command output.

**NOTE: The card cannot be removed if it does not exist in the database.**

The DCM must be out of service (OOS-MT-DSBLD) before it can be removed from the database.



**CAUTION: Removing this DCM from the database will prevent any BLM-based operations from the LSMS from being performed.**

**TIP: Canceling the REPT-STAT-CARD Command**

Because the **rept-stat-card** command can output information for a long period of time, it can be canceled (stopping output to the terminal). There are three ways to cancel the **rept-stat-card** command:

1. Press the <F9> function key on the keyboard at the terminal where the `rept-stat-card` command was entered.
2. Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rept-stat-card` command was entered.
3. From a terminal other than the one 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 originally entered. To enter the `canc-cmd:trm=<xx>` command, the terminal must allow Security Administration commands to be entered from it. The user must be allowed to enter Security Administration commands. Terminal permissions can be verified with the `rtrv-secu-trm` command. User permissions can be verified with the `rtrv-user` or `rtrv-secu-user` commands.

For more information about the `canc-cmd` command, refer to the *EAGLE 5 ISS Commands Manual*.

1. Display the state of the DCM running the `ebdadcm` application with the `rept-stat-card` command with the card location recorded in [Substep d](#) of the [Activating the LNP Feature Overview](#) procedure. The state of the DCM is shown in the `PST` field of the `rept-stat-card` command output. After you have determined that these two cards are present, you can cancel the command.

**rept-stat-card:loc=1217**

```
rlghncxa03w 07-08-01 09:12:36 GMT EAGLE5 37.0.0
CARD  VERSION  TYPE      APPL      PST          SST          AST
1217  123-000-000 DCM       EBDADCM   IS-NR        Active       -----
ALARM STATUS      = No Alarms.
BPDCM GPL         = 002-102-000
IMT BUS A         = Conn
IMT BUS B         = Conn
Command Completed.
```

- If the state of the DCM is not `OOS-MT-DSBLD`, go to [Step 2](#) .
- If the state of the DCM is `OOS-MT-DSBLD`, go to [Step 3](#) .

2. Place the DCM out of service using the `rmv-card` command and specifying the card location.

**rmv-card:loc=1217**

```
rlghncxa03w 07-08-01 09:12:36 GMT EAGLE5 37.0.0
Card has been inhibited.
```

3. Remove the IP link from the DCM running the `EBDADCM` application by entering the `chg-ip-lnk` command and specifying the IP address 0.0.0.0.

**chg-ip-lnk:loc=1217:port=a:ipaddr=0.0.0.0**

```
rlghncxa03w 07-08-01 09:12:36 GMT EAGLE5 37.0.0
CHG-IP-LNK: MASP A - COMPLTD
```

4. Remove the DCM 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.

**dlt-card:loc=1217**

```
rlghncxa03w 07-08-01 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.

**rtrv-card:loc=1217**

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

6. Remove the card from the shelf.
7. Back up the new changes using the **chg-db:action=backup:dest=fixed** command.

The following messages appear. The active Maintenance and Administration Subsystem Processor (MASP) message 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.
```

You have now completed this procedure.

## Removing the BLM Applied to LSMS BLM-Based Operations

This procedure is used to remove the Bulk Load Module (BLM) applied to LSMS BLM-based operations, recorded in [Substep d](#) of the [Activating the LNP Feature Overview](#) procedure, using the **dlt-card** command.

When the LNP feature is activated, BLM-based operations cannot be performed. As a result, this card cannot be in the EAGLE 5 ISS when the LNP feature is activated.

The BLM is shown in the database with the entries **TSM** in the **TYPE** field and **EBDABLM** in the **APPL** field of the **rept-stat-card** command output.

**NOTE: The card cannot be removed if it does not exist in the database.**

The BLM must be out of service (OOS-MT-DSBLD) before it can be removed from the database.

**CAUTION: Removing the BLM from the database will prevent any BLM-based operations from the LSMS.**



1. Display the state of the BLM with the **rept-stat-card** command with the card location recorded in [Substep d](#) of the [Activating the LNP Feature Overview](#) procedure.

The state of the BLM is shown in the **PST** field of the **rept-stat-card** command output. After you have determined that these two cards are present, you can cancel the command.

```
rept-stat-card:loc=1215
```

```
rlghncxa03w 07-08-01 09:12:36 GMT EAGLE5 37.0.0
CARD  VERSION      TYPE      APPL      PST          SST      AST
1215  123-002-000    TSM      EBDABLM   IS-NR       Active   -----
ALARM STATUS      = No Alarms.
IMT GPL           = 123-000-000
IMT BUS A        = Conn
IMT BUS B        = Conn
SCCP % OCCUP     = 0%
Command Completed.
```

- If the state of the BLM is not **OOS-MT-DSBLD**, go to [Step 2](#) .
- If the state of the BLM is **OOS-MT-DSBLD**, go to [Step 3](#) .

2. Place the BLM out of service using the **rmv-card** command and specifying the card location.

```
rmv-card:loc=1215
```

```
rlghncxa03w 07-08-01 09:12:36 GMT EAGLE5 37.0.0
Card has been inhibited.
```

3. Remove the card from the database using the **dlt-card** command.

The **dlt-card** command has only one parameter, **loc**, which is the location of the card.

```
dlt-card:loc=1215
```

```
rlghncxa03w 07-08-01 09:12:36 GMT EAGLE5 37.0.0
DLT-CARD: MASP A - COMPLTD
```

4. Verify the changes using the **rtrv-card** command and specifying the card that was removed in [Step 3](#) .

```
rtrv-card:loc=1215
```

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

5. Remove the card from the shelf.
6. Back up the new changes using the **chg-db:action=backup:dest=fixed** command.  
The following messages appear. The active Maintenance and Administration Subsystem Processor (MASP) message 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.
```

You have now completed this procedure.

## Configuring the DSM Card Ethernet Link to the MPS

This procedure is used to configure the Ethernet link parameters for the DSMs using the **chg-ip-lnk** command.

The **chg-ip-lnk** command uses the following parameters.

**:loc** – The card location of the DSM.

**:port** – The Ethernet interface on the DSM, A or B.

**:ipaddr** – IP address assigned to the Ethernet interface on the DSM. This is an IP address expressed in standard “dot notation.” IP addresses consist of the system’s network number and the machine’s unique host number.

**:submask** – The subnet mask of the IP interface. A subnet mask is an IP address with a restricted range of values. The bits in the mask must be a string of one’s followed by a string of zero’s. There must be at least two one’s in the mask, and the mask cannot be all one’s. See [Table 2-3](#) to assign the correct parameter values.

**:auto** – Tells hardware whether to automatically detect the **duplex** and **speed**. This parameter cannot be used in this procedure.

**:duplex** – This is the mode of operation of the interface.

**:speed** – This is the bandwidth in megabits per second of the interface.

**:mactype** – This is the Media Access Control Type of the interface.

When a DSM is entered into the database, these values are automatically configured in the IP Link table for both Ethernet interfaces on the DSM.

- DUPLEX = HALF
- SPEED = 10

- MACTYPE = DIX
- AUTO = NO
- MCAST = NO

The **IPADDR** and **SUBMASK** columns in the **rtrv-ip-lnk** output are shown as dashes. Each Ethernet link assigned to the DSM requires the IP address and submask of the MPS. The speed of one of the links must be 100 (**speed=100**). The **MCAST** value for both Ethernet links must be yes (**mcast=yes**). No other values need to be changed. It is preferable that the speed of the link on Port A is 100 (**speed=100**), and that the speed of the link on port B is 10 (**speed=10**).

A zero **ipaddr** parameter value (**0.0.0.0**) indicates the DSM Ethernet interface to the MPS is disabled.

The DSM must be placed out of service.

If either the **ipaddr** or **submask** parameters are specified, then both parameters must be specified. If the **ipaddr** parameter value is zero (**0.0.0.0**), the **submask** parameter is not required.

The A or B interface can be used with the DSM.

The value of the IP address specified for the **ipaddr** parameter is defined as follows:

- The first two octets of the IP address are 192.168. These are the first two octets for private class C networks as defined in RFC 1597.
- The third octet is configured, usually to the default value .120 for the main network (port A of the DSM) and the default value .121 for the backup network (port B of the DSM). These are not visible to any external networks, and should not need to be changed.
- The fourth octet of the address is selected as follows:
  - If the ELAP is configured as ELAP A, the fourth octet has a value of 100.
  - If the ELAP is configured as ELAP B, the fourth octet has a value of 200.

The **submask** parameter value is based upon the **ipaddr** setting. See [Table 2-3](#) for the valid input values for the **submask** and **ipaddr** parameter combinations.

**Table 2-3. Valid Subnet Mask Parameter Values**

| Network Class | IP Network Address Range | Valid Subnet Mask Values                                                                                                                         |
|---------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| A             | 1.0.0.0 to 127.0.0.0     | 255.0.0.0 (the default value for a class A IP address)<br>255.192.0.0<br>255.224.0.0<br>255.240.0.0<br>255.248.0.0<br>255.252.0.0<br>255.254.0.0 |

|       |                            |                                                                                                                                                                                   |
|-------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                            | 255.255.128.1                                                                                                                                                                     |
| A+B   | 128.1.0.0 to 191.255.0.0   | 255.255.0.0 (the default value for a class B IP address)<br>255.255.192.0<br>255.255.224.0<br>255.255.240.0<br>255.255.248.0<br>255.255.252.0<br>255.255.254.0<br>255.255.255.128 |
| A+B+C | 192.0.0.0 to 223.255.255.0 | 255.255.255.0 (the default value for a class C IP address)<br>255.255.255.192<br>255.255.255.224<br>255.255.255.240<br>255.255.255.248<br>255.255.255.252                         |

1. Display the current Ethernet link parameters associated with the DSM card in the database by entering the **rtrv-ip-lnk** command.

The following is an example of the possible output.

```
rlghncxa03w 06-08-01 21:14:37 GMT EAGLE5 35.1.0
LOC  PORT  IPADDR          SUBMASK          DUPLEX  SPEED  MACTYPE  AUTO  MCAST
1203  A      192.001.001.001 255.255.255.0   HALF    10     802.3    NO    NO
1203  B      -----          -----          HALF    10     DIX      NO    NO
1205  A      192.001.001.014 255.255.255.0   FULL    100    DIX      NO    NO
1205  B      -----          -----          HALF    10     DIX      NO    NO
1301  A      -----          -----          HALF    10     DIX      NO    NO
1301  B      -----          -----          HALF    10     DIX      NO    NO
1303  A      -----          -----          HALF    10     DIX      NO    NO
1303  B      -----          -----          HALF    10     DIX      NO    NO
1305  A      -----          -----          HALF    10     DIX      NO    NO
1305  B      -----          -----          HALF    10     DIX      NO    NO
1307  A      -----          -----          HALF    10     DIX      NO    NO
1307  B      -----          -----          HALF    10     DIX      NO    NO
1311  A      -----          -----          HALF    10     DIX      NO    NO
1311  B      -----          -----          HALF    10     DIX      NO    NO
IP-LNK  table is (12 of 512) 2% full.
```

2. Verify the status of the DSM card being configured in this procedure using the **rept-stat-card** command.

For example, enter this command. **rept-stat-card:loc=1301**This is an example of the possible output.

```
rlghncxa03w 06-08-01 17:00:36 GMT EAGLE5 35.1.0
CARD  VERSION  TYPE  APPL  PST  SST  AST
1301  123-002-000  DSM   VSCCP  IS-NR  Active  -----
ALARM STATUS      = No Alarms.
BPDCM GPL         = 002-102-000
IMT BUS A         = Conn
IMT BUS B         = Conn
SCCP % OCCUP      = 0%
Command Completed.
```

If the state of the DSM card being configured in this procedure is in service-normal (IS-NR), go to step 3 to inhibit the card. If the state of the DSM card is out-of-service-maintenance disabled (OOS-MT-DSBLD), go to step 5 to change the Ethernet link parameters.

- Place the DSM card out of service using the **inh-card** command.

For example, enter this command. **inh-card:loc=1301**This message should appear.

```
rlghncxa03w 06-08-01 21:18:37 GMT EAGLE5 35.1.0
Card has been inhibited.
```

- Display the status of the DSM card to verify that it is out-of-service maintenance-disabled (OOS-MT-DSBLD).

Enter this command. **rept-stat-card:loc=1301**This is an example of the possible output.

```
rlghncxa03w 06-08-01 17:00:36 GMT EAGLE5 35.1.0
CARD VERSION      TYPE  APPL  PST          SST      AST
1301 123-002-000  DSM   VSCCP  OOS-MT-DSBLD Manual  -----
ALARM STATUS      = No Alarms.
BPDCM GPL         = 002-102-000
IMT BUS A         = Conn
IMT BUS B         = Conn
SCCP % OCCUP      = 0%
Command Completed.
```

- Configure the Ethernet link parameters associated with the DSM card in the database using the **chg-ip-lnk** command.

For this example, enter these commands.**chg-ip-**

**lnk:loc=1301:port=a:ipaddr=192.168.120.1:speed=100 :submask=255.255.255**

**.0:mcast=yes chg-ip-**

**lnk:loc=1301:port=b:ipaddr=192.168.121.1:speed=10 :submask=255.255.255.**

**0:mcast=yes**When each of these commands has successfully completed, the following message should appear.

```
rlghncxa03w 06-08-01 21:18:37 GMT EAGLE5 35.1.0
CHG-IP-LNK: MASP A - COMPLTD
```

- Verify the new Ethernet link parameters associated with the DSM card that was changed in step 5 by entering the **rtrv-ip-lnk** command with the card location specified in step 5.

For this example, enter this command.**rtrv-ip-lnk:loc=1301**The following is an example of the possible output.

```
rlghncxa03w 06-08-01 21:19:37 GMT EAGLE5 35.1.0
LOC  PORT  IPADDR          SUBMASK          DUPLEX  SPEED  MACTYPE  AUTO  MCAST
1301  A    192.168.120.001 255.255.255.0    HALF    100    DIX      NO    YES
1301  B    192.168.121.001 255.255.255.0    HALF    10     DIX      NO    YES
```

**NOTE: If step 3 was not performed, skip steps 7 and 8, and go to step 9.**

- Put the DSM card that was inhibited in step 3 back into service by using the **alw-card** command.

For example, enter this command. **alw-card:loc=1301**This message should appear.

```
rlghncxa03w 06-08-01 21:20:37 GMT EAGLE5 35.1.0
Card has been allowed.
```

- Verify the in-service normal (IS-NR) status of the DSM card using the **rept-stat-card** command.

For example, enter this command. **rept-stat-card:loc=1301**This is an example of the possible output.

```
rlghncxa03w 06-08-01 17:00:36 GMT EAGLE5 35.1.0
CARD VERSION      TYPE  APPL  PST          SST      AST
1301 123-002-000  DSM   VSCCP  IS-NR        Active  -----
```

```

ALARM STATUS      = No Alarms.
BPDCM GPL         = 002-102-000
IMT BUS A         = Conn
IMT BUS B         = Conn
SCCP % OCCUP      = 0%
Command Completed.

```

9. Repeat this procedure for all other DSM cards in the EAGLE 5 ISS.
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.

```

You have now completed this procedure.

## Overview of the ELAP User Interfaces

The EAGLE LNP Application Processor (ELAP) User Interface, provides two user interfaces:

- The Graphical User Interface provides GUI menus that maintain, debug, and operate the platform; it and its associated error messages are described in *Chapter 3, "ELAP Graphical User Interface"* of the *ELAP Administration Manual*.
- The text-based User Interface has a Configuration menu that performs the ELAP configuration and initialization; as described in [ELAP Configuration Menu](#) .

The GUI provides the user with menus and screens to perform routine operations. The text-based user interface provides the ELAP Configuration menu to perform the initial configuration.

To communicate with the ELAP graphical user interface, you use a PC with a network connection and a network browser. For information about using the ELAP GUI, see *Chapter 3, "ELAP Graphical User Interface"* of the *ELAP Administration Manual*.

To configure ELAP, you use the ELAP text-based user interface. For information about configuring the ELAP and how to set up its PC workstation, continue with this chapter.

### Setting Up an ELAP Workstation

The customer workstation serving as a client PC must meet certain criteria, which are described next.

#### Screen Resolution

For optimum usability, the workstation must have a minimum resolution of 800x600 pixels and a minimum color depth of 16 thousand colors per pixel.

#### Compatible Browsers

The ELAP user interface was designed and written to perform with Microsoft Internet Explorer 5.0 or later. The ELAP user interface is also compatible with Mozilla Firefox 1.0.2 or later. Do not use other browsers with the ELAP user interface. When using Firefox, you will encounter the following message when logging into the ELAPGUI:



**CAUTION:** The User Interface may not function correctly with the browser you are using. Microsoft Internet Explorer, version 5 and later, has been certified for this application

## Java

The ELAP GUI uses a Java “banner” applet to display real-time updates and status for both A and B sides of the MPS. A Java virtual machine version 1.2 or later is required.

The Java installation must be performed in the sequence shown:

1. [Install Java Plug-In](#)
2. [Install Java Policy File](#)
3. [Add Security Parameters to an Existing Java Policy File](#) or [Create a New Java Policy File](#)

## Install Java Plug-In

Because the Java applet is required for the ELAP GUI to operate, perform the following procedure to install the Java plug-in after you complete the ELAP configuration.

**NOTE:** The selected browser must be the only browser open on your PC when you modify or create the Java policy file, or else the change will not take effect.

1. Using the selected browser (Internet Explorer 5.0 or later or Mozilla Firefox 1.0.2 or later), enter the IP address for your ELAP A machine. You will see the login screen.
2. Attempt to log in to the ELAP User Interface screen. If using Firefox, you will encounter the following message when logging into the ELAP GUI:

The User Interface may not function correctly with the browser you are using. Microsoft Internet Explorer, version 5 and later, has been certified for this application

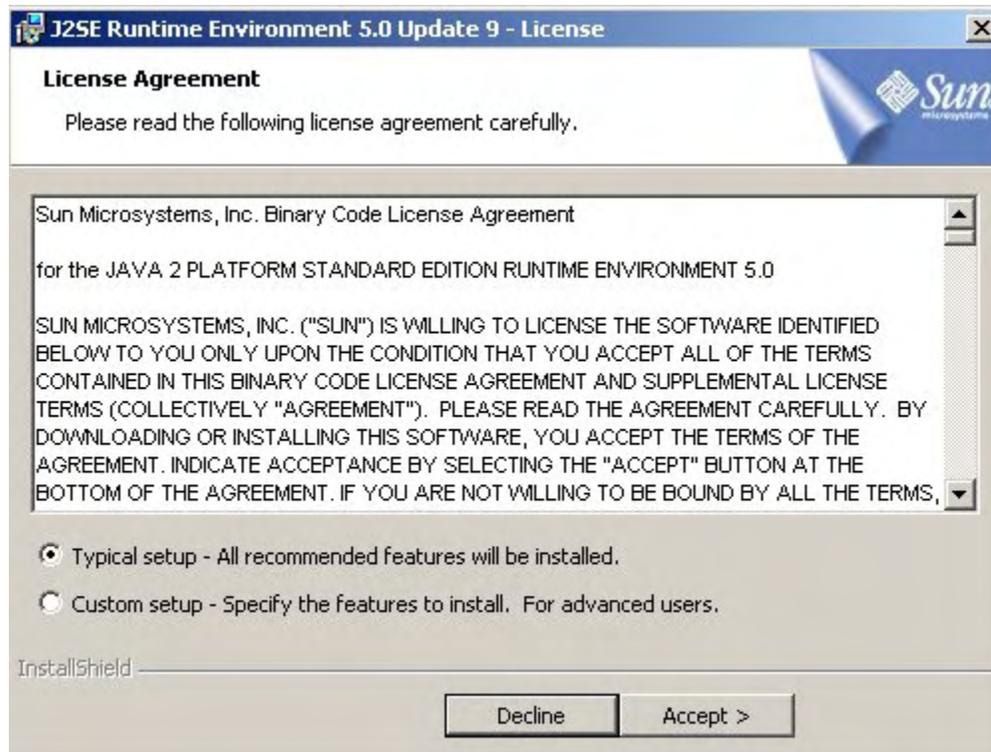
When you have successfully entered the Username and Password, the login process checks for the required Java plug-in. When it finds the Java 1.5 plug-in not present (but you had a previous version of Java installed), the system displays a Security Warning window.

Figure 2-19. Security Warning Window

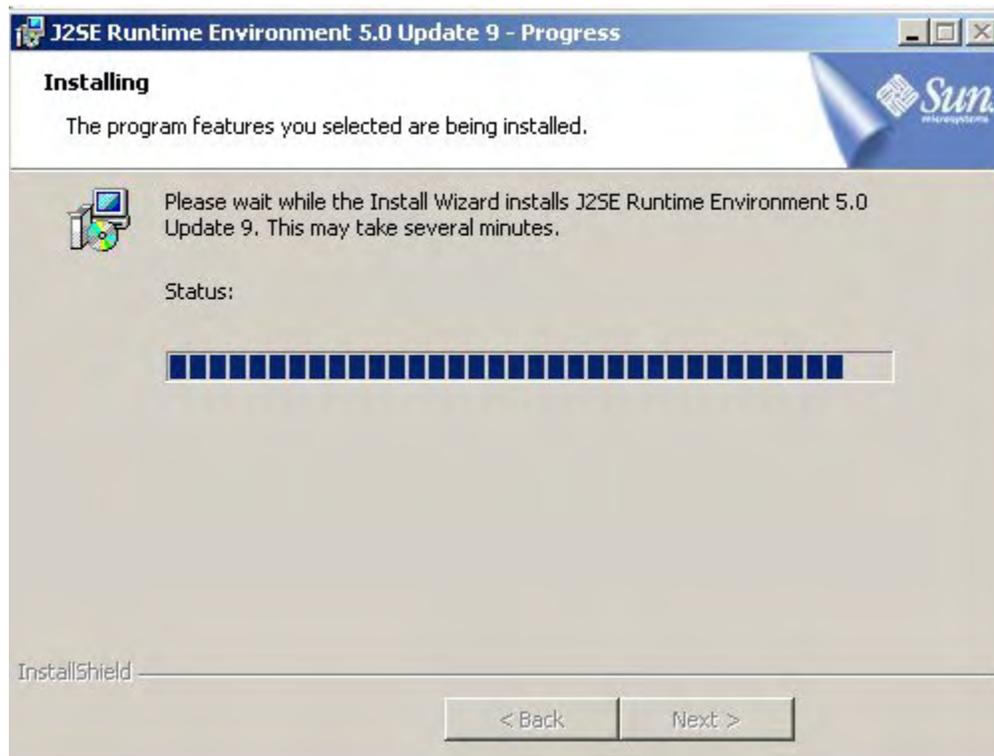


3. Click the **Install** button to begin the process of loading the Java plug-in.
4. Next, the Java installation presents a License Agreement screen.

**Figure 2-20.** License Agreement



5. Ensure that the **Typical Setup** radio button is selected, and click the **Accept** button to accept the Sun Microsystems agreement.
6. The installation process starts, and a progress window appears.

**Figure 2-21.** Java Installation Progress Window

7. When the installation is complete, the Installation Complete window appears.

**Figure 2-22.** Java Installation Complete Window

8. The installation is complete. Click the **Finish** button. You return to the browser screen containing the ELAP login screen.

### Install Java Policy File

The banner applet makes a network connection to each MPS side. A Java policy file must be modified or created exist for the banner applet to connect properly. If the Java policy file is not present, you will receive a Violation status ( VIOL) for the machine.

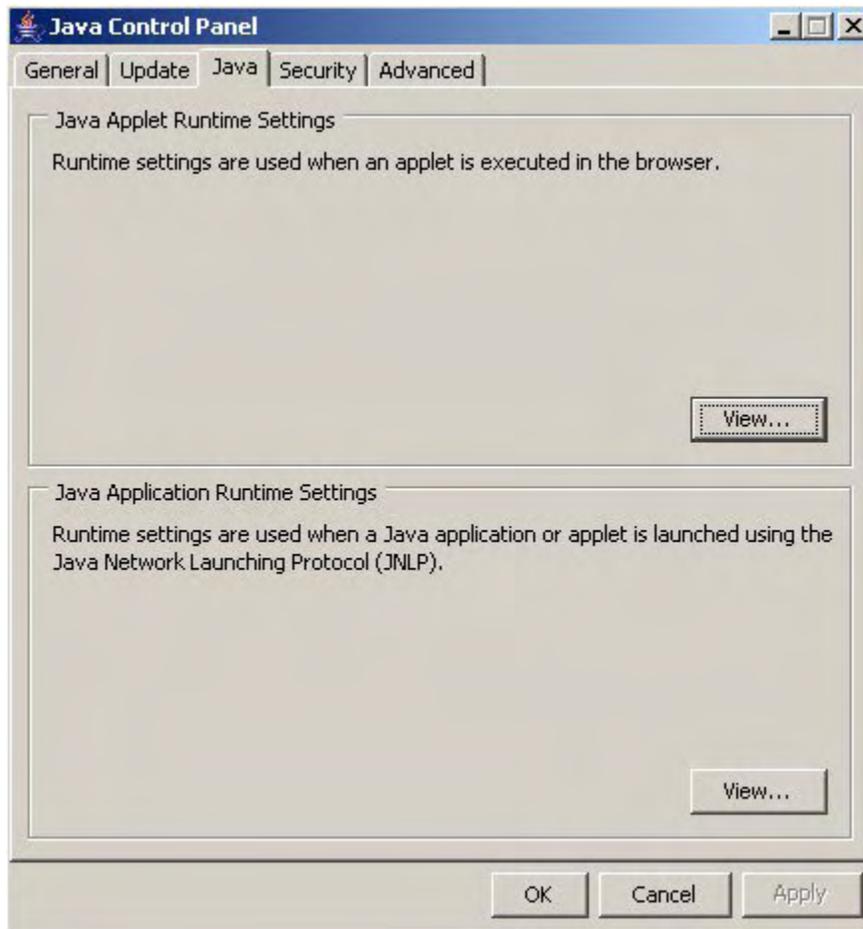
**NOTE:** The selected browser must be the only browser open on your PC when you modify or create the Java policy file, or else the change does not take effect.

### Add Security Parameters to an Existing Java Policy File

To check to see if a Java policy file is already in place, perform the following actions:

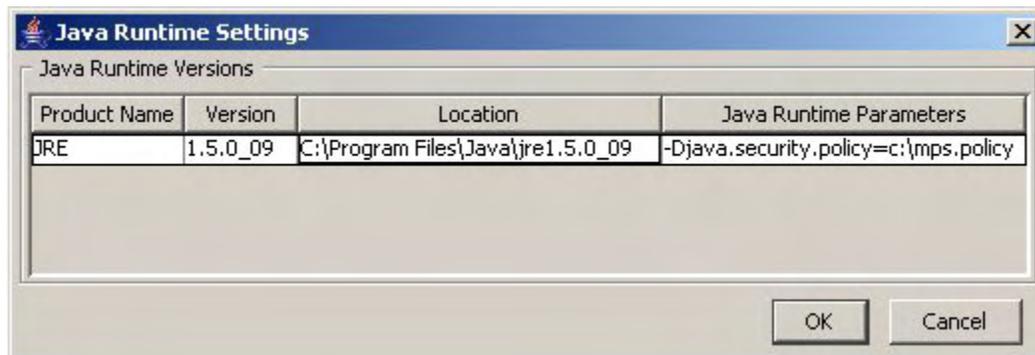
1. From the Windows **Start** menu, select **Control Panel**.
2. Select the **Java Control Panel**. When the **Java Control Panel** appears, click the **Java** tab.

Figure 2-23. Java Control Panel, Java Tab



3. Click **View** in the **Java Applet Runtime Settings** pane. The Java Runtime Settings dialog box appears.

Figure 2-24. Java Runtime Settings Dialog Box



4. Adjust the width of the columns until you can read the contents of the Java Runtime Parameters column (at the far right).
5. Open the policy file indicated in the Java Runtime Parameters column, and insert the following text.

```
grant {
    permission java.net.SocketPermission "*:8473", "connect";
};
```

### Create a New Java Policy File

To create a Java policy file:

1. Insert the following text into a file accessible by the workstation:

```
grant {
    permission java.net.SocketPermission "*:8473", "connect";
};
```

2. Follow steps 2 through 4 in the procedure described in [Add Security Parameters to an Existing Java Policy File](#) .
3. In the Java Runtime Parameters column for Java version 1.5, type the path to the file you created in step 1 of this procedure. An example path is shown below.

```
-Djava.security.policy={full_path_to_file}
```

## ELAP Configuration and Initialization

Before you can use the ELAPGUI, you must initialize and configure the ELAP software. The ELAP configuration and initialization is performed through the ELAP text-based user interface.

You will connect a local (optional) terminal connected to port 0 of the 8 -port connector box on the MPS frame at each EAGLE 5 ISS. (Refer to the *Installation Manual - EAGLE 5 ISS*.) To begin the initialization, you will log into ELAP A the first time as the “**elapconfig**” user. An automatic configuration is performed on both mated ELAPs.

**NOTE: All network connections and the mate ELAP must be present and verified to allow the initial configuration to complete successfully.**

No other user is able to log in to an ELAP until the configuration step is completed for that system.

### *Errors and Other Messages*

The following rules are applicable to configuring the ELAP:

- Mate MPS servers (MPS A and MPS B) must be powered on.
- “Initial Platform Manufacture” for the mate MPS servers must be complete.
- The Sync Network between the mate MPS servers must be operational.
- You must have the correct password for the **elapdev** user on the mate MPS server.

### Required Network Address Information

The information in [Table 2-4](#) is needed to configure the MPSs at EAGLE 5 ISS A. The information in [Table 2-5](#) is needed to configure the MPSs at EAGLE 5 ISS B. Fill in [Table 2-4](#) and [Table 2-5](#) for reference during the installation procedure.

**Table 2-4. Information for MPS at EAGLE 5 ISS A**

| Common Information                                    |       |
|-------------------------------------------------------|-------|
| MPS A Provisioning Network Address                    | . . . |
| MPS B Provisioning Network Address                    | . . . |
| Netmask                                               | . . . |
| Default Router                                        | . . . |
| Port Forwarding and Static NAT Information (optional) |       |
| MPS A Forwarded HTTP Port                             |       |
| MPS B Forwarded HTTP Port                             |       |
| MPS A Forwarded SuExec Port                           |       |
| MPS B Forwarded SuExec Port                           |       |
| MPS A Forwarded LSMS Port                             | 7483* |
| MPS A Forwarded LSMS Port                             | 7483* |
| MPS A Forwarded Banner Port                           |       |
| MPS B Forwarded Banner Port                           |       |
| MPS A Forwarded EBDA Port                             | 1030* |
| MPS B Forwarded EBDA Port                             | 1030* |
| MPS A Provisioning Static NAT Addr.                   | . . . |
| MPS B Provisioning Static NAT Addr.                   | . . . |
| * Do not change the default values for these ports    |       |

..

**Table 2-5. Information for MPS at EAGLE 5 ISS B**

| Common Information                                    |       |
|-------------------------------------------------------|-------|
| MPS A Provisioning Network Address                    | . . . |
| MPS B Provisioning Network Address                    | . . . |
| Netmask                                               | . . . |
| Default Router                                        | . . . |
| Port Forwarding and Static NAT Information (optional) |       |

| Common Information                                 |       |
|----------------------------------------------------|-------|
| MPS A Forwarded HTTP Port                          |       |
| MPS B Forwarded HTTP Port                          |       |
| MPS A Forwarded SuExec Port                        |       |
| MPS B Forwarded SuExec Port                        |       |
| MPS A Forwarded LSMS Port                          | 7483* |
| MPS B Forwarded LSMS Port                          | 7483* |
| MPS A Forwarded Banner Port                        |       |
| MPS B Forwarded Banner Port                        |       |
| MPS A Forwarded EBDA Port                          | 1030* |
| MPS B Forwarded EBDA Port                          | 1030* |
| MPS A Provisioning Static NAT Addr.                | . . . |
| MPS B Provisioning Static NAT Addr.                | . . . |
| * Do not change the default values for these ports |       |

## Configuration Menu Conventions

After you have logged into the ELAP user interface with the **elapconfig** user name, the menu appears that corresponds to that user login name. Before going into the details about the Configuration Menu, you need to know a few things about the Menu Format, Prompts and Default Values, and Error Message Format, which are covered next.

## Menu Format

The configuration menu has a header format displaying specific information. On the first line, it indicates the MPS Side A or B, with which you are active. On the same line, you are shown the **hostname** and **hostid**. The second and third lines show the **Platform Version**, followed by the **Software Version**. The last line displays the date and time.

**Figure 2-25.** Configuration Menu Header Format

```
MPS Side A:  hostname: mps-t1100-a  hostid: fd0a4767
              Platform Version: 2.0.2-4.0.0_50.26.0
              Software Version: ELAP 1.0.1-4.0.0_50.37.0
              Mon Sep 26 10:57:57 EDT 2005
```

When you are shown a menu, you choose a menu item by entering the number of the item (or “e” for Exit) in response to the **Enter Choice** prompt that follows the menu, and press Return.

When you choose a menu item, the user interface performs the requested operation. The operation and any associated output for each menu item are described in detail later in this section.

If you enter an invalid choice (such as a letter or a number that is not available for that menu), an error appears. Perform the corrective action described for that error.

## Prompts and Default Values

Depending on the menu item that you choose, you might be prompted for data (such as IP addresses) that is required to complete the selected operation. Optional fields are indicated by the text “(optional)” at the end of the prompt. To bypass an optional field without entering a value, press Return.

Default values are indicated by a value enclosed in square brackets at the end of the prompt text: [*default value*]. Example default values are shown in this chapter; they might not be the same as the default values that appear for your system. To accept the default value for a prompt instead of entering a response, press Return.

You can press the Escape key to exit any operation without entering a value for the prompt. The operation is aborted, and you are returned to the menu.

## Error Message Format

Invalid menu selections, invalid user input, and failed user interface operations generate error messages on the screen. The error message remains on the screen until you press Return.

All error messages have a unique four-digit error number and associated text. The numbers and text for all error messages generated by the ELAP user interface are listed in Chapter 3, "ELAP Graphical User Interface," in the *ELAP Administration Manual*. The possible error messages that can occur for each ELAP user interface menu item are listed in the description of the menu item in this chapter.

Error messages have the following format, where *XXXX* is the unique four-digit error number for the error and *Error text* is the corresponding error text:

```
E
XXXX
:
```

```
Error text
```

```
Press return to continue
```

Whenever the software must be stopped to perform an operation, you are prompted to stop the software:

```
ELAP software is running. Stop it? [N]: Y
```

However, you must remember that while the ELAP software is stopped, no provisioning updates can be processed by the ELAP.

## ELAP Configuration Menu

### Configuration Overview

When you log into an ELAP with user name “`elapconfig`” after the first initialization of the ELAP, the configuration process begins. (See the details in [Procedure for Configuring ELAPs](#).) The configuration process lets you change IP addresses, time zone, and the password for `elapconfig`. You can display the host ID and exchange secure shell keys. This section describes each of these items in configuration menu.

## Initial elapconfig User Login

The first time the **elapconfig** user logs in to the system, the Initial Configuration Text screen is displayed..

### Figure 2-26. Initial Configuration Text Screen

```
Caution: This is the first login of the text user interface. Please
          review the following checklist before continuing. Failure
          to enter complete and accurate information at this time will
          have unpredictable results.
```

1. The mate MPS servers (MPS A and MPS B) must be powered on.
2. "Initial Platform Manufacture" for the mate MPS servers must be complete.
3. The sync network between the mate MPS servers must be operational.
4. You must have the correct password for the ELAPdev user on the mate MPS server.

```
Press return to continue...
```

If all four criteria above are not met, the configuration cannot proceed. Ensuring that the MPS servers are powered on requires a visual check. If the "Initial Platform Manufacture" is not complete, the configuration cannot proceed. When the sync network is not operational, the user is notified.

When the four criteria are met, press **Return** to resume the process. The Initial Configuration Continue screen displays.

**NOTE:** Review the information required for the following section in [Required Network Address Information](#) . Make certain all required information is obtained and recorded in the tables provided.

### Figure 2-27. Initial Configuration Continue Screen

```
Are you sure you wish to continue? [N]: y
```

Enter

**y**

to continue the installation.

When prompted, enter the elapdev user password on the mate MPS server.

The Enter elapdev Password screen displays.

**Figure 2-28.** Enter elapdev Password Screen

```

Password for ELAPdev@mate:

Keys exchanged.
Verifying that ssh works correctly.
ssh is working correctly.
Building the initial database on slave.
Building the initial database on master.
There was no elap.cfg file. Using default configuration.
Allowing access from slave.
Stopping mysql on master.
Stopping mysql on slave.
Setting up master config file.
Setting up slave config file.
Copying database to slave.
Starting MySQL on master.
Starting MySQL on slave.

```

The Configuration Menu displays.

### Text-based Configuration Menu

Upon successful completion of initial elapconfig user login, the text-based ELAP Configuration Menu displays allowing the **elapconfig** user to configure MPS local and remote servers.

**Figure 2-29.** ELAP Configuration Menu

```

MPS Side A:  hostname: mps-t1100-a  hostid: fd0a4767
              Platform Version: 2.0.2-4.0.0_50.26.0
              Software Version: ELAP 1.0.1-4.0.0_50.37.0
              Mon Sep 26 10:57:57 EDT 2005

```

```

/-----ELAP Configuration Menu-----\
/-----\
1	Display Configuration
2	Configure Network Interfaces Menu
---	-----
3	Set Time Zone
---	-----
4	Exchange Secure Shell Keys
---	-----
5	Change Password
---	-----
6	Platform Menu
---	-----
7	Configure NTP Server
---	-----
e	Exit
\-----/

```

Enter Choice:

To choose a menu item, enter the number or letter of the menu item in response to the **Enter Choice:** prompt, that follows the menu item list., and press **Return**.

### Display Configuration

The Display Configuration menu option 1 displays network address information and the time zone. Upon selecting option 1, a text-based Display Configuration Output screen displays.

**Figure 2-30.** Display Configuration Output Screen

```

MPS Side A:  hostname: mps-t1100-a  hostid: fd0a4767
              Platform Version: 2.0.2-4.0.0_50.26.0
              Software Version: ELAP 1.0.1-4.0.0_50.37.0
              Mon Sep 26 10:57:57 EDT 2005

ELAP A Provisioning Network IP Address = 192.168.61.90
ELAP B Provisioning Network IP Address = 192.168.61.91
Provisioning Network Netmask          = 255.255.255.0
Provisioning Network Default Router   = 192.168.61.250
ELAP A Backup Prov Network IP Address = Not configured
ELAP B Backup Prov Network IP Address = Not configured
Backup Prov Network Netmask           = Not configured
Backup Prov Network Default Router    = Not configured
ELAP A Sync Network Address           = 192.168.2.100
ELAP B Sync Network Address           = 192.168.2.200
ELAP A Main DSM Network Address       = 192.168.128.100
ELAP B Main DSM Network Address       = 192.168.128.200
ELAP A Backup DSM Network Address     = 192.168.129.100
ELAP B Backup DSM Network Address     = 192.168.129.200
ELAP A HTTP Port                      = 8888
ELAP B HTTP Port                      = 80
ELAP A HTTP SuExec Port               = 8001
ELAP B HTTP SuExec Port               = 8001
ELAP A Banner Connection Port         = 8473
ELAP B Banner Connection Port         = 8473
ELAP A Static NAT Address              = 10.25.50.10
ELAP B Static NAT Address              = 10.25.50.11
ELAP A LSMS Connection Port           = 7402
ELAP B LSMS Connection Port           = 7403
ELAP A EBDA Connection Port           = 1030
ELAP B EBDA Connection Port           = 1030
Time Zone                              = US/Eastern

Press return to continue...
    
```

Addresses that you choose should not conflict with your internal network addresses. The class C networks you choose should not conflict with the class C network used in your network scheme. [Table 2-6](#) shows an example of IP addresses used in the configuration process.

**Table 2-6. Sample IP Addresses Used in Configuration**

| Provisioning Network Information               | MPS A (Local) IP Addresses | MPS B (Local) IP Addresses |
|------------------------------------------------|----------------------------|----------------------------|
| ELAP A Provisioning Network IP Address (MPS A) | 192.168.61.90              | 192.168.61.119             |
| ELAP B Provisioning Network IP Address (MPS B) | 192.168.61.91              | 192.168.61.120             |
| Network Net Mask                               | 255.255.255.0              | 255.255.255.0              |
| Default Router                                 | 192.168.61.250             | 192.168.61.250             |

## Configure Network Interfaces and Options

Upon selection of option **2** of the Configuration Menu, the Configure Network Interfaces Menu displays.

**Figure 2-31.** Configure Network Interfaces Menu

```

/-----Configure Network Interfaces Menu-----\
/-----\
1	Configure Provisioning Network
2	Configure Sync Network
---	-----
3	Configure DSM Network
---	-----
4	Configure Backup Provisioning Network
---	-----
5	Configure Forwarded Ports
---	-----
6	Configure Static NAT Addresses
---	-----
e	Exit
\-----/

Enter choice:

```

The Configure Network Interfaces Menu supports the configuration of all the network interfaces for the ELAP.

**NOTE: The Configure Backup Provisioning Network option 4 of the Configure Network Interfaces Menu is not operational in this release.**

### Configure Provisioning Network

The Configure Provisioning Network option **1** of the Configure Network Interfaces Menu configures the ELAP provisioning network. These include the provisioning network's IP address, netmask, and default router IP address. This information allows the ELAP to communicate with an existing customer network.

**NOTE: You must configure these IP addresses. Obtain the values for the IP address, netmask, and default router from the customer's Information Services department. Record the values in the two tables in [Required Network Address Information](#) .**

In response to each prompt, you can enter a dotted decimal IP address or press Return to leave the current value unchanged (the current value is shown in brackets after the prompt text). Upon selection of option **1**, a text-based Configure Provisioning Network output displays.

**NOTE: Entering incorrect information can prevent the ELAP from accepting provisioning data and establishing remote ELAP user interface connections over the customer network.**

**Figure 2-32.** Configure Provisioning Network Output

```

Verifying connectivity with mate ...
Enter the ELAP A provisioning network IP Address [192.168.61.90]:
Enter the ELAP B provisioning network IP Address [192.168.61.91]:
Enter the ELAP provisioning network netmask [255.255.255.0]:
Enter the ELAP provisioning network default router IP Address: 192.168.54.250

Press return to continue ...

```

### Configure Sync Network

The Configure Sync Network option **2** of the Configure Network Interfaces Menu allows you specify the Sync network IP address of the selected ELAP. Sync network IP addresses are configured to default values during ELAP initialization. The third octet of the address can be changed after ELAP initialization is complete.

**NOTE: Unless there is a known network address conflict, the installer can bypass option 2.**

**Obtain the values for the IP address, netmask, and default router from the customer's Information Services department. Record the values in the two tables in [Required Network Address Information](#) .**

Upon selection of option **2**, a text-based Configure Sync Network output displays.

**Figure 2-33.** Configure Sync Network Output

```
Verifying connectivity with mate...
Enter the first 3 octets for the ELAP MPS sync Network [192.168.4]:
```



**CAUTION: Entering incorrect prompt responses/configuration information or rebooting at the wrong time may result in improper operation of the ELAP.**

**If you reboot at the wrong time, you need to contact the Tekelec Customer Care Center for assistance in resolving this situation.**

### Configure DSM Network

The Configure DSM Network option **3**, of the Configure Network Interfaces Menu, prompts you for the ELAPDSM network IP addresses. This information allows the ELAP to communicate with the main and backup DSM networks.

**NOTE: Unless there is a known network address conflict, the installer can bypass option 3.**

In response to each prompt, you can enter a dotted decimal IP address or press Return to leave the current value unchanged (the current value is shown in brackets after the prompt text).

Upon selection of option **3**, a text-based Configure DSM Network output displays.

**Figure 2-34.** Configure DSM Network Output

```
Verifying connectivity with mate ...
Enter the first 3 octets for the ELAP main DSM network [192.168.128]:
Enter the first 3 octets for the ELAP backup DSM network [192.168.129]:
```

**NOTE: Entering incorrect information will prevent the ELAP from communicating with the EAGLE 5 ISS.**

### Configure Forwarded Ports

The Configure Forwarded Ports option **5** of the Configure Network Interfaces Menu provides the functionality to configure ELAP ports for the Web UI.



**CAUTION: Do not change the default values, the LSMS is not capable of changing the LSMS/EBDA ports it can connect to on the MPS.**

Each numbered item of the Configure Forwarded Ports menu allows the user to specify a port number used for remote access to the MPS.

This information should be received from the customer for the MPS and recorded in the two tables in [Required Network Address Information](#) .

### Configure Static NAT Addresses

The Configure Static NAT Addresses option **6**, from the Configure Network Interfaces Menu, provides the functionality to configure the static NAT addresses of the ELAP.

Each numbered item of the Configure Static NAT Addresses menu allows the user to specify an IP Address used outside of the firewall for remote access to the MPS. Upon selection of option **6**, a text-based Configure NAT Addresses Prompt displays.

**Figure 2-35.** Configure NAT Addresses Prompt

```
ELAP A Static NAT Address:
```

### Select Time Zone

**NOTE: Do not perform the Select the Time Zone function on a running system. Contact Tekelec Customer Care Center for assistance.**

The Select Time Zone option **3** prompts you for the time zone to be used by the ELAP. Time zone options are:

- The zone where the ELAP is located
- Greenwich Mean Time
- Another zone that is selected by the customer to meet the needs of the system

**NOTE: The value for the time zone should be obtained from the customer's Information Services department. The default value for the time zone is US/Eastern.**

To select a file in one of the subdirectories, enter a relative path name (such as **US/Eastern**) in response to the prompt. Upon selection of option **3**, a text-based Select Time Zone Menu output displays.

**Figure 2-36.** Select Time Zone Menu Output

```
Press return to continue...
Verifying connectivity with mate...
Are you sure you wish to change the timezone for MPS A and B? [N]: y
Enter a time zone:
```

Enter a valid UNIX time zone file name or press **Return** in response to the prompt to display a complete list of valid time zones. Appendix A in the *ELAP Administration Manual* provides a list of valid time zones.

Time zone changes do not take effect until the MPS is rebooted. The Reboot MPS screen is described in [Platform Menu and Options](#) .

### Exchange Secure Shell Keys

The Exchange Secure Shell Keys option **4**, from the ELAP Configuration Menu, enables connections between local and remote ELAPs. The ELAPs exchange encryption keys, which are required to run the secure shell.

The exchange normally occurs automatically during ELAP initialization. Use this menu item only if the exchange must be performed manually.

The **elapconfig** user must know the password for the **ELAPdev@mate**.

Upon selection of option **4**, a text-based Exchange Secure Shell Keys output displays.

**Figure 2-37.** Exchange Secure Shell Keys Output

```
Are you sure you wish to exchange keys? [N]: y
```

## Change Password

The Change Password option **5**, of the ELAP Configuration Menu, changes the text-based user interface password for the **elapconfig** login name for both MPS A and B.

Upon selection of option **5**, a text-based Change Password output displays.

**Figure 2-38.** Change Password

```
Verifying connectivity with mate...
Are you sure you wish to change the text UI password on MPS A and B? [N]: y
Enter new password for text UI user:
Re-enter new password:

Press return to continue...
```

## Platform Menu and Options

The ELAP Platform Menu option **6**, from the ELAP Configuration Menu, accesses the Platform menu allowing the **elapconfig** user to access and manage platform functions. Upon selection of option **6** from the ELAP Configuration Menu, a text-based Platform Menu output displays.

**Figure 2-39.** Platform Menu Output

```
MPS Side A:  hostname: mps-t1100-a  hostid: fd0a4767
              Platform Version: 2.0.2-4.0.0_50.26.0
              Software Version: ELAP 1.0.1-4.0.0_50.37.0
              Mon Sep 26 10:57:57 EDT 2005
```

```
/-----ELAP Platform Menu-----\
/-----\
1	Initiate Upgrade
2	Eject CD
----	-----
3	Reboot MPS
----	-----
4	Halt MPS
----	-----
5	MySQL Backup
----	-----
6	RTDB Backup
----	-----
e	Exit
\-----/
```

```
Enter choice:
```

### Initiate Upgrade

The **Initiate Upgrade** menu option **1** initiates an upgrade on the selected ELAP. For upgrade procedures, contact the Tekelec Customer Care Center.

### Eject CD

The **Eject CD** menu option **2** initiates an ejection of the CD media on the selected ELAP. Upon selection of option **2**, a text-based output displays.

```
Eject CD tray of MPS A, MPS B or BOTH? [BOTH]:
```

The default option is **BOTH**.

### Reboot MPS

The **Reboot MPS** menu option **3** initiates a reboot of either MPS or both. Upon selection of option **3**, a text-based output displays.

```
Reboot MPS A, MPS B or [BOTH]:
```

**NOTE:** The `elapconfig` user can abort rebooting the MPS by pressing the Escape key at the displayed prompt.

The default option is **BOTH**.



**CAUTION:** Rebooting the MPS stops all ELAP processes. Databases cannot be updated until MPS is fully booted.

## Halt MPS

The **Halt MPS** menu option **4** initiates a halt of one or both MPSs. Upon selection of option **4**, a text-based output displays.

```
Halt MPS A, MPS B or [BOTH]: y
```

The default option is **BOTH**.



**CAUTION: Halting an MPS stops all ELAP processes. Selecting the default (halt both MPS A and MPS B) requires a person to be physically present in order to reboot MPS and allow for further access!**

**NOTE: The elapconfig user can abort the MPS Halt by pressing the Escape key at the displayed prompt.**

## MySQL Backup

The **MySQL Backup** menu option **5** backs up the MySQL database. Upon selection of option **5**, a text-based output displays.

```
Are you sure you want to back up the MySQL database on MPS A? [N]: y
Connecting to local MySQL server...
Getting read lock...
Tarring the NPDB...
Disconnecting from local MySQL server...
```

**NOTE: ELAP software must be stopped or MySQL backup will abort and return to the ELAP Platform Menu.**

## RTDB Backup

The **RTDB Backup** menu option **6** backs up the RTDB database. Upon selection of option **6**, a text-based output displays.

```
Are you sure you want to back up the RTDB database on MPS A to
"/var/TKLC/appl/free/rtdbBackup_mps-t1100-a_20050926110224.tar"? [N]: y
```

**NOTE: ELAP software must be stopped or RTDB backup will abort and return to the ELAP Platform Menu.**

## ELAP Platform Menu Exit

The Exit menu option **e** exits from the ELAP Platform Menu and returns to the ELAP Configuration Menu.

## Configure NTP Server and Options

The **Configure NTP Server** option **7** allows users to display, add, and remove external NTP servers. Upon selection of option **7**, a text-based Configure NTP Server output displays.

**Figure 2-40.** Configure NTP Server Output

```

/----ELAP Configure NTP Server Menu--\
/-----\
| 1 | Display External NTP Server |
|-----|
| 2 | Add External NTP Server   |
|-----|
| 3 | Remove External NTP Server|
|-----|
| e | Exit                       |
\-----\

Enter Choice:

```

### Display External NTP Server

The **Display External NTP Server** menu option **1** displays external NTP server information. If a server is present, a text-based output provides the server name and IP address. The output notified the user if an NTP server is not present.

```

There are no External NTP Servers.
Press return to continue...

```

### Add External NTP Server

The **Add External NTP Server** menu option **2** adds an External NTP Server. Upon selection of option **2**, a text-based output is displayed.

```

Are you sure you wish to add new NTP Server? [N]: y Enter the ELAP NTP Server IP Address:
192.168.61.69 Verifying NTP Server. It might take up to 1 minute. External NTP Server [server
192.168.61.69 prefer] has been added. Press return to continue... Verifying NTP Server. It might take
up to 1 minute. External NTP Server [server 192.102.61.91 prefer] has been added.

```

**NOTE: The IP address must be a valid address for an External NTP Server.**

### Remove External NTP Server

The **Remove External NTP Server** menu option **3** removes an External NTP Server. If a server is present, selecting the Remove External NTP Server removes the server. If an NTP Server is not present, a text-based output displays.

```

There are no External NTP Servers.
Press return to continue...

```

### ELAP Configure NTP Server Menu Exit

The **ELAP Configure NTP Server Menu Exit** option **e** exits the ELAP Configure NTP Server Menu, and returns to the ELAP Configuration Menu.

### Exit

The **Exit** menu option **e** exits the ELAP Configuration menu.

# ELAP Configuration Procedure

Initialization and configuration are provided through a text-based user interface (UI). The user accesses the text-based configuration procedure by means of the product UI.

When the user `elapconfig` logs into MPS A for the first time, the system performs an auto-configuration on both MPSELAP pairs. The sync network and main and backup DSM networks are initialized to their default values, described in "Network Connections" in the *ELAP Administration Manual* and defined in the *Installation Manual - EAGLE 5 ISS*. Various internal configuration parameters are also set to their default values. The installer must perform initial configuration on MPS A on EAGLE 5 ISS A and MPS A on EAGLE 5 ISS B.

## Configuration Terms and Assumptions

- The initial configuration steps assume that each MPS has previously undergone successful Initial Platform Manufacture (IPM).
- The network paths must be present and verified before the MPS servers are ready for ELAP configuration.
- Initial configuration can be implemented on only the MPS A side of EAGLE 5 ISS A and MPS A side of EAGLE 5 ISS B. Attempting to perform initial configuration on MPS B of EAGLE 5 ISS A is not allowed, and the `elapconfig` user will be notified. The attempted configuration will be aborted with no impact on either MPS A or B.

After the initial configuration of MPS A on EAGLE 5 ISS A and MPS A on EAGLE 5 ISS B, both ELAPs should be operational unless the system failed to successfully initialize during reboot or the configured values for the Sync and/or DSM networks conflict with other equipment in the network. Tekelec recommends that you do not change the default network values.

- The provisioning values displayed for the following initialization and configuration steps are example values only.
- Default values can be accepted by pressing the **Return** key at the prompt; default values are shown enclosed in brackets [ ].
- It is the customer's decision about the timing and frequency of performing a back-up of databases. Databases should be backed up when they are initially populated with data; however, the priority that the customer assigns to data and time lost in restoring it will dictate the frequency of database back-up.
- Adding an NTP server is optional. Additionally, only one NTP server is needed to provide time synchronization for all the MPS servers on both EAGLE 5 ISS pairs.
- The ELAP terms 'local' and 'remote' are relative with respect to the ELAP configuration software. In other words, if the installer is running the configuration software on the physical MPS (that is, the MPS that the installer is physically on-site and has his terminal connected to), the configuration software refers to that MPS as 'local'. However if the installer connects through the network into the MPS A on EAGLE 5 ISS B, the configuration software executing at EAGLE 5 ISS B sees itself as 'local', referring to MPS that the installer is physically connected to as the 'remote'.

Remember that the 'local' MPS is whichever MPS A that the configuration software is being executed on, regardless of where the user is physically located.

The MPS of EAGLE 5 ISS A is the first MPS to which the installer physically connects and on which initial configuration of the ELAPs is always begun.

To avoid confusion of these relative terms, the MPS A on EAGLE 5 ISS A is considered to be the on-site MPS to which the installer has the physical connection. This document refers to the MPS to which the installer does not have the physical connection as MPS A on EAGLE 5 ISS B.

## Configuration Symbols

During the Configuration Procedure, the installer will initialize and configure the MPSs to perform various functions. Special instructions are required occasionally for an MPS on EAGLE 5 ISS A, an MPS on EAGLE 5 ISS B. To assist the installer, this manual uses these symbols to indicate individual instructions to be performed for those specific MPSs.

| MPS Symbol                                                                        | Symbol Description                                                                                                            |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
|  | This symbol indicates installation instructions to be performed specifically for the MPSs (MPS A and MPS B) on EAGLE 5 ISS A. |
|  | This symbol indicates installation instructions to be performed specifically for the MPSs (MPS A and MPS B) on EAGLE 5 ISS B. |

## Initial Setup and Connecting to MPSs

Installation personnel may choose to employ various methods for connecting to an MPS. The ELAP software requires that an MPS be configured from side A. This procedure describes a likely method for connecting to EAGLE 5 ISS A and then EAGLE 5 ISS B. Installers require that all console output be captured.

### Connecting to EAGLE 5 ISS A

To prepare for the configuration of the MPS on EAGLE 5 ISS A, the installer connects directly to the MPS at EAGLE 5 ISS A. Use the following method to connect to MPS B of EAGLE 5 ISS A.

1. Use the `ppp` utility to connect the modem located in the OOBM card in server A.  
For information about setting up the `ppp` utility, refer to the *ELAP Administration Manual*.
2. When the prompt appears, enter  
**ssh elapconfig@<server\_IP\_address>**  
to start a secure shell session with an ELAP server:  
**<server\_IP\_address>** is the IP address of the MPS B at EAGLE 5 ISS A.
3. This accesses the ELAP text interface.  
The **elapconfig** username and a password provided by your system administrator are required to continue.

### Connecting to EAGLE 5 ISS B

To prepare for the configuration of the MPS on EAGLE 5 ISS B, connection to and configuration of the MPS on EAGLE 5 ISS A must be completed. Then a secure shell session to MPS at EAGLE 5 ISS B can be made to configure it.

1. Use a secure shell session from the system prompt to the MPS A on EAGLE 5 ISS B, using the designated IP address.

```
ssh 192.168.61.119
Trying 192.168.61.119...
Connected to 192.168.61.119.
Escape character is '^]'.
SunOS 5.7
```

## Procedure for Configuring ELAPs

Upon connection to an MPS (as described in [Initial Setup and Connecting to MPSs](#) ), you can perform this procedure to configure the ELAPs in your network.

**NOTE: Initial configuration cannot be performed through the GUI. The IP addresses required for browser connectivity are not defined until the initial configuration, using the text-based UI, is completed.**

In a typical installation, the installer connects directly to the MPS at EAGLE 5 ISS A to configure it, and then uses **ssh** to connect to the MPS at EAGLE 5 ISS B to configure it.

1. After connecting to the MPS on EAGLE 5 ISS A, the installer is prompted to login. The installer must login as **elapconfig**. Upon successful login, a text-based note of caution appears.

```
SunOS 5.7
mpsa-f0c7c3 console login: elapconfig
Password:
Caution: This is the first login of the text user interface. Please
          review the following checklist before continuing. Failure
          to enter complete and accurate information at this time will
          have unpredictable results.

          1. The mate MPS servers (MPS A and MPS B) must be powered on.
          2. "Initial Platform Manufacture" for the mate MPS servers
             must be complete.
          3. The sync network between the mate MPS servers must be
             operational.
          4. You must have the correct password for the ELAPdev user on
             the mate MPS server.

Press return to continue...
```

2. Press the **Return** key to continue, the installer can now abort or proceed with the initial configuration. A text-based output allows you to abort or proceed with the initial configuration.

```
Are you sure you wish to continue? [N]: y
```

3. Enter **y** to continue with the configuration.

### **BSIDE: MPS on EAGLE 5 ISS B:**

Upon selecting **y** to continue, the configuration software is executed on the MPSs on EAGLE 5 ISS B. Previously, the MPSs on EAGLE 5 ISS B were referred to as 'remote'. Now, the configuration software considers the same MPS pair to be 'local' (for more information, refer to the [Configuration Terms and Assumptions](#) ).

4. When prompted, enter the **elapdev** user password on the mate MPS server in order to confirm the secure shell keys are successfully exchanged.

When the correct password is entered, the secure shell keys are successfully exchanged, and the UI database is set up on MPS A and MPS B, a text-base verification output displays.

```
Password for ELAPdev@mate:
Keys exchanged.
```

```

Verifying that ssh works correctly.
ssh is working correctly.
Building the initial database on slave.
Building the initial database on master.
There was no elap.cfg file. Using default configuration.
Allowing access from slave.
Stopping mysql on master.
Stopping mysql on slave.
Setting up master config file.
Setting up slave config file.
Copying database to slave.
Starting MySQL on master.
Starting MySQL on slave.
    
```

Successful configuration file setup results in the display (for the first time) of the ELAP Configuration Menu and its associated header information.

```

MPS Side A: hostname: mps-t1100-a hostid: fd0a4767
Platform Version: 2.0.2-4.0.0_50.26.0
Software Version: ELAP 1.0.1-4.0.0_50.37.0
Mon Sep 26 10:57:57 EDT 2005
    
```

```

/-----ELAP Configuration Menu-----\
|-----|
| 1 | Display Configuration |
|-----|
| 2 | Configure Network Interfaces Menu |
|-----|
| 3 | Set Time Zone |
|-----|
| 4 | Exchange Secure Shell Keys |
|-----|
| 5 | Change Password |
|-----|
| 6 | Platform Menu |
|-----|
| 7 | Configure NTP Server Menu |
|-----|
| e | Exit |
|-----|
Enter Choice:
    
```

The server designation of MPS A at this site is displayed as well as hostname, hostid, Platform Version, Software Version, and the date.

**5. Choose option 1 for Display Configuration.**

Upon selection of option 1, a text-based output allows you to verify ELAP A and ELAP B Provisioning Network IP addresses, the Time Zone, and other provisioning values for the MPS on EAGLE 5 ISS A.

```

MPS Side A: hostname: mps-t1100-a hostid: fd0a4767
Platform Version: 2.0.2-4.0.0_50.26.0
Software Version: ELAP 1.0.1-4.0.0_50.37.0
Mon Sep 26 10:57:57 EDT 2005

ELAP A Provisioning Network IP Address = 192.168.61.90
ELAP B Provisioning Network IP Address = 192.168.61.91
Provisioning Network Netmask          = 255.255.255.0
Provisioning Network Default Router   = 192.168.61.250
ELAP A Backup Prov Network IP Address = Not configured
ELAP B Backup Prov Network IP Address = Not configured
Backup Prov Network Netmask           = Not configured
Backup Prov Network Default Router    = Not configured
ELAP A Sync Network Address           = 192.168.2.100
ELAP B Sync Network Address           = 192.168.2.200
ELAP A Main DSM Network Address       = 192.168.128.100
ELAP B Main DSM Network Address       = 192.168.128.200
ELAP A Backup DSM Network Address     = 192.168.129.100
ELAP B Backup DSM Network Address     = 192.168.129.200
    
```

```

ELAP A HTTP Port           = 8888
ELAP B HTTP Port           = 80
ELAP A HTTP SuExec Port    = 8001
ELAP B HTTP SuExec Port    = 8001
ELAP A Banner Connection Port = 8473
ELAP B Banner Connection Port = 8473
ELAP A Static NAT Address    = 10.25.50.10
ELAP B Static NAT Address    = 10.25.50.11
ELAP A LSMS Connection Port  = 7402
ELAP B LSMS Connection Port  = 7403
ELAP A EBDA Connection Port  = 1030
ELAP B EBDA Connection Port  = 1030
Time Zone                   = US/Eastern
Press return to continue..
    
```

6. Press **Return** to return to the ELAP Configuration Menu.

The ELAP Configuration Menu displays.

```

/-----ELAP Configuration Menu-----\
|-----|
| 1 | Display Configuration |
|-----|
| 2 | Configure Network Interfaces Menu |
|-----|
| 3 | Set Time Zone |
|-----|
| 4 | Exchange Secure Shell Keys |
|-----|
| 5 | Change Password |
|-----|
| 6 | Platform Menu |
|-----|
| 7 | Configure NTP Server Menu |
|-----|
| e | Exit |
|-----|
    
```

Enter Choice: 2

7. Choose option **2, Configure Network Interfaces Menu**.

The Configure Network Interfaces Menu displays.

```

/-----Configure Network Interfaces Menu-----\
|-----|
| 1 | Configure Provisioning Network |
|-----|
| 2 | Configure Sync Network |
|-----|
| 3 | Configure DSM Network |
|-----|
| 4 | Configure Backup Provisioning Network |
|-----|
| 5 | Configure Forwarded Ports |
|-----|
| 6 | Configure Static NAT Addresses |
|-----|
| e | Exit |
|-----|
    
```

Enter choice: 1

8. Choose option **1, Configure Provisioning Network**.

A text-based output allows you to accept the default IP address values presented by the configuration software for ELAP A and ELAP B provisioning network and network netmask, or to enter specific IP values previously received from the customer for the MPS.

```

Verifying connectivity with mate..
Enter the ELAP A provisioning network IP Address [192.168.61.90]:
Enter the ELAP B provisioning network IP Address [192.168.61.91]:
Enter the ELAP provisioning network netmask [255.255.255.0]:
    
```

Enter the ELAP provisioning network default router IP Address: 192.168.54.250  
Press return to continue..

Refer to the information recorded in the tables in [Required Network Address Information](#) for the correct addresses.

No default value is provided for the ELAP provisioning network default router. This value must be received from the customer.

9. Press the **Return** key, to return to the Configure Network Interfaces Menu.

```

/-----Configure Network Interfaces Menu-----\
/-----\
1	Configure Provisioning Network
2	Configure Sync Network
---	-----
3	Configure DSM Network
---	-----
4	Configure Backup Provisioning Network
---	-----
5	Configure Forwarded Ports
---	-----
6	Configure Static NAT Addresses
---	-----
e	Exit
\-----/
Enter choice: 2

```

10. Enter option 2, **Configure Sync Network**.

**NOTE: Unless there is a known network address conflict, skip all steps related to option 2.**

```

Verifying connectivity with mate...
Enter the first 3 octets for the ELAP MPS sync Network [192.168.4]
Press return to continue...

```

11. Accept or change the default Sync Network IP address octet values presented by the configuration software. Press the **Return** key or, if there is a known conflict, enter customer-specified IP address octet values.

Upon completion, the Configure Network Interfaces Menu displays.

```

/-----Configure Network Interfaces Menu-----\
/-----\
1	Configure Provisioning Network
2	Configure Sync Network
---	-----
3	Configure DSM Network
---	-----
4	Configure Backup Provisioning Network
---	-----
5	Configure Forwarded Ports
---	-----
6	Configure Static NAT Addresses
---	-----
e	Exit
\-----/
Enter choice: 3

```

**NOTE: Unless there is a known network address conflict, skip [Step 12](#) through [Step 14](#) .**

12. Choose option 3, **Configure DSM Network**.

The **Configure DSM Network** option automatically adds the DSM network IP address to the list of known hosts.

13. Accept default IP address octets for the ELAP main DSM network and the ELAP backup DSM network unless a known network conflict exists.

A text-based output displays.

```
Verifying connectivity with mate...
Enter the first 3 octets for the ELAP main DSM network [192.168.136]:
Enter the first 3 octets for the ELAP backup DSM network [192.168.137]:
```

14. If necessary, enter a specific ELAP backup DSM network octet IP address value.

Upon completion of option 3, Configure DSM Network, the Configure Network Interfaces Menu displays.

**NOTE: Unless the MPS is separated from GUI workstations and provisioning systems by a port forwarding firewall, skip all steps related to option 5. Proceed to step [Step 19](#) .**

15. Choose option 5, **Configure Forwarded Ports**.

A text-based Configure Forwarded Ports Menu displays.

```
/-----Configure Forwarded Ports Menu-----\
/-----\
1	Change ELAP A HTTP Port
2	Change ELAP B HTTP Port
---	-----
3	Change ELAP A HTTP SuExec Port
---	-----
4	Change ELAP B HTTP SuExec Port
---	-----
5	Change ELAP A Banner Connection Port
---	-----
6	Change ELAP B Banner Connection Port
---	-----
7	Change ELAP A LSMS Connection Port
---	-----
8	Change ELAP B LSMS Connection Port
---	-----
9	Change ELAP A EBDA Connection Port
---	-----
10	Change ELAP B EBDA Connection Port
---	-----
e	Exit
\-----/
Enter choice: 5
```

16. Enter the correct option number for the port information to be entered.

A text-based output displays.

```
ELAP A HTTP Port [80]:
```

Refer to the tables in [Required Network Address Information](#) for the correct information.

**NOTE: The LSMS is not capable of changing the LSMS/EBDA ports it can connect to on the MPS. Therefore, the default values for options 7 through 10 on the Configure Forwarded Ports Menu should not be changed.**

17. Enter the appropriate information.

Press **Return** once to return to the Configure Forwarded Ports Menu.

18. Enter an **option number** or enter **e** to return to the Configure Network Interfaces Menu.

A text-based Configure Network Interfaces Menu displays.

```
/-----Configure Network Interfaces Menu-----\
/-----\
1	Configure Provisioning Network
2	Configure Sync Network
---	-----
3	Configure DSM Network
---	-----
4	Configure Backup Provisioning Network
---	-----
```

```

|-----|
| 5 | Configure Forwarded Ports |
|-----|
| 6 | Configure Static NAT Addresses |
|-----|
| e | Exit |
|-----|
\-----/
Enter choice: 6

```

19. Choose option **6**, Configure Static NAT Addresses.

A text-based Configure Static NAT Addresses Menu displays.

20. Enter option **1** or **2**.

Each numbered item of the Configure Static NAT Addresses Menu allows the user to specify an IP Address used outside of the firewall for remote access to the MPS. The following table shows an example of a resulting prompt.

```

/-----Configure Static NAT Addresses Menu-----\
|-----|
| 1 | Change ELAP A Static NAT Address |
|-----|
| 2 | Change ELAP B Static NAT Address |
|-----|
| e | Exit |
|-----|
\-----/

```

21. Enter a valid NAT IP address.

Refer to the tables in [Required Network Address Information](#) for the correct information.

ELAP A Static NAT Address:

22. Choose option **e** on the Configure Static NAT Addresses Menu to return to the Configure Network Interfaces Menu.

23. Choose option **e**, Exit from the Configure Network Interfaces Menu to return to the ELAP Configuration Menu.

```

/-----ELAP Configuration Menu-----\
|-----|
| 1 | Display Configuration |
|-----|
| 2 | Configure Network Interfaces Menu |
|-----|
| 3 | Set Time Zone |
|-----|
| 4 | Exchange Secure Shell Keys |
|-----|
| 5 | Change Password |
|-----|
| 6 | Platform Menu |
|-----|
| 7 | Configure NTP Server Menu |
|-----|
| e | Exit |
|-----|
\-----/
Enter Choice: 3

```

**NOTE:** Obtain the value for the time zone from the customer's Information Services department. The default value for the time zone is US/Eastern.

If the time zone is correct for this installation, as shown in the output of the Display Configuration ( [Step 5](#) ), skip all steps related to option 3. Proceed to [Step 26](#) .

24. Choose option **3**, Set Time Zone.

Upon selection of option **3**, a text-based Caution output displays.

Caution: This action requires a reboot of the affected MPS servers to activate the change. Operation of the ELAP software before the MPS servers are rebooted may have unpredictable consequences. Press return to continue...

25. After noting the caution, press the **Return** key to continue.

A text-based confirmation prompt displays.

```
Are you sure you wish to change the timezone for MPS A and B? [N]: y
```

- Press the **Return** key at this confirmation prompt to accept the default **N** and abort the exchange action.
- Enter **y** to confirm the exchange.

Upon selecting **y**, a text-based output is displayed.

```
Enter a time zone file (relative to /usr/share/lib/zoneinfo):
```

The time zone can be the zone where the ELAP is located, Greenwich Mean Time, or another zone that is selected by the customer to meet the needs of the system. If the time zone is known, it can be entered at the prompt. If the time zone value is not known, press the **Return** key, and a list of the valid names is displayed. The time zone change does not take effect until the next time the MPS is rebooted.

Upon successful completion of setting the time zone, the ELAP Configuration Menu displays.

```

/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration |
|-----|
| 2 | Configure Network Interfaces Menu |
|-----|
| 3 | Set Time Zone |
|-----|
| 4 | Exchange Secure Shell Keys |
|-----|
| 5 | Change Password |
|-----|
| 6 | Platform Menu |
|-----|
| 7 | Configure NTP Server Menu |
|-----|
| e | Exit |
\-----/
Enter Choice: 4
    
```

26. Enter option **4**, Exchange Secure Shell Keys.

**NOTE: Option 4, Exchange Secure Shell Keys, is successfully performed automatically by the configuration software at the start of configuration.**

**Skip this step and continue with the next configuration option.**

Upon selection of option **4**, a text-based output displays.

```
Are you sure you wish to exchange keys? [N]: y
```

Upon selection of **y**, a text-based output displays.

```
Verifying connectivity with mate...
Caution: Secure shell keys have already been exchanged between this MPS
server and its mate. Secure shell is working properly.
Press return to continue...
```

27. Press the **Return** key to continue.

A text-based output is displayed.

```
Are you sure you wish to exchange keys with the mate? [N]: y
Password for ELAPdev@mate:
Keys exchanged.
Verifying that ssh works correctly.
ssh is working correctly.
```

- Press the **Return** key at this confirmation prompt to accept the default **N** and abort the exchange action.
- Enter **y** to confirm the exchange.

Upon selecting **y**, A text-based prompt requests the password of the mate. Contact the Tekelec Customer Care Center for the password; refer to [Customer Care Center](#) .

Upon entering the appropriate password, a text-based verification of the exchange is displayed. The installer is returned to the ELAP Configuration Menu.

```

/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration                |
|-----|
| 2 | Configure Network Interfaces Menu   |
|-----|
| 3 | Set Time Zone                       |
|-----|
| 4 | Exchange Secure Shell Keys         |
|-----|
| 5 | Change Password                    |
|-----|
| 6 | Platform Menu                     |
|-----|
| 7 | Configure NTP Server Menu          |
|-----|
| e | Exit                               |
\-----/
Enter Choice: 5

```

**NOTE: If you do not need to change the text-based UI password for the MPSs at this site, skip all steps related to option 5 and proceed to [Step 29](#) .**

- 28.** Enter option **5**, **Change Password**, to change the text-based user interface password for the **elapconfig** login name for both MPS A and B at this site.

Upon selection of option **5**, a text-based output prompts the user to confirm the action of changing the password for both the MPS A and MSP B servers at this site.

```
Verifying connectivity with mate...
Are you sure you wish to change the text UI password on MPS A and B? [N]: y
Enter new password for text UI user:
Re-enter new password:
Press return to continue ...
```

- Press the **Return** key to accept the default of **N** or no, and abort the action to the change the password.
- Enter **y** and a text-based prompt requests the new password, followed by a request for re-entry of the password to confirm the entry.

Successful entry of the new password returns the installer to the ELAP Configuration Menu.

```

/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration                |
|-----|
| 2 | Configure Network Interfaces Menu   |
|-----|
| 3 | Set Time Zone                       |
|-----|

```

```

4	Exchange Secure Shell Keys
5	Change Password
---	-----
6	Platform Menu
---	-----
7	Configure NTP Server Menu
---	-----
e	Exit
---	-----
Enter Choice: 7

```

**NOTE:** If you do not need to add an NTP server skip all steps related to option 7 and proceed to [Step 37](#) .

**29.** Enter option 7, **Configure NTP Server Menu**, to add an NTP Server.

Upon selecting the option 7, a text-based ELAP Configure NTP Server Menu displays.

```

/-----ELAP Configure NTP Server Menu-----\
1	Display External NTP Server
2	Add External NTP Server
---	-----
3	Remove External NTP Server
---	-----
e	Exit
---	-----
Enter Choice: 2

```

**30.** Enter option 2, **Add External NTP Server**.

Upon selection of option 2, a text-based output prompts the user to confirm the action of adding a new NTP Server.

```

Are you sure you wish to add new NTP Server? [N]: y
Enter the ELAP NTP Server IP Address: 192.168.61.69
Verifying NTP Server. It might take up to 1 minute.
External NTP Server [server 192.168.61.69 prefer]
has been added.
Press return to continue...
Verifying NTP Server. It might take up to 1 minute.
External NTP Server [server 192.102.61.91 prefer] has been added.
Press return to continue...

```

- Press **Return** to accept the default of **N** or no, and abort the action to add an external NTP server.
- Enter **y**, to add an external NTP server.

Upon selecting **y**, a text-based prompt asks for the IP address of the NTP server to be added.

**BSIDE: MPS on EAGLE 5 ISS B:**

**31.** Enter the same IP address for the NTP server that was previously added to the MPS A and B servers on EAGLE 5 ISS A.

This action allows the one NTP server to keep all MPS servers in synchronization.

Upon entering an IP address, a text-based display shows the server verification occurring. The installer receives a confirmation of a successful addition of the NTP server.

**32.** Press **Return** to returns to the ELAP Configure NTP Server Menu.

A text-based ELAP Configure NTP Server Menu displays.

```

/-----ELAP Configure NTP Server Menu-----\
1	Display External NTP Server
2	Add External NTP Server
---	-----

```



```

1	Initiate Upgrade
2	Eject CD
---	-----
3	Reboot MPS
---	-----
4	Halt MPS
---	-----
5	MySQL Backup
---	-----
6	RTDB Backup
---	-----
e	Exit
---	-----
Enter Choice: 3
    
```

**38. Enter option 3, Reboot MPS.**

A text-based output prompts the user to reboot MPS A, MPS B or BOTH.

```
Reboot MPS A, MPS B or [BOTH]:
```

**39. Select the Return key to reboot BOTH MPS A and MPS B.**

When rebooting of the MPS server pair on EAGLE 5 ISS B completes, the Platform Menu may re-appear; however, the connection to the MPS server closes, and the installer is returned to the system prompt. The console logon appears at the system prompt signifying the ELAP initial configuration is complete.

**NOTE: The console logon is preceded by many lines of reboot output.**

The initial configuration of MPSs on EAGLE 5 ISS B is now complete. Both MPSs on EAGLE 5 ISS A and MPSs on B are now configured and rebooted.

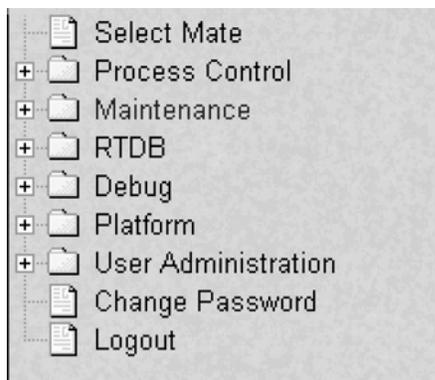
## MPS Health Check Procedure

Run the **syscheck** utility to obtain the operational status of the MPS platform with the following procedure. Refer to the *ELAP Administration Manual* for more details and information about logins and permissions. For more information about the **syscheck** utility, go to the *EAGLE 5 ISS Maintenance Manual*.

**1. Login to the User Interface screen of the ELAPGUI as elapplatform.**

The main menu displays.

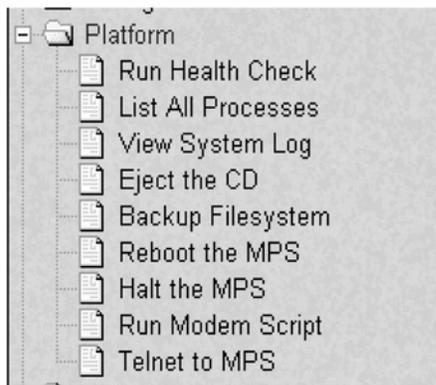
**Figure 2-41.** Main Menu View



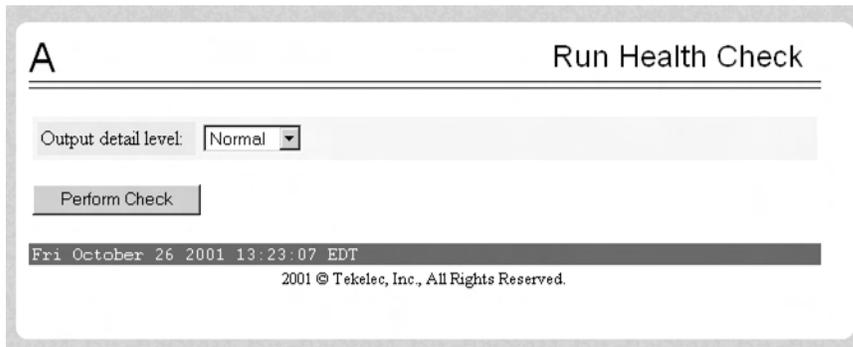
Check the banner information above the menu to verify that you are logged into the correct ELAP.

**2. If it is necessary to switch to another ELAP, select Select Mate from the main menu.**

The Platform Folder Open view displays.

**Figure 2-42.** Platform Folder Open View

3. When the GUI shows you are logged into the desired ELAP, select **Platform> Run Health Check**. The Run Health Check view displays.

**Figure 2-43.** Run Health Check View

4. On the Run Health Check screen, use the pull-down menu to select **Normal** or **Verbose** output detail level.
5. Click the **Perform Check** button to run the system health check on the selected MPS. The system health check output data displays.

You have now completed this procedure.

## EMS Configuration Component

Use the following procedures to manage TekPath or ELAP EMS configuration components:

- [Creating an EMS Configuration Component](#)
- [Modifying an EMS Configuration Component](#)
- [Viewing an EMS Configuration Component](#)
- [Deleting an EMS Configuration Component](#)

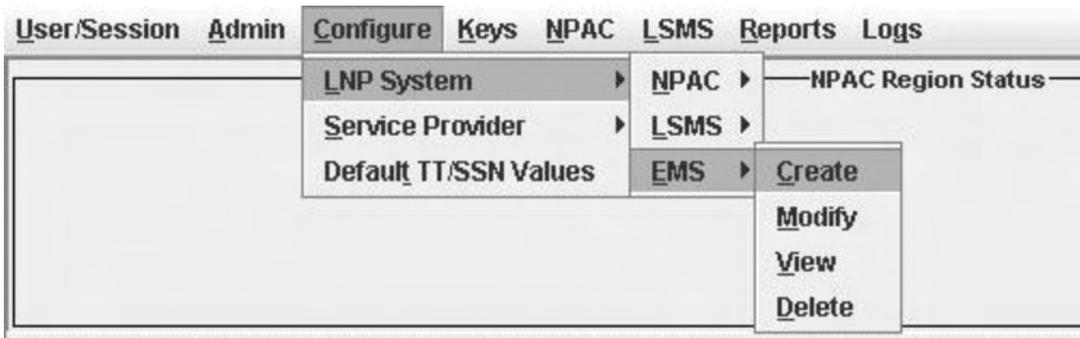
### Creating an EMS Configuration Component

For each network element to be supported by the LSMS, create an EMS configuration component using the following procedure.

**NOTE:** For each EMS configuration created, you must perform a bulk download to the associated EMS/network element. Refer to the LSMS-Eagle 5 ISS LNP Database Synchronization Manual for bulk loading procedures.

1. Log into the LSMS as a user in the `lsmsadm` or `lsmsall` group.
2. From the Main Menu, select **Configure> LNP System> EMS> Create**.

**Figure 2-44.** LNP System Menu – Create EMS



The **Create LNP System EMS** window displays. The window usually opens with the **Address Info** tab displayed; if the **Address Info** tab is not displayed, click its tab to display it.

Figure 2-45. Create LNP System EMS Address Info Tab

3. Ensure that the radio button for an ELAP MPS or a TekPath MPS is selected. For an ELAP MPS, enter the IP addresses for MPS A and MPS B (enter a value from 0 to 255 in each of the first three octets and a value from 0 to 254 in the fourth octet). For a TekPath MPS, enter the IP address for MPS A only.

**NOTE: The LSMS no longer supports connections to OAPs.**

4. Select one of the following radio buttons for the **Verify MPS with PING** field to specify whether the LSMS uses PING to monitor the connectivity between the LSMS and the MPS.

**NOTE: With either selection, the LSMS always monitors connectivity with the keepalive function.**

- **Enabled** to monitor the MPS by sending PINGs over the UDP port. This selection requires an additional port to be open (which can be a security concern), but supports previously available function.
- **Disabled** to monitor the MPS using only the keepalive function. This selection reduces the number of ports required to be open inbound to the ELAP network. Security is increased when the number of open ports is decreased.

**NOTE: The LSMS/EMS PING Enhancement feature provides the following functionality:**

- Prevents intermediate devices (for example, routers and switches) from closing idle HSOP connections
- Detects low level network faults that were previously not detectable using the TCP/IP stack alone.

5. Click the **Component Info** tab.

Figure 2-46. Create LNP System EMS Component Info

6. Enter the **Component Info** data as follows (all fields in this tab must contain data):

- *Owner ID* – ID of the network element owner (maximum 20 alphanumeric characters)
- *Platform Type* – hardware platform of the network element (maximum 20 alphanumeric characters)
- *Platform Supplier* – name of the supplier of the network element hardware platform (maximum 20 alphanumeric characters)
- *Platform SW Release* – release level of the software running on the network element platform (maximum 20 alphanumeric characters)
- *Platform Model* – model number of the network element platform (maximum 20 alphanumeric characters)
- *CLLI* – CLLI code of the network element (maximum 11 numeric and uppercase alphabetic characters)
- *Mate CLLI* – CLLI of the mate EMS component (maximum 11 numeric and uppercase alphabetic characters)
- *PC* – point code of the EMS component (must contain three 3-digit octets; first octet must have a value from 1 to 255; last two octets must have a value from 0 to 255; second octet must not be 001 if the first octet has a value from 1 to 5)
- *Mate PC* – point code of the mate EMS component (must contain three 3-digit octets; first octet must have a value from 1 to 255; last two octets must have a value from 0 to 255; second octet must not be 001 if the first octet has a value from 1 to 5)

- *LNP Capability PC* – LNP capability point code of the network element (must contain three 3-digit octets; first octet must have a value from 1 to 255; last two octets must have a value from 0 to 255; second octet must not be 001 if the first octet has a value from 1 to 5)

7. Click the **Contact Info** tab.

**Figure 2-47.** Create LNP System EMS Contact Info

The screenshot shows a dialog box titled "Create LNP System EMS <TKLC>". It has three tabs: "Address Info", "Component Info", and "Contact Info". The "Contact Info" tab is selected. The form contains the following fields:

- Name: [Text Box]
- Email: [Text Box]
- Street: [Text Box]
- City: [Text Box]
- State: [Text Box]
- ZIP Code: [Text Box]
- Province: [Text Box]
- Country: [Text Box]
- Phone Number: [Text Box]
- Fax Number: [Text Box]
- Pager Number: [Text Box]
- Pager PIN: [Text Box]

Below the fields is a question mark icon and the text "Create EMS Component?". At the bottom are "OK" and "Cancel" buttons.

8. All fields in this tab are optional. If you wish to enter the **Contact Info** data, do so as follows:

- *Name* – name of the person to contact for network element information (maximum 40 alphanumeric characters)
- *Email* – email address of the network element contact person (maximum 60 alphanumeric characters)
- *Street* – street address of the network element contact person (maximum 40 alphanumeric characters)
- *City* – city address of the network element contact person (maximum 20 alphanumeric characters)
- *State* – state address of the network element contact person (two-letter uppercase abbreviation). If you use the *Province* field, enter -- (the default).
- *ZIP Code* – the postal zip code of the network element contact person (five numeric characters)
- *Province* – the province of the network element contact person (two-letter uppercase abbreviation). If you use the *State* field, enter -- (the default).
- *Country* – country of the network element contact person (maximum 20 alphanumeric characters).
- *Phone Number* – phone number of the network element contact person (ten numeric characters required).

- *FAX Number* – FAX number of the network element contact person (ten numeric characters required).
  - *Pager Number* – pager number of the network element contact person (ten numeric characters required)
  - *Pager PIN* – pager PIN number of the network element contact person (ten numeric characters maximum)
9. When finished, click **OK** to apply the changes.
- If the Update Successful dialog appears, click **OK**. The GUI returns to the main console window.

**Figure 2-48.** Update Successful Dialog



- When a mandatory field is empty or a field is not properly configured, the Field Required dialog displays.

**Figure 2-49.** Field Required Dialog



Click **OK** and correct the appropriate field.

Repeat this step until you receive an Update Successful notification.

You have now completed this procedure.

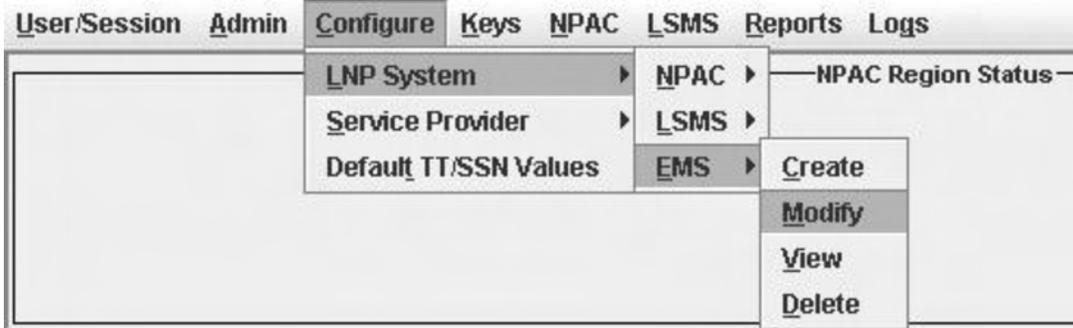
## Modifying an EMS Configuration Component

To modify an existing EMS configuration component, use the following procedure.

**NOTE:** For each EMS configuration created, you must perform a bulk download to the associated EMS/network element. Refer to the LSMS-Eagle 5 ISS LNP Database Synchronization Manual for bulk loading procedures.

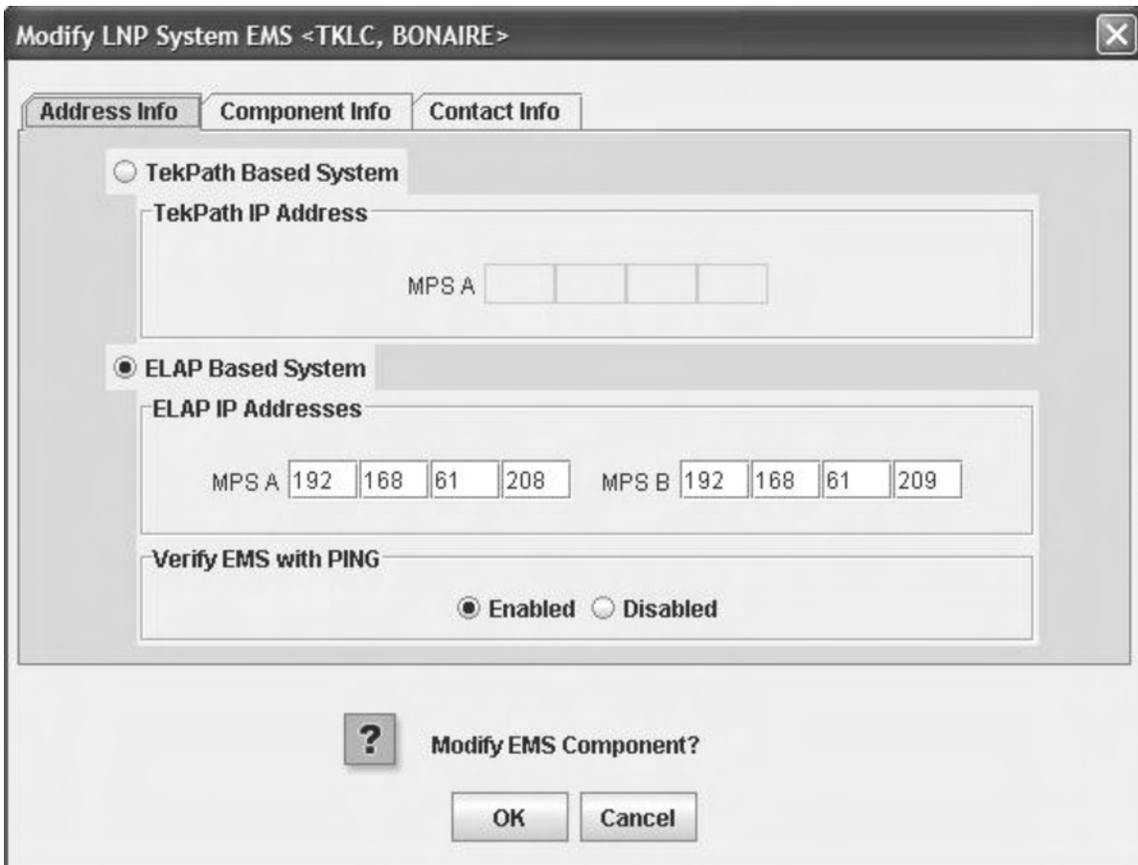
1. Log into the LSMS as a user in the **lsmsadm** or **lsmsall** group.
2. Click the **EMS status** icon for the EMS you wish to modify so that the icon is highlighted.
3. From the **Main Menu**, select **Configure> LNP System> EMS> Modify** .

Figure 2-50. LNP System Menu – Modify EMS



The Modify LNP System EMS window appears.

Figure 2-51. Modify LNP System EMS Window



The window usually opens with the **Address Info** tab displayed; if the **Address Info** tab is not displayed, click its tab to display it.

4. Modify the EMS data as required.  
See [Creating an EMS Configuration Component](#) for detailed field information.
5. Click **OK**.  
The EMS Routing dialog appears.

Figure 2-52. EMS Routing Dialog



Click **OK**

The Update Successful dialog appears.

Figure 2-53. Update Successful Dialog



You have completed this procedure.

**Next:** If a mandatory field is empty or a field is not properly configured, the More Fields Needed dialog appears.

Figure 2-54. More Fields Needed Dialog



Click **OK** and correct the appropriate field.

Repeat this step until you receive an Update Successful notification.

**NOTE:** Changes do not take effect until the `eagleagent` is restarted (refer to *Manually Verifying and Restarting the Eagle Agents in the LSMS Maintenance Manual*).

## Viewing an EMS Configuration Component

To view EMS configuration component information, use the following procedure.

1. Log into the LSMS as a user in the `lsmsview`, `lsmsuser`, `lsmsuext`, or `lsmsadm` group.
2. Click the **EMS status** icon for the EMS you wish to view (highlight the icon).
3. From the **Main Menu**, select **Configure> LNP System> EMS> View**.

The View LNP System EMS dialog displays.

Figure 2-55. View LNP System EMS Dialog



- Click on any of the tabs to view additional information.

For more information about the meaning of the fields on any of the tabs, see [Creating an EMS Configuration Component](#).

**NOTE: You cannot modify information in any of the tabs.**

- When finished viewing, click **OK**.

You have now completed this procedure.

## Deleting an EMS Configuration Component

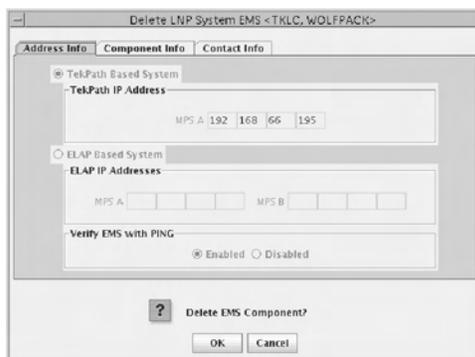
To delete an EMS configuration component, use the following procedure.

**NOTE: The deletion of the EMS configuration component does not take effect until the LSMS is idled and restarted (refer to “Idling an Active Server” and “Starting or Restarting an Idle Server” in the *LSMS Maintenance Manual*).**

- Log into the LSMS as a user in the `lsmsadm` or `lsmsall` group.
- Click the **EMS Status** icon for the EMS you wish to delete (highlight the icon).
- From the **Main Menu**, select **Configure > LNP System > EMS > Delete**.

The Delete LNP EMS dialog displays.

Figure 2-56. Delete LNP System EMS Dialog



- View the information in this window to verify that this is the EMS you wish to delete.

Click on any of the tabs to view additional information. For more information about the meaning of the fields on any of the tabs, see [Creating an EMS Configuration Component](#) . You cannot modify information in any of the tabs.

5. Click **OK** or **Cancel**.
  - If you click **Cancel**, you are returned to the LSMS console window.
  - If you click **OK**, the Update Successful dialog displays.

**Figure 2-57.** Update Successful Dialog



6. Click **OK**.

You have completed this procedure.

## EMS Routing

EMS routing information enables the LSMS to send subscription information to the proper network elements. The EMS routing function allows you to modify or view the routing info that you defined using the TN Filters and GTT Groups (see Chapter 4 of the *LSMS Database Administration Manual*).

### Modify EMS Routing

To modify the TN filters and GTT group assignments for the selected EMS (you can change the EMS being modified by selecting a new value from the EMS combo box), do the following:

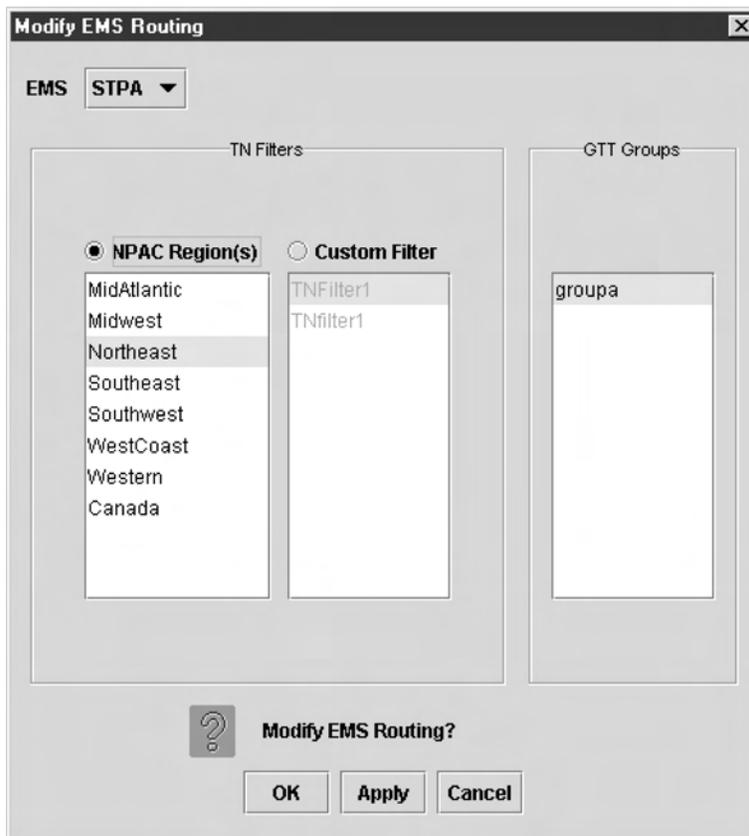
**NOTE:** After you update the TN filter, run an audit for the EMSs utilizing that TN filter. Use the NE Audit with Reconcile procedure (refer to the *LNP Database Synchronization Manual - LSMS with EAGLE 5 ISS*) for each NPA-NXX.

**However, depending on the number of NPA-NXXs, the number of EMSs affected, and the physical distance between the LSMS and the network element, a bulk download to each affected EMS/network element may be more efficient. For more information, refer to the *LNP Database Synchronization Manual - LSMS with EAGLE 5 ISS*.**

1. Log in to LSMS as a member of the permission group that is authorized to perform this operation (see Chapter 2 of the *LSMS Database Administration Manual* for descriptions of these user access groups).
2. From the LSMS Console window, select **LSMS> EMS Routing> Modify** .

The Modify EMS Routing dialog displays.

Figure 2-58. Modify EMS Routing Dialog



The **NPAC Region(s)** list contains the eight predefined NPAC region filters. The **Custom Filter** list contains all custom TN filters that have been created and named.

3. Apply TN Filters - Choose one, but not both, of the following:
  - Regional Filters - When you select the **NPAC Region(s)** radio button, the EMS accepts only the TNs from the selected region(s).
  - Custom Filter - When you select the **Custom Filter** radio button, EMS accepts only the TNs as defined by the selected custom TN filter.

**NOTE:** To modify, view, or delete a custom filter, select the custom filter and then right-click it. A popup menu displays. You can create a new custom filter by clicking the Create button. Newly created TN filters are immediately added to the Custom Filter list.

4. Apply GTT groups, if desired - Default and override GTT translations are determined by the set of all override and default GTT records belonging to this GTT group.

**NOTE:** All named GTT groups are displayed in the GTT Groups panel. You may assign a single group to the selected EMS by clicking on it to select it. You can view a GTT group by selecting it, and then right-clicking it. A popup menu displays. Upon selection of a group, the View GTT Group dialog displays.

Figure 2-59. View GTT Group Dialog



5. Click **OK**.

You have now completed this procedure.

## Bulk Load Procedure

Use the following procedure to manage an bulk load from the LSMS user interface.

**NOTE:** Before starting this procedure, contact the Customer Care Center to be readily available for assistance if you encounter any problems while performing this procedure.

1. Perform the following substeps to ensure that no NPA Splits will activate during the bulk download procedure:
  - a. As `lsmsadm`, enter the following `lsmsdb` commands to output the counts for both Subscription Version and NumberPoolBlock objects:

```
% cd $LSMS_DIR/tools
% lsmsdb -c counts | grep SubscriptionVersion
1,012,345 ... CanadaDB.SubscriptionVersion
5,434,123 ... MidAtlanticDB.SubscriptionVersion
7,111,222 ... MidwestDB.SubscriptionVersion
6,333,999 ... NortheastDB.SubscriptionVersion
8,044,000 ... SoutheaststDB.SubscriptionVersion
4,999,800 ... SouthwestDB.SubscriptionVersion
6,500,000 ... WestCoastDB.SubscriptionVersion
5,250,500 ... WesternDB.SubscriptionVersion
% lsmsdb -c counts | grep NumberPoolBlock
1,205 ..... CanadaDB.NumberPoolBlock
10,400 ..... MidAtlanticDB.NumberPoolBlock
8,005 ..... MidwestDB.NumberPoolBlock
4,000 ..... NortheastDB.NumberPoolBlock
7,500 ..... SoutheaststDB.NumberPoolBlock
1,225 ..... SouthwestDB.NumberPoolBlock
7,700 ..... WestCoastDB.NumberPoolBlock
5,500 ..... WesternDB.NumberPoolBlock
```

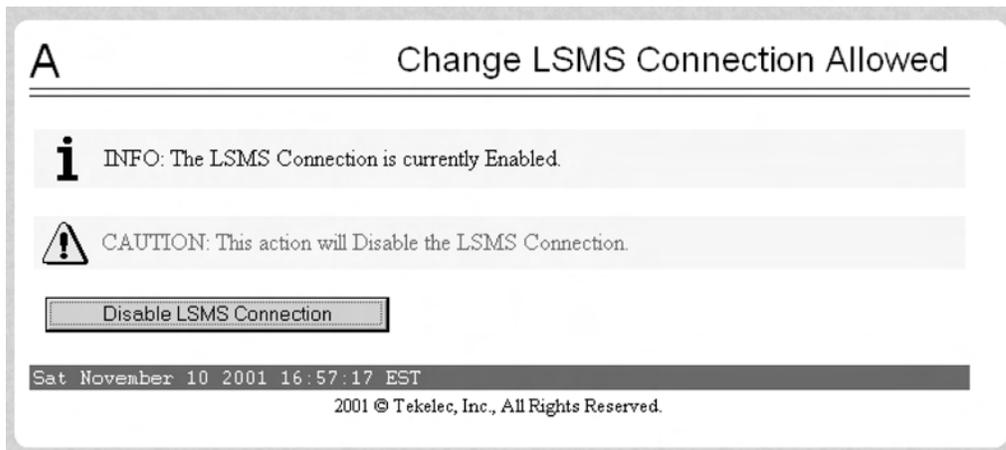
- b. Total the counts listed in the first column of the output from both commands in substep a.  
Divide this total by 2 million, to determine the estimated number of hours for the bulk load.
  - c. Generate an NPA Split Report.  
Select **Pending** for Status and **All NPAC Regions** for NPAC Region. For information about creating and viewing NPA Split Data Reports, refer to the *LSMS Database Administration Manual*.
  - d. Determine if NPA Splits are scheduled to be activated during the time the Bulk Load is to be performed:
    - If no Pending NPA Splits were listed in the report in substep c, or if none of the Pending NPA Splits has a PDP Start Date that occurs within the time period required to complete the Bulk Load, go to [Step 2](#) .
    - If any Pending NPA Split has a PDP Start Date that occurs within the time period required to complete the Bulk Load, continue with next substep.
  - e. Determine the date on which you want the NPA Splits to be activated.  
This should be the next day after the expected completion of the Bulk Load Procedure (based on the start date/time anticipated and the estimated length of the Bulk Load procedure, from substep b). For example, if the Bulk Load is estimated to require 24 hours to complete and the Bulk Load planned to be performed starting at 12 noon on April 1st, the NPA Split should be postponed until April 3rd.
  - f. Postpone the NPA Split (refer to the *LSMS Database Administration Manual*).
2. Ensure that the network element is prepared to receive a bulk load by doing the following:
    - a. Connect your web browser to the ELAP user interface (for more information, refer to the *EAGLE 5 ISS ELAP Administration Manual*).
    - b. Log in with the user name and password for a user who is authorized to access the menu items shown in this procedure.  
The ELAPGUI displayeds.

**Figure 2-60.** ELAP Main Menu



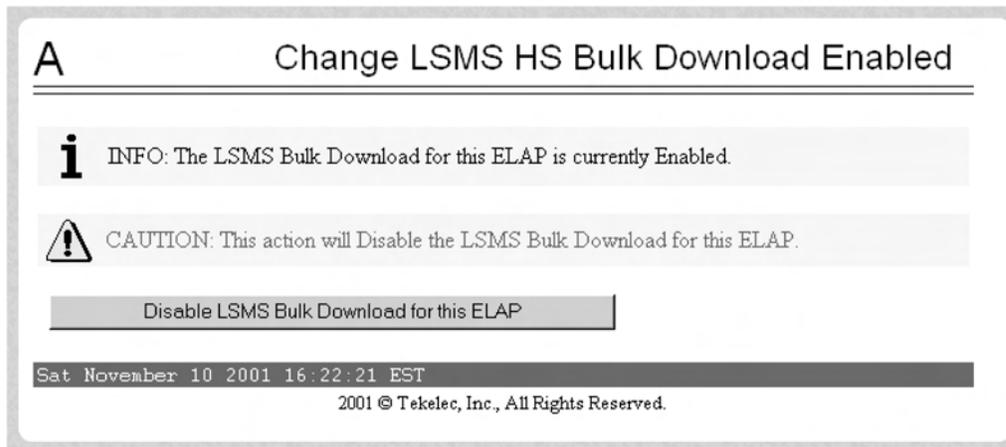
- c. Select **Maintenance> LSMS Connection> Change Allowed** .  
The Change LSMS Connection Allowed dialog displays.

Figure 2-61. Change LSMS Connection Allowed Dialog



- d. Click the **Disable LSMS Connection** button.
- e. Select **Maintenance> LSMSHS Bulk Download> Change Enabled** .  
The Change LSMS HS Bulk Download Enabled dialog displays.

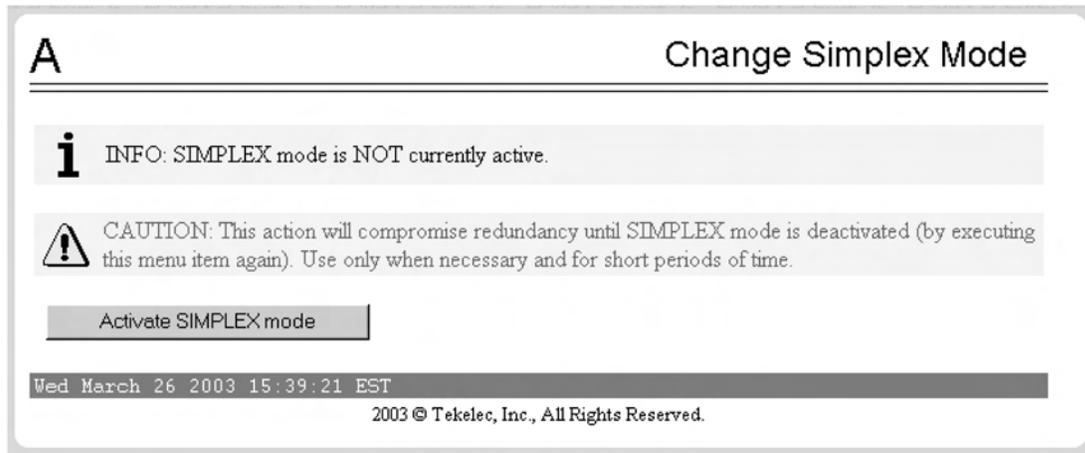
Figure 2-62. Change LSMS HS Bulk Download Enabled Dialog



**NOTE:** Performing this step causes the RTDB to enter a state of requiring database maintenance. Unless you are able to complete the procedure by committing the changes (as described in [Step 6](#) ), the RTDB continues to be in a state of requiring database maintenance.

- f. If the Information field indicates that the LSMS Bulk Download for this ELAP is currently Disabled (the default condition for an ELAP), click the **Enable LSMS Bulk Download for this ELAP** button. (If the LSMS Bulk Download for this ELAP is Enabled, the ELAP is already prepared for the user-initiated resynchronization.)
- g. Select **Maintenance> Simplex Mode> Change Status** .  
The Change Simplex Mode dialog is displayed.

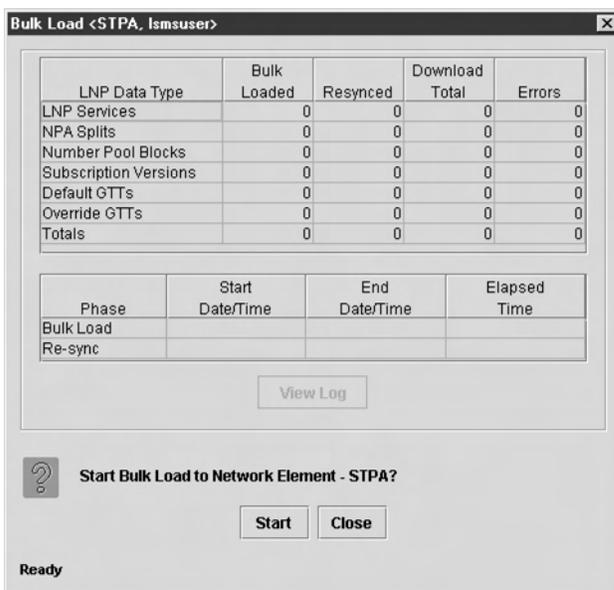
Figure 2-63. Change Simplex Mode Dialog



- h. Click the **Activate SIMPLEX mode** button.
- 3. At the LSMS, log in as a member of the **lsmuser**, **lsmuext**, or **lsmall** user group.
- 4. Start the Bulk Load window using either of the following:
  - a. From the **Main Menu** on the LSMS Console window, select **LSMS> LNPDatabase Synchronization> Bulk Load> <CLLI>**, where **<CLLI>** is the Common Language Location Identifier for the network element that requires the bulk load.
  - b. Right-click the LSMS Console window's **EMS Status** icon (for the network element requiring the bulk load), and select **LNPDatabase Synchronization> Bulk Load**.

The Bulk Load dialog displays.

Figure 2-64. Bulk Load Window Dialog



- 5. To initiate the bulk load, click the **Start** button.

The **Start** button is replaced by an **Abort** button, and the **View Log** button is selectable. Progress is indicated by start time, elapsed time, numbers of successful and failed update commands, and status reported in the status field at the bottom of the window. When the bulk load phase completes (as indicated in the status field and by a value appearing in the **End Date/Time** field for the Bulk Load phase), the Re-sync phase begins and progress continues to be indicated in the same ways. All other buttons become nonselectable. [Table 2-7](#) shows the meaning of each of the fields that appears in this window.

**Table 2-7. Fields in Bulk Load Window**

| Field                                                                                                                                                                                                                                                                                       | Description                                                                                                                                                                    | Possible Values                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>Bulk Loaded</b>                                                                                                                                                                                                                                                                          | Total number of LNP commands successfully transmitted and applied to the NE, LNP database during the initial download phase of the bulk load operation.                        | 0 — 99,999,999                                 |
| <b>Resynced</b>                                                                                                                                                                                                                                                                             | Total number of LNP commands successfully transmitted and applied to the NE, LNP database during the resynchronization phase of the bulk load operation.                       | 0 — 99,999,999                                 |
| <b>Download Total</b>                                                                                                                                                                                                                                                                       | Total number of LNP commands successfully transmitted and applied to the NE, LNP database during initial download and the resynchronization phases of the bulk load operation. | 0 — 99,999,999                                 |
| <b>Errors</b>                                                                                                                                                                                                                                                                               | Total number of commands successfully transmitted but rejected by the NE during the initial download and the resynchronization phases of the bulk load operation.              | 0 — 99,999,999                                 |
| <b>Bulk Load Start Date/Time</b>                                                                                                                                                                                                                                                            | Time at which the initial download phase of the bulk load operation was started by the user.                                                                                   | MM/DD hh:mm:ss <sup>1</sup>                    |
| <b>Bulk Load End Date/Time</b>                                                                                                                                                                                                                                                              | Time when the initial download phase of the bulk load operation completed successfully or terminated abnormally.                                                               | MM/DD hh:mm:ss <sup>1</sup>                    |
| <b>Bulk Load Elapsed Date/Time</b>                                                                                                                                                                                                                                                          | Amount of time for completion of the initial download phase of the bulk load operation or the amount of time it ran before the user aborted it.                                | MM/DD hh:mm:ss <sup>1</sup> [A F] <sup>2</sup> |
| <b>Re-sync Start Date/Time</b>                                                                                                                                                                                                                                                              | Time when the resynchronization phase of the bulk load operation was started by the user.                                                                                      | MM/DD hh:mm:ss <sup>1</sup>                    |
| <b>Re-sync End Date/Time</b>                                                                                                                                                                                                                                                                | Time when the resynchronization phase of the bulk load operation completed successfully (with or without command rejections at the NE) or terminated abnormally.               | MM/DD hh:mm:ss <sup>1</sup>                    |
| <b>Re-sync Elapsed Date/Time</b>                                                                                                                                                                                                                                                            | Amount of time for completion the resynchronization phase of the bulk load operation or the amount of time it ran before the user aborted it.                                  | hh:mm:ss <sup>1</sup> [A F] <sup>2</sup>       |
| <b>Status</b>                                                                                                                                                                                                                                                                               | Text at the bottom left of the dialog to indicate the current status of the resynchronization operation.                                                                       | <b>Varies</b>                                  |
| <p>1 MMindicatesmonth,range01—12<br/> DDindicatesday,range01—31<br/> hhindicateshour,range00—23<br/> mmindicatesminute,range00—59<br/> ssindicatessecond,range00—59</p> <p>2 Aisappendedattheendofthetimeiftheoperationisaborted.<br/> Fisappendedattheendofthetimeiftheoperationfails.</p> |                                                                                                                                                                                |                                                |

The time required to download a database from the LSMS to the network element varies depending on the number of records provisioned in the database and the quality of the transmission and connections. For more

information about estimated time, see the *LNP Database Synchronization Manual - LSMS with EAGLE 5 ISS*. To view the bulk load log file, see the [Bulk Load Log File](#) section. To abort during either the bulk load phase or the resynchronization phase of an electronic bulk load is in progress, click the **Abort** button. A Bulk Load confirmation dialog displays.

Figure 2-65. Bulk Load Dialog



- Click the **Yes** button to terminate the operation in progress. Go to [Step 7](#) as if the bulk load had completed.
- Click the **No** button to close the Bulk Load confirmation dialog and return back to the main Bulk Load dialog with no other effect.

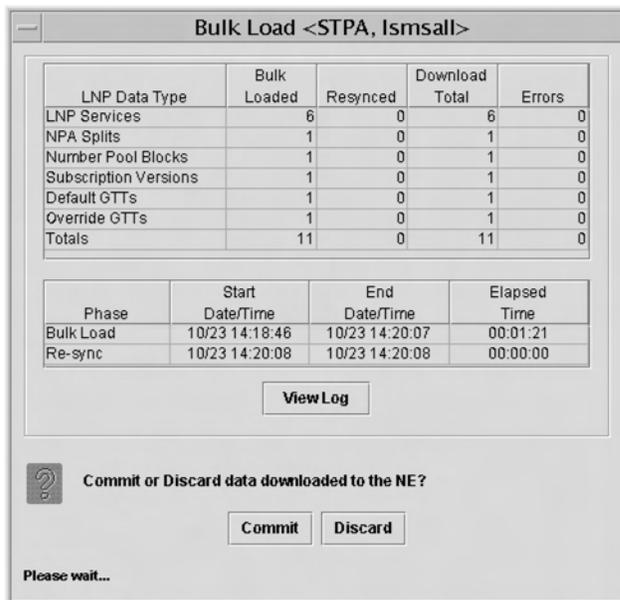
6. When the bulk load operation completes, the Bulk Load complete dialog displays.

Figure 2-66. Bulk Load Complete Dialog



7. Click **OK**.
8. When the bulk load operation completes or is aborted, the **Abort** and **Close** buttons are replaced by **Commit** and **Discard** buttons.

Figure 2-67. Bulk Load Complete



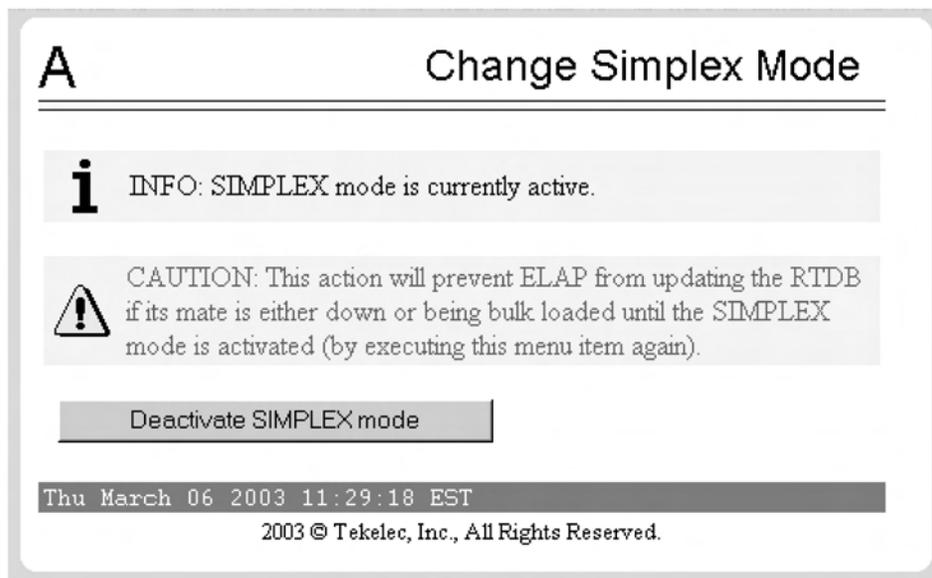
Before you click the **Commit** or **Discard** button, you can view the bulk load log file by clicking the **View Log** button (for more information about the file, including how to view it at other times, see the [Bulk Load Log File](#) section). To conclude the bulk load operation, you must perform one of the following:

- Click the **Discard** button to end the bulk load application (closing the **Bulk Load** window) and to send the NE a discard command that results in changes to the ELAP's RTDB that cannot be undone. (For whatever reason you are performing this procedure, the ELAP RTDB is now in a state of requiring database maintenance, but the bulk load application is no longer running.)
- The NE operator must continue with the following steps to cause the LNP database to be distributed and return the NE to normal operation as follows:

**NOTE: On the active MPS, verify that the DB Status is Coherent and the RTDB Level is greater than zero before copying the newly downloaded database to the mated ELAP.**

1. Copy the newly restored RTDB to its mate ELAP RTDB, as described in [Procedure to Copy an RTDB from the Mate ELAP](#) .
2. Distribute the data to the DSM cards, as described in [Distributing an RTDB LNP Database to DSM Cards](#) .
3. Deactivate the SIMPLEX mode as follows: Select **Maintenance> Simplex Mode> Change Status** . The Change Simplex Mode dialog displays.

**Figure 2-68.** Change Simplex Mode Dialog



4. Click the **Deactivate SIMPLEX mode** button.
5. Disable another user-initiated resynchronization or bulk load, as described in [Disabling Bulk Load](#) .

You have now completed this procedure.

## Bulk Load Log File

This section describes the following topics:

- [Viewing the Bulk Load Log File](#)
- [Bulk Load Log File Contents](#)

## Viewing the Bulk Load Log File

After a user-initiated resynchronization has begun, you can view the electronic bulk load log file by clicking the **View Log** button. The browser window displays the log file `LsmsBulkload.log.<MMDD>`. The file is located in the directory `/usr/local/LSMS/logs/<CLLI>`, `<CLLI>` is the Common Language Location Identifier of the network element receiving the bulk load. `<MMDD>` is the timestamp that contains month and day that the file was created.

You can also use one of the following methods to open the window shown in [Figure 2-69](#) used to browse for this log:

- Select **Logs > Other...** from the main menu of the **LSMS Console** window.
- Click on the **LSMS Console** window's **EMS Status** Icon that corresponds to the network element receiving the bulk load so that the icon is highlighted. Right-click and select **Logs > LNP Database Synchronization > Bulk Load**.

The Open Log Files window displays.

**Figure 2-69.** Open Log Files Window



Scroll down to find the folder that has the `<CLLI>` name for the NE that was bulk loaded. Double-click the folder name, and then double click the file name `LsmsBulkload.log.<MMDD>` that corresponds to the month and day you desire.

**NOTE:** Log files are maintained for seven days and then automatically removed from the LSMS.

## Bulk Load Log File Contents

When a bulk load is started, the bulk load log file for that day is appended (if this is the first bulk load of the day, the file is created). For each bulk load performed on that day, the bulk load log file contains information similar to the information displayed on the Bulk Load main window, such as start and end times for the bulk load, and numbers of successes and failures in various LNP categories.

The bulk load log file contains the following sections:

- Header Section
- Bulk Load Section
- Resynchronization Section
- Summary Section
- Download Commit/Discard Section

See Appendix C of the *LNP Database Synchronization Manual - LSMS with EAGLE 5 ISS* for more information on these sections.

[Figure 2-70](#) shows an example of a bulk load log file.

**Figure 2-70.** Example Bulk Load Log File

```
Wed Oct 31 14:02:03 GMT 2001

Username: lsmsall
NE CLLI: STPB

-----

Wed Oct 31 14:02:02 GMT 2001
Connection established with network element (192.168.61.202:1030)

Bulk download started on Wed Oct 31 14:02:13 GMT 2001

Bulk download completed on Wed Oct 31 14:02:27 GMT 2001

      LNP Services           6 Downloaded           0 errors
      NPA Splits             1 Downloaded           0 errors
Number Pool Blocks         2 Downloaded           0 errors
Subscription Versions     1004 Downloaded        0 errors
      Default GTTs           1 Downloaded           0 errors
      Override GTTs          1 Downloaded           0 errors
      Total                   1015 Downloaded        0 errors

Re-sync started on Wed Oct 31 14:02:29 GMT 2001

New NE LNP Database Time Stamp: Wed Oct 31 14:02:30 GMT 2001
```

Re-sync completed on Wed Oct 31 14:02:30 GMT 2001

|                       |              |          |
|-----------------------|--------------|----------|
| NPA Splits            | 0 Downloaded | 0 errors |
| Number Pool Blocks    | 0 Downloaded | 0 errors |
| Subscription Versions | 0 Downloaded | 0 errors |
| Default GTTs          | 0 Downloaded | 0 errors |
| Override GTTs         | 0 Downloaded | 0 errors |
| Total                 | 0 Downloaded | 0 errors |

Commit completed on Wed Oct 31 14:02:48 GMT 2001.

Username: lsmsall  
NE CLI: STPB

---

Bulk download started on Wed Oct 31 15:04:54 GMT 2001

Bulk download completed on Wed Oct 31 15:05:09 GMT 2001

|                       |                 |          |
|-----------------------|-----------------|----------|
| LNP Services          | 6 Downloaded    | 0 errors |
| NPA Splits            | 1 Downloaded    | 0 errors |
| Number Pool Blocks    | 2 Downloaded    | 0 errors |
| Subscription Versions | 1004 Downloaded | 0 errors |
| Default GTTs          | 1 Downloaded    | 0 errors |
| Override GTTs         | 1 Downloaded    | 0 errors |
| Total                 | 1015 Downloaded | 0 errors |

Re-sync started on Wed Oct 31 15:05:19 GMT 2001

New NE LNP Database Time Stamp: Wed Oct 31 15:05:20 GMT 2001

Re-sync completed on Wed Oct 31 15:05:20 GMT 2001

|                       |              |          |
|-----------------------|--------------|----------|
| NPA Splits            | 0 Downloaded | 0 errors |
| Number Pool Blocks    | 0 Downloaded | 0 errors |
| Subscription Versions | 0 Downloaded | 0 errors |
| Default GTTs          | 0 Downloaded | 0 errors |
| Override GTTs         | 0 Downloaded | 0 errors |
| Total                 | 0 Downloaded | 0 errors |

Discard completed on Wed Oct 31 15:10:55 GMT 2001.

## Bulk Load Error Messages

For a listing of error messages that can appear on the GUI, along with explanation of possible cause and suggested recovery, see Appendix A in the *LNP Database Synchronization Manual - LSMS with EAGLE 5 ISS*.

## Copying One RTDB to Another RTDB

This section describes the procedures for copying an EAGLE LNP Application Processor (ELAP) Real-Time Database (RTDB) from another ELAP RTDB to reload a corrupted or backlevel RTDB. The following types of copy are covered by this section:

- [Copying RTDB from Mated ELAP](#)
- [Copying RTDB from ELAP on Remote Mated NE](#)

**NOTE: For best results, the mated network element should have the same quantities of LNP telephone numbers, LRNs, and NPANXXs provisioned and the same ELAP release level as at the network element the copy is made to. It is possible to copy an RTDB from a mated network element that does not meet these conditions, but doing so should be done under the supervision of Customer Care Center.**

For more information about when to perform the procedures in this section, see Chapter 3 of the *LNP Database Synchronization Manual - LSMS with EAGLE 5 ISS* .

### Copying RTDB from Mated ELAP

An ELAP RTDB can be copied from the RTDB on the mate ELAP.

In order to perform a copy from the RTDB on the mate ELAP, the mate RTDB must be currently synchronized with the LSMS (the EMS status indicator on the LSMS graphical user interface for this network element must be yellow).

This copy is the fastest way to restore an RTDB. The RTDB can be reloaded from the mate in about 9 minutes. Provisioning will be interrupted while the copy occurs.

No user action is required at the LSMS, other than to verify the status of the network element's EMS status indicator.

For instructions on performing this type of RTDB copy, see the [Procedure to Copy an RTDB from the Mate ELAP](#) .

### Copying RTDB from ELAP on Remote Mated NE

An ELAP RTDB can be copied from either ELAP RTDB on the remote mated network element (NE). However, copying from either of the remote mated NE's RTDBs interrupts provisioning on the remote mated network element, so this method should be chosen only when other methods for synchronizing the RTDBs on the local network element are not feasible. For more information about alternate methods, see Chapter 3 of the *LNP Database Synchronization Manual - LSMS with EAGLE 5 ISS*.

**NOTE: For best results, the mated network element should have the same quantities of LNP telephone numbers, LRNs, and NPANXXs provisioned and the same ELAP release level as at the network element the copy is made to. It is possible to copy an RTDB from a mated network element that does not meet these conditions, but doing so should be done under the supervision of Customer Care Center.**

In order to perform a copy from the RTDB on the mated network element, the EMS status indicator on the LSMS graphical user interface for the remote mated network element must be green or yellow, which indicates that one or both of the RTDBs on the remote mated network element is currently synchronized with the LSMS.

The procedure can be used when both local RTDBs need reloading. If at least one of the remote RTDBs is currently synchronized, you can copy a remote RTDB to one of the local RTDBs. This copy may be faster than performing a user-initiated resynchronization or electronic bulk load from the LSMS to the network element that requires restoration, and, depending on the bandwidth of the customer network, may be faster than performing an audit and reconcile from the LSMS. The mate RTDB on the local network element can then be reloaded from the newly reloaded mate in about nine minutes, and then the DSM cards must be rebooted, as described in [Distributing an RTDB LNP Database to DSM Cards](#) .

The time required to accomplish this method depends on the bandwidth of the customer network. For an estimate of the time required, see Appendix D of the *LNP Database Synchronization Manual - LSMS with EAGLE 5 ISS* .

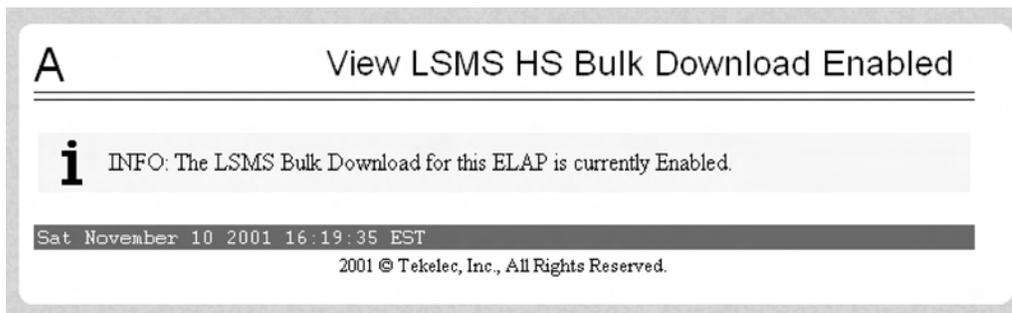
No user action is required at the LSMS, other than to verify the status of the network elements' EMS status indicators.

## Procedure to Copy an RTDB from the Mate ELAP

Use the following procedure to reload a backlevel or corrupted RTDB by copying a currently synchronized RTDB on the mate ELAP. For more information about when to perform this procedure, see [Copying One RTDB to Another RTDB](#) .

1. Open a browser window and connect your web browser to the ELAP graphical user interface (for more information about connecting to the ELAPGUI, refer to the *ELAP Administration Manual*).  
Log in with the user name and password for a user who is authorized to access the menu items shown in this procedure.
2. Verify the status of both RTDBs at this network element, using the procedure described in [Verifying RTDB Status at the Eagle 5 ISS Terminal](#) .  
Determine which RTDB is backlevel or corrupted.
3. Select **Maintenance> LSMSHS Bulk Download> View Enabled** .  
A View LSMS HS Bulk Download Enabled window displays, showing LSMS bulk download enabled.

**Figure 2-71.** View LSMS HS Bulk Download Enabled Window



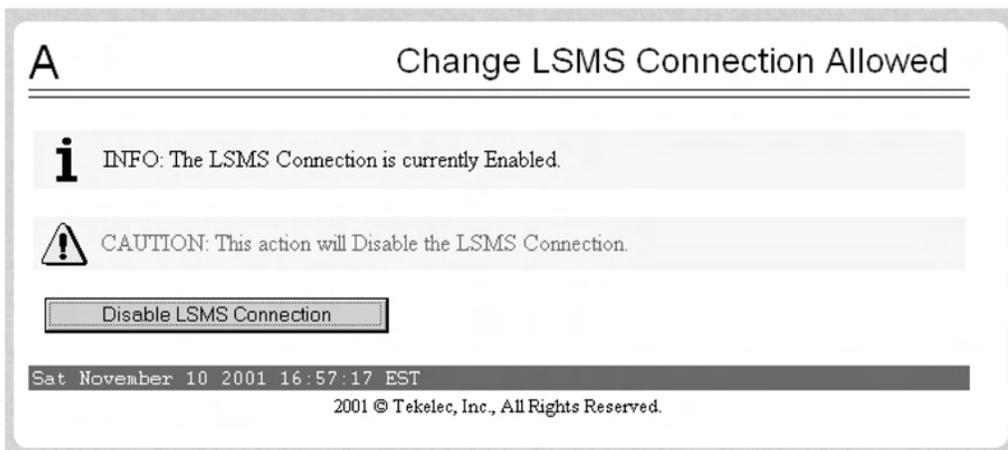
Ensure that the information field shows that the LSMS Bulk Download for this ELAP is currently disabled.

**NOTE: Disabled is the normal setting. If the information field shows that the LSMS Bulk Download for this ELAP is currently enabled, another synchronization operation has not yet been concluded.**

4. Select **Maintenance> LSMS Connection> Change Allowed** .

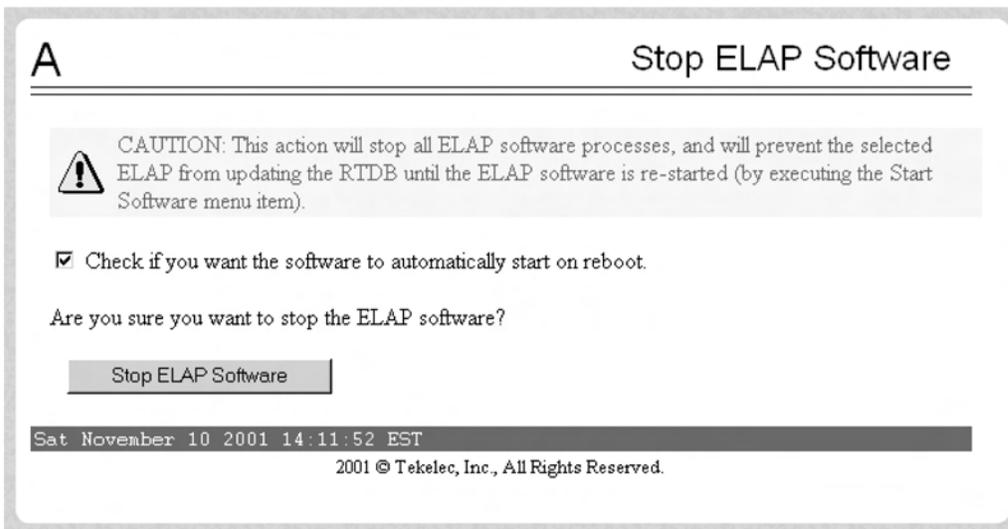
The Change LSMS Connection Allowed window displays, showing LSMS connection enabled.

Figure 2-72. Change LSMS Connection Allowed Window



5. Disable the LSMS Connection
  - If the LSMS connection is already disabled, go to the next step.
  - If the LSMS connection is enabled, click the **Disable LSMS Connection** button.
6. Select **Process Control> Stop Software** .  
The Stop ELAP Software window displays.

Figure 2-73. Stop ELAP Software Window

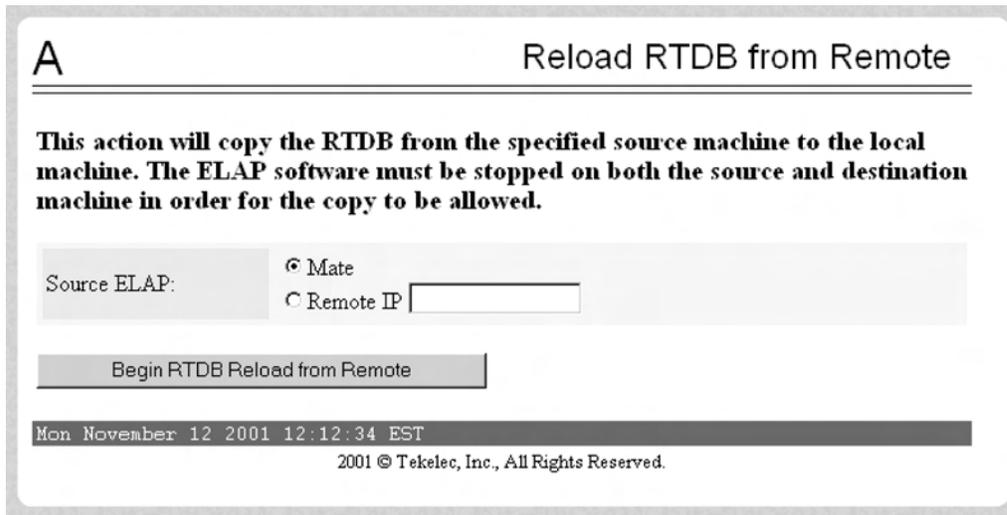


Ensure that the **Check if you want the software to automatically start on reboot** checkbox selected. and click the **Stop ELAP Software** button to confirm that you wish to stop the software.

7. Select **Select Mate**, and repeat steps [Step 3](#) through [Step 5](#) for the other ELAP.
8. Ensure that the ELAP in need of a database restoration is displayed in the window.  
If not, select **Select Mate**.
9. Select **RTDB> Maintenance> Reload from Remote** .

The Reload RTDB from Remote window displays.

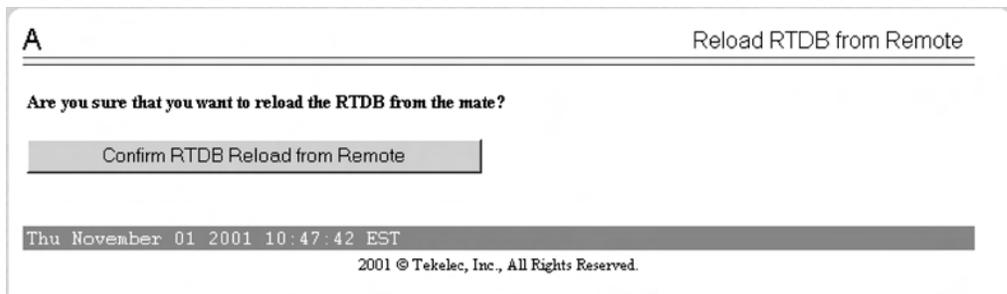
**Figure 2-74.** Reload RTDB from Remote Window



10. Ensure that the radio button labeled **Mate** is selected and click the **Begin RTDB Reload from Remote** button.

The Reload RTDB from Remote window displays.

**Figure 2-75.** Reload RTDB from Remote Window



11. Click the **Confirm RTDB Reload from Remote** button to confirm the reload.

The ELAP software copies the current RTDB to the one that requires restoration. This process requires about 9 minutes.

When the reload begins, the workspace indicates that the reload is in progress, and the banner also displays the status. Messages might appear at the EAGLE 5 ISS terminal indicating that the ELAP software is unavailable for both ELAPs.

When the reload is complete, the Reload RTDB from Remote window displays.

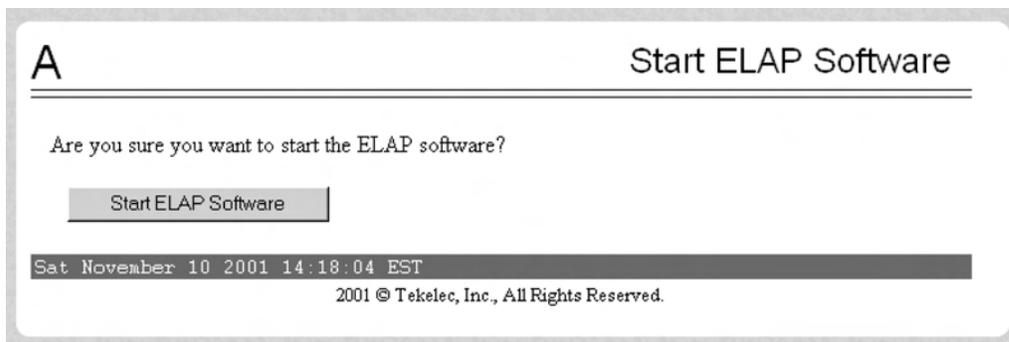
**Figure 2-76.** Reload RTDB from Remote Window



12. Select **Process Control> Start Software** .

The Start ELAP Software window displays.

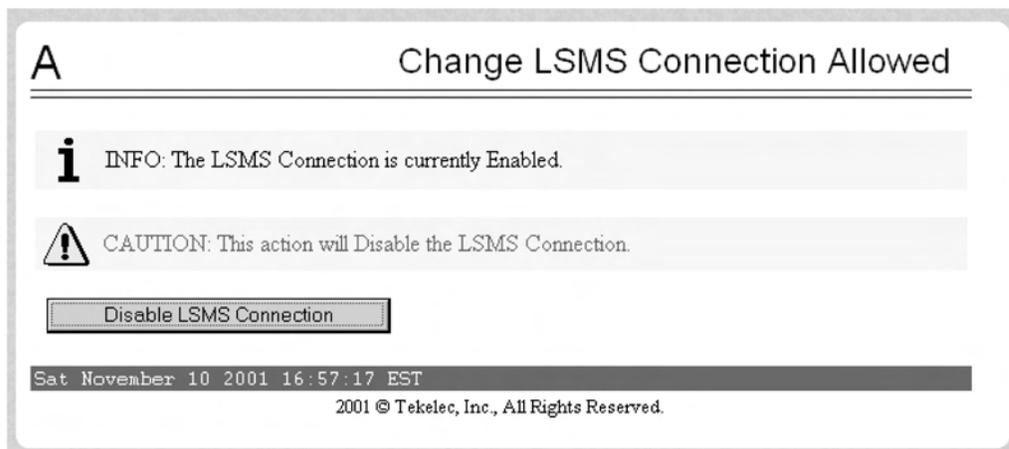
**Figure 2-77.** Start ELAP Software Window



13. Select **Maintenance> LSMS Connection> Change Allowed** .

The Change LSMS Connection Allowed window displays, showing connection enabled.

**Figure 2-78.** Change LSMS Connection Allowed Window



14. Click the **Enable LSMS Connection** button.

When the connection has been enabled, the Change LSMS Connection Allowed window displays, showing connection disabled.

**Figure 2-79.** Change LSMS Connection Allowed Window

15. Select **Select Mate**, and repeat steps [Step 9](#) through [Step 12](#) for the other ELAP.

When the software on both ELAPs has been successfully started, the active ELAP reconnects with the LSMS, which results in an automatic resynchronization. When the automatic resynchronization completes, the EMS status icon, for this network element on the LSMS, returns to green.

If you have performed this procedure by itself (or after you have copied from an RTDB on a remote mated network element), the restoration is complete and normal updates are resumed.

**Next:**

If you want to verify the result of the reload, use [Verifying RTDB Status at the Eagle 5 ISS Terminal](#) to determining the database status.

### Procedure to Copy RTDB from Remote Mated NE

Use the following procedure to reload a backlevel or corrupted RTDB by copying a currently synchronized RTDB on the mated network element. For more information about when to perform this procedure, see [Copying RTDB from ELAP on Remote Mated NE](#) .

In this procedure, the network element requiring restoration of one or both RTDBs is called the local NE, and the ELAP controlling the RTDB requiring restoration is called the local ELAP. The mated network element is called the remote mated NE.



**CAUTION:** Performing this procedure results in temporary loss of provisioning. Do not perform this procedure unless both RTDBs on the local NE require restoration.

1. Ensure that the EMS status indicator for the remote mated network element on the LSMS graphical user interface displays green or yellow, which indicates that at least one RTDB is synchronized or in the process of automatically resynchronizing with the LSMS.
2. Check the banner on both the local ELAP and the mated NEELAP.
  - If the version levels are the same, proceed to the next step.
  - If the version levels are not the same, contact the Customer Care Center.
3. At both the local NE and at the mated NE, enter `rtrv-ctrl-feat`.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
The following features have been permanently enabled:
Feature Name          Partnum  Status  Quantity
IPGWx Signaling TPS   893012814 on      20000
ISUP Normalization    893000201 on      ----
Command Class Management 893005801 off     ----
Intermed GTT Load Sharing 893006901 off     ----
XGTT Table Expansion   893006101 off     ----
XMAP Table Expansion   893007710 on      3000
```

```

Large System # Links      893005910 on      2000
Routesets                893006401 on      6000
LNP ported NPANXXs 893009401 on 300000
LNP ported LRNs 893010505 on 150000
LNP ELAP Configuration   893010901 on      ----
LNP ported TNs 893011010 on 192000000
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.
    
```

4. For all the bolded fields in the **rtrv-ctrl-feat** output, verify that the values at the mated NE are less than or equal to the values at the local NE.
  - If the values for the mated NE are less than or equal to the values for the local NE for all three fields (LNP ported TNs, LNP ported NPANXXs, and LNP ported LRNs), proceed to the next step.
  - If the values for the mated NE are greater than the values for the local NE for any one or more of the three fields (LNP ported TNs, LNP ported NPANXXs, and LNP ported LRNs), contact the Customer Care Center.

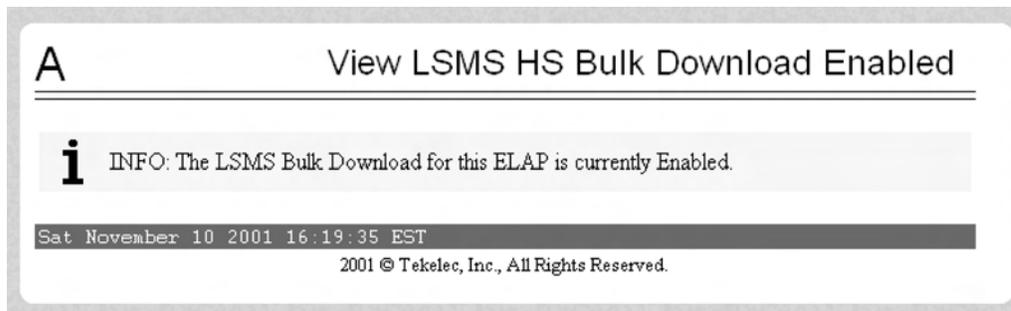
**NOTE: Even if the mated NE supports a higher value for one or more of these fields, it may be possible to copy the RTDB as long as the actual quantity currently stored in the mated NE’s RTDB is less than or equal to the quantity supported by the local NE, but this should be done under the supervision of Customer Care Center.**

5. Open a browser window and connect to the remote mated network element (NE). On the customer (provisioning) network, use the IP address of the standby ELAP on the MPS of the remote mated NE. Log in with the user name and password for a user who is authorized to access the menu items shown in this procedure (for more information about connecting to the ELAPGUI and user authorization, refer to the *ELAP Administration Manual*).
6. Ensure that the ELAP you logged into has Standby status. If you have logged into the active ELAP, select **Select Mate**.

**NOTE: The banner above the menu indicates the whether each ELAP on the remote mated NE has Active or Standby status.**

7. Select **Maintenance> LSMSHS Bulk Download> View Enabled** .  
The View LSMS HS Bulk Download Enabled dialog displays.

**Figure 2-80.** View LSMS HS Bulk Download Enabled Dialog

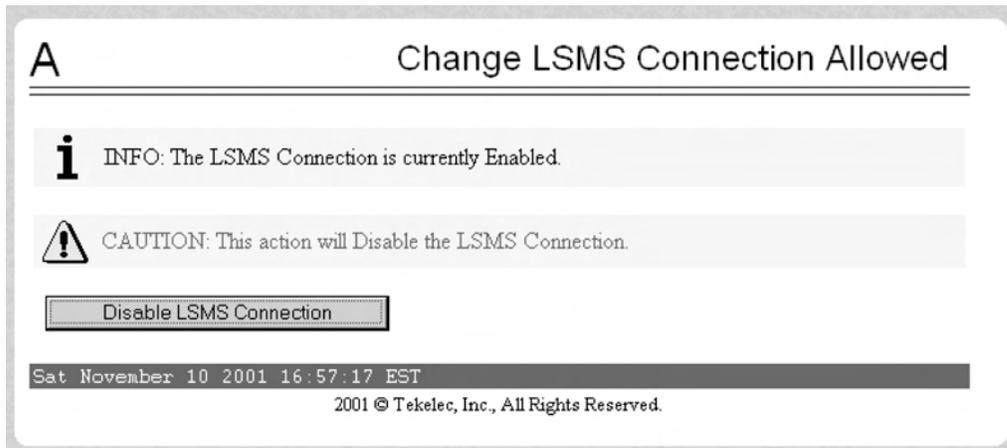


Ensure that the information field shows that the LSMS Bulk Download for this ELAP is currently disabled. If it is currently enabled, select **Maintenance> LSMSHS Bulk Download> Change Enabled** .

8. Select **Maintenance> LSMS Connection> Change Allowed** .

The Change LSMS Connection Allowed dialog displays.

**Figure 2-81.** Change LSMS Connection Allowed Dialog

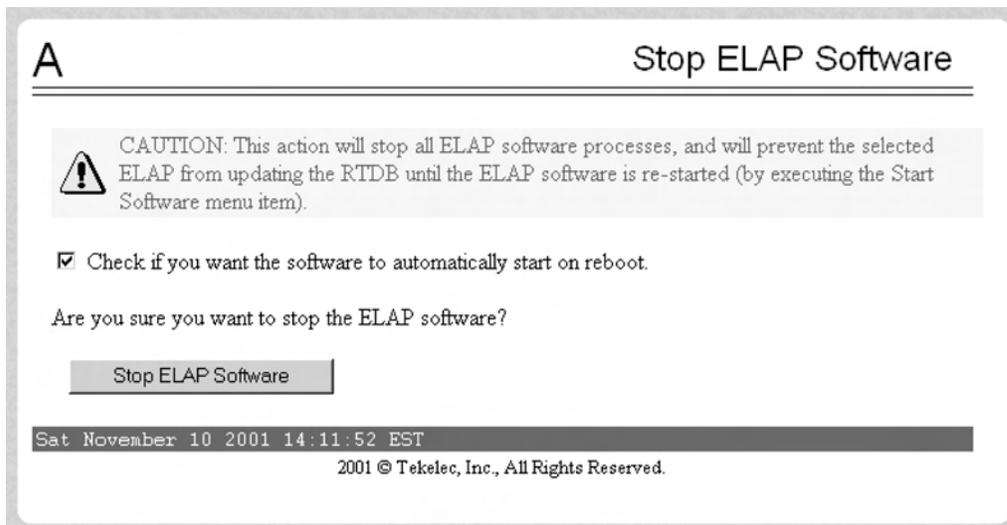


Click the **Disable LSMS Connection** button.

**9. Select Process Control Stop Software.**

The Stop ELAP Software dialog appears.

**Figure 2-82.** Stop ELAP Software Dialog



Ensure that the **Check if you want the software to automatically start on reboot.** checkbox is enabled. Click the **Stop ELAP Software** button to confirm that you wish to stop the software.

**10.** If you are not already connected to the local NE, open another browser window and connect to the remote mated network element (NE). On the customer (provisioning) network, use the IP address of either ELAP on the MPS of the remote mated NE .

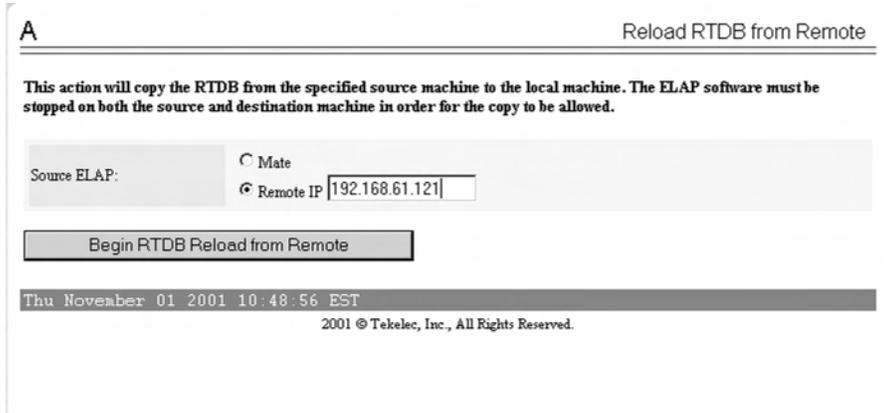
The RTDB on the other ELAP will be restored in [Step 22](#) and [Step 23](#) . Log in with the user name and password for a user who is authorized to access the menu items shown in this procedure.

**11.** Repeat [Step 7](#) , [Step 8](#) , and [Step 9](#) for this ELAP.

12. Select **Select Mate** and repeat steps [Step 7](#) , [Step 8](#) , and [Step 9](#) for the other ELAP.
13. Select **RTDB> Maintenance> Reload from Remote** .

The Reload RTDB from Remote dialog displays.

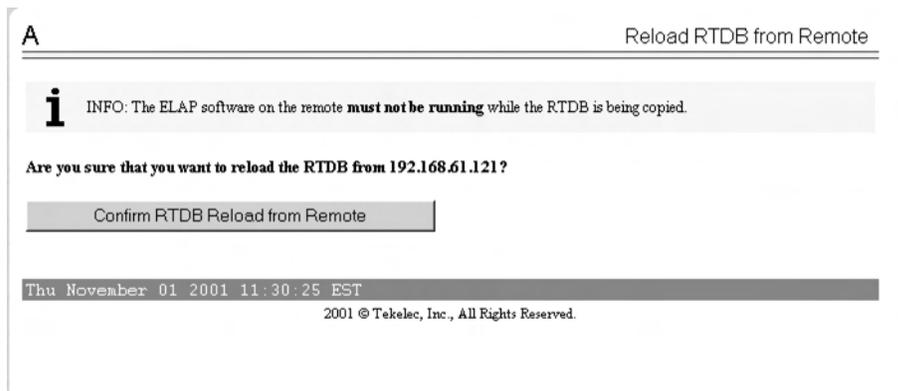
**Figure 2-83.** Reload RTDB from Remote Dialog



14. Ensure that the radio button labeled **Remote IP** is selected. Enter the customer (provisioning) network **IP address** of the standby ELAP on the remote mated network element.
15. Click the **Begin RTDB Reload from Remote** button.

The Reload RTDB from Remote dialog displays, requiring confirmation.

**Figure 2-84.** Reload RTDB from Remote Confirm Dialog

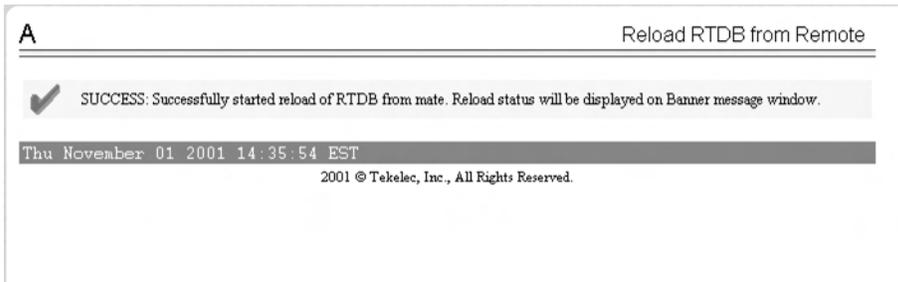


16. Verify that the correct **IP address** is displayed and click the **Confirm RTDB Reload from Remote** button to confirm that you wish to start the reload.

The ELAP software copies the remote mated NE’s standby RTDB to the selected local ELAP’s RTDB. When the reload begins, the workspace indicates that the reload is in progress, and the banner also displays the status. The time required to complete this process depends on the bandwidth of the customer network.

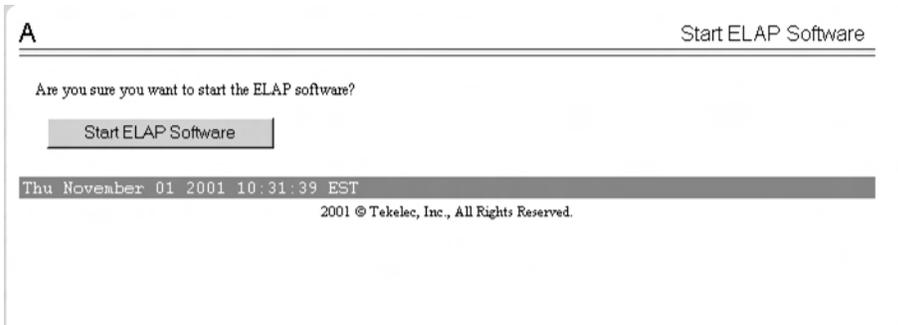
When the reload is complete, the Reload RTDB from Remote dialog displays, showing successful reload start.

**Figure 2-85.** Reload RTDB from Remote Successful Dialog



17. When the reload is complete, select **Process Control> Start Software ..**  
The Start ELAP Software dialog displays, requiring confirmation.

**Figure 2-86.** Start ELAP Software Confirmation Dialog

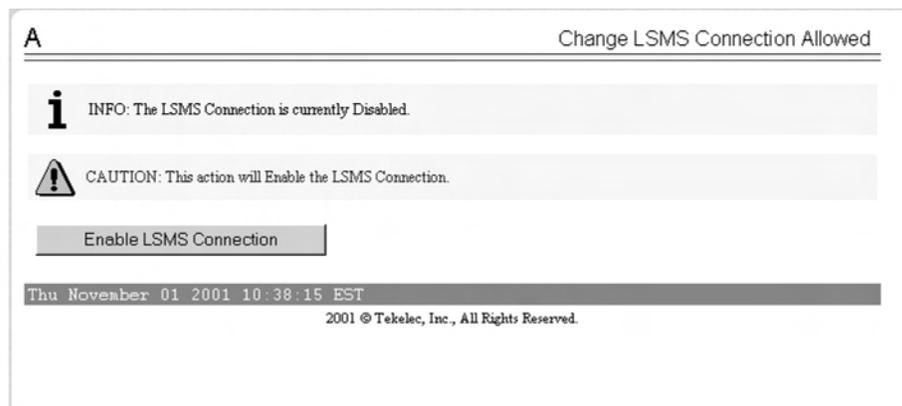


18. Press the **Start ELAP Software** button to confirm that you wish to start the software.  
When the software has started, the Start ELAP Software dialog displays, showing start success.

**Figure 2-87.** Start ELAP Software Success Dialog



19. Select **Maintenance> LSMS Connection> Change Allowed .**  
The Change LSMS Connection Allowed dialog displays, showing LSMS connection disabled.

**Figure 2-88.** Change LSMS Connection Allowed, Connection Disabled Dialog

20. Click the **Enable LSMS Connection** button.

When the connection has been enabled, the Change LSMS Connection Allowed dialog displays, confirming connection success.

**Figure 2-89.** Change LSMS Connection Allowed, Connection Success Dialog

21. Perform the procedure described in [Distributing an RTDB LNP Database to DSM Cards](#) .
22. If both RTDBs on the local ELAP require restoration, ensure that you are logged into the ELAP with the RTDB that has not been restored.
23. On the local ELAP, perform [Copying One RTDB to Another RTDB](#) .  
Start with [Step 8](#) of [Procedure to Copy an RTDB from the Mate ELAP](#) . Ensure that the GUI displays the ELAP with the RTDB that has not been restored. Follow the instructions through the end of the procedure to copy the RTDB from its mate ELAP RTDB.
24. Restart the software and enable the connections to the LSMS. This restoration method is complete and normal updates are resumed.

**Next:** Use the steps in [Verifying RTDB Status at the Eagle 5 ISS Terminal](#) if you want to verify database levels after the reloading is complete.

## Verifying RTDB Status

Before or after executing the Copy One RTDB to Another RTDB procedure, verify the status of the RTDBs using either or both of the following methods:

- [Verifying RTDB Status at the Eagle 5 ISS Terminal](#)

- [Verifying RTDB Status at the ELAP User Interface](#)

## Verifying RTDB Status at the Eagle 5 ISS Terminal

To verify the status of ELAP RTDBs at the EAGLE 5 ISS terminal (view the status of the databases), perform the following procedure.

1. At the EAGLE 5 ISS terminal, enter the `rept-stat-db:db=mps` command.

**NOTE: You can also use the ELAP User Interface to verify RTDB Status.**

A text-based command output displays.

```

          ELAP A ( ACTV )
          C  BIRTHDATE          LEVEL          EXCEPTION
          -  -----
RTDB      Y  00-05-01 10:19:18          17283          - RTDB-EAGLE 00-05-03 16:01:48 17283
          -
          ELAP B ( STDBY )
          C  BIRTHDATE          LEVEL          EXCEPTION
          -  -----
RTDB      Y  00-05-01 10:19:18          17283          - RTDB-EAGLE 00-05-03 16:01:48 17283
          -

```

The command output displays database timestamp (DBTS) of both ELAP RTDBs in the **RTDB-EAGLE** field. The DBTS indicates the last time an update was received by this RTDB from the LSMS. If the two DBTS values are not the same, the RTDB with the lower DBTS may need database maintenance.

## Verifying RTDB Status at the ELAP User Interface

To verify the status of ELAP RTDBs at the ELAP user interface (view the status of the databases), perform the following procedure.

1. Open a browser window and connect your web browser to the ELAP graphical user interface (for more information about connecting to the ELAPGUI, refer to the *ELAP Administration Manual*).  
Log in with the user name and password for a user who is authorized to access the menu items shown in this procedure.

The ELAPGUI Main Menu displays.

For more information about the other areas displayed on ELAPGUI, refer to the *ELAP Administration Manual*.

**Figure 2-90.** ELAP GUI Main Menu



2. Select **RTDB> View RTDB Status**.

The ELAPGUI Local RTDB Status dialog displays the RTDB status.

Figure 2-91. Local RTDB Status

| Local RTDB Status |                                                         |                |                         |
|-------------------|---------------------------------------------------------|----------------|-------------------------|
| DB Status:        | Coherent                                                | Audit Enabled: | Yes                     |
| RTDB Level:       | 8708                                                    | RTDB Birthday: | 09/26/2005 20:44:35 GMT |
| Counts:           | TNs=8708, NPANXXs=778, LRNs=2, SPs=2, MRs=8, MRGroups=2 |                |                         |
| Reload:           | None                                                    |                |                         |

| Mate RTDB Status |                                                         |                |                         |
|------------------|---------------------------------------------------------|----------------|-------------------------|
| DB Status:       | Coherent                                                | Audit Enabled: | Yes                     |
| RTDB Level:      | 8708                                                    | RTDB Birthday: | 09/26/2005 20:44:44 GMT |
| Counts:          | TNs=8708, NPANXXs=778, LRNs=2, SPs=2, MRs=8, MRGroups=2 |                |                         |
| Reload:          | None                                                    |                |                         |

Note the values displayed for DB Level and DB Birthday for both the local RTDB and the mate RTDB.

3. To verify that both RTDBs are ready for normal service, ensure that:
  - The status for both RTDBs displays
  - Both RTDBs are coherent
  - Both RTDBs have the same birthday
  - Both RTDBs have the same level (if provisioning is occurring, the levels might be different by a very small number)

**NOTE:** If you are not sure how to interpret the status of the RTDBs, contact the Customer Care Center.

You have now completed this procedure.

## Activating the LNP Feature on the EAGLE 5 ISS

The LNP feature is activated with the `enable-ctrl-feat` command specifying the feature access key and part number of the desired LNP telephone number quantity. The assigned quantity can be verified with the `rtrv-ctrl-feat` command.



**CAUTION:** Before performing this procedure, verify the number of SCCP cards in the EAGLE 5 ISS by entering the `rept-stat-sccp` command. The number of SCCP cards is shown in the `SCCP Cards Configured` field of the `rept-stat-sccp` output. If the number of SCCP cards is 26 to 32, the LNP feature cannot be enabled. If the LNP feature is enabled, the maximum number of SCCP cards the EAGLE 5 ISS can have is 25. To enable the LNP feature, perform the [Removing an SCCP Card](#) procedure to reduce the number of SCCP cards to 25 or less. Total GTT capacity for the EAGLE 5 ISS will be reduced to a maximum of 40,800 transactions per second by removing SCCP cards in order to enable the LNP feature.

Before the LNP feature can be activated, or before the quantity of LNP telephone numbers can be increased, DSM cards running the VSCCP application with the correct amount of memory must be configured in the EAGLE 5 ISS. See [Table 2-1](#) for the DSM card requirements. For more information on the DSM card, go to the *Hardware Manual - EAGLE 5 ISS*. [Table 2-1](#) also contains the part numbers of the LNP telephone quantities that are specified with the `enable-ctrl-feat` command.

**NOTE: If the EAGLE 5 ISS contains any E5-SM4G cards, LNP telephone number quantities greater than 192 million LNP telephone numbers cannot be enabled.**

The feature access key is based on the feature part number and the serial number of the EAGLE 5 ISS, making the feature access key site-specific.

The `enable-ctrl-feat` command enables the LNP telephone number quantity by inputting the feature access key and the part number corresponding to the desired LNP telephone number quantity with these parameters:

**:fak**

The feature access key provided by Tekelec. The feature access key contains 13 alphanumeric characters and is not case sensitive.

**:partnum**

The Tekelec-issued part number associated with the LNP telephone number quantity, without the dashes. See [Table 2-1](#).

The `enable-ctrl-feat` command requires a valid serial number for the EAGLE 5 ISS is configured in the database, 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).**

The LNP ELAP Configuration feature must be enabled and turned on before the LNP telephone number quantity can be enabled.

The LNP ELAP Configuration feature is enabled with the `enable-ctrl-feat` command, and turned on with the `chg-ctrl-feat` command. The `chg-ctrl-feat` command uses these parameters:

**:partnum**

The Tekelec-issued part number specified in the `enable-ctrl-feat` command. The part number for the LNP ELAP Configuration feature is 893010901.

**:status=on**

Enables the LNP ELAP Configuration feature on.

**NOTE 2: Once the LNP feature is enabled for a specific quantity with the `enable-ctrl-feat` command, that quantity cannot be reduced. The LNP and LNP ELAP Configuration features cannot be disabled, and cannot be enabled with the temporary feature access key. The `chg-ctrl-feat` command cannot be specified for an LNP telephone number quantity. The LNP telephone number quantity and the LNP ELAP Configuration feature must be purchased before you can enable that quantity or the LNP ELAP Configuration feature with the `enable-ctrl-feat` command. If you are not sure if you have purchased**



```
FD BKUP Y 106 05-03-01 16:07:48 GMT Y 106 05-03-01 16:07:48 GMT
FD CRNT Y 106 Y 106
MDAL 1117
- - - - -
RD BKUP Y 106 05-02-28 16:07:48 GMT
```

- If the databases are not coherent after steps 2 and 3 are performed, stop performing this procedure and contact the Customer Care Center.
- If the databases are coherent after steps 2 and 3 are performed, remove the removable cartridge from the removable cartridge drive and store the removable cartridge in a secure place.

5. Display a summary report of all of the device trouble notifications in the EAGLE 5 ISS by entering the **rept-stat-trbl** command.

```
rlghncxa03w 07-08-01 16:07:48 GMT EAGLE5 37.0.0
SEQN UAM AL DEVICE ELEMENT TROUBLE TEXT
3540.0203 ** SLK 1201,A lsn1 REPT-LKF: lost data
3541.0203 ** SLK 1201,B lsn4 REPT-LKF: lost data
3542.0203 ** SLK 1202,A lsn2 REPT-LKF: lost data
3543.0203 ** SLK 1202,B lsn4 REPT-LKF: lost data
3544.0202 ** SLK 1203,A lsn3 REPT-LKF: HWP - too many link interrupts
3545.0202 ** SLK 1203,A1 lsn4 REPT-LKF: HWP - too many link interrupts
3545.0202 ** SLK 1203,B2 lsn4 REPT-LKF: HWP - too many link interrupts
0021.0318I** LSN lsn1 REPT-LKSTO: link set prohibited
0022.0318 ** LSN lsn2 REPT-LKSTO: link set prohibited
0023.0318 ** LSN lsn3 REPT-LKSTO: link set prohibited
0010.0318 ** LSN lsn4 REPT-LKSTO: link set prohibited
0029.0308 *C SYSTEM Node isolated due to SLK failures
```

If any alarms are shown in the **rept-stat-trbl** output, stop performing this procedure and contact the Customer Care Center.

6. Display the status of the cards in the EAGLE 5 ISS by entering the **rept-stat-card** command.

```
rlghncxa03w 07-08-01 12:57:21 GMT EAGLE5 37.0.0
CARD VERSION TYPE APPL PST SST AST
1102 123-001-000 TSM GLS IS-NR Active -----
1113 123-002-000 GPSM EOAM IS-NR Active -----
1114 ----- TDM ----- IS-NR Active -----
1115 ----- GPSM EOAM IS-NR Active -----
1116 ----- TDM ----- IS-NR Active -----
1117 ----- MDAL ----- IS-NR Active -----
1201 123-002-000 LIMDS0 SS7ANSI IS-NR Active -----
1203 123-002-000 LIMDS0 SS7ANSI IS-NR Active -----
1207 123-001-000 LIMV35 SS7GX25 IS-NR Active -----
1208 123-001-000 LIMV35 SS7GX25 IS-NR Active -----
1301 123-001-000 DSM VS CCP IS-NR Active -----
1303 123-001-000 DSM VS CCP IS-NR Active -----
1305 123-002-000 DSM VS CCP IS-NR Active -----
1307 123-001-000 DSM VS CCP IS-NR Active -----
1311 123-001-000 DSM VS CCP IS-NR Active -----
1313 123-001-000 LIMDS0 SS7ANSI IS-NR Active -----
1314 123-001-000 LIMDS0 SS7ANSI IS-NR Active -----
1317 123-001-000 ACMENET STPLAN IS-NR Active -----
```

If the status of any of the cards shown in the **rept-stat-card** output is not IS-NR, stop performing this procedure and contact the Customer Care Center.

7. Display the status of the SCCP cards by entering the **rept-stat-sccp** command.

```
rlghncxa03w 07-08-01 09:12:36 GMT EAGLE5 37.0.0
CARD VERSION PST SST AST MSU CPU
USG USG
-----
1301 123-002-001 IS-NR Active ----- 33% 46%
1303 123-002-001 IS-NR Active ----- 34% 50%
```

```

1305 123-002-001 IS-NR Active ----- 21% 29%
1307 123-002-001 IS-NR Active ----- 35% 52%
1311 123-002-001 IS-NR Active ----- 15% 20%
-----
SCCP Service Average MSU Capacity = 28% Average CPU Capacity = 40%
Command Completed.
    
```

**NOTE 1:** The `rept-stat-sccp` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rept-stat-sccp` command, see the `rept-stat-sccp` command description in the *EAGLE 5 ISS Commands Manual*.

**NOTE:** If the `rtrv-ctrl-feat` output ([Substep a](#) in the [Activating the LNP Feature Overview](#)) shows any control features, skip steps 8 through 11, and go to [Step 12](#). If the `rtrv-ctrl-feat` output shows only the IPGWx Signaling TPS feature with a quantity of 200 and the HC-MIM SLK Capacity feature with a quantity of 64, steps 8 through 11 must be performed.

8. Display the serial number in the database with the `rtrv-serial-num` command.

```

rlghncxa03w 07-08-01 21:15:37 GMT EAGLE5 37.0.0
System serial number = ntxxxxxxxxxxxxxxxx

System serial number is not locked.

rlghncxa03w 07-08-01 21:15:37 GMT EAGLE5 37.0.0
Command Completed
    
```

**NOTE:** If the serial number is correct and locked, skip steps 9, 10, and 11, and go to step 12. If the serial number is correct but not locked, skip steps 9 and 10, and go to step 11. If the serial number is not correct, but is locked, the LNP ELAP Configuration 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. The serial number can be found on a label affixed to the control shelf (shelf 1100).

9. Enter the correct serial number into the database using the `ent-serial-num` command with the `serial` parameter.

**ent-serial-num:serial=<EAGLE 5 ISS's correct serial number>**

```

rlghncxa03w 07-08-28 21:15:37 GMT EAGLE5 37.0.0
ENT-SERIAL-NUM: MASP A - COMPLTD
    
```

10. Verify that the serial number entered into step 9 was entered correctly using the `rtrv-serial-num` command.

```

rlghncxa03w 07-08-28 21:15:37 GMT EAGLE5 37.0.0
System serial number = nt00001231
System serial number is not locked.
rlghncxa03w 07-08-28 21:15:37 GMT EAGLE5 37.0.0
Command Completed
    
```

If the serial number was not entered correctly, repeat steps 9 and 10 and re-enter the correct serial number.

11. Lock the serial number in the database by entering the `ent-serial-num` command with the `lock=yes` parameter.

- Use the serial number shown in step 8, if the serial number shown in step 8 is correct.
- Use the serial number shown in step 10, if the serial number was changed in step 9.

**ent-serial-num:serial=<EAGLE 5 ISS's serial number>:lock=yes**

```

rlghncxa03w 07-08-28 21:15:37 GMT EAGLE5 37.0.0
ENT-SERIAL-NUM: MASP A - COMPLTD
    
```

**NOTE 1:** If the `rtrv-ctrl-feat` output ( [Substep a](#) in the [Activating the LNP Feature Overview](#) ) shows the LNP ELAP Configuration feature is enabled and on, skip [Step 12](#) , [Step 13](#) and [Step 14](#) , and go to [Step 15](#) .

**NOTE:** If the LNP ELAP Configuration feature is enabled and but not on, skip this step and go to [Step 13](#) .

12. Enable the LNPELAP Configuration feature by entering this command.

```
enable-ctrl-feat:partnum=893010901:fak=<LNPELAP Configuration feature access key>
```

```
rlghncxa03w 07-08-01 21:15:37 GMT EAGLE5 37.0.0
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

**NOTE:** The feature access key is provided by Tekelec. If you do not have the LNP ELAP Configuration feature access key, contact your Tekelec Sales Representative or Account Representative.

When the `enable-ctrl-feat` command has successfully completed, a text-based output displays.

13. Turn the LNPELAP Configuration feature on by entering this command .

```
chg-ctrl-feat:partnum=893010901:status=on
```

When the `chg-ctrl-feat` command has successfully completed, a text-based output displays.

```
rlghncxa03w 07-08-01 21:15:37 GMT EAGLE5 37.0.0
CHG-CTRL-FEAT: MASP B - COMPLTD
```

14. Verify the changes by entering the `rtrv-ctrl-feat` command.

```
rtrv-ctrl-feat:partnum=893010901
```

```
rlghncxa03w 07-08-01 21:16:37 GMT EAGLE5 37.0.0
The following features have been permanently enabled:
Feature Name          Partnum   Status   Quantity
LNP ELAP Configuration 893011012 on      ----
```

15. Enable the LNP telephone number quantity using the `enable-ctrl-feat` command with the part number of the desired quantity (shown in [Table 2-1](#) in [Introduction](#) ) and the feature access key for that quantity.

```
enable-ctrl-feat:partnum=893011012:fak=<LNP telephone number quantity feature access key>
```

```
rlghncxa03w 07-08-01 21:15:37 GMT EAGLE5 37.0.0
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

**NOTE 1:** Make sure that the LNP telephone number quantity configured in this step is greater than the ELAP telephone number quantity. The ELAP telephone number quantity can be verified by performing the [Verifying RTDB Status at the ELAP User Interface](#) procedure. If the telephone number quantity on the ELAP is greater than the LNP telephone number quantity configured in this step, the ELAP RTDB is not loaded onto the entire set of DSM cards on the EAGLE 5 ISS. Some of the DSM cards load the ELAP RTDB to provide a restricted level of GTT/LNP service. The remainder of the DSM cards are put into a restricted state. UIM 1323 is generated at the EAGLE 5 ISS.

**NOTE:** The feature access key is provided by Tekelec. If you do not have the feature access key for the desired LNP telephone number quantity, contact your Tekelec Sales Representative or Account Representative.

16. Verify the changes by entering the `rtrv-ctrl-feat` command with the part number specified in [Step 15](#) .

```
rtrv-ctrl-feat:partnum=893011012
```

```
rlghncxa03w 07-08-01 21:16:37 GMT EAGLE5 37.0.0
The following features have been permanently enabled:
Feature Name          Partnum      Status      Quantity
LNP TNS                893011012   on          96000000
```

- Verify the changes to the SCCP card by entering the **rept-stat-sccp** command.

```
rlghncxa03w 07-08-01 09:12:36 GMT EAGLE5 37.0.0
CARD  VERSION      PST          SST          AST          MSU  CPU
      USAGE      USAGE
-----
1301  123-002-001  IS-NR          Active      DB_DIFF      33%  46%
1303  123-002-001  IS-NR          Active      DB_DIFF      34%  50%
1305  123-002-001  IS-NR          Active      DB_DIFF      21%  29%
1307  123-002-001  IS-NR          Active      DB_DIFF      35%  52%
1311  123-002-001  IS-NR          Active      -----      15%  20%
-----
SCCP Service Average MSU Capacity = 28% Average CPU Capacity = 40%
Command Completed.
```

In the **rept-stat-sccp** output, the primary state (**PST**) of the card should be **IS-NR**, and dashes should be shown in the **AST** column.

**NOTE: The **rept-stat-sccp** command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the **rept-stat-sccp** command, see the **rept-stat-sccp** command description in the *EAGLE 5 ISS Commands Manual*.**

- Display a summary report of all of the device trouble notifications in the EAGLE 5 ISS by entering the **rept-stat-trbl** command.

```
rlghncxa03w 07-08-01 16:07:48 GMT EAGLE5 37.0.0
SEQN UAM  AL  DEVICE      ELEMENT      TROUBLE TEXT
3540.0203 ** SLK 1201,A  lsn1        REPT-LKF: lost data
3541.0203 ** SLK 1201,B  lsn4        REPT-LKF: lost data
3542.0203 ** SLK 1202,A  lsn2        REPT-LKF: lost data
3543.0203 ** SLK 1202,B  lsn4        REPT-LKF: lost data
3544.0202 ** SLK 1203,A  lsn3        REPT-LKF: HWP - too many link interrupts
3545.0202 ** SLK 1203,A1 lsn4        REPT-LKF: HWP - too many link interrupts
3545.0202 ** SLK 1203,B2 lsnname489 REPT-LKF: HWP - too many link interrupts
0021.0318I** LSN lsn1        REPT-LKSTO: link set prohibited
0022.0318 ** LSN lsn2        REPT-LKSTO: link set prohibited
0023.0318 ** LSN lsn3        REPT-LKSTO: link set prohibited
0010.0318 ** LSN lsn4        REPT-LKSTO: link set prohibited
0029.0308 *C SYSTEM          Node isolated due to SLK failures
```

If any alarms are shown in the **rept-stat-trbl** output, stop performing this procedure and contact the Customer Care Center.

- Display the overall status of the ELAP subsystem running on the MPS (Multi-Purpose Server) by entering the **rept-stat-mps** command.

```
rlghncxa03w 07-08-01 10:23:93 GMT EAGLE5 37.0.0
      VERSION      PST          SST          AST
ELAP A  030-014-000  IS-NR          Active      -----
  CRITICAL PLATFORM  ALARM DATA = No Alarms
  MAJOR    PLATFORM  ALARM DATA = No Alarms
  MINOR    PLATFORM  ALARM DATA = No Alarms
  CRITICAL APPLICATION ALARM DATA = No Alarms
  MAJOR    APPLICATION ALARM DATA = No Alarms
  MINOR    APPLICATION ALARM DATA = No Alarms
  ALARM STATUS = No Alarms
      VERSION      PST          SST          AST
ELAP B  030-014-000  IS-NR          Standby     -----
  CRITICAL PLATFORM  ALARM DATA = No Alarms
  MAJOR    PLATFORM  ALARM DATA = No Alarms
  MINOR    PLATFORM  ALARM DATA = No Alarms
```

```

CRITICAL APPLICATION ALARM DATA = No Alarms
MAJOR     APPLICATION ALARM DATA = No Alarms
MINOR     APPLICATION ALARM DATA = No Alarms
ALARM STATUS = No Alarms
CARD  PST      SST      LNP STAT
1301 P IS-NR    Active   ACT
1303 IS-NR     Active   ACT
1305 IS-NR     Active   ACT
1307 IS-NR     Active   ACT
1311 IS-NR     Active   ACT
CARD 1301 ALARM STATUS = No Alarms
      DSM PORT A:      ALARM STATUS      = No Alarms
      DSM PORT B:      ALARM STATUS      = No Alarms
CARD 1303 ALARM STATUS = No Alarms
      DSM PORT A:      ALARM STATUS      = No Alarms
      DSM PORT B:      ALARM STATUS      = No Alarms
CARD 1305 ALARM STATUS = No Alarms
      DSM PORT A:      ALARM STATUS      = No Alarms
      DSM PORT B:      ALARM STATUS      = No Alarms
CARD 1307 ALARM STATUS = No Alarms
      DSM PORT A:      ALARM STATUS      = No Alarms
      DSM PORT B:      ALARM STATUS      = No Alarms
CARD 1311 ALARM STATUS = No Alarms
      DSM PORT A:      ALARM STATUS      = No Alarms
      DSM PORT B:      ALARM STATUS      = No Alarms
Command Completed.
    
```

If any alarms are shown in the **rept-stat-mps** output, stop performing this procedure and contact the Customer Care Center.

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

A text-based output is displayed. 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.
    
```

**21. Display the status of the databases with the `rept-stat-db` command.**

```

rlghncxa03w 07-08-01 16:07:48 GMT EAGLE5 37.0.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( STDBY )
      C LEVEL      TIME LAST BACKUP
      - - - - -
FD BKUP  Y      35 05-03-01 15:19:18 GMT
FD CRNT  Y      106
      MDAL 1117
      - - - - -
RD BKUP  -      -      -      -
      ELAP A ( ACTV )
      C BIRTHDATE      LEVEL      EXCEPTION
      - - - - -
RTDB-EAGLE  Y 05-03-01 15:19:18      0      -
TIME LAST UPDATE 05-03-01 15:19:18
      ELAP B ( STDBY )
      C BIRTHDATE      LEVEL      EXCEPTION
      - - - - -
RTDB-EAGLE  Y 05-03-01 15:19:18      0      -
TIME LAST UPDATE 05-03-01 15:19:18
    
```

If the databases are not coherent, or if ELAP A and B do not have the same birthdate, contact the Customer Care Center. If the databases are coherent, and if ELAP A and B have the same birthdate, this procedure is finished.

You have completed this procedure.

## Distributing the LNP Database after LSMS-Based Operation or RTDB Copy

The network element has multiple copies of the LNP database. Synchronization operations are performed on one database. After an RTDB copy or a synchronization operation initiated from the LSMS GUI, the remaining NE LNP databases must be synchronized with the newly synchronized NE database in one of the following ways:

- Automatic Data Distribution

After the following LNP database synchronization operations, data is distributed automatically from the network element's newly synchronized LNP database to all other LNP databases at the network element:

- Automatic resynchronization (see “Automatic Resynchronization Process” in the *LNP Database Synchronization Manual - LSMS with EAGLE 5 ISS*)
- Reconcile (see “Audit and Reconcile Overview” in the *LNP Database Synchronization Manual - LSMS with EAGLE 5 ISS*)

- Network Element Database is not Required after Copying an RTDB from its Mate ELAP

If network element's database synchronization is accomplished only by copying an RTDB from its mate ELAP's RTDB (but not when copying from the mate RTDB is performed after copying an RTDB from the remote mated network element or after a user-initiated resynchronization or bulk load from the LSMS), it is not necessary to distribute the data to the DSM cards because they are already synchronized with the RTDB that was used to restore from. Therefore, after the copy, the DSM cards are now synchronized with both RTDBs.

- Other Network Element Database Distribution

After other LNP database synchronization operations, the network element main LNP database must be distributed by operator intervention to other LNP databases within the network element (both the mate RTDB and the DSM cards). See [Distributing an RTDB LNP Database to DSM Cards](#) .

### Distributing an RTDB LNP Database to DSM Cards

This section describes how to distribute the LNP database to the DSM cards after the RTDB has been updated by one of the following actions:

- Copied from an RTDB on the mated network element (see [Copying One RTDB to Another RTDB](#) )
- Updated by one of the following operations sent from the LSMS:
  - Resynchronized by user-initiated resynchronization (see “Managing Resynchronization from the LSMS,” in the *LNPDatabase Synchronization Manual - LSMS with EAGLE 5 ISS*)
  - Bulk loaded from the LSMS (see [Bulk Load Procedure](#) )

### Distributing an RTDB LNP Database to DSM cards

Perform the following procedure to distribute the data from the ELAP's LNP database to the DSM cards.

1. Distribute the imported LNP database onto each DSM card, which will also silence the LNP database alarms. Use one of the following methods:

- Load the imported LNP database onto one DSM card at a time by reloading each DSM card.

This method allows the global title translation and LNP functions to continue running while the new LNP database is being loaded. When the DSM card is reinitializing, its database goes temporarily out of service for the period of time that it takes to reload the database on the DSM card. The time required to reload the database depends upon the size of the database and can take as long as 15 minutes for an LNP database containing 2,000,000 LNP subscriptions.

- Load the imported LNP database onto all DSM cards in the EAGLE 5 ISS by reinitializing all the DSM cards at once.



**CAUTION: This method not only loads the imported LNP database onto the DSM cards at the same time, but takes all the DSM cards out of service and the LNP subsystem will be offline. This method should only be used in emergency situations.**

- a. Load the imported LNP database onto one DSM card at a time by reloading each DSM card.

**NOTE: Perform steps [Item 1](#) and [Item 2](#) in this method for each DSM card, one DSM card at a time.**

1. Take the DSM card out of service with the **rmv-card** command specifying the card location of the DSM card. If there is only one DSM card in the EAGLE 5 ISS, the **force=yes** parameter must be specified with the **rmv-card** command.

**rmv-card:loc=1301**

After successful completion of this command, the EAGLE 5 ISS returns a text-based output:

```
rlghncxa03w 06-08-01 11:11:28 GMT EAGLE5 35.1.0
Card has been inhibited.
```

2. Return the DSM card to service with the **rst-card** command with the card location of the DSM card and the option **data=persist** to allow a warm restart if possible. This command validates that the LNP database on the specified DSM card is correct. If the LNP database is correct, no further loading is required. If the LNP database is not correct, it is automatically reloaded from the RTDB; loading may require up to an hour.

**rst-card:loc=1301:data=persist**

After successful completion of this command, the EAGLE 5 ISS returns a text-based output:

```
rlghncxa03w 06-08-01 11:11:28 GMT EAGLE5 35.1.0
Card has been allowed.
```

3. When the DSM card is returned to service, the major alarm is silenced and UAM 0431, **LNP database has been corrected**, is generated.

```
rlghncxa03w 06-08-01 11:11:28 GMT EAGLE5 35.1.0
0012.0431 CARD 1301 SCCP LNP database has been corrected
```

4. Repeat [Item 1](#) and [Item 2](#) for the other DSM cards in the EAGLE 5 ISS.

If any of the DSM cards continue to boot, contact the Customer Care Center.

- b. Load the imported LNP database onto all DSM cards in the EAGLE 5 ISS by reinitializing all the DSM cards at once by entering the following command:

```
init-card:appl=vsccp
```



**CAUTION:** This command initializes all the DSM cards at once and not only loads the imported LNP database onto the DSM cards at the same time, but takes all the DSM cards out of service and the LNP subsystem will be offline. This method should only be used in emergency situations.

**NOTE:** A more graceful way of initializing the DSM cards is to reroute all global title translation traffic, including LNP traffic, to the mate network element using the `inh-map-ss` command. The `inh-map-ss` command takes the mated application subsystem out of service. When the mated application subsystem is out of service, all global title translation traffic, including LNP traffic, is rerouted to the mate network element.

The mated application subsystem must be inhibited with the `inh-map-ss` command before the DSM cards are reinitialized with the `init-card:appl=vds` command. After the `init-card:appl=vds` command has finished executing and all the DSM cards have reinitialized, return the mated application subsystem to service with the `alw-map-ss` command.

When the imported database has been loaded onto each DSM card, UAM 0431 is displayed for each DSM card showing that the UAM 0429 has been cleared and the database on the DSM card matches the database on the MASPs. This is an example of UAM 0431.

```
rlghncxa03w 06-08-01 11:11:28 GMT EAGLE5 35.1.0
0012.0431 CARD 1301 SCCP LNP database has been corrected
```

If any of the DSM cards continue to boot, contact the Customer Care Center.

2. Verify that the DSM cards are in-service by entering the `rept-stat-sccp` command.

```
rlghncxa03w 06-08-01 09:12:36 GMT EAGLE5 35.1.0
CARD   VERSION   PST           SST           AST           MSU   CPU
                USAGE        USAGE
-----
1301   123-002-001  IS-NR        Active        -----      33%   46%
1303   123-002-001  IS-NR        Active        -----      34%   50%
1305   123-002-001  IS-NR        Active        -----      21%   29%
1307   123-002-001  IS-NR        Active        -----      35%   52%
1311   123-002-001  IS-NR        Active        -----      15%   20%
-----
SCCP Service Average MSU Capacity = 28% Average CPU Capacity = 40%
Command Completed.
```

The state of the DSM cards, shown in the `PST` field of the `rept-stat-sccp` command output, should be `IS-NR` (in-service normal).

If the state of any DSM cards is not `IS-NR`, contact the Customer Care Center department.

**NOTE:** The `rept-stat-sccp` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rept-stat-sccp` command, see the `rept-stat-sccp` command description in the *EAGLE 5 ISS Commands Manual*.

You have now completed this procedure.

## Disabling Bulk Load

If you have distributed a restored the RTDB LNP data to the DSM cards (as described in [Distributing an RTDB LNP Database to DSM Cards](#) ) after an LSMS-initiated procedure, perform the following procedure.

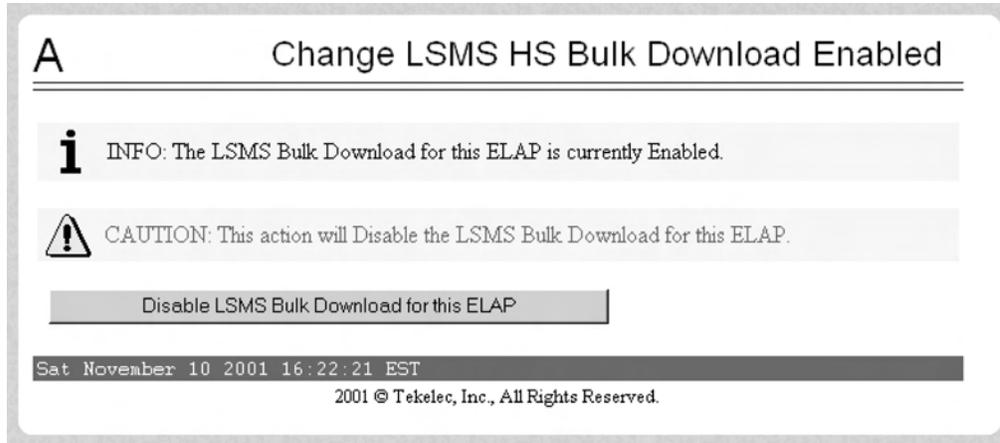
1. If you do not already have a browser window connected to the ELAP, open a browser window and connect your web browser to the ELAP graphical user interface (for more information about connecting to the ELAP GUI, refer to the *ELAP Administration Manual*).

Log in with the user name and password of a user who is authorized to access the menu items shown in this procedure.

2. Select **Maintenance> LSMSHS Bulk Download> Change Enabled**.

The Change LSMS HS Bulk Download Enabled dialog displays.

**Figure 2-92.** Change LSMS HS Bulk Download Enabled Dialog



The information field should show that the LSMS Bulk Download for this ELAP is currently enabled.

3. Click the **Disable LSMSHS Bulk Download for this ELAP** button.

You have completed this procedure and the user-initiated resynchronization or bulk load.

## Manually Verifying and Restarting the Eagle Agents on the LSMS

This procedure explains how to verify that an Eagle agent has started on the LSMS. It also explains how to stop and start the agent, using the **eagle** command.

The Eagle Agent application (**eagleagent**) is responsible for:

- Subscribing to the broadcast channels to receive all NPAC and local data updates
- Connecting with a single EAGLE 5 ISS node using the HSOP (High Speed Operations Protocol) protocol and forwarding LNP updates to the EAGLE 5 ISS
- Filtering LNP data based on the provisioned filter information before forwarding it to the EAGLE 5 ISS (for more information, refer to [EMS Routing](#)).
- Performing automatic resynchronization with an EAGLE 5 ISS node upon connection establishment (for more information, refer to the *LNP Database Synchronization Manual - LSMS with EAGLE 5 ISS*)

One instance of the *eagleagent* process exists for each supported EAGLE 5 ISS node.

1. Log into the LSMS as **root** on the active server.
2. Enter the following command to display the status of all LSMS processes: `/opt/TKLCplat/bin/syscheck -v local lsmshc proc_app`

```
Running modules in class lsmshc...
proc_app: --- Checking Processes on Active ---
proc_app: OK Found: 1 Expected: 1 -> Eagle Agent (DOG)
proc_app: OK Found: 1 Expected: 1 -> Eagle Agent (E1080403)
proc_app: OK Found: 1 Expected: 1 -> Eagle Agent (E1091202)
proc_app: OK Found: 1 Expected: 1 -> Eagle Agent (E1091203)
proc_app: OK Found: 1 Expected: 1 -> NPAC Agent (Canada)
proc_app: OK Found: 1 Expected: 1 -> NPAC Agent (MidAtlantic)
proc_app: OK Found: 1 Expected: 1 -> NPAC Agent (Midwest)
proc_app: OK Found: 1 Expected: 1 -> NPAC Agent (Northeast)
proc_app: OK Found: 1 Expected: 1 -> NPAC Agent (Southeast)
proc_app: OK Found: 1 Expected: 1 -> NPAC Agent (Southwest)
proc_app: OK Found: 1 Expected: 1 -> NPAC Agent (WestCoast)
proc_app: OK Found: 1 Expected: 1 -> NPAC Agent (Western)
proc_app: OK Found: 1 Expected: 1 -> MySQL Server process
(safe_mysqld)
proc_app: OK Found: 1 Expected: 1 -> LSMS Local Data Manager
(supman)
proc_app: OK Found: 1 Expected: 1 -> LSMS Local Services Manager
(lsman)
proc_app: OK Found: 1 Expected: 1 -> Logger Daemon (lsmslogd)
proc_app: OK Found: 1 Expected: 1 -> Report Manager (reportman)
proc_app: OK Found: 1 Expected: 1 -> RMTP Agent (rmtpage)
proc_app: OK Found: 1 Expected: 1 -> RMTP Manager (rmtpmgr)
proc_app: OK Found: 1 Expected: 1 -> Service Assurance Agent (sacw)
proc_app: OK Found: 1 Expected: 1 -> Surveillance Agent (survMon)
proc_app: OK Found: 1 Expected: 1 -> Sentry process (sentryd)
proc_app: Return string: "OK"
OK
The log is available at:
-->/opt/TKLCplat/log/syscheck/syscheck-log
```

If a line similar to the one shown in bold above appears for each supported EAGLE 5 ISS node, you have completed the procedure. If, instead, a line similar to the following line appears, one of these processes has failed; perform the remaining steps of this procedure to restart the processes:

```
* proc: FAILURE:: Found: 0 Expected: 1 -> Eagle Agent (STPA)
```

3. Enter the following command to change the login name to **lsmsadm:su - lsmsadm**
4. Start the Eagle agent by entering the following command at the active server, where **<CLLI>** is the Common Language Location Identifier (such as STPA in the example above) for the EAGLE 5 ISS node:  
**\$LSMS\_DIR/install/eagle start <CLLI>**
5. Verify that the Eagle agent has started by repeating step [Step 2](#) .  
If the Eagle agent fails to start, contact the Customer Care Center .

You have now completed this procedure.

## LNP Services Configuration

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### LNP Services Configuration

This chapter contains the procedures for configuring these elements of the LNP feature.

- LNP services
- LNP subsystem applications
- LNP options
- Mapping LNP translation types

- The Triggerless LNP feature
- Increasing the LRN and NPANXX Quantities on the EAGLE 5 ISS
- Activating and Deactivating the LNP Short Message Service (SMS) feature.

## Message Relay Details

Message relay is an enhancement to the existing global title translation feature and performs the following functions.

- Extraction of the 10-digit dialed number from the TCAP portion of the message – If the MSU contains a 6-digit called party address, message relay gets the 10-digit dialed number from the TCAP portion of the MSU.
- Increased number of translations – For each 10-digit dialed number, up to 6 translations are available. The previous limit was 270,000 total translations. The number of dialed numbers that can be entered depends on the hardware, but the minimum hardware configuration supports 500,000 dialed numbers, so 3 million translations can be entered on the minimum hardware configuration. The maximum hardware configuration supports 2 million dialed numbers, so 12 million message relay translations can be entered on the maximum hardware configuration.
- Replacement of the global title address – Message relay provides the option of replacing the global title address in the called party address with the location routing number associated with the ported dialed number.

Message relay is performed in the following stages:

1. The message arrives at the EAGLE 5 ISS route-on-gt. The EAGLE 5 ISS performs 6-digit (NPANXX) translation. The result of this translation indicates if message relay is required. If it is required, the result of this translation also gives the default data that may be used in stage 3.
2. If stage 1 indicates that message relay is required, the EAGLE 5 ISS performs 10-digit message relay. If the 10-digit number is found, the translation data for the 10-digit number is used to route the message.
3. If the 10-digit number is found and the number has an location routing number assigned to it, the EAGLE 5 ISS checks for message relay override data. If there is override data for the location routing number, the EAGLE 5 ISS uses this override data to route the message.
4. If no location routing number is assigned, or the location routing number does not have override data, the EAGLE 5 ISS uses the data assigned to the 10-digit number.
5. If the location routing number has override data but not for the requested translation type or service, and the service portability option is on (shown in the **SERVPORT** field in the LNP options table), then the EAGLE 5 ISS uses the data assigned to the 10-digit number. If the service portability option is not on, then the message is discarded and UIM and UDTS messages are generated.
6. If no data is assigned to the 10-digit number, and the service portability option is on, then the EAGLE 5 ISS uses the default data from stage 1 to route the message. If the service portability option is not on, then the message is discarded and UIM and UDTS messages are generated.
7. If the 10-digit number is not found, the dialed number is not ported, and the default data from stage 1 is used to route the message.

It's possible that message relay is required, but no default data exists for the NPANXX. This is because EAGLE 5 ISS creates an NPANXX entry when the NPAC sends down a ported subscriber record for a nonported NPANXX. Normally, data is provisioned in the following order:

1. The NPANXX default data is entered.
2. The NPANXX is marked as portable (the value of the **mr** parameter is **yes**).
3. The NPAC sends down information for ported subscribers in the portable NPANXX.

However, it is possible that step 3 can occur before step 1. In this case, if a message arrives for the ported subscriber, the EAGLE 5 ISS routes the message according to the subscriber data entered by the NPAC.

1. The 10-digit number is found in the subscription record. The location routing number has a matching entry in the override table. If override data exists for the requested service, the location routing number override global title translation is used. If location routing number override data exists, but not for the requested translation type, and the service portability option is not on, then the result is no translation, the message is discarded, and UIM and UDTS messages are generated. If the service portability option is on, then the NPAC global title translation data is used.
2. The 10-digit number is found in the subscription record. The location routing number does not have a matching entry in the override table. If NPAC global title translation data exists, the NPAC global title translation is used. If NPAC global title translation data does not exist for the 10-digit number, and the service portability option is not on, then the result is no translation, the message is discarded, and UIM and UDTS messages are generated. If the service portability option is on, then the NPANXX global title translation data is used.

If a message arrives for a nonported subscriber in that NPANXX, and normal global title translation information is defined for the message, the message is routed using the normal global title translation data. But if a message arrives for a nonported subscriber in that NPANXX, and no normal global title translation information is defined for the message, the message is discarded, and UIM and UDTS messages are generated.

[Table 3-1](#) shows the result of the 10-digit message relay processing, and the processing required to route a message.

**Table 3-1. LNP Message Relay**

| Ported MR NPANXX                                        | Ported TN | LNP Message Relay Processing                          | NPAC GTT Data for any Service         |
|---------------------------------------------------------|-----------|-------------------------------------------------------|---------------------------------------|
| No                                                      | No        | Nonported subscriber. See <a href="#">Table 3-3</a> . | N/A                                   |
| No (See Note).                                          | Yes       | Ported subscriber.                                    | Yes - See <a href="#">Table 3-2</a> . |
|                                                         |           |                                                       | No - See <a href="#">Table 3-3</a> .  |
| Yes                                                     | No        | Nonported subscriber. See <a href="#">Table 3-3</a> . | N/A                                   |
| Yes                                                     | Yes       | Ported subscriber.                                    | Yes - See <a href="#">Table 3-2</a> . |
|                                                         |           |                                                       | No - See <a href="#">Table 3-3</a> .  |
| Ported MR NPANXX - An MR NPANXX that is marked portable |           |                                                       |                                       |

| Ported MR NPANXX                                                                                                                                                                                                                                                                                                   | Ported TN | LNP Message Relay Processing | NPAC GTT Data for any Service |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------|-------------------------------|
| Ported TN - A subscription record that is found for a 10-digit number, the location routing number is assigned or NPAC global title translation data is defined for service (translation type).<br><br>Note: The EAGLE 5 ISS creates an NPANXX entry, if none exists, when it receives a ported subscriber record. |           |                              |                               |

**Table 3-2** lists possible combinations for NPAC and override global title translation data provisioning, and the resulting action of message relay for ported subscribers. Message relay data exists for the 10-digit number and service.

**Table 3-2. LNP Message Relay - Ported Subscribers**

| TN GTT DATA defined for 10-Digit Number and Service (TT) | LRN Override GTT DATA defined for 10-Digit Number and Service (TT) | LRN Override GTT DATA defined for 10-Digit Number | Service Portability | LNP Message Relay Action                                                                                                |
|----------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------|
| No                                                       | No                                                                 | No<br>See Note 1.                                 | No                  | The message is discarded. The “No Translation Available” UIM and UDTS messages are generated if return on error is set. |
| No                                                       | No                                                                 | No<br>See Note 1.                                 | Yes                 | The message is routed using NPANXX or normal global title translation data. See <a href="#">Table 3-3</a> .             |
| No                                                       | Yes                                                                | N/A                                               | N/A                 | The message is routed using the location routing number override global title translation data.                         |
| No                                                       | N/A                                                                | Yes<br>See Note 2.                                | No                  | The message is discarded. The “No Translation Available” UIM and UDTS messages are generated if return on error set.    |
| No                                                       | N/A                                                                | Yes<br>See Note 2.                                | Yes                 | The message is routed using NPANXX or normal global title translation data. See <a href="#">Table 3-3</a> .             |
| Yes                                                      | No                                                                 | No<br>See Note 1.                                 | N/A                 | The message is routed using the NPAC global title translation data.                                                     |
| Yes                                                      | Yes                                                                | N/A                                               | N/A                 | The message is routed using the location routing number override global title translation data.                         |
| Yes                                                      | N/A                                                                | Yes<br>See Note 2.                                | Yes                 | The message is routed using the NPAC global title translation data.                                                     |
| Yes                                                      | N/A                                                                | Yes<br>See Note 2.                                | No                  | The message is discarded, The “No Translation Available” UIM and UDTS messages are generated if return on error set.    |

Notes:

1. The 10-digit number has a location routing number assigned, but the location routing number has no matching entry in the override table.

| TN GTT DATA defined for 10-Digit Number and Service (TT)                                                                                                    | LRN Override GTT DATA defined for 10-Digit Number and Service (TT) | LRN Override GTT DATA defined for 10-Digit Number | Service Portability | LNP Message Relay Action |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------|---------------------|--------------------------|
| 2. The 10-digit number has a location routing number override global title translation data assigned, but not for the requested service (translation type). |                                                                    |                                                   |                     |                          |

**Table 3-3** lists possible combinations for traditional and LNP default global title translation data provisioning and the resulting action of message relay for nonported subscribers. The message relay data does not exist for the 10-digit number and service.

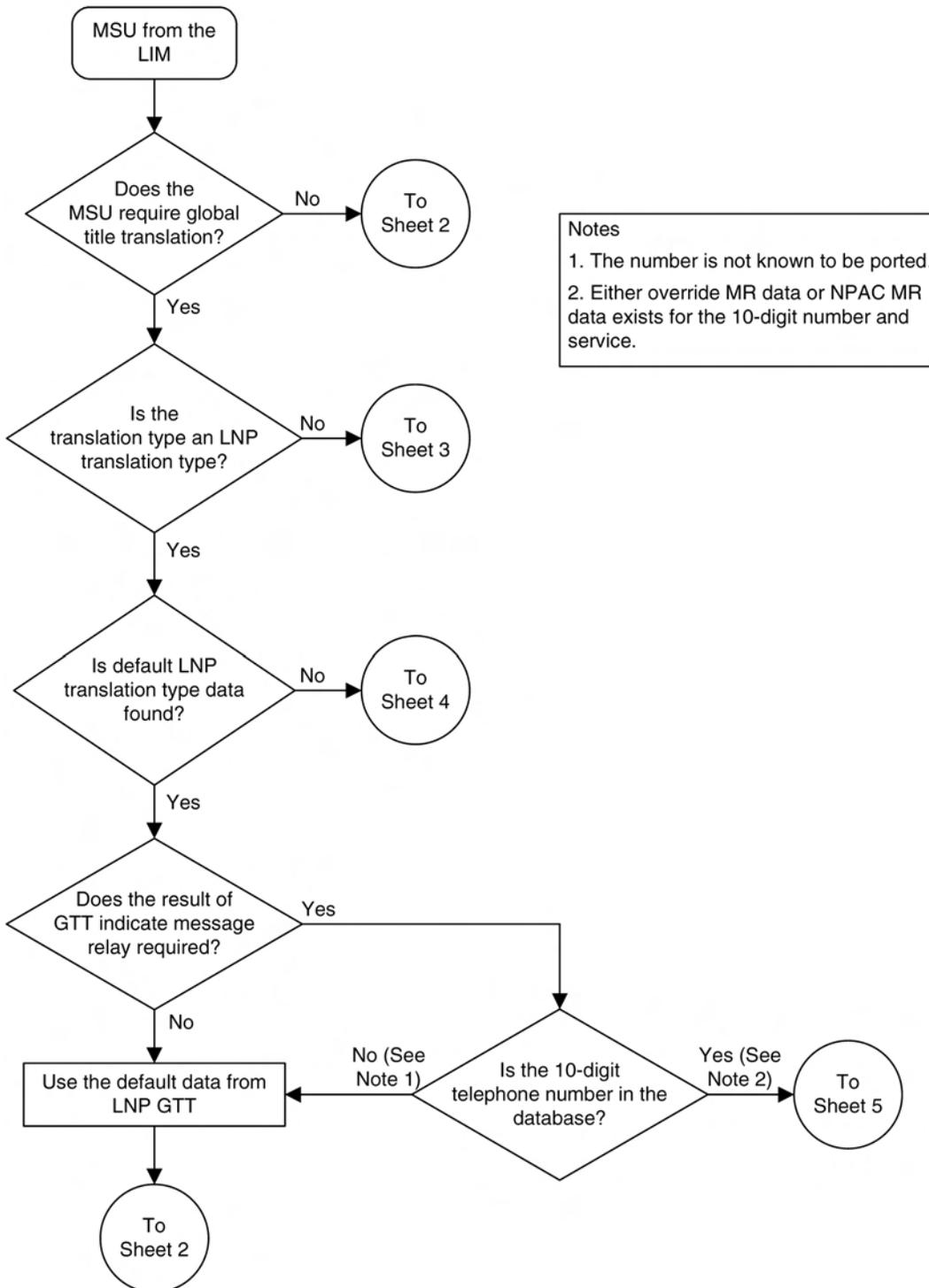
**Table 3-3. LNP Message Relay - Nonported Subscribers**

| Traditional (Non-LNP) GTT DATA defined for Service (TT) | LNP 6-digit Default GTT DATA defined for Service (TT) | LNP Message Relay Action                                                                                                |
|---------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| No                                                      | No<br>See Note.                                       | The message is discarded. The “No Translation Available” UIM and UDTS messages are generated if return on error is set. |
| No                                                      | Yes                                                   | The message is routed using the LNP 6-digit default global title translation data.                                      |
| Yes                                                     | No<br>See Note.                                       | The message routed using the traditional (non-LNP) global title translation data.                                       |
| Yes                                                     | Yes                                                   | The message is routed using the LNP 6-digit default global title translation data.                                      |

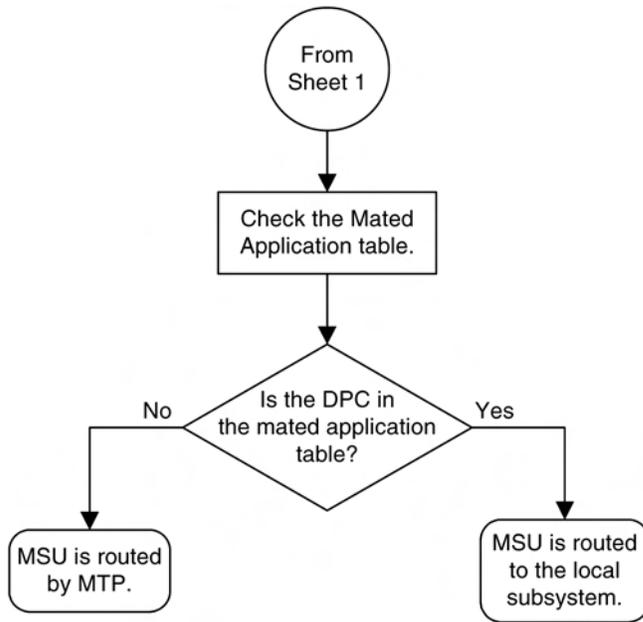
Note: Either the 6-digit default global title translation data is not present (the NPANXX entry is created when the NPAC sends down a ported subscriber record for a nonported NPANXX ), the NPANXX is not ported, or the LNP 6-digit default global title translation data present but not for requested LNP service (translation type).

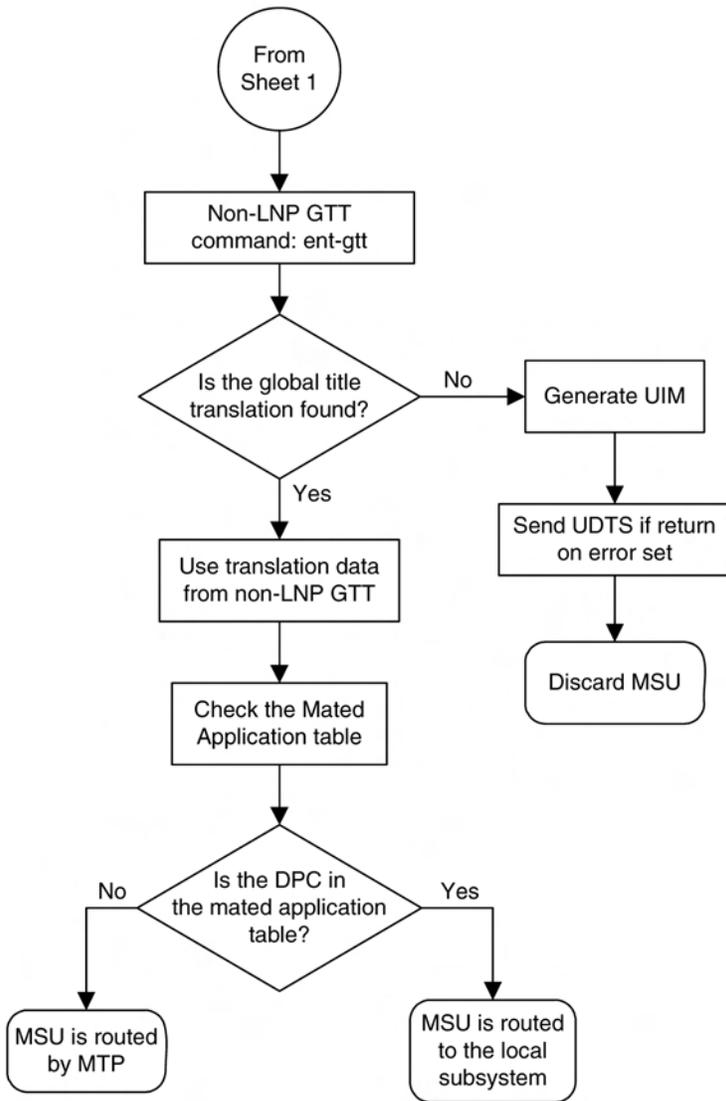
**Figure 3-1** shows how normal global title and message relay are performed on EAGLE 5 ISS.

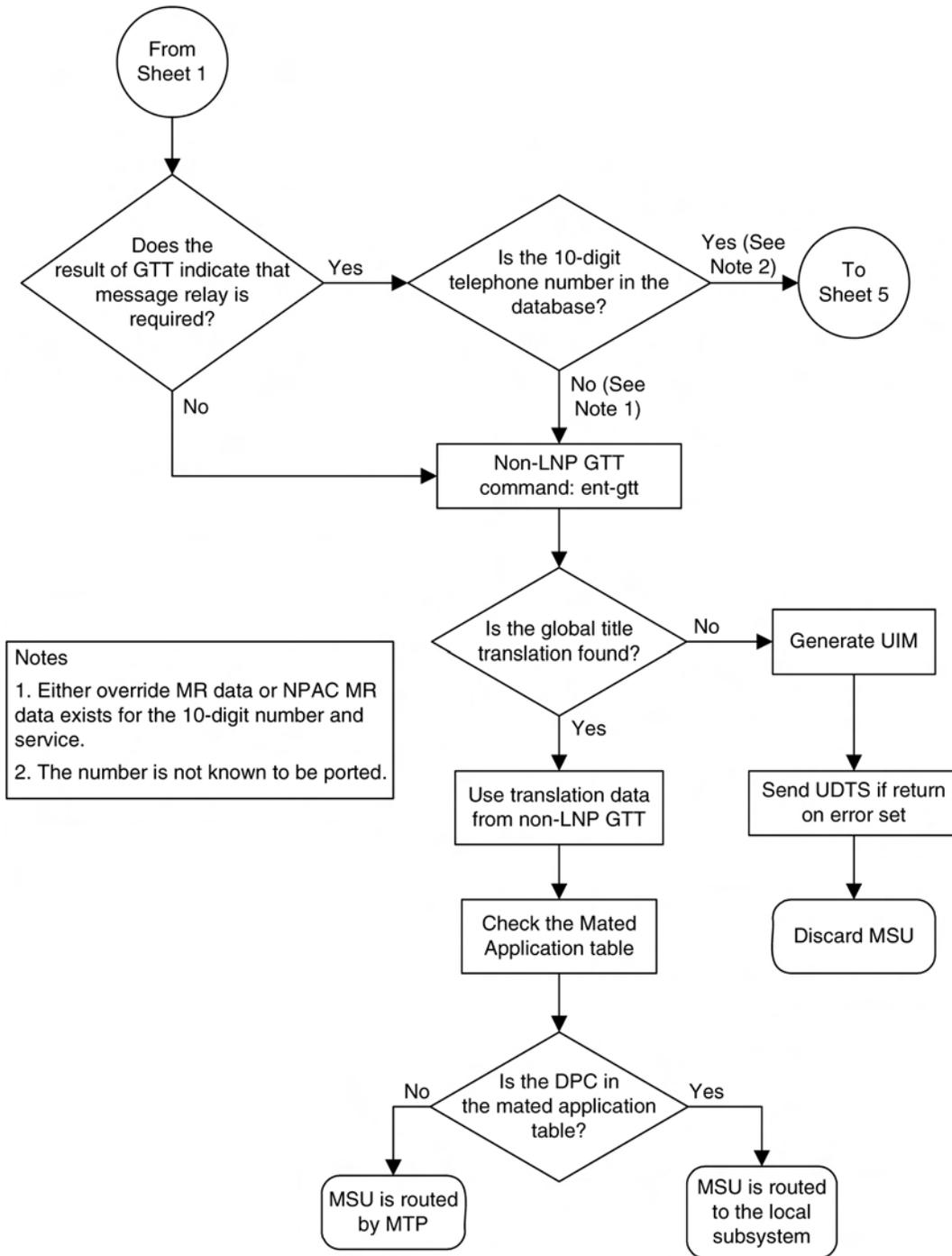
Figure 3-1. Message Flow For Global Title and Message Relay

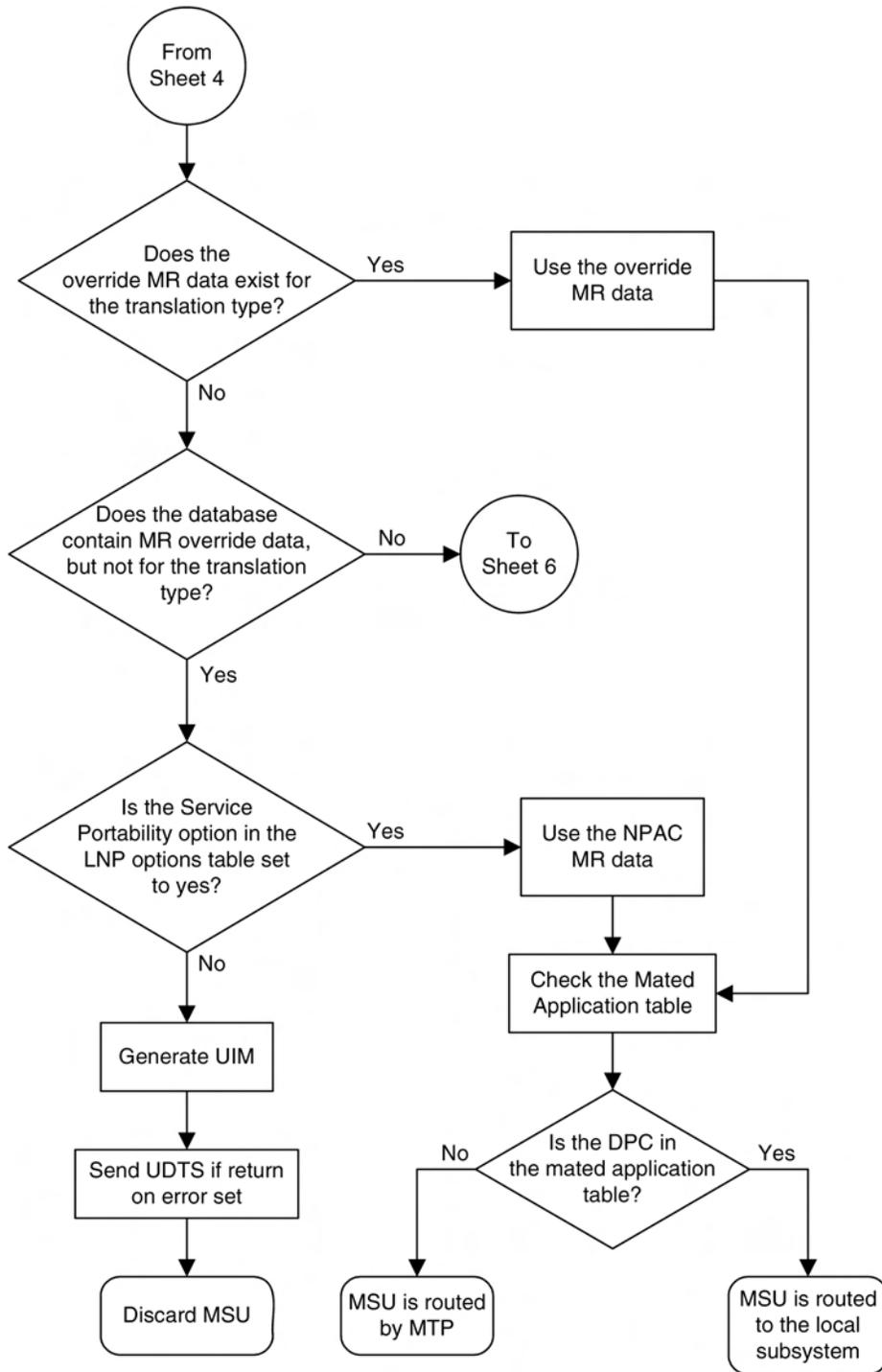


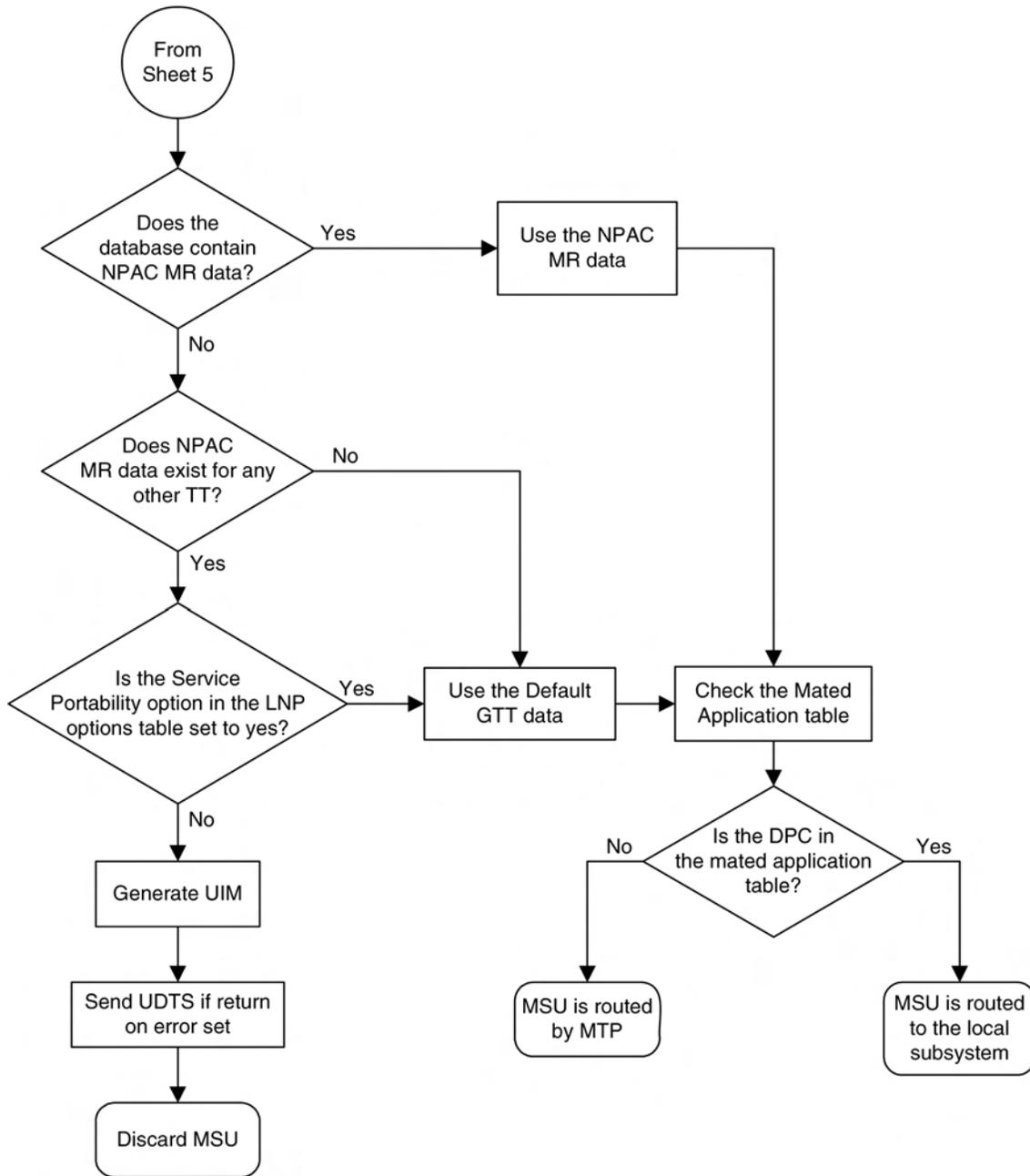
Notes  
 1. The number is not known to be ported.  
 2. Either override MR data or NPAC MR data exists for the 10-digit number and service.





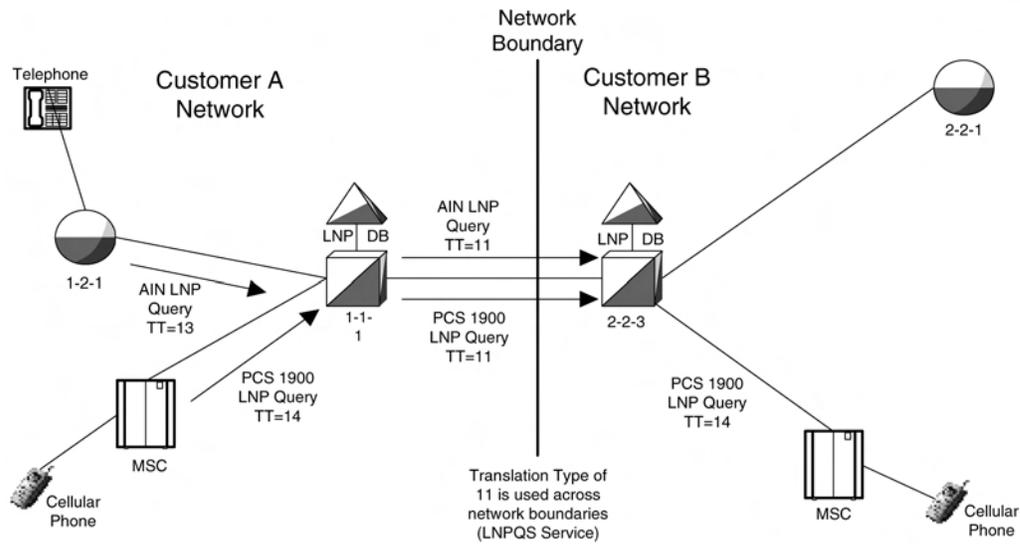






## LNP Query Service (LNPQS) Details

Currently, the translation type in the query message is used to determine the type of LNP query (AIN, IN, WNP, or PCS) for correct decoding and response formulation. LNP queries between networks are defined to use translation type 11, regardless of the protocol used. Also, there are other cases where the TT alone may not be enough to determine the type of protocol being used, thus making it impossible to correctly decode all queries. See [Figure 3-2](#).

**Figure 3-2.** Inter-Network Support for LNP Queries

In this example, Network B would not be able to differentiate between the two types of LNP queries received from Network A.

The TT Independence for LNP Queries feature addresses this issue by providing a new method of protocol determination of an incoming query.

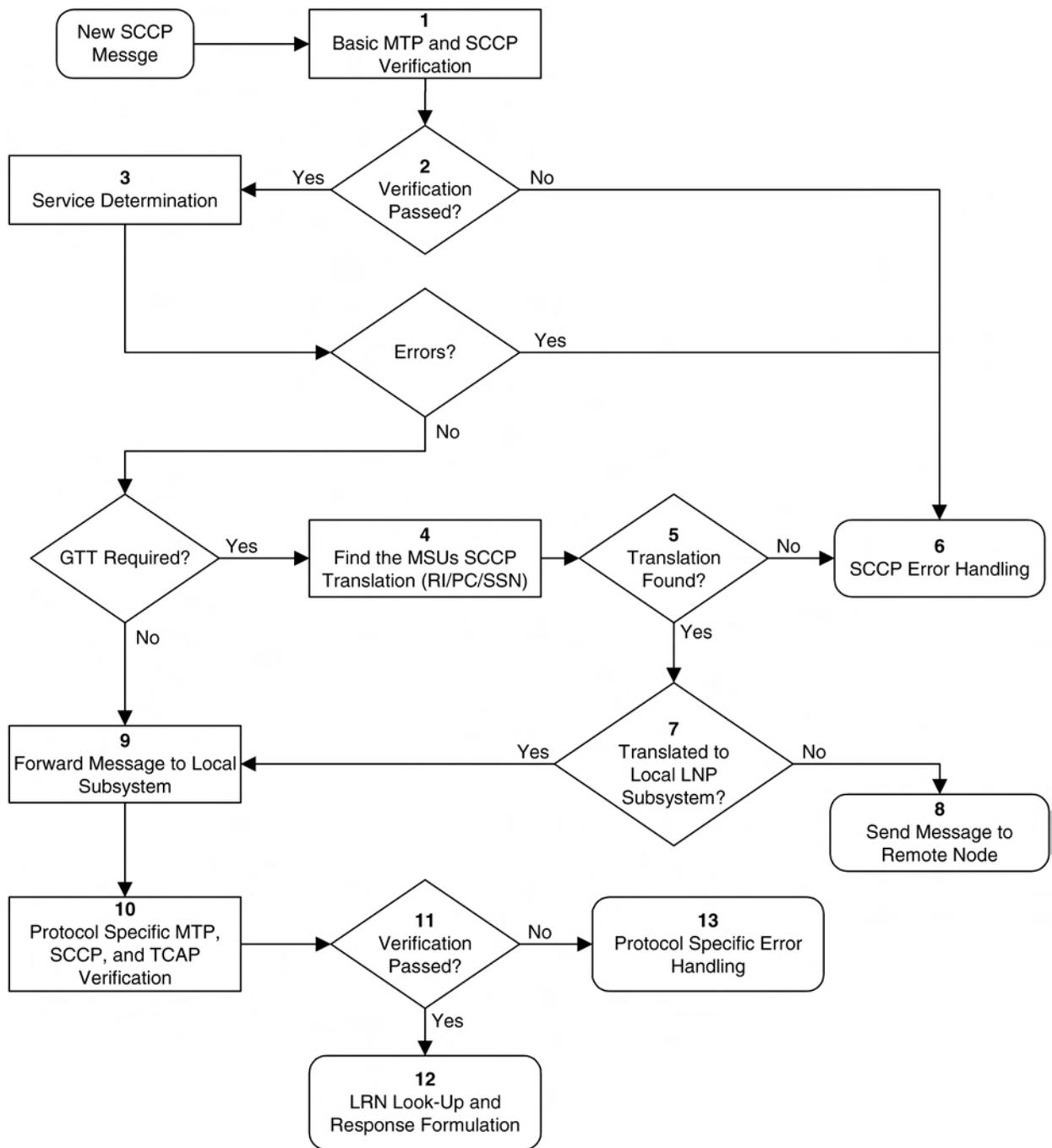
With the TT Independence for LNP Queries feature, the LNP subsystem will be able to determine the protocol of the query based on other fields in the SS7 message, rather than relying on the TT value. This allows the same translation type to be used for multiple protocols, and allows a query between two networks to be handled properly.

The LNP service LNPQS defines the translation type used for LNP queries between networks. This service is defined with the `serv=lnpqs` parameter. While the EAGLE 5 ISS allows any translation type to be assigned to the LNPQS service, it is recommended that translation type 11 is assigned to the LNPQS service.

## LNP Query Processing

LNP queries are processed as described in [Figure 3-3](#)

Figure 3-3. LNP Query Processing



In previous releases, the LNP service (step 3 in [Figure 3-3](#) ) was determined by the translation type contained in the query.

When an LNP query arrives at the EAGLE 5 ISS with the LNPQS service translation type, the EAGLE 5 ISS partially decodes the TCAP portion of the query. Once the TCAP portion of the query is decoded down to the OPCODE, and the Package type, TCAP Transaction ID, and Component parameters are verified, the OPCODE TAG, OPCODE FAMILY, and OPCODE SPEC parameters are examined to determine the LNP service required

to process the query. There are four basic types of queries: AIN, IN, PCS, and WNP. [Table 3-4](#) shows the OPCODE values for the query types.

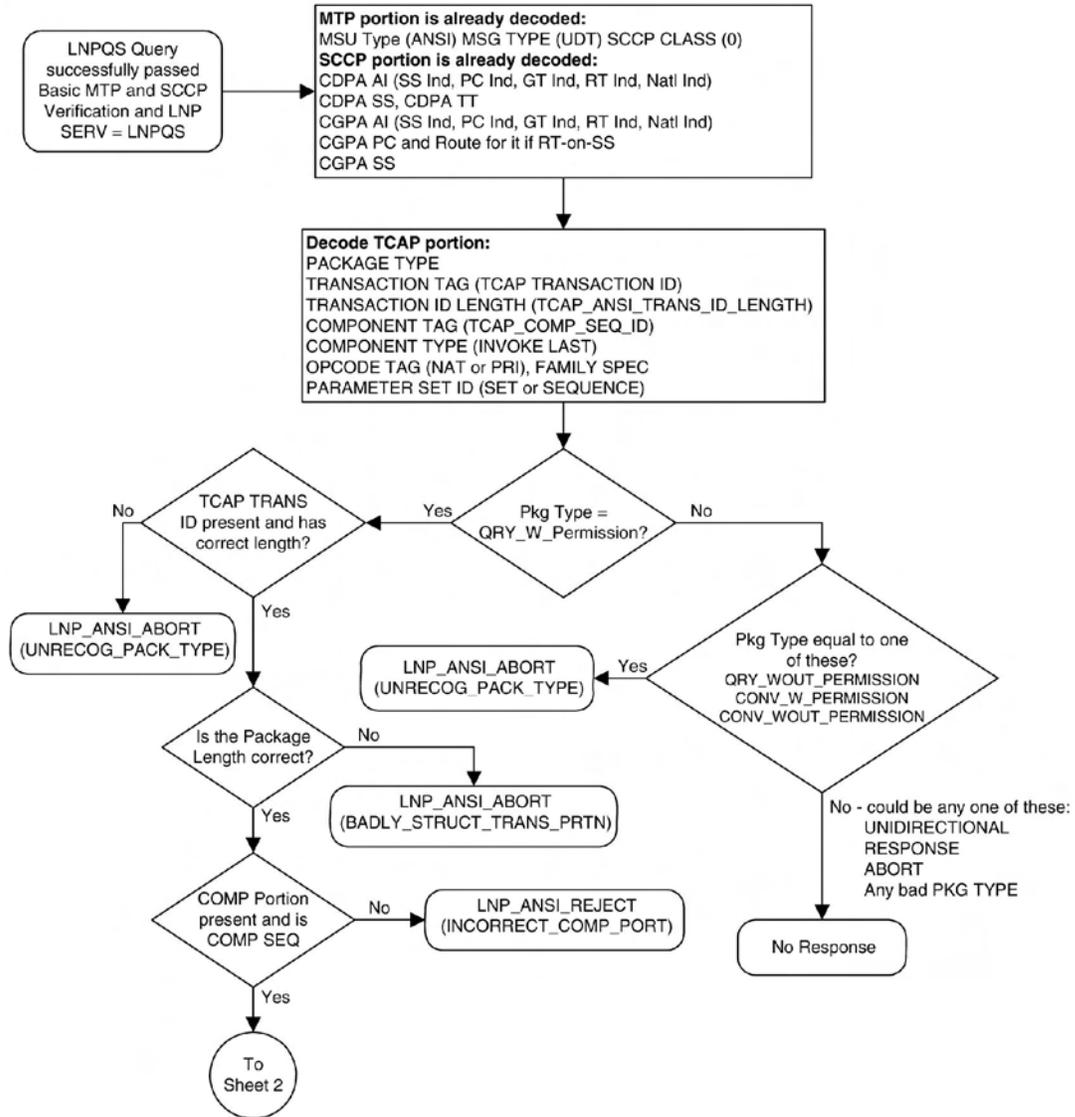
**Table 3-4. LNP Query OPCODE Values**

| Query Type | OPCODE TAG Value | OPCODE FAMILY Value | OPCODE SPEC Value    |
|------------|------------------|---------------------|----------------------|
| AIN        | PRI              | REQUEST INSTRUCT    | INFO ANALYZED        |
| IN         | NAT              | PROVIDE INSTRUCTION | IN START             |
| PCS        | NAT              | PROVIDE INSTRUCTION | IN START             |
| WNP        | PRI              | IS41 OP FAMILY      | IN IS41 NUM PORT REQ |

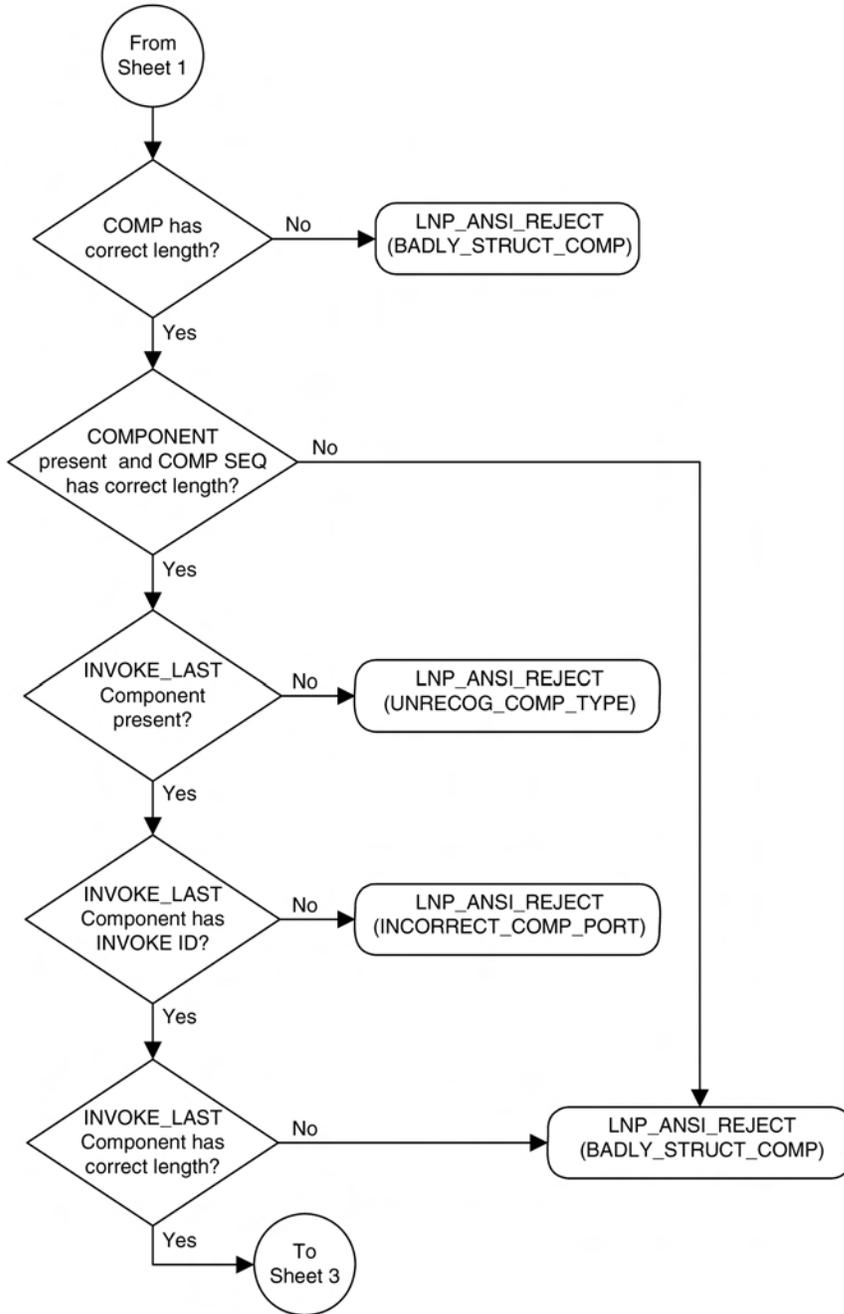
After the OPCODE values are determined, the query is treated by the EAGLE 5 ISS as either an AIN, IN, or WNP query. Since IN and PCS queries use the same OPCODE values, PCS queries are treated as IN queries. If a query is received at the EAGLE 5 ISS containing the specific PCS translation type, the query is treated as a PCS query. [Figure 3-4](#) shows the LNP service determination process for queries containing the LNPQS translation type.

**Figure 3-4. LNP Service Determination Process**

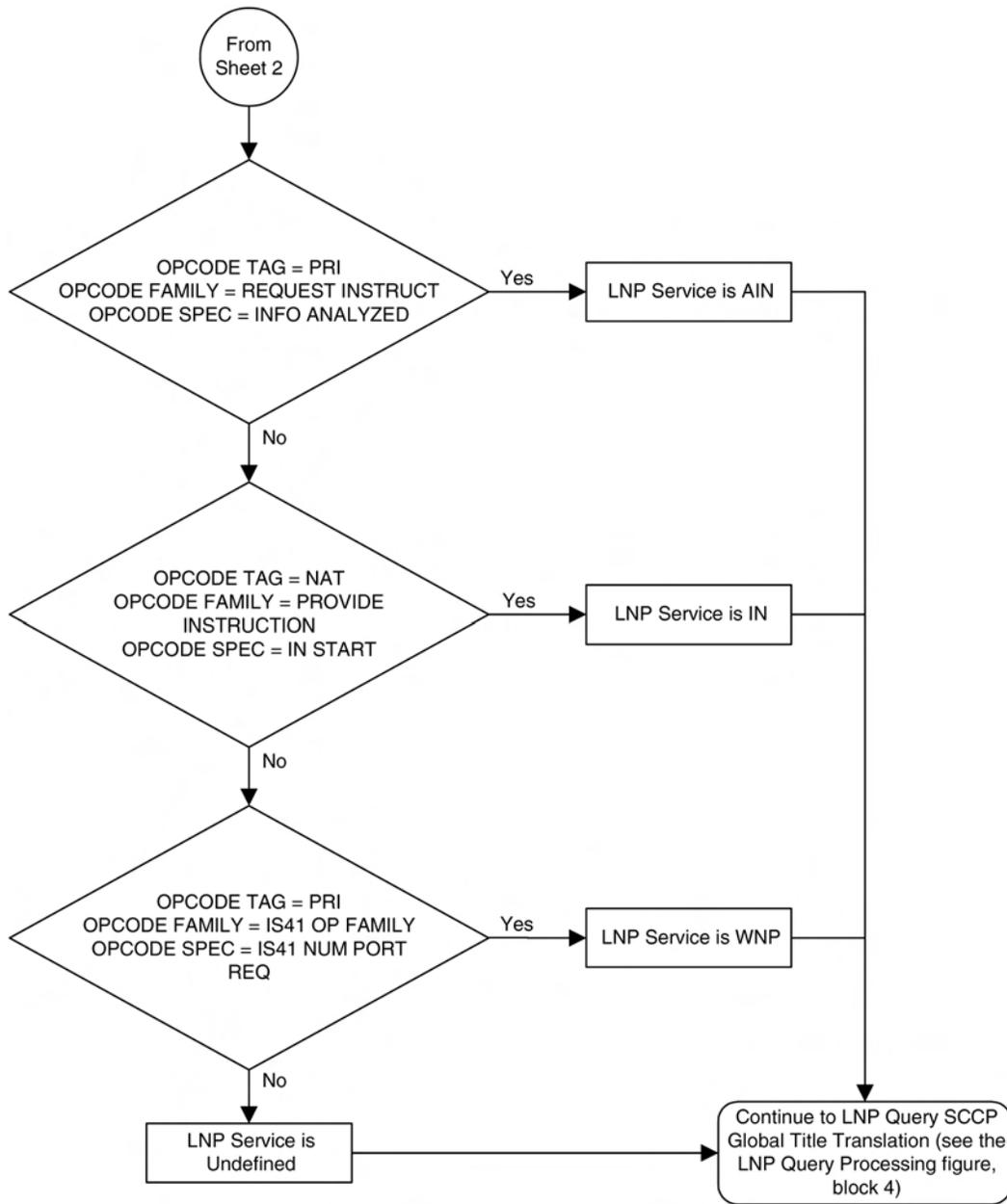
Sheet 1 of 3



Sheet 2 of 3



Sheet 3 of 3



**Limitations**

PCS queries containing the LNPQS translation type are processed as IN queries. Thus, erroneous PCS queries containing the LNPQS translation type are shown in the **rept-stat-lnp** output in the **LNPQS** field, not the **PLNPQS** field.

If the OPCODE fields in a LNPQS query do not match any of the combination for IN, AIN or WNP queries is not an invalid service, but an undefined service. An undefined service may be used to transmit some non-LNP messages between networks. A query for an undefined service is sent to global title translation for further processing.

However, the OPCODE TAG values in LNPQS queries are verified to determine if the values are either NAT or PRI. These OPCODE values are the only values supported by the EAGLE 5 ISS. If the OPCODE TAG value is not NAT or PRI, the generic TCAP ANSI Reject (UNRECOG\_OP\_CODE) response is sent back.

The specific LNP services know what LNP service the query is coming to based on the CDPA TT value, so each service verifies all three OPCODE fields for itself. The IN, AIN, WNP and PCS services react on the OPCODE errors as follows:

- An IN query not containing any of the following OPCODE values produces the IN REJECT (IN\_UNRECOG\_OPER\_CODE) error response:
  - The OPCODE TAG value NAT
  - The OPCODE FAMILY value PROVIDE\_INSTRUCTION
  - The OPCODE SPEC value IN\_START
- An AIN query not containing any of the following OPCODE values produces the AIN RETURN ERROR (ERRONEOUS DATAVAL) error response:
  - The OPCODE TAG value PRI
  - The OPCODE FAMILY value REQUEST\_INSTRUCT
  - The OPCODE SPEC value INFO\_ANALYZED
- The error responses for a WNP query depends on the OPCODE values that are not provided:
  - The WNPS\_REJECT (INCORRECT\_COMP\_PORT) error response is produced when the OPCODE TAG value is not PRI and not NAT.
  - The WNPS\_REJECT (UNRECOG\_OP\_CODE) error response results is produced when the OPCODE TAG value is not PRI or the OPCODE FAMILY value is not IS41\_OP\_FAMILY.
  - The WNPS\_RET\_ERROR (IS41\_OP\_NOT\_SUP) error response is produced when the OPCODE SPEC value is not IS41\_NUM\_PORT\_REQ.
- A PCS query not containing any of the following OPCODE values, produces the PLNPS\_REJECT (IN\_UNRECOG\_OPER\_CODE) error response:
  - The OPCODE TAG value NAT
  - The OPCODE FAMILY value PROVIDE\_INSTRUCTION
  - The OPCODE SPEC value IN\_START

TCAP errors detected before the OPCODE values are verified and the service is determined, causes different responses between LNPQS and specific LNP services (IN, AIN, WNP, PLNP). The EAGLE 5 ISS cannot generate service specific responses before the service is determined.

## Adding an LNP Service

This procedure is used to assign an LNP translation type to a unique LNP service using the **ent-lnp-serv** command. The **ent-lnp-serv** command uses these parameters.

**:serv** – the LNP service assigned to the LNP translation type

**:tt** – the LNP translation type

**:ttn** – the translation type name

**:dv** – the type of digits used by LNP

**:alias** – the alias LNP translation type

The LNP feature must be enabled. Verify this by entering the **rtrv-ctrl-feat** command. If the LNP feature is enabled, the entry **LNP Ported TNS** is shown in the **rtrv-ctrl-feat** output with a quantity greater than zero.

A maximum of 10 LNP services can be assigned to LNP translation types. Services that can be assigned to LNP translation types are:

- AIN
- IN
- CLASS
- CNAM
- LIDB
- ISVM
- Wireless number portability (**serv=wnp**)
- PCS 1900 number portability (**serv=pcs**)
- Wireless short message service center (**serv=wsmsc**)
- LNP query service (**serv=lnpqs**)
- Four user-defined services (UDF1, UDF2, UDF3, UDF4).

The alias LNP translation type provides an alternate value for the LNP translation type, so that different networks can use different translation type values for the specified LNP service. If the alias translation type in the SCCP called party address is defined in the database as an alias LNP translation type, the alias translation type value is mapped to the associated true LNP translation type value, defined by the **tt** parameter, in the database to determine the LNP service that is used on the message. All translation type values (0 - 255) can be used as values for the **alias** parameter, as long as that value is not already in the database as a value for the **tt** parameter.

The **tt** and **serv** parameter combination can only be specified once.

The **tt** and **alias** parameters cannot be specified at the same time. To add a new LNP service and an alias translation type for that service, the **ent-lnp-serv** command must be entered at least twice, depending on how many aliases you wish to enter. The first time the **ent-lnp-serv** command is entered, the LNP service

(**serv**) and true translation type (**tt**) is defined in the database. When the **ent-lnp-serv** command is entered again with the specified LNP service and the **alias** parameter, the alias translation types (**alias**) are assigned to the LNP service.

The value of the **alias** parameter cannot be in the database as an LNP translation type (**tt**).

The value of the **tt** parameter cannot be in the database as an alias LNP translation type (**alias**).

If the **serv** and **tt** parameters are specified, the service type specified by the **serv** parameter cannot be in the database.

Translation type names can be assigned to the LNP service and translation type with the **tttn** parameter. If the parameter is not specified, the translation type name is set to the LNP service name. The translation type name must be unique in the database. The word **none** is used as a value for the **tttn** parameter of the **chg-lnp-serv** command and cannot be used as a translation type name with the **ent-lnp-serv** command. **tttn**

A translation type name can be the service type name only if the service type name matches the value of the **serv** parameter.

If the value of the **serv** parameter is a user defined service type, the value of the **dv** parameter must be **sccp**.

If the value of the **serv** parameter is a either **ain**, **in**, **wnp**, **pcs**, or **lnpqs**, the value of the **dv** parameter must be **tcap**.

The translation type and LNP service specified with the **ent-lnp-serv** command cannot be in the database.

To specify the **serv=wnp** parameter with the **ent-lnp-serv** command, the wireless number portability feature must be turned on. This can be verified with the **WNP = on** entry in the **rtrv-feat** command output.

To specify the **serv=pcs** parameter with the **ent-lnp-serv** command, the PCS 1900 number portability feature must be turned on. This can be verified with the **PLNP = on** entry in the **rtrv-feat** command output.

To specify the **serv=wsmc** parameter with the **ent-lnp-serv** command, the LNP SMS feature must be enabled and on. This can be verified in the **rtrv-ctrl-feat** command output. If the LNP SMS feature is not enabled and on, perform [Activating the LNP Short Message Service \(SMS\) Feature](#) to enable and turn the LNP SMS feature on.

The LNP service LNPQS defines the translation type used for LNP queries between networks. This service is defined with the **serv=lnpqs** parameter. While the EAGLE 5 ISS allows any translation type to be assigned to the LNPQS service, it is recommended that translation type 11 is assigned to the LNPQS service. If any LNP service is assigned translation type 11, and you wish to provision the LNPQS service, the existing service using translation type 11 must be changed to use another translation type. Perform [Changing an LNP Service](#) to change the translation type of the existing service. See [LNP Query Service \(LNPQS\) Details](#) for more information on LNPQS queries.

The examples in this procedure are used to add the LNP services and alias translation types shown in [Table 3-5](#).

**Table 3-5. Example LNP Service Configuration**

| SERV | TT  | TTN   | DV   | ALIAS |
|------|-----|-------|------|-------|
| IN   | 30  | INGTE | TCAP | ---   |
| IN   | --- | ---   | ---- | 150   |
| IN   | --- | ---   | ---- | 175   |

| SERV  | TT  | TTN    | DV   | ALIAS |
|-------|-----|--------|------|-------|
| UDF3  | 100 | UDF3   | SCCP | ---   |
| UDF3  | --- | ---    | ---- | 40    |
| UDF3  | --- | ---    | ---- | 45    |
| AIN   | --- | ---    | ---- | 240   |
| LIDB  | --- | ---    | ---- | 80    |
| WNP   | 50  | WNP50  | TCAP | ---   |
| PCS   | 19  | PCS19  | TCAP | ---   |
| WSMSC | 139 | WSMSC1 | TCAP | ---   |
| LNPQS | 11  | LNPQS  | TCAP | ---   |

1. Verify that the LNP feature is enabled by entering the **rtrv-ctrl-feat** command.

If the LNP feature is enabled, the entry **LNP Ported TNs** should appear in the **rtrv-ctrl-feat** output with a telephone quantity greater than 0.

```
rlghncxa03w 07-08-30 21:15:37 GMT EAGLE5 37.0.0
The following features have been permanently enabled:
Feature Name          Partnum  Status  Quantity
IPGWx Signaling TPS   893012814 on      20000
ISUP Normalization    893000201 on      ----
Command Class Management 893005801 off     ----
Intermed GTT Load Sharing 893006901 off     ----
XGTT Table Expansion   893006101 off     ----
XMAP Table Expansion   893007710 on      3000
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 LNP feature is not enabled, perform the procedures in [Chapter 2 LNP Feature Activation](#) to enable the LNP feature. Go to step 2. If the LNP feature is enabled, go to step 2.

2. Display the LNP services and translation type assignments in the database with the **rtrv-lnp-serv** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
SERV      TT      TTN      DV      ALIAS
AIN       15      AINGTE   TCAP    235
          236
LIDB      20      LIDB     SCCP    ---
CLASS     25      CLASSGTE SCCP    ---
UDF1      201     UDF1     SCCP    ---
TT-SERV TABLE IS (4 of 256) 2% FULL
```

**NOTE 1:** If the **rtrv-ctrl-feat** output in step 1 showed that the LNP feature was not enabled, skip this step and go to step 4.

**NOTE:** If the **serv=wnp** or **serv=pcs** parameters will not be specified with the **ent-lnp-serv** command, skip steps 3, 4, and 5, and go to step 6.

- Verify that the wireless number portability feature (if the **serv=wnp** parameter will be specified in the **ent-lnp-serv** command) or the PCS 1900 number portability feature (if the **serv=pcs** parameter will be specified in the **ent-lnp-serv** command), by entering the **rtrv-feat** command.

**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 wireless number portability feature is on, the entry **WNP = on** appears in the **rtrv-feat** output. If the PCS 1900 number portability feature is on, the entry **PLNP = on** appears in the **rtrv-feat** output. Perform step 4 only if the wireless number portability feature is off and the **serv=wnp** parameter will be specified with the **ent-lnp-serv** command. Perform step 5 only if the PCS 1900 number portability feature is off and the **serv=pcs** parameter will be specified with the **ent-lnp-serv** command.

- Turn the wireless number portability feature on with the **chg-feat** command.

For this example, enter this command.**chg-feat:wnp=on**

**NOTE: Once the wireless number portability feature is turned on with the **chg-feat** command, it cannot be turned off. The wireless number portability 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 wireless number portability feature, contact your Tekelec Sales Representative or Account Representative.**

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

```
rlghncxa03w 07-08-10 11:43:04 GMT EAGLE5 37.0.0
CHG-FEAT: MASP A - COMPLTD
```

- Turn the PCS 1900 number portability feature on with the **chg-feat** command.

For this example, enter this command.**chg-feat:plnp=on**

**NOTE: Once the PCS 1900 number portability feature is turned on with the **chg-feat** command, it cannot be turned off. The PCS 1900 number portability 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 PCS 1900 number portability feature, contact your Tekelec Sales Representative or Account Representative.**

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

```
rlghncxa03w 07-08-10 11:43:04 GMT EAGLE5 37.0.0
CHG-FEAT: MASP A - COMPLTD
```

**NOTE: If you are not assigning a translation type to the WSMSC service, skip step 6 and go to step 7.**

- If the **rtrv-ctrl-feat** output in step 1 shows that the LNP SMS feature is enabled, and **on**, go to step 7.

If the **rtrv-ctrl-feat** output in step 1 shows that the LNP SMS feature is not enabled or on, perform the [Activating the LNP Short Message Service \(SMS\) Feature](#) to enable and turn the LNP SMS feature on. Skip step 7 and go to step 8.

**NOTE: If you are not assigning a translation type to the LNPQS service, skip step 7 and go to step 8.**

- Any translation type can be assigned to the LNPQS service, but since translation type 11 is used for LNP queries between networks, it is recommended that translation type 11 is assigned to the LNPQS service. Examine the **rtrv-lnp-serv** output in step 2 to verify whether or not translation type 11 is assigned to any existing LNP services. If translation type 11 is assigned to any existing LNP services, perform the [Changing an LNP Service](#) and change the translation type of the service using translation type 11.
- Add the LNP services or alias translation types to the database using the **ent-lnp-serv** command.

For this example, enter these commands:

- ent-lnp-serv:serv=in:tt=30:ttn=ingte:dv=tcap**

- `ent-lnp-serv:serv=udf3:tt=100:dv=sccp`
- `ent-lnp-serv:serv=ain:alias=240`
- `ent-lnp-serv:serv=in:alias=150`
- `ent-lnp-serv:serv=in:alias=175`
- `ent-lnp-serv:serv=lidb:alias=80`
- `ent-lnp-serv:serv=udf3:alias=40`
- `ent-lnp-serv:serv=udf3:alias=45`
- `ent-lnp-serv:serv=wnp:tt=50:ttn=wnp50:dv=tcap`
- `ent-lnp-serv:serv=pcs:tt=19:ttn=pcs19:dv=tcap`
- `ent-lnp-serv:serv=wsmsc:tt=139:ttn=wsmsc1:dv=tcap`
- `ent-lnp-serv:serv=lnpqs:tt=11:ttn=lnpqs:dv=tcap`

If the LNP services CLASS, CNAM, LIDB, or ISVM are specified by the `serv` parameter of the `ent-lnp-serv` command, this caution message is displayed indicating that the OAP configuration must be updated with the new LNP service information.

CAUTION: LNP service TTs have changed, OAP configuration is required

There is no need to update the OAP configuration because the OAP is no longer used for the LNP feature. You may go to the next step. When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
ENT-LNP-SERV: MASP A - COMPLTD
```

#### 9. Verify the changes with the `rtrv-lnp-serv` command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
SERV      TT      TTN      DV      ALIAS
AIN       15      AINGTE   TCAP    235
          236
          240
IN        30      INGTE    TCAP    150
          175
LIDB     20      LIDB     SCCP    80
WNP      50      WNP50    TCAP    ---
LNPQS    11      LNPQS    TCAP    ---
PCS      19      PCS19    TCAP    ---
CLASS    25      CLASSGTE SCCP    ---
UDF1     201     UDF1     SCCP    ---
UDF3     100     UDF3     SCCP    40
          45
WSMSC    139     WSMS1    SCCP    ---
TT-SERV TABLE IS (10 of 256) 4% FULL
```

#### 10. 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.
```

## Removing an LNP Service

This procedure is used to remove an LNP service from the database using the **dlt-lnp-serv** command. The **dlt-lnp-serv** command uses two parameters.

**:serv** – the LNP service

**:alias** – the alias LNP translation type assigned to the LNP service

If the **alias** parameter is specified, the alias translation type value must be assigned to the specified LNP service. The alias translation types are shown in the **ALIAS** field of the **rtrv-lnp-serv** command output.

The value of the **alias** parameter cannot be in the database as a true translation type value. The true translation types are shown in the **TT** field of the **rtrv-lnp-serv** command output.

Before an LNP service can be removed from the database, all alias translation types assigned to that service must be removed from the database.

The example in this procedure removes LNP service UDF3 from the database.

1. Display the LNP services and translation type assignments in the database with the **rtrv-lnp-serv** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
SERV      TT      TTN      DV      ALIAS
AIN       15     AINGTE   TCAP    235
          236
          240
IN        30     INGTE    TCAP    150
          175
LIDB      20     LIDB     SCCP    80
WNP       50     WNP50    TCAP    ---
LNPQS     11     LNPQS    TCAP    ---
PCS       19     PCS19    TCAP    ---
CLASS     25     CLASSGTE SCCP    ---
UDF1      201    UDF1     SCCP    ---
UDF3      100    UDF3     SCCP    40
          45
WSMSC     139    WSMSC1   SCCP    ---
TT-SERV TABLE IS (10 of 256) 4% FULL
```

2. Remove the LNP service from the database using the **dlt-lnp-serv** command.

For this example, enter these commands. **dlt-lnp-serv:serv=udf3:alias=40 dlt-lnp-serv:serv=udf3:alias=45 dlt-lnp-serv:serv=udf3** If the LNP services CLASS, CNAM, LIDB, or ISVM are specified by the **serv** parameter of the **dlt-lnp-serv** command, this caution message is displayed indicating that the OAP configuration must be updated with the new LNP service information.

CAUTION: LNP service TTs have changed, OAP configuration is required

There is no need to update the OAP configuration because the OAP is no longer used for the LNP feature. You may go to the next step. When each of this command has successfully completed, this message should appear.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
DLT-LNP-SERV: MASP A - COMPLTD
```

3. Verify the changes with the **rtrv-lnp-serv** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
```

| SERV  | TT  | TTN      | DV   | ALIAS |
|-------|-----|----------|------|-------|
| AIN   | 15  | AINGTE   | TCAP | 235   |
|       |     |          |      | 236   |
|       |     |          |      | 240   |
| IN    | 30  | INGTE    | TCAP | 150   |
|       |     |          |      | 175   |
| LIDB  | 20  | LIDB     | SCCP | 80    |
| WNP   | 50  | WNP50    | TCAP | ---   |
| LNPQS | 11  | LNPQS    | TCAP | ---   |
| PCS   | 19  | PCS19    | TCAP | ---   |
| CLASS | 25  | CLASSGTE | SCCP | ---   |
| UDF1  | 201 | UDF1     | SCCP | ---   |
| WSMSC | 139 | WSMSC1   | SCCP | ---   |

TT-SERV TABLE IS (9 of 256) 4% FULL

4. 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.
```

## Changing an LNP Service

This procedure is used to change the attributes of an existing LNP service using the **chg-lnp-serv** command. The **chg-lnp-serv** command uses these parameters.

**:serv** – the LNP service

**:nserv** – the new LNP service

**:tt** – the current LNP translation type assigned to the LNP service

**:ntt** – the new LNP translation type assigned to the LNP service

**:nttn** – the new translation type name assigned to the LNP service

**:ndv** – the new digits valid indication for the LNP service

The values of the **serv** and **tt** parameters must be in the database.

To change the attributes of an LNP service, either the **serv** or **tt** parameters must be specified, but not both parameters. If you are changing the translation type assigned to the LNP service, the **serv** and **ntt** parameters must be specified. If you are changing the LNP service assigned to a translation type, the **tt** and **nserv** parameters must be specified. The **nserv** and **ntt** parameters cannot be specified together with the **chg-lnp-serv** command.

The new translation type name must be unique in the database.

The new translation type (**ntt**) cannot be in the database as a true translation type or an alias translation type. The true translation types and alias translation types are shown in the **rtrv-lnp-serv** command output. The true translation types are shown in the **TT** field and the alias translation types are shown in the **ALIAS** field.

The word **none** sets the translation type name value to the service type name. A translation type name can be the service type name only if the service type name matches the value of the **serv** parameter.

If the value of the **serv** parameter is a user defined service type or **wsmc**, the value of the **ndv** parameter must be **sccp**.

If the value of the **serv** parameter is either **ain**, **in**, **wnp**, **pcs**, or **lnpqs**, the value of the **ndv** parameter must be **tcap**.

If the **ndv** parameter is specified, the value must be different from the current value of the DV field. The DV value can be changed only for these services: **cnam**, **lidb**, **ismv**, or **class**.

An LNP service cannot be changed if an alias translation type is assigned to the service. The aliases must be removed from the database using the **dlt-lnp-serv** command. If you wish to continue using the alias translation types with the LNP service after the LNP service has been changed, they must be re-assigned to the LNP service using the **ent-lnp-serv** command.

Any translation type can be assigned to the LNPQS service, but it is recommended that translation type 11 is assigned to the LNPQS service. If you are changing the translation type of another service, and the LNPQS service is provisioned in the database, select a translation type other than 11.

The examples in this procedure are used to change the AIN and CLASS services to the values shown in [Table 3-6](#).

**Table 3-6. Changing the LNP Service**

| SERV  | TT | NTT | DV   | NDV  | TTN      | NTTN    |
|-------|----|-----|------|------|----------|---------|
| AIN   | 15 | 55  | TCAP | ---- | AINGTE   | AINLIDB |
| CLASS | 25 | 140 | SCCP | TCAP | CLASSGTE | CLASS   |
| WNP   | 50 | 75  | TCAP | ---  | WNP50    | WNP75   |

1. Display the LNP services and translation type assignments in the database with the **rtrv-lnp-serv** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
SERV TT TTN DV ALIAS
AIN 15 AINGTE TCAP 235
236
240
IN 30 INGTE TCAP 150
175
LIDB 20 LIDB SCCP 80
WNP 50 WNP50 TCAP ---
LNPQS 11 LNPQS TCAP ---
PCS 19 PCS19 TCAP ---
CLASS 25 CLASSGTE SCCP ---
UDF1 201 UDF1 SCCP ---
UDF3 100 UDF3 SCCP 40
45
WSMSC 139 WSMSC1 SCCP ---
TT-SERV TABLE IS (10 of 256) 4% FULL
```

2. If the LNP service being changed has any alias translation types assigned to it, shown in the **ALIAS** field in the output of step 1, remove the alias translation types from the LNP service using the **dlt-lnp-serv** command.

If the LNP service does not have any alias translation types assigned to it, skip this step and go to step 3. For this example, the AIN service has alias translation types assigned to it. Remove the alias translation types with these commands. **dlt-lnp-serv:serv=ain:alias=235 dlt-lnp-serv:serv=ain:alias=236 dlt-lnp-serv:serv=ain:alias=240** When each of this command has successfully completed, this message should appear.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
DLT-LNP-SERV: MASP A - COMPLTD
```

**NOTE:** If the LNP service name (**serv** parameter value) is not being changed, skip steps 3, 4, 5, and 6, and go to step 7. If the LNP service name (**serv** parameter value) is being changed to a service name other than WNP or PCS, skip step 3, 4, and 5, and go to step 6.

3. Verify that the wireless number portability feature (if the **nserv=wnp** parameter will be specified in the **chg-lnp-serv** command) or the PCS 1900 number portability feature (if the **nserv=pcs** parameter will be specified in the **chg-lnp-serv** command), by entering the **rtrv-feat** command.

**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 wireless number portability feature is on, the entry **WNP = on** appears in the **rtrv-feat** output. If the PCS 1900 number portability feature is on, the entry **PLNP = on** appears in the **rtrv-feat** output. Perform step 4 only if the wireless number portability feature is off and the **nserv=wnp** parameter will be specified with the **chg-lnp-serv** command. Perform step 5 only if the PCS 1900 number portability feature is off and the **nserv=pcs** parameter will be specified with the **chg-lnp-serv** command.

4. Turn the wireless number portability feature on with the **chg-feat** command.

For this example, enter this command. **chg-feat:wnp=on**

**NOTE:** Once the wireless number portability feature is turned on with the **chg-feat** command, it cannot be turned off. The wireless number portability 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 wireless number portability feature, contact your Tekelec Sales Representative or Account Representative.

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

```
rlghncxa03w 07-08-10 11:43:04 GMT EAGLE5 37.0.0
CHG-FEAT: MASP A - COMPLTD
```

5. Turn the PCS 1900 number portability feature on with the **chg-feat** command.

For this example, enter this command. **chg-feat:plnp=on**

**NOTE:** Once the PCS 1900 number portability feature is turned on with the **chg-feat** command, it cannot be turned off. The PCS 1900 number portability 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 PCS 1900 number portability feature, contact your Tekelec Sales Representative or Account Representative.

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

```
rlghncxa03w 07-08-10 11:43:04 GMT EAGLE5 37.0.0
CHG-FEAT: MASP A - COMPLTD
```

**NOTE:** If the LNP service name (**serv** parameter value) is being changed to a service name other than WSMSC, skip step 6 and go to step 7.

6. Verify that the LNP Short Message Service is enabled and on by entering the **rtrv-ctrl-feat** command. If the **rtrv-ctrl-feat** output shows that the LNP SMS feature is enabled, and on, go to step 7. If the **rtrv-ctrl-feat** output shows that the LNP SMS feature is not enabled or on, perform [Activating the LNP Short Message Service \(SMS\) Feature](#) to enable and turn the LNP SMS feature on.

**NOTE:** If only the alias translation type values for the LNP service are being changed, skip this step and step 8, and go to step 9 to add the new alias translation type values.

7. Change the LNP service using the **chg-lnp-serv** command.

For this example, enter these commands. **chg-lnp-serv:serv=ain:ntt=55:nttn=ainlidx**

**chg-lnp-serv:serv=class:ntt=140:nttn=none:ndv=tcap chg-lnp-**

**serv:serv=wnp:ntt=75:nttn=wnp75:ndv=tcap**If the LNP services CLASS, CNAM, LIDB, or

ISVM are specified by the **serv** parameter of the **chg-lnp-serv** command, this caution message is displayed indicating that the OAP configuration must be updated with the new LNP service information.

CAUTION: LNP service TTs have changed, OAP configuration is required

There is no need to update the OAP configuration because the OAP is no longer used for the LNP feature. You may go to the next step. When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
CHG-LNP-SERV: MASP A - COMPLTD
```

**8. Verify the changes with the **rtrv-lnp-serv** command.**

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
SERV      TT      TTN      DV      ALIAS
AIN        55      AINGTE   TCAP    ---
IN         30      INGTE    TCAP    150
          175
LIDB       20      LIDB     SCCP    80
WNP        75      WNP75    TCAP    ---
LNPQS      11      LNPQS    TCAP    ---
PCS        19      PCS19    TCAP    ---
CLASS      140     CLASS    SCCP    ---
UDF1       201     UDF1     SCCP    ---
UDF3       100     UDF3     SCCP    40
          45
WSMSC      139     WSMSC1   SCCP    ---
TT-SERV TABLE IS (10 of 256) 4% FULL
```

**9. If you wish to continue using the alias translation types removed in step 2 with the changed LNP service, or add new alias translation types to the LNP service, add them with the **ent-lnp-serv** command.**

Otherwise, go to step 9. For this example, the alias translation types removed in step 2 are added back to the AIN service. Enter these commands. **ent-lnp-serv:serv=ain:alias=235 ent-lnp-serv:serv=ain:alias=236 ent-lnp-serv:serv=ain:alias=240** If the LNP services CLASS, CNAM, LIDB, or ISVM are specified by the **serv** parameter of the **ent-lnp-serv** command, this caution message is displayed indicating that the OAP configuration must be updated with the new LNP service information.

CAUTION: LNP service TTs have changed, OAP configuration is required

There is no need to update the OAP configuration because the OAP is no longer used for the LNP feature. You may go to the next step. When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
ENT-LNP-SERV: MASP A - COMPLTD
```

**10. Verify the changes with the **rtrv-lnp-serv** command.**

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
SERV      TT      TTN      DV      ALIAS
AIN        55      AINGTE   TCAP    235
          236
          240
IN         30      INGTE    TCAP    150
          175
LIDB       20      LIDB     SCCP    80
WNP        75      WNP75    TCAP    ---
LNPQS      11      LNPQS    TCAP    ---
PCS        19      PCS19    TCAP    ---
CLASS      140     CLASS    SCCP    ---
```

```

UDF1      201   UDF1      SCCP    ---
UDF3      100   UDF3      SCCP    40
   45
WSMSC     139   WSMSC1    SCCP    ---
TT-SERV TABLE IS (10 of 256) 4% FULL

```

- 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.

```

## Adding a Subsystem Application

This procedure is used to reserve a subsystem number for the LNP application and place the LNP application either online or offline using the `ent-ss-appl` command. The `ent-ss-appl` command uses these parameters.

`:appl` – the application type, **LNP**

**NOTE:** The `appl` parameter contains the values **INP**, for reserving a subsystem number for the INP subsystem, and **EIR**, for reserving a subsystem number for the EIR subsystem. These values cannot be used in this procedure. To reserve a subsystem number for the INP or EIR subsystem, perform the procedures in the *Feature Manual - INP* or *Feature Manual - EIR* and do not perform this procedure.

`:ssn` – the LNP subsystem number

`:stat` – the state of the LNP application

The LNP feature must be enabled. Verify this by entering the `rtrv-ctrl-feat` command. If the LNP feature is enabled, the entry **LNP ported TNs** should appear in the `rtrv-ctrl-feat` output with a telephone quantity greater than 0. If the LNP feature is not enabled, perform the procedures in [Chapter 2 LNP Feature Activation](#) to enable the LNP feature.

Only one subsystem number for each application can be defined.

If the `stat` parameter is not specified, the application will be offline.

The LNP application applies to both message relay global title translation services and LNP queries.

The application specified by the `appl` parameter cannot already be in the database.

Before the subsystem application can be added to the database, the EAGLE 5 ISS's true point code and the subsystem number must be in the mated application table. The EAGLE 5 ISS's true point code is verified with the `rtrv-sid` command and shown in the `PCA` field. The mated application table is displayed with the `rtrv-map` command. The EAGLE 5 ISS's true point code is shown in the `PCA` field of the `rtrv-map` command output and the subsystem number is shown in the `SSN` field of the `rtrv-map` command output. If the EAGLE 5 ISS's true point code and the subsystem number are not shown in the `rtrv-map` command output, perform one of the "Mated Application" procedure in the *Database Administration Manual – Global Title Translation* and add the EAGLE 5 ISS's true point code and the subsystem to the database.

The example in this procedure reserves the subsystem number 254 for the LNP application and sets the LNP application online.

- Verify that the LNP feature is enabled by entering the `rtrv-ctrl-feat` command.

If the LNP feature is enabled, the entry **LNP ported TNs** should appear in the **rtrv-ctrl-feat** output with a telephone quantity greater than 0. This is an example of the possible output.

```
rlghncxa03w 07-08-29 16:40:40 EST EAGLE5 37.6.0
The following features have been permanently enabled:
Feature Name          Partnum  Status  Quantity
IPGWx Signaling TPS   893012805 on       2000
HC-MIM SLK Capacity   893012707 on        64
ISUP Normalization    893000201 on       ----
Large System # Links  893005910 on       2000
Routesets             893006403 on       8000
EAGLE5 Product        893007101 on       ----
EAGLE Product         893007201 off      ----
Telnet                893005701 on       ----
LNP ELAP Configuration 893010901 on       ----
LNP ported TNs        893011023 on     228000000
LNP ported LRNs       893010501 on     150000
LNP ported NPANXXs    893009402 on     300000
```

If the LNP feature is not enabled, perform the procedures in [Activating the LNP Feature Overview](#) to enable the LNP feature. Go to step 2. If the LNP feature is enabled, go to step 2.

2. Display the subsystem number for the LNP application in the database with the **rtrv-ss-appl** command. This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0

APPL

SSN

STAT
SS-APPL table is (0 of 1) 0% full
```

3. Display the EAGLE 5 ISS's true point code using the **rtrv-sid** command.

The EAGLE 5 ISS's true point code is shown in the **PCA** field of the **rtrv-sid** output. The following is an example of the possible output.

```
rlghncxa03w 07-08-10 11:43:04 GMT EAGLE5 37.0.0
PCA          PCI          PCN          CLLI          PCTYPE
100-100-100  3-75-7          7-9-8-1      rlghncxa03w  OTHER
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    050-060-070
CPCA (LNP)
005-005-002  005-005-004    005-005-005  006-006-006
CPCI
1-002-1      1-002-2          1-002-3      1-002-4
2-001-1      7-222-7
CPCN
2-0-10-3     2-0-11-0         2-0-11-2     2-0-12-1
2-2-3-3      2-2-4-0          10-14-10-1
```

4. Display the mated applications using the **rtrv-map** command specifying the EAGLE 5 ISS's true point code (shown in step 3) and the LNP subsystem number.

For this example, enter this command:

```
rtrv-map:pca=100-100-100:ssn=254
```

This is an example, of the possible output.

```
rlghncxa03w 07-08-07 00:34:31 GMT EAGLE5 37.0.0
```

```
MAP TABLE IS      3 % FULL (33 of 1024)
PCA                SSN RC MULT |-----MATE-----| SRM MRC GRP NAME SSO
                  PCA          SSN RC MULT
100-100-100  254 10 SOL          --- --- GRP01    OFF
```

If the EAGLE 5 ISS's true point code and LNP subsystem number are not shown in the **rtrv-map** output, perform one of the "Mated Application" procedure in the *Database Administration Manual – Global Title Translation* and add the EAGLE 5 ISS's true point code and the subsystem to the database.

5. Add the subsystem number for the LNP application using the **ent-ss-appl** command.

For this example, enter this command:

```
ent-ss-appl:appl=lnp:ssn=254:stat=online
```

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

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
ENT-SS-APPL: MASP A - COMPLTD
```

6. Verify the changes with the **rtrv-ss-appl** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
APPL

SSN

STAT
LNP      254      ONLINE
SS-APPL table is (1 of 1) 100% full
```

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.
```

## Removing a Subsystem Application

This procedure is used to remove a subsystem application from the database using the **dlt-ss-appl** command. The **dlt-ss-appl** command uses only one parameter, **:appl** – the subsystem application. The EAGLE 5 ISS contains only one subsystem application, the LNP subsystem application.

**NOTE:** The **appl** parameter contains the values **INP**, for removing the **INP** subsystem, and **EIR**, for removing the **EIR** subsystem. These values cannot be used in this procedure. To remove the **INP** or **EIR** subsystems, perform the procedures in the *Feature Manual - INP* or *Feature Manual - EIR* and do not perform this procedure.

The subsystem application must be in the database and the subsystem must be out of service.

1. Display the status of the LNP subsystem with the **rept-stat-lnp** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
LNP SUBSYSTEM REPORT IS-NR      Active      -----
LNP Cards Configured= 5
```

```

CARD   PST           SST           GTT STATUS   LNP STATUS   CPU USAGE
1106   IS-NR         Active       ACT          ACT          13%
1201   IS-NR         Active       ACT          ACT          10%
1205   IS-NR         Active       ACT          ACT          11%
1302   IS-NR         Active       ACT          ACT          14%
1310   IS-NR         Active       ACT          ACT          12%
LNPQS:
  SSN STATUS = Allowed      MATE SSN STATUS = Allowed
  ACG: OVERLOAD LEVEL = 0   MIC USAGE = 100%
AVERAGE USAGE:
  GTT   = 13% LNPMPR = 0%   LNPQS  = 0%
  WNPQS = 0%  TLNP  = 10%  PLNPQS = 0%
AVERAGE CPU USAGE = 23%
TOTAL ERRORS:
  GTT:      1 out of      2000
  LNPMPR:   0 out of      0
  LPNQS:    1 out of      500
  WNPQS:    0 out of      0
  PLNPQS:   0 out of      0
  TLNP:     0 out of      0
PROVISIONED TABLE QTY:
  TN:       76800000 of    96000000 ( 80%)
  NPA:      135000 of     150000 ( 90%)
  LRN:      90000 of      100000 ( 90%)
Command Completed.

```

**NOTE: The WNPQS field is only shown if the wireless number portability feature is on. This can be verified with the WNP field of the `rtrv-feat` command output. The PLNPQS field is only shown if the PCS 1900 number portability feature is on. This can be verified with the PLNP field of the `rtrv-feat` command output. The TLNP field is only shown if the triggerless number portability feature is on. This can be verified with the TLNP field of the `rtrv-feat` command output.**

2. Display the subsystem application number for the LNP application in the database with the `rtrv-ss-appl` command.

This is an example of the possible output.

```

rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0

APPL

SSN

STAT
LNP      254      ONLINE
SS-APPL table is (1 of 1) 100% full

```

**NOTE: If the LNP subsystem is out of service, shown by the entry LNP SUBSYSTEM REPORT OOS-MT\_DSBLD in the `rept-stat-lnp` output in step 1, skip steps 3 and 4, and go to step 5.**

3. Place the LNP subsystem application out of service with the `inh-map-ss` command specifying the LNP subsystem number displayed in step 2.

For this example, enter this command. `inh-map-ss:ssn=254` When this command has successfully completed, this message should appear.

```

rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
LNP Subsystem has been inhibited.
Command Completed.

```

4. Verify that the LNP subsystem is out of service with the `rept-stat-lnp` command.

This an example of the possible output.

```

rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0

```

```

LNP SUBSYSTEM REPORT OOS-MT-DSBLD Active -----
LNP Cards Configured= 5
CARD PST SST GTT STATUS LNP STATUS CPU USAGE
1106 IS-NR Active ACT ACT 13%
1201 IS-NR Active ACT ACT 10%
1205 IS-NR Active ACT ACT 11%
1302 IS-NR Active ACT ACT 14%
1310 IS-NR Active ACT ACT 12%
LNPQS:
SSN STATUS = Allowed MATE SSN STATUS = Allowed
ACG: OVERLOAD LEVEL = 0 MIC USAGE = 100%
AVERAGE USAGE:
GTT = 13% LNPMT = 0% LNPQS = 0%
WNPQS = 0% TLNP = 10% PLNPQS = 0%
AVERAGE CPU USAGE = 23%
TOTAL ERRORS:
GTT: 1 out of 2000
LNPMT: 0 out of 0
LPNQS: 1 out of 500
WNPQS: 0 out of 0
PLNPQS: 0 out of 0
TLNP: 0 out of 0
PROVISIONED TABLE QTY:
TN: 76800000 of 96000000 ( 80%)
NPA: 135000 of 150000 ( 90%)
LRN: 90000 of 100000 ( 90%)
Command Completed.

```

**NOTE: The WNPQS field is only shown if the wireless number portability feature is on. This can be verified with the WNP field of the `rtrv-feat` command output. The PLNPQS field is only shown if the PCS 1900 number portability feature is on. This can be verified with the PLNP field of the `rtrv-feat` command output. The TLNP field is only shown if the triggerless number portability feature is on. This can be verified with the TLNP field of the `rtrv-feat` command output.**

- Remove the LNP subsystem application from the database using the `dlt-ss-appl` command. For this example, enter this command. `dlt-ss-appl:appl=lnp` When each of this command has successfully completed, this message should appear.

```

rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
DLT-SS-APPL: MASP A - COMPLTD

```

- Verify the changes with the `rtrv-ss-appl` command.

This is an example of the possible output.

```

rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0

```

```

APPL

```

```

SSN

```

```

STAT
SS-APPL table is (0 of 1) 0% full

```

- 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.

```

## Changing a Subsystem Application

This procedure is used to set an existing subsystem application either online or offline using the **chg-ss-appl** command. The **chg-ss-appl** command uses these parameters.

**:appl** – the application type. The EAGLE 5 ISS contains only one subsystem application, the LNP subsystem application.

**NOTE:** The **appl** parameter contains the values **INP**, for changing the INP subsystem, and **EIR**, for changing the EIR subsystem. These values cannot be used in this procedure. To change the INP or EIR subsystem, perform the procedures in the *Feature Manual - INP* or *Feature Manual - EIR* and do not perform this procedure.

**:nstat** – the new state of the subsystem application

If the **nstat=offline** parameter is specified, the subsystem application must be online. If the **nstat=online** parameter is specified, the subsystem application must be offline. The state of the subsystem application is shown in the **STAT** field of the **rtrv-ss-appl** command output.

If the subsystem application is to be taken offline (**nstat=offline**), the subsystem must be taken out of service (**OOS-MT-DSBLD**) with the **inh-map-ss** command.

The **rept-stat-lnp** command is used to determine the state of the LNP subsystem.

This example contains two procedures, one for taking the LNP subsystem application offline, and another for placing the LNP subsystem application online.

1. Verify whether or not the LNP subsystem is online or offline with the **rtrv-ss-appl** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
```

```
APPL
```

```
SSN
```

```
STAT
```

```
LNP      254      ONLINE
SS-APPL table is (1 of 1) 100% full
```

If the LNP subsystem is offline, this procedure does not need to be performed.

2. Display the status of the LNP subsystem with the **rept-stat-lnp** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
```

```
LNP SUBSYSTEM REPORT IS-NR      Active      -----
```

```
LNP Cards Configured= 5
```

| CARD | PST   | SST    | GTT STATUS | LNP STATUS | CPU USAGE |
|------|-------|--------|------------|------------|-----------|
| 1106 | IS-NR | Active | ACT        | ACT        | 13%       |
| 1201 | IS-NR | Active | ACT        | ACT        | 10%       |
| 1205 | IS-NR | Active | ACT        | ACT        | 11%       |
| 1302 | IS-NR | Active | ACT        | ACT        | 14%       |
| 1310 | IS-NR | Active | ACT        | ACT        | 12%       |

```
LNPQS:
```

```
SSN STATUS = Allowed      MATE SSN STATUS = Allowed
```

```
ACG: OVERLOAD LEVEL = 0   MIC USAGE = 100%
```

```
AVERAGE USAGE:
```

```
GTT   = 13% LNPMPR = 0%   LNPQS  = 0%
```

```
WNPQS = 0% TLNP  = 10%  PLNPQS = 0%
```

```
AVERAGE CPU USAGE = 23%
```

```

TOTAL ERRORS:
GTT:      1 out of    2000
LNPMR:    0 out of     0
LPNQS:    1 out of    500
WNPQS:    0 out of     0
PLNPQS:   0 out of     0
TLNP:     0 out of     0
PROVISIONED TABLE QTY:
TN:       76800000 of  96000000 ( 80%)
NPA:      135000 of   150000 ( 90%)
LRN:      90000 of   100000 ( 90%)
Command Completed.

```

**NOTE:** The **WNPQS** field is only shown if the wireless number portability feature is on. This can be verified with the **WNP** field of the **rtrv-feat** command output.

The **PLNPQS** field is only shown if the PCS 1900 number portability feature is on. This can be verified with the **PLNP** field of the **rtrv-feat** command output.

The **TLNP** field is only shown if the triggerless number portability feature is on. This can be verified with the **TLNP** field of the **rtrv-feat** command output.

- Place the LNP subsystem out of service with the **inh-map-ss** command specifying the LNP subsystem number displayed in step 2.

For this example, enter this command. **inh-map-ss:ssn=254** When this command has successfully completed, this message should appear.

```

rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
LNP Subsystem has been inhibited.
Command Completed.

```

- Verify that the LNP subsystem is out of service with the **rept-stat-lnp** command.

This an example of the possible output.

```

rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
LNP SUBSYSTEM REPORT OOS-MT-DSBLD Active -----
LNP Cards Configured= 5
CARD   PST           SST           GTT STATUS   LNP STATUS   CPU USAGE
1106   IS-NR             Active       ACT          ACT          13%
1201   IS-NR             Active       ACT          ACT          10%
1205   IS-NR             Active       ACT          ACT          11%
1302   IS-NR             Active       ACT          ACT          14%
1310   IS-NR             Active       ACT          ACT          12%
LNPQS:
SSN STATUS = Allowed      MATE SSN STATUS = Allowed
ACG: OVERLOAD LEVEL = 0   MIC USAGE = 100%
AVERAGE USAGE:
GTT   = 13% LNPMR = 0%   LNPQS = 0%
WNPQS = 0% TLNP  = 10%  PLNPQS = 0%
AVERAGE CPU USAGE = 23%
TOTAL ERRORS:
GTT:      1 out of    2000
LNPMR:    0 out of     0
LPNQS:    1 out of    500
WNPQS:    0 out of     0
PLNPQS:   0 out of     0
TLNP:     0 out of     0
PROVISIONED TABLE QTY:
TN:       76800000 of  96000000 ( 80%)
NPA:      135000 of   150000 ( 90%)
LRN:      90000 of   100000 ( 90%)
Command Completed.

```

**NOTE:** The **WNPQS** field is only shown if the wireless number portability feature is on. This can be verified with the **WNP** field of the **rtrv-feat** command output.

The **PLNPQS** field is only shown if the PCS 1900 number portability feature is on. This can be verified with the **PLNP** field of the **rtrv-feat** command output.

The **TLNP** field is only shown if the triggerless number portability feature is on. This can be verified with the **TLNP** field of the **rtrv-feat** command output.

- Place the LNP subsystem offline using the **chg-ss-appl** command with the **nstat=offline** parameter.

For this example, enter this command. **chg-ss-appl:appl=lnp:nstat=offline** When this command has successfully completed, this message should appear.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
```

```
CHG-SS-APPL: MASP A - COMPLTD
```

- Verify the changes with the **rtrv-ss-appl** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
```

```
APPL
```

```
SSN
```

```
STAT
```

```
LNP          254          OFFLINE
SS-APPL table is (1 of 1) 100% full
```

- 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.
```

## Changing LNP Options

This procedure is used to change the LNP specific options using the **chg-lnpopts** command. The **chg-lnpopts** command uses these parameters.

- :amaslpid** – the AMA service logic ID
- :incslp** – is the AMA service logic ID included in the response
- :amactype** – the AMA call type
- :amafeatid** – the AMA feature ID
- :cic** – the carrier identification code
- :aud** – the audit indicator

**:sp** – the service provider ID

**:jipprv** – The values for this parameter are either **yes** or **no**. If the value is **yes**, the Jurisdiction Information Parameter value is added to the IAM. If the value is **no**, the Jurisdiction Information Parameter value is not added to the IAM.

**:jipdigits** – The value of the Jurisdiction Information Parameter as a 6-digit number.

**:frcsmplx** – The values for this parameter are either **yes** or **no**. If the value is **yes**, LNP updates are accepted when the EAGLE 5 ISS is in the simplex mode (when the standby MASP is incoherent, at a different level compared to the active MASP, or unstable). If the value is **no**, LNP updates are not accepted when the EAGLE 5 ISS is in the simplex mode (when the standby MASP is incoherent, at a different level compared to the active MASP, or unstable).

**:admhipri** – The values for this parameter are either **yes** or **no**. If the value is **yes**, LNP administration has the highest priority of all administration in the EAGLE 5 ISS. If the **admhipri=yes** parameter is specified, LNP administration could starve out normal STP updates during LNP administration of 2 TNs per second. If the value of this parameter is **no**, then STP and LNP updates receive the same priority and performance of LNP updates can be reduced depending on other activity on the EAGLE 5 ISS.

**:gtwystp** – The values for this parameter are either **yes** or **no**. If the value is **yes**, the EAGLE 5 ISS is configured as a gateway STP and running the LNP feature. The NPAC sends LNP subscriptions that contain capability point codes that do not have routes assigned to them in the EAGLE 5 ISS database. If the value for the **gtwystp** is **no**, the EAGLE 5 ISS is not configured as a gateway STP.

**:ccp** – The values for this parameter are either **yes** or **no**. When this parameter is enabled (**ccp=yes**), the EAGLE 5 ISS copies the Charge Number and Charge Party Station type from an LNP AIN query (if present) to the LNP AIN Response message.

**:servport** – The values for this parameter are either **yes** or **no**. If the value for this parameter is **yes**, then splitting services between TN and LRN override records is allowed. This settings lets the EAGLE 5 ISS craftsperson update LRN overrides for message relay services that are to be supported in the network. The EAGLE 5 ISS will then fallback to the TN gateway point code (NPAC subscription data) for message relay services the CLEC wants to provide.

If the value of this parameter is **no**, and no LRN override services are provisioned, then the TN's gateway point codes (NPAC subscription data) are used to route queries out of the network. If one or more LRN override services are provisioned, the TN is considered to be ported into the network. In this case, if an LRN override service is requested and the LRN has other services administered, but the requested service is not provisioned, then a UDTs response for the service is provided.

**:wqredrct** – The values for this parameter are either **on** or **off**. If the value of this parameter is **on**, the EAGLE 5 ISS allows the global title translation functionality to treat any wireless LNP (WNP) and PCS) queries that require global title translation as a normal global title translation. If the value of this parameter is **off**, all wireless LNP (WNP and PCS) queries that require global title translation are routed directly to the local subsystem.

**:wsmsc10dig** – The values for this parameter are either **yes** or **no**. If the value of this parameter is **yes**, then the EAGLE 5 ISS verifies that either 10 or 11 digits are present in the CDPA global title address. If 11 digits are present, then the first digit is stripped from the CDPA global title address to derive 10 digits for LNP WSMSC translation. Otherwise, all 10 digits are used for LNP WSMSC translation. If the value of this parameter is **no**, then the EAGLE 5 ISS verifies that 11 digits (including a padded 0 digit) are present in the CDPA global title address. If 11 digits are present in the CDPA global title address, the EAGLE 5 ISS strips the first digit and uses only 10 digits for LNP WSMSC translation.

The LNP feature must be enabled. Verify this by entering the **rtrv-ctrl-feat** command. If the LNP feature is enabled, the entry **LNP ported TNs** should appear in the **rtrv-ctrl-feat** output with a telephone

quantity greater than 0. If the LNP feature is not enabled, perform the procedures in the [Chapter 2 LNP Feature Activation](#) to enable the LNP feature.

The **jipprv** and **jipdigits** parameters can only be specified if the Triggerless LNP feature is on. This can be verified by the **TLNP = on** field of the **rtrv-feat** command output.

The **wgredrct** parameter can only be specified if either the wireless number portability feature or the PCS 1900 number portability feature is on. The entry **WNP = on** in the **rtrv-feat** command output shows whether or not the wireless number portability feature is on. The entry **PLNP = on** in the **rtrv-feat** command output shows whether or not the PCS 1900 number portability feature is on.

**NOTE: The wireless number portability (WNP), PCS 1900 number portability (PLNP), or Triggerless LNP (TLNP) features must be purchased before you turn any of these features on with the chg-feat command. If you are not sure if you have purchased these features, contact your Tekelec Sales Representative or Account Representative.**

The **wsmsc10dig** parameter can only be specified if the LNP SMS feature is activated and on. This shown in the **rtrv-ctrl-feat** command output. If the LNP SMS feature is not activated or on, perform the [Activating the LNP Short Message Service \(SMS\) Feature](#) .

The value for any parameter not specified with the **chg-lnpopts** command is not changed.

The value of the **sp** parameter can contain from 1 to 4 alphanumeric characters.

The examples in this procedure changes these LNP options to these values.

AMASLPID = 909873583

AMACTYPE = 181

AMAFEATID = 250

CIC = 1254

SP = 1234

1. Verify that the LNP feature is enabled by entering the **rtrv-ctrl-feat** command.

If the LNP feature is enabled, the entry **LNP ported TNs** should appear in the **rtrv-ctrl-feat** output with a telephone quantity greater than 0. This is an example of the possible output.

```
rlghncxa03w 07-08-29 16:40:40 EST EAGLE5 37.6.0
The following features have been permanently enabled:
Feature Name          Partnum   Status   Quantity
IPGWx Signaling TPS   893012805 on        2000
HC-MIM SLK Capacity   893012707 on         64
ISUP Normalization    893000201 on         ---
Large System # Links  893005910 on        2000
Routesets             893006403 on        8000
EAGLE5 Product        893007101 on         ---
EAGLE Product         893007201 off         ---
Telnet                893005701 on         ---
LNP ELAP Configuration 893010901 on         ---
LNP ported TNs        893011023 on      228000000
LNP ported LRNs       893010501 on       150000
LNP ported NPANXXs    893009402 on       300000
;
```

If the LNP feature is not enabled, perform the procedures in the [Chapter 2 LNP Feature Activation](#) to enable the LNP feature. Go to step 2. If the LNP feature is enabled, go to step 2.

2. Display the LNP options in the database with the **rtrv-lnpopts** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
```

```

AMASLPID      = 123456789
INCSLP        = yes
AMATYPE       = 003
AMAFEATID     = 010
CIC           = 1369
AUD           = on
SP            = 5678
FRCSMPLX     = yes
ADMHIPRI      = yes
GTWYSTP       = yes
JIPPROV       = yes
JIPDIGITS     = 910460
CCP           = no
SERVPORT      = no
WQREDRCT      = off
WSMSC10DIG    = yes

```

**NOTE 1:** The **JIPPROV** and **JIPDIGITS** fields are only displayed if the Triggerless LNP feature is on. This can be verified by the **TLNP = on** field of the **rtrv-feat** command output (step 3).

**NOTE 2:** If the **rtrv-ctrl-feat** output in step 1 showed that the LNP feature was not enabled, skip this step and go to step 4.

**NOTE:** If the **wqredrct**, **jipprv**, or **jipdigits** parameters are not being specified in this procedure, skip steps 3, 4, and 5, and go to step 6.

3. Verify that the Wireless Number Portability feature or the PCS 1900 Number Portability feature (if the **wqredrct** parameter will be specified in this procedure), or the Triggerless LNP feature (if the **jipprv**, or **jipdigits** parameters will be specified in this procedure), by entering the **rtrv-feat** command.

**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 Wireless Number Portability feature is on, the entry **WNP = on** appears in the **rtrv-feat** output.

If the PCS 1900 Number Portability feature is on, the entry **PLNP = on** appears in the **rtrv-feat** output.

If the Triggerless LNP feature is on, the entry **TLNP = on** appears in the **rtrv-feat** output.

**NOTE:** If the desired features in step 3 are on, skip this step and go to step 5.

4. If either the **WNP**, **PLNP**, or **TLNP** fields in step 3 are set to **off**, the Wireless Number Portability, PCS 1900 Number Portability, or Triggerless LNP features must be turned on with the **chg-feat** command, depending on whether you are changing the value of the **wqredrct**, **jipprv**, or **jipdigits** parameters. To turn the Wireless Number Portability feature on, enter this command. **chg-feat:wnp=on** To turn the PCS 1900 Number Portability feature on, enter this command. **chg-feat:plnp=on** To turn the Triggerless LNP feature on, enter this command. **chg-feat:tlnp=on** If you wish to turn all three features on, or a combination of two of these features, enter the **chg-feat** command with each parameter that corresponds to the feature you wish to turn on. For example, to turn all three features on, enter this command. **chg-feat:tlnp=on:plnp=on:wnp=on**

**NOTE:** Once the Triggerless LNP, Wireless Number Portability or PCS 1900 Number Portability features are turned on with the **chg-feat** command, they cannot be turned off.

The Triggerless LNP, Wireless Number Portability or PCS 1900 Number Portability features must be purchased before you turn these features on with the **chg-feat** command. If you are not sure if you have purchased these features, contact your Tekelec Sales Representative or Account Representative.

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

```

r1ghncxa03w 07-08-10 11:43:04 GMT EAGLE5 37.0.0
CHG-FEAT: MASP A - COMPLTD

```

**NOTE:** If the `wmsc10dig` parameter is not being specified in this procedure, skip this step and go to step 5.

5. If `rtrv-ctrl-feat` output in step 1 shows that the LNP SMS feature is not enabled or is off, perform the [Activating the LNP Short Message Service \(SMS\) Feature](#) and enable and turn on the LNP SMS feature.
6. Change the LNP options using the `chg-lnpopts` command.

For this example, enter this command. `chg-`

`lnpopts:amaslpid=909873583:amactype=181:amafeatid=250 :cic=1254:sp=123`

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

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
CHG-LNPOPTS: MASP A - COMPLTD
```

7. Verify the changes with the `rtrv-lnpopts` command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
AMASLPID      = 909873583
INCSLP        = yes
AMACTYPE      = 181
AMAFEATID     = 250
CIC           = 1254
AUD           = on
SP            = 1234
FRCSMPLX     = yes
ADMHIPRI     = yes
GTWYSTP      = yes
JIPPROV      = yes
JIPDIGITS    = 910460
CCP          = no
SERVPORT     = no
WQREDRCT     = off
WSMSC10DIG   = yes
```

8. 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.
```

## Mapping LNP Translation Types

This procedure is used to change globally administered NGT and RGTA indications for each point code and translation type combinations for a group of existing telephone numbers in the database using the `chg-lnp-ttmap` command.

The `chg-lnp-ttmap` command uses these parameters.

`:tt` – the LNP translation type

`:pc/pca` – the point code assigned to the LNP translation type

`:nngt` – the LNP new translation type

`:nrgta` – the new value showing whether the global title address is replaced by the location routing number

The LNP feature must be enabled. Verify this by entering the **rtrv-ctrl-feat** command. If the LNP feature is enabled, the entry **LNP TNS** should appear in the **rtrv-ctrl-feat** output with a telephone quantity greater than 0. If the LNP feature is not enabled, perform the procedures in [Chapter 2 LNP Feature Activation](#) and enable the LNP feature.

The translation type (**tt**) cannot be in the database as an alias translation type, but must be assigned to an LNP service. The true translation types and alias translation types are shown in the **rtrv-lnp-serv** command output. The true translation types are shown in the **TT** field and the alias translation types are shown in the **ALIAS** field. The translation type cannot be assigned to either the AIN or IN services. This is shown in the **SERV** field of the **rtrv-lnp-serv** command output.

The message relay default global title translation point code must be in the routing table. This can be verified with the **rtrv-rte** command. If the default global title translation point code is not in the routing table, it must be added using one of the “Adding a Route” procedures or the “Changing a Route” procedure in the *Database Administration Manual – SS7*.

At least one of these parameters, **nngt** or **nrgta**, must be specified.

If the **nngt** or **nrgta** parameters are specified, the **NGT** or **RGTA** portions of the message relay global title translation entries in the database that contain the specified translation type and point code are changed. Any future message relay global title translations entered into the database that contain the specified point code and translation type will use the values for the **NGT** and **RGTA** specified by the **chg-lnp-ttmap** command.

All NPANXXs and telephone number entries in the database that reference the point code specified with the **pc/ pca** parameter are changed by the **chg-lnp-ttmap** command.

If the **nrgta=yes** parameter is specified, a location routing number must be associated with the message relay global title translation. This is verified by examining the LNP data on the ELAP. See the *EAGLE 5 ISS ELAP Administration Manual* for the procedures for examining the LNP data.

If **nngt** parameter is specified, the **XLAT** portion of the message relay global title translation must be equal to **DPCNGT** and the **RI** portion of the message relay global title translation must be equal to **GT**. If they are not, these values will be changed to **DPCNGT** and **GT** respectively.

If the **nngt=none** parameter is specified, the **XLAT** portion of the message relay global title translation is changed to **DPC** and the **RI** portion of the message relay global title translation is changed to **GT**. If the translation type and point code combination does not exist in the database, this command creates one.

### Canceling the RTRV-RTE Command

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

- Press the **F9** function key on the keyboard at the terminal where the **rtrv-rte** command was entered.
- Enter the **canc-cmd** without the **trm** parameter at the terminal where the **rtrv-rte** command was entered.
- Enter the **canc-cmd:trm=<xx>**, where **<xx>** is the terminal where the **rtrv-rte** command was entered, from another terminal other than the terminal where the **rtrv-rte** 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 LNP feature is enabled by entering the **rtrv-ctrl-feat** command.

If the LNP feature is enabled, the entry **LNP TNS** should appear in the **rtrv-ctrl-feat** output with a telephone quantity greater than 0. This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
The following features have been permanently enabled:
Feature Name          Partnum    Status    Quantity
IPGWx Signaling TPS   893012814 on        20000
ISUP Normalization    893000201 on        ----
Command Class Management 893005801 off       ----
Intermed GTT Load Sharing 893006901 off       ----
XGTT Table Expansion  893006101 off       ----
XMAP Table Expansion  893007710 on        3000
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 LNP feature is not enabled, perform the procedures in [Chapter 2 LNP Feature Activation](#) and enable the LNP feature. Go to step 2. If the LNP feature is enabled, go to step 2.

2. Display the mapped LNP global title translations in the database with the **rtrv-lnp-ttmap** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
TT  PCA          NGT  RGTA
16  001-001-001  0    yes
16  100-100-100  28   yes
18  002-002-002  10   no
20  006-006-006  80   no
25  010-010-010  40   yes
Message Relay Table is 1% full
```

**NOTE:** If the **nrgta=yes** parameter will not be specified with the **chg-lnp-ttmap** command, skip step 3, and go to step 4.

3. If the **nrgta=yes** parameter is to be specified with the **chg-lnp-ttmap** command, a location routing number must be associated with the message relay global title translation.

This is verified by examining the LNP data on the ELAP. See the *EAGLE 5 ISS ELAP Administration Manual* for the procedures for examining the LNP data.

**NOTE:** If the **nrgta=yes** parameter will be specified with the **chg-lnp-ttmap** command and step 3 was performed, skip step 4, and go to step 5.

4. Display the LNP translation types in the database with the **rtrv-lnp-serv** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
SERV  TT  TTN  DV  ALIAS
AIN   15  AINGTE  TCAP  235
      236
      240
CNAM  60  CNAM  SCCP  ---
IN    30  INGTE  TCAP  150
      175
ISVM  50  ISVM  SCCP  ---
LIDB  20  LIDB  SCCP  80
LNPQS 11  LNPQS  TCAP  ---
PCS   19  PCS19  TCAP  ---
```

```

CLASS      25      CLASSGTE  SSCP  ---
UDF1      201     UDF1      SSCP  ---
UDF2      16       UDF2      SSCP  ---
UDF3      100     UDF3      SSCP  40
   45
UDF4      18       UDF4      SSCP  ---
WSMSC     139     WSMSC1    SSCP  ---
TT-SERV TABLE IS (17 of 256) 7% FULL
    
```

5. Display the routes in the database using the **rtrv-rte** command.

The following is an example of the possible output.

```

rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
DPCA          ALIASI          ALIASN/N24  LSN      RC      APCA
001-001-001  -----
lsn4          10      001-001-001
lsn04         20      001-002-003
RTX:No       CLLI=lsn4clli
001-001-002  -----
lsn2          10      001-001-002
RTX:No       CLLI=lsn2clli
001-002-003  -----
lsn04         10      001-002-003
RTX:No       CLLI=lsn04clli
002-002-002  -----
lsn01         10      002-002-002
lsn02         20      004-004-004
lsn03         30      003-003-003
RTX:No       CLLI=lsn01clli
002-002-004  -----
lsn3          10      002-002-004
RTX:No       CLLI=lsn3clli
002-007-008  -----
lsn06         10      002-007-008
RTX:No       CLLI=lsn06clli
003-003-003  -----
lsn03         10      003-003-003
lsn01         20      002-002-002
lsn02         30      004-004-004
RTX:No       CLLI=lsn03clli
003-003-005  -----
lsn4          10      003-003-005
RTX:No       CLLI=lsn4clli
004-004-004  -----
lsn02         10      004-004-004
lsn01         20      002-002-002
lsn03         30      003-003-003
RTX:No       CLLI=lsn02clli
005-005-005  -----
lsn5          10      005-005-005
RTX:No       CLLI=lsn5clli
006-006-006  -----
lsn6          10      006-006-006
RTX:No       CLLI=lsn6clli
007-007-007  -----
lsn7          10      007-007-007
RTX:No       CLLI=lsn7clli
010-010-010  -----
lsn8          10      010-010-010
RTX:No       CLLI=lsn8clli
100-100-100  -----
lsn9          10      100-100-100
RTX:No       CLLI=lsn9clli
100-100-110  -----
lsn0          10      100-100-110
lsn9          20      100-100-100
RTX:No       CLLI=lsn0clli
150-175-000  -----
lsn10         10      150-175-000
RTX:No       CLLI=lsn10clli
200-150-007  -----
lsn11         10      200-150-007
lsn10         10      150-175-000
RTX:No       CLLI=lsn11clli
200-200-200  -----
lsn12         10      200-200-200
RTX:No       CLLI=lsn12clli
DPCI          ALIASN/N24      ALIASA      LSN      RC      APC
DPCN          ALIASA          ALIASI      LSN      RC      APC
DPCN24        ALIASA          ALIASI      LSN      RC      APC
    
```

6. Using the outputs of steps 3, 4, and 5 as a guide, enter the mapped LNP translation types into the database using the **chg-lnp-tmap** command.

If step 3 was performed, select a translation type and point code combination from LNP database on the ELAP that have an LRN associated with it. If step 4 was performed, select a translation type from the **rtrv-lnp-serv** output (step 4) that is not assigned to the AIN or IN LNP services and a point code from the

**rtrv-rte** output (step 5). For this example, enter these commands. **chg-lnp-ttmap:tt=10:pc=003-003-005:nngt=60** **chg-lnp-ttmap:tt=50:pc=005-005-005:nngt=70:nrgta=yes** **chg-lnp-ttmap:tt=18:pc=200-200-200:nrgta=yes** When each of these commands have successfully completed, this message should appear.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
CHG-LNP-TTMAP: MASP A - COMPLTD
```

7. Verify the changes with the **rtrv-lnp-ttmap** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-28 14:42:38 GMT EAGLE5 37.0.0
TT PCA NGT RGTA
10 003-003-005 60 yes
16 001-001-001 0 yes
16 100-100-100 28 yes
18 002-002-002 10 no
18 200-200-200 0 yes
25 003-003-003 40 yes
35 005-005-005 80 no
50 005-005-005 70 yes
Message Relay Table is 1% full
```

8. 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.
```

## Configuring the Triggerless LNP Feature

This procedure is used to configure the Triggerless LNP feature. The Triggerless LNP feature provides service providers a method to route calls to ported numbers without having to upgrade their signaling switch (end office or mobile switching center) software. In a trigger based LNP solution, the service providers have to modify the end office (EO) or mobile switching center (MSC) to contain the LNP triggers. These triggers cause the EO/ MSC to launch the query to the LNP database and route the call based on the returned location routing number (LRN).

The Triggerless LNP feature does not require any updates to the EO/MSC. Instead, the Initial Address Message (IAM) sent from the end office is intercepted by the Triggerless LNP equipped EAGLE 5 ISS and converted to include the LRN if the call is to a ported number.

The Gateway Screening feature is used to capture the IAMs that are converted for the Triggerless LNP feature. The database must contain a gateway screening screenset that contains these items:

- An allowed SIO screen that allows ISUP messages into the EAGLE 5 ISS. ISUP messages are MSUs that contain the value 5 in the service indicator field (SI=5) of the service information octet (SIO) of the MSU. This is verified in [Step 14](#) of this procedure.
- The gateway screening stop action **tlnp**. The gateway screening stop actions can be verified with the **rtrv-gws-actset** command, as shown in [Step 10](#) in this procedure.



**CAUTION:** When Gateway Screening is in the screen test mode, as defined by the linkset parameters `gwsa=off` and `gwsn=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 database does not contain an allowed SIO screen that allows ISUP messages into the EAGLE 5 ISS, go to the *Database Administration Manual - Gateway Screening* to configure the required screen set in the database.

**NOTE:** It is recommended that the screening for ISUP messages allowed into the EAGLE 5 ISS stop at either the Allowed SIO, Allowed DPC, Blocked DPC, or Allowed ISUP screens. Screening on these messages can continue to the Allowed DESTFLD, Allowed CGPA, Allowed TT, Allowed CDPA, or Allowed AFTPC screens, but these screens do not contain any screenable criteria contained in an ISUP message. Once these messages are passed on to the Allowed DESTFLD or Allowed CGPA screens, they will continue to be passed during the gateway screening process until the gateway screening process stops.

The Gateway Screening and Triggerless LNP features must be on. This can be verified with these entries in the `rtrv-feat` command output.

- `GWS = on`, for the Gateway Screening feature
- `TLNP = on`, for the Triggerless LNP feature

**NOTE:** Once the Gateway Screening and Triggerless LNP features are turned on with the `chg-feat` command, they cannot be turned off.

The Gateway Screening and Triggerless LNP features must be purchased before you turn the features on with the `chg-feat` command. If you are not sure if you have purchased the Gateway Screening and Triggerless LNP features, contact your Tekelec Sales Representative or Account Representative.

The LNP feature must be enabled. Enter the `rtrv-ctrl-feat` command to verify whether or not the LNP feature is enabled. If the output of the `rtrv-ctrl-feat` command shows a quantity in the `LNP ported TNS` field, the LNP feature is enabled. If the LNP feature is not enabled, perform the procedures in [Activating the LNP Feature Overview](#) to enable the LNP feature.

When the IAMs are converted, a jurisdiction indicator parameter (JIP) is added to the IAM message after LNP lookup if the jurisdiction information parameter does not exist in original IAM message and either:

- The `JIPPROV` value in the LNP options table is set to **yes**.
- A valid calling party number exists in original IAM message.

The options for the JIP parameter are set using the `chg-lnpopts` command with these parameters

- `jipprv` – Is a jurisdiction information parameter value to be added to the IAM, **yes** or **no**?
- `jipdigits` – The value of the jurisdiction information parameter as a 6-digit number.

The JIP parameter options can be verified with the `JIPPROV` and `JIPDIGITS` fields of the `rtrv-lnpopts` command.

#### Canceling the RTRV-LS Command

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

- Press the **F9** function key on the keyboard at the terminal where the **rtrv-ls** command was entered.
- Enter the **canc-cmd** without the **trm** parameter at the terminal where the **rtrv-ls** command was entered.
- Enter the **canc-cmd:trm=<xx>**, where **<xx>** is the terminal where the **rtrv-ls** command was entered, from another terminal other than the terminal where the **rtrv-ls** 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 Gateway Screening and the Triggerless LNP features are on by entering the **rtrv-feat** command.

If the Gateway Screening feature is on, the **GWS** field should be set to **on**. If the Triggerless LNP feature is on, the **TLNP** 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 Triggerless LNP feature is on, go to [Step 7](#). Before the Triggerless LNP feature can be turned on, the Gateway Screening and LNP features must be on. If the Gateway Screening feature is off, go to [Step 2](#) to turn the gateway screening feature on.

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.**

**The Gateway Screening 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 Gateway Screening feature, contact your Tekelec Sales Representative or Account Representative.**

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

```
rlghncxa03w 07-08-07 00:57:31 GMT EAGLE5 37.0.0
CHG-FEAT: MASP A - COMPLTD
```

3. Verify whether or not the LNP feature is enabled by using the **rtrv-ctrl-feat** command.

If the LNP feature is enabled, the entry LNP ported TNs appears in the **rtrv-ctrl-feat** output with a telephone number quantity greater than 0. This is an example of the possible output.

```
rlghncxa03w 07-08-30 21:15:37 GMT EAGLE5 37.0.0
The following features have been permanently enabled:
Feature Name          Partnum  Status  Quantity
IPGWx Signaling TPS   893012814 on      20000
ISUP Normalization    893000201 on      ----
Command Class Management 893005801 off     ----
LNP Short Message Service 893006601 on      ----
Intermed GTT Load Sharing 893006901 off     ----
XGTT Table Expansion   893006101 off     ----
XMAP Table Expansion   893007710 on      3000
Large System # Links   893005910 on      2000
Routesets              893006401 on      6000
LNP ELAP Configuration 893010901 on      ----
LNP ported TNs        893011008 on      48000000
LNP ported LRNs       893010505 on      100000
LNP ported NPANXXs    893009401 on      150000
```

```

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.

```

**NOTE: If the `rtrv-ctrl-feat` output in step 3 shows that the LNP feature is enabled, skip this step and go to step 5.**

4. Enable the LNP feature by performing the procedures in [Activating the LNP Feature Overview](#) .
5. Turn the Triggerless LNP feature on by entering this command.

```
chg-feat:tlnp=on
```

**NOTE: Once the Triggerless LNP feature is turned on with the `chg-feat` command, it cannot be turned off.**

**The Triggerless LNP 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 Triggerless LNP feature, contact your Tekelec Sales Representative or Account Representative.**

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

```

rlghncxa03w 07-08-07 00:57:31 GMT EAGLE5 37.0.0
CHG-FEAT: MASP A - COMPLTD

```

6. Verify the changes using the `rtrv-feat` command.

The **GWS = on** and **TLNP = on** should be shown in the `rtrv-feat` output.

**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*.**

7. Display the LNP options for the jurisdiction information parameter by entering the `rtrv-lnpopts` command.

The jurisdiction information parameter options are shown in the **JIPPROV** and **JIPDIGITS** fields as shown in bold in the example output.

```

rlghncxa03w 07-08-07 00:57:31 GMT EAGLE5 37.0.0
AMASLPID      = 123456789
INCSLP        = yes
AMATYPE       = 003
AMAFEATID     = 010
CIC           = 1369
AUD           = on
SP            = a123
FRCSMPLX     = yes11
ADMHIPRI      = yes
GTWYSTP       = yes
JIPPROV       = no
JIPDIGITS    = 919460

```

If you wish to change the jurisdiction information parameter options in the LNP options table go to [Step 8](#) , otherwise go to [Step 10](#) .

8. Change the jurisdiction information parameter options in the LNP options table using the `chg-lnpopts` command with the `jipprv` and `jipdigits` parameters.

For this example, enter this command.**chg-lnpopts:jipprv=yes:jipdigits=423929**When the `chg-lnpopts` has successfully completed, this message should appear.

```

rlghncxa03w 07-08-07 00:57:31 GMT EAGLE5 37.0.0
CHG-LNPOPTS: MASP A - COMPLTD

```

9. Verify the changes using the `rtrv-lnpopts` command.

The following is an example of the possible output.

```
rlghncxa03w 07-08-07 00:57:31 GMT EAGLE5 37.0.0
AMASLPID      = 123456789
INCSLP        = yes
AMATYPE       = 003
AMAFEATID     = 010
CIC           = 1369
AUD           = on
SP            = a123
FRCSMPLX     = yes
ADMHIPRI      = yes
GTWYSTP       = yes
JIPPROV       = yes
JIPDIGITS    = 423929
```

10. Display the gateway screening stop action sets in the database using the **rtrv-gws-actset** command.

The Triggerless LNP feature requires a gateway stop action set with the **tlnp** gateway screening stop action. The **tlnp** gateway stop action is shown by the entry **tlnp** in the **rtrv-gws-actset** command output. The following is an example of the possible output.

```
rlghncxa03w 07-08-07 00:57:31 GMT EAGLE5 37.0.0
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
4   crcncf copy cncf rdct
5   cncf  cncf
6   cfrd  cncf rdct
GWS action set table is (6 of 16) 38% full
```

If the **tlnp** gateway screening stop action is not shown in the **rtrv-gws-actset** command output, go to [Step 11](#) . Otherwise, go to [Step 12](#) .

11. Add the **tlnp** gateway screening stop action set to the database with the **chg-gws-actset** command.

If an existing gateway screening stop action set is changed, the **force=yes** parameter must be specified with the **chg-gws-actset** command. The **tlnp** gateway screening stop action cannot be specified with either the **cncf** ( calling name conversion facility) or **rdct** (redirect) gateway screening actions in the same gateway screening action set. The **tlnp** gateway screening stop action can be specified with the **copy** gateway screening atop action in the same gateway screening actions set. If the **copy** gateway screening stop action is added to a gateway screening stop action set, it must be configured as the first gateway screening stop action in the gateway screening stop action set with the **act1** parameter. For this example, a two new gateway screening stop action sets are being created for the **tlnp** gateway screening stop action. Enter these commands:

```
chg-gws-actset:actid=7:name=tlnp:act1=tlnp
```

```
chg-gws-actset:actid=8:name=cptlnp:act1=copy:act2=tlnp
```

When the **chg-gws-actset** has successfully completed, this message should appear.

```
rlghncxa03w 07-08-07 00:57:31 GMT EAGLE5 37.0.0
CAUTION: GWS action set may be referenced by one or more GWS rules
CHG-GWS-ACTSET: MASP A - COMPLTD
```

12. Verify the changes with the **rtrv-gws-actset** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-07 00:57:31 GMT EAGLE5 37.0.0
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
4  crcncf copy cncf rdct
5  cncf  cncf
6  cfrd  cncf rdct
7  tlnp  tlnp
8  cptlnp copy tlnp
GWS action set table is ( 8 of 16) 50% full

```

**NOTE:** If [Step 2](#) of this procedure was performed, skip this step and [Step 14](#) and [Step 15](#) , and go to [Step 16](#) .

13. Display the linksets in the database with the **rtrv-ls** command.

This is an example of the possible output.

```

rlghncxa03w 07-08-07 00:57:31 GMT EAGLE5 37.0.0
  L3T  SLT
LSN      APCA (SS7)  SCRNL  SET  SET BEI  LST LNKS  GWSA  GWSM  GWSD  SLSCI  NIS
atmansio 179-100-087  scr2  1    1  no  a  0    on  off  off  no  off
atmansil 200-050-176  scr1  1    1  no  a  0    on  off  off  no  off
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  gws2  1    3  yes c  5    off off  off  yes off
ls01     002-002-002  scr1  1    1  no  c  0    on  off  off  no  off
ls02     004-004-004  scr1  1    1  no  b  0    on  off  off  no  off
  L3T  SLT
LSN      APCA (X25)  SCRNL  SET  SET BEI  LST LNKS  GWSA  GWSM  GWSD  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
LSN      APCI (SS7)  SCRNL  SET  SET BEI  LST LNKS  GWSA  GWSM  GWSD  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
LSN      APCN (SS7)  SCRNL  SET  SET BEI  LST LNKS  GWSA  GWSM  GWSD  SLSCI  NIS
lsn1     11111      scr1  1    1  yes a  1    off off  off  --- on
lsn2     11112      scr2  1    2  no  c  3    on  on  on  --- on
  L3T  SLT
LSN      APCN24 (SS7)  SCRNL  SET  SET BEI  LST LNKS  ACT  MES  DIS  SLSCI  NIS
  L3T  SLT
  GWS  GWS  GWS
LSN (CHINA) APCN (SS7)  SCRNL  SET  SET BEI  LST LNKS  ACT  MES  DIS  SLSCI  NIS
  L3T  SLT
  GWS  GWS  GWS
LSN (CHINA) APCN24 (SS7)  SCRNL  SET  SET BEI  LST LNKS  ACT  MES  DIS  SLSCI  NIS
Link set table is ( 16 of 1024) 2% full

```

If the linkset that you wish to screen for the ISUP IAMs does not have a gateway screening screen set assigned to it, shown in the **SCRNL** field of the **rtrv-ls** command output, go to [Step 16](#) .

14. Display the screens in the gateway screen set using the **rtrv-scrset** command specifying a specific screen set name with the **scrnl** parameter.

If the required linkset references a screen set, shown in the **SCRNL** field of the **rtrv-ls** command output, use that name with the **scrnl** parameter of the **rtrv-scrset** command. If the required linkset does not reference a screen set, go to [Step 16](#) and configure the required screen set with a gateway screening stop action set containing the **TLNP** gateway screening stop action. For this example, enter this command.**rtrv-scrset:scrnl=gws2**

```

rlghncxa03w 07-08-07 00:57:31 GMT EAGLE5 37.0.0
SCRNL  NSFI  NSR/ACT  RULES  DESTFLD
gws2   BLKOPC  gws5      2      N
        SIO     iec        3
        DPC     abc2      5
        BLKDPC  gw11     2
        BLKDPC  gw12     2

```

|         |      |   |
|---------|------|---|
| BLKDPC  | wdb2 | 2 |
| DESTFLD | dst1 | 1 |
| DESTFLD | fld5 | 1 |
| CGPA    | gw13 | 3 |
| TT      | gw16 | 2 |
| CDPA    | gw18 | 2 |
| AFTPC   | gw20 | 1 |

If the screen set contains an Allowed SIO screen, go to [Step 15](#) . Otherwise, go to [Step 16](#) .

15. Display the allowed SIO screen shown in the output of the `rtrv-scrset` command executed in [Step 14](#) .

For this example, enter this command `rtrv-scr-sio:sr=iec` This is an example of the possible output

```
rlghncxa03w 07-08-07 00:57:31 GMT EAGLE5 37.0.0
SCREEN = ALLOWED SIO
SR  NIC  PRI  SI  H0      H1      NSFI    NSR/ACT
IEC  1    1    5  --      --      BLKDPC  WDB2
IEC  1    2    5  --      --      STOP    CRCNCF
IEC  1    3    5  --      --      DPC     ABC2
```

If the **SI** field does not contain the value 5, this screen does not allow ISUP messages into the EAGLE 5 ISS. If you wish to add a new screen set, with an allowed SIO screen containing the **SI** value 5, go to [Step 16](#) and configure a gateway screening screen set with a gateway screening stop action set that contains the TLNP gateway screening stop action. If you wish to change the existing screen set, skip [Step 16](#) , [Step 17](#) , and [Step 18](#) , and go to [Step 19](#) to reconfigure the gateway screening screen set with an allowed SIO screen containing the **SI** value 5 and with a gateway screening stop action set that contains the TLNP gateway screening stop action.

16. Go to the *Database Administration Manual - Gateway Screening* and add a gateway screening screen set to the database that contains these items.
  - a. An Allowed SIO screen that allows only ISUP messages (SI = 5) into the EAGLE 5 ISS.
  - b. The gateway screening process stops at one of these screens with the gateway screening stop action TLNP.
    - Allowed SIO – see the “Adding an Allowed SIO Screen” procedure
    - Allowed DPC – see the “Adding an Allowed DPC Screen” procedure
    - Blocked DPC – see the “Adding a Blocked DPC Screen” procedure
    - Allowed ISUP – see the “Adding an Allowed ISUP Message Type Screen” procedure
17. The gateway screening screen set created in [step 16](#) must be assigned to a linkset.

If the screen set name used in [Step 16](#) is shown in the **SCRN** field of the `rtrv-ls` command output displayed in [Step 13](#) , go to [Step 18](#) . If the screen set name used in [Step 16](#) is not shown in the **SCRN** field of the `rtrv-ls` command output displayed in [Step 13](#) , perform the “Adding an SS7 Linkset” procedure in the *Database Administration Manual - SS7* and add the required linkset to the database, making sure that the linkset references the necessary screen set. If you wish to change an existing linkset in the database, perform the “Changing an SS7 Linkset” procedure in the *Database Administration Manual - SS7* and change the required linkset to reference the necessary screen set.

18. 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. This procedure is finished.

```
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.

**NOTE: If [Step 16](#) , [Step 17](#) , and [Step 18](#) were performed, this procedure is finished.**

19. Go to the *Database Administration Manual - Gateway Screening* and change the gateway screening screen set so that the screen set contains these items:

- a. An Allowed SIO screen that allows only ISUP messages (SI = 5) into the EAGLE 5 ISS.
  - The gateway screening process stops at one of these screens with the gateway screening stop action TLNP.
  - Allowed SIO – see the “Changing an Allowed SIO Screen” procedure
  - Allowed DPC – see the “Changing an Allowed DPC Screen” procedure
  - Blocked DPC – see the “Changing a Blocked DPC Screen” procedure
  - Allowed ISUP – see the “Changing an Allowed ISUP Message Type Screen” procedure

**NOTE 1: If the `rtrv-scrset` output in [Step 14](#) did not show any of the following screens: DPC, BLKDPC, ISUP, DESTFLD, CGPA, TT, CDPA, or AFTPC, this procedure is finished.**

**NOTE 2: If the `rtrv-scrset` output in [Step 14](#) did not show any of the following screens: DPC, BLKDPC, ISUP, but did show any of these screens: DESTFLD, CGPA, TT, CDPA, or AFTPC, skip this step and go to [Step 21](#) .**

**NOTE: If new DPC, BLKDPC, or ISUP screens were not added to the screen set in [Step 19](#) , skip this step and go to [Step 21](#) .**

20. Go to the *Database Administration Manual - Gateway Screening* and remove the DPC, BLKDPC, or ISUP screens shown in the `rtrv-scrset` output in step 14, by performing these procedures as necessary.

- a. Allowed DPC – see the “Removing an Allowed DPC Screen” procedure
- b. Blocked DPC – see the “Removing a Blocked DPC Screen” procedure
- c. Allowed ISUP – see the “Removing an Allowed ISUP Message Type Screen” procedure



**CAUTION: Do not remove any screens from the database until you have made absolutely sure that these screens are not being used by other screen sets. Failure to do so, can result in breaking the gateway screening process for those screen sets.**

**NOTE: If the `rtrv-scrset` output in [Step 14](#) did not show any of the following screens: DESTFLD, CGPA, TT, CDPA, or AFTPC, do not perform [Step 21](#) . This procedure is finished.**

21. Go to the *Database Administration Manual - Gateway Screening* and remove the DESTFLD, CGPA, TT, CDPA, or AFTPC screens shown in the `rtrv-scrset` output in step 14, by performing these procedures as necessary.

- a. Allowed DESTFLD – see the “Removing an Allowed Affected Destination Field Screen” procedure
- b. Allowed CGPA – see the “Removing an Allowed Calling Party Address Screen” procedure
- c. Allowed TT – see the “Removing an Allowed Translation Type Screen” procedure
- d. Allowed CDPA – see the “Removing an Allowed Called Party Address Screen” procedure
- e. Allowed AFTPC – see the “Removing an Allowed Affected Point Code Screen” procedure



**CAUTION:** Do not remove any screens from the database until you have made absolutely sure that these screens are not being used by other screen sets. Failure to do so can result in breaking the gateway screening process for those screen sets.

## Increasing the LRN and NPANXX Quantities on the EAGLE 5 ISS

When the LNP feature is enabled for the first time the LRN (location routing number) and NPANXX quantities are set at 100,000 (for LRNs) and 150,000 (for NPANXXs). These quantities can be increased to 150,000 LRNs and 300,000 NPANXXs, but only when the LNP telephone number quantity is 60 million or greater. To increase the LNP telephone number quantity to 60 million numbers or greater, refer to the [Increasing LNP Telephone Number Quantity on EAGLE 5 ISS](#) procedure.

These quantities are increased using the **enable-ctrl-feat** command specifying the feature access key and part number of the desired LRN and NPANXX quantity. The current assigned quantities can be verified with the **rtrv-ctrl-feat** command.

The feature access key is based on the feature's part number and the serial number of the EAGLE 5 ISS, making the feature access key site-specific.

The **enable-ctrl-feat** command enables the LRN or NPANXX quantity with these parameters:

**:fak** – The feature access key provided by Tekelec. The feature access key contains 13 alphanumeric characters and is not case sensitive.

**:partnum** – The Tekelec-issued part number associated with the desired LRN or NPANXX quantity. The part numbers for increasing the LRN and NPANXX quantities are:

- LRN quantity increase to 150,000 – 893010501
- NPANXX quantity increase to 300,000 – 893009402

**NOTE:** Once the LRN or NPANXX quantity is increased with the **enable-ctrl-feat** command, that quantity cannot be reduced. The LRN and NPANXX quantity features cannot be disabled, and cannot be enabled with the temporary feature access key. The **chg-ctrl-feat** command cannot be specified for an LRN and NPANXX quantity.

The LRN and NPANXX quantity must be purchased before you can enable that quantity with the **enable-ctrl-feat** command. If you are not sure if you have purchased the desired LRN and NPANXX quantity, or do not have the feature access key for the LRN and NPANXX quantity being enabled, contact your Tekelec Sales Representative or Account Representative.

To fully use the increased LRN and NPANXX quantities, the Measurements Platform must be enabled on the EAGLE 5 ISS. If the Measurements Platform is not enabled, the measurements for LRNs are capped at 100,000, and the measurements for NPANXXs are capped at 150,000. Measurements for LRN and NPANXX quantities beyond 100,000 LRNs and 150,000 NPANXXs will be lost. To enable the Measurements Platform, perform the “Configuring the Measurements Platform Feature” procedure in the *EAGLE 5 ISS Database Administration Manual - System Management*.

1. Display the status of the features by entering the **rtrv-ctrl-feat** command.

The following is an example of the possible output.

```
rlghncxa03w 07-08-01 21:15:37 GMT EAGLE5 37.0.0
```

The following features have been permanently enabled:

| Feature Name              | Partnum   | Status | Quantity |
|---------------------------|-----------|--------|----------|
| IPGWx Signaling TPS       | 893012814 | on     | 20000    |
| ISUP Normalization        | 893000201 | on     | ----     |
| Command Class Management  | 893005801 | off    | ----     |
| LNP Short Message Service | 893006601 | on     | ----     |
| Intermed GTT Load Sharing | 893006901 | off    | ----     |
| XGTT Table Expansion      | 893006101 | off    | ----     |
| XMAP Table Expansion      | 893007710 | on     | 3000     |
| Large System # Links      | 893005910 | on     | 2000     |
| Routesets                 | 893006401 | on     | 6000     |
| LNP ELAP Configuration    | 893010901 | on     | ----     |
| LNP TNs                   | 893011008 | on     | 48000000 |
| LNP LRNs                  | 893010505 | on     | 100000   |
| LNP NPANXXs               | 893009401 | on     | 150000   |
| 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 LRN quantity is 150,000, and the NPANXX quantity is 300,000, no further action is necessary. If the LNP telephone number quantity shown in the **rtrv-ctrl-feat** output is 48,000,000 or less, refer to [Increasing LNP Telephone Number Quantity on EAGLE 5 ISS](#), and increase the LNP telephone number quantity to 60,000,000 or greater.

2. Verify the NPANXX and LRN quantity on the ELAP.

Perform the [Verifying RTDB Status at the ELAP User Interface](#) procedure. The number of NPANXXs and LRNs on the ELAP must be less than the configured quantity on the EAGLE 5 ISS. If either the NPANXX and LRN quantity on the ELAP is greater than the quantity shown in the **rtrv-ctrl-feat** output, the ELAP RTDB is not loaded onto the entire set of DSM cards on the EAGLE 5 ISS. Some of the DSM cards load the ELAP RTDB to provide a restricted level of GTT/LNP service. The remainder of the DSM cards are put into a restricted state. UIM 1324 is generated at the EAGLE 5 ISS if the NPANXX quantity on the ELAP is greater than the NPANXX quantity configured on the EAGLE 5 ISS. UIM 1325 is generated at the EAGLE 5 ISS if the LRN quantity on the ELAP is greater than the LRN quantity configured on the EAGLE 5 ISS. To avoid this situation, make sure when performing this procedure that the NPANXX and LRN quantities configured on the EAGLE 5 ISS are greater than the NPANXX and LRN quantities on the ELAP. If the NPANXX and LRN quantity on the ELAP is less than the quantity shown in the **rtrv-ctrl-feat** output in step 1, or is less than the quantity that will be configured in this procedure, go to step 3.

3. Verify whether or not the Measurements Platform on the EAGLE 5 ISS is enabled by entering the **rtrv-measopts** command.

This is an example of the possible output.

```
rlghncxa03w 07-08-01 16:02:05 GMT EAGLE5 37.0.0
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 *EAGLE 5 ISS Database Administration Manual - System Management* and enable the Measurements Platform.

4. Increase the LRN and NPANXX quantities by entering these commands.

```
enable-ctrl-feat:partnum=893010501:fak=<LRN quantity feature access
key> enable-ctrl-feat:partnum=893009402:fak=<NPANXX quantity feature
access key>
```

**NOTE: The feature access key is provided by Tekelec. If you do not have the feature access key for these quantities, contact your Tekelec Sales Representative or Account Representative.**

When the **enable -ctrl-feat** command has successfully completed, this message should appear.

```
rlghncxa03w 07-08-01 21:15:37 GMT EAGLE5 37.0.0
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

5. Verify the changes by entering these commands.

**rtrv-ctrl-feat:partnum=893010501**The following is an example of the possible output.

```
rlghncxa03w 07-08-01 21:16:37 GMT EAGLE5 37.0.0
The following features have been permanently enabled:
Feature Name          Partnum  Status  Quantity
LNP LRNs              893010501 on      150000
```

**rtrv-ctrl-feat:partnum=893009402**The following is an example of the possible output.

```
rlghncxa03w 07-08-01 21:16:37 GMT EAGLE5 37.0.0
The following features have been permanently enabled:
Feature Name          Partnum  Status  Quantity
LNP NPANXXs          893009402 on      300000
```

6. 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.
```

## Activating the LNP Short Message Service (SMS) Feature

The LNP Short Message Service feature is activated with a feature access key. The feature access key is provided by Tekelec once the feature is purchased, and is entered into the EAGLE 5 ISS using the **enable-ctrl-feat** and **chg-ctrl-feat** commands. The LNP feature must be enabled before the LNP Short Message Service feature can be activated. Refer to the [Activating the LNP Feature Overview](#) for more information about enabling the LNP feature.

The **enable-ctrl-feat** command enables the feature by inputting the feature's access key and the controlled feature's part number with these parameters:

**:fak** – The feature access key provided by Tekelec. The feature access key contains 13 alphanumeric characters and is not case sensitive.

**:partnum** – The Tekelec-issued part number associated with the LNP Short Message Service feature, 893006601.

Once the LNP Short Message Service feature has been enabled, the LNP Short Message Service feature must be activated with the **chg-ctrl-feat** command. The **chg-ctrl-feat** command uses these parameters:

**:partnum** – The Tekelec-issued part number associated with the LNP Short Message Service feature, 893006601.

**:status=on** – used to activate the controlled features that customer has purchased and enabled.

The status of the controlled features in the EAGLE 5 ISS is shown with the **rtrv-ctrl-feat** command.

When this procedure is completed and the LNP Short Message Service feature is activated, the WSMSC LNP service must be added to the LNP service table. Refer to the [Adding an LNP Service](#) .

The WSMSC10DIG LNP option can be set with the `chg-lnpopts` command. The WSMSC10DIG LNP option can be set in the [Changing LNP Options](#) .

1. Display the status of the LNP Short Message Service feature by entering the `rtrv-ctrl-feat` command. The following is an example of the possible output.

```
rlghncxa03w 07-08-01 21:15:37 GMT EAGLE5 37.0.0
The following features have been permanently enabled:
Feature Name          Partnum  Status  Quantity
IPGWx Signaling TPS   893012814 on      20000
ISUP Normalization    893000201 on      ----
INTERMED GTT LOAD SHARING 893006901 off     ----
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 LNP Short Message Service feature is permanently enabled, and its status is **on**, no further action is necessary. If the LNP Short Message Service feature is permanently enabled, and its status is **off**, skip steps 2 and 3, and go to step 4. If the LNP Short Message Service feature is temporarily enabled, and you wish to permanently enable this feature, or the temporary feature access key for that feature has expired, skip step 2 and go to step 3. If the LNP Short Message Service feature is to remain temporarily enabled, and its status is **off**, skip step 2 and go to step 3. If the feature's status is **on**, no further action is necessary. If the LNP Short Message Service feature is to remain temporarily enabled, and its status is **on**, no further action is necessary. If the `rtrv-ctrl-feat` output shows that the LNP feature is not enabled, refer to the [Activating the LNP Feature Overview](#) to enable the LNP feature

**NOTE: If the output from step 1 shows that the LNP Short Message Service feature is enabled, either temporarily or permanently, skip step 2 and go to step 3.**

2. Verify that the Wireless Number Portability (WNP) feature is on, by entering the `rtrv-feat` command. If the Wireless Number Portability feature is on, the **WNP** 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 Wireless Number Portability feature is off, perform the [Adding an LNP Service](#) and turn the Wireless Number Portability feature on, and add the WNP service to the database.

3. Enable the LNP Short Message Service feature with either a permanent key or temporary key by entering the `enable-ctrl-feat` command.

For this example, enter this command: `enable-ctrl-feat:partnum=893006601:fak=<LNP Short Message Service feature access key>`

**NOTE: The values for the feature access key (the `fak` parameter) are provided by Tekelec. If you do not have the controlled feature part number or the feature access key for the feature you wish to enable, contact your Tekelec Sales Representative or Account Representative.**

When the `enable-ctrl-feat` command has successfully completed, this message should appear.

```
rlghncxa03w 07-08-01 21:15:37 GMT EAGLE5 37.0.0
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

4. The LNP Short Message Service feature enabled in step 3 must be activated using the `chg-ctrl-feat` command, specifying the controlled feature part number used in step 3 and the `status=on` parameter.

For this example, enter these commands. **chg-ctrl-feat:partnum=893006601:status=on** When this command has successfully completed, the following message should appear.

```
rlghncxa03w 07-08-01 21:15:37 GMT EAGLE5 37.0.0
CHG-CTRL-FEAT: MASP B - COMPLTD
```

5. Verify the changes by entering the **rtrv-ctrl-feat** command with the LNP Short Message Service feature part number.

For this example, enter this command. **rtrv-ctrl-feat:partnum=893006601** The following is an example of the possible output.

```
rlghncxa03w 07-08-01 21:15:37 GMT EAGLE5 37.0.0
The following features have been permanently enabled:
Feature Name          Partnum    Status    Quantity
LNP Short Message Service 893006601  on       ----
```

6. 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.
```

## Clearing a Temporary FAK Alarm

This procedure is used to clear the critical alarm, UAM 0368, generated when the temporary feature access key for any controlled feature (for example, LNP Short Message Service) has expired, using the **chg-ctrl-feat** command.

The **chg-ctrl-feat** command uses the following parameters:

**:partnum** - The part number of the controlled feature that was temporarily enabled and is causing the alarm.

**:alarm=clear** - Clears UAM 0368, Temp Key(s) have expired.

The controlled feature must have been temporarily enabled and is now in danger of expiration or in an *expired* state.

1. Display the controlled feature that has the expired feature access key by entering the **rtrv-ctrl-feat:expired=yes** command.

The following is an example of the possible output.

```
rlghncxa03w 07-08-01 21:17:37 GMT EAGLE5 37.0.0
The following features have expired temporary keys:
Feature Name          Part Num
LNP Short Message Service 893006601
```

2. Clear the EAGLE 5 ISS alarm in the database by entering the **chg-ctrl-feat** command.

For example, enter this command. **chg-ctrl-feat:partnum=893006601:alarm=clear** When this command has successfully completed, the following message should appear.

```
rlghncxa03w 07-08-01 21:16:37 GMT EAGLE5 37.0.0
CHG-CTRL-FEAT: MASP A - COMPLTD
```

3. Verify that the alarm has cleared in the database by using the **rtrv-ctrl-feat:expired=yes** command.

The following is an example of the possible output.

```
rlghncxa03w 07-08-01 21:16:37 GMT EAGLE5 37.0.0
0367.0181 * SYSTEM Temp Key(s) expiration alarm cleared.
```

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.
```

## Deactivating the LNP Short Message Service Feature

This procedure is used to deactivate the LNP Short Message Service feature, using the **chg-ctrl-feat** command.

The **chg-ctrl-feat** command uses the following parameters:

**:partnum** – The part number of the LNP Short Message Service feature, 893006601.

**:status=off** – used to deactivate the controlled feature.

The status of the LNP Short Message Service feature must be **on** and is shown with the **rtrv-ctrl-feat** command.



**CAUTION:** If the LNP Short Message Service feature is deactivated, the WSMSC LNP service cannot be used for local number portability.

1. Display the controlled features whose status is **on** by entering the **rtrv-ctrl-feat:status=on** command.

The following is an example of the possible output.

```
rlghncxa03w 07-08-01 21:17:37 GMT EAGLE5 37.0.0
The following features have been permanently enabled:
Feature Name          Partnum    Status  Quantity
IPGWx Signaling TPS   893012814  on      20000
ISUP Normalization    893000201  on      ----
LNP Short Message Service 893006601  on      ----
INTERMED GTT LOAD SHARING 893006901  on      ----
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.
```

2. Deactivate the LNP Short Message Service feature by entering the **chg-ctrl-feat** command with the **status=off** parameter.

For example, enter this command. **chg-ctrl-feat:partnum=893006601:status=off** When this command has successfully completed, the following message should appear.

```
rlghncxa03w 07-08-01 21:16:37 GMT EAGLE5 37.0.0
CHG-CTRL-FEAT: MASP A - COMPLTD
```

3. Verify that the LNP Short Message Service feature has been deactivated by using the **rtrv-ctrl-feat:partnum=893006601** command.

The following is an example of the possible output.

```
rlghncxa03w 07-08-01 21:16:37 GMT EAGLE5 37.0.0
The following features have been permanently enabled:
Feature Name          Partnum    Status    Quantity
LNP Short Message Service 893006601  off      ----
```

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.
```

## Changing the LNP Telephone Number Alarm Thresholds

This procedure is used to change the alarm thresholds for generating alarms when the LNP Telephone number quantity has exceeded the defined percentage of the maximum number of LNP telephone numbers the EAGLE 5 ISS can contain. The alarm thresholds are changed using the **chg-th-alm** command and these parameters:

**:lnptndb11** – The percentage, from 0 to 100, of the maximum number of LNP telephone numbers the EAGLE 5 ISS can contain that generates major alarm UAM 0288. The system default value for the **lnptndbv11** parameter is 90. The current value of this parameter is shown in the **LNP TN DB Alarm Level 1:** field of the **rtrv-th-alm** command output.

**:lnptndb12** – The percentage, from 0 to 100, of the maximum number of LNP telephone numbers the EAGLE 5 ISS can contain that generates critical alarm UAM 0287. The system default value for the **lnptndbv12** parameter is 95. The current value of this parameter is shown in the **LNP TN DB Alarm Level 2:** field of the **rtrv-th-alm** command output.

The **chg-th-alm** command contains other optional parameters. These parameters are not shown here because they are not necessary to provision the LNP telephone number alarm thresholds. These parameters are explained in more detail in the *Commands Manual*.

The maximum number of LNP telephone numbers the EAGLE 5 ISS can contain is shown in the **rtrv-ctrl-feat** command output or in the **TN:** row in the **PROVISIONED TABLE QTY:** section of the **rept-stat-lnp** command output,

1. Display the current LNP telephone number alarm thresholds by entering the **rtrv-th-alm** command.

This is an example of the possible output.

```
rlghncxa03w 06-08-28 09:12:36 GMT EAGLE5 35.1.0
LNP TN DB Alarm Level 1:          80%
LNP TN DB Alarm Level 2:          90%
Command Executed
```

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

2. Change the LNP telephone number alarm thresholds by entering the **chg-th-alm** command with at least one of the LNP telephone number alarm thresholds.

One or both LNP telephone number alarm threshold parameters can be specified with the **chg-th-alm** command. If a parameter is not specified with the **chg-th-alm** command, that parameter value will not

be changed. However, after the **chg-th-alm** command is performed, the **lnptndblv2** parameter value must be greater than the **lnptndblv1** parameter value. For this example, enter this command:

```
chg-th-alm:lnptndbl1=70:lnptndbl2=80
```

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

```
rlghncxa03w 06-08-28 09:12:36 GMT EAGLE5 35.1.0
CHG-TH-ALM: MASP A - COMPLTD
```

3. Verify the changes using the **rtrv-th-alm** command.

This is an example of the possible output.

```
rlghncxa03w 06-08-28 09:12:36 GMT EAGLE5 35.1.0
LNP TN DB Alarm Level 1:          70%
LNP TN DB Alarm Level 2:          80%
Command Executed
```

**NOTE:** The **rtrv-th-alm** command output contains other fields that are not used in this procedure. If you wish to see all the fields displayed by the **rtrv-th-alm** command, see the **rtrv-th-alm** 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.
```

## Increasing LNP Telephone Number Quantity on EAGLE 5 ISS

This procedure is used to increase the current quantity of LNP telephone numbers in the EAGLE 5 ISS using the **enable-ctrl-feat** command specifying the feature access key and part number of the desired LNP telephone number quantity. The current LNP telephone number quantity is shown in the LNP ported TNs row of the **rtrv-ctrl-feat** command output.

**NOTE:** This procedure is used only if the LNP ELAP Configuration feature is enabled and turned on. If the LNP ELAP Configuration feature is not enabled or turned on, do not perform this procedure but refer to the [Activating the LNP Feature Overview](#) to activate the LNP feature and to enable and turn on the LNP ELAP Configuration feature.

The feature access key is based on the LNP telephone number quantity's part number and the serial number of the EAGLE 5 ISS, making the feature access key site-specific. The **enable-ctrl-feat** command enables the LNP telephone number quantity by inputting the feature access key and the part number corresponding to the desired LNP telephone number quantity with these parameters:

**:fak**

The feature access key provided by Tekelec. The feature access key contains 13 alphanumeric characters and is not case sensitive.

**:partnum**

The Tekelec-issued part number of the LNP telephone number quantity, without the dashes, shown in [Table 2-1](#).

**NOTE:** Once a specific LNP telephone number quantity is enabled with the **enable-ctrl-feat** command, that quantity cannot be reduced. The LNP feature cannot be disabled, and cannot be enabled

with the temporary feature access key. The `chg-ctrl-feat` command cannot be specified for an LNP telephone number quantity.

The LNP telephone number quantity must be purchased before you can enable that quantity with the `enable-ctrl-feat` command. If you are not sure if you have purchased the desired LNP telephone number quantity, or do not have the feature access key for the LNP telephone number quantity being enabled, contact your Tekelec Sales Representative or Account Representative.



**CAUTION:** Make sure that the LNP telephone number quantity configured in this step is greater than the ELAP telephone number quantity. The ELAP telephone number quantity can be verified by performing the [Verifying RTDB Status at the ELAP User Interface](#) procedure. If the telephone number quantity on the ELAP is greater than the LNP telephone number quantity configured in this step, the ELAP RTDB is not loaded onto the entire set of DSM cards on the EAGLE 5 ISS. Some of the DSM cards load the ELAP RTDB to provide a restricted level of GTT/LNP service. The remainder of the DSM cards are put into a restricted state. UIM 1323 is generated at the EAGLE 5 ISS.

If the current LNP telephone number quantity is 228 million numbers, this procedure cannot be performed. This is the maximum LNP telephone number quantity that can be enabled.

Before the quantity of LNP telephone numbers can be increased, DSM cards running the VSCCP application with the correct amount of memory must be configured in the EAGLE 5 ISS. Refer to [Table 2-1](#) for the DSM card requirements. For more information on the DSM card, go to the *Hardware Manual - EAGLE 5 ISS*.

If any E5-SM4G cards are provisioned in the EAGLE 5 ISS, the maximum number of LNP telephone numbers that can be enabled is 192 million. If the current LNP telephone number quantity is 192 million, this procedure cannot be performed.

1. Display the status of the features by entering the `rtrv-ctrl-feat` command.

```

Feature Name          Partnum   Status   Quantity
IPGWx Signaling TPS   893012814 on       20000
ISUP Normalization    893000201 on       ----
Command Class Management 893005801 off      ----
LNP Short Message Service 893006601 on       ----
Intermed GTT Load Sharing 893006901 off      ----
XGTT Table Expansion   893006101 off      ----
XMAP Table Expansion   893007710 on       3000
Large System # Links   893005910 on       2000
Routesets              893006401 on       6000
LNP ELAP Configuration 893010901 on       ----
LNP ported TNs        893011008 on       48000000
LNP ported LRNs       893010505 on       100000
LNP ported NPANXXs    893009401 on       150000
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 LNP ELAP Configuration feature is not enabled or turned on, do not perform this procedure but refer to the [Activating the LNP Feature Overview](#) section to activate the LNP feature and to enable and turn on the LNP ELAP Configuration feature.

If the current LNP telephone number quantity is 228 million numbers, this procedure cannot be performed. This is the maximum quantity that can be enabled.

If the current LNP telephone number quantity is either 204 million numbers or 216 million numbers, skip steps 2 and 3, and go to step 4. All of the DSM cards in the EAGLE 5 ISS are 4 GB DSM cards.

2. Display the status of the DSM cards by entering the **rept-stat-sccp** command.

```
rlghncxa03w 07-05-01 09:12:36 GMT EAGLE5 37.0.0
CARD VERSION PST SST AST MSU CPU
USAGE USAGE
-----
1301 123-002-001 IS-NR Active ----- 33% 46%
1303 123-002-001 IS-NR Active ----- 34% 50%
1305 123-002-001 IS-NR Active ----- 21% 29%
1307 123-002-001 IS-NR Active ----- 35% 52%
1311 123-002-001 IS-NR Active ----- 15% 20%
-----
SCCP Service Average MSU Capacity = 28% Average CPU Capacity = 40%
Command Completed.
```

**NOTE: The rept-stat-sccp command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the rept-stat-sccp command, see the rept-stat-sccp command description in the EAGLE 5 ISS Commands Manual.**

3. Verify the memory installed on the DSM card is enough based on the LNP telephone number quantity being assigned (refer to [Table 2-1](#)) and the GPL running on the DSM card. Enter the **rept-stat-card** command specifying the location of a DSM card from step 2 with the **mode=full** parameter. The amount of memory is shown in the **DBD MEMORY SIZE** field and is measured in megabytes. The GPL is shown in the **GPL** column.

```
rlghncxa03w 07-05-01 10:09:55 GMT EAGLE5 37.0.0
CARD VERSION TYPE GPL PST SST AST
1301 123-002-001 DSM VSCCP IS-NR Active -----
ALARM STATUS = No Alarms.
IMT VERSION = 123-002-000
PROM VERSION = 002-125-002
IMT BUS A = Conn
IMT BUS B = Conn
CLOCK A = IdleCLOCK B = Idle
CLOCK I = Active
MBD BIP STATUS = valid
DB STATUS = valid
DBD MEMORY SIZE = 1024M
HW VERIFICATION CODE = ----
SCCP % OCCUP = 0%
SNM TVG RESULT = 24 hr: -----, 5 min: -----
Command Completed.
```

Repeat this step for every DSM card shown in step 2.

If the amount of memory on any of the DSM cards is not enough to support the new LNP telephone number quantity, perform the [Adding a DSM Card](#) procedure and add the required DSM cards with the correct amount of memory (refer to [Table 2-1](#)). After the new DSM cards have been added, perform the [Removing an SCCP Card](#) procedure and remove the DSM cards shown in this step that do not have enough memory to support the new LNP telephone number quantity.

If the GPL running on any of the DSM cards is SCCPHC, these cards are E5-SM4G cards. If the LNP telephone number quantity shown in step 1 is 192 million, this procedure cannot be performed. This is the maximum LNP telephone number quantity that is allowed on the EAGLE 5 ISS if E5-SM4G cards are provisioned in the database.

4. Enable the new LNP telephone number quantity using the **enable-ctrl-feat** command with the part number of the desired quantity shown in [Table 2-1](#) and the feature access key for that quantity.  
**enable-ctrl-feat:partnum=893011012:fak=<LNP telephone number quantity feature access key>**

**NOTE:** Make sure that the LNP telephone number quantity configured in this step is greater than the ELAP telephone number quantity. The ELAP telephone number quantity can be verified by performing the [Verifying RTDB Status at the ELAP User Interface](#) procedure. If the telephone number quantity on the ELAP is greater than the LNP telephone number quantity configured in this step, the ELAP RTDB is not loaded onto the entire set of DSM cards on the EAGLE 5 ISS. Some of the DSM cards load the ELAP RTDB to provide a restricted level of GTT/LNP service. The remainder of the DSM cards are put into a restricted state. UIM 1323 is generated at the EAGLE 5 ISS.

**NOTE:** The feature access key is provided by Tekelec. If you do not have the feature access key for the desired LNP telephone number quantity, contact your Tekelec Sales Representative or Account Representative.

```
rlghncxa03w 07-05-01 21:15:37 GMT EAGLE5 37.0.0  
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

5. Verify the changes by entering the **rtrv-ctrl-feat** command with the part number specified in step 4.

```
rtrv-ctrl-feat:partnum=893011012
```

```
rlghncxa03w 07-05-01 21:16:37 GMT EAGLE5 37.0.0  
The following features have been permanently enabled:  
Feature Name  Partnum      Status      Quantity  
LNP ported TNs 893011012    on          96000000
```

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.
```

6. 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.
```

# Automatic Call Gapping (ACG) Configuration

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## Overview

Automatic call gapping controls the rate that location routing number (LRN) queries for a particular telephone number or a portion of a telephone number are received by the EAGLE 5 ISS when a particular threshold is reached. ACG controls are used under two conditions:

1. When a node overload condition is detected and an ACG control is configured for that overload level, the EAGLE 5 ISS sends an ACG component within each LRN query response it processes. The ACG control is invoked for the first 6 or 10 digits of the called party address in all queries sent to the EAGLE 5 ISS to control the rate that queries are processed.
2. If no overload control is sent, the EAGLE 5 ISS sends an ACG for a manually initiated control to control the rate of queries for a particular area code (3 digits), area code and prefix (6 digits), 10 digit telephone

number, or part of a 10 digit telephone number (6 to 10 digits) are processed. The database can contain a maximum of 256 manually initiated ACG controls.

In addition to the digits applied to the ACG control, the ACG control contains a duration index and a gap interval index. The duration index is a timer defining the amount of time the ACG control is in effect. The gap interval index is a timer that defines the rate that queries are processed in the EAGLE 5 ISS. For example, the ACG control may be in effect for 128 seconds, the duration index, and a query is processed every 2 seconds, the gap interval index. When the ACG control is detected, the duration timer and gap interval timer are started. Until the gap timer expires, all calls containing the specified number of digits or the specified digits are routed to reorder tone or to an announcement indicating that the call cannot be completed. Once the gap timer has expired, the next call containing the matching dialed digits is processed normally and the gap timer is restarted. This cycle continues until the ACG control is cancelled by the EAGLE 5 ISS or the duration timer expires. [Table 4-1](#) shows the values for the duration index and the gap index used in the automatic call gapping commands.

**Table 4-1. Duration and Gap Interval Index Values**

| Index | Duration Index Value ( <i>DRTN</i> ) in seconds | Node Overload Control Interval or IN Manual Initiated Control Interval Index Value ( <i>INTVL</i> ) in seconds | AIN Manual Initiated Control Interval Index Value ( <i>AINTVL</i> ) in seconds |
|-------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 0     | N/A                                             | 0                                                                                                              | N/A                                                                            |
| 1     | 1                                               | 3                                                                                                              | 0                                                                              |
| 2     | 2                                               | 4                                                                                                              | 0.1                                                                            |
| 3     | 4                                               | 6                                                                                                              | 0.25                                                                           |
| 4     | 8                                               | 8                                                                                                              | 0.5                                                                            |
| 5     | 16                                              | 11                                                                                                             | 1                                                                              |
| 6     | 32                                              | 16                                                                                                             | 2                                                                              |
| 7     | 64                                              | 22                                                                                                             | 5                                                                              |
| 8     | 128                                             | 30                                                                                                             | 10                                                                             |
| 9     | 256                                             | 42                                                                                                             | 15                                                                             |
| 10    | 512                                             | 58                                                                                                             | 30                                                                             |
| 11    | 1024                                            | 81                                                                                                             | 60                                                                             |
| 12    | 2048                                            | 112                                                                                                            | 120                                                                            |
| 13    | infinite                                        | 156                                                                                                            | 300                                                                            |
| 14    | N/A                                             | 217                                                                                                            | 600                                                                            |
| 15    | N/A                                             | 300                                                                                                            | infinite                                                                       |

## Node Overload Control

The EAGLE 5 ISS does not maintain overload levels for individual subsystems, but maintains an overload level for the entire EAGLE 5 ISS, the node. There are 10 overload levels that are defined for the EAGLE 5 ISS. Each overload level contains this information.

- The number of queries in a 30 second period that defines each overload level. When the defined number of queries is reached, the ACG control for the overload level goes into effect.
- The number of digits from AIN queries to control
- The number of digits from IN queries to control
- The duration index of the ACG control
- The gap interval index of the ACG control

Only overload levels 1 through 9 can be added or removed from the database, but can be changed. Overload level 10 is pre-defined with these values.

The number of queries = 2,147,483,647

The number of digits from AIN queries to control = 6

The number of digits from IN queries to control = 6

The gap interval index = 7 - 22 seconds

The duration index = 1 - 1 second

Any overload levels that are not configured are not used. If no overload levels are configured or if any LIMs are denied service, then overload level 10 is used for the ACG node overload control.

## Manually Initiated Control

Manually initiated controls are applied to a specific 10 digit telephone number or a part of a specific telephone number in either AIN queries or IN queries. The manually initiated control can contain the first 3, 6, 7, 8, 9 digits, or all 10 digits of the telephone number.

The duration index of a manually initiated control uses the same values as the duration index of a node overload control. A manually initiated control contains a gap interval index for IN queries, using the same values as the gap interval index for the node overload control levels, and a gap interval index for AIN queries using different values.

For IN queries, the digits sent for manually initiated controls is the original 10 digit called party number. For example, if a query for called party number 919-460-2132 triggers a manually initiated control for the digits 919, the digits parameter of the ACG is 919-460-2132 instead of 919.

A manually initiated control can be applied to all queries sent to the EAGLE 5 ISS. This type of manually initiated control specifies the number of digits from the queries' dialed digits. For manually initiated controls that apply to particular query services and called party digits, the number of digits to use in the ACG component is the number of digits in the specified digit string.

The database can contain a manually initiated control that applies to all queries and manually initiated controls that apply to specific combinations of query service and called party digits. When more than one control applies to a specific query, the one selected is the one containing the higher number of digits. If a manually initiated control

cannot be selected with this method, then the one with the higher gap interval index value is selected. If the controls contain the same gap interval index value, then the control with the higher duration index value is selected. This an example of how these controls are selected.

1. A control for AIN LNP queries for called party digits of 919-460-2 is entered into the database. ( dgts=9194602: drtn=3: **ent-acg-mic:serv=ain:aintvl=1**).
2. A control with a interval index of 10 for AIN LNP queries for called party digits of 919-460 is entered into the database. ( serv=ain:dgts=919460:drtn=12: **ent-acg-mic:aintvl=10**).
3. A control with a interval index of 7 for all queries, and the number of digits used for the control is 6 is entered into the database. ( type=all: nd=6:drtn=12: aintvl=7: **ent-acg-mic:intvl=7**)
4. The EAGLE 5 ISS receives an AIN query for the called party address 919-461-1017.
5. The EAGLE 5 ISS sends an ACG for 919-461. The control entered in item 3 is the only one that applies.
6. The EAGLE 5 ISS receives an AIN query for called party 919-460-2132.
7. The EAGLE 5 ISS sends ACG for 919-460-2. The control entered in item 1 is more specific than the controls entered in items 2 and 3.
8. The EAGLE 5 ISS receives an AIN query for called party 919-460-5500.
9. The EAGLE 5 ISS sends ACG with a interval index of 10 for 919-460. The control entered in item 2 is more specific than the control entered in item 3. The control entered in item 1 does not apply.

## **Determining the ACG Node Overload Control Level Query Rates**

The query rates for the ACG node overload control levels are the number of LNP queries received by the EAGLE 5 ISS in a 30 second period. When the defined number of queries is reached, the ACG control for that node overload control level goes into effect.

These items are used to calculate the query rates for the node overload control levels.

N = the number of SCCP cards installed in the EAGLE 5 ISS.

S = the total SCCP EAGLE 5 ISS traffic capacity in messages per second

P = The LNP query portion of the SCCP traffic from 0% to 100% determined from the traffic studies.

Q = The LNP query portion of the total SCCP EAGLE 5 ISS capacity in messages per second

F = The query rate of the first ACG node overload control level at 80% of the total LNP query portion of the SCCP traffic, in messages per 30 seconds

L = The query rate of the last ACG node overload control level at 100% of the total SCCP traffic, in messages per 30 seconds

NL = The number of ACG node overload control levels being used.

I = The spacing of the query rates between the node overload control levels.

The query rates are configured with the **qr** parameter of **ent-acg-noc** and **chg-acg-noc** commands.

Any node overload control levels that are not configured are not used. If no node overload control levels are configured or if any LIMs are denied SCCP service, then node overload control level 10 is used for the ACG node overload control. Node overload control level 10 cannot be added with the `ent-acg-noc` command or removed with the `dlt-acg-noc` command, but can be changed with the `chg-acg-noc` command. It is recommended that the query rate for node overload control level 10 is not changed. The default query rate for node overload control level 10 is 2,147,483,647 messages per 30 seconds.



**WARNING: If the query rate for node overload control level 10 is changed, then node overload control level 10 is used as any other node overload control level in addition to the default conditions that node overload control level 10 is used for (no node overload control levels are configured or for any LIMs denied SCCP service). If the query rate for node overload control level 10 is changed, make sure that the duration and interval timer values assigned to node overload control level 10 are appropriate for all three conditions or traffic may be lost.**

By not changing the query rate of node overload control level 10, this ensures that node overload control level 10 is used for its default conditions and is not treated as another node overload control level.

### Determining the Total SCCP EAGLE 5 ISS Traffic Capacity

The total EAGLE 5 ISS traffic capacity is determined from the number of SCCP cards installed in the EAGLE 5 ISS (N). Each SCCP card can handle 850 messages per second. The number of SCCP cards used in this calculation is one less than the total number of SCCP cards in the EAGLE 5 ISS. To determine the total SCCP EAGLE 5 ISS traffic capacity (S), subtract 1 from the total number of SCCP cards and multiply the result by 850 messages per second.

$$(N-1) \times 850 \text{ messages per second} = \text{Total SCCP traffic capacity (S)}$$

### Determining the LNP Query Portion of the Total SCCP EAGLE 5 ISS Traffic Capacity

The LNP query portion of the SCCP traffic (Q) is a percentage of the total SCCP EAGLE 5 ISS traffic (P) as determined from the traffic studies. Once the LNP query percentage is determined, multiply the total SCCP EAGLE 5 ISS traffic capacity (S) by the LNP query percentage.

$$S \times P = Q$$

### Determining the Query Rate of the First ACG Node Overload Control Level

The ACG node overload controls should start when the LNP query portion of the SCCP traffic reaches 80% of the total LNP query portion of the SCCP traffic (Q). The ACG node overload control level is determined by the number messages received over a 30 second period of time. To determine the query rate of the first ACG node overload control level (F), in messages per 30 seconds, multiply the total LNP query portion of the SCCP traffic (Q) by .8, then multiply that result by 30.

$$Q \times 0.8 \times 30 = F$$

### Determining the Query Rate of the Last ACG Node Overload Control Level

The ACG node overload controls should continue until the LNP query portion of the SCCP traffic reaches 100% of the total SCCP traffic (S). To determine the query rate of the last ACG node overload control level (L), in messages per 30 seconds, multiply the total LNP query portion of the SCCP traffic by 30.

$$S \times 30 = L$$

### Determining the Spacing of Query Rates between ACG Node Overload Control Levels

If the number of ACG node overload control levels being used is 3 or more, the query rates of each node overload control level between the first and the last node overload control level can be evenly divided. Subtract the query rate of the first level from the query rate of the last level and divide the result by the number of node overload control levels (NL) being used minus 1.

$$(L - F)/(NL-1) = I$$

### Setting the ACG Node Overload Control Levels

If three node overload control levels are being used:

The query rate for the first node control level = F

The query rate for the second node control level = F + I

The query rate for the third node control level = L

If four node overload control levels are being used:

The query rate for the first node control level = F

The query rate for the second node control level = F + I

The query rate for the third node control level = F + 2I

The query rate for the fourth node control level = L

If five node overload control levels are being used:

The query rate for the first node control level = F

The query rate for the second node control level = F + I

The query rate for the third node control level = F + 2I

The query rate for the fourth node control level = F + 3I

The query rate for the fifth node control level = L

If six node overload control levels are being used:

The query rate for the first node control level = F

The query rate for the second node control level = F + I

The query rate for the third node control level = F + 2I

The query rate for the fourth node control level = F + 3I

The query rate for the fifth node control level = F + 4I

The query rate for the sixth node control level = L

If seven node overload control levels are being used:

The query rate for the first node control level = F

The query rate for the second node control level = F + I

The query rate for the third node control level =  $F + 2I$

The query rate for the fourth node control level =  $F + 3I$

The query rate for the fifth node control level =  $F + 4I$

The query rate for the sixth node control level =  $F + 5I$

The query rate for the seventh node control level =  $L$

If eight node overload control levels are being used:

The query rate for the first node control level =  $F$

The query rate for the second node control level =  $F + I$

The query rate for the third node control level =  $F + 2I$

The query rate for the fourth node control level =  $F + 3I$

The query rate for the fifth node control level =  $F + 4I$

The query rate for the sixth node control level =  $F + 5I$

The query rate for the seventh node control level =  $F + 6I$

The query rate for the eighth node control level =  $L$

If nine node overload control levels are being used:

The query rate for the first node control level =  $F$

The query rate for the second node control level =  $F + I$

The query rate for the third node control level =  $F + 2I$

The query rate for the fourth node control level =  $F + 3I$

The query rate for the fifth node control level =  $F + 4I$

The query rate for the sixth node control level =  $F + 5I$

The query rate for the seventh node control level =  $F + 6I$

The query rate for the eighth node control level =  $F + 7I$

The query rate for the ninth node control level =  $L$

### Example 1

For this example, this is the configuration of the EAGLE 5 ISS.

$P = 0.50$  - 50% LNP queries as determined by the traffic studies

$N = 11$  SCCP cards

$NL = 7$  ACG node overload control levels - ACG node overload control levels 3 through 9

1. Determine the total SCCP EAGLE 5 ISS traffic capacity

$$(N-1) \times 850 \text{ messages per second} = \text{Total SCCP traffic capacity (S)}$$

$$(11-1) \times 850 \text{ messages per second} = 8500 \text{ messages per second}$$

2. Determine the LNP query portion of the total SCCP EAGLE 5 ISS traffic capacity in messages per second

$$S \times P = Q$$

$$8500 \text{ messages per second} \times 0.50 = 4250 \text{ messages per second}$$

3. Determine the query rate of the first ACG node overload control level

$$Q \times 0.8 \times 30 = F$$

$$4250 \text{ messages per second} \times 0.8 \times 30 = 102,000 \text{ messages per 30 seconds}$$

4. Determining the query rate of the last ACG node overload control level

$$S \times 30 = L$$

$$8500 \text{ messages per second} \times 30 = 255,000 \text{ messages per 30 seconds}$$

5. Determine the spacing of the query rates between ACG node overload control levels

$$(L - F)/(NL-1) = I$$

$$(255,000 \text{ messages per 30 seconds} - 102,000 \text{ messages per 30 seconds})/(7 - 1) = 25,500 \text{ messages per 30 seconds.}$$

6. Setting the ACG node overload control levels by entering these commands.

```
ent-acg-noc:lvl=3:qr=102000:drtn=3:intvl=3
```

```
ent-acg-noc:lvl=4:qr=127500:drtn=4:intvl=4
```

```
ent-acg-noc:lvl=5:qr=153000:drtn=5:intvl=5
```

```
ent-acg-noc:lvl=6:qr=178500:drtn=6:intvl=6
```

```
ent-acg-noc:lvl=7:qr=204000:drtn=7:intvl=7
```

```
ent-acg-noc:lvl=8:qr=229500:drtn=8:intvl=8
```

```
ent-acg-noc:lvl=9:qr=255000:drtn=9:intvl=9
```

### **Example 2**

For this example, this is the configuration of the EAGLE 5 ISS.

P = 0.70 - 70% LNP queries as determined by the traffic studies

N = 21 SCCP cards

NL = 7 ACG node overload control levels - ACG node overload control levels 3 though 9

1. Determine the total SCCP EAGLE 5 ISS traffic capacity

$$(N-1) \times 850 \text{ messages per second} = \text{Total SCCP traffic capacity (S)}$$

$$(21-1) \times 850 \text{ messages per second} = 17,000 \text{ messages per second}$$

2. Determine the LNP query portion of the total SCCP EAGLE 5 ISS traffic capacity in messages per second

$$S \times P = Q$$

17,000 messages per second x 0.70 = 11,900 messages per second

- Determine the query rate of the first ACG node overload control level

$$Q \times 0.8 \times 30 = F$$

11,900 messages per second x 0.8 x 30 = 285,600 messages per 30 seconds

- Determining the query rate of the last ACG node overload control level

$$S \times 30 = L$$

17,000 messages per second x 30 = 510,000 messages per 30 seconds

- Determine the spacing of the query rates between ACG node overload control levels

$$(L - F)/(NL-1) = I$$

(510,000 messages per 30 seconds - 285,600 messages per 30 seconds)/ (7 - 1) = 37,400 messages per 30 seconds.

- Setting the ACG node overload control levels by entering these commands.

```
ent-acg-noc:lvl=3:qr=285600:drtn=3:intvl=3
```

```
ent-acg-noc:lvl=4:qr=323000:drtn=4:intvl=4
```

```
ent-acg-noc:lvl=5:qr=360400:drtn=5:intvl=5
```

```
ent-acg-noc:lvl=6:qr=397800:drtn=6:intvl=6
```

```
ent-acg-noc:lvl=7:qr=435200:drtn=7:intvl=7
```

```
ent-acg-noc:lvl=8:qr=472600:drtn=8:intvl=8
```

```
ent-acg-noc:lvl=9:qr=510000:drtn=9:intvl=9
```

### Example 3

For this example, this is the configuration of the EAGLE 5 ISS.

P = 0.60 - 60% LNP queries as determined by the traffic studies

N = 17 SCCP cards

NL = 4 ACG node overload control levels - ACG node overload control levels 2, 4, 6, and 8

- Determine the total SCCP EAGLE 5 ISS traffic capacity

$$(N-1) \times 850 \text{ messages per second} = \text{Total SCCP traffic capacity (S)}$$

(17-1) x 850 messages per second = 13,600 messages per second

- Determine the LNP query portion of the total SCCP EAGLE 5 ISS traffic capacity in messages per second

$$S \times P = Q$$

13,600 messages per second x 0.60 = 8160 messages per second

- Determine the query rate of the first ACG node overload control level

$$Q \times 0.8 \times 30 = F$$

8160 messages per second x 0.8 x 30 = 195,840 messages per 30 seconds

4. Determining the query rate of the last ACG node overload control level

$S \times 30 = L$

13,600 messages per second x 30 = 408,000 messages per 30 seconds

5. Determine the spacing of the query rates between ACG node overload control levels

$(L - F)/(NL-1) = I$

(408,000 messages per 30 seconds - 195,840 messages per 30 seconds)/ (4 - 1) = 70,720 messages per 30 seconds.

6. Setting the ACG node overload control levels by entering these commands.

```
ent-acg-noc:lvl=2:qr=195840:drtn=3:intvl=3
```

```
ent-acg-noc:lvl=4:qr=266560:drtn=4:intvl=4
```

```
ent-acg-noc:lvl=6:qr=337280:drtn=6:intvl=6
```

```
ent-acg-noc:lvl=8:qr=408000:drtn=8:intvl=8
```

## Adding an ACG Node Overload Control Level

This procedure is used to add an ACG node overload control level to the database using the **ent-acg-noc** command.

The **ent-acg-noc** command uses these parameters.

**:lvl** – The overload levels, 1 through 9.

**:qr** – The number of LNP queries in a 30 second period that define a particular overload level

**:and** – The number of digits in the global title address of an AIN query

**:ind** – The number of digits in the global title address of an IN query

**:intvl** – The interval index – the amount of time between ACGs. This is a number that is mapped to a time value at the LNP node. See [Table 4-1](#) .

**:drtn** – The duration index – the amount of time that the ACG is in effect. This is a number that is mapped to a time value at the LNP node. See [Table 4-1](#) .

To add an ACG node overload control, the LNP feature must be enabled. This is verified by entering the **rtrv-ctrl-feat** command. If the LNP feature is enabled, the entry **LNP ported TNS** is shown in the **rtrv-ctrl-feat** output with a quantity greater than 0. If the LNP feature is not enabled, perform the procedures in the [Chapter 2 LNP Feature Activation](#) to enable the LNP feature.

The overload level to be added cannot be in the database.

Overload level 10 is pre-defined in the database with these values and cannot be added to the database. These values can be changed using the [Changing an ACG Node Overload Control Level](#) .

QR = 2147483647

AND = 6

IND = 6

INTVL = 7 - 22 seconds

DRTN = 1 - 1 second

The examples in this procedure are used to add ACG node overload control level 7 to the database with these values.

QR = 35000000

AND = 10

IND = 10

INTVL = 7 - 22 seconds

DRTN = 8 - 128 seconds

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 07-08-29 16:40:40 EST EAGLE5 37.6.0
The following features have been permanently enabled:
Feature Name          Partnum   Status   Quantity
IPGWx Signaling TPS   893012805 on        2000
HC-MIM SLK Capacity   893012707 on         64
ISUP Normalization    893000201 on         ----
Large System # Links  893005910 on        2000
Routesets             893006403 on        8000
EAGLE5 Product        893007101 on         ----
EAGLE Product         893007201 off         ----
Telnet                893005701 on         ----
LNP ELAP Configuration 893010901 on         ----
LNP ported TNS        893011023 on       228000000
LNP ported LRNs       893010501 on       150000
LNP ported NPANXXs    893009402 on       300000
;
```

If the LNP feature is enabled, the entry **LNP ported TNS** is shown in the **rtrv-ctrl-feat** output with a quantity greater than 0. If the LNP feature is enabled, go to step 2. If the LNP feature is not enabled, perform the procedures in the [Chapter 2 LNP Feature Activation](#) to enable the LNP feature. After the LNP feature is enabled, go to step 2.

2. Display the ACG node overload levels in the database by entering the **rtrv-acg-noc** command.

The following is an example of the possible output.

```
rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
LVL QR          AND  IND  INTVL  DRTN
3   600000      10  6   3      6
4   750000      6   6   5      7
10  2147483647  10  10  15     13
RTRV-ACG-NOC: MASP A - COMPLTD
```

3. Add the ACG node overload control level to the database using the **ent-acg-noc** command.

For this example, enter this command **ent-acg-**

**noc:lvl=7:qr=35000000:and=10:ind=10:intvl=7:drtn=8** When this command has successfully completed, this message should appear.

```
rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
ENT-ACG-NOC: MASP A - COMPLTD
```

- Verify the changes using the **rtrv-acg-noc** command.

The following is an example of the possible output.

```
rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
LVL QR      AND  IND  INTVL DRTN
3   600000   10  6   3     6
4   750000   6   6   5     7
7   35000000 10  10  7     8
10  2147483647 10  10  15    13
RTRV-ACG-NOC: MASP A - COMPLTD
```

- 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.
```

## Removing an ACG Node Overload Control Level

This procedure is used to remove an ACG Node Overload Control Level from the database using the **dlt-acg-noc** command.

The **dlt-acg-noc** command uses only one parameter, **lvl** – the overload levels 1 through 9. The database contains 10 ACG node overload levels, but only nine are configurable.

Overload level 10 cannot be removed from the database, but its values can be changed using the [Changing an ACG Node Overload Control Level](#) procedure.

The overload level to be removed must be in the database.

The example in this procedure removes ACG node overload control level 3 from the database.

- Display the ACG node overload levels in the database by entering the **rtrv-acg-noc** command.

The following is an example of the possible output.

```
rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
LVL QR      AND  IND  INTVL DRTN
3   600000   10  6   3     6
4   750000   6   6   5     7
7   35000000 10  10  7     8
10  2147483647 10  10  15    13
RTRV-ACG-NOC: MASP A - COMPLTD
```

- Remove the ACG node overload control level from the database using the **dlt-acg-noc** command.

For this example, enter this command. **dlt-acg-noc:lvl=3** When this command has successfully completed, this message should appear.

```
rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
DLT-ACG-NOC: MASP A - COMPLTD
```

- Verify the changes using the **rtrv-acg-noc** command.

The following is an example of the possible output.

```
rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
LVL QR      AND  IND  INTVL DRTN
4   750000   6   6   5     7
7   35000000 10  10  7     8
```

```
10 2147483647 10 10 15 13
RTRV-ACG-NOC: MASP A - COMPLTD
```

4. 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.
```

## Changing an ACG Node Overload Control Level

This procedure is used to change the values of an existing ACG Node Overload Control Level in the database using the **chg-acg-noc** command.

The **chg-acg-noc** command uses these parameters.

**:lvl** – The overload levels, 1 through 10.

**:qr** – The number of LNP queries in a 30 second period that define a particular overload level

**:and** – The number of digits in the global title address of a AIN query

**:ind** – The number of digits in the global title address of a IN query

**:intvl** – The interval index – the amount of time between ACGs. This is a number that is mapped to a time value at the LNP node. See [Table 4-1](#) .

**:drtn** – The duration index – the amount of time that the ACG is in effect. This is a number that is mapped to a time value at the LNP node. See [Table 4-1](#) .

The overload level to be changed must be in the database.

The examples in this procedure are used to change ACG node overload control level 10 in the database to these values.

QR = 70000000, AND = 6, IND = 6, INTVL = 11 - 81 seconds

DRTN = 8 - 128 seconds

1. Display the ACG node overload levels in the database by entering the **rtrv-acg-noc** command.

The following is an example of the possible output.

```
rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
LVL QR      AND  IND  INTVL  DRTN
3   600000   10  6    3      6
4   750000   6   6    5      7
7   35000000 10  10   7      8
10  2147483647 10  10   15     13
RTRV-ACG-NOC: MASP A - COMPLTD
```

2. Change the ACG node overload control level values in the database using the **chg-acg-noc** command.

For this example, enter this command. **chg-acg-**

**noc:lvl=10:qr=70000000:and=6:ind=6:intvl=11:drtn=8** When this command has successfully completed, this message should appear.

```
rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
CHG-ACG-NOC: MASP A - COMPLTD
```

3. Verify the changes using the **rtrv-acg-noc** command.

The following is an example of the possible output.

```
rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
LVL QR      AND  IND  INTVL  DRTN
3   600000   10  6    3      6
4   750000   6   6    5      7
7   35000000 10  10   7      8
10  70000000  6   6   11     8
RTRV-ACG-NOC: MASP A - COMPLTD
```

4. 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.
```

## Adding ACG Manual Initiated Controls

This procedure is used to assign ACG controls to all LNP queries or to specific LNP query services and called party digits using the **ent-acg-mic** command. If the EAGLE 5 ISS query service receives a query to which a control applies, then the EAGLE 5 ISS sends an ACG, encoded as configured, with the response.

The **ent-acg-mic** command uses these parameters.

**:type** – Whether the manually initiated control applies to all query services (**type=all**) or to a specific query service and called party digits (**type=sd**).

**:serv** – The type of service the manual initiated control is applied to

**:dgts** – the digits of the global title address

**:nd** – the number of digits in the global title address

**:drtn** – The duration index – the amount of time that the ACG is in effect. This is a number that is mapped to a time value at the LNP node. See [Table 4-1](#) .

**:intvl** – The IN interval index – the amount of time between ACGs for IN queries. This is a number that is mapped to a time value at the LNP node. See [Table 4-1](#) .

**:aintvl** – The AIN interval index – the amount of time between ACGs for AIN queries. This is a number that is mapped to a time value at the LNP node. See [Table 4-1](#) .

To add an ACG manual initiated control, the LNP feature must be enabled. This is verified by entering the **rtrv-ctrl-feat** command. If the LNP feature is enabled, the entry **LNP ported TNS** is shown in the **rtrv-ctrl-feat** output with a quantity greater than 0. If the LNP feature is not enabled, perform the procedures in the [Chapter 2 LNP Feature Activation](#) to enable the LNP feature.

If the **type=all** parameter is specified, the **nd**, **intvl**, and **aintvl** parameters must be specified and the **serv** and **dgts** parameters cannot be specified. To specify the **type=all** parameter, no existing ACG manually initiated control specifying all LNP query services can be in the database.

If the **type=sd** parameter is specified, the **serv** and **dgts** parameters must be specified. To specify the **type=sd** parameter, no existing ACG manually initiated control containing the same query service and digits can be in the database.

If the **serv=ain** parameter is specified, the **aintvl** parameter must be specified and the **intvl** parameter cannot be specified.

If the **serv=in** parameter is specified, the **intvl** parameter must be specified and the **aintvl** parameter cannot be specified.

The database contains a maximum of 256 ACG manually initiated controls with the **type=sd** parameter. When the **type=sd** parameter is specified with the **ent-acg-mic** command, the output displays the number of entries in the ACG MIC table and the amount of the ACG MIC table being used, expressed as a percentage obtained by dividing the number of entries in the ACG MIC table by the maximum number of entries the ACG MIC table can contain, 256.

```
rlghncxa03w 06-08-28 08:50:12 GMT EAGLE5 35.1.0
ACG MIC table is (11 of 256) 4% full of type SD
ENT-ACG-MIC: MASP A - COMPLTD
```

The examples in this procedure are used to add these three ACG manually initiated controls to the database.

#### ACG Manually Initiated Control #1

Type of Control = All

Number of Digits = 6

IN Interval Index = 4 - 8 seconds

AIN Interval Index = 7 - 5 seconds

Duration Index = 8 - 128 seconds

#### ACG Manually Initiated Control #2

Type of Control = SD

Query Service = AIN

AIN Interval Index = 8 - 10 seconds

Digits = 910584

Duration Index = 7 - 64 seconds

#### ACG Manually Initiated Control #3

Type of Control = SD

Query Service = IN

IN Interval Index = 6 - 16 seconds

Digits = 4237431234

Duration Index = 5 - 16 seconds

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 07-08-29 16:40:40 EST EAGLE5 37.6.0
```

The following features have been permanently enabled:

| Feature Name           | Partnum   | Status | Quantity  |
|------------------------|-----------|--------|-----------|
| IPGWx Signaling TPS    | 893012805 | on     | 2000      |
| HC-MIM SLK Capacity    | 893012707 | on     | 64        |
| ISUP Normalization     | 893000201 | on     | ----      |
| Large System # Links   | 893005910 | on     | 2000      |
| Routesets              | 893006403 | on     | 8000      |
| EAGLE5 Product         | 893007101 | on     | ----      |
| EAGLE Product          | 893007201 | off    | ----      |
| Telnet                 | 893005701 | on     | ----      |
| LNP ELAP Configuration | 893010901 | on     | ----      |
| LNP ported TNs         | 893011023 | on     | 228000000 |
| LNP ported LRNs        | 893010501 | on     | 150000    |
| LNP ported NPANXXs     | 893009402 | on     | 300000    |

;

If the LNP feature is enabled, the entry **LNP ported TNs** is shown in the **rtrv-ctrl-feat** output with a quantity greater than 0. If the LNP feature is enabled, go to step 2. If the LNP feature is not enabled, perform the procedures in the [Chapter 2 LNP Feature Activation](#) to enable the LNP feature. After the LNP feature is enabled, go to step 2.

2. Display the ACG manually initiated controls in the database using the **rtrv-acg-mic** command.

The following is an example of the possible output.

```
rlghncxa03w 06-08-28 08:50:12 GMT EAGLE5 35.1.0
TYPE=ALL
ND INTVL AINTVL DRTN
TYPE=SD
DGTS      SERV INTVL AINTVL DRTN
704461    AIN  -    8    7
919460    IN   6    -    7
9194602132 AIN  -    7    8
9194602132 IN   4    -    8
919461    IN   6    -    7
ACG MIC table is (5 of 256) 2% full of type SD
RTRV-ACG-MIC: MASP A - COMPLTD
```

3. Add the ACG manually initiated controls to the database using the **ent-acg-mic** command.

For this example, enter this command.

```
ent-acg-mic:type=all:nd=6:intvl=8:aintvl=7:drtn=8
```

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

```
rlghncxa03w 06-08-28 08:50:12 GMT EAGLE5 35.1.0
ENT-ACG-MIC: MASP A - COMPLTD
```

**ent-acg-mic:type=sd:serv=ain:dgts=910584:aintvl=8:drtn=7** When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-08-28 08:50:12 GMT EAGLE5 35.1.0
ACG MIC table is (6 of 256) 2% full of type SD
ENT-ACG-MIC: MASP A - COMPLTD
```

**ent-acg-mic:type=sd:serv=in:dgts=4237431234:intvl=6:drtn=5** When this command has successfully completed, this message should appear.

```
rlghncxa03w 06-08-28 08:50:12 GMT EAGLE5 35.1.0
ACG MIC table is (7 of 256) 3% full of type SD
ENT-ACG-MIC: MASP A - COMPLTD
```

4. Verify the changes using the **rtrv-acg-mic** command with either the **type=all** parameter, or the parameters and values specified with the **type=sd** parameter in step 3.

For this example, enter this command.

```
rtrv-acg-mic:type=all
```

The following is an example of the possible output.

```
rlghncxa03w 06-08-28 08:50:12 GMT EAGLE5 35.1.0
TYPE=ALL
ND INTVL AINTVL DRTN
6 8 7 8
```

**rtrv-acg-mic:type=sd:serv=ain:dgts=910584:aintvl=8:drtn=7**The following is an example of the possible output.

```
rlghncxa03w 06-08-28 08:50:12 GMT EAGLE5 35.1.0
TYPE=SD
DGTS SERV INTVL AINTVL DRTN
910584 AIN - 8 7
ACG MIC table is (7 of 256) 3% full of type SD
RTRV-ACG-MIC: MASP A - COMPLTD
```

**rtrv-acg-mic:type=sd:serv=in:dgts=4237431234:intvl=6:drtn=5**The following is an example of the possible output.

```
rlghncxa03w 06-08-28 08:50:12 GMT EAGLE5 35.1.0
TYPE=SD
DGTS SERV INTVL AINTVL DRTN
4237431234 IN 6 - 5
ACG MIC table is (7 of 256) 3% full of type SD
RTRV-ACG-MIC: MASP A - COMPLTD
```

5. 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.
```

## Removing ACG Manual Initiated Controls

This procedure is used to remove an ACG manually initiated control using the **dlt-acg-mic** command.

The **dlt-acg-mic** command uses these parameters.

**:type** – Whether the manually initiated control applies to all query services (**type=all**) or to a specific query service and called party digits (**type=sd**).

**:serv** – The type of service the manual initiated control is applied to

**:dgts** – the digits of the global title address

The specified ACG manually initiated control must be in the database.

If the **type=all** parameter is specified, the **serv** and **dgts** parameters cannot be specified.

If the **type=sd** parameter is specified, the **serv** and **dgts** parameters must be specified.

The example in this procedure is used to remove the ACG manually initiated control for all query types and the IN query type for digits 919460.

1. Display the ACG manually initiated controls in the database using the **rtrv-acg-mic** command.

The following is an example of the possible output.

```
rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
```

```

TYPE=ALL
ND INTVL AINTVL DRTN
6 8 7 8
TYPE=SD
DGTS SERV INTVL AINTVL DRTN
4237431234 IN 6 - 5
704461 AIN - 8 7
910584 AIN - 8 7
919460 IN 6 - 7
9194602132 AIN - 7 8
9194602132 IN 4 - 8
919461 IN 6 - 7
ACG MIC table is (7 of 256) 3% full of type SD
RTRV-ACG-MIC: MASP A - COMPLTD

```

- Remove the ACG manually initiated controls from the database using the **dlt-acg-mic** command. For this example, enter these commands. **dlt-acg-mic:type=all** When this command has successfully completed, this message should appear.

```

rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
DLT-ACG-MIC: MASP A - COMPLTD

```

**dlt-acg-mic:type=sd:serv=in:dgts=919460** When this command has successfully completed, this message should appear.

```

rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
ACG MIC table is (6 of 256) 2% full of type SD
DLT-ACG-MIC: MASP A - COMPLTD

```

- Verify the changes using the **rtrv-acg-mic** command with either the **type=all** parameter, or the parameters and values specified with the **type=sd** parameter in step 2. If the ACG manual initiated controls were successfully removed in step 2, the **rtrv-acg-mic** output should not show the entry that was removed. For this example, enter these commands.

```

rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
TYPE=ALL
ND INTVL AINTVL DRTN

```

**rtrv-acg-mic:type=sd:serv=in:dgts=919460** The following is an example of the possible output.

```

rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
TYPE=SD
DGTS SERV INTVL AINTVL DRTN
ACG MIC table is (6 of 256) 2% full of type SD
RTRV-ACG-MIC: MASP A - COMPLTD

```

- 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.

```

## Changing ACG Manual Initiated Controls

This procedure is used to change an existing ACG manually initiated controls using the **chg-acg-mic** command. The **chg-acg-mic** command uses these parameters.

**:type** – Whether the manually initiated control applies to all query services (**type=all**) or to a specific query service and called party digits (**type=sd**).

**:serv** – The type of service the manual initiated control is applied to

**:dgts** – the digits of the global title address

**:nd** – the number of digits in the global title address

**:drtn** – The duration index – the amount of time that the ACG is in effect. This is a number that is mapped to a time value at the LNP node. See [Table 4-1](#) .

**:intvl** – The IN interval index – the amount of time between ACGs for IN queries. This is a number that is mapped to a time value at the LNP node. See [Table 4-1](#) .

**:aintvl** – The AIN interval index – the amount of time between ACGs for AIN queries. This is a number that is mapped to a time value at the LNP node. See [Table 4-1](#) .

The specified ACG manually initiated control must be in the database.

If the **type=all** parameter is specified, one of these parameters, **nd**, **intvl**, **aintvl**, or **drtn** must be specified and the **serv** and **dgts** parameters cannot be specified.

If the **type=sd** parameter is specified, the **serv** and **dgts** parameters must be specified and the **nd** parameter cannot be specified.

If the **serv=ain** parameter is specified, either the **drtn** or **aintvl** parameter must be specified and the **intvl** parameter cannot be specified.

If the **serv=in** parameter is specified, either the **drtn** or **intvl** parameters must be specified and the **aintvl** parameter cannot be specified.

The examples in this procedure are used to change these three ACG manually initiated controls in the database.

The manually initiated control for all queries is changed to these values:

Number of Digits = 10

IN Interval Index = 7 - 22 seconds

AIN Interval Index = 11 - 60 seconds

Duration Index = 5 - 16 seconds

The manually initiated control for AIN queries using the digits 910584 is changed to use a duration index of 12 (2048 seconds) and an interval index of 9 (15 seconds).

The manually initiated control for IN queries for 4237341234 is changed to use a duration index of 7 (64 seconds) and an interval index of 7 (22 seconds).

1. Display the ACG manually initiated controls in the database using the **rtrv-acg-mic** command.

The following is an example of the possible output.

```
rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
TYPE=ALL
ND INTVL AINTVL DRTN
6 8 7 8
TYPE=SD
DGTS SERV INTVL AINTVL DRTN
4237431234 IN 6 - 5
704461 AIN - 8 7
910584 AIN - 8 7
```

```

919460      IN      6      -      7
9194602132 AIN     -      7      8
9194602132 IN      4      -      8
919461      IN      6      -      7
ACG MIC table is (7 of 256) 3% full of type SD
RTRV-ACG-MIC: MASP A - COMPLTD
    
```

2. Add the ACG manually initiated controls to the database using the **chg-acg-mic** command.

For this example, enter these commands. **chg-acg-mic:type=all:nd=10:intvl=7:aintvl=11:drtn=5** When this command has successfully completed, this message should appear.

```

rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
CHG-ACG-MIC: MASP A - COMPLTD
    
```

**chg-acg-mic:type=sd:serv=ain:dgts=910584:aintvl=12:drtn=9** When this command has successfully completed, this message should appear.

```

rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
ACG MIC table is (7 of 256) 3% full of type SD
CHG-ACG-MIC: MASP A - COMPLTD
    
```

**chg-acg-mic:type=sd:serv=in:dgts=4237431234:intvl=7:drtn=7** When this command has successfully completed, this message should appear.

```

rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
ACG MIC table is (7 of 256) 3% full of type SD
CHG-ACG-MIC: MASP A - COMPLTD
    
```

3. Verify the changes using the **rtrv-acg-mic** command with either the **type=all** parameter, or the **serv** and **dgts** parameters and values specified with the **type=sd** parameter in step 2.

If the ACG manual initiated controls were successfully removed in step 2, the **rtrv-acg-mic** output should not show the entry that was removed. For this example, enter these commands.

```

rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
TYPE=ALL
ND  INTVL  AINTVL  DRTN
10  7      11      5
    
```

**rtrv-acg-mic:type=sd:serv=ain:dgts=910584**

```

rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
TYPE=SD
DGTS      SERV  INTVL  AINTVL  DRTN
910584    AIN   -      12      9
ACG MIC table is (7 of 256) 3% full of type SD
    
```

**RTRV-ACG-MIC: MASP A - COMPLTD rtrv-acg-mic:type=sd:serv=in:dgts=4237431234**

```

rlghncxa03w 07-08-28 08:50:12 GMT EAGLE5 37.0.0
TYPE=SD
DGTS      SERV  INTVL  AINTVL  DRTN
4237431234 IN    7      -      7
ACG MIC table is (7 of 256) 3% full of type SD
RTRV-ACG-MIC: MASP A - COMPLTD
    
```

4. 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.
    
```

# Glossary

## A

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACG           | Automatic Call Gapping                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| AFTPC         | Affected Point Code                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| AIN           | Advanced Intelligent Network                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Allowed AFTPC | The gateway screening entity that identifies the messages containing a specific affected point code. Messages containing the specified affected 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 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 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. |
| Allowed TT    | The gateway screening entity that identifies the SCCP messages that have a specified translation type value in the called party address. SCCP messages containing specified translation type in the called party address 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.                                                                                                                                                                                                                        |
| ALT           | Application Logging Task                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| AMA           | Automated Message Accounting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| AND           | AIN Number of Digits (in GTT address for AIN query)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| ANSI          | American National Standards Institute                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

## B

|        |                                |
|--------|--------------------------------|
| BLKDPC | Blocked Destination Point Code |
| BLM    | Bulk Load Module               |

## C

|       |                                                                |
|-------|----------------------------------------------------------------|
| CIC   | Carrier Identification Code                                    |
|       | A 4-digit code that controls the routing applied to a message. |
| CIC   | Circuit Identification Code                                    |
| CLASS | Custom Local Area Signaling Service                            |
| CLASS | Custom Local Area Subscriber Services                          |

|      |                                     |
|------|-------------------------------------|
| CLEC | Competitive Local Exchange Carrier  |
| CLLI | Common Language Location Identifier |
| CNAM | Calling Name Delivery Service       |
| CSR  | Customer Service Request            |

## 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. |
| DCM      | Database Communication Module<br>The DCM provides IP connectivity for applications. Connection to a host is achieved through an ethernet LAN using the TCP/IP protocol.                                                                                                                            |
| DD       | Detailed Design                                                                                                                                                                                                                                                                                    |
| 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.                                                                                                      |
| DIX      | Digital/Intel/Xerox<br>Digital/Intel/Xerox de facto standard for Ethernet Media Access Control Type.                                                                                                                                                                                               |
| DPC      | Destination Point Code<br>The point code of the signaling point to which the MSU is routed. This point code can be adjacent to the EAGLE 5 ISS, but does not have to be.                                                                                                                           |
| DSM      | Database Service Module.                                                                                                                                                                                                                                                                           |
| DV       | Digits Valid                                                                                                                                                                                                                                                                                       |

## E

|         |                                                                                                                                                                                                          |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EBDA    | Enhanced Bulk Download and Audit                                                                                                                                                                         |
| EBDABLM | The application used by the TSM or DSM to store the LNP database downloaded from the LSMS for the Enhanced Bulk Download function. This GPL does not support 24-bit ITU-N point codes.                   |
| EBDADCM | The application used by the DCM to transmit the LSMS LNP database at high speed over an Ethernet connection for the Enhanced Bulk Download function. This GPL does not support 24-bit ITU-N point codes. |
| EIR     | Equipment Identity Register                                                                                                                                                                              |
| ELAP    | EAGLE LNP Application Processor                                                                                                                                                                          |
| EMS     | Element Management System<br>A system used to provide a top level management view of the network elements.                                                                                               |
| EO      | End Office                                                                                                                                                                                               |

## G

|         |                                |
|---------|--------------------------------|
| GB      | Gigabyte — 1,073,741,824 bytes |
| GPL     | Generic Program Load           |
| GPSM-II | General Purpose Service Module |
| GT      | Global Title Routing Indicator |

## LNP Feature Activation Guide

|     |                           |
|-----|---------------------------|
| GTT | Global Title Translation. |
| GUI | Graphical User Interface  |

### H

|      |                               |
|------|-------------------------------|
| HSOP | High Speed Operation Protocol |
|------|-------------------------------|

### I

|                 |                                                                                                                                                       |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| IAM             | Initial Address Message                                                                                                                               |
| ID              | Identity                                                                                                                                              |
| ID              | Identity, identifier                                                                                                                                  |
| IMT             | Inter-Module-Transport<br>The communication software that operates the inter-module-transport bus on all cards except the LIMATM, DCM, DSM, and HMUX. |
| IN              | Intelligent Network                                                                                                                                   |
| INP             | INAP-based Number Portability                                                                                                                         |
| INP             | Intelligent Network (IN) Portability                                                                                                                  |
| INP             | INAP-based Number Portability                                                                                                                         |
| IP              | Intelligent Peripheral                                                                                                                                |
| IP              | Internet Protocol                                                                                                                                     |
| IP <sup>7</sup> | Tekelec's Internet Protocol to SS7 Interface                                                                                                          |
| IS-NR           | In Service - Normal                                                                                                                                   |
| ISS             | Integrated Signaling System                                                                                                                           |
| ISUP            | ISDN User Part                                                                                                                                        |

### K

|     |                                                                                                                      |
|-----|----------------------------------------------------------------------------------------------------------------------|
| Key | For the ICNP feature, a unique DS value used to access a table entry, consisting of a number length and number type. |
|-----|----------------------------------------------------------------------------------------------------------------------|

### L

|         |                                                                                                                    |
|---------|--------------------------------------------------------------------------------------------------------------------|
| LIDB    | Line Information Database                                                                                          |
| LIM     | Link Interface Module                                                                                              |
| Link    | Signaling Link                                                                                                     |
| LNP     | Local Number Portability                                                                                           |
| LNPQS   | LNP Query Service                                                                                                  |
| LNP SMS | LNP Short Message Service                                                                                          |
| LRN     | Location Routing Number<br>A 10 digit number identifying the new location of the ported 10 digit telephone number. |
| LSMS    | Local Service Management System                                                                                    |

### M

|      |                                                    |
|------|----------------------------------------------------|
| MASP | Maintenance and Administration Subsystem Processor |
| MDAL | Maintenance Disk and Alarm Card                    |

|     |                         |
|-----|-------------------------|
| MPS | Multi-Purpose Server    |
| MR  | Message Relay           |
| MSC | Mobile Switching Center |
| MSU | Message Signaling Unit  |
| MT  | Mobile Terminated       |
| MTP | Message Transfer Part   |
| MTP | Module Test Plan        |

**N**

|        |                                                                                                                                                                                                    |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NE     | Network Element                                                                                                                                                                                    |
| NE     | North East                                                                                                                                                                                         |
| NGT    | New Global Title                                                                                                                                                                                   |
| NPAC   | Number Portability Administration Center                                                                                                                                                           |
| NPANXX | The area code and office prefix of a telephone number. For example, with the telephone number 919-555-1212, the digits 919 are the area code (NPA) and the digits 555 are the office prefix (NXX). |

**O**

|        |                                                                                                                                                                                                                                                                        |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OAP    | The application running on the OAP used for the SEAS and LNP features. The LNP feature can be enabled only for a quantity of 2 to 12 million numbers. This GPL does not support 24-bit ITU-N point codes.<br>See also Operations Support System Application Processor. |
| OOS-MT | Out of Service - Maintenance                                                                                                                                                                                                                                           |

**P**

|      |                                                                                                                                                                                                            |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PC   | Point Code.                                                                                                                                                                                                |
| PCS  | Personal Communications Service (North American GSM)                                                                                                                                                       |
| PCS  | Personal Communication Service                                                                                                                                                                             |
| PIN  | Personal Identification Number                                                                                                                                                                             |
| PLNP | The Personal Communications Service (PCS) 1900 LNP Query (PLNP) feature provides for LNP query/response in a PCS wireless environment using the LRN method to support Service Provider Number Portability. |
| PRI  | Primary Rate Interface                                                                                                                                                                                     |
| PRI  | Priority                                                                                                                                                                                                   |
| PRI  | Primary Rate ISDN                                                                                                                                                                                          |

**Q**

|    |            |
|----|------------|
| QR | Query Rate |
|----|------------|

**R**

|       |                                    |
|-------|------------------------------------|
| RFC   | Request for Comment                |
| RI    | Routing Indicator                  |
| Route | A path to another signaling point. |

## LNP Feature Activation Guide

RTDB DSM Real-time database

### S

SCCP Signaling Connection Control Part

SI Service Indicator

SIO Service Information Octet

SIO Service Information Octet.

SMS Short Message Service

SP Service Provider

SP Signaling Point

SS7 Signaling System #7

STP Signal Transfer Point.

SW Software

SW South West

### T

TCAP Transaction Capabilities Application Part

TCP/IP Transmission Control Protocol/Internet Protocol

TDM Terminal Disk Module.

TLNP Triggerless LNP

TN Telephone Number

A 10 digit ported telephone number.

TT Translation Type.

TTN Translation Type Name

### U

UAM Unsolicited Alarm Message.

UDP User Datagram Protocol

UDTS Unit Data Transfer Service

UIM Unsolicited Information Message

### V

VSCCP VxWorks Signaling Connection Control Part

The application used by the DSM card to support the G-Flex, G-Port, INP, EIR, and LNP features. If the G-Flex, G-Port, INP, or LNP feature is not turned on, and a DSM card is present, the VSCCP GPL processes normal GTT traffic.

### W

WNP Wireless Number Portability

WSMSC Wireless Short Message Service Center

### X

XLAT

Translate Indicator

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