

Tekelec Signaling Products LNP Feature Activation Guide

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Tekelec Signaling Products

LNP Feature Activation Guide

910-4355 Revision F

May 2005



TEKELEC

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Ordering Information

Additional copies of this document can be ordered from Tekelec Network Signaling Group, 5200 Paramount Parkway, Morrisville, North Carolina, 27560.

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List of Acronyms

BLM	Bulk Load Module
BPDCM	Application software for flash memory management on the DCM or DSM
CD	Compact Disc
CLLI	Common Language Location Identifier
CSR	Customer Service Report
DCM	Database Communications Module
DSM	Database Service Module
EBDABLM	The application used by the TSM to store the LNP database downloaded from the LSMS for the Enhanced Bulk Download feature
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 feature
ELAP	Eagle LNP Application Processor
EMS	Element Management System
Esc	Escape
GTT	Global Title Translation
GUI	Graphical User Interface
HMUX	High-Speed Multiplexer Card
HSOP	High Speed Operations Protocol
IP	Internet Protocol
IPADDR	IP Address
IPM	Initial Platform Manufacture
IPM	Initial Platform Manufacture
IPMX	Interprocessor Message Transport Multiplexer Card
IS-NR	In-Service Normal
LIM	Link Interface Module

List of Acronyms

LNP	Local Number Portability
LRN	Location Routing Number - A 10 digit number identifying the new location of the ported 10 digit telephone number.
LSMS	Local Service Management System
MASP	Maintenance and Administration Subsystem Processor
MPS	Multi-Purpose Server
NAT.....	network address translation
NPAC.....	Number Portability Administration Center
NPA-NXX.....	Area Code and Office Prefix
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).
NSAP.....	Network Service Access Point
NTP	Network Time Protocol
OAP.....	Operations System Support Applications Processor
OOS-MT-DSBLD	Out of Service - Maintenance Disabled
PC	Personal Computer
PC	Point Code
RD BKUP	Removable Disk Backup
RTDB.....	Real-Time Database
SCCP	Signaling Connection Control Part – Application software for the global title translation (GTT) feature
SEAS.....	Signaling Engineering and Administration System
TCP.....	Transmission Control Protocol
TN.....	Telephone Number
TSM.....	Translation Service Module
UI.....	User Interface
VSCCP	The application software used for the global title translation, LNP, LNP 48 Million Number, GFLEX, INP, and G-PORT features

Introduction

This guide describes how to activate the LNP feature for LNP telephone number quantities of 24 million, 36 million, 48 million, 60 million, 72 million, 84 million, and 96 million. LNP telephone number quantities from 2 million to 12 million numbers can be assigned, but not in this procedure. To assign quantities of 2 million to 12 million LNP telephone numbers, go to the *Eagle Database Administration Manual - LNP*. The LNP feature for telephone number quantities greater than 12 million numbers requires this hardware:

- DSMs configured and installed in the Eagle. TSMs running the SCCP application cannot be in the database and cannot be physically installed in the Eagle. The Eagle must be running release 28.0 or greater.
- LSMS E450 running release 5.0 or greater
- The ELAP (Eagle LNP Application Processor) running on the MPS platform.

The hardware requirements depend on the software releases the Eagle, ELAP, and LSMS are running. Table 1 shows these requirements.

Table 1. LSMS, Eagle, and ELAP Software Release Combinations

LNP Telephone Number Quantity	LSMS Releases	Eagle Releases	ELAP Releases
48 Million	5.0	28.x, 29.x	2.x
24 Million - 48 Million	5.0	30.0 or greater	2.x, 3.0 or greater
60 Million - 96 Million	5.1, 6.0 or greater	30.0 or greater	3.0 or greater

For Eagle’s running releases 28.x or 29.x, the only telephone number quantity that can be set, beyond 12 million numbers, is 48 million numbers. This quantity is set using the Eagle’s **chg-feat** command with the **lnp48mil=on** and **force=yes** parameters. This is discussed in greater detail in the “Activating the LNP 48 Million Number Feature on the Eagle - Eagle Releases 28.x and 29.x” procedure on page 155.

The LNP telephone number quantity for Eagles running release 30.0 or greater is set with feature access keys corresponding to the quantity. To configure a particular LNP telephone number quantity in the Eagle, the Eagle must contain either DSMs with a minimum amount of RAM. Table 2 on page 2 shows the LNP telephone number quantities, the part numbers that correspond to these quantities, and the DSM requirements for that LNP telephone number quantity. Go to the “Activating the LNP Feature on the Eagle - Eagle Release 30.0 or Greater” procedure on page 168 for more information on setting these quantities.

Table 2. LNP Hardware and Part Number Configuration Table

LNP Telephone Number Quantity	Minimum Hardware	Part Number
24 Million	2 GB DSM	893-0110-06
36 Million	3 GB DSM	893-0110-07
48 Million	4 GB DSM	893-0110-08
60 Million	4 GB DSM	893-0110-09
72 Million	4 GB DSM	893-0110-10
84 Million	4 GB DSM	893-0110-11
96 Million	4 GB DSM	893-0110-12

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 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 Eagle's DSMs from the ELAP using two dedicated Ethernet networks between the MPS platform and the Eagle's DSMs.

When the LNP feature is enabled for the first time, on Eagles running release 30.0 or greater, 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 - Eagle Release 30.0 or Greater" procedure on page 193.

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 user guide:

- 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 2.0.

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
```

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- 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 05-02-01 21:20:37 GMT EAGLE5 33.0.0`
`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

The *LNP Feature Activation Guide* references these manuals in the Eagle and LSMS documentation set.

- The *NSD Installation Manual* contains the descriptions of the system hardware, hardware specifications, cabling requirements, and procedures for installing the system.
- The *Eagle Database Administration Manual – LNP* contains procedural information required to configure the Eagle’s database to implement the local number portability (LNP) feature for telephone number quantities of 2 to 12 million numbers.
- The *Eagle Maintenance Manual* contains procedural information required for maintaining the system. The *Maintenance Manual* provides preventive and corrective maintenance procedures used in maintaining the system.
- The *ELAP Administration Manual* provides a definition of the user interface to the Eagle LNP Application Processor on the MPS/ELAP platform. The manual defines the methods for accessing the interface, menus, screens available to the user and describes their impact. It provides the syntax and semantics of user input and defines the output the user receives, including information and error messages.
- The *LSMS Database Administration Manual* provides information about using the LSMS (Local Service Management System) local and web-based graphical user interface (GUI), using the command-line interface, managing NPAC relations, managing locally provisioned data, report generation, logs and measurements, and local time calculation and world time zone data.
- The *LSMS-Eagle STP LNP Database Synchronization Manual* describes how to synchronize LNP databases at the LSMS and at a network element (an Eagle STP is an example of a network element). The methods include automatic resynchronization performed by the LSMS and the network element as well as

user-initiated resynchronization of the network element’s LNP database from the LSMS, audits and reconciles of the network element’s LNP database from the LSMS, and procedures for performing a bulk load of the network element’s LNP database from the LSMS or from another network element.

- The *LSMS Configuration Manual* contains information you need to configure the LSMS. Topics include integrating LSMS into your network, using key lists, configuring and starting LSMS processes, configuration components and service provider contact information, working with NPAC associations, and configuring optional features.
- The *LSMS Maintenance Manual, Enterprise 450* (supplied to LSMS installations using the Enterprise 450 servers) describes the LSMS design for high availability, the LSMS software, and procedures for routine, preventive, and corrective maintenance. Each maintenance manual also contains a reference of LSMS commands and notifications.

Documentation Admonishments

Admonishments are icons and text that may appear in this and other Eagle and LSMS manuals that alert the reader to assure personal safety, to minimize possible service interruptions, and to warn of the potential for equipment damage.

Following are the admonishments, listed in descending order of priority.

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

Tekelec Technical Services

The Tekelec Technical Services department offers a point of contact through which customers can receive support for problems that may be encountered during the use of Tekelec’s products. The Tekelec Technical Services department is staffed with highly trained engineers to provide solutions to your technical questions and issues seven days a week, twenty-four hours a day. A variety of service programs are available through the Tekelec Technical Services department to maximize the performance of Tekelec products that meet and exceed customer needs.

LNP Feature Activation Guide

To receive technical assistance, call the Tekelec Technical Services department at one of the following locations:

- Tekelec, UK
Phone: +44 1784 467 804.
- Tekelec, USA
Phone (within the continental US) 888-367-8552 (888-FOR-TKLC)
(outside the continental US) +1 919-460-2150.

Or you can request assistance by way of electronic mail at **eaglets@tekelec.com**.

When your call is received, Technical Services issues a Customer Service Report (CSR). Each CSR includes an individual tracking number. When a CSR is issued, Technical Services determines the classification of the trouble. The CSR contains the serial number of the system, problem symptoms, and messages. Technical Services assigns the CSR to a primary engineer, who will work to solve the problem. Technical Services closes the CSR when the problem is resolved.

If a critical problem exists, Technical Services initiates emergency procedures (see the following topic, "Emergency Response").

Emergency Response

If a critical service situation occurs, Tekelec Technical Services offers emergency response twenty-four hours a day, seven days a week. The emergency response provides immediate coverage, automatic escalation, and other features to ensure a rapid resolution to the problem.

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

- Failure in the system that prevents transaction processing
- Reduction in system capacity or in system traffic-handling capability
- Inability to restart the system
- Corruption of the database
- Inability to perform maintenance or recovery operations
- Inability to provide any required critical or major trouble notification
- Any other problem severely affecting service, capacity, traffic, and billing. Maintenance capabilities may be defined as critical by prior discussion and agreement with Tekelec Technical Services.

Activating the LNP Feature Overview

To activate this feature, actions need to be taken at the LSMS (E450), the ELAP, as well as at the Eagle.

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.

Procedure

At the Eagle:

1. Verify these items in the Eagle's database by entering these commands:

- a. `rtrv-ctrl-feat` – to verify whether or not the LNP telephone number quantity feature is enabled, and what the quantity is.

NOTE: This command can be used to display the status of the LNP telephone number quantity feature only on Eagles running release 30.0 or greater. If your Eagle is running releases 28.x or 29.x, perform the `rtrv-feat` command in substep b instead of the `rtrv-ctrl-feat` command.

- b. `rtrv-feat` – to verify whether or not the GTT and LNP features are on, and the GPORT, GFLEX, or INP features are off. For Eagle's running releases 28.x or 29.x, the LNP features shown by this command are: LNP, WNP, TLNP, PLNP, LNP12MIL, LNP18MIL, and LNP48MIL. For Eagle's running release 30.0 or greater, the LNP features shown by this command are: TLNP, WNP, and PLNP.
- c. `rtrv-ip-lnk` – to verify the DSM Ethernet configuration to the ELAPs
- d. `rtrv-oap-config` – to verify the LSMS NSAP IP addresses
- e. `rept-stat-card` – to verify the state and location of the cards running the EBDADCM, EBDABLM, VSCCP, and SCCP applications.

Record the values displayed in these steps.



CAUTION: If the `rtrv-feat` output shows that the GPORT, GFLEX, or INP features are on, this procedure cannot be performed. The LNP feature cannot be enabled if the GPORT, GFLEX, or INP features are on. If you wish to enable the LNP feature, contact Tekelec Technical Services (see "Tekelec Technical Services" on page 4).



CAUTION: If the output of the `rtrv-ctrl-feat` or `rtrv-feat` commands show that the maximum quantity of LNP telephone numbers is enabled for the Eagle/LSMS/ELAP combination you are running, see Table 1 on page 1, this procedure cannot be performed. If you wish to enable a quantity greater than the quantity allowed in Table 1 on page 1, contact Tekelec Technical Services (see "Tekelec Technical Services" on page 4).

NOTE: If the `rtrv-ctrl-feat` output in step 1a shows the LNP telephone number quantity is greater than 12 million numbers (Eagle release 30.0 or greater), or the `rtrv-feat` output in step 1b shows that the LNP 48 Million feature is enabled (`lnp48mi1 = on`) (Eagle releases 28.x or 29.x), skip steps 2 through 4, and go to step 6.

2. If step 1e shows no cards running the VSCCP application (DSMs), perform the "Adding a DSM" procedure on page 20 to make sure that DSMs are configured and installed in the Eagle according to the hardware requirements shown in Table 2 on page 2.

3. If step 1e shows cards running the SCCP application (TSMs), perform the "Removing an SCCP Card" procedure on page 24 to make sure that any TSMs are removed.

4. If step 1e shows cards running the EBDADCM and EBDABLM applications, perform the "Removing the DCM Applied to LSMS BLM-Based Operations" procedure on page 26 and "Removing the BLM Applied to LSMS BLM-Based Operations" procedure on page 29 to make sure that these cards are removed from the Eagle.

NOTE: If steps 2 through 4 were performed, skip step 5, and go to step 6.

5. Verify the memory installed on the DSM is enough based on the LNP telephone number quantity being assigned (see Table 2 on page 2). Enter the `rept-stat-card` command specifying the location of a DSM with the `mode=full` parameter. The amount of memory is shown in the **DBD MEMORY SIZE** field and is measured in megabytes.

```
tekelecstp 04-06-01 10:09:55 EST EAGLE5 33.0.0
CARD  VERSION      TYPE      APPL      PST          SST          AST
1301  118-002-001    DSM       VSCCP     IS-NR       Active       -----
ALARM STATUS      = No Alarms.
IMT  VERSION      = 118-002-000
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, go to the "Adding a DSM" procedure on page 20 and add a DSM with the correct amount of memory (see Table 2 on page 2). After the

new DSM has been added, go to the "Removing an SCCP Card" procedure on page 24 and remove the DSM specified in this step from the database.

Repeat this step for every DSM shown in step 1e.

-
6. If step 1c does not show IP links from the DSMs to the MPS, or if DSMs were configured in steps 2 or 5, configure the IP Link from the DSMs to MPS A and B using the "Configuring the DSM Ethernet Link to the MPS" procedure on page 31.
-

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 05-02-01 09:12:36 GMT EAGLE5 33.0.0
SCCP SUBSYSTEM REPORT IS-NR      Active      -----
SCCP Cards Configured=5   Cards IS-NR=5
System TPS Alarm Threshold = 80% Total Capacity
System Peak SCCP Load:           0 TPS
System Total SCCP Capacity:      8500 TPS
```

CARD	VERSION	PST	SST	AST	MSU USAGE	CPU USAGE
1301	118-002-001	IS-NR	Active	-----	33%	46%
1303	118-002-001	IS-NR	Active	-----	34%	50%
1305	118-002-001	IS-NR	Active	-----	21%	29%
1307	118-002-001	IS-NR	Active	-----	35%	52%
1311	118-002-001	IS-NR	Active	-----	15%	20%

```
-----
SCCP Service Average MSU Capacity = 28% Average CPU Capacity = 40%
```

Command Completed.

8. If the state any of the DSMs shown in steps 1c, 5, or 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 steps 1c, 5, or 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 05-02-01 21:20:37 GMT EAGLE5 33.0.0
Card has been allowed.
```

- 9. Test port A of one of the DSMs using the `ping` pass command with the card location of the DSM recorded in step 1 and the IP address for port A of that DSM shown in either step 1c or step 6.

```
pass:cmd="ping 192.168.120.1":loc=1301
```

3 packets transmitted, 3 packets received, 0% packet loss

- 10. Test port B of the DSM specified in step 9 using the `ping` pass command with the card location of the DSM specified in step 9 and the IP address for port B shown in either step 1c or step 6.

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

3 packets transmitted, 3 packets received, 0% packet loss

- 11. Repeat steps 9 and 10 for all other DSMs in the Eagle.
-

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

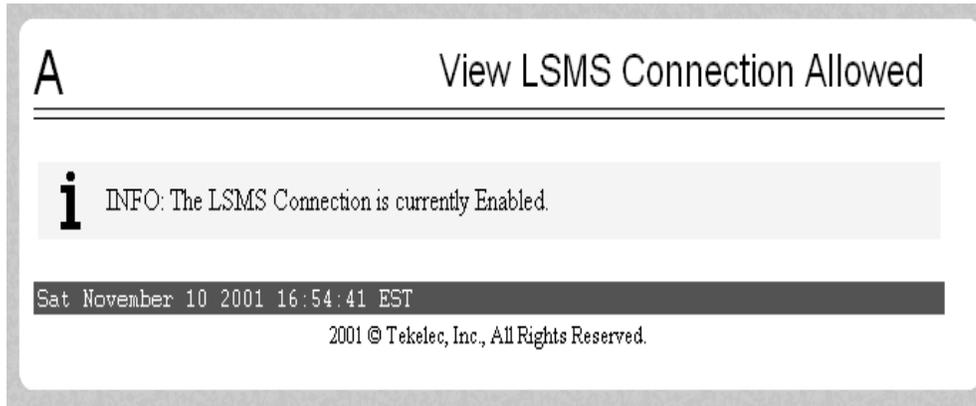
- 12.** Log into ELAP A or B.
-

- 13. From **ELAP Menu**, select **Maintenance > Display Release Levels** to verify that the ELAP version is correct according to Table 1 on page 1. If the ELAP version is not correct, contact Tekelec Technical Services (see “Tekelec Technical Services” on page 4) before performing either the “ELAP 2.x Configuration Procedure” procedure on page 57 or “ELAP 3.0 Configuration Procedure” procedure on page 88.
-

- 14. Perform a health check of the MPS. Go to the “MPS Health Check Procedure” section on page 109.
-

15. Disable the LSMS Connection. Select **Maintenance > LSMS Connection > View Allowed**. The window shown in Figure 1 displays.

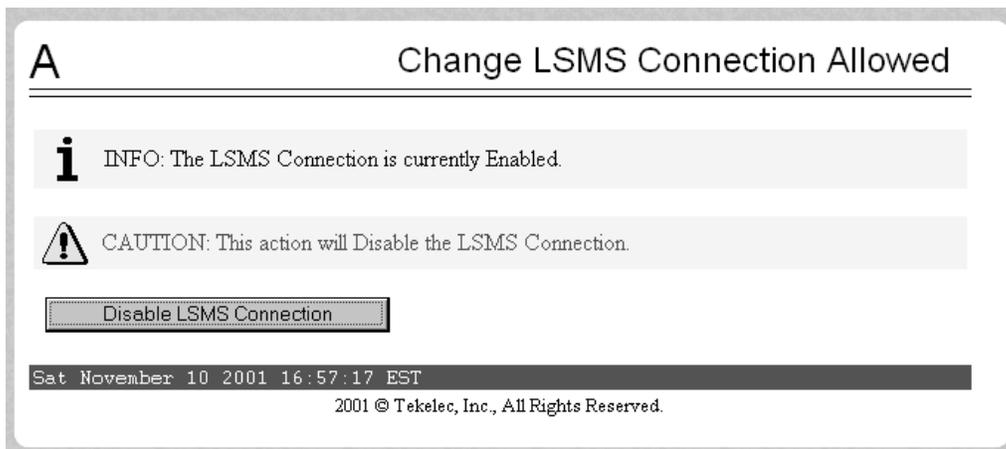
Figure 1. LSMS Connection View



If the connection is disabled, no action is necessary. Go to step 16.

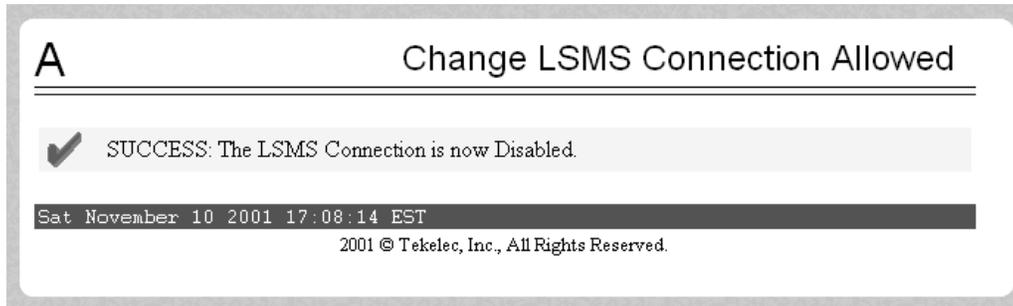
If the connection is enabled, select **Maintenance > LSMS Connection > Change Allowed**. The window shown in Figure 2 displays.

Figure 2. Disabling the LSMS Connection



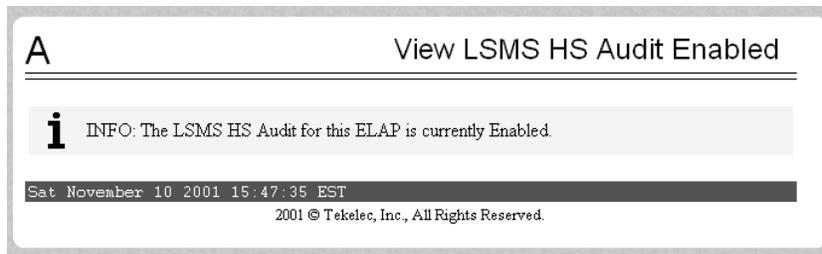
Click the **Disable LSMS Connection** button. The window shown in Figure 3 on page 11 displays.

Figure 3. Confirming the LSMS Connection is Disabled



- 16.** Verify that the LSMS High-Speed Audit is on. Select **Maintenance > LSMS HS Audit > View Enabled**. The window shown in Figure 4 displays.

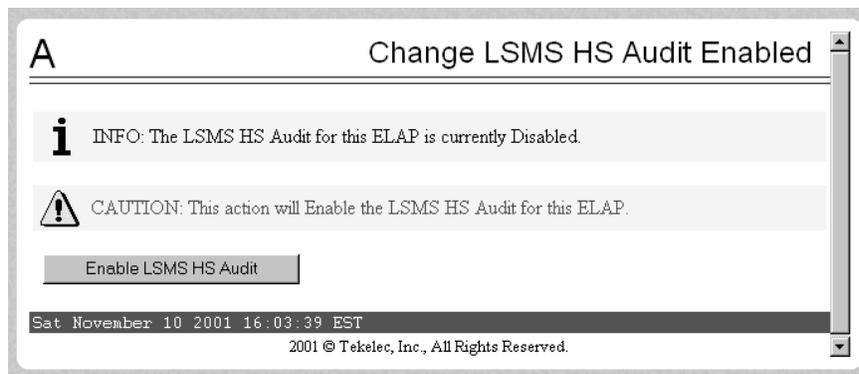
Figure 4. LSMS High-Speed Audit View



If the LSMS High-Speed Audit is enabled, no action is necessary. Go to step 17.

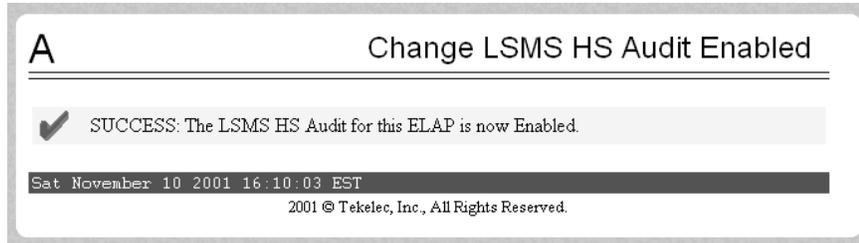
If the LSMS High-Speed Audit is disabled, select **Maintenance > LSMS HS Audit > Change Enabled**. The window shown in Figure 5 displays.

Figure 5. Enabling the LSMS High-Speed Audit



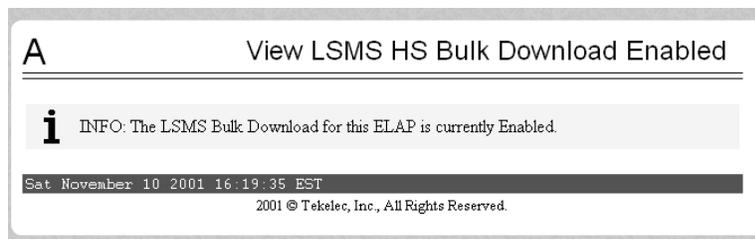
Click the **Enable LSMS HS Audit** button. The window in Figure 6 displays.

Figure 6. Confirming the LSMS High-Speed Audit is Enabled



17. Verify that the LSMS High-Speed Bulk Download/High-Speed Resynch is enabled for ELAP and its Mate. Select **Maintenance > LSMS HS Bulk Download > View Enabled**.

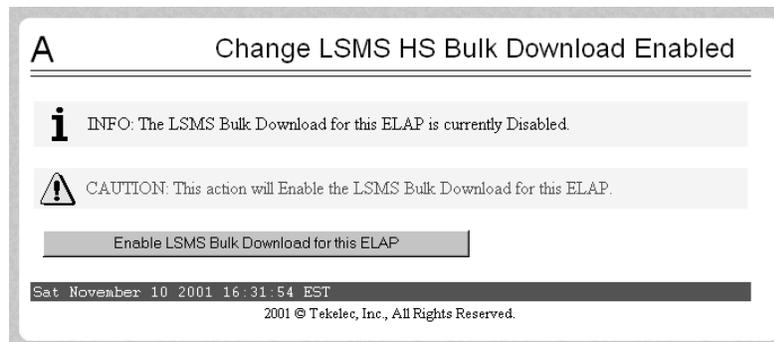
Figure 7. LSMS High-Speed Bulk Download View



If the LSMS High-Speed Bulk Download is enabled, no action is necessary. Go to step 20.

If the LSMS High-Speed Bulk Download is disabled, select **Maintenance > LSMS HS Bulk Download > Change Enabled**. The window shown in Figure 8 displays.

Figure 8. Enabling the LSMS High-Speed Bulk Download



Click the **Enable LSMS Bulk Download for this ELAP** button. The window shown in Figure 9 on page 13 displays.

Figure 9. Confirming the LSMS HS Bulk Download is Enabled



18. Repeat steps 12 through 17 for the other ELAP.

At the Eagle:

19. Activate the LNP feature for the desired LNP telephone number quantity. Perform either the “Activating the LNP 48 Million Number Feature on the Eagle - Eagle Releases 28.x and 29.x” procedure on page 155 or the “Activating the LNP Feature on the Eagle - Eagle Release 30.0 or Greater” procedure on page 168 depending on the release the Eagle is running.

NOTE: If the LNP telephone number quantity at the start of this procedure is greater than 12 million numbers, skip steps 20 and 21, and go to step 22.

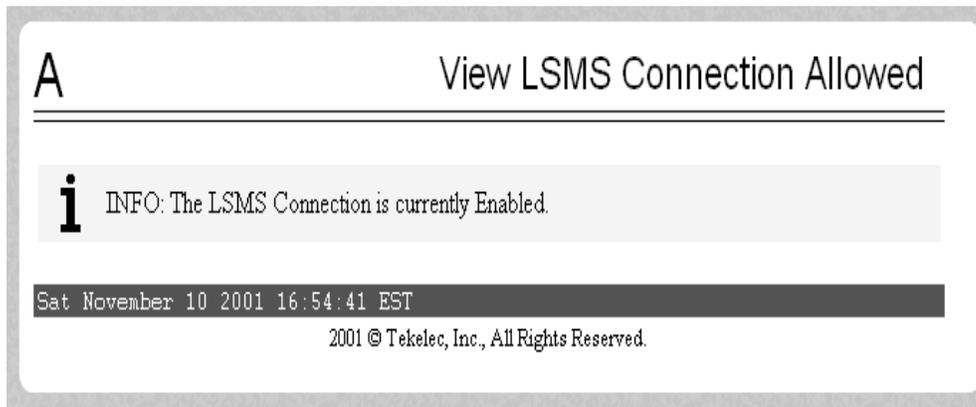
At the LSMS:

20. Create a “dummy” EMS for the new MPSs by performing the “Creating an EMS Configuration Component” procedure on page 111. Except for IP addresses, use the same information as is used for the OAP. This “dummy” is used so that you can bulk load the LNP database to it and check that everything is OK before actually taking the OAPs off line (for new installation, this will not be a “dummy”).

21. Configure new MPSs in the EMS Routing window. Go to the “EMS Routing” section on page 122.

- At the MPS (ELAP A or B):**
22. Enable the LSMS Connection. Select **Maintenance > LSMS Connection > View Allowed**. The window shown in Figure 10 displays.

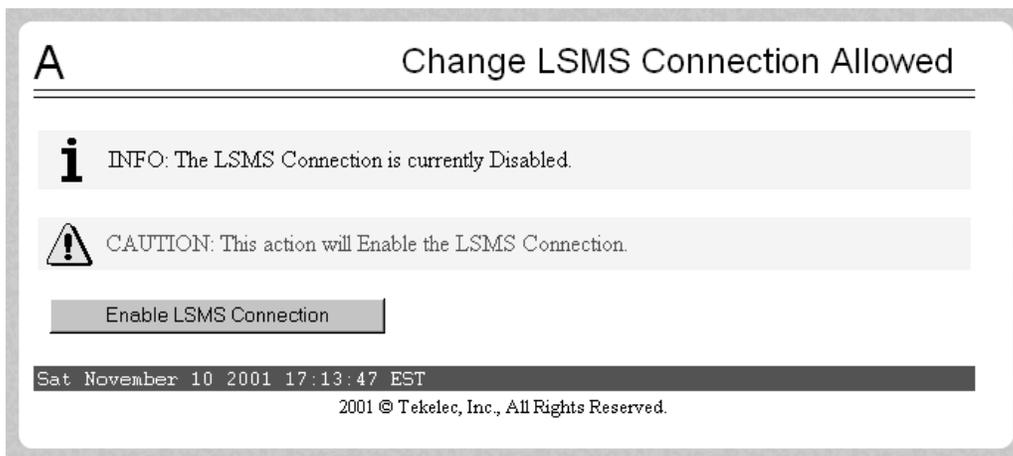
Figure 10. LSMS Connection View



If the connection is enabled, no action is necessary. Go to step 23.

If the connection is disabled, select **Maintenance > LSMS Connection > Change Allowed**. The window shown in Figure 11 displays.

Figure 11. Enabling the LSMS Connection



Click the **Enable LSMS Connection** button. The window shown in Figure 12 on page 15 displays.

Figure 12. Confirming the LSMS Connection is Enabled



Repeat step 22 for the other ELAP.

At the LSMS:

23. Perform a bulk download to one of the ELAPs. Perform the procedures in the “Electronic Bulk Load Procedure” section on page 126.

At the MPS (the ELAP specified in step 23):

24. Copy the bulk down loaded database to the other ELAP. Perform the procedures in the “Copying One RTDB from Another RTDB” section on page 136.

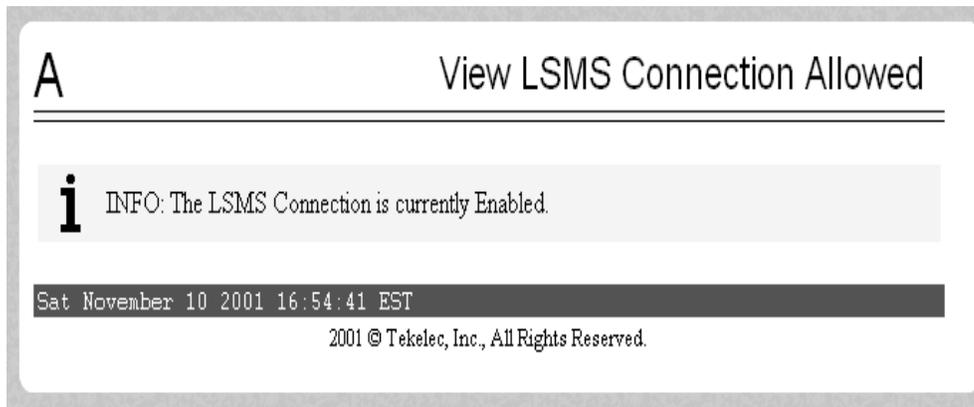
25. Perform a health check of the MPS. Go to the “MPS Health Check Procedure” section on page 109.

At the Eagle:

26. Distribute the RTDB database to each DSM in the Eagle. Perform the procedures in the “Distributing the LNP Database after LSMS-Based Operation or RTDB Copy” section on page 184.

- At the MPS (ELAP A or B):**
27. Disable the LSMS Connection. Select **Maintenance > LSMS Connection > View Allowed**. The window shown in Figure 13 displays.

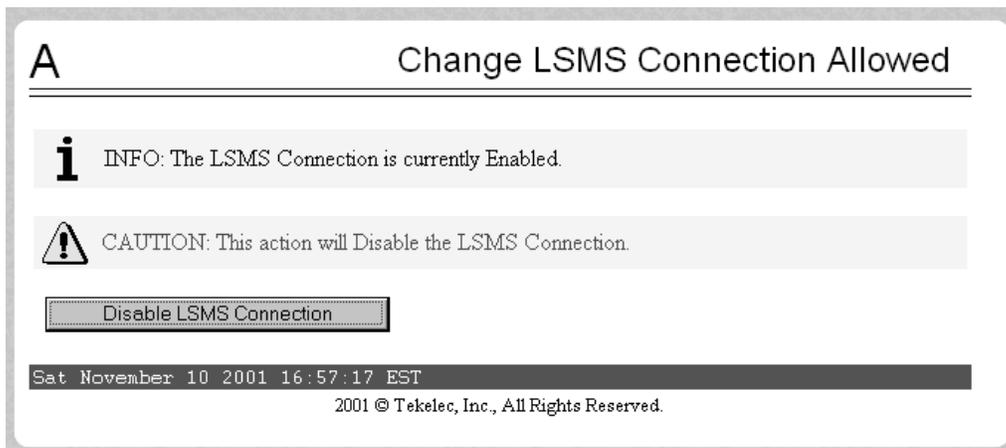
Figure 13. LSMS Connection View



If the connection is disabled, no action is necessary. Go to step 28.

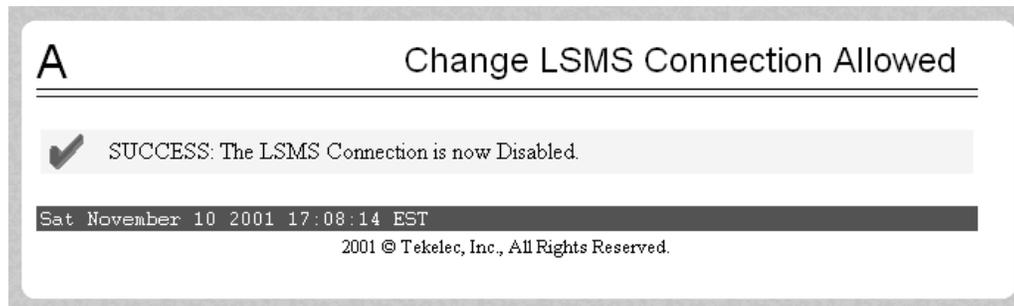
If the connection is enabled, select **Maintenance > LSMS Connection > Change Allowed**. The window shown in Figure 14 displays.

Figure 14. Disabling the LSMS Connection



Click the **Disable LSMS Connection** button. The window shown in Figure 15 on page 17 displays.

Figure 15. Confirming the LSMS Connection is Disabled



Repeat step 27 for the other ELAP.



NOTE: If step 20 on page 13 was not performed, skip step 28 and go to step 29.

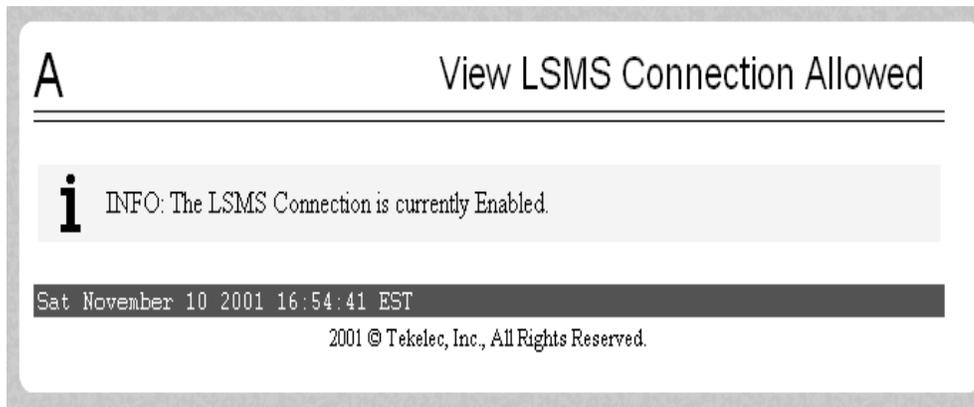
At the LSMS:

28. Change the EMSs that were configured as OAPs to now be MPSs and then remove the "dummy" EMS. Use the IP addresses recorded in step 1d.

- To change the EMS, go to the "Modifying an EMS Configuration Component" procedure on page 116.
 - To remove the "dummy" EMS, go to the "Deleting an EMS Configuration Component" procedure on page 120.
-

- At the MPS (ELAP A or B):**
29. Enable LSMS Connection. Select **Maintenance > LSMS Connection > View Allowed**. The window shown in Figure 16 displays.

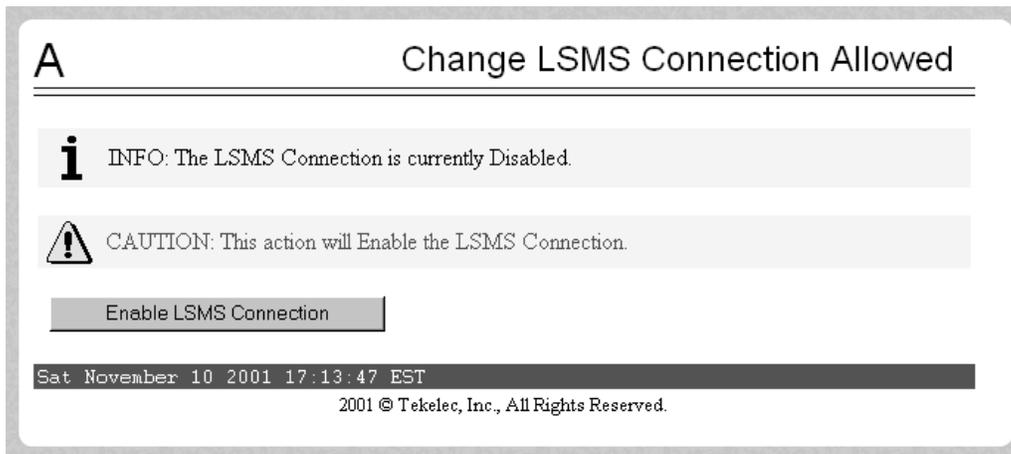
Figure 16. LSMS Connection View



If the connection is enabled, no action is necessary. Go to step 30.

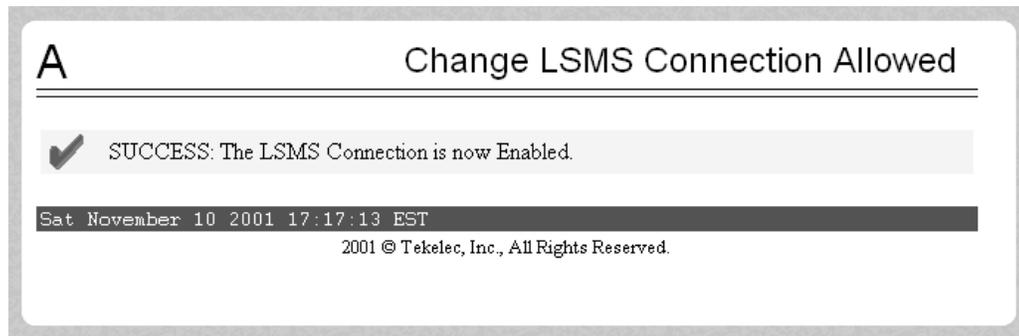
If the connection is disabled, select **Maintenance > LSMS Connection > Change Allowed**. The window shown in Figure 17 displays.

Figure 17. Enabling the LSMS Connection



Click the **Enable LSMS Connection** button. The window shown in Figure 18 on page 19 displays.

Figure 18. Confirming the LSMS Connection is Enabled



Repeat step 29 for the other ELAP.

At the LSMS:

30. 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.

NOTE: If the SEAS feature in the Eagle is not on, shown in the `rtrv-feat` output in step 1b, this step does not need to be performed.

At the Eagle:

31. Remove the `hsopEnabled` file from both OAPs. Go to the "Removing the `hsopEnabled` File from the OAP" procedure on page 190.

32. The procedure is completed.

Adding a DSM

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

- 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

The DSM can be inserted only in the odd numbered card slots of the extension shelf. Slot 09 of each shelf contains the IPMX card (Eagle releases 28.x or 29.X), the HMUX card (Eagle releases 28.x, 29.x, 30.0 and greater), or HIPR card (Eagle release 33.0), thus the DSM cannot be inserted in slot 09. The DSM can be inserted in the control shelf, but only in slots 01, 03, 05, 07, and 11. The DSM occupies two card slots, so the even numbered card slot adjacent to the odd numbered slot where the DSM has been inserted must be empty, as shown in Table 3. The DSM is connected to the network through the odd numbered card slot connector.

Table 3. DSM Card Locations

Location of the DSM	Empty Card Location	Location of the DSM	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`.
- `:app1` – 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 to be added to the database even if there are not enough SCCP cards to support the number of LIMs in the system. 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 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 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 can contain a maximum of 25 DSMs.

Procedure

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: 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 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 this command.

```
chg-feat:gtt=on
```

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.

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

```
rlghncxa03w 05-02-01 09:57:41 GMT EAGLE5 33.0.0  
CHG-FEAT: MASP A - COMPLTD
```

3. Display the cards in the system using the `rtrv-card` command.

NOTE: Cards should be distributed throughout the system for proper power distribution. Refer to the *NSD Installation Manual* for the shelf power distribution.

This is an example of the possible output.

```
rlghncxa03w 05-02-01 09:58:31 GMT EAGLE5 33.0.0
CARD   TYPE      APPL      LSET NAME      LINK SLC LSET NAME      LINK SLC
1101   TSM         SCCP
1102   TSM         GLS
1113   GPSM        EOAM
1114   TDM-A
1115   GPSM        EOAM
1116   TDM-B
1117   MDAL
1201   LIMDS0     SS7ANSI    sp2             A    0    sp1             B    0
1203   LIMDS0     SS7ANSI    sp3             A    0
1204   TSM         SCCP
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         SCCP
2105   TSM         SCCP
2112   TSM         SCCP
```

4. Verify that the DSM has been physically installed into the proper location.



CAUTION: If the version of the BPDCM GPL on the DSM card does not match the BPDCM GPL version in the database when the DSM 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 Maintenance Manual* before proceeding with this procedure.

5. Add the DSM to the database using the `ent-card` command. For this example, enter this command.

```
ent-card:loc=1301:type=dsm:appl=vsccp
```

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

```
rlghncxa03w 05-02-01 09:57:51 GMT EAGLE5 33.0.0
ENT-CARD: MASP A - COMPLTD
```

6. Verify the changes using the `rtrv-card` command with the card location specified. For this example, enter this command.

```
rtrv-card:loc=1301
```

This is an example of the possible output.

```
rlghncxa03w 05-02-01 09:58:31 GMT EAGLE5 33.0.0
CARD   TYPE      APPL      LSET NAME      LINK SLC LSET NAME      LINK SLC
1301   DSM          VSCCP
```

7. Repeat this procedure to add other DSMs to the Eagle.
-

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

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

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 on page 2.

These card locations were recorded in step 1e on page 6 (TSMs), or shown in the `rept-stat-card` output in step 5 on page 7 (DSMs 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 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.

Procedure

1. Display the status of the SCCP cards by entering the `rept-stat-sccp` command. This is an example of the possible output.

```
rlghncxa03w 05-02-01 09:12:36 GMT EAGLE5 33.0.0
SCCP SUBSYSTEM REPORT IS-NR      Active      -----
SCCP Cards Configured=10  Cards IS-NR=10
System TPS Alarm Threshold = 80% Total Capacity
System Peak SCCP Load:      0 TPS
System Total SCCP Capacity:  12750 TPS
```

CARD	VERSION	PST	SST	AST	MSU USAGE	CPU USAGE
1101	118-002-001	IS-NR	Active	-----	33%	40%
1204	118-002-001	IS-NR	Active	-----	21%	25%
2101	118-002-001	IS-NR	Active	-----	15%	14%
2105	118-002-001	IS-NR	Active	-----	25%	26%
2112	118-002-001	IS-NR	Active	-----	40%	35%
1301	118-002-001	IS-NR	Active	-----	20%	23%
1303	118-002-001	IS-NR	Active	-----	11%	14%
1305	118-002-001	IS-NR	Active	-----	10%	12%
1307	118-002-001	IS-NR	Active	-----	16%	18%
1311	118-002-001	IS-NR	Active	-----	24%	30%

```
-----
SCCP Service Average MSU Capacity = 22%  Average CPU Capacity = 24%
```

Command Completed.

2. Remove the card from service using the **rmv-card** command and specifying the card location, recorded in step 1e on page 6 or shown in step 5 on page 7 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. For this example, enter this command.

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

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

```
rlghncxa03w 05-02-01 09:12:36 EST EAGLE5 33.0.0  
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. For this example, enter this command.

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

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

```
rlghncxa03w 05-02-01 09:12:36 EST EAGLE5 33.0.0  
DLT-CARD: MASP A - COMPLTD
```

4. Verify the changes using the **rtrv-card** command specifying the card that was removed in step 3. For this example, enter this command.

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

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

```
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 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 step 1e on page 6 of the "Activating the LNP Feature Overview" procedure, using the `dlc-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 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.

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.

Canceling the `REPT-STAT-CARD` Command

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

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

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

Procedure

1. Display the state of the DCM running the **ebdadcm** application with the **rept-stat-card** command with the card location recorded in step 1e on page 6 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 (see "Canceling the **REPT-STAT-CARD** Command" on page 26). For this example, enter this command.

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

This is an example of the possible output:

```
rlghncxa03w 05-02-01 09:12:36 EST EAGLE5 33.0.0
CARD  VERSION      TYPE      APPL      PST          SST          AST
1217  118-000-000    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. For this example, enter this command:

```
rmv-card:loc=1217
```

After successful completion of this command, the system returns the following output:

```
rlghncxa03w 05-02-01 09:12:36 EST EAGLE5 33.0.0
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. For this example, enter this command:

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

After successful completion of this command, the system returns the following output:

```
rlghncxa03w 05-02-01 09:12:36 EST EAGLE5 33.0.0
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. For this example, enter this command:

```
dlt-card:loc=1217
```

After successful completion of this command, the system returns the following output:

```
rlghncxa03w 05-02-01 09:12:36 EST EAGLE5 33.0.0  
DLT-CARD: MASP A - COMPLTD
```

5. Verify the changes using the **rtrv-card** command specifying the card that was removed in step 4. For this example, enter this command:

```
rtrv-card:loc=1217
```

After successful completion of this command, the system returns the following output:

```
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 step 1e on page 6 of the "Activating the LNP Feature Overview" procedure, using the `dlc-card` command.

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

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.

Procedure

1. Display the state of the BLM with the `rept-stat-card` command with the card location recorded in step 1e on page 6 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 (see "Canceling the **REPT-STAT-CARD** Command" on page 26). For this example, enter this command.

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

This is an example of the possible output:

```
rlghncxa03w 05-02-01 09:12:36 EST EAGLE5 33.0.0
CARD   VERSION   TYPE      APPL      PST          SST          AST
1215   118-002-000 TSM       EBDABLM   IS-NR       Active       -----
ALARM STATUS      = No Alarms.
IMT GPL           = 118-000-000
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. For this example, enter this command:

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

After successful completion of this command, the system returns the following output:

```
rlghncxa03w 05-02-01 09:12:36 EST EAGLE5 33.0.0
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. For this example, enter this command:

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

After successful completion of this command, the system returns the following output:

```
rlghncxa03w 05-02-01 09:12:36 EST EAGLE5 33.0.0
DLT-CARD: MASP A - COMPLTD
```

4. Verify the changes using the **rtrv-card** command and specifying the card that was removed in step 3. For this example, enter this command.

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

After successful completion of this command, the system returns the following output:

```
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 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 4 on page 32 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**).

If the **ipaddr** parameter value is non-zero, the **ipaddr** value must be shown in the **rtrv-ip-host** output.

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 should be either 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 4 for the valid input values for the **submask** and **ipaddr** parameter combinations.

Table 4. 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) 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.128.1

Table 4. Valid Subnet Mask Parameter Values (Continued)

A+B	128.1.0.0 to 191.255.0.0	255.255.0.0 (the default value for a class B IP address) 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.128
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) 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252

Procedure

1. Display the current Ethernet link parameters associated with the DSM in the database by entering the `rtrv-ip-lnk` command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 21:14:37 GMT EAGLE5 33.0.0
LOC  PORT  IPADDR          SUBMASK          DUPLEX  SPEED  MACTYPE  AUTO  MCAST
1203  A      192.001.001.001 255.255.255.128 HALF    10     802.3    NO    NO
1205  A      192.001.001.014 255.255.255.0   FULL    100    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. If IP address information is being added or changed (not deleted) in the link parameters, verify that the IP address is present in the IP host table by using the **rtrv-ip-host** command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 21:15:37 GMT EAGLE5 33.0.0

IPADDR          HOST
192.1.1.1       IPNODE1_1201
192.1.1.12      IPNODE1_1203
192.1.1.14      IPNODE1_1205
192.1.1.20      IPNODE2_1201
192.1.1.22      IPNODE2_1203
192.1.1.24      IPNODE2_1205
192.1.1.32      KC_HLR2
192.1.1.50      DN_MSC1
192.1.1.52      DN_MSC2
```

- NOTE:** If the required IP address information is shown in the **rtrv-ip-host** output in step 2, skip step 3 and go to step 4.

3. Add IP host information to the database by entering the **ent-ip-host** command with the hostname and the IP address. For example, enter this command.

```
ent-ip-host:host=dsmhost1:ipaddr=192.168.120.1
```

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

```
rlghncxa03w 05-02-01 21:18:37 GMT EAGLE5 33.0.0
ENT-IP-HOST: MASP A - COMPLTD
```

4. Verify the status of the DSM 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 05-02-01 17:00:36 GMT EAGLE5 33.0.0
CARD VERSION   TYPE   APPL   PST           SST       AST
1301 118-002-000 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 being configured in this procedure is in service-normal (IS-NR), go to step 5 to inhibit the card. If the state of the DSM is out-of-service-maintenance disabled (OOS-MT-DSBLD), go to step 7 to change the Ethernet link parameters.

5. Place the DSM out of service using the `inh-card` command. For example, enter this command.

```
inh-card:loc=1301
```

This message should appear.

```
rlghncxa03w 04-06-01 21:18:37 GMT EAGLE5 33.0.0
Card has been inhibited.
```

6. Display the status of the DSM 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 05-02-01 17:00:36 GMT EAGLE5 33.0.0
CARD  VERSION      TYPE  APPL   PST      SST      AST
1301  118-002-000  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.
```

7. Configure the Ethernet link parameters associated with the DSM 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:auto=no:mactype=dix:mcast=yes
```

```
chg-ip-lnk:loc=1301:port=b:ipaddr=192.168.121.1:speed=10
:submask=255.255.255.0:auto=no:mactype=dix:mcast=yes
```

When each of these commands has successfully completed, the following message should appear.

```
rlghncxa03w 05-02-01 21:18:37 GMT EAGLE5 33.0.0
CHG-IP-LNK: MASP A - COMPLTD
```

8. Verify the new Ethernet link parameters associated with the DSM that was changed in step 7 by entering the `rtrv-ip-lnk` command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 21:19:37 GMT EAGLE5 33.0.0
LOC  PORT  IPADDR          SUBMASK          DUPLEX  SPEED  MACTYPE  AUTO  MCAST
1203  A    192.001.001.001 255.255.255.128  HALF   10     802.3    NO   NO
1205  A    192.001.001.014 255.255.255.0   FULL   100    DIX      NO   NO
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
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.
```

- NOTE:** If step 5 was not performed, skip steps 9 and 10, and go to step 11.

9. Put the DSM that was inhibited in step 5 back into service by using the `alw-card` command. For example, enter this command.

```
alw-card:loc=1301
```

This message should appear.

```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 33.0.0
Card has been allowed.
```

10. Verify the in-service normal (IS-NR) status of the DSM 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 05-02-01 17:00:36 GMT EAGLE5 33.0.0
CARD  VERSION      TYPE  APPL      PST          SST          AST
1301  118-002-000  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.
```

11. Repeat this procedure for all other DSMs in the Eagle.

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

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

You have now completed this procedure.

ELAP Software Configuration Overview

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,” in the *ELAP Administration Manual*.
- The text-based user interface has a configuration menu that performs the ELAP configuration and initialization, and is described in these sections:
 - “ELAP 2.x Configuration Menu” section on page 47
 - “ELAP 3.0 Configuration Menu” section on page 74.

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,” in 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 section.

After setting up the PC workstation, go to one of these sections, depending on the version of ELAP you are running:

- “ELAP Configuration and Initialization - ELAP 2.x” section on page 45
- “ELAP Configuration and Initialization - ELAP 3.0” section on page 72.

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.

Internet Explorer

The ELAP user interface was designed and written to perform with Microsoft Internet Explorer 5.0 or later. Do not use other browsers with the ELAP user interface.

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:

- “Installing the Java Plug-In” on page 39
- “Installing the Java Policy File” on page 43
- “Adding Security Parameters to an Existing Java Policy File” on page 43 or “Creating a New Java Policy File” on page 44

Installing the 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. You will perform this after completing the ELAP configuration described in the “ELAP Configuration and Initialization - ELAP 2.x” section on page 45, or in the “ELAP Configuration and Initialization - ELAP 3.0” section on page 72.

NOTE: This must be the only Internet Explorer open on your PC when you modify or create the Java policy file, or else the change does not take effect.

Procedure

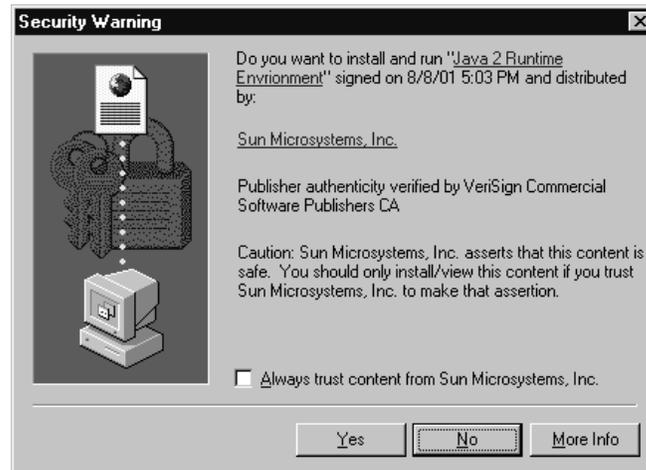
1. Using Internet Explorer 5.0 or later, enter the IP address for your ELAP A machine. You will see the login screen. See Figure 19.

Figure 19. ELAP User Interface Login Screen



2. Attempt to log in to the ELAP User Interface screen. When you have successfully entered the Username and Password, the login process checks for the required Java plug-in. When it finds the Java plug-in not present, the system displays a 'Security Warning' window, shown in Figure 20.

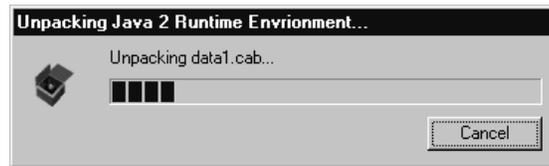
Figure 20. Security Warning Window



3. Click the Yes button to begin the process of loading the Java plug-in.
-

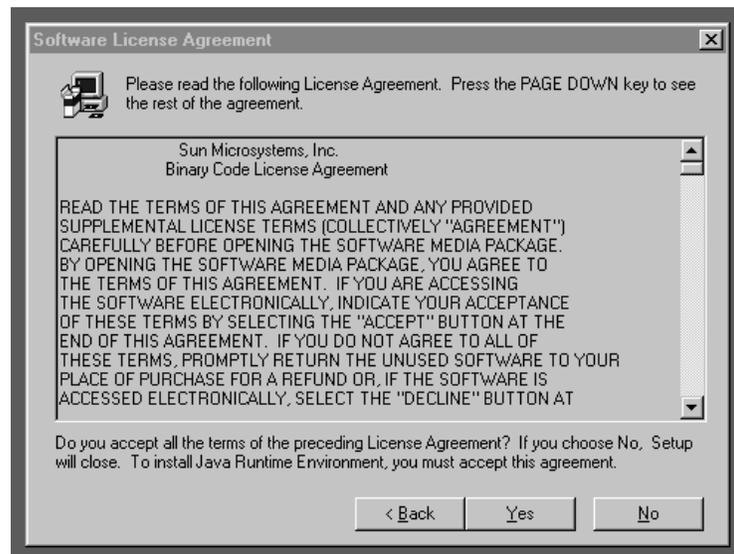
- 4. The loading and unpacking of the Java runtime environment begins, as shown in Figure 21.

Figure 21. Unpacking Java Runtime



-
- 5. Next, the Java installation presents a Software Licensing Agreement screen shown in Figure 22.

Figure 22. Software Licensing Agreement



-
- 6. Click the **Yes** button to accept the Sun Microsystems agreement.
-

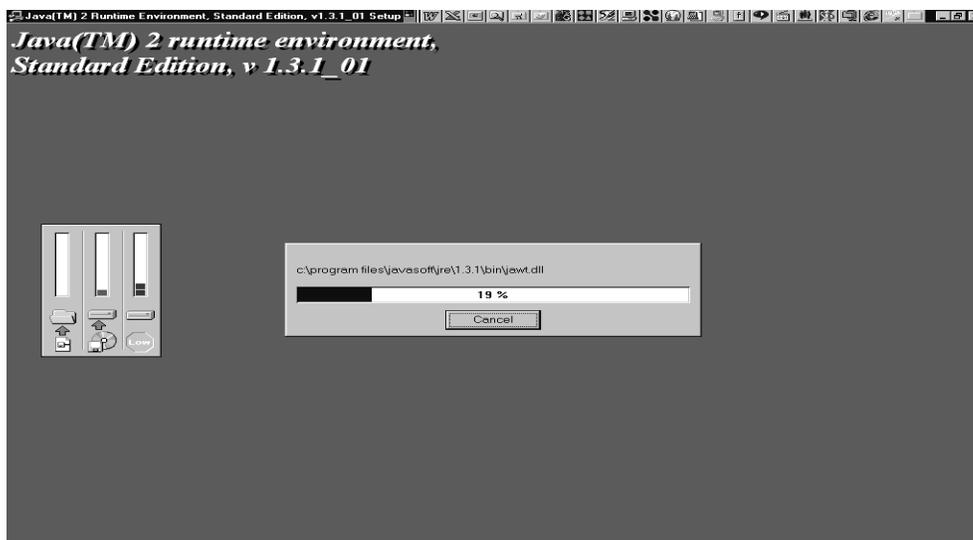
7. Next, you must specify a destination location for the Java folder, as shown in Figure 23.

Figure 23. Choosing a Destination Location



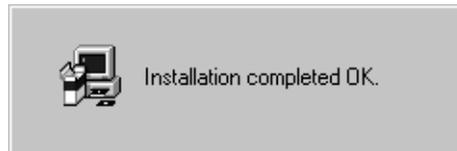
8. Since the specified default location is the preferred location to use, simply click the **Next** button to accept the Destination Folder. The process begins to load the program and shows the progress in a screen like Figure 24.

Figure 24. Storing the Java Program



- 9. As this loading process continues, several screens appear in succession marking the progress of the installation and the creation of Java JAR files. Finally, another momentary message indicates the successful completion, shown in Figure 25.

Figure 25. Successfully Completing the Installation



-
- 10. When screen in Figure 25 appears and then disappears, the installation of the Java plug-in is finished. You return to the Internet Explorer screen containing the login screen in Figure 19 on page 40.
-

Installing the Java Policy File

The banner applet makes a network connection to each MPS side. A Java policy file must be modified or created 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; for more information, see Chapter 3, "ELAP Graphical User Interface," in the *ELAP Administration Manual*.

NOTE: This must be the only Internet Explorer open on your PC when you modify or create the Java policy file, or else the change does not take effect.

Adding 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:

- Select **Settings > Control Panel** from the Windows **Start Menu**.
- Double click on the Java Plug-in icon
- Under the "Basic" tab, the path to a policy file is specified as follows:

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

Open the specified file, and insert the following text:

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

Creating a New Java Policy File

To create a Java policy file, insert the following text into a file accessible by the workstation:

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

To install the new Java policy file, perform the following actions:

- Select **Settings > Control Panel** from the Windows **Start Menu**.
- Double click on the Java Plug-in icon
- Under the “Basic” tab, type in the path to the policy file you created above:

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

You have now completed the Java installation procedure.

ELAP Configuration and Initialization - ELAP 2.x

Before you can use the ELAP GUI, 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. (Refer to the *Installation Manual*.) 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:

1. 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.

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. See a sample configuration header format in Figure 26 on page 46.

Figure 26. Configuration Menu Header Format

```
MPS Side A:  hostname: mpsa-f0c7c3  hostid: 80f0c7c3
              Platform Version: 20.14.0
              Software Version: ELAP 2.0.0-20.9.0
              Thu Nov 15 13:33:42 EST 2001
```

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 the **<Return>** key.

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 the **<Return>** key.

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 section; 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 the **<Return>** key.

You can press the **<Esc>** 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 the **<Return>** key.

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 section.

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:

```
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 2.x Configuration Menu

Overview of ELAP Configuration

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 ELAP 2.x” on page 58.) 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 the **Configuration Menu**.

Initial `elapconfig` User Login

The first time the `elapconfig` user logs in to the system, the text screen is displayed as shown in Figure 27.

Figure 27. 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; furthermore, if the sync network is not operational, the user is notified.

When the four criteria are met, press the **<Return>** key and the process resumes. Figure 28 on page 48 shows the continuation of the screen information.

Figure 28. Initial Configuration Continues

```

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

```

At this point, the first appearance of the **Configuration Menu** occurs, and is discussed next.

Text-based Configuration Menu

Following the report appearing in Figure 28, the **ELAP Configuration Menu** is displayed as shown in Figure 29. The `elapconfig` user can now begin configuring the MPS local and remote servers.

Figure 29. ELAP Configuration Menu

```

MPS Side A:  hostname: mpsa-f0c7c3  hostid: 80f0c7c3
              Platform Version: 20.14.0
              Software Version: ELAP 2.0.0-20.9.0
              Thu Nov 15 13:36:42 EST 2001

```

```

/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration             |
|----|-----\
| 2 | Configure Provisioning Network    |
|----|-----\
| 3 | Configure Sync Network           |
|----|-----\
| 4 | Configure DSM Network            |
|----|-----\
| 5 | Set Time Zone                    |
|----|-----\
| 6 | Exchange Secure Shell Keys       |
|----|-----\
| 7 | Change Password                  |
|----|-----\
| 8 | Platform Menu                    |
|----|-----\
| 9 | 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 the <Return> key.

Next the use of each of the menu options is explained.

Display Configuration

Option 1 in the **ELAP Configuration Menu, Display Configuration**, displays network address information and the time zone. See an example in Figure 30.

Figure 30. Example of Display Configuration Output

```

ELAP A Provisioning Network IP Address = 192.168.61.136
ELAP B Provisioning Network IP Address = 192.168.61.137
Provisioning Network Netmask          = 255.255.255.0
Provisioning Network Default Router    = 192.168.61.250
ELAP A Sync Network Address           = 192.168.2.100
ELAP B Sync Network Address           = 192.168.2.200
ELAP A Main DSM Network Address       = 192.168.120.100
ELAP B Main DSM Network Address       = 192.168.120.200
ELAP A Backup DSM Network Address     = 192.168.121.100
ELAP B Backup DSM Network Address     = 192.168.121.200
Time Zone                             = US/Eastern
    
```

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 5 shows an example of IP addresses used in the configuration process.

Table 5. Sample IP Addresses Used in Configuration

Provisioning Network Information	IP Addresses
ELAP A Provisioning Network IP Address (MPS A)	192.168.61.136
ELAP B Provisioning Network IP Address (MPS B)	192.168.61.137
Network Net Mask	255.255.255.0
Default Router	192.168.61.250

Configure Provisioning Network

Option 2 in the **ELAP Configuration Menu, Configure Provisioning Network**, prompts you for 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 your Information Services department.

In response to each prompt, you can enter a dotted decimal IP address or press the <Return> key to leave the current value unchanged (the current value is shown in brackets after the prompt text). See Figure 31.

Figure 31. Configure Provisioning Network Output

```
ELAP software is running. Stop it? [N]: Y
Verifying connectivity with mate...
Enter the ELAP A provisioning network IP Address [192.168.61.136]:
Enter the ELAP B provisioning network IP Address [192.168.61.137]:
Enter the ELAP provisioning network netmask [255.255.255.0]:
Enter the ELAP provisioning network default router IP Address [192.168.61.250]:

Press return to continue ...
```

NOTE: Take care in configuring the IP information. Incorrect information can prevent the ELAP from accepting provisioning data and establishing remote ELAP user interface connections over the customer network.

Configure Sync Network

Option 3 in the **ELAP Configuration Menu, Configure Sync Network**, allows you to 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.



CAUTION: Take care in entering the prompt responses. Entering incorrect information or rebooting at the wrong time can result in improper operation of the ELAP. If you reboot at the wrong time, you need to contact Tekelec Technical Services (see “Tekelec Technical Services” on page 4) for assistance in resolving this situation.

See “Network Connections” in Chapter 2 of the *ELAP Administration Manual* for a description of ELAP network IP address assignments. See Figure 32.

Figure 32. Configure Sync Network Output

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

Configure DSM Network

Option 4 in the **ELAP Configuration Menu, Configure DSM Network**, prompts you for DSM main and backup network IP addresses. This information allows the ELAP to communicate with the main and backup DSM networks.

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

See “Network Connections” in Chapter 2 of the *ELAP Administration Manual* for a description of ELAP network IP address assignments. See Figure 33 on page 51.

Figure 33. Configure DSM Networks Menu Item 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: Take care in configuring the IP information. Incorrect information will prevent the ELAP from communicating with the Eagle.

Set Time Zone

Option 5 in the **ELAP Configuration Menu**, **Set Time Zone**, prompts you for the time zone to be used by the ELAP. 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.

NOTE: The value for the time zone should be obtained from your Information Services department. The default value for the time zone is “US/Eastern” (EST - the Eastern time zone in the United States).

After option 5 is selected in the **ELAP Configuration Menu**, a caution is displayed alerting you that if the timezone is changed, both MPSs must be rebooted. You are also asked to decide whether or not you wish to change the time zone for MPSs A and B. See Figure 34.

Figure 34. Set Time Zone Menu Item Output

```
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...
Verifying connectivity with mate...
Are you sure you wish to change the timezone for MPS A and B? [N]: Y
```

If you answer the prompt **N** (no), or press the **<Return>** key, the time zone for the MPSs is not changed.

If you answer the prompt **Y** (yes), you are prompted with the following.

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

You must enter a valid UNIX time zone file name. To select a file in one of the subdirectories, enter a relative path name (such as “US/Eastern” for the Eastern time zone in the United States) in response to the prompt. To display a complete list of the valid time zones, simply press the **<Return>** key in response to the prompt, and all valid time zone names are displayed. Appendix A in the *ELAP Administration Manual*, or step 14 on page 64 of this procedure also contains a list of valid time zones.

The time zone change does not take effect until the next time the MPS is rebooted. The **Reboot MPS** menu item is described in “Reboot MPS” on page 53.

Exchange Secure Shell Keys

Option 6 in the **ELAP Configuration Menu, Exchange Secure Shell Keys**, enables connections between local and remote ELAPs without entering a password. The ELAPs exchange encryption keys, which are required to run the secure shell. The exchange is normally done automatically during ELAP initialization. This menu item can be used if the exchange ever needs to be done manually. See Figure 35.

Figure 35. Exchange Secure Shell Keys Output

```

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...

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.

```

Change Password

Option 7 in the **ELAP Configuration Menu, Change Password**, changes the text user interface password for an `elapconfig` login name for both ELAP A and B. See Figure 36.

NOTE: It is recommended that you contact Tekelec Technical Services; refer to “Tekelec Technical Services” on page 4, before changing the password.

Figure 36. Change Password Output

```

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

Option 8 in the **ELAP Configuration Menu, ELAP Platform Menu**, accesses the Platform menu so that the `elapconfig` user can access and manage platform functions shown next. See Figure 37 on page 53.

Figure 37. Platform Menu Output

```
MPS Side A:  hostname: mpsa-d1a8f8  hostid: 80d1a8f8
              Platform Version: 20.20.0
              Software Version: ELAP 2.0.0-20.11.0
              Wed Jan 28 18:16:57 EST 2002
```

```
/-----ELAP Platform Menu-\
/-----\
| 1 | Initiate Upgrade |
|---|-----|
| 2 | Eject CD       |
|---|-----|
| 3 | Reboot MPS     |
|---|-----|
| 4 | Halt MPS       |
|---|-----|
| 5 | File System Backup |
|---|-----|
| 6 | MySQL Backup   |
|---|-----|
| 7 | RTDB Backup    |
|---|-----|
| e | Exit           |
\-----/
```

Enter choice:

Initiate Upgrade

Option 1 in the **ELAP Platform Menu**, **Initiate Upgrade**, initiates an upgrade on the selected ELAP. For upgrade procedures, contact Tekelec Technical Services; refer to “Tekelec Technical Services” on page 4.

Eject CD

Option 2 in the **ELAP Platform Menu**, **Eject CD**, initiates an ejection of the CD media on the selected ELAP. The default is 'BOTH'.

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

Reboot MPS

Option 3 in the **ELAP Platform Menu**, **Reboot MPS**, initiates a reboot of either MPS or both. The default is BOTH.

NOTE: The `elapconfig` user can abort rebooting the MPS by pressing the <Esc> key at the displayed prompt.

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

NOTE: Rebooting the MPS stops all ELAP processes, and databases cannot be updated until MPS is fully booted.

Halt MPS

Option 4 in the **ELAP Platform Menu**, **Halt MPS**, initiates a halt of one MPS or both. The default is BOTH.

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

NOTES:

1. Halting an MPS stops all ELAP processes. Selecting the default to halt both MPS A and MPS B requires a person to be physically present in order to reboot MPS to allow for further access!
2. The `elapconfig` user can abort halting the MPS by pressing the <Esc> key at the displayed prompt.
3. It is recommended that you contact Tekelec Technical Services; refer to "Tekelec Technical Services" on page 4, before halting the MPS.

File System Backup

Option 5 in the **ELAP Platform Menu**, **File System Backup**, backs up all system files. The output is shown below.

```
Are you sure you want to back up the file system on MPS A? [N]: y
Backing up MPS A file system...
```

NOTE: This option does not backup database files.

MySQL Backup

Option 6 in the **ELAP Platform Menu**, **MySQL Backup**, backs up the MySQL database. The output is shown below.

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

```
ELAP software is running. Stop it? [N]: y
Are you sure you want to back up the MYSQL on MPS? [N]: y
Backing up MPS A file system...
```

RTDB Backup

Option 7 in the **ELAP Platform Menu**, **RTDB Backup**, backs up the RTDB database. The output is shown below.

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

```
ELAP software is running. Stop it? [N]: y
Are you sure you want to back up the RTDB database on MPS A? [N]: y
Backing up MPS A file system...
```

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

Option 9 in the **ELAP Configuration Menu**, **Configure NTP Server**, allows for the display, addition, and removal of an external NTP server. See Figure 38.

Figure 38. 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

Option 1 in the **ELAP Configure NTP Server Menu**, **Display External NTP Server**, displays External NTP Server information. If a server is present, the server name and IP address are displayed. If an NTP Server is not present, the following is displayed.

```

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

Add External NTP Server

Option 2 in the **ELAP Configure NTP Server Menu**, **Add External NTP Server**, adds an External NTP Server. The output below is an example of the addition of an External NTP Server.

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

```

Are you sure you will to add a new NTP Server? [N]: y
Enter the ELAP NTP Server IP Address: 192.102.61.91

Verifying NTP Server. It might take up to 1 minute.
External NTP Server [server 192.102.61.91 prefer] has been added.
    
```

Remove External NTP Server

Option 3 in the **ELAP Configure NTP Server Menu**, **Remove External NTP Server**, 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, the following appears.

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

ELAP Configure NTP Server Menu Exit

The **ELAP Configure NTP Server Menu Exit** menu 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 2.x Configuration Procedure

Initialization and configuration are provided through a text-based user interface described in this section. The user accesses the text-based configuration procedure by means of the product user interface.

The first time the user identification `elapconfig` logs into MPS A, the system performs an auto-configuration on both MPS ELAP pairs. The sync network and main and backup DSM networks are initialized to their default values, described in “Network Connections” in Chapter 2 of the *ELAP Administration Manual* and defined in the *NSD Installation Manual*. Various internal configuration parameters are also set to their default values. The installer must perform initial configuration on MPS A on Eagle A and MPS B on Eagle B.

Configuration Terms and Assumptions

- The initial configuration steps assume that each MPS has previously undergone successful Initial Platform Manufacture (IPM).
- The network path must be present and verified before the MPS servers are ready for ELAP configuration.
- Initial configuration can be implemented on only MPS A. Attempting to perform initial configuration on MPS B 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, 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 examples values only.
- Default values can be accepted just 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 his databases. Of course, 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 backup.
- 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 pairs.

Procedure for Configuring ELAP 2.x

Perform the configuration procedure by following these steps in the text-based user interface.

NOTE: Initial configuration cannot be performed through the GUI because the IP addresses required for browser connectivity do not exist until the initial configuration is completed.

Procedure

1. The following IP addresses are required for configuring the ELAP A and ELAP B. Obtain these addresses from the customer, and enter them in Table 6. You will need these addresses to perform the configuration procedure.

Table 6. Provisioning Network IP Address Information

IP Addresses Required to Configure ELAPs
ELAP A Provisioning (MPS A):
ELAP A Provisioning (MPS B):
Network Netmask:
Default Router

2. Connect to MPS B by any of the following methods:
- Use port 0 on the 8-port connector box.
 - Use the TTYA serial port on the rear of MPS B.
 - Telnet into the MPS B.

For the locations of the ports and hubs mentioned above, refer to the *NSD Installation Manual*.

3. Login to MPS B, using the login ID `mpuser`. Contact Tekelec Technical Services for the passwords (see “Tekelec Technical Services” on page 4).

4. From MPS B, use the `tip` command to connect to the console port of the MPS A on Eagle A.

```
$tip mate
Trying 192.168.2.120...
Connected to 192.168.2.120.
Escape character is '^]'.

```

```
SunOS 5.7
```

```
mpsa-f0ad77 console login:
```

5. After connecting to the console port of the MPS A, you are prompted to login. You must login as **elapconfig**. A note of caution is displayed. If all the conditions of the caution notice are satisfied, press the **<Return>** key to continue.

```
SunOS 5.7
```

```
mposa-f0ad77 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...
```

-
6. Upon pressing the **<Return>** key to continue, the initial configuration can proceed or be aborted. Enter **y** to continue.

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

NOTE: Pressing the <Return> key without typing y would accept the default value of n or no.

-
7. Enter the password for the mate MPS A to confirm that secure shell keys (**ssh**) are successfully exchanged.

```
Password for elapdev@mate:  
Keys exchanged.  
Verifying that ssh works correctly.
```

```
ssh is working correctly.
```

-
8. After issuing the notification that the secure shell key (**ssh**) exchange is working correctly, the configuration software sets up the default configuration file, **epap.cfg**, on MPS A and MPS B.

```
Building the initial database on side A.  
Stopping mysql on local.  
Stopping mysql on mate.  
Setting up local config file.  
Setting up mate config file.  
Starting MySQL on local.  
Starting MySQL on mate.  
Allowing access from slave.  
Resetting master and slave db threads.  
Specifying master db.  
There was no epap.cfg file. Using default configuration.
```

9. A successful configuration file setup displays the **ELAP Configuration Menu** and its associated header information. The server designation of MPS A on Eagle A is displayed as well as Hostname, Host ID, Platform Version, Software Version, and the Date.

```
MPS Side A:  hostname: mpsa-f0ad77  hostid: 80f0ad77
              Platform Version: 20.25.0
              Software Version: ELAP 2.0.0-20.17.0
              Tue Jan 15 11:03:31 EST 2002
```

```
/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration |
|-----|
| 2 | Configure Provisioning Network |
|-----|
| 3 | Configure Sync Network |
|-----|
| 4 | Configure DSM Network |
|-----|
| 5 | Set Time Zone |
|-----|
| 6 | Exchange Secure Shell Keys |
|-----|
| 7 | Change Password |
|-----|
| 8 | Platform Menu |
|-----|
| 9 | Configure NTP Server |
|-----|
| e | Exit |
\-----/
```

```
Enter Choice: 1
```

10. Selecting option 1, **Display Configuration**, from the **ELAP Configuration Menu** provides a means of verifying ELAP A and ELAP B Provisioning Network IP addresses, the Time Zone, and other provisioning values for the MPS.

```
MPS Side A:  hostname: mpsa-f0ad77  hostid: 80f0ad77
              Platform Version: 20.25.0
              Software Version: ELAP 2.0.0-20.17.0
              Tue Jan 15 11:04:27 EST 2002
```

```
ELAP A Provisioning Network IP Address = 192.168.61.119
ELAP B Provisioning Network IP Address = 192.168.61.120
Provisioning Network Netmask           = 255.255.255.0
Provisioning Network Default Router    =
ELAP A Sync Network Address            = 192.168.2.100
ELAP B Sync Network Address            = 192.168.2.200
ELAP A Main DSM Network Address        = 192.168.120.100
ELAP B Main DSM Network Address        = 192.168.120.200
ELAP A Backup DSM Network Address      = 192.168.121.100
ELAP B Backup DSM Network Address      = 192.168.121.200
Time Zone                               = US/Eastern
```

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

Pressing the <Return> key to continue returns you to the **ELAP Configuration Menu**.

- 11. Select menu option 2, Configure Provisioning Network, from the ELAP Configuration Menu.**

```
MPS Side A:  hostname: mpsa-f0ad77  hostid: 80f0ad77
              Platform Version: 20.25.0
              Software Version: ELAP 2.0.0-20.17.0
              Tue Jan 15 11:05:03 EST 2002
```

```

/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration |
|-----|
| 2 | Configure Provisioning Network |
|-----|
| 3 | Configure Sync Network |
|-----|
| 4 | Configure DSM Network |
|-----|
| 5 | Set Time Zone |
|-----|
| 6 | Exchange Secure Shell Keys |
|-----|
| 7 | Change Password |
|-----|
| 8 | Platform Menu |
|-----|
| 9 | Configure NTP Server |
|-----|
| e | Exit |
\-----/

```

Enter Choice: 2

Selecting this option 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 recorded in Table 6.

NOTE: No default value is provided for the ELAP provisioning network default router. This value and the IP addresses and network netmask values, if changed, must be obtained from your Information Services department.

```

Verifying connectivity with mate...
Enter the ELAP A provisioning network IP Address [192.168.61.119]:
Enter the ELAP B provisioning network IP Address [192.168.61.120]:
Enter the ELAP provisioning network netmask [255.255.255.0]:
Enter the ELAP provisioning network default router IP Address: 192.168.61.250

```

NOTE: Unless there is a known network address conflict, step 12 can be skipped.

12. After entering the ELAP provisioning network default router IP address, you are returned to the **ELAP Configuration Menu**. Select menu option **3**, **Configure Sync Network**, to accept the default Sync Network IP address octet values presented by the configuration software.

```
MPS Side A:  hostname: mpsa-f0ad77  hostid: 80f0ad77
              Platform Version: 20.25.0
              Software Version: ELAP 2.0.0-20.17.0
              Tue Jan 15 11:09:19 EST 2002
```

```

/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration |
|-----|
| 2 | Configure Provisioning Network |
|-----|
| 3 | Configure Sync Network |
|-----|
| 4 | Configure DSM Network |
|-----|
| 5 | Set Time Zone |
|-----|
| 6 | Exchange Secure Shell Keys |
|-----|
| 7 | Change Password |
|-----|
| 8 | Platform Menu |
|-----|
| 9 | Configure NTP Server |
|-----|
| e | Exit |
\-----/

```

Enter Choice: 3

Press the **<Return>** key or, if there is a known conflict, enter the customer-specified IP address octet values.

```
Verifying connectivity with mate...
Enter the first 3 octets for the ELAP MPS sync network [192.168.2]:
```

NOTE: Unless there is a known network address conflict, step 13 can be skipped.

13. After accepting the default value or entering a specific ELAP Sync IP address octet value, you are returned to the **ELAP Configuration Menu**. Select menu option **4, Configure DSM Network**, automatically adds the DSM network IP address to the list of known hosts.

```
MPS Side A:  hostname: mpsa-f0ad77  hostid: 80f0ad77
              Platform Version: 20.25.0
              Software Version: ELAP 2.0.0-20.17.0
              Tue Jan 15 11:13:17 EST 2002
```

```
/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration |
|-----|
| 2 | Configure Provisioning Network |
|-----|
| 3 | Configure Sync Network |
|-----|
| 4 | Configure DSM Network |
|-----|
| 5 | Set Time Zone |
|-----|
| 6 | Exchange Secure Shell Keys |
|-----|
| 7 | Change Password |
|-----|
| 8 | Platform Menu |
|-----|
| 9 | Configure NTP Server |
|-----|
| e | Exit |
\-----/
```

Enter Choice: 4

Accept the default IP address octets for the ELAP main DSM network and the ELAP backup DSM network presented by the configuration software. If a know network conflict exists, enter the IP address octet values for the ELAP main DSM network and the ELAP backup DSM network obtained from your Information Services department.

```
Verifying connectivity with mate...
Warning: Permanently added the DSA host key for IP address
'192.168.2.100' to the list of known hosts.
```

```
Enter the first 3 octets for the ELAP main DSM network [192.168.120]:
Enter the first 3 octets for the ELAP backup DSM network [192.168.121]:
```

NOTE: If the time zone was found to be correct in the output of Display Configuration, steps 14, 15, and 16 can be skipped.

14. After accepting the default value or entering a specific ELAP backup DSM network octet IP address value, you are returned to the **ELAP Configuration Menu**. Select menu option 5, **Set Time Zone**, to confirm or change the time zone setting.

```
MPS Side A:  hostname: mpsa-f0ad77  hostid: 80f0ad77
              Platform Version: 20.25.0
              Software Version: ELAP 2.0.0-20.17.0
              Tue Jan 15 11:25:19 EST 2002
```

```

/-----ELAP Configuration Menu-----\
|-----|-----|
| 1 | Display Configuration |
|-----|-----|
| 2 | Configure Provisioning Network |
|-----|-----|
| 3 | Configure Sync Network |
|-----|-----|
| 4 | Configure DSM Network |
|-----|-----|
| 5 | Set Time Zone |
|-----|-----|
| 6 | Exchange Secure Shell Keys |
|-----|-----|
| 7 | Change Password |
|-----|-----|
| 8 | Platform Menu |
|-----|-----|
| 9 | Configure NTP Server |
|-----|-----|
| e | Exit |
|-----|-----|
\-----/

```

```
Enter Choice: 5
```

An important caution is displayed. After noting the warning, press the **<Return>** key to continue.

You are prompted for confirmation on setting the time zone for the MPS A and MPS B. Enter **y** to confirm. Pressing the **<Return>** key accepts the default of **N** (or **no**) to continue with setting the time zone; the action is aborted. You are returned to the **ELAP Configuration Menu**.

```
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...
```

```
Verifying connectivity with mate...
```

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

15. If the affirmative response **y** is given to the time zone confirmation, the following prompt is displayed. If the time zone is known, it can be entered at the prompt. If the time zone value is not known exactly, just press the **<Return>** key.

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

16. If an incorrect time zone is entered, or if the <Return> key is pressed, a list of all available time zone values is displayed, and the installer may select a value from this table.

```

Time zone file does not exist
Valid time zone files are:
Australia/Broken_Hill  Australia/LHI           Australia/NSW
Australia/North        Australia/Queensland     Australia/South
Australia/Tasmania    Australia/Victoria      Australia/West
Australia/Yancowinna  Australia/ACT           Brazil/Acre
Brazil/DeNoronha      Brazil/East             Brazil/West
Canada/Atlantic       Canada/Central          Canada/East-Saskatchewan
Canada/Eastern        Canada/Mountain         Canada/Newfoundland
Canada/Pacific        Canada/Yukon            Chile/Continental
Chile/EasterIsland    Etc/GMT                 Etc/GMT+1
Etc/GMT+10            Etc/GMT+11             Etc/GMT+12
Etc/GMT+2             Etc/GMT+3              Etc/GMT+4
Etc/GMT+5             Etc/GMT+6              Etc/GMT+7
Etc/GMT+8             Etc/GMT+9              Etc/GMT-1
Etc/GMT-10            Etc/GMT-11             Etc/GMT-12
Etc/GMT-13            Etc/GMT-2              Etc/GMT-3
Etc/GMT-4             Etc/GMT-5              Etc/GMT-6
Etc/GMT-7             Etc/GMT-8              Etc/GMT-9
Etc/GMT+0             Etc/GMT-0              Mexico/BajaNorte
Mexico/BajaSur        Mexico/General          Mideast/Riyadh87
Mideast/Riyadh88     Mideast/Riyadh89       US/Alaska
US/Aleutian          US/Michigan             US/Pacific-New
US/Samoa             US/Arizona              US/Central
US/East-Indiana      US/Eastern              US/Hawaii
US/Mountain          US/Pacific              CET
CST6CDT              Cuba                    EET
EST                   EST5EDT                 Egypt
Eire                  Factory                  GB
HST                   Hongkong                Iceland
Iran                  Israel                   Japan
Kwajalein            Libya                    MET
MST                   MST7MDT                 NZ
NZ-CHAT              PRC                     PST8PDT
Poland                Portugal                 ROC
ROK                   Singapore                Turkey
W-SU                  WET                      africa
asia                  australasia              backward
etcetera              europe                   factory
northamerica          pacificnew               solar87
solar88                solar89                  southamerica
GB-Eire                GMT                       GMT+0
GMT+1                  GMT+10                   GMT+11
GMT+12                 GMT+13                   GMT+2
GMT+3                  GMT+4                     GMT+5
GMT+6                  GMT+7                     GMT+8
GMT+9                  GMT-0                     GMT-1
GMT-10                 GMT-11                   GMT-12
GMT-2                  GMT-3                     GMT-4
GMT-5                  GMT-6                     GMT-7
GMT-8                  GMT-9                     Greenwich
Jamaica                Navajo                    UCT
UTC                    Universal                 Zulu
    
```

Enter a time zone file (relative to /usr/share/lib/zoneinfo): **US/Eastern**

After setting the time zone successfully, you are returned to the **ELAP Configuration Menu**.



NOTE: The following menu option 6, Exchange Secure Shell Keys, is performed automatically by the configuration software at the start of configuration. The configuration software would not have proceeded if the exchange had not been successful. This step may be skipped during the initial configuration.

17. Select menu option 6, Exchange Secure Shell Keys.

```
MPS Side A: hostname: mpsa-f0ad77  hostid: 80f0ad77
Platform Version: 20.25.0
Software Version: ELAP 2.0.0-20.17.0
Tue Jan 15 11:26:29 EST 2002
```

```
/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration |
|-----|
| 2 | Configure Provisioning Network |
|-----|
| 3 | Configure Sync Network |
|-----|
| 4 | Configure DSM Network |
|-----|
| 5 | Set Time Zone |
|-----|
| 6 | Exchange Secure Shell Keys |
|-----|
| 7 | Change Password |
|-----|
| 8 | Platform Menu |
|-----|
| 9 | Configure NTP Server |
|-----|
| e | Exit |
\-----/
```

```
Enter Choice: 6
```

You are notified in the output that the secure shell keys have already been exchanged.

Pressing the **<Return>** key brings up a prompt requiring confirmation to continue with the exchange. Pressing the **<Return>** key at this confirmation prompt defaults to **n** or **no**, and the exchange action is aborted. Entering **y** confirms the exchange, and you are prompted for the password of the mate. Contact Tekelec Technical Services for the password (see “Tekelec Technical Services” on page 4).

After entering the appropriate password, a verification of the exchange of keys is displayed. You are returned to the **ELAP Configuration Menu**.

```
Verifying connectivity with mate...
```

```
Caution: Secure shell keys have already been exchanged between this MPS
server and it's mate. Secure shell is working properly.
```

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



NOTES:

1. If the password does not need to be changed, skip this step and go to step 19.
2. It is recommended that you contact Tekelec Technical Services; refer to "Tekelec Technical Services" on page 4, before changing the password.

18. Select menu option 7, **Change Password**, from the ELAP Configuration Menu.

```
MPS Side A:  hostname: mpsa-f0ad77  hostid: 80f0ad77
              Platform Version: 20.25.0
              Software Version: ELAP 2.0.0-20.17.0
              Tue Jan 15 11:28:08 EST 2002
```

```
/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration |
|---|-----|
| 2 | Configure Provisioning Network |
|---|-----|
| 3 | Configure Sync Network |
|---|-----|
| 4 | Configure DSM Network |
|---|-----|
| 5 | Set Time Zone |
|---|-----|
| 6 | Exchange Secure Shell Keys |
|---|-----|
| 7 | Change Password |
|---|-----|
| 8 | Platform Menu |
|---|-----|
| 9 | Configure NTP Server |
|---|-----|
| e | Exit |
\-----/
```

```
Enter Choice: 7
```

You are prompted to confirm the action of changing the password for both the MPS A and MSP B servers on Eagle A. Pressing the <Return> key accepts the default of **N** or **no**, and aborts the action to the change the password.

Entering **y** invokes a prompt for the new password, followed by the re-entry of the password to verify that choice. Successful entry of the new password returns you to the **ELAP Configuration Menu**.

```
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:
```



NOTE: If an NTP server is not needed, steps 19, 20, 21, and 22 can be skipped.

19. An NTP Server can now be added by selecting menu option 9, **Configure NTP Server**, from the **ELAP Configuration Menu**.

```
MPS Side A:  hostname: mpsa-f0ad77  hostid: 80f0ad77
              Platform Version: 20.25.0
              Software Version: ELAP 2.0.0-20.17.0
              Tue Jan 15 11:29:30 EST 2002
```

```
/-----ELAP Configuration Menu-----\
/-----\
| 1 | Display Configuration |
|-----|
| 2 | Configure Provisioning Network |
|-----|
| 3 | Configure Sync Network |
|-----|
| 4 | Configure DSM Network |
|-----|
| 5 | Set Time Zone |
|-----|
| 6 | Exchange Secure Shell Keys |
|-----|
| 7 | Change Password |
|-----|
| 8 | Platform Menu |
|-----|
| 9 | Configure NTP Server |
|-----|
| e | Exit |
\-----\
```

Enter Choice: 9



20. Selecting menu option 9, **Configure NTP Server**, brings up the **ELAP Configure NTP Server Menu**. Select menu option 2, **Add External NTP Server**.

Verifying connectivity with mate...

```
MPS Side A:  hostname: mpsa-f0ad77  hostid: 80f0ad77
              Platform Version: 20.25.0
              Software Version: ELAP 2.0.0-20.17.0
              Tue Jan 15 14:03:50 EST 2002
```

```
/-----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

You are prompted to confirm the action of adding a new NTP Server. Pressing the **<Return>** key accepts the default of **y** or **no**, and aborts the action to add an external NTP server.

Entering **y** invokes a prompt where the IP address of the NTP server is added.

The display shows the server verification occurring. The output displays a confirmation that the addition of the NTP server was successful.

NOTE: All NTP Server IP addresses shown are only examples.

```
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...
```

-
- 21.** Pressing the **<Return>** key returns you to the **ELAP Configure NTP Server Menu**. Select menu option **1, Display External NTP Server**, to confirm successful addition of the NTP server.

```
MPS Side A: hostname: mpsa-f0ad77 hostid: 80f0ad77
Software Version: ELAP 2.0.0-20.17.0
Tue Jan 15 14:05:36 EST 2002
```

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

```
Enter Choice: 1
```

Verify that the external NTP Server IP address is correct.

```
External NTP Server [server 192.168.61.69 prefer ]

Press return to continue...
```

22. Pressing the <Return> key returns you to the **ELAP Configure NTP Server Menu**. Select **e** from the menu options to exit the **ELAP Configure NTP Server Menu** and to return to the **ELAP Configuration Menu**.

```
MPS Side A:  hostname: mpsa-f0ad77  hostid: 80f0ad77
              Platform Version: 20.25.0
              Software Version: ELAP 2.0.0-20.17.0
              Tue Jan 15 14:06:12 EST 2002
```

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

```
Enter Choice: e
```

23. If the time zone was not changed, select menu option **e**, **Exit**, from the **ELAP Configuration Menu**. Go to step 24.

If the time zone was changed however, MPS A and B must be rebooted.

Select menu option **8**, **Platform Menu**, from the **ELAP Configuration Menu**.

To reboot MPS A and B, select option **3**, **Reboot MPS**.

```
MPS Side A:  hostname: mpsa-f0ad77  hostid: 80f0ad77
              Platform Version: 20.25.0
              Software Version: ELAP 2.0.0-20.17.0
              Tue Jan 15 11:04:31 EST 2002
```

```
/-----ELAP Platform Menu-\
/-----\
| 1 | Initiate Upgrade          |
|---|-----|
| 2 | Eject CD                  |
|---|-----|
| 3 | Reboot MPS                |
|---|-----|
| 4 | Halt MPS                  |
|---|-----|
| 5 | File System Backup        |
|---|-----|
| 6 | MySQL Backup              |
|---|-----|
| 7 | RTDB Backup               |
|---|-----|
| e | Exit                       |
\-----\
```

```
Enter Choice: 3
```

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You are prompted to reboot MPS A, MPS B, or both MPS A and B. To reboot both MPS A and MPS B, press the <Return> key. This will select the default value, **BOTH**.

```
Reboot MPS A, MPS B or BOTH? [BOTH]:  
Verifying connectivity with mate...  
Reboot mate MPS...  
Reboot local MPS...  
. . .  
. . .  
. . .  
<reboot output>  
. . .  
. . .
```

-
- 24.** At the exit of the **ELAP Configuration Menu** or with the reboot of MPS A and B, the console logon appears at the system prompt. This prompt indicates the completion of ELAP initial configuration.

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

```
mpsa-f0ad77 console login:
```

-
- 25.** The ELAP initial configuration is now complete.
-

You have now completed this procedure.

ELAP Configuration and Initialization - ELAP 3.0

Before you can use the ELAP GUI, 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. (Refer to the *NSD Installation Manual*.) 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:

1. 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.

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. See a sample configuration header format in Figure 39 on page 73.

Figure 39. Configuration Menu Header Format

```
MPS Side A:  hostname: mpsa-d1c48f  hostid: 80d1c48f
              Platform Version: 3.0.0-22.13.0
              Software Version: ELAP 3.0.0-30.19.0
              Mon Dec 16 16:41:13 EST 2002
```

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 the **<Return>** key.

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 the **<Return>** key.

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 section; 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 the **<Return>** key.

You can press the **<Esc>** 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 the **<Return>** key.

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 section.

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:

```
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 3.0 Configuration Menu

Overview of ELAP Configuration

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 ELAP 3.0” on page 89.) 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 the **Configuration Menu**.

Initial `elapconfig` User Login

The first time the `elapconfig` user logs in to the system, the text screen is displayed as shown in Figure 40.

Figure 40. 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; furthermore, if the sync network is not operational, the user is notified.

When the four criteria are met, press the **<Return>** key and the process resumes. Figure 41 on page 75 shows the continuation of the screen information.

Figure 41. Initial Configuration Continues

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

At this point, the first appearance of the **Configuration Menu** occurs, and is discussed next.

Text-based Configuration Menu

Following the report appearing in Figure 41, the **ELAP Configuration Menu** is displayed as shown in Figure 42. The `elapconfig` user can now begin configuring the MPS local and remote servers.

Figure 42. ELAP 3.0 Configuration Menu

```
MPS Side A: hostname: mpsa-d1c48f  hostid: 80d1c48f
Platform Version: 3.0.0-22.13.0
Software Version: ELAP 3.0.0-30.19.0
Mon Dec 16 16:41:13 EST 2002
```

```
/-----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 the <Return> key.

Next the use of each of the menu options is explained.

Display Configuration

Option 1 in the **ELAP Configuration Menu, Display Configuration**, displays network address information and the time zone. See an example in Figure 43.

Figure 43. Example of Display Configuration Output

```

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 7 on page 77 shows an example of IP addresses used in the configuration process.

Table 7. Sample IP Addresses Used in Configuration

Provisioning Network Information	IP Addresses
ELAP A Provisioning Network IP Address (MPS A)	192.168.61.136
ELAP B Provisioning Network IP Address (MPS B)	192.168.61.137
Network Net Mask	255.255.255.0
Default Router	192.168.61.250

Configure Network Interfaces and Options

Option 2 in the **ELAP Configuration Menu, Configure Network Interfaces Menu**, accesses the Platform menu so that the `elapconfig` user can access and manage the ELAP's network interfaces. See Figure 44.

Figure 44. 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:

```

Configure Provisioning Network

Option 1 in the **Configure Network Interfaces Menu, Configure Provisioning Network**, prompts you for 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 your Information Services department.

In response to each prompt, you can enter a dotted decimal IP address or press the **<Return>** key to leave the current value unchanged (the current value is shown in brackets after the prompt text). See Figure 45 on page 78.

Figure 45. 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...

```

NOTE: Take care in configuring the IP information. Incorrect information can prevent the ELAP from accepting provisioning data and establishing remote ELAP user interface connections over the customer network.

Configure Sync Network

Option 2 in the **Configure Network Interfaces Menu**, **Configure Sync Network**, allows you to 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.



CAUTION: Take care in entering the prompt responses. Entering incorrect information or rebooting at the wrong time can result in improper operation of the ELAP. If you reboot at the wrong time, you need to contact Tekelec Technical Services (see “Tekelec Technical Services” on page 4) for assistance in resolving this situation.

See “Network Connections” in Chapter 2 of the *ELAP Administration Manual* for a description of ELAP network IP address assignments. See Figure 46.

Figure 46. Configure Sync Network Output

```

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

```

Configure DSM Network

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

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

See “Network Connections” in Chapter 2 of the *ELAP Administration Manual* for a description of ELAP network IP address assignments. See Figure 47 on page 79.

Figure 47. Configure DSM Networks Menu Item 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]:
Press return to continue...
```

NOTE: Take care in configuring the IP information. Incorrect information will prevent the ELAP from communicating with the Eagle.

Configure Backup Provisioning Network

Option 4 in the **Configure Network Interfaces Menu, Configure Backup Provisioning Network**, prompts you for all information necessary to setup a second interface for the provisioning network. The IP address for this interface must be on a different class C subnet than the primary Provisioning Network address. You have the option of setting up a second default router address to coincide with the backup provisioning network. If the default router field is left empty, a second default route will not be added.

NOTE: There are no default values for any of these fields. You must configure these IP addresses. Obtain the values for the IP address, netmask, and default router from your Information Services department.

In response to each prompt, you can enter a dotted decimal IP address or press the <Return> key to leave the current value unchanged (the current value is shown in brackets after the prompt text). See Figure 48.

Figure 48. Configure Backup 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...
```

NOTE: Take care in configuring the IP information. Incorrect information can prevent the ELAP from accepting provisioning data and establishing remote ELAP user interface connections over the customer network.

Configure Forwarded Ports

Option 5 in the **Configure Network Interfaces Menu, Configure Forwarded Ports**, allows you to configure these ports for ELAPs A and B: HTTP ports (options 1 and 2), SuExec ports (options 3 and 4), and Banner ports (options 5 and 6). See Figure 49 on page 80.

Figure 49. 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
\-----/

```

Port forwarding allows a single external address to be used for multiple internal systems. The port forwarding firewall maintains a list of services (basically port numbers) and corresponding internal addresses.

Although the MPS has two individual internal IP addresses, external clients are only allowed to reach the internal network using one external address. The MPS servers must use different port numbers for each externally available service in order to distinguish MPS A from MPS B to external clients.

The MPS uses three ports for the Web user interface and another two ports for the LSMS and EBDA connections. At a minimum, one MPS side must be configured with three Web user interface ports different from the default values. The firewall must be configured to forward three Web user interface ports to MPS A and three different Web user interface ports to MPS B.



CAUTION: The LSMS does not currently allow configuration of alternate LSMS and EBDA ports (options 7, 8, 9, and 10). The LSMS is required to be on the internal network of a port forwarding firewall. Do not change the default values for options 7, 8, 9, and 10.

In response to each prompt, you can enter a port value or press the <Return> key to leave the current value unchanged (the current value is shown in brackets after the prompt text). See Figure 50. See Table 8 on page 81 for a list of the default port numbers used by the MPS.

Figure 50. Configure Forwarded Ports Example

```
ELAP A HTTP Port [80]: 90
```

Table 8. Default MPS Port Numbers used by the ELAP

TCP/IP Port	Use	Inbound	Outbound
20	ftp-data ¹	Yes ¹	Yes
21	ftp ¹	Yes ¹	Yes
22	TCP (ssh)	Yes ²	Yes
23	telnet	Yes	Yes
123	NTP	Yes	Yes
80	Apache	Yes	No
8001	suEXEC	Yes	No
8473	GUI server	Yes	Yes
1030 ³	LSMS Bulk Download and High Speed Audit	Yes	Yes
7483 ³	LSMS Provisioning Data	Yes	Yes
9691	Watcher Port (diagnostics)	Yes	Yes
<p>Notes:</p> <p>1. FTP data is normally received from the customer's provisioning system. This assumes the firewall automatically opens the high numbered return port (the default behavior of firewalls like Firewall-1). If you are using a basic packet filtering router, contact Tekelec Technical Services; refer to "Tekelec Technical Services" on page 4.</p> <p>2. The two-way TCP communication channel endpoints are the port number 22 and the server spawned random port value.</p> <p>3. These values cannot be changed.</p>			

The **Exit** menu option **e** exits from the **Configure Forwarded Ports Menu** and returns to the **Configure Network Interfaces Menu**.

Configure Static NAT Addresses

Option 6 in the **Configure Network Interfaces Menu, Configure Static NAT Addresses**, allows you to configure static NAT (network address translation) addresses for MPS A and B (options 1 and 2). See Figure 51 on page 82.

Figure 51. Configure Static NAT Addresses

```

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

```

Static address mapping makes systems that are behind the firewall appear to have public addresses on the external network. A one-to-one mapping exists between internal and external addresses.

An external address must be assigned to the NAT firewall for each MPS side. The external addresses must be entered into the MPS database in order for the Web user interface to be fully functional.

In response to each prompt, you can enter a dotted decimal IP address or press the **<Return>** key to leave the current value unchanged (the current value is shown in brackets after the prompt text). See Figure 52.

Figure 52. Configure Static NAT Addresses Example

```

ELAP A Static NAT Address: 192.168.61.1

```

The **Exit** menu option **e** exits from the **Configure Static NAT Addresses Menu** and returns to the **Configure Network Interfaces Menu**.

Configure Network Interfaces Menu Exit

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

Set Time Zone

Option 3 in the **ELAP Configuration Menu**, **Set Time Zone**, prompts you for the time zone to be used by the ELAP. The time zone can be the zone where the ELAP is located, Greenwich Mean Time, or another zone that meets the needs of the system.

NOTE: The value for the time zone should be obtained from your **Information Services** department. The default value for the time zone is **"US/Eastern"** (EST - the Eastern time zone in the United States).

After option 3 is selected in the **ELAP Configuration Menu**, a caution is displayed alerting you that, if the timezone is changed, both MPSs must be rebooted. You are also asked to decide whether or not you wish to change the time zone for MPSs A and B. See Figure 53 on page 83.

Figure 53. Set Time Zone Menu Item Output

```
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...
```

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

If you answer the prompt **n** (no), or press the **<Return>** key, the time zone for the MPSs is not changed.

If you answer the prompt **y** (yes), you are prompted with the following.

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

You must enter a valid UNIX time zone file name. To select a file in one of the subdirectories, enter a relative path name (such as "US/Eastern" for the Eastern time zone in the United States) in response to the prompt. To display a complete list of the valid time zones, simply press the **<Return>** key in response to the prompt, and all valid time zone names are displayed. Appendix A in the *ELAP Administration Manual*, or step 20 on page 101 of this procedure also contains a list of valid time zones.

The time zone change does not take effect until the next time the MPS is rebooted. The **Reboot MPS** menu item is described in "Set Time Zone" on page 82.

Exchange Secure Shell Keys

Option 4 in the **ELAP Configuration Menu, Exchange Secure Shell Keys**, enables connections between local and remote ELAPs without entering a password. The ELAPs exchange encryption keys, which are required to run the secure shell. The exchange is normally done automatically during ELAP initialization. This menu item can be used if the exchange ever needs to be done manually. See Figure 54.

Figure 54. Exchange Secure Shell Keys Output

```
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...
```

```
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.
```

Change Password

Option 5 in the **ELAP Configuration Menu, Change Password**, changes the text user interface password for an `elapconfig` login name for both ELAP A and B. See Figure 55.

NOTE: It is recommended that you contact Tekelec Technical Services; refer to “Tekelec Technical Services” on page 4, before changing the password.

Figure 55. Change Password Output

```
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

Option 6 in the **ELAP Configuration Menu, ELAP Platform Menu**, accesses the Platform menu so that the `elapconfig` user can access and manage platform functions shown next. See Figure 56.

Figure 56. Platform Menu Output

```
MPS Side A:  hostname: mpsa-d1c48f  hostid: 80d1c48f
              Platform Version: 3.0.0-22.13.0
              Software Version: ELAP 3.0.0-30.19.0
              Mon Dec 16 16:41:13 EST 2002
```

```
/-----ELAP Platform Menu-\
/-----\
| 1 | Initiate Upgrade |
|----|-----|
| 2 | Eject CD         |
|----|-----|
| 3 | Reboot MPS      |
|----|-----|
| 4 | Halt MPS        |
|----|-----|
| 5 | File System Backup |
|----|-----|
| 6 | MySQL Backup    |
|----|-----|
| 7 | RTDB Backup     |
|----|-----|
| e | Exit            |
\-----/
```

```
Enter choice:
```

Initiate Upgrade

Option 1 in the **ELAP Platform Menu, Initiate Upgrade**, initiates an upgrade on the selected ELAP. For upgrade procedures, contact Tekelec Technical Services; refer to “Tekelec Technical Services” on page 4.

Eject CD

Option 2 in the **ELAP Platform Menu, Eject CD**, initiates an ejection of the CD media on the selected ELAP. The default is BOTH.

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

Reboot MPS

Option 3 in the **ELAP Platform Menu, Reboot MPS**, initiates a reboot of either MPS or both. The default is BOTH.

NOTE: The `elapconfig` user can abort rebooting the MPS by pressing the <Esc> key at the displayed prompt.

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

NOTE: Rebooting the MPS stops all ELAP processes, and databases cannot be updated until MPS is fully booted.

Halt MPS

Option 4 in the **ELAP Platform Menu, Halt MPS**, initiates a halt of one MPS or both. The default is BOTH.

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

NOTES:

1. Halting an MPS stops all ELAP processes. Selecting the default to halt both MPS A and MPS B requires a person to be physically present in order to reboot MPS to allow for further access!
2. The `elapconfig` user can abort halting the MPS by pressing the <Esc> key at the displayed prompt.
3. It is recommended that you contact Tekelec Technical Services; refer to “Tekelec Technical Services” on page 4, before halting the MPS.

File System Backup

Option 5 in the **ELAP Platform Menu, File System Backup**, backs up all system files. The output is shown below.

```
Are you sure you want to back up the file system on MPS A? [N]: y  
Backing up MPS A file system...
```

NOTE: This option does not backup database files.

MySQL Backup

Option 6 in the **ELAP Platform Menu**, **MySQL Backup**, backs up the MySQL database. The output is shown below.

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

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

Are you sure you want to back up the MYSQL on MPS? [N]: y
Backing up MPS A file system...
```

RTDB Backup

Option 7 in the **ELAP Platform Menu**, **RTDB Backup**, backs up the RTDB database. The output is shown below.

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

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

Are you sure you want to back up the RTDB database on MPS A? [N]: y
Backing up MPS A file system...
```

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

Option 7 in the **ELAP Configuration Menu**, **Configure NTP Server**, allows for the display, addition, and removal of an external NTP server. See Figure 57.

Figure 57. 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

Option 1 in the **ELAP Configure NTP Server Menu, Display External NTP Server**, displays External NTP Server information. If a server is present, the server name and IP address are displayed. If an NTP Server is not present, the following is displayed.

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

Add External NTP Server

Option 2 in the **ELAP Configure NTP Server Menu, Add External NTP Server**, adds an External NTP Server. The output below is an example of the addition of an External NTP Server.

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

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

Remove External NTP Server

Option 3 in the **ELAP Configure NTP Server Menu, Remove External NTP Server**, 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, the following appears.

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

ELAP Configure NTP Server Menu Exit

The **ELAP Configure NTP Server Menu Exit** menu 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 3.0 Configuration Procedure

Initialization and configuration are provided through a text-based user interface described in this section. The user accesses the text-based configuration procedure by means of the product user interface.

The first time the user identification `elapconfig` logs into MPS A, the system performs an auto-configuration on both MPS ELAP pairs. The sync network and main and backup DSM networks are initialized to their default values, described in “Network Connections” in Chapter 2 of the *ELAP Administration Manual* and defined in the *NSD Installation Manual*. Various internal configuration parameters are also set to their default values. The installer must perform initial configuration on MPS A on Eagle A and MPS B on Eagle B.

Configuration Terms and Assumptions

- The initial configuration steps assume that each MPS has previously undergone successful Initial Platform Manufacture (IPM).
- The network path must be present and verified before the MPS servers are ready for ELAP configuration.
- Initial configuration can be implemented only on MPS A. Attempting to perform initial configuration on MPS B 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, 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 examples values only.
- Default values can be accepted just 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 his databases. Of course, 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 backup.
- 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 pairs.

Procedure for Configuring ELAP 3.0

Perform the configuration procedure by following these steps in the text-based user interface.

NOTE: Initial configuration cannot be performed through the GUI because the IP addresses required for browser connectivity do not exist until the initial configuration is completed.



CAUTION: It is recommended that the ELAP (3.0 or greater) is connected to the Eagle before LNP telephone number data is loaded onto the ELAP and before the LNP telephone number quantity is enabled on the Eagle. When the LNP telephone number quantity is enabled on the Eagle, the feature key and quantity information is sent to the ELAP, resulting in the ELAP database quantity being the same as the LNP telephone number quantity on the Eagle. If the ELAP database quantity is larger than the LNP telephone number quantity on the Eagle, the ELAP will try to download more LNP telephone number records than the Eagle can handle, resulting in generating a major alarm, UAM 0281 - LNP Ported TNs exceeds Feat. Capacity. In this condition, the DSMs will not load any data as well. To clear this alarm, or to keep the alarm from being generated at all, the LNP telephone number quantity on the Eagle should be equal to or greater than the quantity of the ELAP database.

Procedure

- 1. The following IP addresses are required for configuring the ELAP A and ELAP B. Obtain these addresses your Information Services department, and enter them in Tables 9 and 10, and Table 11 on page 90. You will need these addresses to perform the configuration procedure.

Table 9. NTP Server IP Address

NTP Server IP Address

Table 10. MPS A Configuration Information

Common Information		Backup Provisioning Net. Information (Optional)	
MPS A Provisioning Network Address		MPS A Backup Provisioning Net. Addr.	
MPS B Provisioning Network Address		MPS B Backup Provisioning Net. Addr.	
Netmask		Backup Netmask	
Default Router		Backup Default Router	
Port Forwarding and Static NAT Information (Optional)			

Table 10. MPS A Configuration Information (Continued)

Common Information		Backup Provisioning Net. Information (Optional)	
MPS A Forwarded HTTP Port		MPS A Forwarded Banner Port	
MPS B Forwarded HTTP Port		MPS B Forwarded Banner Port	
MPS A Forwarded SuExec Port		MPS A Forwarded EBDA Port	1030*
MPS B Forwarded SuExec Port		MPS B Forwarded EBDA Port	1030*
MPS A Forwarded LSMS Port	7483*	MPS A Provisioning Static NAT Addr.	
MPS B Forwarded LSMS Port	7483*	MPS B Provisioning Static NAT Addr.	
* These values cannot be changed.			

Table 11. MPS B Configuration Information

Common Information		Backup Provisioning Net. Information (Optional)	
MPS A Provisioning Network Address		MPS A Backup Provisioning Net. Addr.	
MPS B Provisioning Network Address		MPS B Backup Provisioning Net. Addr.	
Netmask		Backup Netmask	
Default Router		Backup Default Router	
Port Forwarding and Static NAT Information (Optional)			
MPS A Forwarded HTTP Port		MPS A Forwarded Banner Port	
MPS B Forwarded HTTP Port		MPS B Forwarded Banner Port	
MPS A Forwarded SuExec Port		MPS A Forwarded EBDA Port	1030*
MPS B Forwarded SuExec Port		MPS B Forwarded EBDA Port	1030*
MPS A Forwarded LSMS Port	7483*	MPS A Provisioning Static NAT Addr.	
MPS B Forwarded LSMS Port	7483*	MPS B Provisioning Static NAT Addr.	
* These values cannot be changed.			

2. Connect to MPS B by any of the following methods:
- Use port 0 on the 8-port connector box.
 - Use the TTYA serial port on the rear of MPS B.
 - Telnet into the MPS B.

For the locations of the ports and hubs mentioned above, refer to the *NSD Installation Manual*.

3. Login to MPS B, using the login ID **tk1c**. Contact Tekelec Technical Services for the passwords (see “Tekelec Technical Services” on page 4).
-

4. From MPS B, use the **tip** command to connect to the console port of the MPS A on Eagle A.

```
$tip mate
Trying 192.168.2.120...
Connected to mate.
Escape character is '^]'.

SunOS 5.7

mpsa-f0c7c3 console login:
```

5. After connecting to the console port of the MPS A, you are prompted to login. You must login as **elapconfig**. A note of caution is displayed. If all the conditions of the caution notice are satisfied, press the **<Return>** key to continue.

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 any of the above criteria are not met, the ELAP configuration will not proceed. Ensuring that the MPS servers are powered on requires a visual check. If the “Initial Platform Manufacture” is not complete, the ELAP configuration will not proceed and should the sync network not be operational, the user will be notified.

6. Upon pressing the <Return> key to continue, the initial configuration can proceed or be aborted. Enter **y** to continue.

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

NOTE: Pressing the <Return> key without typing **y would accept the default value of **n** or **no**.**

7. Enter the password for the mate MPS A to confirm that secure shell keys (**ssh**) are successfully exchanged.

```
Password for elapdev@mate:
```

```
Keys exchanged.  
Verifying that ssh works correctly.  
ssh is working correctly.
```

8. After the notification that secure shell key exchange is working correctly, the configuration software will setup the user interface database on MPS A and MPS B at this site.

```
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.
```

LNP Feature Activation Guide

9. A successful configuration file setup displays the **ELAP Configuration Menu** and its associated header information. The server designation of MPS A on Eagle A is displayed as well as Hostname, Host ID, Platform Version, Software Version, and the Date.

```
MPS Side A:  hostname: mpsa-d1c48f  hostid: 80d1c48f
              Platform Version: 3.0.0-22.13.0
              Software Version: ELAP 3.0.0-30.19.0
              Mon Dec 16 16:41:13 EST 2002
```

```
/-----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: 1
```

- 10. Selecting option 1, Display Configuration, from the ELAP Configuration Menu** provides a means of verifying ELAP A and ELAP B Provisioning Network IP addresses, the Time Zone, and other provisioning values for the MPS.

```
MPS Side A:  hostname: mpsa-d1c48f  hostid: 80d1c48f
              Platform Version: 3.0.0-22.13.0
              Software Version: ELAP 3.0.0-30.19.0
              Mon Dec 16 16:42:32 EST 2002
```

```
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           = 7483
ELAP B LSMS Connection Port           = 7483
ELAP A EBDA Connection Port           = 1030
ELAP B EBDA Connection Port           = 1030
Time Zone                             = US/Eastern
```

Press return to continue...

Pressing the <Return> key to continue returns you to the **ELAP Configuration Menu**.

- 11. Select menu option 2, **Configure Network Interfaces Menu**, from the **ELAP Configuration Menu**.

```
MPS Side A:  hostname: mpsa-d1c48f  hostid: 80d1c48f
              Platform Version: 3.0.0-22.13.0
              Software Version: ELAP 3.0.0-30.19.0
              Mon Dec 16 16:41:13 EST 2002
```

```
/-----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: 2

- 12. From the **Configure Network Interfaces Menu**, select option 1, **Configure Provisioning Network**.

```
/-----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

NOTE: Values for the IP address, network netmask, DSM and default router should be obtained from your Information Services department.

```
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...
```

13. You may accept default IP address values presented by the configuration software for ELAP A and ELAP B provisioning network and network netmask, or enter specific IP values previously received from your Information Services department for the MPS. Refer to the information recorded in Table 10 on page 89 and Table 11 on page 90 for the correct addresses.

NOTE: No default value is provided for the ELAP provisioning network default router. This value must be received from your Information Services department.

-
14. After entering the ELAP provisioning network default router IP address for MPS A at this site, you are returned to the **Configure Network Interfaces Menu**.

-
- NOTE: Unless there is a known network address conflict, step 15 can be skipped.**

15. Select menu option 2, **Configure Sync Network**, to accept the default Sync Network IP address octet values presented by the configuration software.

```

/-----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

```

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

```

You may accept default Sync Network IP address octet values presented by the configuration software by pressing the **<Return>** key, or enter a specific ELAP Sync IP address octet values if there is a known conflict.

After accepting the default or entering a specific ELAP Sync IP address octet value, you are returned to the **Configure Network Interfaces Menu**.

- NOTE:** Unless there is a known network address conflict, step 16 can be skipped.

16. Select menu option 3, Configure DSM Network.

```

/-----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

```

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]:
Press return to continue...

```

This menu option automatically adds the DSM network IP address to the list of known hosts. You should then accept default IP address octets for the ELAP main DSM network and the ELAP backup DSM network presented by the configuration software by pressing the **<Return>** key unless a known network conflict exists. If there is a known network conflict, enter the first three octets of the ELAP main DSM network and ELAP backup network IP addresses obtained from your Information Services department.

After accepting the default or entering specific ELAP DSM network octet IP address values, you are returned to the **Configure Network Interfaces Menu**.



NOTE: If no backup provisioning network interface is desired at this time, step 17 can be skipped.

17. Select menu option 4, Configure Backup Provisioning Network.

```

/-----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: 4

```

Verifying connectivity with mate..
ELAP A backup provisioning network IP Address: 192.168.59.169
ELAP B backup provisioning network IP Address: 192.168.59.170
ELAP backup provisioning network netmask: 255.255.255.0
ELAP backup provisioning network default router IP Address: 192.168.59.250

```

This menu selection prompts you for all information necessary to setup a second interface for the your provisioning network. The information should be received from your Information Services department for the MPS. Refer to the information recorded in Table 10 on page 89 and Table 11 on page 90 for the correct addresses.

NOTE: There are no default values for the IP address, network netmask, default router fields.

The IP address for this interface must be on a different class C subnet than the primary provisioning network address. You also have the option of setting up a second default router address to coincide with the backup provisioning network. If the default router field is left empty, a second default route is not added.

After entering the backup provisioning network information, you are returned to the **Configure Network Interfaces Menu**.



NOTE: Unless the MPS is separated from GUI workstations and provisioning systems by a port forwarding firewall, skip 18 may be skipped.

18. Select menu option 5, Configure Forwarded Ports.

```

/-----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: 5

This menu selection provides the functionality to configure ELAP ports for the Web user interface and PDBI interfaces.

```

/-----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 |
\-----/
    
```

Select each of the appropriate sub menu options to configure each port.

- Select option 1, **Change ELAP A HTTP Port.**
- Select option 2, **Change ELAP B HTTP Port.**
- Select option 3, **Change ELAP A SuExec Port.**

- Select option 4, **Change ELAP B SuExec Port.**
- Select option 5, **Change ELAP A Banner Port.**
- Select option 6, **Change ELAP B Banner Port.**

Each of these menu selections prompts you for a port number recorded in Table 10 on page 89 and Table 11 on page 90 for the correct values.

After entering the forwarded port information, select **e** to exit the **Forwarded Port Configuration Menu**. You are returned to the **Configure Network Interfaces Menu**.



NOTE: Unless the MPS is separated from GUI workstations and provisioning systems by a firewall performing static NAT, step 19 may be skipped.

19. Select menu option 6, **Configure Static NAT Addresses.**

```

/-----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

This menu selection provides the functionality to configure the static NAT addresses of the ELAP.

```

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

```

Select each of the appropriate sub menu options to configure each address.

- Select option 1, **Change ELAP A Static NAT Address**
- Select option 2, **Change ELAP B Static NAT Address**

Each of these menu selections prompts you for the IP Addresses recorded in Table 10 on page 89 and Table 11 on page 90.

After entering the static NAT Address information, select **e** to exit the **Static NAT Address Configuration Menu**. You are returned to the **Configure Network Interfaces Menu**. Select **e** to exit the **Configure Network Interfaces Menu** and return to the **ELAP Configuration Menu**.



NOTE: If the time zone was found to be correct in the output of **Display Configuration**, steps 20, 21, and 22 may be skipped. The default time zone is "EST" (US/Eastern).

20. Select menu option 3, Set Time Zone from the ELAP Configuration Menu.

```
MPS Side A:  hostname: mpsa-d1c48f  hostid: 80d1c48f
              Platform Version: 3.0.0-22.13.0
              Software Version: ELAP 3.0.0-30.19.0
              Mon Dec 16 16:41:13 EST 2002
```

```
/-----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: 3

An important caution is displayed. After noting the caution, press the **<Return>** key to continue.

```
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...

You are prompted for confirmation on setting the time zone for the MPS A and MPS B. Enter **y** to confirm. Pressing the **<Return>** key accepts the default of **N** (or **no**) to continue with setting the time zone; the action is aborted. You are returned to the **ELAP Configuration Menu**.

21. If the affirmative response **y** is given to the time zone confirmation, the following prompt is displayed. If the time zone is known, it can be entered at the prompt. If the time zone value is not known exactly, just press the **<Return>** key.

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

22. If an incorrect time zone is entered, or if the **<Return>** key is pressed in step 21, a list of all available time zone values is displayed, and you may select a value from this table.

```
Time zone file does not exist
Valid time zone files are:
Australia/Broken_Hill      Australia/LHI              Australia/NSW
Australia/North            Australia/Queensland      Australia/South
Australia/Tasmania        Australia/Victoria        Australia/West
Australia/Yancowinna      Australia/ACT             Brazil/Acre
Brazil/DeNoronha          Brazil/East               Brazil/West
Canada/Atlantic           Canada/Central            Canada/East-Saskatchewan
Canada/Eastern             Canada/Mountain           Canada/Newfoundland
Canada/Pacific             Canada/Yukon              Chile/Continental
Chile/EasterIsland        Etc/GMT                  Etc/GMT+1
Etc/GMT+10                Etc/GMT+11               Etc/GMT+12
Etc/GMT+2                 Etc/GMT+3                Etc/GMT+4
Etc/GMT+5                 Etc/GMT+6                Etc/GMT+7
Etc/GMT+8                 Etc/GMT+9                Etc/GMT-1
Etc/GMT-10                Etc/GMT-11               Etc/GMT-12
Etc/GMT-13                Etc/GMT-2                Etc/GMT-3
Etc/GMT-4                 Etc/GMT-5                Etc/GMT-6
Etc/GMT-7                 Etc/GMT-8                Etc/GMT-9
Etc/GMT+0                 Etc/GMT-0                Mexico/BajaNorte
Mexico/BajaSur            Mexico/General            Mideast/Riyadh87
Mideast/Riyadh88          Mideast/Riyadh89         US/Alaska
US/Aleutian               US/Michigan               US/Pacific-New
US/Samoa                  US/Arizona                US/Central
US/East-Indiana           US/Eastern                 US/Hawaii
US/Mountain               US/Pacific                CET
CST6CDT                   Cuba                       EET
EST                        EST5EDT                    Egypt
Eire                       Factory                     GB
HST                        Hongkong                   Iceland
Iran                       Israel                      Japan
Kwajalein                 Libya                       MET
MST                        MST7MDT                     NZ
NZ-CHAT                    PRC                         PST8PDT
Poland                     Portugal                    ROC
ROK                        Singapore                   Turkey
W-SU                       WET                         africa
asia                       australasia                 backward
etcetera                   europe                       factory
northamerica               pacificnew                   solar87
solar88                    solar89                       southamerica
GB-Eire                     GMT                           GMT+0
GMT+1                       GMT+10                       GMT+11
GMT+12                      GMT+13                       GMT+2
GMT+3                       GMT+4                         GMT+5
GMT+6                       GMT+7                         GMT+8
GMT+9                       GMT-0                         GMT-1
GMT-10                      GMT-11                       GMT-12
GMT-2                       GMT-3                         GMT-4
```

LNP Feature Activation Guide

GMT-5	GMT-6	GMT-7
GMT-8	GMT-9	Greenwich
Jamaica	Navajo	UCT
UTC	Universal	Zulu

Enter a time zone file (relative to /usr/share/lib/zoneinfo): **US/Eastern**

After setting the time zone successfully, you are returned to the **ELAP Configuration Menu**.



NOTE: The following menu option 4, Exchange Secure Shell Keys, is performed automatically by the configuration software at the start of configuration. The configuration software would not have proceeded if the exchange had not been successful. This step may be skipped during the initial configuration.

23. Select menu option 4, Exchange Secure Shell Keys.

```
MPS Side A:  hostname: mpsa-dlc48f  hostid: 80dlc48f
              Platform Version: 3.0.0-22.13.0
              Software Version: ELAP 3.0.0-30.19.0
              Mon Dec 16 16:41:13 EST 2002
```

```
/-----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: **4**

You are notified in the output that the secure shell keys have already been exchanged.

Pressing the **<Return>** key brings up a prompt requiring confirmation to continue with the exchange. Pressing the **<Return>** key at this confirmation prompt defaults to **n** or **no**, and the exchange action is aborted. Entering **y** confirms the exchange, and you are prompted for the password of the mate. Contact Tekelec Technical Services for the password (see “Tekelec Technical Services” on page 4).

After entering the appropriate password, a verification of the exchange of keys is displayed. You are returned to the **ELAP Configuration Menu**.

```
Verifying connectivity with mate...
```

Caution: Secure shell keys have already been exchanged between this MPS server and it's mate. Secure shell is working properly.

Press return to continue...

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.



NOTES:

1. If the password does not need to be changed, skip this step and go to step 25.
2. It is recommended that you contact Tekelec Technical Services; refer to "Tekelec Technical Services" on page 4, before changing the password.

24. Select menu option 5, Change Password, from the ELAP Configuration Menu.

```
MPS Side A: hostname: mpsa-d1c48f hostid: 80d1c48f
             Platform Version: 3.0.0-22.13.0
             Software Version: ELAP 3.0.0-30.19.0
             Mon Dec 16 16:41:13 EST 2002
```

```
/-----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: 5

You are prompted to confirm the action of changing the password for both the MPS A and MPS B servers on Eagle A. Pressing the <Return> key accepts the default of **n** or **no**, and aborts the action to the change the password.

Entering **y** invokes a prompt for the new password, followed by the re-entry of the password to verify that choice. Successful entry of the new password returns you to the **ELAP Configuration Menu**.

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...



NOTE: If an NTP server is not needed, steps 25, 26, 27, and 28 can be skipped.

25. An NTP Server can now be added by selecting menu option 7, *Configure NTP Server*, from the *ELAP Configuration Menu*. This brings up the *ELAP Configure NTP Server Menu*.

```
MPS Side A:  hostname: mpsa-d1c48f  hostid: 80d1c48f
              Platform Version: 3.0.0-22.13.0
              Software Version: ELAP 3.0.0-30.19.0
              Mon Dec 16 16:41:13 EST 2002
```

```
/-----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: 7

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

26. Select menu option 2, **Add External NTP Server** from the **ELAP Configure NTP Server Menu**.

You are prompted to confirm the action of adding a new NTP Server. Pressing the **<Return>** key accepts the default of **n** or **no**, and aborts the action to add an external NTP server.

Entering **y** invokes a prompt where the IP address of the NTP server is added. Enter the NTP server IP address from Table 9 on page 89.

The display shows the server verification occurring. The output displays a confirmation that the addition of the NTP server was successful.

NOTE: All NTP Server IP addresses shown are only examples. The IP Address must be of a valid External 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...
```

27. Pressing the **<Return>** key returns you to the **ELAP Configure NTP Server Menu**. Select menu option 1, **Display External NTP Server**, to confirm successful addition of the NTP server.

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

```
Enter Choice: 1
```

Verify that the external NTP Server IP address is correct.

```
External NTP Server [server 192.168.61.69 prefer ]
```

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

28. Pressing the <Return> key returns you to the **ELAP Configure NTP Server Menu**. Select **e** from the menu options to exit the **ELAP Configure NTP Server Menu** and to return to the **ELAP Configuration Menu**.

```

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

```

Enter Choice: e

29. If the time zone was not changed, select menu option **e**, **Exit**, from the **ELAP Configuration Menu**. Go to step 30.

If the time zone was changed however, MPS A and B must be rebooted.

Select menu option **6**, **Platform Menu**, from the **ELAP Configuration Menu**.

```

MPS Side A:  hostname: mpsa-d1c48f  hostid: 80d1c48f
              Platform Version: 3.0.0-22.13.0
              Software Version: ELAP 3.0.0-30.19.0
              Mon Dec 16 16:41:13 EST 2002

```

```

/-----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: 6

To reboot MPS A and B, select option 3, **Reboot MPS** from the **Platform Menu**.

```

/-----ELAP Platform Menu-----\
|-----\
| 1 | Initiate Upgrade |
|-----\
| 2 | Eject CD         |
|-----\
| 3 | Reboot MPS       |
|-----\
| 4 | Halt MPS         |
|-----\
| 5 | File System Backup |
|-----\
| 6 | MySQL Backup     |
|-----\
| 7 | RTDB Backup      |
|-----\
| e | Exit             |
|-----\

```

Enter Choice: 3

You are prompted to reboot MPS A, MPS B, or both MPS A and B. To reboot both MPS A and MPS B, press the <Return> key. This will select the default value, **BOTH**.

NOTE: The `elapconfig` user can abort rebooting of the MPS by pressing the <Esc> key at the **Reboot MPS A, MPS B or [BOTH]:** prompt.

WARNING: Rebooting of an MPS stops all ELAP processes and databases cannot be updated until MPS is fully booted.

Reboot MPS A, MPS B or [BOTH]:

-
30. At the exit of the **ELAP Configuration Menu** or with the reboot of MPS A and B, the console logon appears at the system prompt. This prompt indicates the completion of ELAP initial configuration.

NOTE: The console login will be preceded by many lines of reboot output.

-
31. The ELAP initial configuration is now complete.
-

You have now completed this procedure.

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.

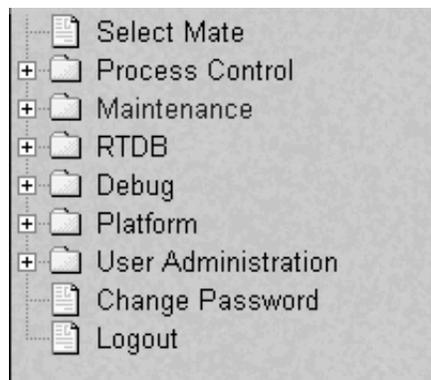
The following procedures describe how to perform the system health check using the menu item and the **syscheck** login. For more information about the **syscheck** utility, go to the *Eagle Maintenance Manual*.

Procedure

1. Login to the **User Interface** screen of the ELAP GUI as **elapplatform**. See Figure 19 on page 40.
-

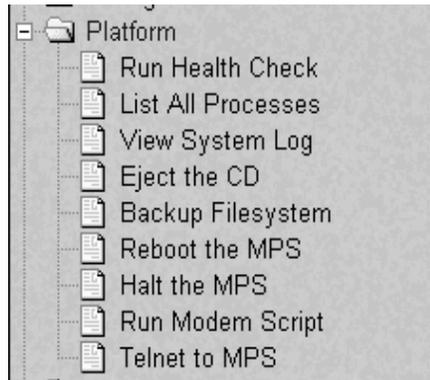
2. Check the banner information above the menu to verify that you are logged into the problem ELAP indicated in the UAM.
Move the cursor to and select **Select Mate** from the main menu (Figure 58) if necessary to switch to the problem ELAP.

Figure 58. Main Menu View



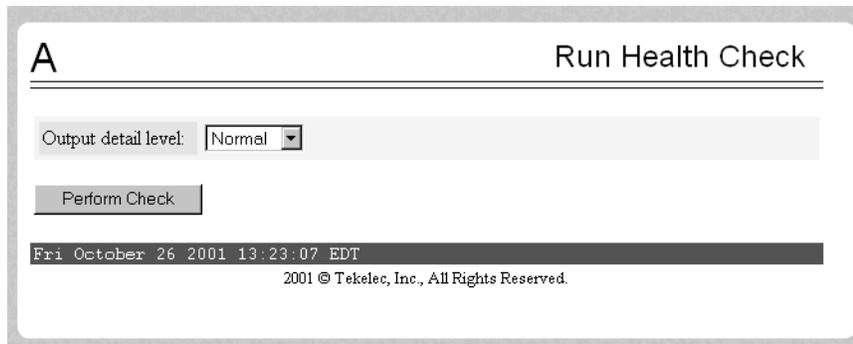
3. Move the cursor to and select **Platform** to open the **Platform** folder (Figure 59).

Figure 59. Platform Folder Open View



4. Move the cursor to and select **Run Health Check** to open the **Run Health Check** folder.

Figure 60. Run Health Check View



5. On the **Run Health Check** screen (Figure 60), use the pull-down menu to select **Normal** or **Verbose** output detail level.
6. Move the cursor to and select the **Perform Check** button to run the system health check on the selected MPS.
7. The system health check output data will display on the screen.

You have now completed this procedure.

EMS Configuration Component

Use the following procedures to manage EMS configuration components:

- “Creating an EMS Configuration Component” on page 111
- “Modifying an EMS Configuration Component” on page 116
- “Viewing an EMS Configuration Component” on page 119
- “Deleting an EMS Configuration Component” on page 120

Creating an EMS Configuration Component

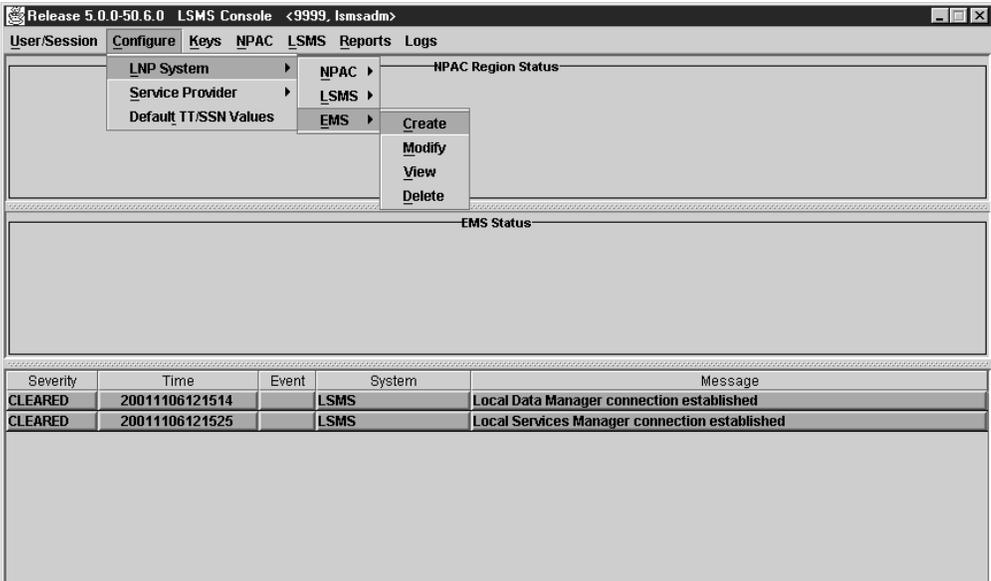
For each network element to be supported by the LSMS, create an EMS configuration component using the following procedure.

NOTE: For each EMS configuration created, you must perform a bulk download to the associated EMS/network element. Refer to topics about bulk loading in these sections: “Electronic Bulk Load Procedure” procedure on page 126, “Copying One RTDB from Another RTDB” procedure on page 136, “Distributing the LNP Database after LSMS-Based Operation or RTDB Copy” procedure on page 184.

Procedure

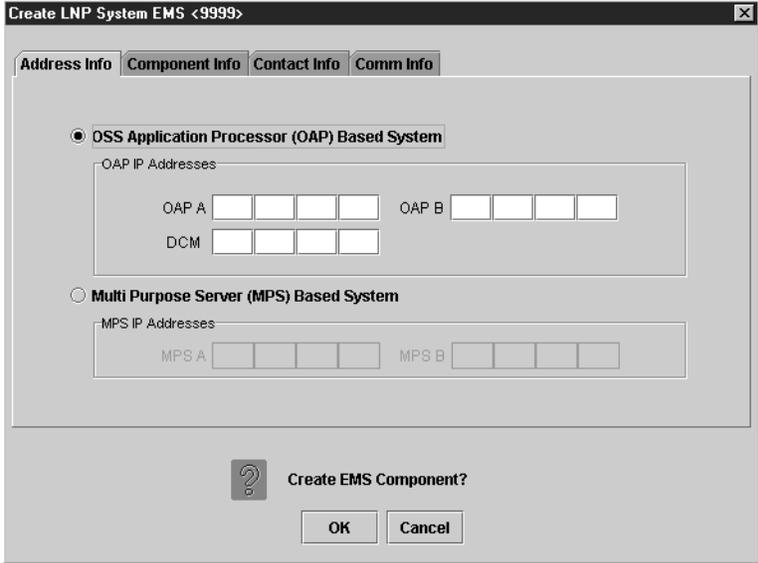
1. Log into the LSMS as a user in the `lsmsadm` or `lsmsall` user group.
-
2. From the **Main Menu**, select **Configure > LNP System > EMS > Create**, as shown in the example in Figure 61 on page 112.

Figure 61. LNP System Menu – Create EMS



The **Create LNP System EMS** window is displayed as shown in the example in Figure 62. 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 62. Create LNP System EMS Address Info Tab

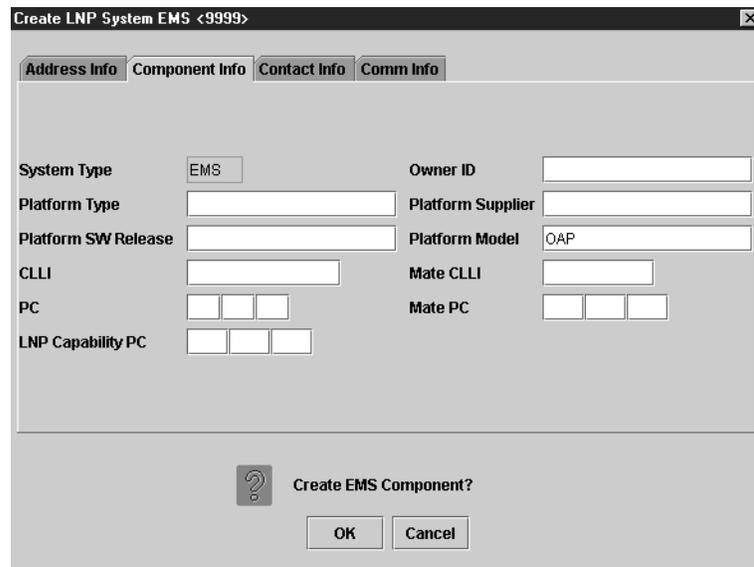


- 3. Click the **Multi Purpose Server (MPS) Based System** radio button to indicate that the EMS has an MPS. Enter the IP addresses (enter a value from 0 to 255 in each of the first three octets and a value from 0 to 254 in the fourth octet) of MPS A and MPS B.

NOTE: The **Comm Info** tab does not appear.

- 4. Click the **Component Info** tab; the window displays as shown in the example in Figure 63.

Figure 63. Create LNP System EMS Component Info



- 5. 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)

-
6. Click the **Contact Info** tab; the window displays as shown in the example in Figure 64.

Figure 64. Create LNP System EMS Contact Info

The screenshot shows a dialog box titled "Create LNP System EMS <9999>". It has four tabs: "Address Info", "Component Info", "Contact Info", and "Comm Info". The "Contact Info" tab is selected. The form contains the following fields:

Name	<input type="text"/>	Email	<input type="text"/>
Street	<input type="text"/>		
City	<input type="text"/>	State	<input type="text"/>
Province	<input type="text"/>	Country	<input type="text"/>
Phone Number	<input type="text"/>	Fax Number	<input type="text"/>
Pager Number	<input type="text"/>	Pager PIN	<input type="text"/>

At the bottom of the dialog box, there is a question mark icon and the text "Create EMS Component?". Below this are "OK" and "Cancel" buttons.

7. 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)

-
8. When finished, click **OK** to apply the changes.
- If the following message appears (Figure 65), click **OK** in the message window and the GUI will return to the main console window.

Figure 65. Create Successful



- If a message similar to the following appears (Figure 66), a mandatory field is empty or a field is not properly configured.

Figure 66. More Fields Needed



Click **OK** in the message window and correct the appropriate field. Repeat this step until the message in Figure 65 on page 115 displays.

You have now completed this procedure.

Modifying an EMS Configuration Component

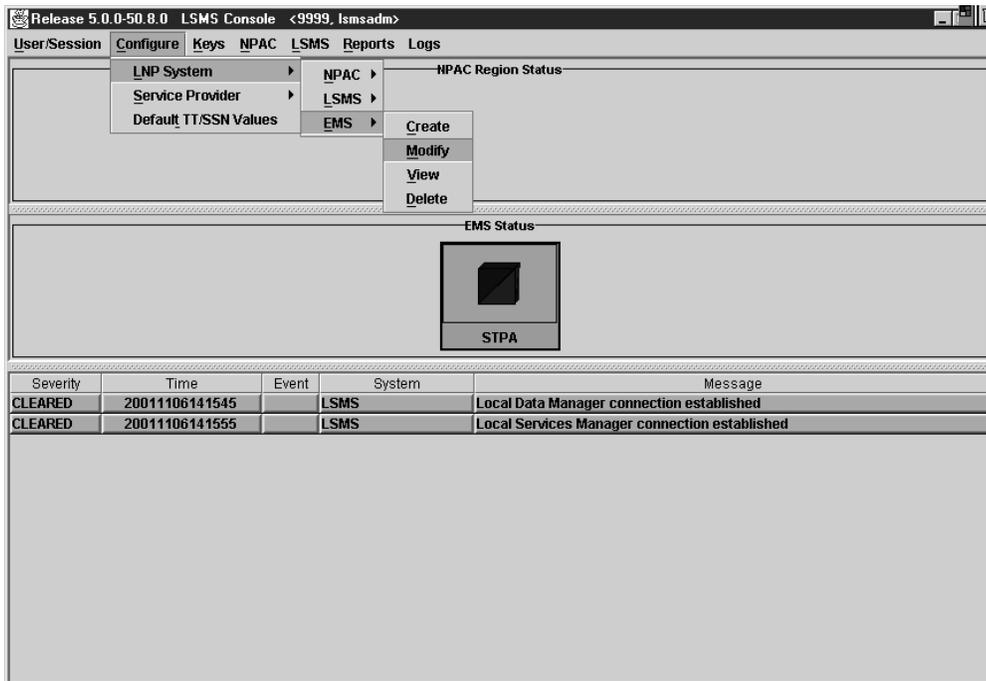
To modify an existing EMS configuration component, use the following procedure.

NOTE: These changes do not take effect until the *eagleagent* is stopped and restarted (refer to “Manually Verifying and Restarting the Eagle Agents on the LSMS” procedure on page 191).

Procedure

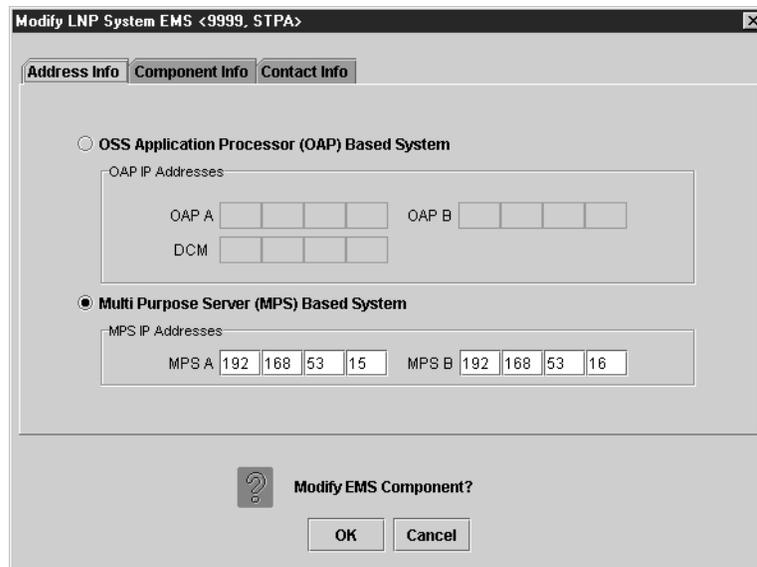
1. Log into the LSMS as a user in the `lsmsadm` or `lsmsall` user group.
-
2. Click the **EMS status** icon for the EMS you wish to modify so that the icon is highlighted.
-
3. From the **Main Menu**, select **Configure > LNP System > EMS > Modify**; the window shown in the example in Figure 67 on page 117 displays.

Figure 67. LNP System Menu – Modify EMS



The **Modify LNP System EMS** window is displayed as shown in the example in Figure 68. 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 68. Modify LNP System EMS Window



4. Modify the EMS data as required. See “Creating an EMS Configuration Component” on page 111 for detailed field information.

5. Click **OK**:
- If the following message appears (Figure 69), click **OK** in the message window:

Figure 69. Modify Done



Click **OK**; the window shown in (Figure 70) displays.

Figure 70. Modify Successful



Click **OK** in the message window, and the GUI will return to the main console window.

- If a message similar to the following appears (Figure 71), a mandatory field is empty or a field is not properly configured.

Figure 71. More Fields Needed



Click **OK** in the message window and correct the appropriate field. Repeat this step until the message in Figure 69 displays.

You have now completed this procedure.

NOTE: These changes do not take effect until the *eagleagent* is restarted (refer to “Manually Verifying and Restarting the Eagle Agents on the LSMS” procedure on page 191).

Viewing an EMS Configuration Component

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

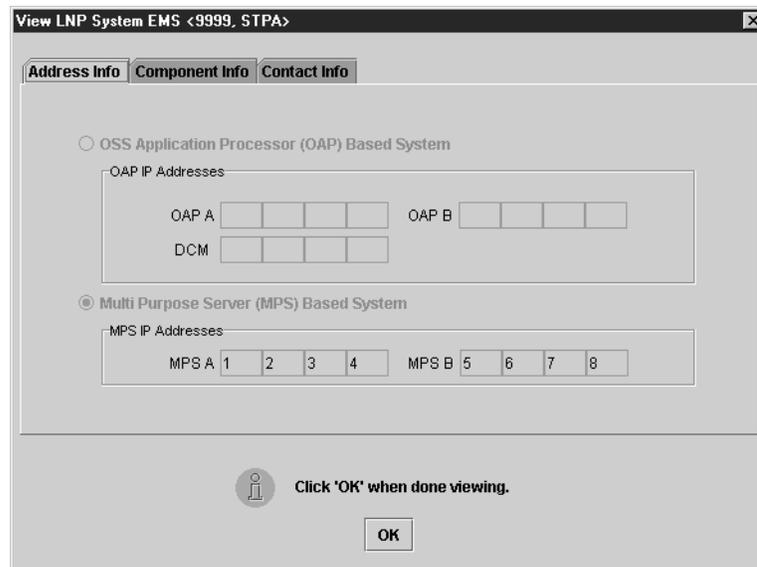
Procedure

1. Log into the LSMS as a user in the `lsmsview`, `lsmsuser`, `lsmsuext`, or `lsmsadm` user group.

2. Click the **EMS status** icon for the EMS you wish to view so that the icon is highlighted.

3. From the **Main Menu**, select **Configure > LNP System > EMS > View**; a window similar to the example shown in Figure 72 displays.

Figure 72. View LNP System EMS Window



4. 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” on page 111. You cannot modify information in any of the tabs.

5. 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*).

Procedure

1. Log into the LSMS as a user in the `lsmsadm` or `lsmsall` user group.
2. Click the **EMS status** icon for the EMS you wish to delete so that the icon is highlighted.
3. From the **Main Menu**, select **Configure > LNP System > EMS > Delete**; a window similar to the example shown in Figure 73 displays.

Figure 73. Delete LNP System EMS Window

4. 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” on page 111. 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 **Delete Confirmation** window is displayed, as shown in Figure 74.

Figure 74. Delete Confirmation Window



-
- 6. Click **OK** to end this procedure.
-

You have now 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

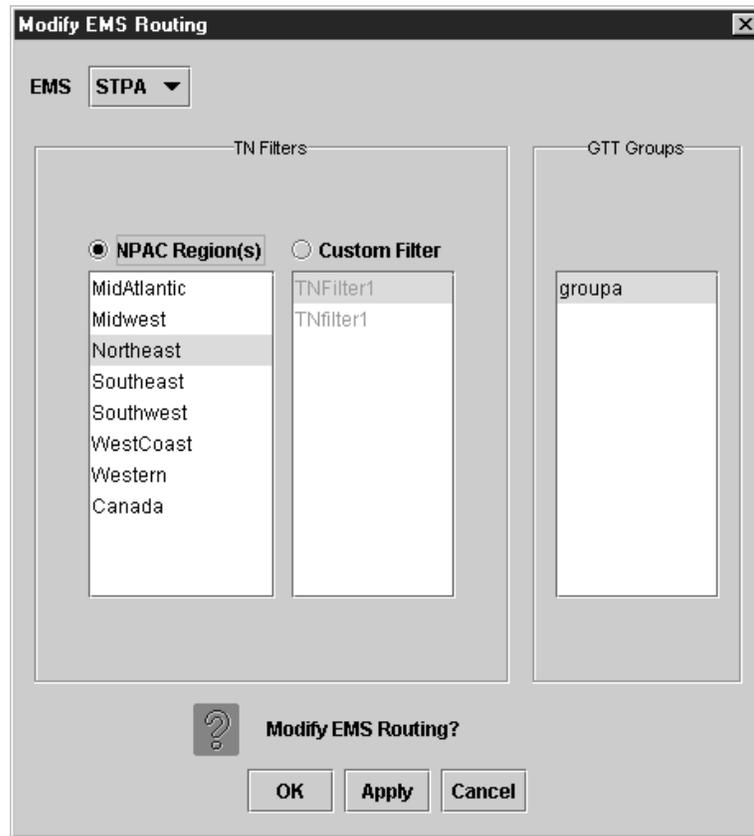
To modify the TN filters and GTT group assignments for the selected EMS (you can change the EMS being modified by selecting a new value from the EMS combo box), do the following:

NOTE: For each EMS included in a new EMS list, you must update the EMS/network element database. Use the NE Audit with Reconcile procedure (refer to the *LSMS-Eagle LNP Database Synchronization Manual*) for each NPA-NXX added or changed and on each affected EMS to update the databases. 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 *LSMS-Eagle LNP Database Synchronization Manual*.

Procedure

1. Log into the LSMS as a member of the `lsmsuser`, `lsmsall`, or `lsmsuext` user group.
-
2. From the **LSMS Console** window, select **LSMS > EMS Routing > Modify**. The **Modify EMS Routing** window is displayed (see Figure 75 on page 123).

Figure 75. Modify EMS Routing Window



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.

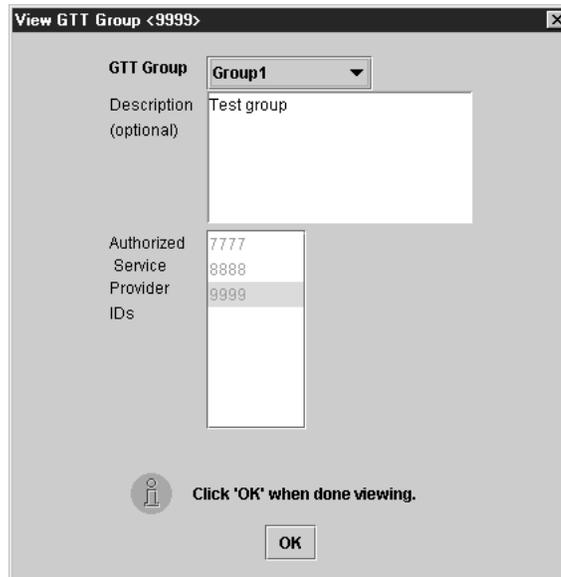
-
3. Apply TN Filters - Choose one, but not both, of the following:
- Regional Filters - When you select the **NPAC Region(s)** radio button, the EMS accepts only the TNs from the selected region(s).
 - Custom Filter - When you select the **Custom Filter** radio button, EMS accepts only the TNs as defined 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 (**groupa**, in this example shown in Figure 75 on page 123).

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, giving you the option to view the selected group. See Figure 76 for an example of the View GTT Group dialog.

Figure 76. View GTT Group Dialog



-
5. Click OK .

You have now completed this procedure.

View EMS Routing

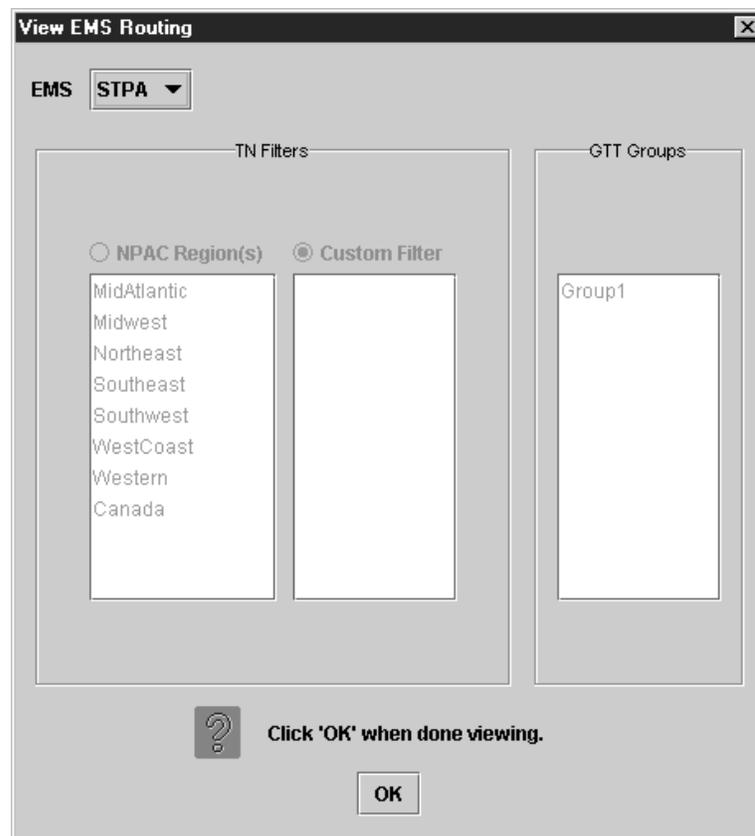
To view the TN filters and GTT group assignments for the selected EMS (you can change the EMS being viewed by selecting a new value from the EMS combo box), do the following:

Procedure

1. Log into the LSMS as a member of any of the five user access groups : **lsmsadm**, **lsmsuser**, **lsmsview**, **lsmsuext**, or **lsmsall** (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 > View**. The **View EMS Routing** window is displayed (see Figure 77).

Figure 77. View EMS Routing Window



-
3. Click **OK**.
-

You have now completed this procedure.

Electronic Bulk Load Procedure

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

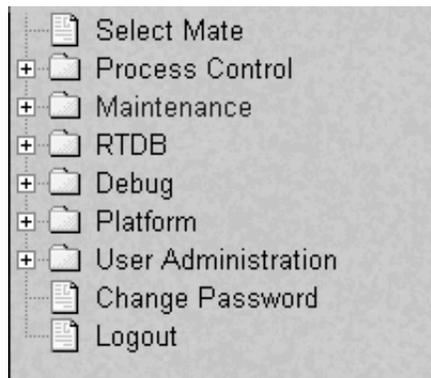
NOTE: Before starting this procedure, contact Tekelec Technical Services (see “Tekelec Technical Services” on page 4) to be readily available for assistance if you encounter any problems while performing this procedure.

Procedure

1. Ensure that the network element is prepared to receive an electronic bulk load by connecting your web browser to the ELAP user interface (for more information, 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.

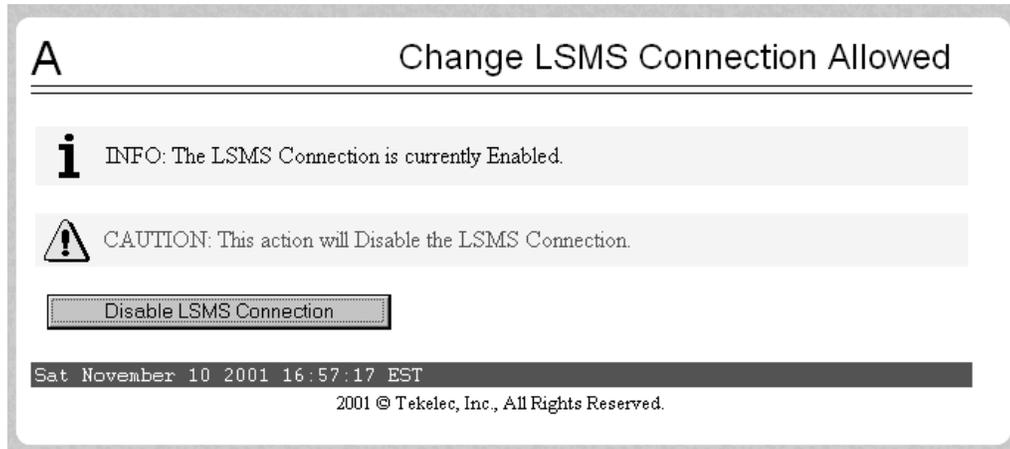
The ELAP GUI displays, as shown in Figure 78.

Figure 78. ELAP Main Menu



Select **Maintenance > LSMS Connection > Change Allowed**. The window shown in Figure 79 on page 127 displays.

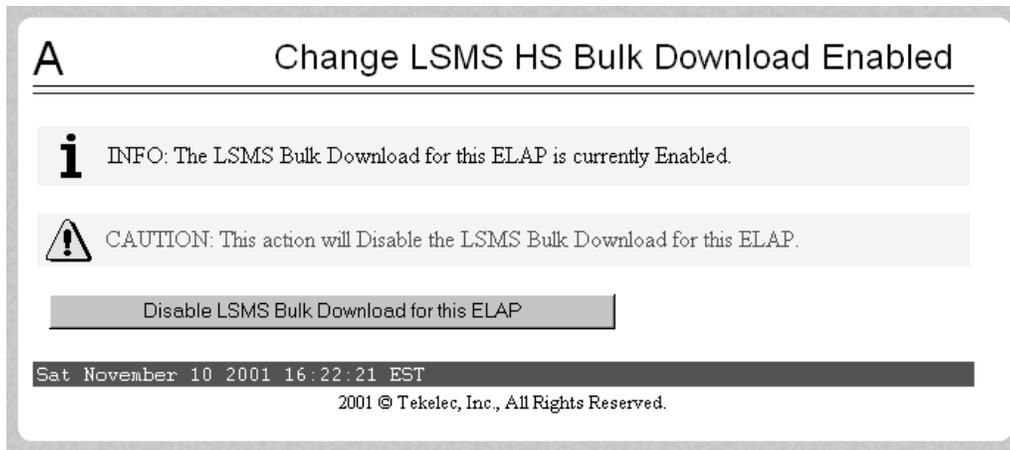
Figure 79. Disabling the LSMS Connection



Click the **Disable LSMS Connection** button.

Next, select **Maintenance > LSMS HS Bulk Download > Change Enabled**. The window shown in Figure 80 displays.

Figure 80. Enabling Change HS Bulk Download



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 5), the RTDB continues to be in a state of requiring database maintenance.

If the Information field indicates that the LSMS Bulk Download for this ELAP is currently Disabled (as shown in Figure 80, and which is the default condition for an ELAP), click the **Enable LSMS Bulk Download for this ELAP** button. (If the Information field indicates that the LSMS

Bulk Download for this ELAP is Enabled, the ELAP is already prepared for the user-initiated resynchronization.)

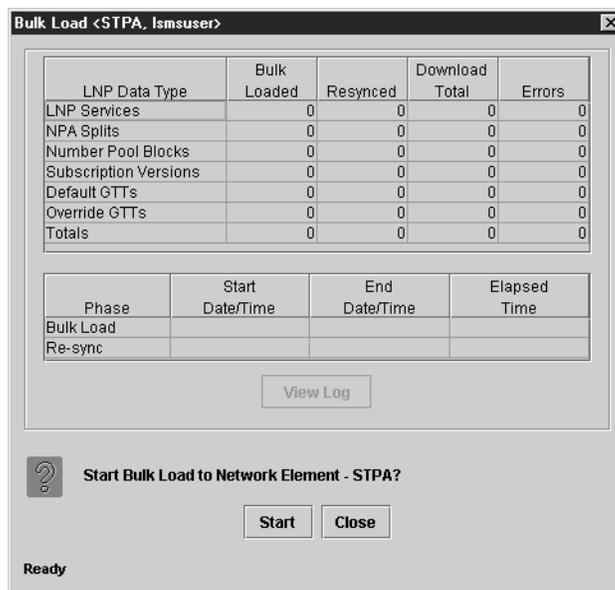
Go to step 2.

-
- 2. At the LSMS, log in as a member of the `lsmsuser`, `lsmsuext`, or `lsmsall` user group.

-
- 3. Start the Bulk Load window using either of the following:
 - From the **Main Menu** on the **LSMS Console** window, select **LSMS > LNP Database Synchronization > Bulk Load > <CLLI>**, where **<CLLI>** is the Common Language Location Identifier for the network element that requires the bulk load.
 - Right-click the **LSMS Console** window's EMS status icon that corresponds to the network element requiring the bulk load, and select **LNP Database Synchronization > Bulk Load**.

The **Bulk Load** window displays. An example of this window is shown in Figure 81.

Figure 81. Bulk Load Window



- 4. To initiate the electronic bulk load, click the **Start** button. The **Start** button is replaced by the **Abort** button, and the **View Log** button becomes 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 12 shows the meaning of each of the fields that appears in this window.

Table 12. Fields in Bulk Load Window

Field	Description	Possible Values
Bulk Loaded	Total number of LNP commands that were successfully transmitted and applied to the NE's LNP database during the initial download phase of the bulk load operation.	0—99,999,999
Resynced	Total number of LNP commands that were successfully transmitted and applied to the NE's LNP database during the resynchronization phase of the bulk load operation.	0—99,999,999
Download Total	Total number of LNP commands that were successfully transmitted and applied to the NE's LNP database during initial download and the resynchronization phases of the bulk load operation.	0—99,999,999
Errors	Total number of commands that were successfully transmitted but rejected by the NE during the initial download and the resynchronization phases of the bulk load operation.	0—99,999,999
Bulk Load Start Date/Time	Time at which the initial download phase of the bulk load operation was started by the user.	MM/DD hh:mm:ss ¹
Bulk Load End Date/Time	Time at which the initial download phase of the bulk load operation completed successfully or terminated abnormally.	MM/DD hh:mm:ss ¹
Bulk Load Elapsed Date/Time	Amount of time the initial download phase of the bulk load operation took to complete or the amount of time it ran before the user aborted it.	MM/DD hh:mm:ss ¹ [A F] ²

1 MM indicates month, range 01—12
 DD indicates day, range 01—31
 hh indicates hour, range 00—23
 mm indicates minute, range 00—59
 ss indicates second, range 00—59

2 A is appended at the end of the time if the operation is aborted.
 F is appended at the end of the time if the operation fails.

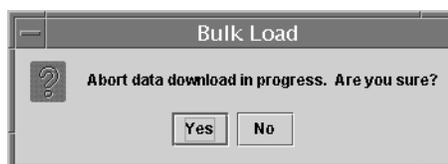
Table 12. Fields in Bulk Load Window (Continued)

Field	Description	Possible Values
Re-sync Start Date/Time	Time at which the resynchronization phase of the bulk load operation was started by the user.	MM/DD hh:mm:ss ¹
Re-sync End Date/Time	Time at which 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 ¹
Re-sync Elapsed Date/Time	Amount of time the resynchronization phase of the bulk load operation took to complete or the amount of time it ran before the user aborted it.	hh:mm:ss ¹ [A F] ²
Status	Appears as text at the bottom left of the window to indicate the current status of the resynchronization operation.	Varies
<p>1 MM indicates month, range 01—12 DD indicates day, range 01—31 hh indicates hour, range 00—23 mm indicates minute, range 00—59 ss indicates second, range 00—59</p> <p>2 A is appended at the end of the time if the operation is aborted. F is appended at the end of the time if the operation fails.</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 *LSMS-Eagle LNP Database Synchronization Manual*.

To view the bulk load log file, see the “Electronic Bulk Load Log File” section on page 133.

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 confirmation dialog displays, as shown in Figure 82.

Figure 82. Abort Bulk Load Operation Dialog

- Click the **Yes** button to immediately terminate the operation in progress. Go to the step 6 as if the bulk load had completed.
- Click the **No** button to close the **Abort** confirmation dialog and return back to the main **Bulk Load** window with no other effect.

5. When the electronic bulk load operation completes, the information dialog shown in Figure 83 displays.

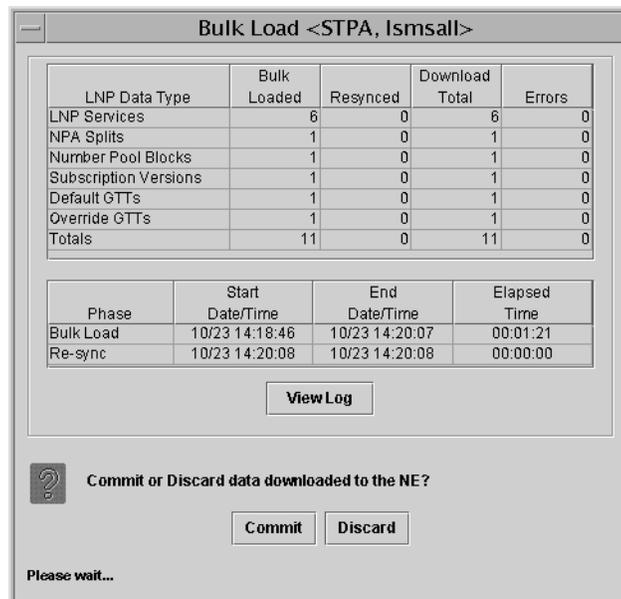
Figure 83. Bulk Load Complete Information Dialog



Click **OK**.

6. When the electronic bulk load operation completes or is aborted, the **Abort** and **Close** buttons are replaced by **Commit** and **Discard** buttons, as shown in Figure 84.

Figure 84. 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 “Electronic Bulk Load Log File” section on page 133).

To conclude the bulk load operation, you must click one of the following buttons:

- Click the **Discard** button to end the electronic 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’s RTDB is now in a state of requiring database maintenance, but the electronic bulk load application is no longer running.)
- Click the **Commit** button to end the electronic bulk load application (closing the **Bulk Load** window) and to send the NE a command that informs the NE that the download operation is finished and the changes made are ready to be distributed. This command results in changes to the ELAP’s RTDB. (The **Commit** button is not selectable (it is grayed out) if you have aborted the electronic bulk load.) The NE operator must cause the LNP database to be distributed and return the NE to normal operation as follows:
 1. Distribute the data to the DSMs, as described in “Distributing an RTDB LNP Database to DSMs” on page 185.
 2. Copy the newly restored RTDB to its mate ELAP’s RTDB, as described in “Copying RTDB from Mated ELAP” on page 136.
 3. Disable another user-initiated resynchronization or bulk load, as described in “Disabling Bulk Load” on page 188.

You have now completed this procedure.

Electronic Bulk Load Log File

This section describes the following topics:

- Viewing the Bulk Load Log File
- Bulk Load Log File Contents (see page 134).

Viewing the Bulk Load Log File

Any time after the user-initiated resynchronization has begun, you can view the electronic bulk load log file by clicking the **View Log** button. The browser window used for displaying reports and logs (if this window is not already opened, it is opened automatically) displays the log file

LsmsBulkload.log.<MMDD>, located in the directory **/usr/local/LSMS/logs/<CLLI>**, where **<CLLI>** is the Common Language Location Identifier of the network element receiving the bulk load and **<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 85 used to browse for this log:

Figure 85. Browsing for a Bulk Load Log Files



- 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**.

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. Log files are maintained for seven days after they are created; then they are automatically removed from the LSMS.

Bulk Load Log File Contents

Whenever 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

Figure 86 shows an example of a bulk load log file.

Figure 86. Example Bulk Load Log File

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

Username: lsmsall
NE CLLI: STPB

-----

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

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

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

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

Figure 86. Example Bulk Load Log File (Continued)

```

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

Username: lsmsall
NE CLI:  STPB

```

```

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

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

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

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

```

Electronic 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 *LSMS-Eagle LNP Database Synchronization Manual*.

Copying One RTDB from 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" on page 136

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

Copying RTDB from Mated ELAP

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

The following conditions are necessary in order to perform a copy from the RTDB on the mate ELAP:

- The LNP 48 Million Numbers feature must be installed on both network elements (only for Eagles running releases 28.x or 29.x). For Eagles running release 30.0 or greater, the LNP telephone number quantity must be greater than 12 million numbers.
- The mate RTDB is currently synchronized with the LSMS (the EMS status indicator on the LSMS graphical user interface for this network element is 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 "Procedure to Copy an RTDB from the Mate ELAP" on page 140.

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 *LSMS-Eagle LNP Database Synchronization Manual*.

The following conditions are necessary in order to perform a copy from the RTDB on the mated network element:

- The LNP 48 Million Numbers feature must be installed on both network elements (only for Eagles running releases 28.x or 29.x). For Eagles running release 30.0 or greater, the LNP telephone number quantity must be greater than 12 million numbers.
- The EMS status indicator on the LSMS graphical user interface for the remote mated network element is 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 DSMs must be rebooted, as described in "Distributing RTDB, Returning to Normal Service" on page 185.

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 *LSMS-Eagle Database Synchronization Manual*.

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

Verifying RTDB Status

Before or after executing the procedure, verify the status of the RTDBs using either or both of the following methods:

- "Verifying RTDB Status at the Eagle Terminal"
- "Verifying RTDB Status at the ELAP User Interface" on page 138

Verifying RTDB Status at the Eagle Terminal

To verify the status of the ELAP RTDBs at the Eagle terminal, enter the `rept-stat-db:db=mps` command.

The command output displays database timestamp (DBTS) of both ELAP RTDBs in the **RTDB-EAGLE** field, as shown in bold in the following example. 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.

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	-

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. Then, after you have viewed the status, interpret the status of the database as recommended in “Interpreting the Database Status from the ELAP Interface” section on page 139.

Procedure

1. 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 for a user who is authorized to access the menu items shown in this procedure.

The ELAP GUI displays, as shown in Figure 78 on page 126. This figure shows the entire ELAP GUI; the remaining figures in this section show only as much of the workspace area (at the lower right) as contains information. For more information about the other areas displayed on this window, refer to the *ELAP Administration Manual*.

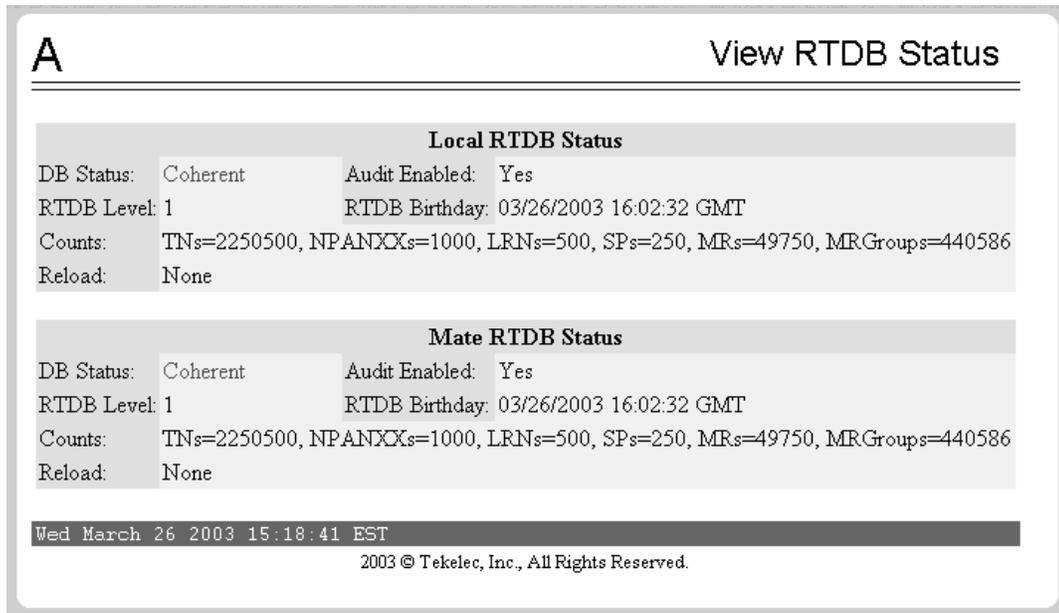
Figure 87. ELAP Main Menu



- 2. Select **RTDB > View RTDB Status**.

The ELAP GUI workspace displays the RTDB status, as shown in Figure 88.

Figure 88. ELAP RTDB Status



Note the values displayed for DB Level and DB Birthday for both the local RTDB and the mate RTDB.

You have now completed this procedure.

Interpreting the Database Status from the ELAP Interface

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)

If you are not sure how to interpret the status of the RTDBs, contact Tekelec Technical Services (see “Tekelec Technical Services” on page 4).

Procedure to Copy an RTDB from the Mate ELAP

To reload a backlevel or corrupted RTDB by copying a currently synchronized RTDB on the mate ELAP, perform the following procedure.

Procedure Summary

These procedures differ only in the appearance of the ELAP user interface. Each procedure performs the following basic functions:

1. Log into the ELAP whose RTDB needs restoration
2. Verify the status of both RTDBs to determine which RTDB needs restoration
3. Disable the connection to the LSMS so that normal updates are not received
4. Stop the ELAP software
5. Switch to the mate ELAP and repeat step 4.
6. Switch back to the ELAP whose RTDB needs restoration
7. Reload the RTDB from the mate ELAP
8. Start the ELAP software
9. Switch to the mate ELAP and repeat step 8.
10. Enable the connection to the LSMS

When this procedure is finished, the next step depend on why you started this procedure, as follows:

- When you copy an RTDB its mate ELAP after you have copied from an RTDB on a remote mated network element (as described in “Procedure to Copy RTDB from Remote Mated NE” on page 147) or after an LSMS-initiated procedure (as described in the *LSMS-Eagle LNP Database Synchronization Manual*), you will have distributed the data to the DSMs prior to this procedure and, after this procedure, you must disable the bulk load or resynchronization (as described in “Disabling Bulk Load” on page 188).
- When this restoration procedure is performed by itself, no other action is necessary (it is not necessary to distribute the data to the DSMs because they are already synchronized with the RTDB that was used to restore from).

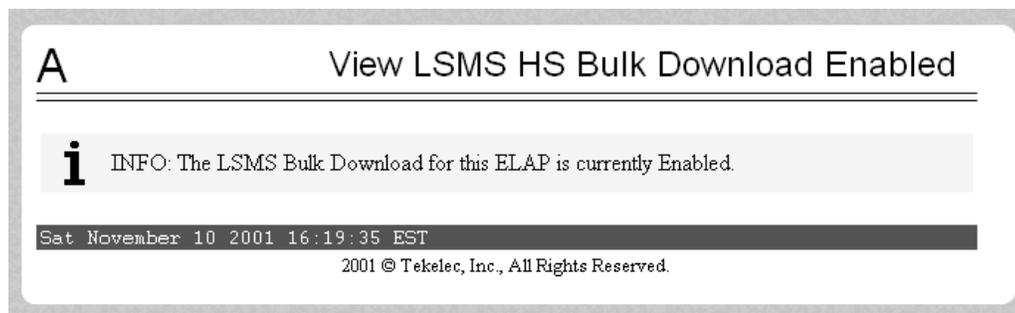
Procedure

1. 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 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” on page 137. Determine which RTDB is backlevel or corrupted.

3. Select **Maintenance > LSMS HS Bulk Download > View Enabled**; a window similar to the example shown in Figure 89 displays.

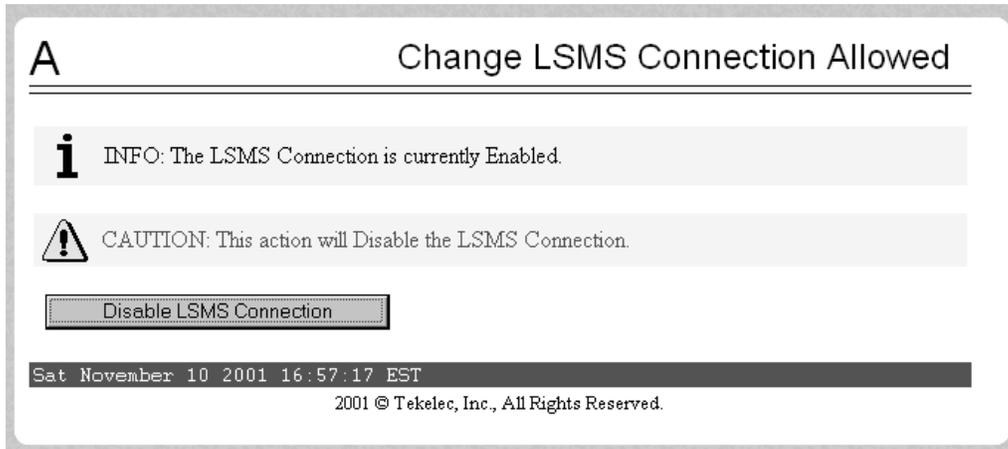
Figure 89. View Enabled Window



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

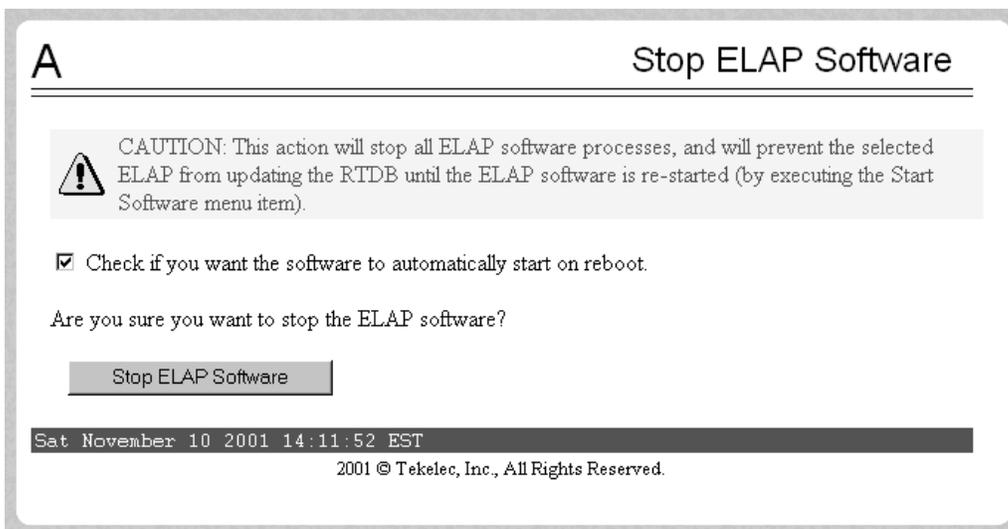
NOTE: Disabled is the normal setting. If the information field shows that the LSMS Bulk Download for this ELAP is currently enabled, another synchronization operation has not yet been concluded.

4. Select **Maintenance > LSMS Connection > Change Allowed**; a window similar to the example shown in Figure 90 on page 142 displays.

Figure 90. Disable LSMS Connection Window

Click the **Disable LSMS Connection** button.

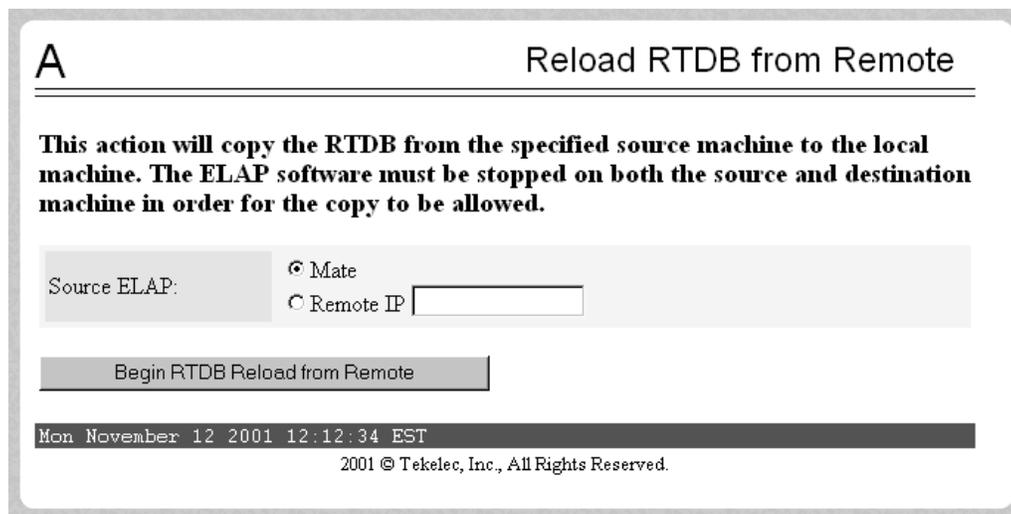
-
5. Select **Process Control > Stop Software**; a window similar to the example shown in Figure 91 displays.

Figure 91. Stopping Software on the ELAP GUI

Ensure that the checkbox labeled “Check if you want the software to automatically start on reboot” is filled in (if it is not filled in, click the checkbox to fill it in) and click the **Stop ELAP Software** button to confirm that you wish to stop the software.

- 6. Select **Select Mate**, and repeat step 5 for the other ELAP.
-
- 7. Ensure that the ELAP whose database needs restoration is displayed in the window. (If not, select **Select Mate**.) Select **RTDB > Maintenance > Reload from Remote**; a window similar to the example shown in Figure 92 displays.

Figure 92. Reload from Remote ELAP



A Reload RTDB from Remote

This action will copy the RTDB from the specified source machine to the local machine. The ELAP software must be stopped on both the source and destination machine in order for the copy to be allowed.

Source ELAP: Mate Remote IP

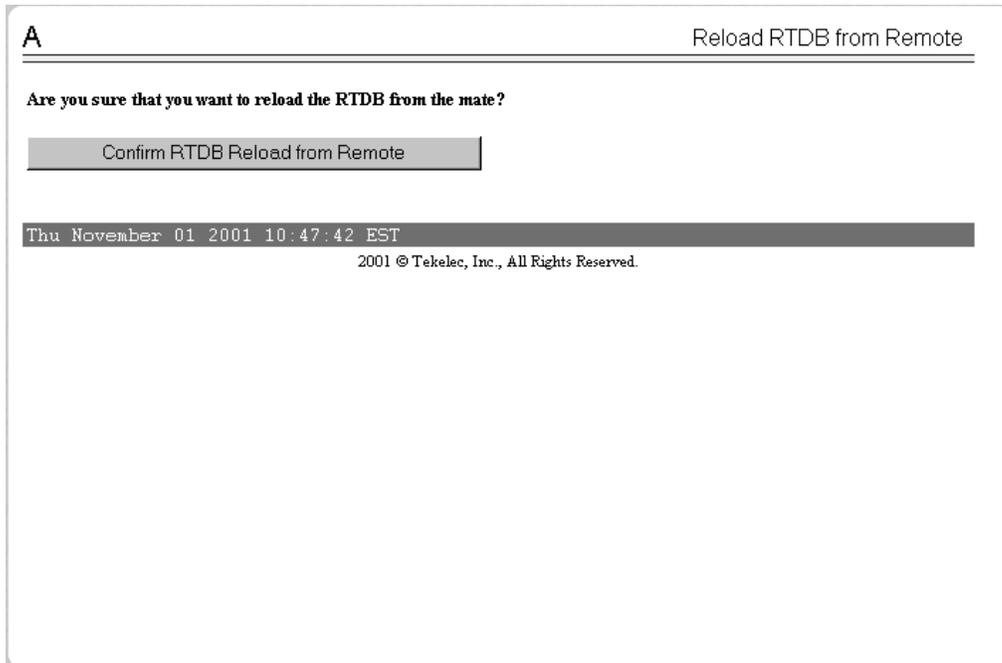
Begin RTDB Reload from Remote

Mon November 12 2001 12:12:34 EST
2001 © Tekelec, Inc., All Rights Reserved.

Ensure that the radio button labeled “**Mate**” is filled in (if not, click the button to make it filled in), and click the **Begin RTDB Reload from Remote** button.

8. The window shown in Figure 93 displays.

Figure 93. Confirming a Reload



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 terminal indicating that the ELAP software is unavailable for both ELAPs.

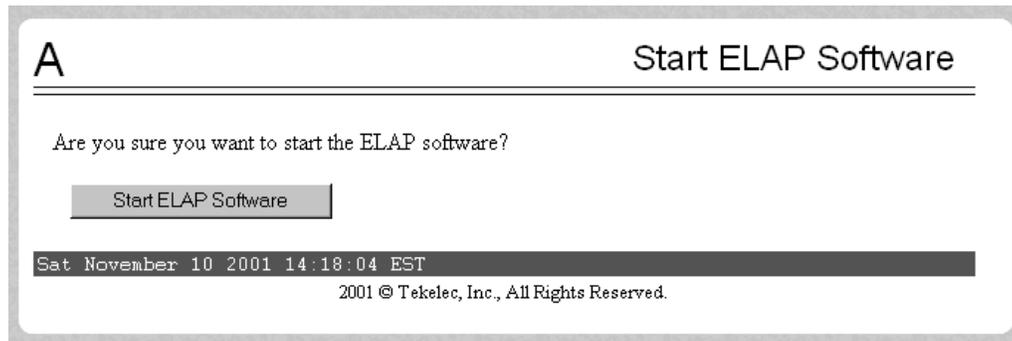
When the reload is complete, the workspace displays as shown in Figure 94.

Figure 94. Reload from Mate Successful



- 9. Select **Process Control > Start Software**; a window similar to the example shown in Figure 95 displays.

Figure 95. Starting Software on the ELAP GUI



-
- 10. Click the **Start ELAP Software** button to confirm that you wish to start the software. When the software has started, the workspace displays the information shown in Figure 96.

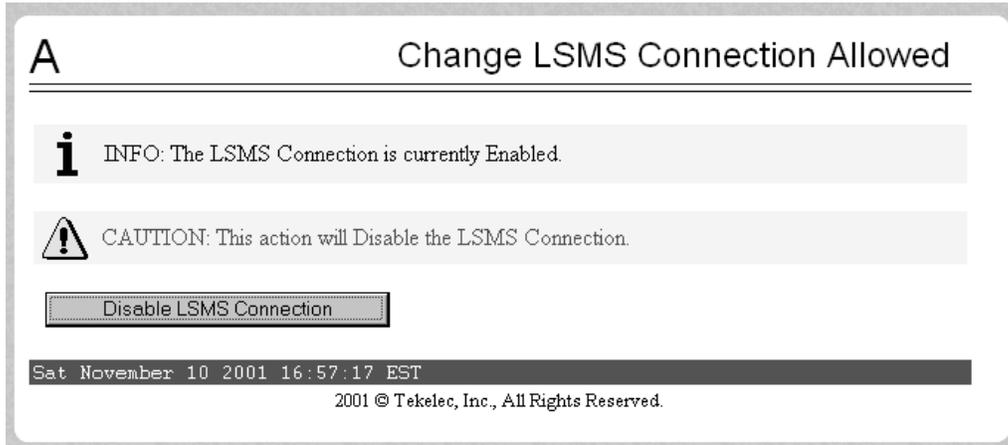
Figure 96. Software Started on the ELAP GUI



-
- 11. Select **Select Mate**, and repeat steps 9 and 10 for the other ELAP.
-

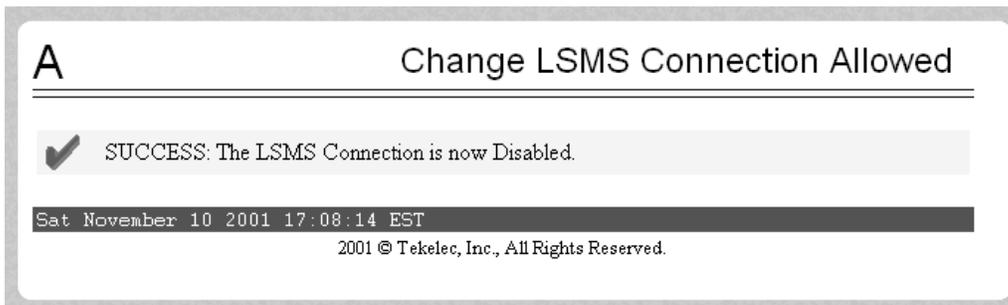
12. Select **Maintenance > LSMS Connection > Change Allowed**; a window similar to the example shown in Figure 97 displays.

Figure 97. Enable LSMS Connection Window



13. Click the **Enable LSMS Connection** button. When the connection has been enabled, the workspace displays the information shown in Figure 98.

Figure 98. LSMS Connection Enabled on the ELAP GUI



14. 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.

You have completed this procedure. Next, if you want to further verify the result of the reload, use the steps in “Verifying RTDB Status” on page 137 for determining the database status, and then do one of the following:

- If you have performed this procedure by itself or after you have copied from an RTDB on a remote mated network element (as described in “Procedure to Copy RTDB from Remote Mated NE” on page 147), the restoration is complete and normal updates are resumed.
- If you have performed this procedure after an LSMS-initiated procedure (as described in “Electronic Bulk Load Procedure” on page 126), you will have distributed the data to the DSMs prior to this procedure and, after this procedure, you must disable the bulk load or resynchronization (as described in “Disabling Bulk Load” on page 188).

Procedure to Copy RTDB from Remote Mated NE

To reload a backlevel or corrupted RTDB by copying a currently synchronized RTDB on the mated network element, perform the following procedure.



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

In this procedure, the network element requiring restoration of both RTDBs is called the local NE. The mated network element is called the remote mated NE. These basic functions are performed in this procedure:

1. At the LSMS, ensure that the EMS status indicator for the remote mated NE indicates that at least one RTDB is synchronized with the LSMS
2. Log into the standby ELAP on the remote mated NE
3. Disable the connection to the LSMS so that normal updates are not received
4. Stop the ELAP software
5. Log into either ELAP on the local NE
6. Repeat steps 3 and 4 on the local NE’s ELAP
7. Switch to the mate ELAP on the local NE
8. Repeat steps 3 and 4 on the local NE’s mate ELAP
9. Reload the RTDB from the remote mated NE
10. Log into the standby ELAP on the remote mated NE
11. Start the software on the remote mated NE’s standby ELAP

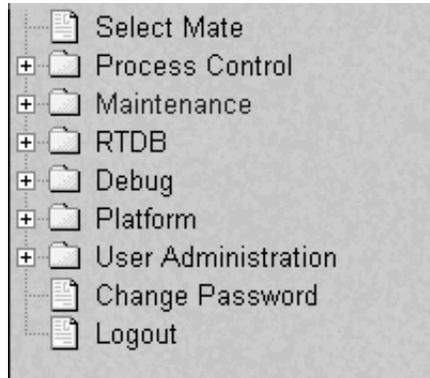
12. Enable the connection to the LSMS for the remote mated NE's standby ELAP
13. Log into the local ELAP whose RTDB has not yet been restored (the other RTDB was restored in step 9)
14. Reload the RTDB from the mate ELAP
15. Start the local ELAP's software
16. Enable the local ELAP's connection to the LSMS
17. Switch to the mate ELAP on the local NE
18. Repeat steps 15 and 16 on the mate ELAP
19. Distribute the RTDB contents to the DSMs

Procedure

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. Open a browser window and connect to the remote mated network element (NE) using the IP address of the standby ELAP on the remote mated NE's MPS on the customer (provisioning) network. 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 ELAP GUI and user authorization, refer to the *ELAP Administration Manual*).
-

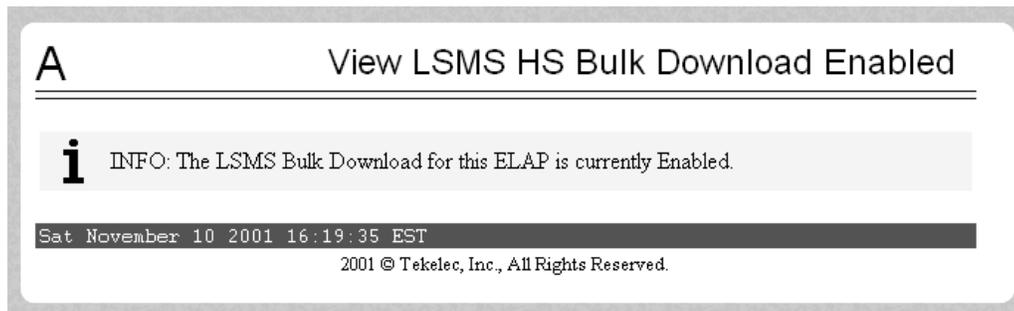
- 3. The banner above the menu indicates the whether each ELAP on the remote mated NE has Active or Standby status. Ensure that the ELAP you logged into has Standby status. If you have logged into the active ELAP, select **Select Mate** from the **ELAP Main Menu** (Figure 99) to switch to the standby ELAP.

Figure 99. Main Menu View



-
- 4. Select **Maintenance > LSMS HS Bulk Download > View Enabled**; a window similar to the example shown in Figure 100 displays.

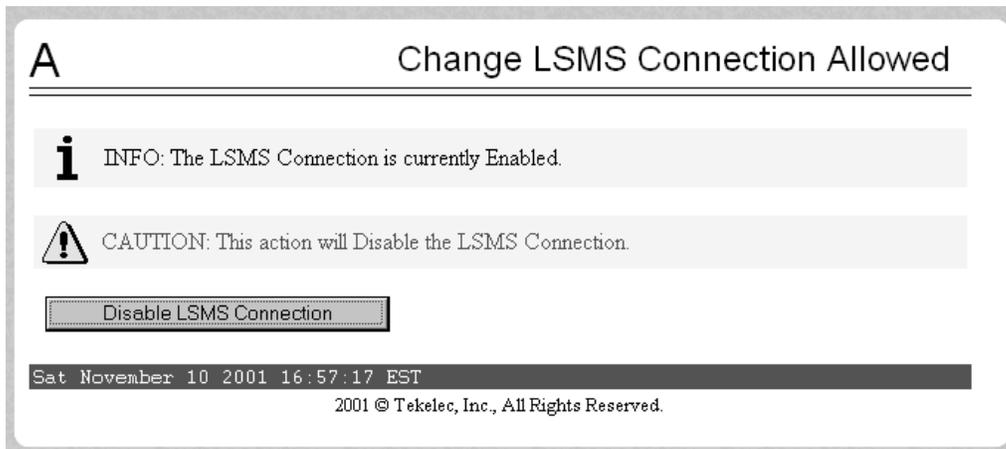
Figure 100. View Enabled Window



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

-
- 5. Select **Maintenance > LSMS Connection > Change Allowed**; a window similar to the example shown in Figure 101 on page 150 displays.

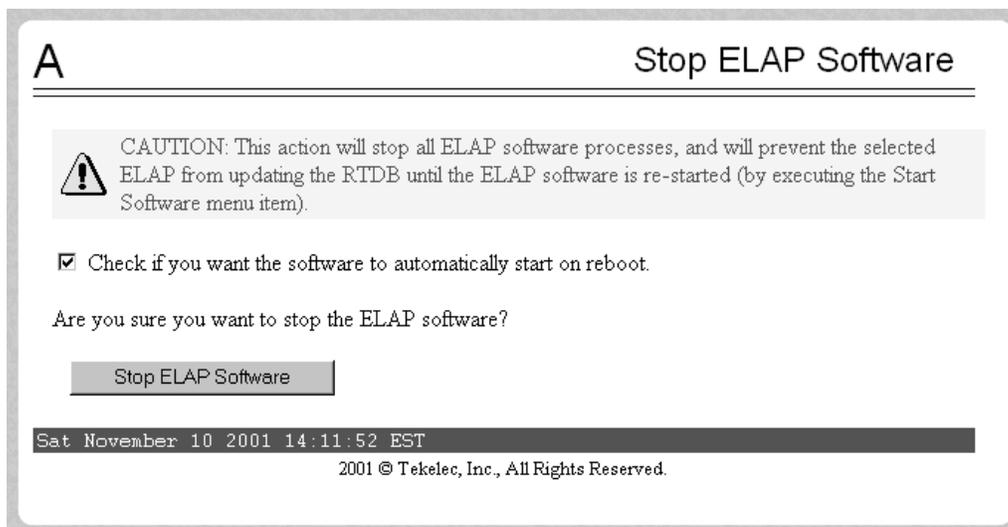
Figure 101. Disable LSMS Connection Window



Click the **Disable LSMS Connection** button.

-
6. Select **Process Control > Stop Software**; a window similar to the example shown in Figure 102 displays.

Figure 102. Stopping Software on the ELAP GUI



Ensure that the checkbox labeled “Check if you want the software to automatically start on reboot” is filled in (if it is not filled in, click it to fill it in) and click the **Stop ELAP Software** button to confirm that you wish to stop the software.

- 7. If you are not already connected to the local NE, open another browser window and connect to the local NE using the IP address of either ELAP on the local NE's MPS on the customer (provisioning) network. The RTDB on the other ELAP will be restored in step 18. Log in with the user name and password for a user who is authorized to access the menu items shown in this procedure.

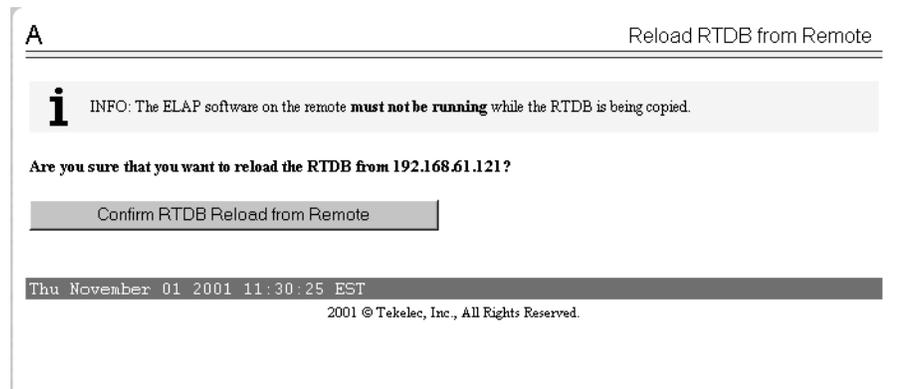
-
- 8. Repeat step 4, 5, and 6 for this ELAP.

-
- 9. Select **Select Mate** from the **ELAP Main Menu** (Figure 99 on page 149) and repeat steps 4, 5, and 6 for the other ELAP.

-
- 10. Select **RTDB > Maintenance > Reload from Remote**; a window similar to the example shown in Figure 103 displays.

Figure 103. Reload from Remote Mated NE's ELAP

-
- 11. Ensure that the radio button labeled **Remote IP** is filled in (if it is not filled in, click the radio button to fill it in) and enter the customer (provisioning) network IP address of the standby ELAP on the remote mated network element, as shown in Figure 103. Then, click the **Begin RTDB Reload from Remote** button. A window similar to the example shown in Figure 104 on page 152 displays.

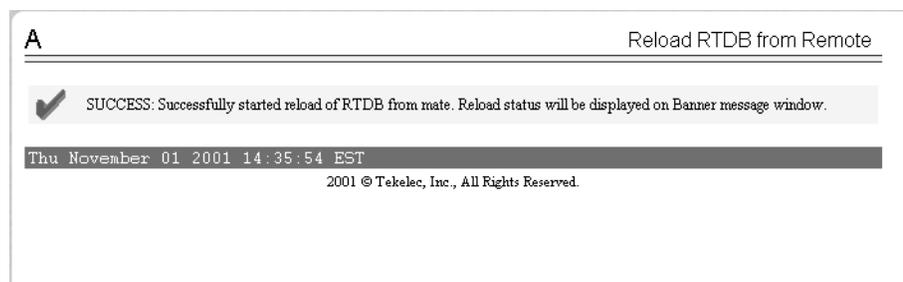
Figure 104. Confirm Reload from Remote Mated NE's ELAP

12. 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.

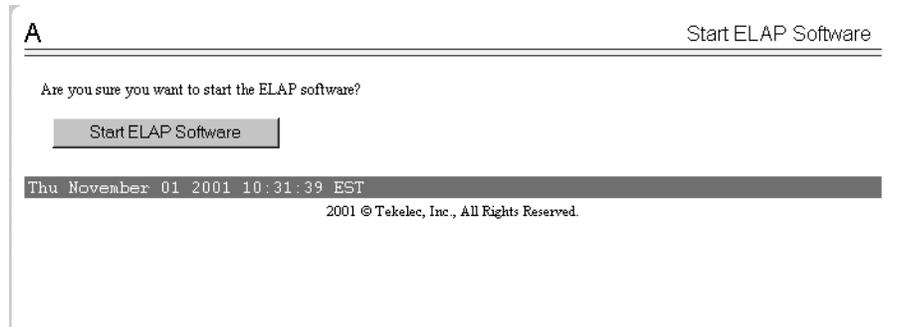
When the reload begins, the workspace indicates that the reload is in progress, and the banner also displays the status. The time required to complete this process depends on the bandwidth of the customer network.

When the reload is complete, the workspace displays as shown in Figure 105.

Figure 105. Reload from Remote Mated NE Successful

13. When the reload is complete, on the ELAP that the RTDB was copied from (on the remote mated NE), select **Process Control > Start Software**; a window similar to the example shown in Figure 106 on page 153 displays.

Figure 106. Starting Software on the ELAP GUI



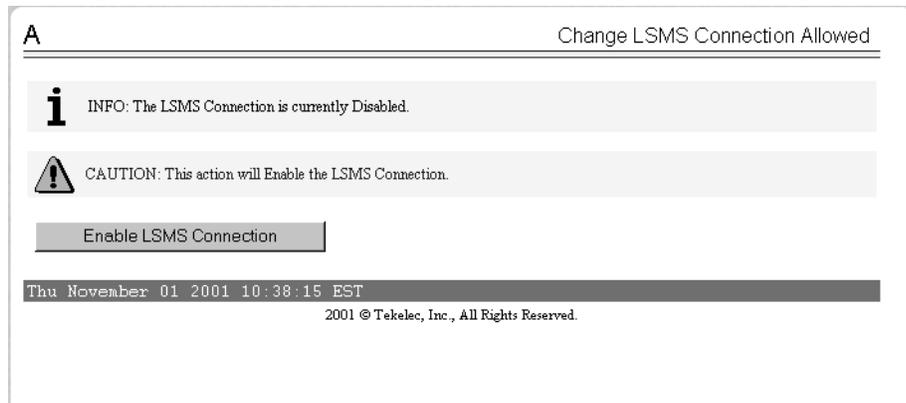
- 14. Press the **Start ELAP Software** button to confirm that you wish to start the software. When the software has started, the workspace displays the information shown in Figure 107.

Figure 107. Software Started on the ELAP GUI



- 15. Select **Maintenance > LSMS Connection > Change Allowed**; a window similar to the example shown in Figure 108 displays.

Figure 108. Enable LSMS Connection Window



16. Click the **Enable LSMS Connection** button. When the connection has been enabled, the workspace displays the information shown in Figure 109.

Figure 109. LSMS Connection Enabled on the ELAP GUI



17. Perform the procedure described in “Distributing RTDB, Returning to Normal Service” on page 185.
18. On the local ELAP, perform the “Copying One RTDB from Another RTDB” procedure on page 136 (you can start with step 7 on page 143); ensure that the GUI displays the ELAP whose RTDB has not yet been restored. Follow the instructions through the end of the procedure to copy the RTDB from its mate ELAP RTDB (which was restored in step 10 on page 151 through step 13 on page 152 of this procedure), restart the software, and enable the connections to the LSMS.

This restoration method is complete and normal updates are resumed.

Use the steps in “Verifying RTDB Status” on page 137 if you want to verify database levels after the reloading is complete.

The database will be backed up to the fixed disk and to a removable cartridge before the LNP 48 Million Number feature is activated. The removable cartridge that will contain the database must be inserted in the removable cartridge drive.

If the RD BKUP field of the `rept-stat-db` output contains dashes, the removable cartridge drive does not contain a removable cartridge. If dashes are shown in the RD BKUP field, insert the removable cartridge that will contain the database into the removable cartridge drive.

If the removable cartridge is not the cartridge that will contain the database, replace the removable cartridge with the one that will contain the database.

-
3. Back up the database 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.
```

-
4. Back up the database to the removable cartridge using the `chg-db:action=backup:dest=remove` command. These messages appear:

```
BACKUP (REMOVABLE) : MASP B - Backup starts on active MASP.
BACKUP (REMOVABLE) : MASP B - Backup to removable cartridge complete.
```

-
5. Display the status of the databases by entering the `rept-stat-db` command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 16:07:48 GMT Rel 29.0.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C  LEVEL      TIME LAST BACKUP  C  LEVEL      TIME LAST BACKUP
      -  - - - - - - - - - - - - - - -  -  - - - - - - - - - - - - - - -
FD BKUP Y      106 04-06-01 16:07:48 GMT Y      106 04-06-01 16:07:48 GMT
FD CRNT Y      106
      MDAL 1117
      -  - - - - - - - - - - - - - - -
RD BKUP Y      106 04-06-01 16:07:48 GMT
```

If the databases are not coherent after steps 3 and 4 are performed, stop performing this procedure and contact Tekelec Technical Services. See "Tekelec Technical Services" on page 4.

If the databases are coherent after steps 3 and 4 are performed, remove the removable cartridge from the removable cartridge drive and store the removable cartridge in a secure place.

- 6. Display a summary report of all of the device trouble notifications in the system by entering the **rept-stat-trbl** command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 16:07:48 GMT Rel 29.0.0
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 lsn489+ 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 Tekelec Technical Services. See “Tekelec Technical Services” on page 4.

- **NOTE: If the system contains no OAPs, skip this step and go to step 8.**

- 7. Make sure that there are no alarms for either OAP, by entering the **rept-stat-lsms** command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 14:59:11 GMT Release 29.0.0
                                GPL          PST          SST          AST
-----
LSMS SYSTEM                    IS-NR          Active          -----
TDM Port                        4              IS-NR          Active          -----
TDM Port                        10             IS-NR          Active          -----
OAP                             A      026-001-000  IS-NR          Active          -----
OAP                             B      026-001-000  IS-NR          Active          -----
LSMS Conn                       A1             IS-NR          Active          -----
LSMS Conn                       B1             IS-NR          Active          -----

LSMS SYSTEM ALARM STATUS = No Alarms.
OAP A       ALARM STATUS = No Alarms.
OAP B       ALARM STATUS = No Alarms.
LSMS Conn A1 ALARM STATUS = No Alarms.
LSMS Conn B1 ALARM STATUS = No Alarms.
```

Command Completed.

If any alarms are shown in the **rept-stat-lsms** output, stop performing this procedure and contact Tekelec Technical Services. See “Tekelec Technical Services” on page 4.

- 8. Display the status of the cards in the system by entering the `rept-stat-card` command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 12:57:21 GMT Rel 29.0.0
CARD  VERSION      TYPE  APPL  PST   SST   AST
1102  116-001-000    TSM   GLS   IS-NR  Active  -----
1113  116-002-000    MASP  OAM   IS-NR  Active  -----
1114  -----        TDM   ----- IS-NR  Active  -----
1115  -----        MASP  OAM   IS-NR  Active  -----
1116  -----        TDM   ----- IS-NR  Active  -----
1117  -----        MDAL  ----- IS-NR  Active  -----
1201  116-002-000    LIMDS0 SS7ANSI IS-NR  Active  -----
1203  116-002-000    LIMDS0 SS7ANSI IS-NR  Active  -----
1207  116-001-000    LIMV35 SS7GX25 IS-NR  Active  -----
1208  116-001-000    LIMV35 SS7GX25 IS-NR  Active  -----
1301  116-001-000    DSM   VSCCP IS-NR  Active  -----
1303  116-001-000    DSM   VSCCP IS-NR  Active  -----
1305  116-002-000    DSM   VSCCP IS-NR  Active  -----
1307  116-001-000    DSM   VSCCP IS-NR  Active  -----
1311  116-001-000    DSM   VSCCP IS-NR  Active  -----
1313  116-001-000    LIMDS0 SS7ANSI IS-NR  Active  -----
1314  116-001-000    LIMDS0 SS7ANSI IS-NR  Active  -----
1317  116-001-000    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 Tekelec Technical Services. See "Tekelec Technical Services" on page 4.

9. Display the terminal configuration in the database with the `rtrv-trm` command. The OAP terminals are shown in the output with the entry `OAP` in the TYPE field. Record the values of the OAP terminal ports. This is an example of the possible output. In this example, the OAP terminals are terminals 6 and 9, shown in bold.

```
r1ghncxa03w 04-06-01 16:02:08 GMT Rel 29.0.0
TRM  TYPE      COMM          FC      TMOUT  MXINV  DURAL
1    VT320      9600-7-E-1  SW      30     5      99:59:59
2    KSR        9600-7-E-1  HW      30     5      INDEF
3    PRINTER    4800-7-E-1  HW      30     0      00:00:00
4    VT320      2400-7-E-1  BOTH    30     5      00:30:00
5    VT320      9600-7-O-1  NONE    30     5      00:00:30
6    OAP        19200-7-E-1 SW      0      5      INDEF
7    PRINTER    9600-7-N-2  HW      30     5      00:30:00
8    KSR        19200-7-E-2 BOTH    30     5      00:30:00
9    OAP        19200-7-E-1 SW      0      5      INDEF
10   VT320      9600-7-E-1  HW      30     5      00:30:00
11   VT320      4800-7-E-1  HW      30     5      00:30:00
12   PRINTER    9600-7-E-1  HW      30     4      00:30:00
13   VT320      9600-7-O-1  NONE    30     5      00:30:00
14   VT320      9600-7-E-2  SW      30     8      00:30:00
15   VT320      9600-7-N-2  HW      30     5      00:30:00
16   VT320      9600-7-E-2  BOTH    30     3      00:30:00
```

```
TRM  TRAF  LINK  SA   SYS  PU  DB
1    NO   YES   NO   YES  NO  YES
2    NO   NO    NO   NO   NO  NO
3    YES  YES   YES  NO   YES YES
4    YES  NO    NO   NO   NO  NO
5    NO   YES   NO   NO   NO  NO
6    YES  YES   YES  YES  YES YES
7    YES  YES   YES  YES  YES YES
8    NO   NO    NO   NO   YES NO
9    YES  YES   YES  YES  YES YES
10   NO   NO    NO   NO   NO  NO
11   YES  YES   YES  YES  YES YES
12   YES  YES   YES  YES  YES YES
13   NO   YES   NO   NO   NO  NO
14   NO   NO    YES  NO   NO  NO
15   YES  YES   YES  NO   YES YES
16   NO   NO    NO   NO   YES NO
```

10. Display the status of the terminals with the `rept-stat-trm` command. This is an example of the possible output:

```
rlghncxa03w 05-02-01 15:08:45 GMT Rel 29.0.0
TRM   PST           SST           AST
1     IS-NR         Active       -----
2     IS-NR         Active       -----
3     IS-NR         Active       -----
4     IS-NR         Active       -----
5     IS-NR         Active       -----
6     IS-NR        Active      -----
7     IS-NR         Active       -----
8     IS-NR         Active       -----
9     IS-NR        Active      -----
10    IS-NR         Active       -----
11    IS-NR         Active       -----
12    IS-NR         Active       -----
13    IS-NR         Active       -----
14    IS-NR         Active       -----
15    IS-NR         Active       -----
16    IS-NR         Active       -----
Command Completed.
```

11. Take the OAP terminals out of service using the `rmv-trm` command with the values of the OAP terminals recorded in step 10. The `force=yes` parameter must be used when taking the last OAP terminal out of service. For this example, enter these commands:

```
rmv-trm:trm=6
rmv-trm:trm=9:force=yes
```



CAUTION: These commands will take the connection between the system and the LSMS and the SEAS interface out of service and will remain out of service until the OAP terminals are returned to service in step 22.

If the status of the OAP terminals shown in the PST field in step 11 is OOS-MT-DSBLD (out of service maintenance disabled), the terminal is already out of service and the `rmv-trm` command does not need to be executed for that terminal.

After successful completion of this command, the system returns the following output:

```
rlghncxa03w 05-02-01 15:08:45 GMT Rel 29.0.0
Inhibit message sent to terminal

rlghncxa03w 05-02-01 15:08:45 GMT Rel 29.0.0
Command Completed.
```

12. Change the terminal type of the OAP terminals to **NONE** with the **chg-trm** command, the **type=none** parameter, and with the values of the OAP terminals recorded in step 10. For this example, enter these commands.

chg-trm:trm=6:type=none

chg-trm:trm=9:type=none

The system returns the following output:

```
rlghncxa03w 04-06-01 11:11:28 GMT Rel 29.0.0
CHG-TRM: MASP B - COMPLTD
```

13. Verify that the OAP terminals have been changed to the terminal type **NONE** with the **rtrv-trm** command. This is an example of the possible output. In this example, the OAP terminals are terminals 6 and 9, shown in bold.

```
rlghncxa03w 04-06-01 16:02:08 GMT Rel 29.0.0
TRM  TYPE      COMM          FC  TMOUT  MXINV  DURAL
1    VT320      9600-7-E-1 SW   30    5     99:59:59
2    KSR        9600-7-E-1 HW   30    5     INDEF
3    PRINTER    4800-7-E-1 HW   30    0     00:00:00
4    VT320      2400-7-E-1 BOTH 30    5     00:30:00
5    VT320      9600-7-O-1 NONE 30    5     00:00:30
6    NONE      19200-7-E-1 SW   0     5     INDEF
7    PRINTER    9600-7-N-2 HW   30    5     00:30:00
8    KSR        19200-7-E-2 BOTH 30    5     00:30:00
9    NONE      19200-7-E-1 SW   0     5     INDEF
10   VT320      9600-7-E-1 HW   30    5     00:30:00
11   VT320      4800-7-E-1 HW   30    5     00:30:00
12   PRINTER    9600-7-E-1 HW   30    4     00:30:00
13   VT320      9600-7-O-1 NONE 30    5     00:30:00
14   VT320      9600-7-E-2 SW   30    8     00:30:00
15   VT320      9600-7-N-2 HW   30    5     00:30:00
16   VT320      9600-7-E-2 BOTH 30    3     00:30:00

TRM  TRAF LINK SA  SYS PU  DB
1    NO  YES  NO  YES NO  YES
2    NO  NO  NO  NO  NO  NO
3    YES YES  YES NO  YES YES
4    YES NO  NO  NO  NO  NO
5    NO  YES  NO  NO  NO  NO
6    YES YES  YES YES YES YES
7    YES YES  YES YES YES YES
8    NO  NO  NO  NO  YES NO
9    YES YES  YES YES YES YES
10   NO  NO  NO  NO  NO  NO
11   YES YES  YES YES YES YES
12   YES YES  YES YES YES YES
13   NO  YES  NO  NO  NO  NO
14   NO  NO  YES NO  NO  NO
15   YES YES  YES NO  YES YES
16   NO  NO  NO  NO  YES NO
```

14. Display the status of the SCCP cards by entering the `rept-stat-sccp` command. This is an example of the possible output.

```
rlghncxa03w 05-02-01 09:12:36 GMT Rel 29.0.0
SCCP SUBSYSTEM REPORT IS-NR      Active      -----
SCCP Cards Configured=5   Cards IS-NR=5
System TPS Alarm Threshold = 80% Total Capacity
System Peak SCCP Load:      0 TPS
System Total SCCP Capacity:  8500 TPS
```

CARD	VERSION	PST	SST	AST	MSU USAGE	CPU USAGE
1301	116-002-001	IS-NR	Active	-----	33%	46%
1303	116-002-001	IS-NR	Active	-----	34%	50%
1305	116-002-001	IS-NR	Active	-----	21%	29%
1307	116-002-001	IS-NR	Active	-----	35%	52%
1311	116-002-001	IS-NR	Active	-----	15%	20%

```
-----
SCCP Service Average MSU Capacity = 28% Average CPU Capacity = 40%
```

Command Completed.

15. Turn the LNP 48 Million Number feature on by entering this command.

```
chg-feat:lnp48mil=on:force=yes
```

NOTE: Once the LNP 48 Million Number feature is turned on with the `chg-feat` command, it cannot be turned off.

The LNP 48 Million Number 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 LNP 48 Million Number feature, contact your Tekelec Sales Representative or Account Representative.

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

```
rlghncxa03w 05-02-01 00:57:31 GMT Rel 29.0.0
CHG-FEAT: MASP A - COMPLTD
```

16. After the LNP 48 Million Number feature is turned on, the associated state of the SCCP cards, shown in the `AST` column of the `rept-stat-sccp` output, is set to `DB_DIFF`, indicating that the database on these cards is at a different level than the database on the fixed disks. Display the status of the SCCP cards by entering the `rept-stat-sccp` command. This is an example of the possible output.

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```

rlghncxa03w 05-02-01 09:12:36 GMT Rel 29.0.0
SCCP SUBSYSTEM REPORT IS-NR          Active    -----
SCCP Cards Configured=5   Cards IS-NR=5
System TPS Alarm Threshold = 80% Total Capacity
System Peak SCCP Load:           0 TPS
System Total SCCP Capacity:       8500 TPS

CARD   VERSION      PST           SST           AST           MSU   CPU
                USAGE   USAGE
-----
1301   116-002-001   IS-NR         Active        DB_DIFF       33%   46%
1303   116-002-001   IS-NR         Active        DB_DIFF       34%   50%
1305   116-002-001   IS-NR         Active        DB_DIFF       21%   29%
1307   116-002-001   IS-NR         Active        DB_DIFF       35%   52%
1311   116-002-001   IS-NR         Active        DB_DIFF       15%   20%
-----
SCCP Service Average MSU Capacity = 28% Average CPU Capacity = 40%

```

Command Completed.

17. To get the database level on the SCCP cards to the correct level, the cards must be reloaded. From the **rept-stat-sccp** output in step 16, choose an SCCP card that has the smallest number in the **MSU USAGE** column and that has the **DB_DIFF** indicator in the **AST** column. Place this card out of service with the **rmv-card** command and specifying the card location. If the SCCP card to be removed is the only SCCP card in service, the **force=yes** parameter must also be specified. For this example, enter this command.

```
rmv-card:loc=1311
```

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

```

rlghncxa03w 05-02-01 00:26:31 GMT Rel 29.0.0
Card has been inhibited.

```

18. Put the card specified in step 17 back into service with the **rst-card** command and specifying the card location specified in step 17. For this example, enter this command.

```
rst-card:loc=1311
```

When this command has successfully completed, these messages should appear.

```

1947.0096   CARD  1311 VSCCP      Card has been reloaded
1950.0085   DSM A   1311      IP Connection Available
1951.0085   DSM B   1311      IP Connection Available
1952.0449  ** CARD 1311 VSCCP      RTDB resynchronization in progress
1953.0445   CARD 1311 VSCCP      RTDB database has been corrected
1954.0328   SCCP SYSTEM      SCCP is available

```

19. Verify the changes to the SCCP card by entering the `rept-stat-sccp` command. The primary state (**PST**) of the card should be **IS-NR**, and dashes should be shown in the **AST** column of the `rept-stat-sccp` output for the card specified in steps 17 and 18. This is an example of the possible output.

```
rlghncxa03w 05-02-01 09:12:36 GMT Rel 29.0.0
SCCP SUBSYSTEM REPORT IS-NR Active -----
SCCP Cards Configured=5 Cards IS-NR=5
System TPS Alarm Threshold = 80% Total Capacity
System Peak SCCP Load: 0 TPS
System Total SCCP Capacity: 8500 TPS
```

CARD	VERSION	PST	SST	AST	MSU USAGE	CPU USAGE
1301	116-002-001	IS-NR	Active	DB_DIFF	33%	46%
1303	116-002-001	IS-NR	Active	DB_DIFF	34%	50%
1305	116-002-001	IS-NR	Active	DB_DIFF	21%	29%
1307	116-002-001	IS-NR	Active	DB_DIFF	35%	52%
1311	116-002-001	IS-NR	Active	-----	15%	20%

```
-----
SCCP Service Average MSU Capacity = 28% Average CPU Capacity = 40%
```

Command Completed.

20. Repeat steps 17, 18, and 19 for the other SCCP cards in the system. Choose an SCCP card that has the smallest number in the **MSU USAGE** column and that has the **DB_DIFF** indicator in the **AST** column.

NOTE: If the SEAS feature is not on, shown by the entry `SEAS = on` in the `rtrv-feat` output in step 1, skip steps 21 through 23, and go to step 24.

21. Change the terminal type of the terminals that were changed to **NONE** in step 12 to the terminal type **OAP** with the `chg-trm` command and the `type=oap` parameter. For this example, enter these commands:

```
chg-trm:trm=6:type=oap
```

```
chg-trm:trm=9:type=oap
```

After successful completion of this command, the system returns the following output:

```
rlghncxa03w 04-06-01 11:11:28 GMT Rel 29.0.0
CHG-TRM: MASP B - COMPLTD
```

- 22. Put the OAP terminals back into service with the `rst-trm` command. For this example, enter these commands.

```
rst-trm:trm=6
```

```
rst-trm:trm=9
```

After successful completion of this command, the system returns the following output:

```
rlghncxa03w 05-02-01 15:08:45 GMT Rel 29.0.0
Allow message sent to terminal
```

```
rlghncxa03w 05-02-01 15:08:45 GMT Rel 29.0.0
Command Completed.
```

- 23. Verify that the OAP terminals are in service with the `rept-stat-trm` command. In service terminals are shown in the `rept-stat-trm` command output with the entry `IS-NR` in the `PST` field. This is an example of the possible output:

```
rlghncxa03w 05-02-01 15:08:45 GMT Rel 29.0.0
TRM  PST          SST          AST
1    IS-NR          Active       -----
2    IS-NR          Active       -----
3    IS-NR          Active       -----
4    IS-NR          Active       -----
5    IS-NR          Active       -----
6    IS-NR          Active       -----
7    IS-NR          Active       -----
8    IS-NR          Active       -----
9    IS-NR          Active       -----
10   IS-NR          Active       -----
11   IS-NR          Active       -----
12   IS-NR          Active       -----
13   IS-NR          Active       -----
14   IS-NR          Active       -----
15   IS-NR          Active       -----
16   IS-NR          Active       -----
Command Completed.
```

If the OAP terminals are is not in service, contact the Tekelec Technical Services department. See “Tekelec Technical Services” on page 4.

- 24. Display a summary report of all of the device trouble notifications in the system by entering the **rept-stat-trb1** command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 16:07:48 GMT Rel 29.0.0
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-trb1** output, stop performing this procedure and contact Tekelec Technical Services. See “Tekelec Technical Services” on page 4.

- 25. Display the overall status of the ELAP (Eagle LNP Application Processor) subsystem running on the MPS (multi-purpose server) by entering the **rept-stat-mps** command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 10:23:93 GMT Rel 29.0.0
          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
```

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```
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 Tekelec Technical Services. See "Tekelec Technical Services" on page 4.

-
26. Display the status of the databases with the **rept-stat-db** command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 16:07:48 GMT Rel 29.0.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( STDBY )
      C LEVEL      TIME LAST BACKUP
      -----
FD BKUP  Y      35 04-06-01 15:19:18 GMT
FD CRNT  Y      106
      MDAL 1117
      -----
RD BKUP  -      -      -      -

      ELAP A ( ACTV )
      C BIRTHDATE      LEVEL      EXCEPTION
      -----
RTDB-EAGLE  Y 04-06-01 15:19:18      0      -
TIME LAST UPDATE  04-06-01 15:19:18

      ELAP B ( STDBY )
      C BIRTHDATE      LEVEL      EXCEPTION
      -----
RTDB-EAGLE  Y 04-06-01 15:19:18      0      -
TIME LAST UPDATE  04-06-01 15:19:18
```

If the databases are not coherent, or if ELAP A and B do not have the same birthdate, contact Tekelec Technical Services. See "Tekelec Technical Services" on page 4.

If the databases are coherent, and if ELAP A and B have the same birthdate, this procedure is finished.

You have now completed this procedure.

Activating the LNP Feature on the Eagle - Eagle Release 30.0 or Greater

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 current assigned quantity can be verified with the **rtrv-ctrl-feat** command.

Before the LNP feature can be activated, or before the quantity of LNP telephone numbers can be increased, DSMs running the VSCCP application with the correct amount of memory must be configured in the Eagle. See Table 2 on page 2 for the DSM requirements. For more information on the DSM, go to the *NSD Installation Manual*. Table 2 on page 2 also contains the part numbers of the LNP telephone quantities that are specified with the **enable-ctrl-feat** command.

The feature access key is based on the feature's part number and the serial number of the system, 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 generated by the feature access key generator. The feature access key contains 13 alphanumeric characters and is not case sensitive. The feature access key is provided by Tekelec.

: partnum – The Tekelec-issued part number associated with the LNP telephone number quantity, without the dashes. See Table 2 on page 2.

The **enable-ctrl-feat** command requires that the database contain a valid serial number for the Eagle, and that this serial number is locked. This can be verified with the **rtrv-serial-num** command. The Eagle 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 is on-site, with the **ent-serial-num** command. The **ent-serial-num** command uses these parameters.

: serial – The serial number assigned to the Eagle. 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.

Before the LNP telephone number quantity can be increased beyond 12 million numbers, the LNP ELAP Configuration controlled feature must be enabled with the `enable-ctrl-feat` command, and activated 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 – used to activate the LNP ELAP Configuration feature.

NOTE: 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 the desired LNP telephone number quantity or the LNP ELAP Configuration feature, or do not have the feature access key for the LNP telephone number quantity being enabled or the LNP ELAP configuration feature, contact your Tekelec Sales Representative or Account Representative.



CAUTION: It is recommended that the ELAP (3.0 or greater) is connected to the Eagle before LNP telephone number data is loaded onto the ELAP and before the LNP telephone number quantity is enabled on the Eagle. When the LNP telephone number quantity is enabled on the Eagle, the feature key and quantity information is sent to the ELAP, resulting in the ELAP database quantity being the same as the LNP telephone number quantity on the Eagle. If the ELAP database quantity is larger than the LNP telephone number quantity on the Eagle, the ELAP will try to download more LNP telephone number records than the Eagle can handle, resulting in generating a major alarm, UAM 0281 - LNP Ported TNs exceeds Feat. Capacity. In this condition, the DSMs will not load any data as well. To clear this alarm, or to keep the alarm from being generated at all, the LNP telephone number quantity on the Eagle should be equal to or greater than the quantity of the ELAP database.

- NOTE: The remainder of this procedure is performed on the Eagle.**
- 3. The `rept-stat-db` command output in step 1 on page 171 shows the status of the Eagle databases.

The database will be backed up to the fixed disk and to a removable cartridge before the LNP feature is activated. The removable cartridge that will contain the database must be inserted in the removable cartridge drive.

If the RD BKUP field of the `rept-stat-db` output contains dashes, the removable cartridge drive does not contain a removable cartridge. If dashes are shown in the RD BKUP field, insert the removable cartridge that will contain the database into the removable cartridge drive.

If the removable cartridge is not the cartridge that will contain the database, replace the removable cartridge with the one that will contain the database.

- 4. Back up the database 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.
```

- 5. Back up the database to the removable cartridge using the `chg-db:action=backup:dest=remove` command. These messages appear:

```
BACKUP (REMOVABLE) : MASP B - Backup starts on active MASP.
BACKUP (REMOVABLE) : MASP B - Backup to removable cartridge complete.
```

- 6. Display the status of the databases by entering the `rept-stat-db` command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 16:07:48 GMT EAGLE5 33.0.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C  LEVEL      TIME LAST BACKUP  C  LEVEL      TIME LAST BACKUP
      -  - - - - - - - - - - - - - - -  -  - - - - - - - - - - - - - - -
FD BKUP Y          106 04-06-01 16:07:48 GMT Y          106 04-06-01 16:07:48 GMT
FD CRNT Y          106                               Y          106
      MDAL 1117
      -  - - - - - - - - - - - - - - -
RD BKUP Y          106 04-06-01 16:07:48 GMT
```

If the databases are not coherent after steps 4 and 5 are performed, stop performing this procedure and contact Tekelec Technical Services. See "Tekelec Technical Services" on page 4.

If the databases are coherent after steps 4 and 5 are performed, remove the removable cartridge from the removable cartridge drive and store the removable cartridge in a secure place.

7. Display a summary report of all of the device trouble notifications in the system by entering the **rept-stat-trb1** command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 16:07:48 GMT EAGLE5 33.0.0
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-trb1** output, stop performing this procedure and contact Tekelec Technical Services. See “Tekelec Technical Services” on page 4.

- NOTE:** If the **rtrv-ctrl-feat** output (step 1a in the “Activating the LNP Feature Overview” section on page 6) shows that the LNP telephone number quantity currently assigned is greater than 12 million numbers, skip this step and go to step 9.

8. Make sure that there are no alarms for either OAP, by entering the **rept-stat-lsms** command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 14:59:11 GMT Release 31.6.0
                                GPL PST SST AST
-----
LSMS SYSTEM IS-NR Active -----
TDM Port 4 IS-NR Active -----
TDM Port 10 IS-NR Active -----
OAP A 026-001-000 IS-NR Active -----
OAP B 026-001-000 IS-NR Active -----
LSMS Conn A1 IS-NR Active -----
LSMS Conn B1 IS-NR Active -----

LSMS SYSTEM ALARM STATUS = No Alarms.
OAP A ALARM STATUS = No Alarms.
OAP B ALARM STATUS = No Alarms.
LSMS Conn A1 ALARM STATUS = No Alarms.
LSMS Conn B1 ALARM STATUS = No Alarms.
```

Command Completed.

If any alarms are shown in the **rept-stat-lsms** output, stop performing this procedure and contact Tekelec Technical Services. See “Tekelec Technical Services” on page 4.

- 9. Display the status of the cards in the system by entering the `rept-stat-card` command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 12:57:21 GMT EAGLE5 33.0.0
CARD  VERSION      TYPE  APPL    PST      SST      AST
1102  118-001-000    TSM   GLS     IS-NR    Active   -----
1113  118-002-000    GPST  EOAM    IS-NR    Active   -----
1114  -----        TDM   ----- IS-NR    Active   -----
1115  -----        GPST  EOAM    IS-NR    Active   -----
1116  -----        TDM   ----- IS-NR    Active   -----
1117  -----        MDAL  ----- IS-NR    Active   -----
1201  118-002-000    LIMDS0 SS7ANSI IS-NR    Active   -----
1203  118-002-000    LIMDS0 SS7ANSI IS-NR    Active   -----
1207  118-001-000    LIMV35 SS7GX25 IS-NR    Active   -----
1208  118-001-000    LIMV35 SS7GX25 IS-NR    Active   -----
1301  118-001-000    DSM   VSCCP  IS-NR    Active   -----
1303  118-001-000    DSM   VSCCP  IS-NR    Active   -----
1305  118-002-000    DSM   VSCCP  IS-NR    Active   -----
1307  118-001-000    DSM   VSCCP  IS-NR    Active   -----
1311  118-001-000    DSM   VSCCP  IS-NR    Active   -----
1313  118-001-000    LIMDS0 SS7ANSI IS-NR    Active   -----
1314  118-001-000    LIMDS0 SS7ANSI IS-NR    Active   -----
1317  118-001-000    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 Tekelec Technical Services. See “Tekelec Technical Services” on page 4.

- NOTE:** If the `rtrv-ctrl-feat` output (step 1a in the “Activating the LNP Feature Overview” section on page 6) shows that the LNP telephone number quantity currently assigned is greater than 12 million numbers, skip steps 10, 11, 12, 13, and 14, and go to step 15.

- 10. Display the terminal configuration in the database with the `rtrv-trm` command. The OAP terminals are shown in the output with the entry `OAP` in the `TYPE` field. Record the values of the OAP terminal ports. This is an example of the possible output. In this example, the OAP terminals are terminals 6 and 9, shown in bold.

```
rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 33.0.0
TRM  TYPE  COMM      FC  TMOUT  MXINV  DURAL
1    VT320  9600-7-E-1 SW   30    5    99:59:59
2    KSR    9600-7-E-1 HW   30    5    INDEF
3    PRINTER 4800-7-E-1 HW   30    0    00:00:00
4    VT320  2400-7-E-1 BOTH 30    5    00:30:00
5    VT320  9600-7-O-1 NONE 30    5    00:00:30
6    OAP    19200-7-E-1 SW   0     5    INDEF
7    PRINTER 9600-7-N-2 HW   30    5    00:30:00
8    KSR    19200-7-E-2 BOTH 30    5    00:30:00
9    OAP    19200-7-E-1 SW   0     5    INDEF
10   VT320  9600-7-E-1 HW   30    5    00:30:00
11   VT320  4800-7-E-1 HW   30    5    00:30:00
12   PRINTER 9600-7-E-1 HW   30    4    00:30:00
13   VT320  9600-7-O-1 NONE 30    5    00:30:00
14   VT320  9600-7-E-2 SW   30    8    00:30:00
15   VT320  9600-7-N-2 HW   30    5    00:30:00
16   VT320  9600-7-E-2 BOTH 30    3    00:30:00
```

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TRM	TRAF	LINK	SA	SYS	PU	DB
1	NO	YES	NO	YES	NO	YES
2	NO	NO	NO	NO	NO	NO
3	YES	YES	YES	NO	YES	YES
4	YES	NO	NO	NO	NO	NO
5	NO	YES	NO	NO	NO	NO
6	YES	YES	YES	YES	YES	YES
7	YES	YES	YES	YES	YES	YES
8	NO	NO	NO	NO	YES	NO
9	YES	YES	YES	YES	YES	YES
10	NO	NO	NO	NO	NO	NO
11	YES	YES	YES	YES	YES	YES
12	YES	YES	YES	YES	YES	YES
13	NO	YES	NO	NO	NO	NO
14	NO	NO	YES	NO	NO	NO
15	YES	YES	YES	NO	YES	YES
16	NO	NO	NO	NO	YES	NO

TRM	APP											
	SERV	SS	CARD	CLK	DBG	GTT	GWS	MEAS	MON	MPS	SEAS	SLAN
1	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
2	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
3	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
4	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	NO	NO
5	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
6	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
7	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
8	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
9	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
10	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
11	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
12	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
13	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
14	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
15	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
16	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

- 11. Display the status of the terminals with the `rept-stat-trm` command. This is an example of the possible output:

```
rlghncxa03w 05-02-01 15:08:45 GMT EAGLE5 33.0.0
TRM   PST           SST           AST
 1    IS-NR         Active       -----
 2    IS-NR         Active       -----
 3    IS-NR         Active       -----
 4    IS-NR         Active       -----
 5    IS-NR         Active       -----
 6    IS-NR        Active     -----
 7    IS-NR         Active       -----
 8    IS-NR         Active       -----
 9    IS-NR        Active     -----
10    IS-NR         Active       -----
11    IS-NR         Active       -----
12    IS-NR         Active       -----
13    IS-NR         Active       -----
14    IS-NR         Active       -----
15    IS-NR         Active       -----
16    IS-NR         Active       -----
Command Completed.
```

- 12. Take the OAP terminals out of service using the `rmv-trm` command with the values of the OAP terminals recorded in step 11. The `force=yes` parameter must be used when taking the last OAP terminal out of service. For this example, enter these commands:

```
rmv-trm:trm=6
rmv-trm:trm=9:force=yes
```



CAUTION: These commands will take the connection between the system and the LSMS and the SEAS interface out of service and will remain out of service until the OAP terminals are returned to service in step 26.

If the status of the OAP terminals shown in the PST field in step 11 is OOS-MT-DSBLD (out of service maintenance disabled), the terminal is already out of service and the `rmv-trm` command does not need to be executed for that terminal.

After successful completion of this command, the system returns the following output:

```
rlghncxa03w 05-02-01 15:08:45 GMT EAGLE5 33.0.0
Inhibit message sent to terminal

rlghncxa03w 05-02-01 15:08:45 GMT EAGLE5 33.0.0
Command Completed.
```

- 13. Change the terminal type of the OAP terminals to `NONE` with the `chg-trm` command, the `type=none` parameter, and with the values of the OAP terminals recorded in steps 10 and 11. For this example, enter these commands.

```
chg-trm:trm=6:type=none
chg-trm:trm=9:type=none
```

The system returns the following output:

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 33.0.0
CHG-TRM: MASP B - COMPLTD
```

14. Verify that the OAP terminals have been changed to the terminal type **NONE** with the **rtrv-trm** command. This is an example of the possible output. In this example, the OAP terminals are terminals 6 and 9, shown in bold.

```
rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 33.0.0
TRM  TYPE      COMM          FC  TMOUT  MXINV  DURAL
1    VT320      9600-7-E-1 SW   30    5    99:59:59
2    KSR        9600-7-E-1 HW   30    5    INDEF
3    PRINTER    4800-7-E-1 HW   30    0    00:00:00
4    VT320      2400-7-E-1 BOTH 30    5    00:30:00
5    VT320      9600-7-O-1 NONE 30    5    00:00:30
6    NONE      19200-7-E-1 SW   0     5    INDEF
7    PRINTER    9600-7-N-2 HW   30    5    00:30:00
8    KSR        19200-7-E-2 BOTH 30    5    00:30:00
9    NONE      19200-7-E-1 SW   0     5    INDEF
10   VT320      9600-7-E-1 HW   30    5    00:30:00
11   VT320      4800-7-E-1 HW   30    5    00:30:00
12   PRINTER    9600-7-E-1 HW   30    4    00:30:00
13   VT320      9600-7-O-1 NONE 30    5    00:30:00
14   VT320      9600-7-E-2 SW   30    8    00:30:00
15   VT320      9600-7-N-2 HW   30    5    00:30:00
16   VT320      9600-7-E-2 BOTH 30    3    00:30:00

TRM  TRAF  LINK  SA  SYS  PU  DB
1    NO   YES   NO  YES  NO  YES
2    NO   NO    NO  NO   NO  NO
3    YES  YES   YES  NO   YES  YES
4    YES  NO    NO  NO   NO  NO
5    NO   YES   NO  NO   NO  NO
6    YES  YES   YES  YES  YES  YES
7    YES  YES   YES  YES  YES  YES
8    NO   NO    NO  NO   YES  NO
9    YES  YES   YES  YES  YES  YES
10   NO   NO    NO  NO   NO  NO
11   YES  YES   YES  YES  YES  YES
12   YES  YES   YES  YES  YES  YES
13   NO   YES   NO  NO   NO  NO
14   NO   NO    YES  NO   NO  NO
15   YES  YES   YES  NO   YES  YES
16   NO   NO    NO  NO   YES  NO

APP  APP
TRM  SERV  SS  CARD  CLK  DBG  GTT  GWS  MEAS  MON  MPS  SEAS  SLAN
1    YES  NO  NO
2    YES  NO  NO
3    YES  NO  NO
4    YES  YES  YES  YES  YES  NO  YES  YES  YES  YES  YES  NO  NO
5    YES  NO  NO
6    YES  NO  NO
7    NO   YES  NO  NO
8    YES  YES
9    YES  YES
10   NO   NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO
11   NO   NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO
12   NO   NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO
13   NO   NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO
14   NO   NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO
15   NO   NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO
16   NO   NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO
```

- 15. Display the status of the SCCP cards by entering the `rept-stat-sccp` command. This is an example of the possible output.

```
rlghncxa03w 05-02-01 09:12:36 GMT EAGLE5 33.0.0
SCCP SUBSYSTEM REPORT IS-NR          Active      -----
SCCP Cards Configured=5   Cards IS-NR=5
System TPS Alarm Threshold = 80% Total Capacity
System Peak SCCP Load:           0 TPS
System Total SCCP Capacity:       8500 TPS

CARD   VERSION      PST           SST           AST           MSU   CPU
                USAGE   USAGE
-----
1301   118-002-001   IS-NR         Active        -----        33%   46%
1303   118-002-001   IS-NR         Active        -----        34%   50%
1305   118-002-001   IS-NR         Active        -----        21%   29%
1307   118-002-001   IS-NR         Active        -----        35%   52%
1311   118-002-001   IS-NR         Active        -----        15%   20%
-----
SCCP Service Average MSU Capacity = 28% Average CPU Capacity = 40%
```

Command Completed.

- NOTE: If the `rtrv-ctrl-feat` output (step 1a in the “Activating the LNP Feature Overview” section on page 6) shows any control features, skip this step and step 17, and go to step 18.**

- 16. Display the serial number in the database with the `rtrv-serial-num` command. This is an example of the possible output.

```
rlghncxa03w 05-02-01 21:15:37 GMT EAGLE5 33.0.0
System serial number = ntxxxxxxxxxxxxxx
System serial number is not locked.

rlghncxa03w 05-02-01 21:15:37 GMT EAGLE5 33.0.0
Command Completed
```

- NOTE: If the serial number is locked, skip step 17 and go to step 18.**

- 17. If the serial number shown in step 16 is not correct and not locked, enter the correct serial number into the database and lock the serial number using the `ent-serial-num` command with the `serial` and `lock` parameters.

If the serial number is correct, but is not locked, enter the `ent-serial-num` command specifying the serial number shown in step 16 with the `lock=yes` parameter.

For this example, enter this command.

```
ent-serial-num:serial=<Eagle's serial number>:lock=yes
```

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

```
rlghncxa03w 05-02-01 21:15:37 GMT EAGLE5 33.0.0
ENT-SERIAL-NUM: MASP A - COMPLTD
```

NOTE: If the `rtrv-ctrl-feat` output (step 1a in the “Activating the LNP Feature Overview” section on page 6) shows the LNP ELAP Configuration feature is enabled and on, skip steps 18, 19 and 20, and go to step 21.

NOTE: If the LNP ELAP Configuration feature is enabled and but not on, skip this step and go to step 19.

18. Enable the LNP ELAP Configuration feature by entering this command.

```
enable-ctrl-feat:partnum=893010901:fak=<LNP ELAP Configuration
feature access key>
```

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, this message should appear.

```
rlghncxa03w 05-02-01 21:15:37 GMT EAGLE5 33.0.0
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

19. Activate the LNP ELAP Configuration feature by entering this command.

```
chg-ctrl-feat:partnum=893010901:status=on
```

When the `chg-ctrl-feat` command has successfully completed, the following message should appear.

```
rlghncxa03w 05-02-01 21:15:37 GMT EAGLE5 33.0.0
CHG-CTRL-FEAT: MASP B - COMPLTD
```

20. Verify the changes by entering this command.

```
rtrv-ctrl-feat:partnum=893010901
```

The following is an example of the possible output.

```
rlghncxa03w 05-02-01 21:16:37 GMT EAGLE5 33.0.0
The following features have been permanently enabled:
Feature Name          Partnum    Status    Quantity
LNP ELAP Configuration 893011012 on        ----
```

- 21. Enable the LNP telephone number quantity using the `enable-ctrl-feat` command with the part number of the desired quantity shown in Table 2 on page 2 and the feature access key for that quantity. For this example, enter this command.

```
enable-ctrl-feat:partnum=893011012:fak=<LNP telephone number
quantity feature access key>
```

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.

When the `enable-ctrl-feat` command has successfully completed, this message should appear.

```
rlghncxa03w 05-02-01 21:15:37 GMT EAGLE5 33.0.0
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

- 22. Verify the changes by entering the `rtrv-ctrl-feat` command with the part number specified in step 21.

```
rtrv-ctrl-feat:partnum=893011012
```

The following is an example of the possible output.

```
rlghncxa03w 05-02-01 21:16:37 GMT EAGLE5 33.0.0
The following features have been permanently enabled:
Feature Name          Partnum    Status    Quantity
LNP TNs              893011012  on       96000000
```

- 23. Verify the changes to the SCCP card by entering the `rept-stat-sccp` command. The primary state (**PST**) of the card should be **IS-NR**, and dashes should be shown in the **AST** column of the `rept-stat-sccp` output. This is an example of the possible output.

```
rlghncxa03w 05-02-01 09:12:36 GMT EAGLE5 33.0.0
SCCP SUBSYSTEM REPORT IS-NR          Active      -----
SCCP Cards Configured=5   Cards IS-NR=5
System TPS Alarm Threshold = 80% Total Capacity
System Peak SCCP Load:           0 TPS
System Total SCCP Capacity:       8500 TPS
```

CARD	VERSION	PST	SST	AST	MSU USAGE	CPU USAGE
1301	118-002-001	IS-NR	Active	DB_DIFF	33%	46%
1303	118-002-001	IS-NR	Active	DB_DIFF	34%	50%
1305	118-002-001	IS-NR	Active	DB_DIFF	21%	29%
1307	118-002-001	IS-NR	Active	DB_DIFF	35%	52%
1311	118-002-001	IS-NR	Active	-----	15%	20%

```
SCCP Service Average MSU Capacity = 28% Average CPU Capacity = 40%
```

Command Completed.

24. Verify whether or not the SEAS feature is on by entering the `rtrv-feat` command. If the SEAS feature is on, the `SEAS` field should be set to `on`.

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

- NOTE:** If the SEAS feature is not on, shown by the entry `SEAS = off` in the `rtrv-feat` output in step 24, skip steps 25 through 27, and go to step 28.

25. Change the terminal type of the terminals that were changed to `NONE` in step 13 on page 175 to the terminal type `OAP` with the `chg-trm` command and the `type=oap` parameter. For this example, enter these commands:

```
chg-trm:trm=6:type=oap
```

```
chg-trm:trm=9:type=oap
```

After successful completion of this command, the system returns the following output:

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 33.0.0
CHG-TRM: MASP B - COMPLTD
```

26. Put the OAP terminals back into service with the `rst-trm` command. For this example, enter these commands.

```
rst-trm:trm=6
```

```
rst-trm:trm=9
```

After successful completion of this command, the system returns the following output:

```
rlghncxa03w 05-02-01 15:08:45 GMT EAGLE5 33.0.0
Allow message sent to terminal
```

```
rlghncxa03w 05-02-01 15:08:45 GMT EAGLE5 33.0.0
Command Completed.
```

27. Verify that the OAP terminals are in service with the **rept-stat-trm** command. In service terminals are shown in the **rept-stat-trm** command output with the entry **IS-NR** in the **PST** field. This is an example of the possible output:

```
rlghncxa03w 05-02-01 15:08:45 GMT EAGLE5 33.0.0
TRM   PST           SST           AST
 1   IS-NR         Active         -----
 2   IS-NR         Active         -----
 3   IS-NR         Active         -----
 4   IS-NR         Active         -----
 5   IS-NR         Active         -----
 6   IS-NR         Active         -----
 7   IS-NR         Active         -----
 8   IS-NR         Active         -----
 9   IS-NR         Active         -----
10   IS-NR         Active         -----
11   IS-NR         Active         -----
12   IS-NR         Active         -----
13   IS-NR         Active         -----
14   IS-NR         Active         -----
15   IS-NR         Active         -----
16   IS-NR         Active         -----
Command Completed.
```

If the OAP terminals are is not in service, contact the Tekelec Technical Services department. See “Tekelec Technical Services” on page 4.

28. Display a summary report of all of the device trouble notifications in the system by entering the **rept-stat-trb1** command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 16:07:48 GMT EAGLE5 33.0.0
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-trb1** output, stop performing this procedure and contact Tekelec Technical Services. See “Tekelec Technical Services” on page 4.

- 29. Display the overall status of the ELAP subsystem running on the MPS (multi-purpose server) by entering the `rept-stat-mps` command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 10:23:93 GMT EAGLE5 33.0.0
          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 Tekelec Technical Services. See "Tekelec Technical Services" on page 4.

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 NE's remaining LNP databases must be synchronized with the NE's newly synchronized database as described in one of the following sections:

- "Automatic Data Distribution"
- "NE Database Synchronization After Copying RTDB from Mate ELAP"
- "Other NE Database Synchronization"

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 *LSMS-Eagle LNP Database Synchronization Manual*)
- ELAP-based reconcile (see "Audit with Reconcile Over Normal Update Connection" in the *LSMS-Eagle LNP Database Synchronization Manual*)

NE Database Synchronization After Copying RTDB from Mate ELAP

If NE 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 DSMs because they are already synchronized with the RTDB that was used to restore from. Therefore, after the copy, the DSMs are now synchronized with both RTDBs.

Other NE Database Synchronization

However, after other LNP database synchronization operations, the network element's main LNP database must be distributed by operator intervention to other LNP databases within the network element (both the mate RTDB and the DSMs). See "Distributing RTDB, Returning to Normal Service" on page 185.

Distributing RTDB, Returning to Normal Service

This section describes how to distribute the LNP database to the other network element databases and return the network element to normal service after one RTDB has been updated by one of the following actions:

- Copied from an RTDB on the mated network element (see “Copying One RTDB from Another RTDB” procedure on page 136); the data must be distributed to the DSMs; then, the ELAPs are ready for normal service
- Updated by one of the following ELAP-based operations sent from the LSMS:
 - Resynchronized by user-initiated resynchronization (see Chapter 5, “Managing Resynchronization from the LSMS,” in the *LSMS-Eagle LNP Database Synchronization Manual*)
 - Bulk loaded from the LSMS (see “Electronic Bulk Load Procedure” procedure on page 126)

After one of these LSMS-initiated procedures, the newly synchronized RTDB must be copied to the mate RTDB and the data must be distributed to the DSMs. In addition, the NE operator must disable the ability to receive another user-initiated resynchronization or bulk load to prevent an inadvertent user-initiated resynchronization or bulk load, both of which require disconnection with the LSMS and, therefore, temporary loss of provisioning. (The steps for enabling this ability are described in “Managing User-Initiated Resynchronization from the LSMS” in the *LSMS-Eagle LNP Database Synchronization Manual* or “Electronic Bulk Load Procedure” on page 126; the steps for disabling the ability again are described in first few steps in the procedures described in “Disabling Bulk Load” on page 188.)

Distributing an RTDB LNP Database to DSMs

Perform the following procedure to distribute the data from the ELAP’s LNP database to the DSMs.

Procedure

1. Distribute the imported LNP database onto each DSM, which will also silence the LNP database alarms. Use one of the following methods:

- Method A loads the imported LNP database onto one DSM at a time by reloading each DSM.

This method allows the global title translation and LNP functions to continue running while the new LNP database is being loaded. When the DSM is reinitializing, its database goes temporarily out of service for the period of time that it takes to reload the database on the DSM. 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.

- Method B loads the imported LNP database onto all DSMs in the system by reinitializing all the DSMs at once.



CAUTION: This method not only loads the imported LNP database onto the DSMs at the same time, but takes all the DSMs out of service and the LNP subsystem will be offline. This method should only be used in emergency situations. Method A is the preferred method.

Method A: Perform steps a and b in this method for each DSM, one DSM at a time.

- Take the DSM out of service with the `rmv-card` command specifying the card location of the DSM. If there is only one DSM in the system, the `force=yes` parameter must be specified with the `rmv-card` command. For this example, Enter this command:

```
rmv-card:loc=1301
```

After successful completion of this command, the system returns the following output:

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 33.0.0
Card has been inhibited.
```

- Return the DSM to service with the `rst-card` command with the card location of the DSM and the option `data=persist` to allow a warm restart if possible. This command validates that the LNP database on the specified DSM 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.

For this example, enter this command:

```
rst-card:loc=1301:data=persist
```

After successful completion of this command, the system returns the following output:

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 33.0.0
Card has been allowed.
```

- When the DSM is returned to service, the major alarm is silenced and UAM 0431, LNP database has been corrected, is generated. For this example, this message is generated:

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 33.0.0
0012.0431 CARD 1301 SCCP LNP database has been corrected
```

- Repeat steps a and b for the other DSMs in the system.

If any of the DSMs continue to boot, contact Tekelec Technical Services (see “Tekelec Technical Services” on page 4).

Method B: Enter the `init-card:appl=vsccp` command.



CAUTION: This command initializes all the DSMs at once and not only loads the imported LNP database onto the DSMs at the same time, but takes all the DSMs 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 DSMs 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 DSMs are reinitialized with the `init-card:appl=vsccp` command. After the `init-card:appl=vsccp` command has finished executing and all the DSMs 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, UAM 0431 is displayed for each DSM showing that the UAM 0429 has been cleared and the database on the DSM matches the database on the MASPs. This is an example of UAM 0431.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 33.0.0  
0012.0431 CARD 1301 SCCP LNP database has been corrected
```

If any of the DSMs continue to boot, contact Tekelec Technical Services (see “Tekelec Technical Services” on page 4).

- 2. Verify that the DSMs are in-service by entering the `rept-stat-sccp` command. The state of the DSMs, shown in the `PST` field of the `rept-stat-sccp` command output, should be `IS-NR` (in-service normal). This is an example of the possible output:

```
rlghncxa03w 05-02-01 09:12:36 GMT EAGLE5 33.0.0
SCCP SUBSYSTEM REPORT IS-NR Active -----
SCCP Cards Configured=5 Cards IS-NR=5
System TPS Alarm Threshold = 80% Total Capacity
System Peak SCCP Load: 0 TPS
System Total SCCP Capacity: 8500 TPS

CARD   VERSION   PST       SST       AST       MSU   CPU
              USAGE   USAGE
-----
1301   118-002-001 IS-NR     Active    -----    33%   46%
1303   118-002-001 IS-NR     Active    -----    34%   50%
1305   118-002-001 IS-NR     Active    -----    21%   29%
1307   118-002-001 IS-NR     Active    -----    35%   52%
1311   118-002-001 IS-NR     Active    -----    15%   20%
-----
SCCP Service Average MSU Capacity = 28% Average CPU Capacity = 40%
```

Command Completed.

If the state of any DSMs is not `IS-NR`, contact the Tekelec Technical Services department. See “Tekelec Technical Services” on page 4.

You have now completed distributing the data to the DSMs; next, do one of the following:

- If this procedure is being performed after an RTDB copy from the mated NE, your ELAP is ready for normal service.
- If this procedure is being performed after a bulk load or user-initiated resynchronization from the LSMS GUI, do the following to return the ELAPs to normal service:
 1. Copy the RTDB that was restored (by the user-initiated resynchronization or bulk load from the LSMS) to the RTDB on the mate ELAP, as described in “Procedure to Copy an RTDB from the Mate ELAP” on page 140.
 2. Perform one of the procedures described in “Disabling Bulk Load” on page 188.

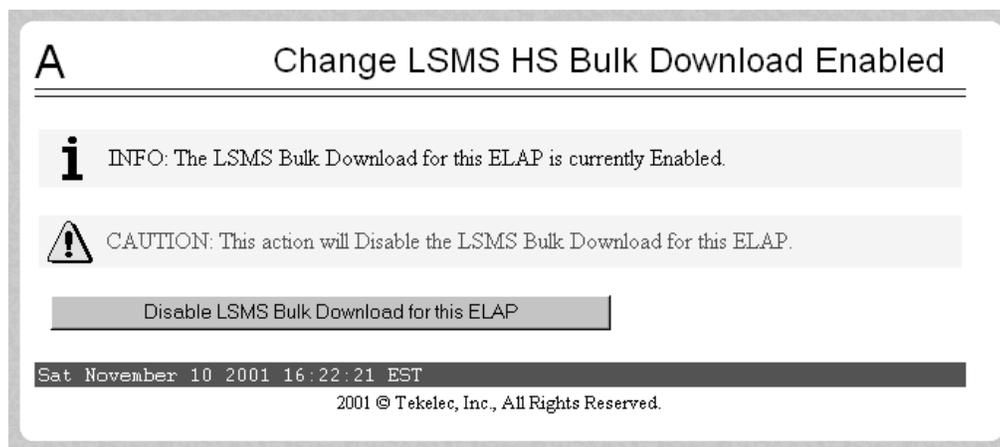
Disabling Bulk Load

If you have distributed a restored RTDB’s LNP data to the DSMs (as described in “Distributing an RTDB LNP Database to DSMs” on page 185) after an LSMS-initiated procedure, perform the following procedure.

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 > LSMS HS Bulk Download > Change Enabled**; a window similar to the example shown in Figure 110 displays.

Figure 110. Change Enabled Window



The information field should show that the LSMS Bulk Download for this ELAP is currently enabled.

-
3. Click the **Disable LSMS HS Bulk Download for this ELAP** button.
-

You have now completed this procedure and the user-initiated resynchronization or bulk load.

Removing the `hsopEnabled` File from the OAP

To use the OAP with the SEAS feature on, and the LNP feature activated, the `hsopEnabled` feature must be removed from both OAPs. Removing this file keeps the OAP from asking for an LNP DBTS (LNP database timestamp) from the Eagle after the LNP feature is activated.

Procedure

1. Log into the OAP as `ccsproj`.

2. Enter the `cd /ccsosmr` command to go to the `ccsosmr` directory.

3. In the `ccsosmr` directory, find a directory with the same name as the OAP's CLI.

4. Enter the `rm /work/hsopEnabled` command to remove the `hsopEnabled` file from this directory.

5. Log out of the OAP.

6. Repeat this procedure for the other OAP.

You have now completed this procedure.

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 node using the HSOP (High Speed Operations Protocol) protocol and forwarding LNP updates to the Eagle
- Filtering LNP data based on the provisioned filter information before forwarding it to the Eagle (for more information, refer to “Modify EMS Routing” procedure on page 122.
- Performing automatic resynchronization with an Eagle node upon connection establishment (for more information, refer to the *LSMS-Eagle LNP Database Synchronization Manual*)

One instance of the *eagleagent* process exists for each supported Eagle node.

Procedure

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 -m local lsmshc proc
```

Ensure that the output contains a line similar to the one shown in bold in the following example for each Eagle node that is to be supported:

```
***** Running system checks on lsmspri. *****
```

```
Running modules in class lsmshc...
proc: --- Checking Processes on Active ---
*   proc: OK          Found: 1 Expected: 1 -> OSI daemon (osinetd)
*   proc: OK          Found: 1 Expected: 1 -> OSI Log daemon (osilogd)
*   proc: OK         Found: 1 Expected: 1 -> Eagle Agent (STPA)
*   proc: OK          Found: 1 Expected: 1 -> NPAC Agent (Northeast)
*   proc: OK          Found: 1 Expected: 1 -> NPAC Agent (Midwest)
*   proc: OK          Found: 1 Expected: 1 -> NPAC Agent (MidAtlantic)
*   proc: OK          Found: 1 Expected: 1 -> NPAC Agent (Western)
*   proc: OK          Found: 1 Expected: 1 -> NPAC Agent (WestCoast)
*   proc: OK          Found: 1 Expected: 1 -> NPAC Agent (Southeast)
*   proc: OK          Found: 1 Expected: 1 -> NPAC Agent (Southwest)
*   proc: OK          Found: 1 Expected: 1 -> NPAC Agent (Canada)
*   proc: OK          Found: 1 Expected: 1 -> obe for Regional database (NortheastDB)
*   proc: OK          Found: 1 Expected: 1 -> obe for Regional database (MidwestDB)
*   proc: OK          Found: 1 Expected: 1 -> obe for Regional database (MidAtlanticDB)
*   proc: OK          Found: 1 Expected: 1 -> obe for Regional database (WesternDB)
*   proc: OK          Found: 1 Expected: 1 -> obe for Regional database (WestCoastDB)
*   proc: OK          Found: 1 Expected: 1 -> obe for Regional database (SoutheastDB)
*   proc: OK          Found: 1 Expected: 1 -> obe for Regional database (SouthwestDB)
*   proc: OK          Found: 1 Expected: 1 -> obe for Regional database (CanadaDB)
*   proc: OK          Found: 1 Expected: 1 -> obe for Supplemental database (supDB)
*   proc: OK          Found: 1 Expected: 1 -> obe for Resynchronization database (ResyncDB)
```

```

*   proc: OK           Found: 1 Expected: 1 -> Local Data Manager (supman)
*   proc: OK           Found: 1 Expected: 1 -> Local Services Manager (lsman)
*   proc: OK           Found: 1 Expected: 1 -> Logger Daemon (lsmslogd)
*   proc: OK           Found: 1 Expected: 1 -> Report Manager (reportman)
*   proc: OK           Found: 1 Expected: 1 -> RMTTP Agent (rmtpagent)
*   proc: OK           Found: 1 Expected: 1 -> RMTTP Manager (rmtpmgr)
*   proc: OK           Found: 0 Expected: 0 -> Service Assurance Agent (sacw)
*   proc: OK           Found: 1 Expected: 1 -> Surveillance Agent (survMon)
*   proc: OK           Found: 1 Expected: 1 -> System Monitor daemon (sm_symond)
*   proc: OK           Found: 1 Expected: 1 -> Sentry process (sentryd)
*   proc: OK           Found: 0 Expected: 0 -> GUI connections

proc: Return string: "OK"
                                OK

exit code: (0)

```

If a line similar to the one shown in bold above appears for each supported Eagle 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 node:

```
% $LSMS_DIR/install/eagle start <CLLI>
```

-
- 5.** Verify that the Eagle agent has started by repeating step 2.

If the Eagle agent fails to start, contact Tekelec Technical Services (see "Tekelec Technical Services" on page 4).

You have now completed this procedure.

Increasing the LRN and NPANXX Quantities on the Eagle - Eagle Release 30.0 or Greater

When the LNP feature is enabled for the first time, on Eagles running release 30.0 or greater, 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 “Activating the LNP Feature Overview” section on page 6.

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 system, 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 generated by the feature access key generator. The feature access key contains 13 alphanumeric characters and is not case sensitive. The feature access key is provided by Tekelec.

: partnum – The Tekelec-issued part number associated with the LNP telephone number quantity, without the dashes. 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

The **enable-ctrl-feat** command requires that the database contain a valid serial number for the Eagle, and that this serial number is locked. This can be verified with the **rtrv-serial-num** command. The Eagle 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 is on-site, with the **ent-serial-num** command. The **ent-serial-num** command uses these parameters.

: serial – The serial number assigned to the Eagle. 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: 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. 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 Database Administration Manual - System Management*.

Procedure

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 05-02-01 21:15:37 GMT EAGLE5 33.0.0
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	----
Prepaid SMS Intercept Ph1	893006701	on	----
Intermed GTT Load Sharing	893006901	off	----
G-Port Circ Route Prevent	893007001	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

```
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 the “Activating the LNP Feature Overview” section on page 6, and increase the LNP telephone number quantity to 60,000,000 or greater.

2. Verify whether or not the Measurements Platform on the Eagle is enabled by entering the `rtrv-measopts` command. This is an example of the possible output.

```
rlghncxa03w 05-02-01 16:02:05 GMT EAGLE5 33.0.0
EAGLE MEASUREMENT OPTIONS LIST
```

```
Platform Enabled =off
-----
SYSTOTSTP      =on  MTCHNP      =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 Database Administration Manual - System Management* and enable the Measurements Platform.

3. 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 05-02-01 21:15:37 GMT EAGLE5 33.0.0
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

4. Verify the changes by entering these commands.

```
rttrv-ctrl-feat:partnum=893010501
```

The following is an example of the possible output.

```
rlghncxa03w 05-02-01 21:16:37 GMT EAGLE5 33.0.0
The following features have been permanently enabled:
Feature Name          Partnum    Status    Quantity
LNP LRNs              893010501  on        150000
```

```
rttrv-ctrl-feat:partnum=893009402
```

The following is an example of the possible output.

```
rlghncxa03w 05-02-01 21:16:37 GMT EAGLE5 33.0.0
The following features have been permanently enabled:
Feature Name          Partnum    Status    Quantity
LNP NPANXXs          893009402  on        300000
```

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

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

You have now completed this procedure.

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 system using the **enable-ctrl-feat** and **chg-ctrl-feat** commands. The LNP feature must be enabled for LNP telephone number quantities greater than 12 million numbers before the LNP Short Message Service feature can be activated. Refer to the “Activating the LNP Feature Overview” section on page 6 for more information about enabling the LNP feature for LNP telephone number quantities greater than 12 million numbers.

The **enable-ctrl-feat** command enables the controlled feature by inputting the controlled feature’s access key and the controlled feature’s part number with these parameters:

: fak – The feature access key generated by the feature access key generator. The feature access key contains 13 alphanumeric characters and is not case sensitive.

: partnum – The Tekelec-issued part number associated with the controlled feature. The part number is a 9-digit number, not including dashes. The first three digits must be 893 (that is, 893xxxxxx, where x is a numeric value).

If the controlled feature is being enabled with a temporary feature access key, the feature must not be in the *in-use*, *expired*, or *unavailable* state.

The **enable-ctrl-feat** command requires that the database contain a valid serial number for the system, and that this serial number is locked. This can be verified with the **rtrv-serial-num** command. The system 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 system is on-site, with the **ent-serial-num** command. The **ent-serial-num** command uses these parameters.

: serial – The serial number assigned to the system. 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.

Once the controlled feature has been enabled, the controlled 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 controlled feature. The part number is a 9-digit number, not including dashes. The first three digits must be 893 (that is, 893xxxxxx, where x is a numeric value).

: status=on – used to activate the controlled features that customer has purchased and enabled.

The status of the controlled features in the system is shown with the **rtrv-ctrl-feat** command.

When this procedure is completed and the LNP SMS feature is activated, the WSMSC LNP service must be added to the LNP service table. Refer to the “Adding an LNP Service” procedure in the *Eagle Database Administration Manual - LNP*.

The WSMSC10DIG LNP option can be set with the **chg-lnpopts** command. The WSMSC10DIG LNP option can be set in the “Changing LNP Options” procedure in the *Eagle Database Administration Manual - LNP*.

Procedure

1. Display the status of the LNP SMS feature by entering the **rtrv-ctrl-feat** command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 21:15:37 GMT EAGLE5 33.0.0
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	----
G-PORT CIR ROUTE PREVENT	893007001	on	----

```
The following features have been temporarily enabled:
```

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

```
The following features have expired temporary keys:
```

Feature Name	Partnum
Zero entries found.	

If the **rtrv-ctrl-feat** output shows that the LNP SMS feature is permanently enabled, and its status is **on**, no further action is necessary.

If the LNP SMS feature is permanently enabled, and its status is **off**, skip steps 2 and 3, and go to step 4.

If the LNP SMS 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 SMS 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 SMS 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 telephone quantity is 12 million numbers or less, refer to the “Activating the LNP Feature Overview” section on page 6 to enable the LNP feature with the telephone number quantity greater than 12 million numbers.

NOTE: If the output from step 1 shows that the LNP SMS 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, go to the “Adding an LNP Service” procedure in the *Eagle Database Administration Manual - LNP* and turn the Wireless Number Portability feature on, and add the WNP service to the database.

-
3. Enable the LNP SMS 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 SMS 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 05-02-01 21:15:37 GMT EAGLE5 33.0.0  
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

-
4. The LNP SMS 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 05-02-01 21:15:37 GMT EAGLE5 33.0.0  
CHG-CTRL-FEAT: MASP B - COMPLTD
```

5. Verify the changes by entering the **rtrv-ctrl-feat** command with the LNP SMS feature part number. For this example, enter this command.

```
rtrv-ctrl-feat:partnum=893006601
```

The following is an example of the possible output.

```
rlghncxa03w 05-02-01 21:15:37 GMT EAGLE5 33.0.0
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.

Procedure

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 05-02-01 21:17:37 GMT EAGLE5 33.0.0
The following features have expired temporary keys:
Feature Name          Part Num
LNP Short Message Service 893006601
```

2. Clear the system 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 05-02-01 21:16:37 GMT EAGLE5 33.0.0
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 05-02-01 21:16:37 GMT EAGLE5 33.0.0
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 SMS Feature

This procedure is used to deactivate the LNP SMS feature, using the `chg-ctrl-feat` command.

The `chg-ctrl-feat` command uses the following parameters:

- `:partnum` – The part number of the LNP SMS feature.
- `:status=off` – used to deactivate the controlled feature.

The status of the LNP SMS feature must be `on` and is shown with the `rtrv-ctrl-feat` command.



CAUTION: If the LNP SMS feature is deactivated, the WSMSC LNP service cannot be used for local number portability.

Procedure

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 05-02-01 21:17:37 GMT EAGLE5 33.0.0
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       ----
G-PORT CIR ROUTE PREVENT 893007001 on       ----
```

The following features have been temporarily enabled:

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

The following features have expired temporary keys:

```
Feature Name           Partnum
Zero entries found.
```

2. Deactivate the LNP SMS 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 05-02-01 21:16:37 GMT EAGLE5 33.0.0
CHG-CTRL-FEAT: MASP A - COMPLTD
```

LNP Feature Activation Guide

3. Verify that the LNP SMS feature has been deactivated by using the **rtrv-ctrl-feat:partnum=893006601** command. The following is an example of the possible output.

```
rlghncxa03w 05-02-01 21:16:37 GMT EAGLE5 33.0.0
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.
```

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