

Tekelec Signaling Products Database Administration Manual - System Management

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Tekelec *Signaling Products*

Database Administration Manual - System Management

**910-4305 Revision J
June 2004**



TEKELEC

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6,327,350 6,662,017 6,456,845 6,647,113 5,953,404 6,606,379 6,167,129 6,324,183 6,639,981 5,008,929

Ordering Information

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

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Overview

The *Database Administration Manual – System Management* describes the procedures necessary for database administration personnel or translations personnel to manage the system's database and GPLs, and to configure basic system requirements such as user names and passwords, system-wide security requirements, and terminal configurations.

NOTE: Database administration privileges are password restricted. Only those persons with access to the command class "Database Administration" can execute the administrative functions. Other command classes and the commands allowed by those classes are listed in the *Commands Manual*.

Manual Organization

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

This document is organized into these sections:

Chapter 1, "Introduction," contains general information about the database and the organization of this manual.

Chapter 2, "Database Management Procedures," describes the different options for managing the database, such as backing up data and copying database tables from one disk to another, and provides procedures for tasks associated with database applications.

Chapter 3, "GPL Management Procedures," describes the procedures used for managing the system data (GPLs) on the system.

Chapter 4, "System Administration Procedures," describes the procedures used to administer the system wide security requirements, user names and passwords, the system date and time, terminal configurations, shelves, SS7 LIM cards, and configuration information for the Measurements Platform feature.

Appendix A, "EOAP Provisioning Procedures," describes initial implementation of the Embedded Operations System Support Applications Processor (EOAP) and the configuration of the Eagle STP to support either the EOAP or the Texas Micro OAP.

Appendix B, "Controlled Feature Activation Procedures," describes the procedures necessary to activate and deactivate the controlled features (features that require a feature access key to be activated) contained in this manual.

Related Publications

The *Database Administration Manual – System Management* is part of the Eagle documentation set and may reference related manuals of this set. The documentation set includes the following manuals:

- The *Commands Manual* contains procedures for logging into or out of an Eagle STP or IP⁷ Secure Gateway system, a general description of the terminals, printers, the disk drive used on the system, and a description of all the commands used in the system. The *Commands Manual* also contains the *Commands Pocket Guide* and the *Commands Quick Reference*.
- The *Commands Error Recovery Manual* contains the procedures to resolve error message conditions generated by the commands in the *Commands Manual*. These error messages are presented in numerical order.
- The *Database Administration Manual – Features* contains procedural information required to configure an Eagle STP or IP⁷ Secure Gateway system to implement these features:
 - X.25 Gateway
 - STP LAN
 - Database Transport Access
 - GSM MAP Screening
 - Eagle Support for Integrated Sentinel
- The *Database Administration Manual - Gateway Screening* contains a description of the Gateway Screening (GWS) feature and the procedures necessary to configure an Eagle STP or IP⁷ Secure Gateway system to support this feature.
- The *Database Administration Manual – Global Title Translation* contains procedural information required to configure an Eagle STP or IP⁷ Secure Gateway system to implement these features:
 - Global Title Translation
 - Enhanced Global Title Translation
 - Variable Length Global Title Translation
 - Interim Global Title Modification
 - Intermediate GTT Load Sharing
- The *Database Administration Manual – IP⁷ Secure Gateway* contains procedural information required to configure the system to implement the SS7-IP Gateway.
- The *Database Administration Manual – LNP* contains procedural information required to configure an Eagle STP system or an IP⁷ Secure Gateway system to implement the local number portability (LNP) feature.

- The *Database Administration Manual – SEAS* contains the procedures that can be performed from the Signaling Engineering and Administration Center (SEAC) or a Signaling Network Control Center (SNCC) to configure the Eagle. These procedures contain a brief description of the procedure, a reference to the procedure in either the *Database Administration Manual – SS7*, *Database Administration Manual – Global Title Translation*, or *Database Administration Manual – Gateway Screening* that contains more information on that procedure, and a flowchart showing the order that the tasks must be performed.
- The *Database Administration Manual – SS7* contains procedural information required to configure an Eagle STP system or an IP⁷ Secure Gateway system to implement the SS7 protocol.
- The *Dimensioning Guide for EPAP Advanced DB Features* is used to provide EPAP planning and dimensioning information. This manual is used by Tekelec personnel and Eagle customers to aid in the sale, planning, implementation, deployment, and upgrade of EAGLE 5 SAS systems.
- 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 *EPAP Administration Manual* describes how to administer to the Eagle Provisioning Application Processor on the MPS/EPAP platform. The manual defines the methods for accessing the user 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 messages, alarms, and status.
- The *Feature Manual - EIR* provides details of the feature providing network operators with the capability to prevent stolen or disallowed GSM mobile handsets from accessing the network. This manual gives the instructions and information on how to install, use, and maintain the EIR feature on the Multi-Purpose Server (MPS) platform of the Eagle System.
- The *Feature Manual - G-Flex C7 Relay* provides an overview of a feature supporting the efficient management of Home Location Registers in various networks. This manual gives the instructions and information on how to install, use, and maintain the G-Flex feature on the Multi-Purpose Server (MPS) platform of the Eagle System.
- The *Feature Manual - G-Port* provides an overview of a feature providing the capability for mobile subscribers to change the GSM subscription network within a portability cluster while retaining their original MSISDNs. This manual gives the instructions and information on how to install, use, and maintain the G-Port feature on the Multi-Purpose Server (MPS) platform of the Eagle System.

Introduction

- The *Feature Manual - INP* provides information and instructions on how to implement, utilize, and maintain the INAP-based Number Portability (INP) feature on the Multi-Purpose Server (MPS) platform of the Eagle System.
- The *FTP-Based Table Retrieve Application (FTRA) User Guide* describes how to set up and use a PC to serve as the offline application for the Eagle FTP Retrieve and Replace feature.
- The *LNP Database Synchronization Manual - LSMS 6.0/Eagle* describes how to keep the LNP databases at a release 6.0 LSMS and a network element (the Eagle is a network element) synchronized through the use of resynchronization, audits and reconciles, and bulk loads.

NOTE: LNP Database Synchronization Manuals for LSMS release 5.0 and 4.0 can be ordered separately. Contact your sales representative for part number information.

- The *LNP Feature Activation Guide* contains procedural information required to configure the system for the LNP feature using telephone number quantities from 24 million to 96 million telephone numbers.
- The *Maintenance Manual* contains procedural information required for maintaining the Eagle STP system, the IP⁷ Secure Gateway system. The *Maintenance Manual* provides preventive and corrective maintenance procedures used in maintaining the different systems.
- The *Eagle STP with TekServer IAS MPS Platform Software and Maintenance Manual* describes the TekServer core platform features and the MPS customization features that make up the Multi-Purpose Server (MPS) platform software. This manual also describes how to perform preventive and corrective maintenance for the MPS.
- The *Signaling Products Hardware Manual* contains hardware descriptions and specifications of Tekelec's Network Systems Division (NSD) products. These include the Eagle STP system, the IP⁷ Secure Gateway (SG) system, and OEM-based products which include the ASi 4000 Service Control Point (SCP), and the Integrated Sentinel with Extended Services Platform (ESP) subassembly.

The *Signaling Products Hardware Manual* provides an overview of each system and its subsystems, details of standard and optional hardware components in each system, and basic site engineering. Refer to this manual to obtain a basic understanding of each type of system and its related hardware, to locate detailed information about hardware components used in a particular release, and to help configure a site for use with the system hardware.

- The *NSD Installation Manual* contains cabling requirements, schematics, and procedures for installing the Eagle systems along with LEDs, Connectors, Cables, and Power Cords to Peripherals. Refer to this manual to install components or the complete systems.

- The *Signaling Products Integrated Applications Installation Manual* provides the installation information on Frame Floors and Shelves for Integrated Applications Products such as MPS EPAP 4.0, ASi 4000 SCP, and VXi Media Gateway Controller, Integrated and Non-Integrated Sentinel, LEDs, Connectors, Cables, and Power Cords to Peripherals. Refer to this manual to install components or the complete systems.
- The *TekServer Services Platform Hardware Manual* provides general specifications and a description of the TekServer. This manual also includes site preparation, environmental and other requirements, procedures to physically install the TekServer, and troubleshooting and repair of Field Replacable Units (FRUs).
- The *Provisioning Database Interface Manual* defines the programming interface that populates the Provisioning Database (PDB) for the Eagle features supported on the MPS/EPAP platform. The manual defines the provisioning messages, usage rules, and informational and error messages of the interface. The customer uses the PDBI interface information to write his own client application to communicate with the MPS/EPAP platform.
- The *Release Documentation* contains the following documents for a specific release of the system:

Release Notice - Describes the changes made to the system during the lifecycle of a release. The initial Release Notice includes Generic Program Loads (GPLs) only. The final Release Notice provides a list of PRs resolved in a build and all known PRs.

NOTE: The *Release Notice* is maintained solely on Tekelec's Customer Support Website to provide you with instant access to the most up-to-date release information.

Feature Notice - Describes the features contained in the specified release. Also provides the hardware baseline for the specified release, describes the customer documentation set, provides information about customer training, and explains how to access the Customer Service website.

Technical Bulletins - Contains a compilation of updates to methods or procedures used to maintain the system (if applicable).

System Overview - Provides high-level information on SS7, the IP⁷ Secure Gateway, system architecture, LNP, and EOAP.

Master Glossary - Contains an alphabetical listing of terms, acronyms, and abbreviations relevant to the system.

Cross-Reference Index - Lists all first-level headings used throughout the documentation set.

- *Previously Released Features* - The Previously Released Features Manual briefly describes the features of previous Eagle and IP⁷ Secure Gateway releases, and it identifies the release number of their introduction.

Documentation Packaging and Updates




Customer documentation is updated whenever significant changes that affect system operation or configuration are made.

The document part number is shown on the title page along with the current revision of the document, the date of publication, and, if applicable, the software release that the document covers. The bottom of each page contains the document part number and the date of publication.

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.

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

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.

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

- Tekelec, UK

Phone (within the UK) 07071232453
(outside the UK) +44 7071232453 or +44 1784437067.

- 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 (see Bellcore Generic Requirements, GR-929-CORE, Reliability and Quality Measurements for Telecommunications Systems (RQMS)). 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.

Maintenance and Administration Subsystem

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

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

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

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

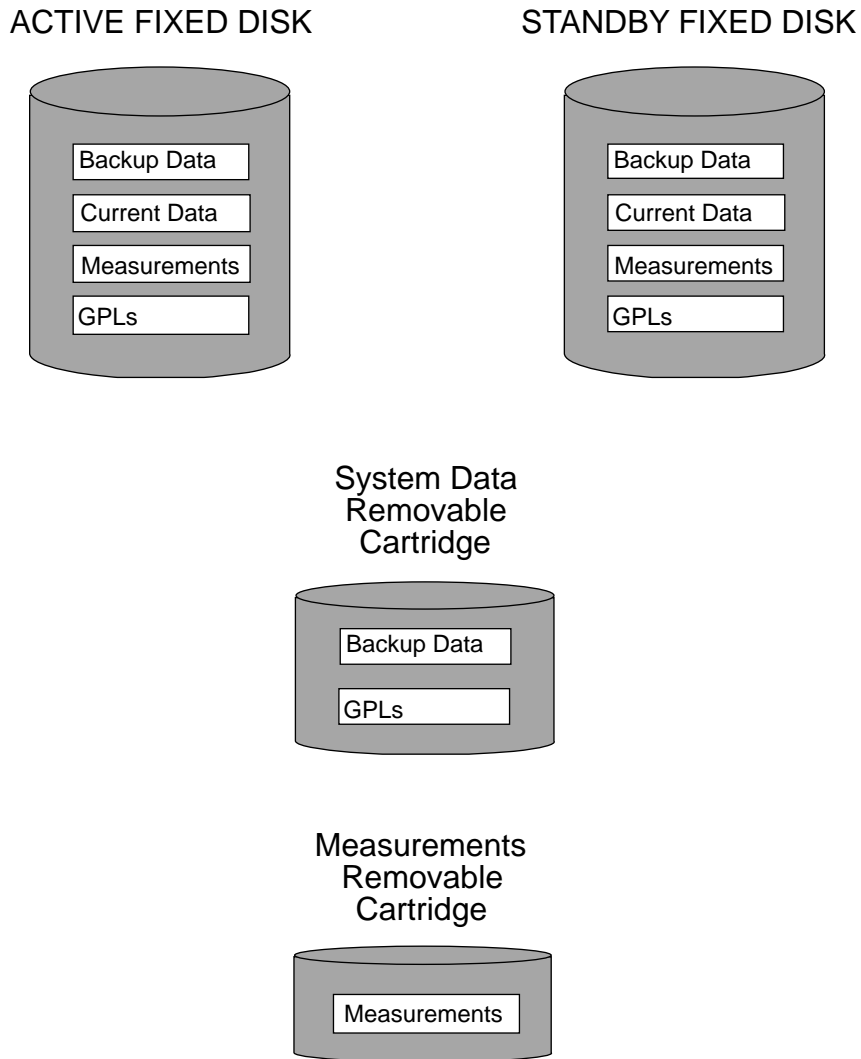
The procedures in the *Database Administration Manual – System Management* refer to the terms MASP and MDAL. The database commands, such as **rept-stat-db**, refer to the MASP because the MASP controls the input to the TDM and MDAL, and output from the TDM and MDAL. The MDAL is only referred to when inserting or removing the removable cartridge because the removable cartridge drive resides on the MDAL.

For more information on these cards, go to the *Installation Manual*.

Database Partitions

The data that the Eagle uses to perform its functions are stored in two separate areas: the fixed disk drives, and the removable cartridge. The Fixed Disk Drive section on page 1-11 and the Removable Cartridge section on page 1-12 describe these areas and data that is stored on them. These areas and their partitions are shown in Figure 1-1.

Figure 1-1. Database Partitions



Fixed Disk Drive

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

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

- Current partition
- Backup partition
- Measurements partition
- Generic program loads (GPLs) partition

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

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

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

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

Removable Cartridge

A removable cartridge is used for two purposes.

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

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

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

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

Additional and preformatted removable cartridges are available from Tekelec Technical Services.

List of Acronyms and Abbreviations

ACG	Automatic Call Gapping
ACM	Application Communications Module
ACM-ENET	Applications Communications Module with the Ethernet interface
ACT.....	Activate
ACTV	Active
AFTPC	Affected Point Code
AINF	Application Interface Appliquè
ALIASA.....	ANSI Alias Point Code
ALIASI.....	ITU International Alias Point Code
ALIASN.....	ITU National Alias Point Code
ALM.....	Alarm
ANSI	American National Standards Institute
APC.....	Adjacent Point Code
APCA.....	ANSI Adjacent Point Code
APCI	ITU International Adjacent Point Code
APCN	ITU National Adjacent Point Code
API	Application Programming Interface
APPL.....	Application
ARP	Address Resolution Protocol
AST	Associated State for Maintenance
ATM.....	Asynchronous Transfer Mode
ATMANSI.....	The application software for the ATM (high-speed) SS7 signaling links
ATMTSEL	ATM timing selector
BEI.....	Broadcast Exception Indicator
BIP	Board ID PROM
BPDCM	Application software for flash memory management on the DCM card
BPHCAP.....	Application software used by the application processor and the IMT processor of the LIMATM

BPS	Bits per Second or Bytes per Second
BSN	Backward Sequence Number
C	Continue
CANC	Cancel
CAP	Capacity
CCS	Common Channel Signaling
CCS7ITU.....	Application software for ITU SS7 signaling links
CDPA	Called Party Address
CGPA	Calling Party Address
CHG	Change
CLLI	Common Language Location Identifier
Cmd Rej.....	Command Rejected
CNCF	Calling Name Conversion Facility
COO	Changeover Order Message
CPC	Capability Point Code
CPCA	ANSI Capability Point Code
CPCI.....	ITU International Capability Point Code
CPCN.....	ITU National Capability Point Code
CPCTYPE	Capability Point Code Type
CRMD.....	Cluster Routing and Management Diversity
DACT.....	Deactivate
DB.....	Database
DBG.....	Debug
DCE.....	Data Communication Equipment
DCM	Database Communication Module
DESTFLD	Allowed Affected Destination Field
DLK.....	Data Link
DLT.....	Delete
DPC.....	Destination Point Code
DPCA.....	ANSI Destination Point Code
DPCI.....	ITU International Destination Point Code

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DPCN	ITU National Destination Point Code
DS0A.....	Digital Signal Level - 0
DTA.....	Database Transport Access
DTE	Data Terminal Equipment
E1.....	European equivalent of the North American 1.544 Mbps T1 (Trunk Level 1) except that E1 carries information at 2.048 Mbps.
ECM.....	Error Correction Method
EIR.....	Equipment Identity Register
ELEI	Exception List Exclusion Indicator
EMAP	EAGLE Measurements Application Processor
EMDC	Element Measurement and Data Collection
EMS.....	Element Management System
ENT.....	Enter
FC	Flow control
FE	Far End
FIB.....	Forward Indicator Bit
FISU	Fill In Signal Unit
FPC.....	Provisioned full point code entry
FPCA	Full Point Code entry
FTA	File Transfer Area
FTP	File Transfer Protocol
Gbyte	Gigabyte
GLS	Gateway Loading Services – Application software for the gateway screening loading services
GN.....	Generic Name parameter of an ISUP Initial Address Message (IAM)
GPL	Generic Program Load
GPSM.....	General Purpose Service Module
GTT	Global Title Translation
GWS.....	Gateway Screening
GWSA.....	Gateway Screening Application
GWSD.....	Gateway Screening Message Discard

GWSM	Gateway Screening Mode
H0	H0 heading code in the service information octet
H1	H1 heading code in the service information octet
I/O	Input/Output
IAM	Initial Address Message
ICMP	Internet Control Message Protocol
ID	Identity
IMT	Interprocessor Message Transport
INH	Inhibit
INIT	Initialize
IP	Internet Protocol
IPLIM	Application software for TCP/IP point-to-point connectivity for ANSI networks
IPLIMI	Application software for TCP/IP point-to-point connectivity for ITU networks
IPLIMx	IPLIM and IPLIMI
IS-NR	In Service - Normal
ISUP	ISDN User Part
ITU	International Telecommunications Union
ITU-I	ITU International
ITU-N	ITU National
ITU-TSS	International Telecommunications Union - Telecommunications Standardized Sector
LAN	Local Area Network
LBP	Loop Back Point
LC	Logical Channel
LCD	Loss of Cell Delineation
LC2NM	Logical Channel to Network Management
LED	Light Emitting Diode
LFS	Link Fault Sectionalization
LIM	Link Interface Module
LIMATM	LIM used with ATM (high-speed) signaling links
LIMDS0	LIM with a DS0A interface

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LIMOCU	LIM with a OCU interface
LIMV35.....	LIM with a V.35 interface
LLT	Latching LFS Test
LOC.....	Location
LNP	Local Number Portability
LNPBAS	LNP Basic command class
LNPDB	LNP Database Administration command class
LNPSUB	LNP Subscription command class
LPSET	ATM (high-speed) signaling link parameter set identifier
LS.....	Linkset
LSMS.....	Local Service Management System
LSN	Linkset Name
LST	Linkset Type
MAP	Mated Application
MAS	Maintenance and Administration Subsystem
MASP.....	Maintenance and Administration Subsystem Processor
Mbyte.....	Megabyte
MCP	The application software for the Measurements Platform feature
MCPM	Measurement Collection & Polling Module
MDAL.....	Maintenance Disk and Alarm Card
MSAR	Memory Space Accounting Report
MSU	Message Signaling Unit
MTP	Message Transfer Part
NE	Near End
NCPC.....	New Capability Point Code
NCPCA.....	New ANSI Capability Point Code
NCPCI	New ITU International Capability Point Code
NCPCN	New ITU National Capability Point Code
NEI	Network Element Interface
NLT	Non-latching LFS Test

NMA	Telcordia Network Monitoring and Analysis Operations Support System
OAP.....	Operations System Support/ Applications Processor
OCU	Office Channel Unit
OOS.....	Out of Service
OOS-MT-DSBLD	Out of Service - Maintenance Disabled
OPC.....	Originating Point Code
PC	Point Code
PCA.....	ANSI Point Code
PCI.....	ITU International Point Code
PCN.....	ITU National Point Code
PCR	Preventive Cyclic Retransmission
PDU.....	Protocol Data Unit
PID	Password ID
PIP	Party Information Parameter parameter of an ISUP Initial Address Message (IAM)
PRTY.....	Parity
PST	Primary State for Maintenance
PVC	Permanent Virtual Circuit
RCx.....	Signaling-Route-Set-Test for either a prohibited or restricted cluster network management message
REPT-STAT	Report Status
RLE.....	Remote Link Element
RLI.....	Remote Link Interface
RMV	Remove
RSP	Signaling-Route-Set-Test Signal for a prohibited destination network management message
RSR.....	Signaling-Route-Set-Test Signal for a restricted destination network management message
RST	Restore
RSx	Signaling-Route-Set-Test Signal for either a restricted destination or prohibited destination network management message
RTRV	Retrieve

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SCCP	Signaling Connection Control Part – Application software for the global title translation (GTT) feature
SCMG	SCCP Management
SCRN	Screen Set Name
SCRSET	Screen Set
SEAC.....	Signaling Engineering and Administration Center
SIE	Status Indication Emergency Alignment
SIN	Status Indication Normal Alignment
SIO	Status Indication Out of Alignment or Service Information Octet
SIOS	Status Indication Out of Service
SLC.....	Signaling Link Code
SLK.....	Signaling Link
SLS	Signaling Link Selector
SLSCI	5- to 8-bit SLS Conversion Indicator
SLSCNV	SLS Conversion
SLTC.....	Signaling Link Test Control
SNCC	Signaling Network Control Center
SS7.....	Signaling System #7
SS7 ADDR.....	The dummy X.25 address assigned to the SS7 destination entity on the SS7 side of the circuit
SS7 DPC.....	SS7 Destination Point Code
SS7ANSI.....	The application software for the ANSI SS7 signaling links
SS7GX25	The application software for the X.25/SS7 gateway feature
SSA.....	Subsystem Allowed network management message
SSCF	Service Specific Coordination Function
SSCOP	Service Specific Coordination Oriented Protocol
SSN.....	SS7 Subsystem Number
SSP	Subsystem Prohibited network management message
SST	Secondary State for Maintenance
SST	Subsystem Status Test network management message

STDBY.....	Standby
STP	Signal Transfer Point
STP LAN	Feature that copies MSUs selected through the gateway screening process and sends these MSUs over the Ethernet to an external host computer for further processing
STPLAN	Application software for the STP LAN feature
SUERM.....	Signal Unit Error Rate Monitor
T1.....	Trunk Level 1
TCA.....	Transfer Cluster Allowed network management message
TCAP	Transaction Capability Application Part
TCP.....	Transmission Control Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol
TCR.....	Transfer Cluster Restricted network management message
TCx.....	Either a Transfer Cluster Allowed, Transfer Cluster Restricted, or Transfer Cluster Prohibited network management message
TDM.....	Terminal Disk Module
TFA.....	Transfer Allowed network management message
TFC.....	Transfer Controlled network management message
TFATCABMLQ.....	TFA/TCA broadcast minimum link quantity
TFATFRPR.....	TFA/TFR pacing rate
TFP	Transfer Prohibited network management message
TFR.....	Transfer Restricted network management message
TFx.....	Either a Transfer Allowed, Transfer Controlled, Transfer Restricted, or Transfer Prohibited network management message
TLNP.....	Triggerless LNP
TPC.....	True Point Code
TRA.....	Traffic Restart Allowed
TRM	Terminal
TRW	Traffic Restart Waiting
TSET.....	Transmitter Signaling Element Timing

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TSM.....	Translation Services Module
TT	Translation Type
TVG.....	Group Ticket Voucher feature
UAM	Unsolicited Alarm Message
UDTS	Unit Data Transfer Service
UID.....	User ID
UIM.....	Unsolicited Information Message
UIMRD	UIM Redirect
UNHB.....	Uninhibit
VCI.....	Virtual Channel Identifier
VPI	Virtual Path Identifier
WNP	Wireless Number Portability
X25 ADDR	The X.25 network address of the X.25 destination entity or the SS7 node.
X-list.....	Exception list of non-provisioned members of provisioned cluster.

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Introduction

This chapter contains procedures for creating database backups or backups of the system data, and restoring the database or system data. The term “database” refers to all data that can be administered by the user including shelves, cards, links, routes, global title translation tables, and gateway screening tables. The term “system data” refers to data that cannot be administered by the user including maintenance software and generic program loads (GPLs).

These procedures are to be used as they are presented in this chapter. If these procedures are not followed, and a system or database backup (or restore) is attempted, a system failure could result.

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

The database management procedures are used to perform these functions:

- Verifying the database
- Backing up the database
 - on the fixed disk
 - to the removable cartridge
- Restoring the database
 - from the backup partition of the fixed disk
 - from the removable cartridge
- Repairing the database
- Copying the database from the active to the standby fixed disk
- Backing up system data to the removable cartridge
- Restoring system data from a removable cartridge
- Formatting a removable cartridge
- Formatting the fixed disk of the standby TDM

The procedures in this chapter refer to the Maintenance and Administration Subsystem Processor (MASP), Terminal Disk Module (TDM) and the Maintenance Disk and Alarm Card (MDAL).

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

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

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

The TDM is associated with a specific GPSM-II card. For example, the TDM in location 1114 is associated with the GPSM-II in location 1113 and the combination of these two cards is designated as MASP A. The TDM in location 1116 is associated with the GPSM-II in location 1115 and the combination of these two cards designated as MASP B. When MASP A is active, the GPSM-II in location 1113 and TDM in location 1114 are active. When MASP A is standby, the GPSM-II in location 1113 and TDM in location 1114 are standby. One MASP is always active and the other MASP is always standby.

To determine which MASP is active, enter the **rept-stat-db** command, the **rept-stat-card** command, or examine the LEDs on both TDMs or the MDAL card.

The output of the **rept-stat-db** command shows which MASP is active with the indicator (**ACTV**) following the TDM card location. The indicator (**STDBY**) following the TDM card location shows which MASP is standby.

The output of the **rept-stat-card** command shows which MASP is active with the entry **ACTIVE** in the **SST** field for the GPSM-II card. The entry **STANDBY** in the **SST** field for the GPSM-II card shows which MASP is standby.

If the LED on the TDM is green, the associated MASP is active. If the LED on the TDM is toggling from green to amber, the associated MASP is standby.

The MDAL card has two LEDs that also show the status of each MASP. These LEDs are labeled MASP A and MASP B and the LED that is green shows which MASP is active.

The database commands, such as **rept-stat-db**, refer to the TDM because the TDM contains the fixed disk drive for the MASP. The MDAL is only referred to when inserting or removing the removable cartridge because the removable cartridge drive resides on the MDAL.

Removable Cartridge

Some of these procedures are used with a removable cartridge. When the removable cartridge is not being used, it should be write protected and stored in a secure place. The database on the removable cartridge can be used to restore the database in the event of a catastrophe, or to retrieve a particular database configuration.

The removable cartridge used with these procedures must be formatted for either system data or measurements data. The system provides the user the ability to format a removable cartridge for either of these purposes. A removable cartridge can be formatted on the system by using the **format-disk** command. More information on the **format-disk** command can be found in the *Commands Manual*. To format a removable cartridge, go to the "Formatting a Removable Cartridge" procedure on page 2-80.

Additional and preformatted removable cartridges are available from Tekelec Technical Services. See "Tekelec Technical Services" on page 1-7.

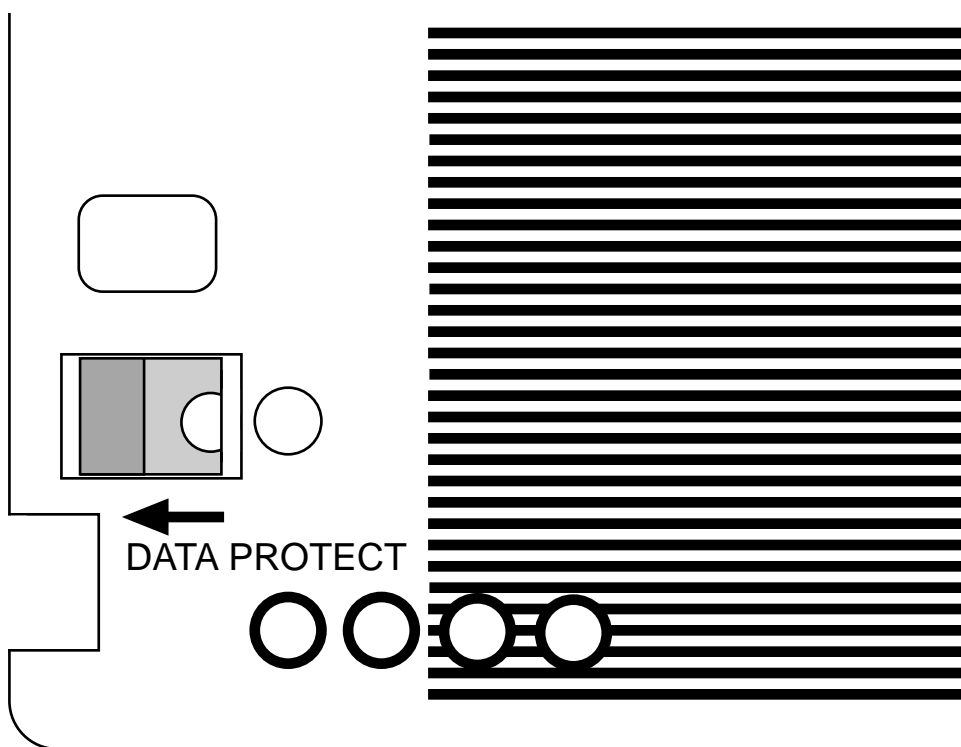
Procedures that use the removable cartridge require that the removable cartridge be either write protected or write enabled. When the cartridge is write protected, no data can be written to the cartridge, nor can the cartridge be formatted. The data can only be read from the cartridge. When the cartridge is write enabled, data can be written to the cartridge, data can be read from the cartridge, and the cartridge can be formatted and any data on the cartridge will be lost.

This section contains the procedures for handling removable cartridges. In addition to procedures for write protecting and write enabling the removable cartridge, this section also contains procedures for inserting the removable cartridge into the removable cartridge drive and removing the removable cartridge from the removable cartridge drive.

Write Protecting the Removable Cartridge

The write protecting mechanism of the removable cartridge is a tab located in the lower left corner of the cartridge. Under the tab is an arrow pointing toward the left edge of the cartridge and the words "DATA PROTECT" are under the arrow. To write protect the removable cartridge, slide the tab to the left, the direction of the arrow, until it snaps into place. The hole to the right of the tab should be clear and open. See Figure 2-1.

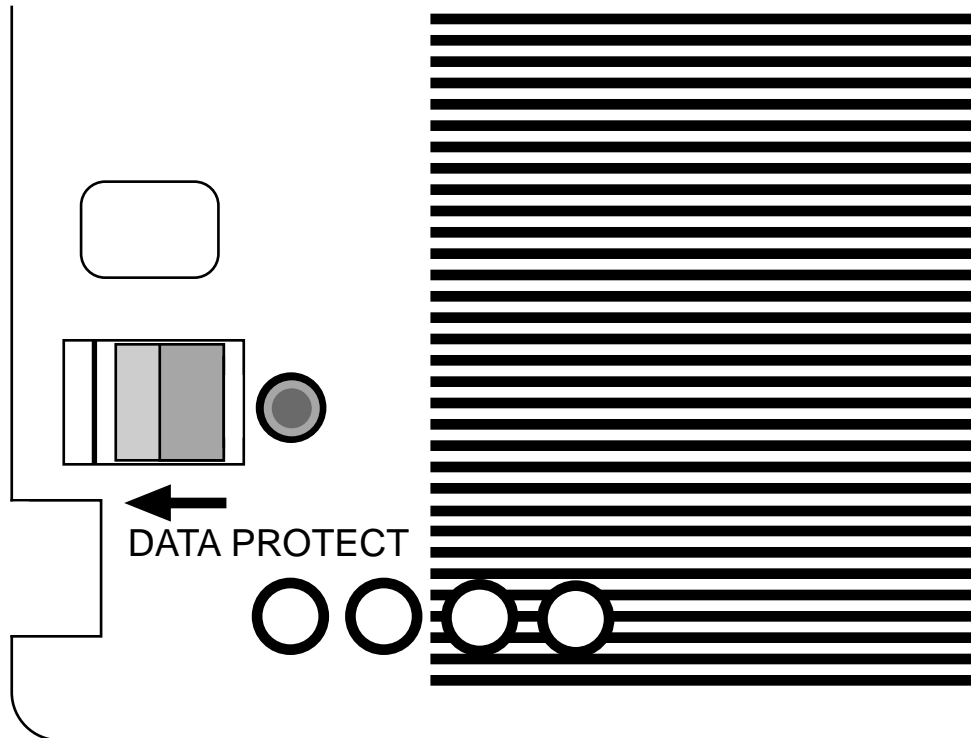
Figure 2-1. Write Protected Removable Cartridge



Write Enabling the Removable Cartridge

To write enable the removable cartridge, slide the tab to the right, the opposite direction of the arrow, until it snaps into place. The hole to the right of the tab should be filled with a red dot. See Figure 2-2.

Figure 2-2. Write Enabled Removable Cartridge

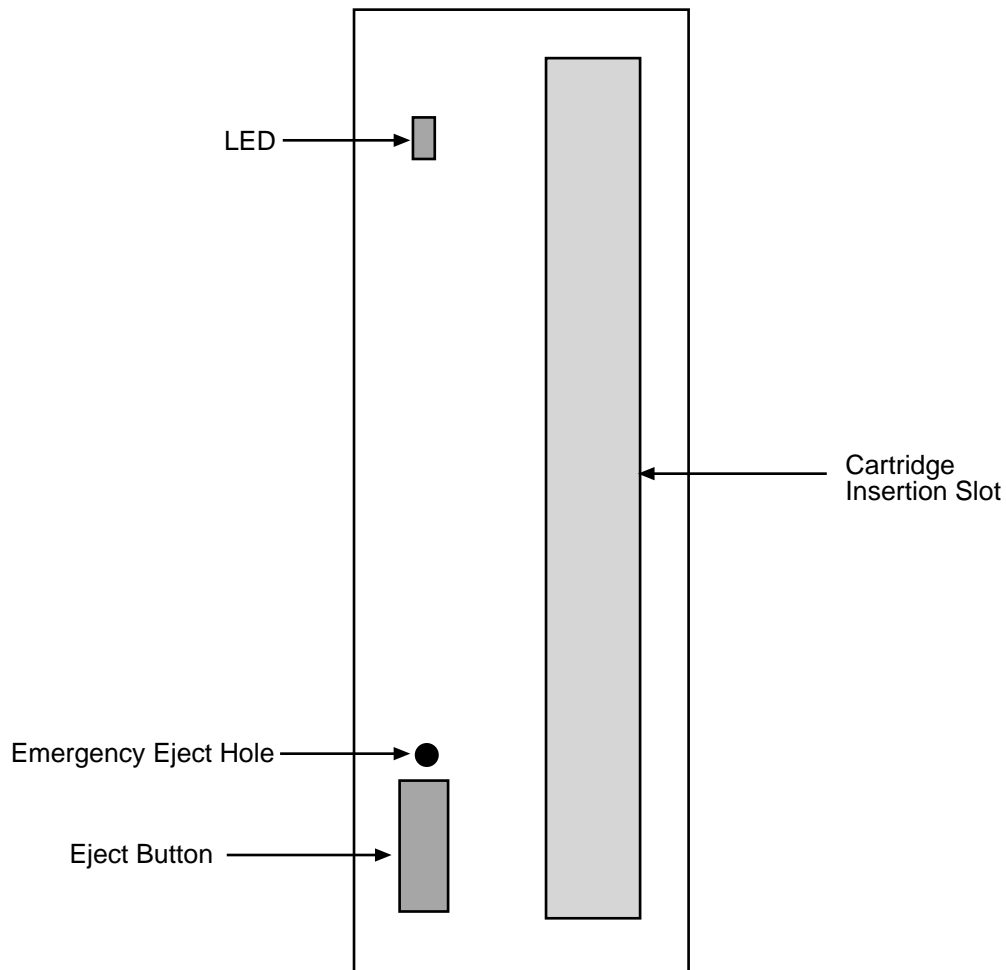


Inserting the Removable Cartridge

The removable cartridge is a two sided cartridge with each side designated as side A and side B. The removable cartridge drive can only access one side of the cartridge at a time, which side is accessed depends on how the cartridge is inserted into the removable cartridge drive. The side indicator is located on the shutter on each side of the removable cartridge.

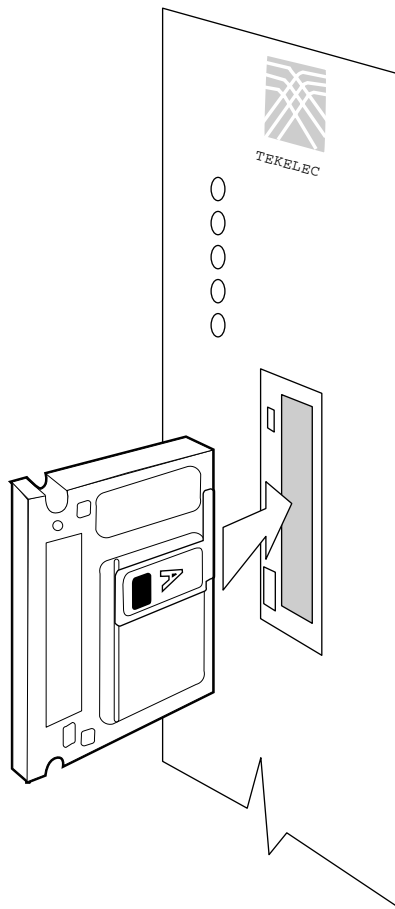
Figure 2-3 shows the layout of the removable cartridge drive.

Figure 2-3. Removable Cartridge Drive Layout



To insert the removable cartridge to access side A, insert the removable cartridge into the cartridge insertion slot of the drive with the indicator for side A on the shutter facing to the right side of the drive and away from the side with the LED and the eject button, as shown in Figure 2-4.

Figure 2-4. Inserting the Removable Cartridge to Use Side A



To insert the removable cartridge to access side B, insert the removable cartridge into the cartridge insertion slot of the drive with the indicator for side A on the shutter facing to the left side of the drive and toward the side with the LED and the eject button.

When the removable cartridge is inserted into the removable cartridge drive, the LED is yellow while the cartridge is spinning up. When the cartridge is finished spinning up and ready to use, the LED is green.

Removing the Removable Cartridge

To remove the removable cartridge from the removable cartridge drive, the LED should be green. If the LED is yellow, the drive is being accessed by the system and the cartridge cannot be removed from the drive. Wait until the LED is green before attempting to remove the cartridge from the drive. When the LED is green, push the eject button on the removable cartridge drive. While the cartridge is being ejected from the drive, the LED is yellow. The LED is off when the cartridge is fully ejected from the drive. The cartridge can then be removed from the drive.

Verifying the Database

Verifying the database means to check the operational status of the database. The `rept-stat-db` command is used to check the operational status of the database. The `rept-stat-db` command has three optional parameters that can be used with it, `display`, `loc`, and `db`.

The `display` parameter can use four values: `brief` (the default value), `except`, `all`, and `version`. The value for the `loc` parameter is the card location of the card, based on the GPL assigned to the card, whose database you wish to verify. These card locations are shown in the *Installation Manual*. The `db` parameter specifies which database to display: `stp` (the Eagle databases), `mpps` (the MPS databases) and `all` (both STP and MPS databases).

The operational status of the database is shown by the indicator C. This indicator shows whether the database is coherent. Coherency is an indication of whether the update to the database was successful. Each database has a coherency indicator. When an update is attempted, the coherency indicator is set to "incoherent" before the actual update is executed. When the update has been successfully completed, the coherency indicator is changed to coherent. If the update is not successful, the coherency indicator is not changed. If the coherency indicator is incoherent, this could be an indication of possible internal coherency problems when a restart is executed (for example, an index table was updated, but the corresponding data storage table was not modified).

REPT-STAT-DB Output Fields

The outputs of the `rept-stat-db` command contains these fields. There are fields that are displayed only when specific parameters are specified. Some of these fields are displayed only when certain features are on. The conditions under which these fields are displayed are noted in the description of the fields.

Database Status: – an indication of any database alarms on the MASPs.

>> OK<< – there are no database alarms

>> NOT OK<< – database alarms are present

This indicator is not used with the `loc` parameter output.

(ACTV) – The specified MASP is the active processor. This is not used with the `loc` parameter output.

(STDBY) – The specified MASP is the standby processor. This is not used with the `loc` parameter output.

(NOACCS) – The specified processor is not accessible. This is not used with the `loc` parameter output.

(OFF-LINE) – The specified TDM has been inhibited and may have been removed from the control shelf. This is not used with the `loc` parameter output.

C – an indicator of whether the database is coherent. A "Y" means that the database is coherent; an "N" means that the database is not coherent; a "-" means that the database is not accessible.

LEVEL – the number of updates made to the database partitions.

TIME LAST BACKUP – the date and time the last change was performed on the removable cartridge (if inserted) and the backup partition of the fixed disk. This field is not used with the **loc** parameter output. If a dash (-) is displayed in this field for the **FD BACKUP** or **RD BACKUP** partitions, then no backup has been created for that partition.

RD BKUP – Removable cartridge backup partition.

FD BKUP – Fixed disk backup partition.

FD CRNT – Fixed disk current partition. This field is not used with the **loc** parameter output.

DIFF CONTENTS – The specified database's contents are different when compared to the other database in that partition.

DIFF LEVEL – The specified database's level (other than the backup partition of the fixed disk – **FD BKUP**) does not match the level of the current partition of the active fixed disk (**FD CRNT**).

DIFF TIME – The specified database's level matches the level of the current partition of the active fixed disk (**FD CRNT**), but the time that the database was updated, when compared to the current partition of the active fixed disk (**FD CRNT**), is different. This occurs when the time/date stamp of the database being updated is corrupted.

CORRUPTED – The specified database is corrupted.

INCOHERENT – The specified database is incoherent.

OFF-LINE – The specified TDM is off-line and has been removed from the control shelf.

EXCEPTION – The condition of the specified database that the system has detected a problem with. These conditions are: **DIFF CONTENTS**, **DIFF LEVEL**, **DIFF TIME**, **CORRUPTED**, **INCOHERENT**, and **OFF-LINE**. A "-" indicates that the database was not accessible. A blank entry indicates that the database has no problems. A number in this field indicates the number of corrupted records that have been repaired on the specific DSM. The number value is displayed until the DSM is reset. This field is used with the **display=except**, **display=all**, and **loc** parameter outputs.

CARD/APPL – the card type or the application assigned to the card specified in the **LOC** field. This field is not used with the **display=brief** (default) parameter output.

- **TDM-BKUP** – Backup partition on the fixed disk on the TDM.
- **TDM-CRNT** – Current partition on the fixed disk on the TDM.
- **MDAL** – The maintenance disk and alarm card. This card contains the removable cartridge drive.

- **ATMANSI** – The **atmans**i application. This application is used for high-speed ATM signaling links.
- **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.
- **EMDC** – The application used by the DCM for the CMIP/OSI measurement collection interface as defined by Bellcore GR-376.
- **CCS7ITU** – The **ccs7itu** application. This application is used for CCS7ITU signaling links.
- **IPLIM** – The **iplim** application software for TCP/IP point-to-point ANSI connectivity.
- **IPLIMI** – The **iplimi** application software for TCP/IP point-to-point ITU connectivity.
- **GLS** – The **gls** application. This application is used for the gateway screening feature.
- **SCCP** – The **sccp** application. This application is used for the global title translation and LNP features.
- **VSCCP** – The **vsccp** application. This application is used for the global title translation, G-FLEX, INP, G-PORT , or if the ELAP Configuration or EIR features are enabled and activated.
- **SS7ANSI** – The **ss7ansi** application. This application is used for SS7 signaling links.
- **SS7IPGW** – The application software for TCP/IP point-to-multipoint connectivity within an ANSI network.
- **SS7GX25** – The **ss7gx25** application. This application is used for X.25 signaling links.
- **STPLAN** – The **stplan** application. This application is used by the ACM for the STP LAN feature.
- **VXWSLAN** – The **vxwslan** application. The application is used by the DCM for the STP LAN feature.

LOC – the card location of the database. This field is not used with the **display=brief** (default) parameter output.

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T – an indicator of whether the specified database is in transition. A “Y” means that the database is in transition; an “N” means that the database is not in transition. A database is in transition when the database for the Link Interface Module (LIM) or SCCP card is in the process of being loaded with the new screen set information after an update to the database, and the database has not reached the current reported database level. This field is not used with the **display=brief** (default) parameter output.

TIME LAST UPDATE – the date and time the last change was performed on the specified card and its associated database. This field is not used with the **display=brief** (default) parameter output.

VERSION – The version number of each database.

111-000-000 – The version number of the database. This number will be different for different software releases.

“-” – The database is not available.

This field is only used with the **display=version** parameter output.

STATUS – The operational status of the database version.

NORMAL – The database version is fully operational.

A blank entry indicates that the database is not available or is unknown. A numeric value indicates that the database is invalid. The value displayed is the status value found in the field and is for diagnostic purposes.

This field is only used with the **display=version** parameter output.

EPAP A (ACTV) – The active Eagle Provisioning Application Processor. This field is displayed only when either the G-FLEX, INP, or G-PORT features are on, or when the EIR is enabled and on. This field is not displayed with the **loc** parameter output.

EPAP B (STDBY) – The standby Eagle Provisioning Application Processor. This field is displayed only when either the G-FLEX, INP, or G-PORT features are on, or when the EIR is enabled and on. This field is not displayed with the **loc** parameter output.

ELAP A (ACTV) – The active Eagle LNP Application Processor. This field is displayed only when the ELAP Configuration feature is enabled and on. This field is not displayed with the **loc** parameter output.

ELAP B (STDBY) – The standby Eagle LNP Application Processor. This field is displayed only when the ELAP Configuration feature is enabled and on. This field is not displayed with the **loc** parameter output.

BIRTHDATE – The date and time of creation for the database. This field is displayed only when either the G-FLEX, INP, G-PORT or EIR features are enabled, or if the ELAP Configuration feature is enabled and on.

PDB – The provisioning database status information. This field is displayed only when either the G-FLEX, INP, or G-PORT features are on, or when the EIR is enabled and on. This field is not displayed with the `loc` parameter output.

RTDB – The provisioning database status information that was used to create the resident real-time database. The RTDB information may be different than the PDB information if the PDB has been reloaded, or if the RTDB has not been loaded from the PDB. If the RTDB birthdate is different than the PDB or if the level is too old to be able to resynchronize the databases, then a “Reload Required” alarm is generated. This field is displayed only when either the G-FLEX, INP, or G-PORT features are on, or when either the EIR or the ELAP Configuration features are enabled and on. This field is not displayed with the `loc` parameter output.

RTDB-EAGLE – The EPAP resident real-time database status information. This database is downloaded to DSM cards. If the birthdate or level do not match the DSM card, then the DSM card generates an alarm. The RTDB database is reloaded from the PDB, and the birthdate and level are reset and will not match the database status information. This database status mismatch condition indicates an abnormal condition that requires DSM cards to be reloaded. This field is displayed only when either the G-FLEX, INP, or G-PORT features are on, or when either the EIR or the ELAP Configuration features are enabled and on. This field is not displayed with the `loc` parameter output.

IN-SRVC – The amount of time, in days (d), hours (h), and minutes (m), that the DSM card has been running since it was brought into service. This field is displayed in the **EAGLE RTDB REPORT** section of the `rept-stat-db` output. This field is displayed only when either the G-FLEX, INP, or G-PORT features are on, or when either the EIR or the ELAP Configuration features are enabled and on. This field is not displayed with the `display=version` and `loc` parameter outputs.

For any databases that are not accessible, dashes are displayed in the output of the `rept-stat-db` command. Dashes are also displayed in the removable cartridge backup partition (**RD BACKUP**) if no system removable cartridge is in the removable cartridge drive, or if a measurements removable cartridge is in the removable cartridge drive.

REPT-STAT-DB Outputs

The following sections show the different outputs that the `rept-stat-db` command can generate depending on which parameters are specified with the `rept-stat-db` command.

- `display=brief` (the default value)
- `display=except`
- `display=all`
- `display=version`
- `loc`
- `db`

DISPLAY=BRIEF Parameter

The output of the `rept-stat-db` command with the `display=brief` parameter specified (the default parameter if no parameters are specified) contains the operational status of both MASP's and the removable cartridge drive on the MDAL card. This is an example of the output when the `display=brief` parameter is used or when no parameters are used.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C  LEVEL      TIME LAST BACKUP  C  LEVEL      TIME LAST BACKUP
      - - - - -
FD BKUP  Y          35 04-06-01 10:19:18 GMT  Y          35 04-06-01 10:19:18 GMT
FD CRNT  Y          106
MDAL 1117
      - - - - -
RD BKUP  Y          106 04-05-31 14:29:03 GMT
```

If either the G-FLEX, INP, or G-PORT features are on, or the EIR feature is enabled and on, the output of the **rept-stat-db** command also shows the status of the databases on EPAP A and EPAP B as shown in this example.

```

DATABASE STATUS: >> OK <<
          TDM 1114 ( STDBY )                TDM 1116 ( ACTV )
          C LEVEL      TIME LAST BACKUP    C LEVEL      TIME LAST BACKUP
          - - - - -
FD BKUP  Y          35 04-06-01 10:19:18 GMT  Y          35 04-06-01 10:19:18 GMT
FD CRNT  Y          106
          MDAL 1117
          - - - - -
RD BKUP  Y          106 04-06-01 14:29:03 GMT

          EPAP A ( ACTV )
          C BIRTHDATE          LEVEL      EXCEPTION
          - - - - -
PDB          04-06-01 10:19:18          10          -
RTDB         Y 04-06-01 10:19:18          10          -
RTDB-EAGLE   04-06-01 10:19:18          10          -

          EPAP B ( STDBY )
          C BIRTHDATE          LEVEL      EXCEPTION
          - - - - -
PDB          04-06-01 10:19:18          10          -
RTDB         Y 04-06-01 10:19:18          10          -
RTDB-EAGLE   04-06-01 10:19:18          10          -
    
```

If the ELAP Configuration feature is enabled and on, the output of the **rept-stat-db** command also shows the status of the databases on ELAP A and ELAP B as shown in this example.

```

DATABASE STATUS: >> OK <<
          TDM 1114 ( ACTV )                TDM 1116 ( STDBY )
          C LEVEL      TIME LAST BACKUP    C LEVEL      TIME LAST BACKUP
          - - - - -
FD BKUP  Y          11 04-06-01 08:20:13 GMT  Y          11 04-06-01 08:20:13 GMT
FD CRNT  Y          11
          MDAL 1117
          - - - - -
RD BKUP  Y          1 04-05-31 15:44:20 GMT

          ELAP A ( ACTV )
          C BIRTHDATE          LEVEL      EXCEPTION
          - - - - -
RTDB         Y 04-06-01 08:20:04          12345        -
RTDB-EAGLE   04-06-01 08:20:04          12345        -

          ELAP B ( STDBY )
          C BIRTHDATE          LEVEL      EXCEPTION
          - - - - -
RTDB         Y 04-06-01 08:20:04          12345        -
RTDB-EAGLE   04-06-01 08:20:04          12345        -
    
```

DISPLAY=EXCEPT Parameter

The output from the **display=except** parameter contains all the information displayed from the **display=brief** parameter along with the coherency indicator and the number of updates for all the cards whose database level does not match the active fixed disk current partition, reference database level, or is incoherent. All databases that are not accessible are also displayed. The time stamp for the last database update for every card is displayed. This is an example of the output when the **display=except** parameter is used.

```
rlghncxa03w 04-06-01 08:28:59 GMT EAGLE5 31.6.0
DATABASE STATUS: >> NOT OK <<
      TDM 1114 ( ACTV )                TDM 1116 ( STDBY)
      C  LEVEL      TIME LAST BACKUP  C  LEVEL      TIME LAST BACKUP
-----
FD BKUP Y          74 04-06-01 23:30:05 GMT Y          74 04-06-01 23:30:05 GMT
FD CRNT N          78 CORRUPTED          Y          75 DIFF LEVEL
      MDAL 1117
      -----
RD BKUP - - - - -

CARD/APPL LOC  C  T  LEVEL      TIME LAST UPDATE  EXCEPTION
-----
SCCP      1101 -  -  -          -          -          -
TDM-CRNT  1114 N  N  78          04-06-01 23:15:06 CORRUPTED
TDM-CRNT  1116 Y  N  75          04-06-01 22:47:05 DIFF LEVEL
CCS7ITU   1207 N  N  78          04-06-01 23:05:06 INCOHERENT
```

If either the G-FLEX, INP, or G-PORT features are on, or the EIR feature is enabled and on, the output of the `rept-stat-db:display=except` command also shows the status of the databases on EPAP A and EPAP B, followed by the status of the VSCCP card database, as shown in this example.

```

rlghncxa03w 04-06-01 08:55:54 GMT EAGLE5 31.6.0
rept-stat-db:display=except
DATABASE STATUS: >> OK <<
      TDM 1114 ( ACTV )
      C  LEVEL      TIME LAST BACKUP
      -  - - - - -
FD BKUP  Y          11 04-06-01 08:20:13 GMT
FD CRNT  Y           12
      MDAL 1117
      -  - - - - -
RD BKUP  Y           1 04-05-31 15:44:20 GMT

CARD/APPL LOC  C  T  LEVEL      TIME LAST UPDATE  EXCEPTION
-----
SS7ANSI   1103 Y  N  10          04-06-01 08:03:48  DIFF LEVEL
TDM-BKUP  1114 Y  -  11          04-06-01 08:04:00  DIFF LEVEL
TDM-BKUP  1116 Y  -  11          04-06-01 08:04:00  DIFF LEVEL
MDAL      1117 Y  -  1          04-05-31 15:06:29  DIFF LEVEL

      EPAP A ( ACTV )
      C  BIRTHDATE      LEVEL      EXCEPTION
      -  - - - - -
PDB          Y 04-06-01 08:20:04      12345      -
RTDB         Y 04-06-01 08:20:04      12345      -
RTDB-EAGLE  Y 04-06-01 08:20:04      12345      -

      EPAP B ( STDBY )
      C  BIRTHDATE      LEVEL      EXCEPTION
      -  - - - - -
PDB          Y 04-06-01 08:20:04      12345      -
RTDB         Y 04-06-01 08:20:04      12345      -
RTDB-EAGLE  Y 04-06-01 08:20:04      12345      -

      EAGLE RTDB REPORT
CARD/APPL LOC  C  BIRTHDATE      LEVEL      EXCEPTION      IN-SRVC
-----
VSCCP     1203 Y 04-06-01 08:20:04      12340     DIFF LEVEL     10d 23h 21m

```

Database Management Procedures

If the ELAP Configuration feature is enabled and on, the output of the **rept-stat-db:display=except** command also shows the status of the databases on ELAP A and ELAP B, followed by the status of the VSCCP card database, as shown in this example.

```

rlghncxa03w 04-06-01 08:55:54 GMT EAGLE5 31.6.0
rept-stat-db:display=except
DATABASE STATUS: >> OK <<
      TDM 1114 ( ACTV )
      C  LEVEL      TIME LAST BACKUP
      -----
FD BKUP  Y          11 04-06-01 08:20:13 GMT
FD CRNT  Y          12
      MDAL 1117
      - - - - -
RD BKUP  Y          1 04-05-31 15:44:20 GMT

CARD/APPL LOC  C  T  LEVEL      TIME LAST UPDATE  EXCEPTION
-----
SS7ANSI   1103 Y  N  10          04-06-01 08:03:48  DIFF LEVEL
TDM-BKUP  1114 Y  -  11          04-06-01 08:04:00  DIFF LEVEL
TDM-BKUP  1116 Y  -  11          04-06-01 08:04:00  DIFF LEVEL
MDAL      1117 Y  -  1          04-06-01 15:06:29  DIFF LEVEL

      ELAP A ( ACTV )
      C  BIRTHDATE      LEVEL      EXCEPTION
      - - - - -
RTDB     Y  04-06-01 08:20:04  12345      -
RTDB-EAGLE Y  04-06-01 08:20:04  12345      -

      ELAP B ( STDBY )
      C  BIRTHDATE      LEVEL      EXCEPTION
      - - - - -
RTDB     Y  04-06-01 08:20:04  12345      -
RTDB-EAGLE Y  04-06-01 08:20:04  12345      -

      EAGLE RTDB REPORT
CARD/APPL LOC  C  BIRTHDATE      LEVEL      EXCEPTION  IN-SRVC
-----
VSCCP     1203 Y  04-06-01 08:20:04  12340      DIFF LEVEL  10d 23h 21m

```

DISPLAY=ALL Parameter

The output from the **display=all** parameter contains the same information displayed from the **display=brief** parameter as well as and the coherency and the number of updates for all the databases. The time stamp for the last database update for every card is displayed. This is an example of the output when the **display=all** parameter is used.

```

rlghncxa03w 04-06-01 08:39:24 GMT EAGLE5 31.6.0
rept-stat-db:display=all
DATABASE STATUS: >> OK <<
      TDM 1114 ( ACTV )                TDM 1116 ( STDBY)
      C  LEVEL    TIME LAST BACKUP    C  LEVEL    TIME LAST BACKUP
-----
FD BKUP  Y      11 04-06-01 08:20:13 GMT  Y      11 04-06-01 08:20:13 GMT
FD CRNT  Y      11
      MDAL 1117
      -
RD BKUP  Y      1 04-05-31 15:44:20 GMT

CARD/APPL  LOC  C  T  LEVEL    TIME LAST UPDATE  EXCEPTION
-----
SS7ANSI    1102 Y  N  11      04-06-01 08:04:00  -
SS7ANSI    1103 Y  N  11      04-06-01 08:04:00  -
VSCCP      1105 Y  N  11      04-06-01 08:04:00  -
STPLAN     1107 Y  N  11      04-06-01 08:04:00  -
TDM-CRNT   1114 Y  N  11      04-06-01 08:04:00  -
TDM-BKUP   1114 Y  -  11      04-06-01 08:04:00  -
TDM-CRNT   1116 Y  N  11      04-06-01 08:04:00  -
TDM-BKUP   1116 Y  -  11      04-06-01 08:04:00  -
MDAL       1117 Y  -  1      04-05-31 15:06:29  DIFF LEVEL
VSCCP      1201 Y  N  11      04-06-01 08:04:00  -
VSCCP      1203 Y  N  11      04-06-01 08:04:00  -

```

Database Management Procedures

If either the G-FLEX, INP, or G-PORT features are on, or the EIR feature is enabled and on, the output of the `rept-stat-db:display=all` command also shows the status of the databases on EPAP A and EPAP B, followed by the status of the VSCCP card database, as shown in this example.

```

rlghncxa03w 04-06-01 08:39:24 GMT EAGLE5 31.6.0
rept-stat-db:display=all
DATABASE STATUS: >> OK <<
      TDM 1114 ( ACTV )
      C  LEVEL      TIME LAST BACKUP
      -----
FD BKUP  Y      11 04-06-01 08:20:13 GMT
FD CRNT  Y      11
      MDAL 1117
      - - - - -
RD BKUP  Y      1 04-05-31 15:44:20 GMT

CARD/APPL LOC  C  T  LEVEL      TIME LAST UPDATE  EXCEPTION
-----
SS7ANSI   1102 Y  N  11      04-06-01 08:04:00  -
SS7ANSI   1103 Y  N  11      04-06-01 08:04:00  -
STPLAN    1107 Y  N  11      04-06-01 08:04:00  -
TDM-CRNT  1114 Y  N  11      04-06-01 08:04:00  -
TDM-BKUP  1114 Y  -  11      04-06-01 08:04:00  -
TDM-CRNT  1116 Y  N  11      04-06-01 08:04:00  -
TDM-BKUP  1116 Y  -  11      04-06-01 08:04:00  -
MDAL      1117 Y  -  1       04-05-31 15:06:29  DIFF LEVEL
VSCCP     1201 Y  N  11      04-06-01 08:04:00  -
VSCCP     1203 Y  N  11      04-06-01 08:04:00  -

      EPAP A ( ACTV )
      C  BIRTHDATE      LEVEL      EXCEPTION
      -----
PDB       Y  04-06-01 08:20:04  12345      -
RTDB      Y  04-06-01 08:20:04  12345      -
RTDB-EAGLE Y  04-06-01 08:20:04  12345      -

      EPAP B ( STDBY )
      C  BIRTHDATE      LEVEL      EXCEPTION
      -----
PDB       Y  04-06-01 08:20:04  12345      -
RTDB      Y  04-06-01 08:20:04  12345      -
RTDB-EAGLE Y  04-06-01 08:20:04  12345      -

      EAGLE RTDB REPORT
      CARD/APPL LOC  C  BIRTHDATE      LEVEL      EXCEPTION  IN-SRVC
      -----
VSCCP     1201 Y  04-06-01 08:20:04  12345      -          10d 23h 21m
VSCCP     1203 Y  04-06-01 08:20:04  12345      -           5d  3h  1m
VSCCP     1105 Y  04-06-01 08:20:04  12345      -           9d 12h 37m

```

If the ELAP Configuration feature is enabled and on, the output of the `rept-stat-db:display=all` command also shows the status of the databases on ELAP A and ELAP B, followed by the status of the VSCCP card database, as shown in this example.

```

rlghncxa03w 04-06-01 08:39:24 GMT EAGLE5 31.6.0
rept-stat-db:display=all
DATABASE STATUS: >> OK <<
      TDM 1114 ( ACTV )
      C  LEVEL  TIME LAST BACKUP
      -----
FD BKUP  Y      11 04-06-01 08:20:13 GMT
FD CRNT  Y      11
      MDAL 1117
      -----
RD BKUP  Y      1 04-05-31 15:44:20 GMT

CARD/APPL LOC  C  T  LEVEL      TIME LAST UPDATE  EXCEPTION
-----
SS7ANSI   1102 Y  N  11      04-06-01 08:04:00  -
SS7ANSI   1103 Y  N  11      04-06-01 08:04:00  -
VSCCP     1105 Y  N  11      04-06-01 08:04:00  -
STPLAN    1107 Y  N  11      04-06-01 08:04:00  -
TDM-CRNT  1114 Y  N  11      04-06-01 08:04:00  -
TDM-BKUP  1114 Y  -  11      04-06-01 08:04:00  -
TDM-CRNT  1116 Y  N  11      04-06-01 08:04:00  -
TDM-BKUP  1116 Y  -  11      04-06-01 08:04:00  -
MDAL      1117 Y  -  1       04-05-31 15:06:29  DIFF LEVEL
VSCCP     1201 Y  N  11      04-06-01 08:04:00  -
VSCCP     1203 Y  N  11      04-06-01 08:04:00  -

      ELAP A ( ACTV )
      C  BIRTHDATE      LEVEL      EXCEPTION
      -----
RTDB      Y  04-06-01 08:20:04  12345      -
RTDB-EAGLE  Y  04-06-01 08:20:04  12345      -

      ELAP B ( STDBY )
      C  BIRTHDATE      LEVEL      EXCEPTION
      -----
RTDB      Y  04-06-01 08:20:04  12345      -
RTDB-EAGLE  Y  04-06-01 08:20:04  12345      -

      EAGLE RTDB REPORT
CARD/APPL LOC  C  BIRTHDATE      LEVEL      EXCEPTION  IN-SRVC
-----
VSCCP     1201 Y  04-06-01 08:20:04  12345      -          10d 23h 21m
VSCCP     1203 Y  04-06-01 08:20:04  12345      -           5d  3h  1m
VSCCP     1105 Y  04-06-01 08:20:04  12345      -           9d 12h 37m

```


If either the G-FLEX, INP, or G-PORT features are on, or either the EIR or ELAP Configuration features are enabled and on, and the card being displayed is a VSCCP card, the output of the `rept-stat-db` command also contains the status of the VSCCP card database, as shown in this example.

```

CARD/APPL LOC C T LEVEL          TIME LAST UPDATE  EXCEPTION
-----
VSCCP      1213 Y N          78 04-06-01 23:15:06  -

CARD/APPL LOC C BIRTHDATE          LEVEL          EXCEPTION
-----
VSCCP      1213 Y 04-06-01 10:10:18          10 DIFF LEVEL

```

DB Parameter

The DB parameter specifies which databases to display. Through the DB parameter, you can specify the output to report on:

- Eagle STP databases (`db=stp`)
- MPS/ELAP/EPAP databases (`db=mps`), which support the G-PORT, G-FLEX, INP, and EIR features, and the LNP feature when the ELAP Configuration feature is enabled and on.
- All databases (`db=all`), the default value that provides output for both the STP and MPS databases.

The following example shows an output when the `db=stp` parameter is used on an ELAP or EPAP system.

```

rlghncxa03w 04-06-01 08:39:24 GMT EAGLE5 31.6.0
rept-stat-db:db=stp
DATABASE STATUS: >> OK <<
          TDM 1114 ( ACTV )          TDM 1116 ( STDBY)
          C  LEVEL    TIME LAST BACKUP  C  LEVEL    TIME LAST BACKUP
          -  - - - - - - - - - - - - -  -  - - - - - - - - - - - - -
FD BKUP  Y          11 04-06-01 08:20:13 GMT  Y          11 04-06-01 08:20:13 GMT
FD CRNT  Y          11                               Y          11
          MDAL 1117
          -  - - - - - - - - - - - - -
RD BKUP  Y          1 04-05-31 15:44:20 GMT

```


When the ELAP Configuration feature is enabled and on, the MPS/ELAP databases are used. The following sample shows the output for **db=mps** to display the MPS databases and for **display=except** to display RTDB card exception conditions.

```
rlghncxa03w 04-06-01 08:55:54 GMT EAGLE5 31.6.0
rept-stat-db:display=except:db=mps
```

ELAP A (ACTV)						
	C	BIRTHDATE		LEVEL	EXCEPTION	
	-	-----		-----	-----	
RTDB	Y	04-06-01 08:20:04		12345	-	
RTDB-EAGLE	Y	04-06-01 08:20:04		12345	-	

ELAP B (STDBY)						
	C	BIRTHDATE		LEVEL	EXCEPTION	
	-	-----		-----	-----	
RTDB	Y	04-06-01 08:20:04		12345	-	
RTDB-EAGLE	Y	04-06-01 08:20:04		12345	-	

EAGLE RTDB REPORT						
CARD/APPL	LOC	C	BIRTHDATE	LEVEL	EXCEPTION	IN-SRVC
-----	----	-	-----	-----	-----	-----
VSCCP	1203	Y	04-06-01 08:20:04	12340	DIFF LEVEL	5d 3h 1m

When the G-FLEX, INP, or G-PORT features are on, or the EIR feature is enabled and on, the MPS/EPAP databases are used. Output from the DB parameter provides expanded detail about the databases and cards in the MPS/EPAP system when the **display=all** parameter is used with the **db=mps** parameter, as shown in this example.

```
rlghncxa03w 04-06-01 08:39:24 GMT EAGLE5 31.6.0
rept-stat-db:display=all:db=mps
```

EPAP A (ACTV)						
	C	BIRTHDATE		LEVEL	EXCEPTION	
	-	-----		-----	-----	
PDB	Y	04-06-01 08:20:04		12345	-	
RTDB	Y	04-06-01 08:20:04		12345	-	
RTDB-EAGLE	Y	04-06-01 08:20:04		12345	-	

EPAP B (STDBY)						
	C	BIRTHDATE		LEVEL	EXCEPTION	
	-	-----		-----	-----	
PDB	Y	04-06-01 08:20:04		12345	-	
RTDB	Y	04-06-01 08:20:04		12345	-	
RTDB-EAGLE	Y	04-06-01 08:20:04		12345	-	

EAGLE RTDB REPORT						
CARD/APPL	LOC	C	BIRTHDATE	LEVEL	EXCEPTION	IN-SRVC
-----	----	-	-----	-----	-----	-----
VSCCP	1201	Y	04-06-01 08:20:04	12345	-	10d 23h 21m
VSCCP	1203	Y	04-06-01 08:20:04	12345	-	5d 3h 1m
VSCCP	1105	Y	04-06-01 08:20:04	12345	-	9d 12h 37m

- If the current partition of the active fixed disk is coherent and the database on the removable cartridge is not coherent, as shown in this output example, use the **chg-db:action=backup:dest=remove** command. For more information, go to the “Making a Backup of the Database to the Removable Cartridge” procedure on page 2-35.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> NOT OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C LEVEL      TIME LAST BACKUP    C LEVEL      TIME LAST BACKUP
      - - - - -
FD BKUP  Y          35 04-06-01 10:19:18 GMT  Y          35 04-06-01 10:19:18 GMT
FD CRNT  Y          106                      Y          106
      MDAL 1117
      - - - - -
RD BKUP  N          106 INCOHERENT
```

The **chg-db:action=backup:dest=remove** command is also used to backup the current database on both fixed disks to the removable cartridge.

- If the backup partition of both fixed disks are coherent and the current partition of both fixed disks are not coherent, use the **chg-db:action=restore:src=fixed** command. For more information, go to the “Restoring the Database from the Backup Partition of the Fixed Disk” procedure on page 2-39. This condition is shown in this example output of the **rept-stat-db** command.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> NOT OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C LEVEL      TIME LAST BACKUP    C LEVEL      TIME LAST BACKUP
      - - - - -
FD BKUP  Y          35 04-06-01 10:19:18 GMT  Y          35 04-06-01 10:19:18 GMT
FD CRNT  Y          35 DIFF LEVEL            N          68 INCOHERENT
      MDAL 1117
      - - - - -
RD BKUP  -          -          -          -
```

- If the database on the removable cartridge is coherent and the current partition of the both fixed disks are not coherent, use the **chg-db:action=restore:src=remove** command. For more information, go to the “Restoring the Database from the Removable Cartridge” procedure on page 2-43. This condition is shown in this example output of the **rept-stat-db** command.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> NOT OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C LEVEL      TIME LAST BACKUP    C LEVEL      TIME LAST BACKUP
      - - - - -
FD BKUP  Y          35 04-06-01 10:19:18 GMT  Y          35 04-06-01 10:19:18 GMT
FD CRNT  Y          106 DIFF LEVEL            N          93 INCOHERENT
      MDAL 1117
      - - - - -
RD BKUP  Y          106 04-05-31 14:29:03 GMT
```


Database Management Procedures

- If the backup and current partitions on the active fixed disks are coherent and the backup and current partitions on the standby fixed disks are not coherent, use the `chg-db:action=repair` command. For more information, go to the “Repairing the Database” procedure on page 2-48. This condition is shown in this example output of the `rept-stat-db` command.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> NOT OK <<
          TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
          C  LEVEL      TIME LAST BACKUP   C  LEVEL      TIME LAST BACKUP
          - - - - -
FD BKUP  N           35 INCOHERENT         Y           55 DIFF LEVEL
FD CRNT  N           106 INCOHERENT        Y           55 DIFF LEVEL
          MDAL 1117
          - - - - -
RD BKUP  -           -                     -           -
```

If, after executing the appropriate change database command, the database is still not coherent, contact Tekelec Technical Services. See “Tekelec Technical Services” on page 1-7.

Backing Up the Database

The **backup** procedures should be performed according to the preventive maintenance procedures in Chapter 2, "Preventive Maintenance," of the *Maintenance Manual*. The procedures copy the current database to either the nonactive (backup) partition on the fixed disk or to the removable cartridge. To backup a database, the **chg-db** command uses these parameters.

:action=backup – the operation to perform on the database, a backup of the current database

:dest – the destination of the backup operation, either the backup partition of the fixed disk (**fixed**) or the removable cartridge (**remove**). If the **dest** parameter is not specified, the current database is backed up to the backup partition of the fixed disk.

Making a Backup of the Database on the Fixed Disk

This procedure is used to make a backup of the database on the fixed disk using the **chg-db** command with **action=backup** and **dest=fixed** parameters.

The databases in the current partitions of both MASP's (FD CRNT) must be coherent. For more information on verifying the database, read "Verifying the Database" on page 2-10.

Procedure

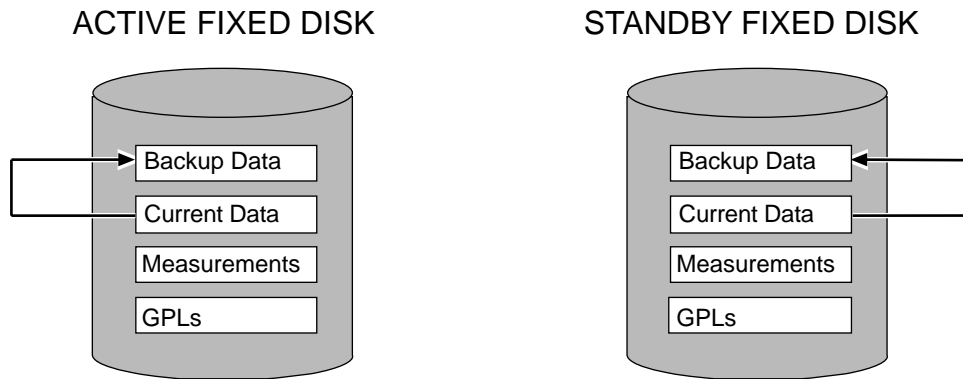
1. Verify that the databases in the current partitions of both MASP's (FD CRNT) are coherent using the **rept-stat-db** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C  LEVEL      TIME LAST BACKUP  C  LEVEL      TIME LAST BACKUP
      - - - - -
FD BKUP  Y          35 04-06-01 10:19:18 GMT  Y          35 04-06-01 10:19:18 GMT
FD CRNT  Y          106
MDAL 1117
      - - - - -
RD BKUP  Y          106 04-05-31 14:29:03 GMT
```

- Enter the `chg-db:action=backup:dest=fixed` command. This command can take up to 30 minutes to execute, depending on other system activity that is in progress when this command is entered. The action of this command is shown in Figure 2-5.

NOTE: If this command takes more than 60 minutes to execute, contact Tekelec Technical Services for assistance. See “Tekelec Technical Services” on page 1-7.

Figure 2-5. Backup Action on the Fixed Disk



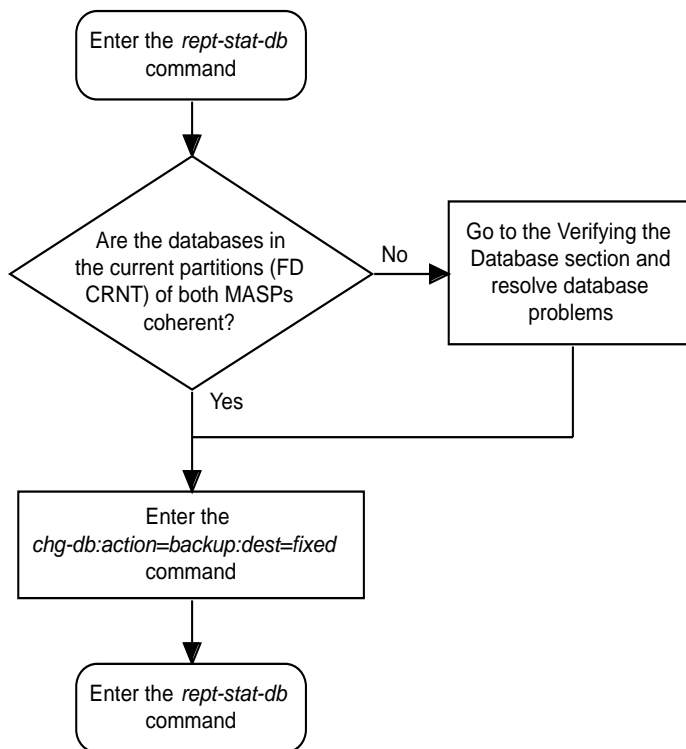
During command execution, these messages appear (the active MASP is displayed first):

```
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.
```

- Verify that the databases of both MASPs are coherent using the `rept-stat-db` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
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 16:09:17 GMT  Y        106 04-06-01 16:09:17 GMT
FD CRNT  Y        106
MDAL 1117
-----
RD BKUP  Y        106 04-05-31 14:29:03 GMT
```

Flowchart 2-1. Making a Backup of the Database to the Fixed Disk



3. Enter the `chg-db:action=backup:dest=remove` command.

During command execution, these messages should appear.

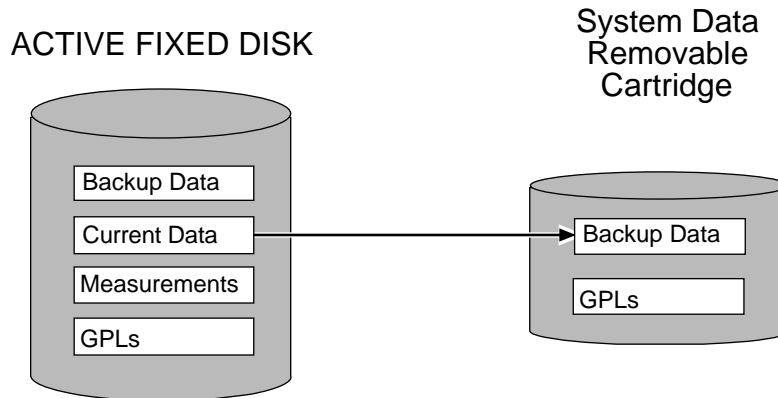
```
BACKUP (REMOVABLE) : MASP A - Backup starts on active MASP.
BACKUP (REMOVABLE) : MASP A - Backup to removable cartridge complete.
```

This command is only performed on the active MASP. The action of this command is shown in Figure 2-6.

This command can take up to 30 minutes to execute, depending on the size of the database and other system activity that is in progress when this command is entered.

NOTE: If this command takes more than 60 minutes to execute, contact Tekelec Technical Services for assistance. See "Tekelec Technical Services" on page 1-7

Figure 2-6. Backup Action to the Removable Cartridge



4. Verify that the databases on the removable cartridge (RD BKUP) and the current partition of the active MASP (FD CRNT) are coherent using the `rept-stat-db` command. This is an example of the possible output.

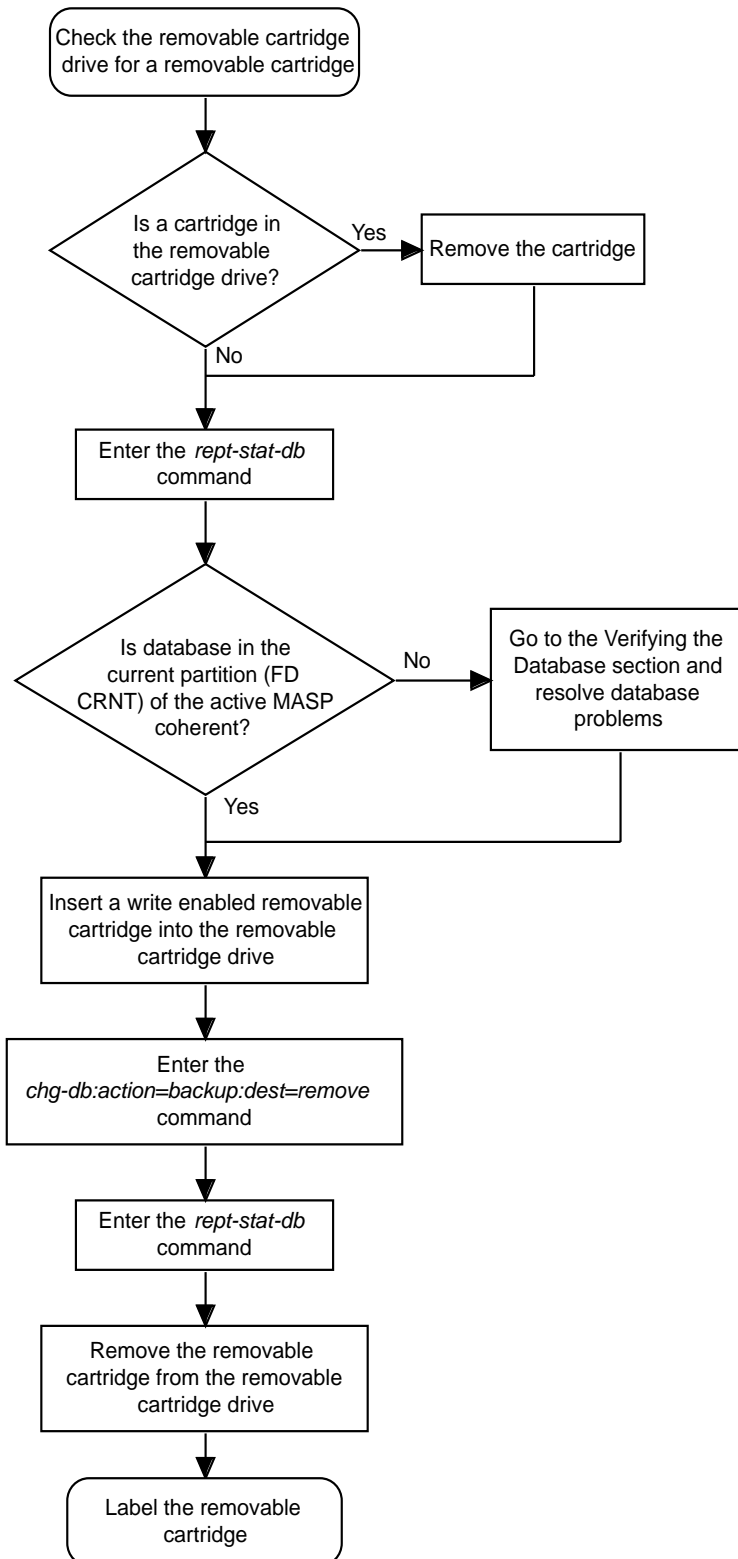
```
rlghncxa03w 04-06-01 16:11:34 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C LEVEL      TIME LAST BACKUP    C LEVEL      TIME LAST BACKUP
      - - - - -
FD BKUP  Y         35 04-06-01 10:19:18 GMT  Y         35 04-06-01 10:19:18 GMT
FD CRNT  Y         106
MDAL 1117
      - - - - -
RD BKUP  Y         106 04-05-31 16:09:53 GMT
```

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5. Remove the removable cartridge from the removable cartridge drive on the MDAL card. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.

6. Label the removable cartridge, 1 through 4 if the backup is performed weekly or monthly, A through D if the backup is performed quarterly. For more information on labeling the removable cartridge, see Chapter 2, "Preventive Maintenance," in the *Maintenance Manual*. Store this cartridge in a secure place.

Flowchart 2-2. Making a Backup of the Database to the Removable Cartridge



Restoring the Database

The **restore** procedures are used to bring a database from the backup partition of both MASP's and load the database onto the current partitions of both MASP's. It is also used to load a database from a removable cartridge onto the current partitions of both MASP's. To restore a database, the **chg-db** command uses these parameters.

:action=restore – the operation to perform on the database, restoring a previously backed up database

:src – the source of the database being restored, either the backup partition of the fixed disk (**fixed**) or the removable cartridge (**remove**). If the **src** parameter is not specified, the database is restored from the backup partition of the fixed disk (**fixed**).



CAUTION: If the restore device state option is on, shown by the **ON** value for the **RSTRDEV** field in the **rtrv-stpopts** command output, the state of the cards, SS7 signaling links, TCP/IP data links, and terminals before the **chg-db:action=restore** and **init-sys** commands are performed will not be maintained after these commands are performed. The persistent device state table becomes obsolete and is disabled. UIM 1257 is generated.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
1234.1257 SYSTEM INFO DB Restore has cleared and disabled PDS
```

Restoring the Database from the Backup Partition of the Fixed Disk

This procedure is used to restore the database from the backup partition of the fixed disk using the **chg-db** command with the **action=restore** and **src=fixed** parameters.

The databases in the backup partitions of both MASP's (RD BKUP) must be coherent. For more information on verifying the database, read "Verifying the Database" on page 2-10.



CAUTION: Using the **action=restore** parameter with the **chg-db** command is an emergency recovery procedure, and requires the **init-sys** command to download the restored database to all the cards in the system.

Procedure

1. Verify that the databases in the backup partitions of both MASP's (FD BKUP) are coherent using the `rept-stat-db` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C LEVEL      TIME LAST BACKUP    C LEVEL      TIME LAST BACKUP
-----
FD BKUP Y          35 04-06-01 10:19:18 GMT Y          35 04-06-01 10:19:18 GMT
FD CRNT Y          106
      MDAL 1117
      -----
RD BKUP -          -          -          -
```

2. Enter the `chg-db:action=restore:src=fixed` command. This command can take up to 30 minutes to execute, depending on other system activity that is in progress when this command is entered.

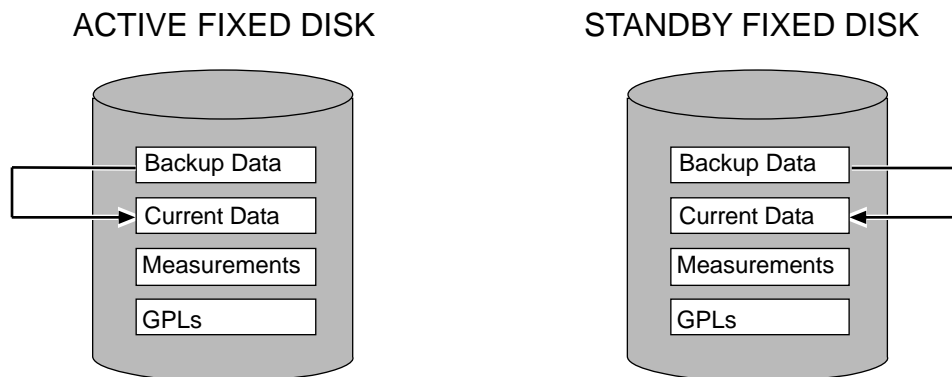
NOTE: If this command takes more than 60 minutes to execute, contact Tekelec Technical Services for assistance. See "Tekelec Technical Services" on page 1-7.

During command execution, these messages appear (the active MASP is displayed first):

```
RESTORE (FIXED) : MASP A - Restore starts on active MASP.
RESTORE (FIXED) : MASP A - Restore from fixed disk on active MASP complete.
RESTORE (FIXED) : MASP A - Restore starts on standby MASP.
RESTORE (FIXED) : MASP A - MASP(s) will reboot to load data.
RESTORE (FIXED) : MASP A - Restore from fixed disk on stdby MASP complete.
```

The action of this command is shown in Figure 2-7.

Figure 2-7. Restore Action on the Fixed Disk





CAUTION: The `init-sys` command causes a complete system reload, and should only be used during periods of low traffic. Using this command ensures that all cards are running the same database, but will interrupt service.

3. When the commands have successfully completed, re-initialize the Eagle using the `init-sys` command.

NOTE: The `init-sys` command must be entered twice within 30 seconds for the system to be re-initialized. If the `init-sys` command is not executed twice within 30 seconds, the attempt to re-initialize the system is aborted.

When the `init-sys` command is first entered, this message should appear.

```
rlghncxa03w 04-06-01 07:05:01 GMT EAGLE5 31.6.0
CAUTION: This command causes a complete system reload, and
will result in traffic loss.
Re-enter command within 30 seconds to confirm.
```

When the `init-sys` command is re-entered within the 30 second time limit, this message should appear.

```
rlghncxa03w 04-06-01 07:05:17 GMT EAGLE5 31.6.0
Init System command issued at terminal #3
```

From the time that the `init-sys` command is accepted, you must wait approximately 2 minutes before you can perform step 4 (logging into the system). If the system terminal is in the VT-100/VT-320 mode, the terminal display will be refreshed with non-zero alarm counts. During this 2 minutes interval, an intermediate screen refresh caused by the MASP's role change from active to standby, and from standby to active. This screen refresh is typically a partial refresh and the alarm indicators are set to zero.

If you are logged into the system in the KSR mode, the only response you will receive that you are now able to log into the system is that you will receive UAM 0009, MASP became active. UAM 0009 could be issued twice due to possible transient MASP role change (switching from active to standby). Following the execution of the `init-sys` command, the MASP that was active before the `init-sys` command was entered will be the active MASP when the system has finished reinitializing.

-
4. Log into the system using the `login` or `act-user` command. This is an example of the messages that appear when you have successfully logged onto the system.

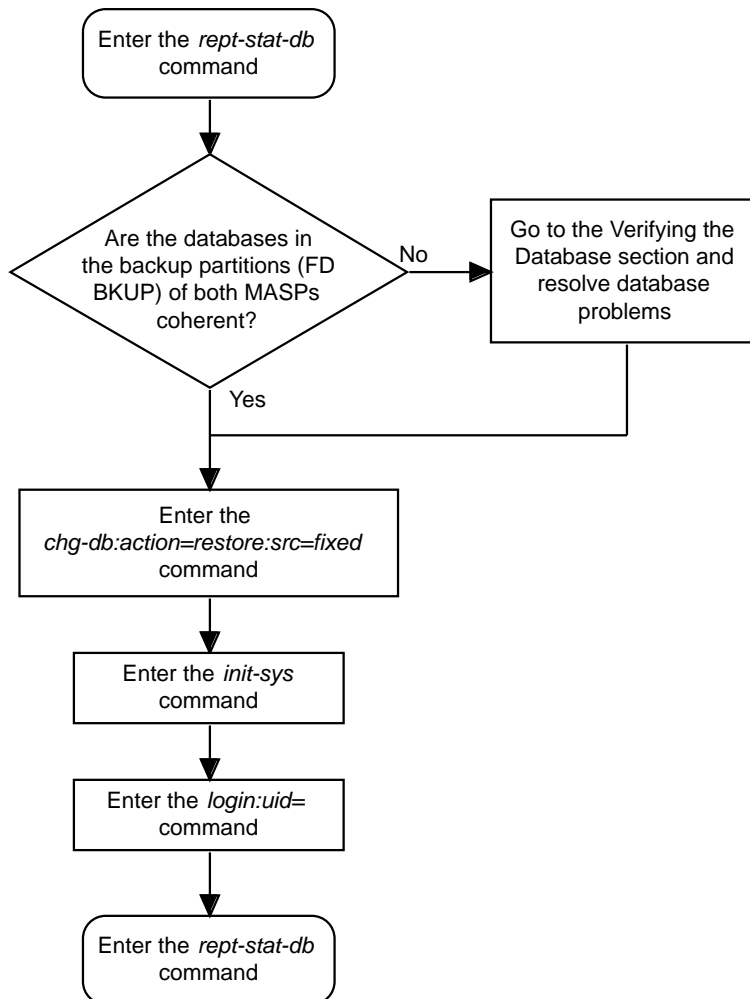
```
NOTICE: This is a private computer system.
Unauthorized access or use may lead to prosecution.
```

```
0 LOGIN failures since last successful LOGIN
Last successful LOGIN was on port 4 on 04-06-01 @ 09:34:56
```

- Verify that the databases of both MASP's are coherent using the `rept-stat-db` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( STDBY)          TDM 1116 ( ACTV )
      C  LEVEL      TIME LAST BACKUP  C  LEVEL      TIME LAST BACKUP
-----
FD BKUP Y      35 04-06-01 10:19:18 GMT Y      35 04-06-01 10:19:18 GMT
FD CRNT Y      35
      MDAL 1117
      -----
RD BKUP -      -      -      -
```

Flowchart 2-3. Restoring the Database from the Fixed Disk



Restoring the Database from the Removable Cartridge

This procedure is used to restore the database from the removable cartridge using the `chg-db` command with the `action=restore` and `src=remove` parameters.

The database on the removable cartridge (RD BKUP) must be coherent. For more information on verifying the database, read “Verifying the Database” on page 2-10.

The removable cartridge must contain the database configuration to be restored. The removable cartridge should be write protected. To write protect a removable cartridge, see “Write Protecting the Removable Cartridge” on page 2-6.



CAUTION: Using the `action=restore` parameter with the `chg-db` command is an emergency recovery procedure, and requires the `init-sys` command to download the restored database to all the cards in the system.

Procedure

1. Check the removable cartridge drive on the MDAL card for a removable cartridge. If there is a removable cartridge in the drive, remove it. For more information on removing the removable cartridge from the removable cartridge drive, see “Removing the Removable Cartridge” on page 2-9.

2. Insert the removable cartridge that contains the database configuration to be restored into the removable cartridge drive on the MDAL card. For more information on inserting the removable cartridge in the removable cartridge drive, see “Inserting the Removable Cartridge” on page 2-8.

3. Verify that the database on the removable cartridge (RD BKUP) is coherent using the `rept-stat-db` command. This is an example of the possible output.

```

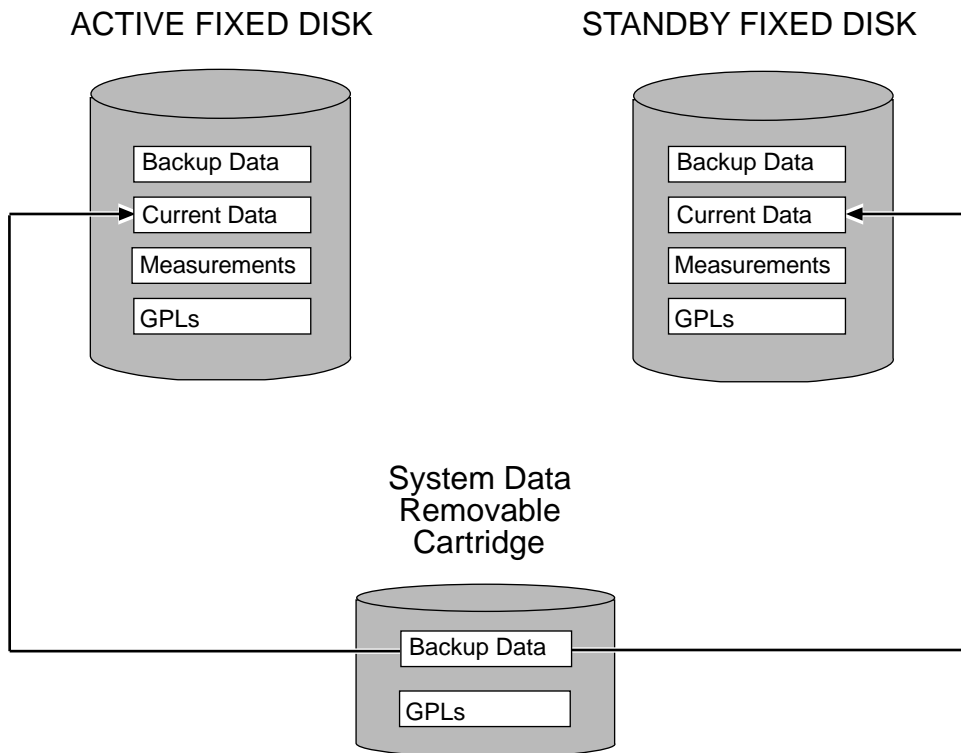
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
          TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
          C  LEVEL      TIME LAST BACKUP   C  LEVEL      TIME LAST BACKUP
          - - - - -
FD BKUP  Y           35 04-06-01 10:19:18 GMT Y           35 04-06-01 10:19:18 GMT
FD CRNT  Y            95                      Y            95
          MDAL 1117
          - - - - -
RD BKUP  Y            106 04-05-31 20:27:53 GMT
    
```

4. Enter the `chg-db:action=restore:src=remove` command. This command can take up to 30 minutes to execute, depending on the size of the database and other system activity that is in progress when this command is entered.

NOTE: If this command takes more than 60 minutes to execute, contact Tekelec Technical Services for assistance. See “Tekelec Technical Services” on page 1-7.

The action of this command is shown in Figure 2-8.

Figure 2-8. Restore Action from the Removable Cartridge



During command execution, these messages appear (the active MASP is displayed first).

```
RESTORE (REMOVABLE) : MASP A - Restore starts on active MASP.
RESTORE (REMOVABLE) : MASP A - Restore starts on standby MASP.
RESTORE (REMOVABLE) : MASP A - MASP(s) will reboot to load data.
RESTORE (REMOVABLE) : MASP A - Restore from removable cartridge complete.
```



CAUTION: The `init-sys` command causes a complete system reload, and should only be used during periods of low traffic. Using this command ensures that all cards are running the same database, but will interrupt service.

5. When the commands have successfully completed, re-initialize the system using the `init-sys` command.

NOTE: The `init-sys` command must be entered twice within 30 seconds for the system to be re-initialized. If the `init-sys` command is not executed twice within 30 seconds, the attempt to re-initialize the system is aborted.

When the `init-sys` command is first entered, this message should appear.

```
rlghncxa03w 04-06-01 07:05:01 GMT EAGLE5 31.6.0
CAUTION: This command causes a complete system reload, and
will result in traffic loss.
Re-enter command within 30 seconds to confirm.
```

When the `init-sys` command is re-entered within the 30 second time limit, this message should appear.

```
rlghncxa03w 04-06-01 07:05:17 GMT EAGLE5 31.6.0
Init System command issued at terminal #3
```

From the time that the `init-sys` command is accepted, you must wait approximately 2 minutes before you can perform step 6 (logging into the system). If the system terminal is in the VT-100/VT-320 mode, the terminal display will be refreshed with non-zero alarm counts. During this 2 minutes interval, an intermediate screen refresh caused by the MASP's role change from active to standby, and from standby to active. This screen refresh is typically a partial refresh and the alarm indicators are set to zero.

If you are logged into the system in the KSR mode, the only response you will receive that you are now able to log into the system is that you will receive UAM 0009, MASP became active. UAM 0009 could be issued twice due to possible transient MASP role change (switching from active to standby). Following the execution of the `init-sys` command, the MASP that was active before the `init-sys` command was entered will be the active MASP when the system has finished reinitializing.

-
6. Log into the system using the `login` or `act-user` command.

This is an example of the messages that appear when you have successfully logged into the system.

```
NOTICE: This is a private computer system.
Unauthorized access or use may lead to prosecution.

0 LOGIN failures since last successful LOGIN
Last successful LOGIN was on port 4 on 04-06-01 @ 09:34:56
```

7. Verify that the databases on the removable cartridge (RD BKUP) and the current partitions of both MASPs (FD CRNT) are coherent using the **rept-stat-db** command. This is an example of the possible output.

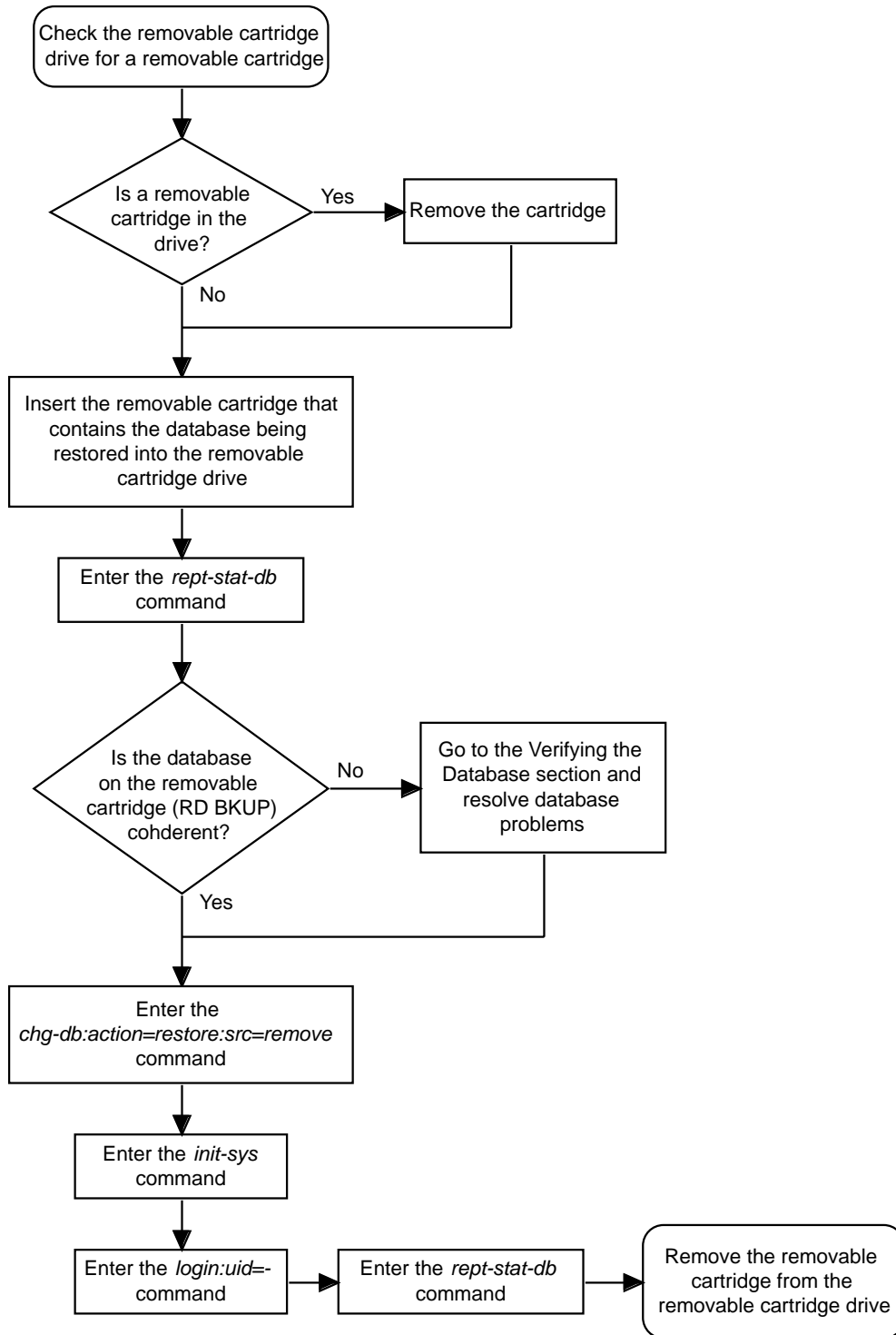
```

rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C  LEVEL      TIME LAST BACKUP  C  LEVEL      TIME LAST BACKUP
      -----
FD BKUP  Y          35 04-06-01 10:19:18 GMT  Y          35 04-06-01 10:19:18 GMT
FD CRNT  Y          106
      MDAL 1117
      -----
RD BKUP  Y          106 04-05-31 20:27:53 GMT

```

8. Remove the removable cartridge from the removable cartridge drive on the MDAL card. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.
-

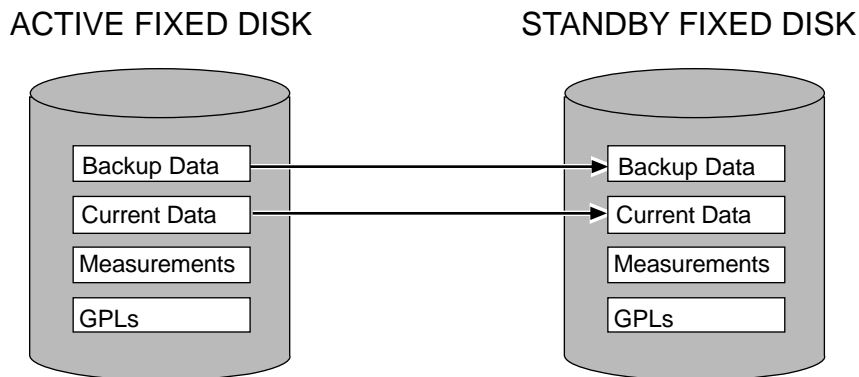
Flowchart 2-4. Restoring the Database from the Removable Cartridge



Repairing the Database

Perform the **repair** procedure whenever the two fixed disks have a different database image, such as after a MASP failure. This procedure copies the fixed disk image of the database associated with the active MASP to the fixed disk of the standby MASP. Figure 2-9 illustrates this action. To repair a database, The **chg-db** command uses only one parameter, **action=repair** – the operation to perform on the database, repairing a database

Figure 2-9. Action of the Repair Procedure



To repair the database, perform this procedure.

The databases in the current (FD CRNT) and the backup (FD BKUP) partitions of the active MASP must be coherent. For more information on verifying the database, read “Verifying the Database” on page 2-10.



CAUTION: To prevent any potential database corruption when performing this procedure, the OAP terminals must be placed out of service with the **rmv-trm** command before executing the **chg-db:action=repair** command.

Procedure

1. Verify that the databases in the current (FD CRNT) and the backup (FD BKUP) partitions of the active MASP are coherent using the `rept-stat-db` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> NOT OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C  LEVEL      TIME LAST BACKUP  C  LEVEL      TIME LAST BACKUP
-----
FD BKUP N          35 INCOHERENT      Y    55 DIFF LEVEL
FD CRNT N          106 INCOHERENT     Y     55
      MDAL 1117
      - - - - -
RD BKUP - - - - -
```

2. 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. This is an example of the possible output. In this example, the OAP terminals are terminals 6 and 9. If no OAP terminals are shown in the `rtrv-trm` command output, go to step 5.

```
rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
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
```

	APP											
TRM	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

3. Display the status of the terminals with the `rept-stat-trm` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
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.
```

4. Place the OAP terminals out of service using the `rmv-trm` command. The `force=yes` parameter must be used when placing the last OAP terminal out of service. For this example, enter these commands.

```
rmv-trm:trm=6
rmv-trm:trm=9:force=yes
```

If the status of the OAP terminals shown in the `PST` field in step 3 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.

This message should appear when each of these commands have successfully completed.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Inhibit message sent to terminal
```

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```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Command Completed.
```

5. Enter the **chg-db:action=repair** command. This command can take up to 30 minutes to execute, depending on the size of the database and other system activity that is in progress when this command is entered.

NOTE: If this command takes more than 60 minutes to execute, contact Tekelec Technical Services. See "Tekelec Technical Services" on page 1-7.

During command execution, these messages appear:

```
REPAIR: MASP A - Repair starts on standby MASP.
REPAIR: MASP A - Standby MASP will reboot to load data.
REPAIR: MASP A - Repair from fixed disk complete.
```

6. Verify that the databases of both MASPs are coherent using the **rept-stat-db** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C  LEVEL      TIME LAST BACKUP  C  LEVEL      TIME LAST BACKUP
      - - - - -
FD BKUP  N          55 04-06-01 13:11:43 GMT  Y          55 04-06-01 13:11:43 GMT
FD CRNT  N          55                      Y          55
      MDAL 1117
      - - - - -
RD BKUP  -          -                      -
```

If OAP terminals are shown in the **rtrv-trm** command output in step 2, go to step 7. Otherwise this procedure is completed.

7. Put the OAP terminals back into service with the **rst-trm** command. For this example, enter these commands.

```
rst-trm:trm=6
```

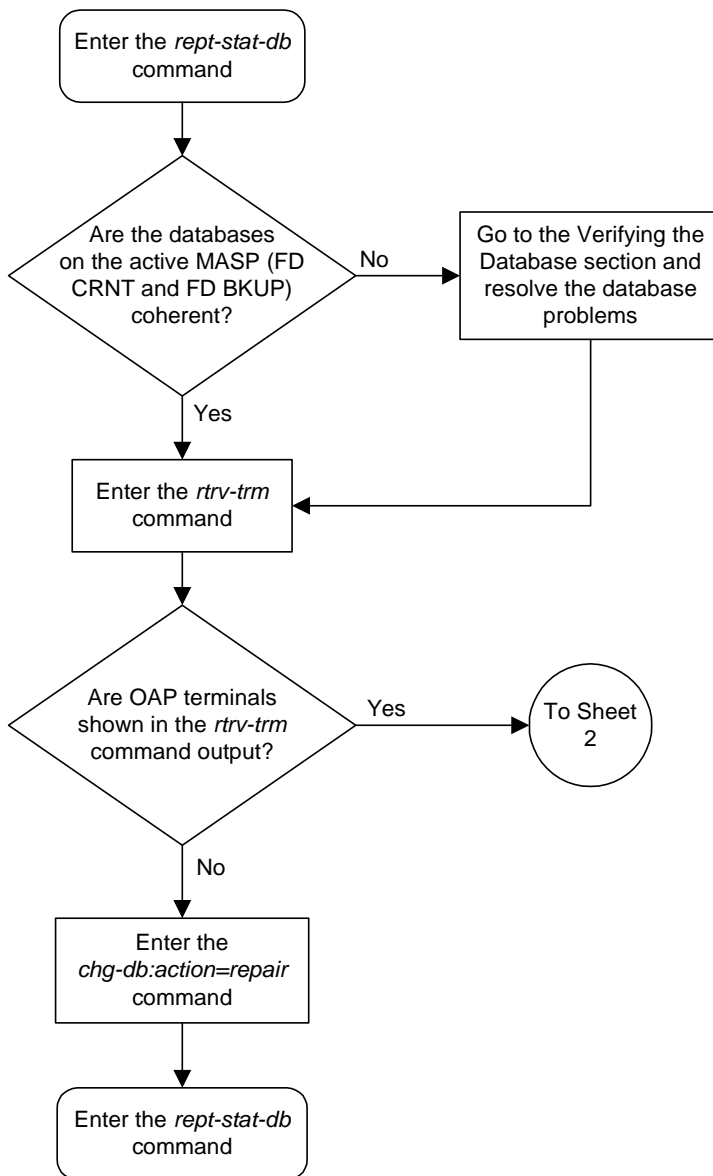
```
rst-trm:trm=9
```

This message should appear when each command has successfully completed.

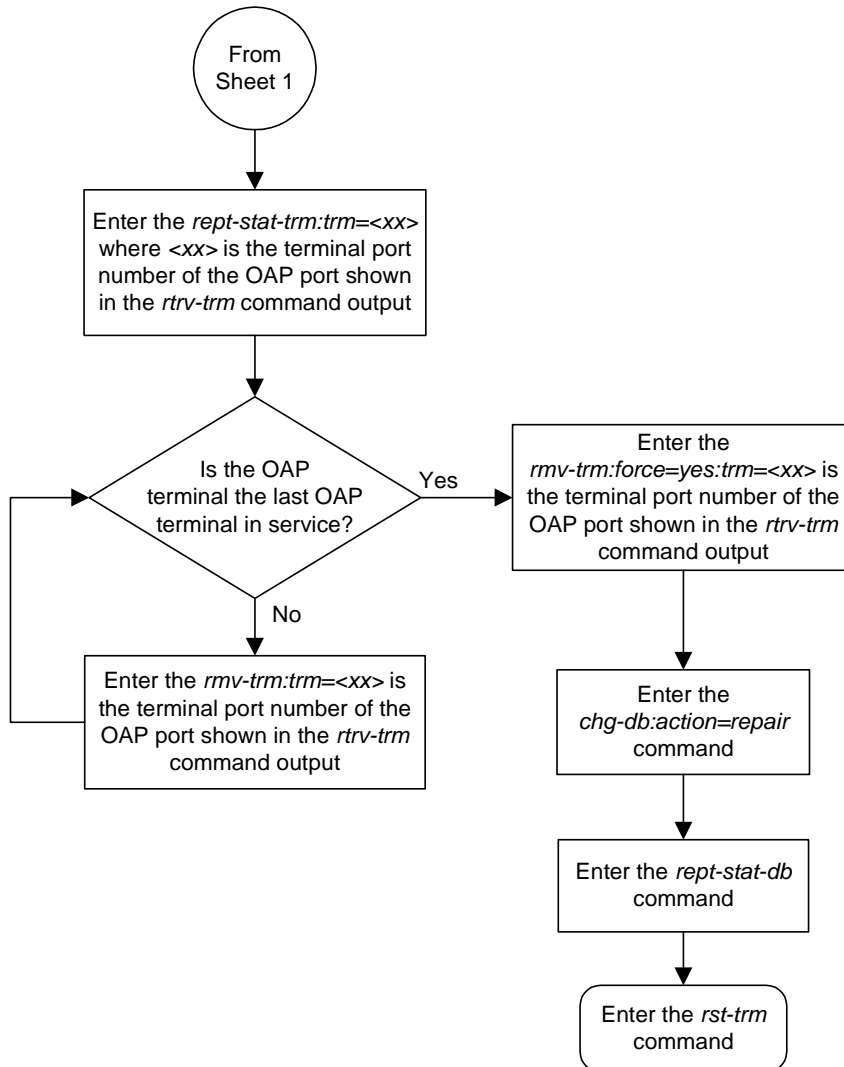
```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Allow message sent to terminal
```

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Command Completed.
```

Flowchart 2-5. Repairing the Database (Sheet 1 of 2)



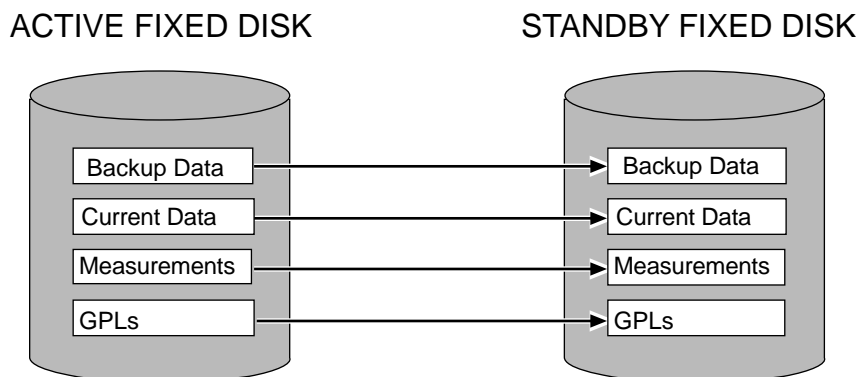
Flowchart 2-5. Repairing the Database (Sheet 2 of 2)



Copying the Database from the Active to the Standby Fixed Disk

This procedure copies everything on the active fixed disk to the standby fixed disk using the `copy-disk` command. Figure 2-10 shows the action of the `copy-disk` command.

Figure 2-10. Action of the Copy Disk Procedure



The `copy-disk` command uses these parameters.

- `:sloc` – the card location of the active fixed disk
- `:dloc` – the card location of the standby fixed disk
- `:force` – does the standby fixed disk contain system data? This parameter provides some protection against data loss from copying over a fixed disk containing system data. If the standby fixed disk contains system data, you must specify the `force=yes` parameter. The default value for this parameter is `no`.

:format – is the standby fixed disk to be formatted before the data from the active fixed disk is copied to the standby fixed disk? The default value for this parameter is **yes**, the standby fixed disk will be formatted before copying.

Specify the **format=no** parameter with the **copy-disk** command to copy to the standby fixed disk without formatting the standby fixed disk. The standby fixed disk must be properly formatted to specify the **format=no** parameter. If the standby fixed disk is not properly formatted and the **format=no** parameter is specified, the **copy-disk** command will be rejected with this message.

E2819 Cmd Rej: Destination disk is unformatted

NOTE: The performance time required to copy a fixed disk to another fixed disk varies depending on database size and system activity. This operation should typically take no longer than 2.5 hours. If you are not performing the low-level format (**format=no**), the operation should take no longer than 1 hour. If the **copy-disk** operation exceeds 3 hours, contact Tekelec Technical Services for assistance. See “Tekelec Technical Services” on page 1-7. If the **copy-disk** operation without the low-level format exceeds 1.5 hours, call Tekelec Technical Services.

The databases in the current (FD CRNT) and the backup (FD BKUP) partitions of the active MASP must be coherent. For more information on verifying the database, read “Verifying the Database” on page 2-10. Measurements must be inhibited.

The standby fixed disk cannot be formatted if the security log on the standby fixed disk contains any entries that have not been copied to the FTA area of the fixed disk. This can be verified with the **rept-stat-secu** command. If the security log on the standby fixed disk contains entries that have not been copied to the file transfer area of the fixed disk, copy these entries to the file transfer area using the **copy-secu** command.

The **copy-disk** command can be executed if the status of the security log on the standby fixed disk cannot be determined. This allows the **copy-disk** command to format and initialize a previously un-initialized fixed disk. An un-initialized fixed disk does not contain a security log.



CAUTION: To prevent any potential database corruption when performing this procedure, the OAP terminals must be placed out of service with the **rmv-trm** command before executing the **copy-disk** command.

Procedure

1. Verify that the databases in the current (FD CRNT) and the backup (FD BKUP) partitions of the active MASP are coherent using the `rept-stat-db` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> NOT OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C  LEVEL      TIME LAST BACKUP  C  LEVEL      TIME LAST BACKUP
-----
FD BKUP  Y          75 04-06-01 13:11:43 GMT  Y          95 04-06-01 13:11:43 GMT
FD CRNT  N          55 DIFF LEVEL           Y          105
      MDAL 1117
      - - - - -
RD BKUP  -          -          -          -          -
```

2. Verify that measurement collection is on or off using the `rtrv-meas-sched` command. This is an example of the possible output. The `COLLECT` field shows whether measurement collection is on or off. In this example, measurement collection is on.

```
rlghncxa03w 04-06-01 12:22:55 GMT EAGLE5 31.5.0
COLLECT          = on
GTWYLSFLTR      = both
-----
SYSTOT-STP      = off
SYSTOT-TT       = off
SYSTOT-STPLAN   = on
COMP-LNKSET     = off
COMP-LINK       = on
GTWY-STP        = on
GTWY-LNKSET     = on
MTCD-STP        = on
MTCD-LINK       = on
MTCD-STPLAN     = on
MTCD-LNKSET     = on
```

NOTE: If measurement collection is off, skip this step and go to step 4.

3. Inhibit all measurements using the `chg-meas:collect=off` command.



CAUTION: Measurements must be inhibited or the `copy-disk` command cannot be executed. The `chg-meas:collect=on` command should not be executed while the `copy-disk` command is in progress. If possible, do not inhibit measurements at midnight since doing so can cause the loss of an entire day of measurements. When measurements are inhibited, measurement collection is stopped. For the period of time that measurements are inhibited, those measurements will be lost.

This message should appear.

```
rlghncxa03w 04-06-01 16:12:50 GMT EAGLE5 31.6.0
CHG-MEAS: MASP A - COMPLTD
```

- Verify whether or not the Measurements Platform option is enabled (**Platform Enabled = on**) using the **rtrv-measopts** command.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
EAGLE MEASUREMENT OPTIONS LIST
```

```
Platform Enabled =on
-----
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*.

NOTE: If step 4 shows that the Measurements Platform is not enabled, skip this step and step 6, and go to step 7.

- Display the status of the MCPMs in the database with the **rept-stat-meas** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0
```

```
MEAS SS          PST          SST          AST
                IS-NR          Active        -----
ALARM STATUS =   No Alarms

CARD  VERSION    TYPE  PST          SST          AST
2107 P 101-9-000  MCPM  IS-NR        Active        -----
      IP Link A   IS-NR        Active        Available
2108  101-9-000  MCPM  IS-NR        Active        -----
      IP Link A   IS-NR        Active        Available
2111  101-9-000  MCPM  IS-NR        Active        -----
      IP Link A   IS-NR        Active        Available

CARD 2107 ALARM STATUS = No Alarms
CARD 2108 ALARM STATUS = No Alarms
CARD 2111 ALARM STATUS = No Alarms
```

- Place all the MCPMs out of service using the **rmv-card** command, specifying the card location of the MCPM. If the MCPM to be placed out of service is the last MCPM that is in service, the **force=yes** parameter must also be specified. For this example, enter these commands.

```
rmv-card:loc=2107
rmv-card:loc=2108
rmv-card:loc=2111:force=yes
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
Card has been inhibited.
```

7. Verify that the security log on the standby MASP contains no entries that must be copied to the FTA area of the fixed disk with the **rept-stat-seculog** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:59:06 GMT EAGLE5 31.6.0
-- SINCE LAST UPLOAD -- OLDEST NEWEST LAST
LOC ROLE ENTRIES %FULL OFLO FAIL RECORD RECORD UPLOAD
1114 Active 8312 84 No No 03-12-05 04-06-01 04-05-30
11:23:56 15:59:06 14:02:22

1116 Standby 693 7 No No 03-12-05 04-06-01 04-05-30
11:24:12 14:00:06 14:02:13
```

If the number shown in the **ENTRIES** field for the standby MASP (shown with the entry **standby** in the **ROLE** field) is 0, go to step 9.

If the number shown in the **ENTRIES** field for the standby MASP is greater than 0, these entries must be copied to the FTA area of the fixed disk. To copy these entries, go to step 8. For this example, go to step 8.

-
8. Copy the security log entries on the standby MASP to the FTA area on the fixed disk with the **copy-seculog** command. For this example, enter the **copy-seculog:slog=stb** command. This is an example of the message that should appear.

```
rlghncxa03w 04-06-01 15:59:06 GMT EAGLE5 31.6.0
Security log on TDM 1116 copied to file 961004s.log on TDM 1114
```

Database Management Procedures

- 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. This is an example of the possible output. In this example, the OAP terminals are terminals 6 and 9. If no OAP terminals are shown in the `rtrv-trm` command output, go to step 12.

```

rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
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

APP  APP
TRM  SERV  SS   CARD  CLK  DBG  GTT  GWS  MEAS  MON  MPS  SEAS  SLAN
1    YES  YES  YES   YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
2    YES  YES  YES   YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
3    YES  YES  YES   YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
4    YES  YES  YES   YES  YES  NO   YES  YES  YES  YES  YES  NO  NO
5    YES  YES  YES   YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
6    YES  YES  YES   YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
7    NO   YES  YES   YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
8    YES  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  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

```

10. Display the status of the terminals with the `rept-stat-trm` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
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. Place the OAP terminals out of service using the `rmv-trm` command. The `force=yes` parameter must be used when placing the last OAP terminal out of service. For this example, enter these commands.

```
rmv-trm:trm=6
```

```
rmv-trm:trm=9:force=yes
```

If the status of the OAP terminals shown in the `PST` field in step 10 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.

This message should appear when each of these commands have successfully completed.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Inhibit message sent to terminal

rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Command Completed.
```

12. Enter the `copy-disk` command along with the card location of the standby TDM (shown by the indicator `STDBY` in the `rept-stat-db` command output in step 1) that the data is being copied to. If the standby fixed disk contains system data, the `force=yes` parameter must be specified with the `copy-disk` command. If you do not wish to format the standby fixed disk before copying, specify the `format=no` parameter with the `copy-disk` command.

For this example, enter this command.

```
copy-disk:dloc=1114:sloc=1116:force=yes:format=yes
```

In this example, the standby fixed disk contains Eagle data and will be formatted before any data is copied to the standby fixed disk.

NOTE: The performance time required to copy a fixed disk to another fixed disk varies depending on database size and system activity. This operation should typically take no longer than 2.5 hours. If you are not performing the low-level format (`format=no`), the operation should take no longer than 1 hour. If the `copy-disk` operation exceeds 3 hours, contact Tekelec Technical Services for assistance. See “Tekelec Technical Services” on page 1-7. If the `copy-disk` operation without the low-level format exceeds 1.5 hours, call Tekelec Technical Services.



WARNING: Failure of the `copy-disk` command may result in corrupted TDMs. If you experience a `copy-disk` command failure, call Tekelec Technical Services for assistance. See “Tekelec Technical Services” on page 1-7.

When the command has been executed and completed, these messages should appear.

```
rlghncxa03w 04-06-01 10:22:05 GMT EAGLE5 31.6.0
copy-disk:sloc=1116:dloc=1114:force=yes
Command entered at terminal #3.
;

rlghncxa03w 04-06-01 10:22:06 GMT EAGLE5 31.6.0
Copy-disk (fixed): from active (1116) to standby (1114) started.
Extended processing required, please wait.
;

rlghncxa03w 04-06-01 10:22:08 GMT EAGLE5 31.6.0
Copy-disk (fixed): format of standby disk started
;

rlghncxa03w 04-06-01 10:27:08 GMT EAGLE5 31.6.0
Copy-disk (fixed): format in progress
;

rlghncxa03w 04-06-01 10:32:08 GMT EAGLE5 31.6.0
Copy-disk (fixed): format in progress
;

rlghncxa03w 04-06-01 11:07:05 GMT EAGLE5 31.6.0
Copy-disk (fixed): format of standby disk completed
;
```

```

rlghncxa03w 04-06-01 11:07:06 GMT EAGLE5 31.6.0
Copy-disk (fixed): copying to standby disk started
;

rlghncxa03w 04-06-01 11:12:06 GMT EAGLE5 31.6.0
Copy-disk (fixed): copy in progress
;

rlghncxa03w 04-06-01 11:27:10 GMT EAGLE5 31.6.0
Copy-disk (fixed): from active (1116) to standby (1114) completed.
Measurements collection may be turned on now if desired.

```

If the **format=no** parameter was specified in this example, these messages should appear when the **copy-disk** command has successfully completed.

copy-disk:dloc=1114:sloc=1116:force=yes:format=no

```

rlghncxa03w 04-06-01 10:22:06 GMT EAGLE5 31.6.0
Copy-disk (fixed): from active (1116) to standby (1114) started.
Extended processing required, please wait.
;

rlghncxa03w 04-06-01 11:07:08 GMT EAGLE5 31.6.0
Copy-disk (fixed): copying to standby disk started
;

rlghncxa03w 04-06-01 11:12:06 GMT EAGLE5 31.6.0
Copy-disk (fixed): copy in progress
;

rlghncxa03w 04-06-01 11:17:06 GMT EAGLE5 31.6.0
Copy-disk (fixed): copy in progress
;

rlghncxa03w 04-06-01 11:22:06 GMT EAGLE5 31.6.0
Copy-disk (fixed): copy in progress
;

rlghncxa03w 04-06-01 11:27:08 GMT EAGLE5 31.6.0
Copy-disk (fixed): from active (1116) to standby (1114) completed.
Measurements collection may be turned on now if desired.

```

The standby MASP is rebooted to load the data when the command completes successfully.

NOTE: While this command is executing, commands that affect the database configuration cannot be executed. Any attempt to execute such a command will be rejected.

NOTE: If measurement collection was not turned off in step 3, skip this step and go to step 14.

13. Turn on the measurements using the **chg-meas:collect=on** command.

This message should appear.

```

rlghncxa03w 04-06-01 16:12:50 GMT EAGLE5 31.6.0
CHG-MEAS: MASP A - COMPLTD

```


NOTE: If MCPMs were not placed out of service in step 6, skip steps 14 and 15, and go to step 16.

14. Place the MCPMs back into service using the **rst-card** specifying the location of each MCPM. For this example, enter these commands.

```
rst-card:loc=2107
rst-card:loc=2108
rst-card:loc=2111
```

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

```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 31.6.0
Card has been allowed.
```

15. Display the status of the MCPMs in the database with the **rept-stat-meas** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0
```

MEAS SS		PST	SST	AST	
		IS-NR	Active	-----	
	ALARM STATUS =	No Alarms			
CARD	VERSION	TYPE	PST	SST	AST
2107 P	101-9-000	MCPM	IS-NR	Active	-----
	IP Link A		IS-NR	Active	Available
2108	101-9-000	MCPM	IS-NR	Active	-----
	IP Link A		IS-NR	Active	Available
2111	101-9-000	MCPM	IS-NR	Active	-----
	IP Link A		IS-NR	Active	Available
	CARD 2107 ALARM STATUS =	No Alarms			
	CARD 2108 ALARM STATUS =	No Alarms			
	CARD 2111 ALARM STATUS =	No Alarms			

16. Verify that the databases of both MASPs are coherent using the **rept-stat-db** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C LEVEL      TIME LAST BACKUP    C LEVEL      TIME LAST BACKUP
-----
FD BKUP  Y          95 04-06-01 05:53:36 GMT  Y          95 04-06-01 05:53:36 GMT
FD CRNT  Y          105
MDAL 1117
-----
RD BKUP  -          -          -          -
```

If OAP terminals are shown in the **rtrv-trm** command output in step 9, go to step 17. Otherwise this procedure is completed.

17. Put the OAP terminals back into service with the `rst-trm` command. For this example, enter these commands.

```
rst-trm:trm=6
```

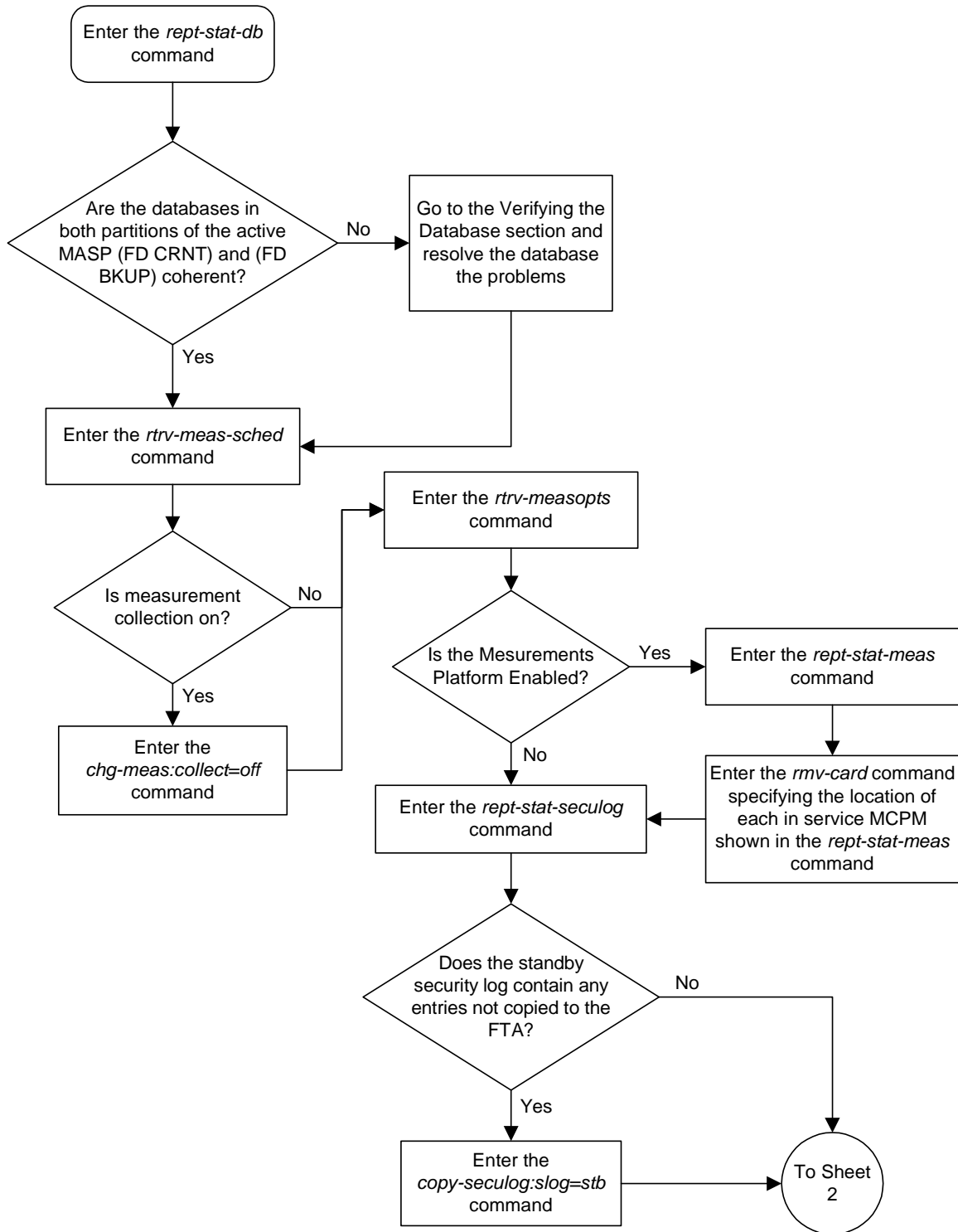
```
rst-trm:trm=9
```

This message should appear when each command has successfully completed.

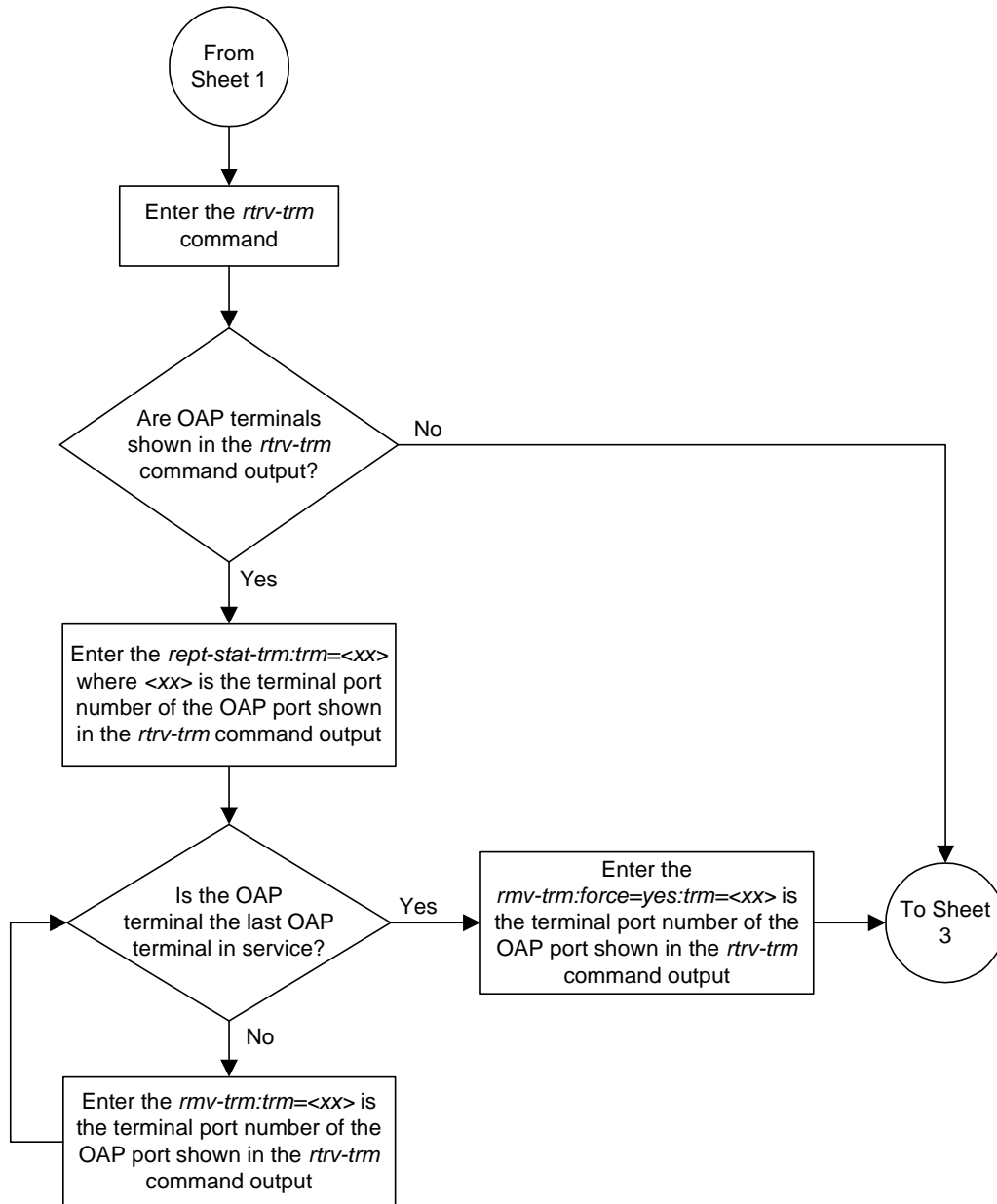
```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0  
Allow message sent to terminal
```

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0  
Command Completed.
```

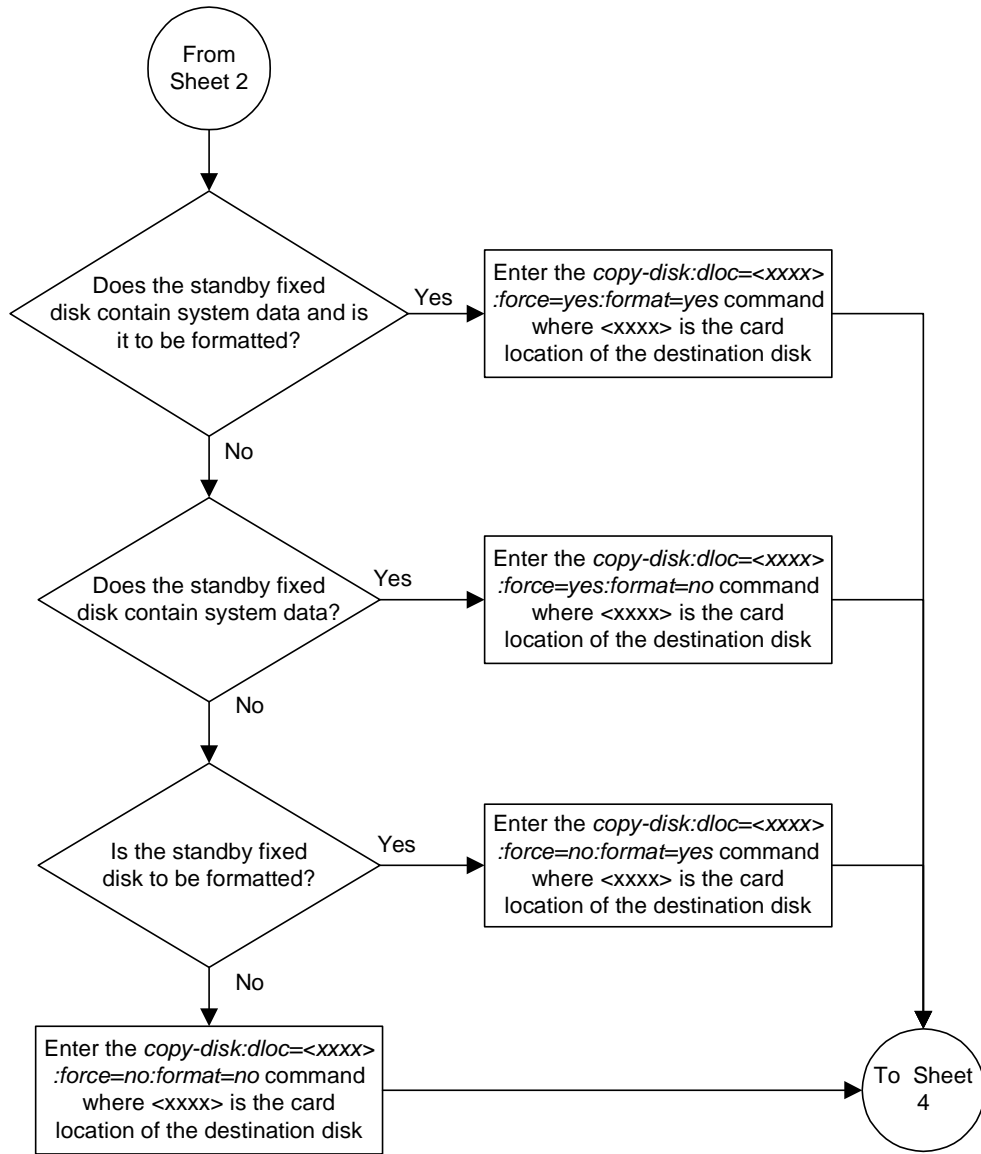
Flowchart 2-6. Copy Disk Procedure (Sheet 1 of 4)



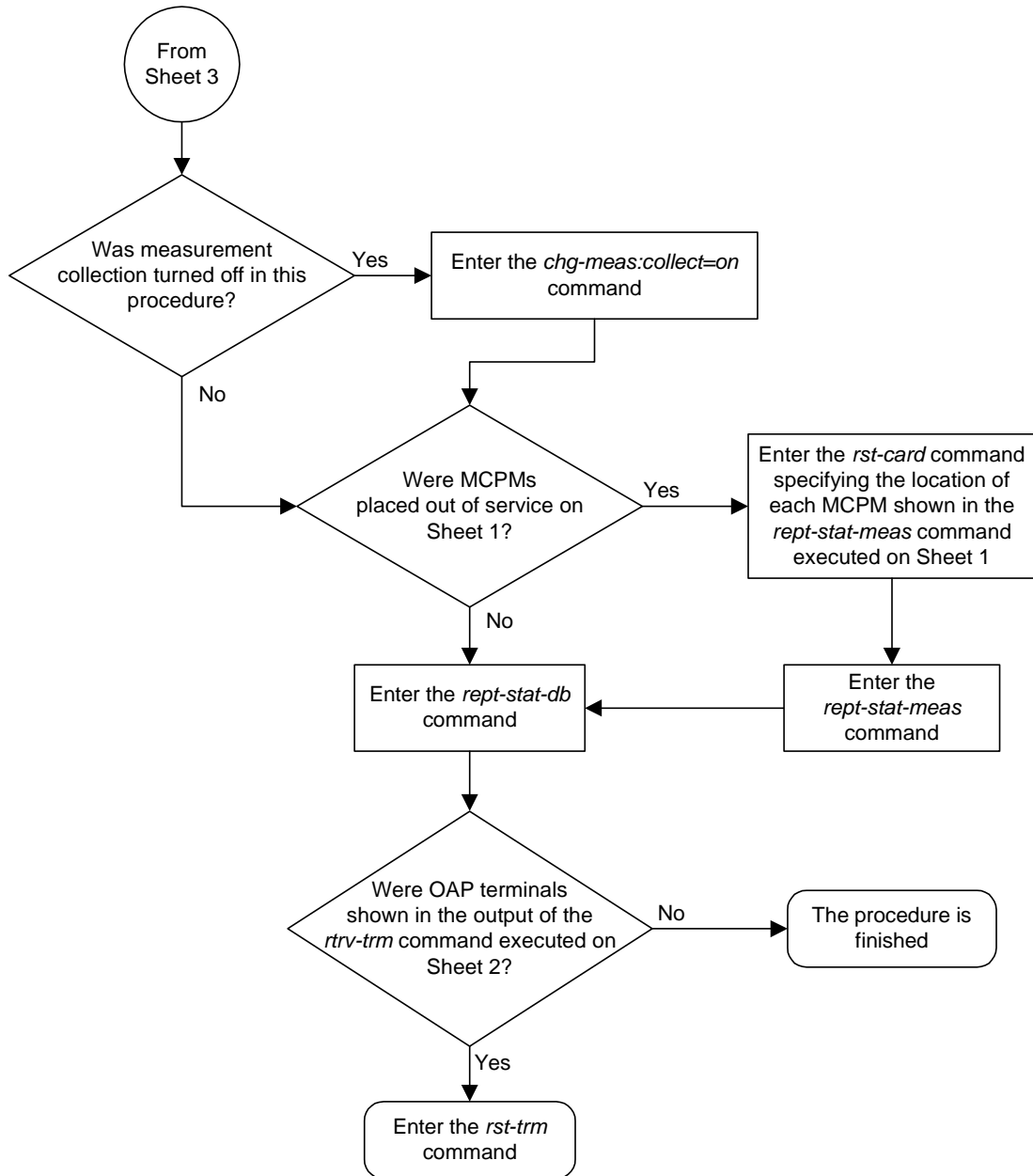
Flowchart 2-6. Copy Disk Procedure (Sheet 2 of 4)



Flowchart 2-6. Copy Disk Procedure (Sheet 3 of 4)



Flowchart 2-6. Copy Disk Procedure (Sheet 4 of 4)



Backing Up System Data to the Removable Cartridge

This section details the procedure used to make a backup copy of the system data in addition to the database.

The term “database” refers to all data that can be administered by the user, including shelves, cards, links, routes, global title translation tables, and gateway screening tables. The term “system data” refers to data that cannot be administered by the user, including maintenance software modules and generic program loads (GPLs).

This procedure is used to make a backup copy of the system data.

The database in the current partition of the active MASP (FD CRNT) must be coherent. For more information on verifying the database, read “Verifying the Database” on page 2-10.

A pre-formatted removable cartridge that is write enabled is required. If the removable cartridge is not formatted, go to the “Formatting a Removable Cartridge” procedure on page 2-80 and format the cartridge. To write enable a removable cartridge, see “Write Enabling the Removable Cartridge” on page 2-7.

Procedure

1. Verify that the database in the current partition of the active MASP (FD CRNT) is coherent using the `rept-stat-db` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
          TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
          C  LEVEL      TIME LAST BACKUP  C  LEVEL      TIME LAST BACKUP
          -  - - - - - - - - - - - - - - -  -  - - - - - - - - - - - - - - -
FD BKUP  Y           95 04-06-01 05:53:36 GMT Y           95 04-06-01 05:53:36 GMT
FD CRNT  Y           105                      Y           105
          MDAL 1117
          -  - - - - - - - - - - - - - - -
RD BKUP  -           -                      -           -
```

2. Insert the pre-formatted removable cartridge in the removable cartridge drive on the MDAL card. For more information on inserting the removable cartridge in the removable cartridge drive, see “Inserting the Removable Cartridge” on page 2-8.
-

3. Enter the **chg-db:action=backup:dest=remove** command:

During command execution, these messages should appear.

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

4. Verify that the databases on the removable cartridge (RD BKUP) and the current partition of the active MASP (FD CRNT) are coherent using the **rept-stat-db** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:09:34 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
      C  LEVEL      TIME LAST BACKUP  C  LEVEL      TIME LAST BACKUP
-----
FD BKUP  Y          95 04-06-01 05:53:36 GMT  Y          95 04-06-01 05:53:36 GMT
FD CRNT  Y          105
      MDAL 1117
      - - - - -
RD BKUP  Y          105 04-05-31 16:07:48 GMT
```

5. Make a backup copy of the GPLs on the fixed disk of the active TDM to the removable cartridge using the **copy-gpl** command. For this example, enter this command.

```
copy-gpl:sloc=1116:dloc=1117
```

During command execution, these messages should appear.

```
rlghncxa03w 04-06-01 14:50:46 GMT EAGLE5 31.6.0
COPY-GPL: MASP B - COPY STARTS ON ACTIVE MASP
COPY GPL: MASP B - COPY TO REMOVABLE CARTRIDGE COMPLETE
```

Database Management Procedures

- Verify the GPLs on the removable cartridge with the `rtrv-gpl` command. This is an example of the possible output.

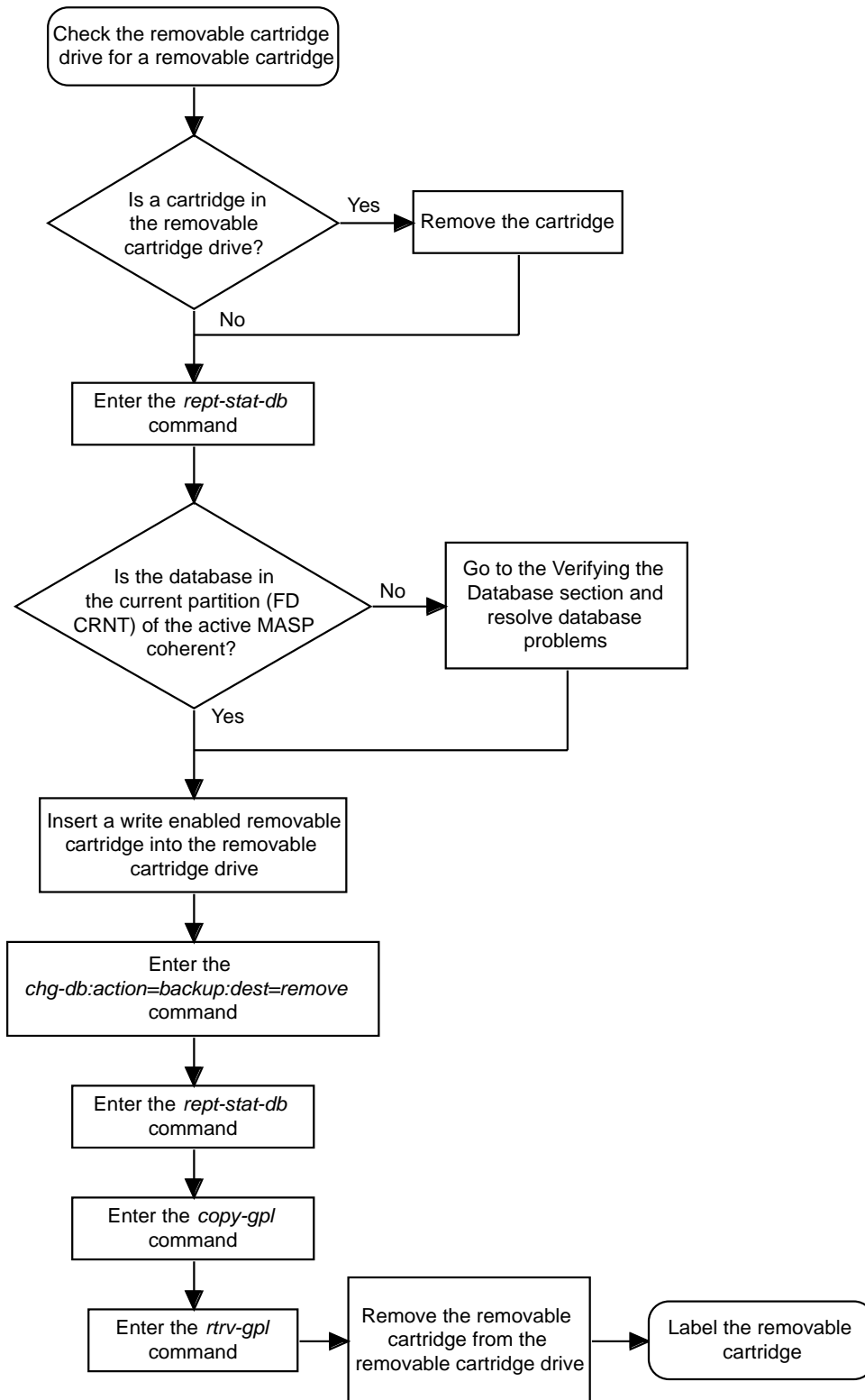
```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
UTILITY	1114	141-000-000	141-000-000	141-001-000	141-001-000
UTILITY	1116	141-000-000	141-000-000	-----	-----
EOAM	1114	113-003-000	113-003-000	113-004-000	113-004-000
EOAM	1116	113-003-000	113-003-000	-----	-----
GLS	1114	113-002-000	113-002-000	113-002-000	113-003-000
GLS	1116	113-002-000	113-002-000	113-002-000	-----
SCCP	1114	113-002-000	113-002-000	113-002-000	113-003-000
SCCP	1116	113-002-000	113-002-000	113-002-000	-----
VSCCP	1114	113-002-000	113-002-000	113-002-000	113-003-000
VSCCP	1116	113-002-000	113-002-000	113-002-000	-----
SS7ANSI	1114	113-002-000	113-002-000	113-002-000	113-003-000
SS7ANSI	1116	113-002-000	113-002-000	113-002-000	-----
ATMANSI	1114	113-002-000	113-002-000	113-001-000	113-002-000
ATMANSI	1116	113-002-000	113-002-000	113-001-000	-----
IPLIM	1114	113-002-000	113-002-000	113-002-000	113-003-000
IPLIM	1116	113-002-000	113-002-000	113-002-000	-----
IPLIMI	1114	113-002-000	113-002-000	113-002-000	113-003-000
IPLIMI	1116	113-002-000	113-002-000	113-002-000	-----
SS7IPGW	1114	113-002-000	113-002-000	113-002-000	113-003-000
SS7IPGW	1116	113-002-000	113-002-000	113-002-000	-----
SS7ML	1114	113-002-000	113-002-000	113-002-000	113-003-000
SS7ML	1116	113-002-000	113-002-000	113-002-000	-----
CCS7ITU	1114	113-002-000	113-002-000	113-002-000	113-003-000
CCS7ITU	1116	113-002-000	113-002-000	113-002-000	-----
SS7GX25	1114	113-001-000	113-001-000	113-001-000	113-002-000
SS7GX25	1116	113-001-000	113-001-000	113-001-000	-----
STPLAN	1114	113-001-000	113-001-000	113-001-000	113-002-000
STPLAN	1116	113-001-000	113-001-000	113-001-000	-----
IMT	1114	113-001-000	113-001-000	113-001-000	113-002-000
IMT	1116	113-001-000	113-001-000	113-001-000	-----
BPHCAP	1114	002-101-000	002-101-000	002-100-000	002-101-000
BPHCAP	1116	002-101-000	002-101-000	002-100-000	-----
BPDCM	1114	002-101-000	002-101-000	002-100-000	002-101-000
BPDCM	1116	002-101-000	002-101-000	002-100-000	-----
BPHMUX	1114	111-001-000	111-001-000	111-000-000	111-001-000
BPHMUX	1116	111-001-000	111-001-000	111-000-000	-----
BPMPPL	1114	002-101-000	002-101-000	002-100-000	002-101-000
BPMPPL	1116	002-101-000	002-101-000	002-100-000	-----
EMDC	1114	113-001-000	113-001-000	113-000-000	113-001-000
EMDC	1116	113-001-000	113-001-000	113-000-000	-----
EBDABLM	1114	113-001-000	113-001-000	113-000-000	113-001-000
EBDABLM	1116	113-001-000	113-001-000	113-000-000	-----
EBDADCM	1114	113-001-000	113-001-000	113-000-000	113-001-000
EBDADCM	1116	113-001-000	113-001-000	113-000-000	-----
VXWSLAN	1114	113-001-000	113-001-000	113-000-000	113-001-000
VXWSLAN	1116	113-001-000	113-001-000	113-000-000	-----
OAP	1114	026-001-000	026-001-000	-----	026-001-000
OAP	1116	026-001-000	026-001-000	-----	-----
EMAP	1114	026-001-000	026-001-000	-----	026-001-000
EMAP	1116	026-001-000	026-001-000	-----	-----

7. Remove the removable cartridge from the removable cartridge drive on the MDAL card. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.
-

8. Label the removable cartridge, 1 through 4 if the backup is performed weekly or monthly, A through D if the backup is performed quarterly. For more information on labeling the removable cartridge, see Chapter 2, "Preventive Maintenance," in the *Maintenance Manual*. Store this cartridge in a secure place.
-

Flowchart 2-7. Backing Up System Data to the Removable Cartridge



Restoring System Data from a Removable Cartridge

This section presents the procedure for restoring system data from a system backup removable cartridge that was made using the `chg-db` command.

The database on the removable cartridge (RD BKUP) must be coherent. For more information on verifying the database, read "Verifying the Database" on page 2-10.

The removable cartridge must contain the database configuration to be restored. The removable cartridge should be write protected.

For some commands to be executed, they must use values obtained from previous steps. The best way to do this is echo the output of the command (for example, `rtrv-gp1`) to a printer. Enter the `rtrv-trm` command to make sure the output is echoed to a printer. If the output is not echoed to a printer, go to the "Changing Terminal Characteristics" procedure on page 4-51 to allow the output to be echoed to a printer.



CAUTION: Using the `action=restore` parameter with the `chg-db` command is an emergency recovery procedure, and requires the `init-sys` command to download the restored database to all the cards in the system.



CAUTION: If the restore device state option is on, shown by the `ON` value for the `RSTRDEV` field in the `rtrv-stpopts` command output, the state of the cards, SS7 signaling links, TCP/IP data links, and terminals before the `chg-db:action=restore` and `init-sys` commands are performed will not be maintained after these commands are performed. The persistent device state table becomes obsolete and is disabled. UIM 1257 is generated.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
1234.1257     SYSTEM          INFO  DB Restore has cleared and disabled PDS
```

Procedure

1. Check the removable cartridge drive on the MDAL card for a removable cartridge. If there is a removable cartridge in the drive, remove it. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.
-
2. Make sure the removable cartridge containing the new software is "write protected" (NOT write enabled). To write protect a removable cartridge, see "Write Protecting the Removable Cartridge" on page 2-6.
-

3. Insert the removable cartridge containing the system data into the removable cartridge drive of the MDAL card. For more information on inserting the removable cartridge in the removable cartridge drive, see "Inserting the Removable Cartridge" on page 2-8.

4. Verify that the database on the removable cartridge (RD BKUP) is coherent using the `rept-stat-db:display=version` command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
          TDM 1114 ( ACTV )                TDM 1116 ( STDBY)
          C  LEVEL    TIME LAST BACKUP    C  LEVEL    TIME LAST BACKUP
          -----
FD BKUP  Y          74 04-05-31 21:03:21 GMT Y          74 04-05-31 21:03:21 GMT
FD CRNT  Y          78                               Y          78
          MDAL 1117
          -----
RD BKUP  Y          74 04-05-31 21:03:21 GMT

CARD/APPL  LOC  C  T  LEVEL    TIME LAST UPDATE  VERSION STATUS
-----
TDM-CRNT   1114 Y  N  78      04-06-01 23:12:37  111-000-000  NORMAL
LNP
TDM-BKUP   1114 Y  -  74      04-05-31 21:03:21  111-000-000  NORMAL
LNP
TDM-CRNT   1116 Y  N  78      04-06-01 23:12:37  111-000-000  NORMAL
LNP
TDM-BKUP   1116 Y  -  74      04-05-31 21:03:21  111-000-000  NORMAL
LNP
MDAL      1117 Y  -  74      04-05-31 21:03:21  111-000-000  NORMAL
LNP
    
```

If the LNP feature is not enabled, the LNP database versions are not shown in the `rept-stat-db:display=version` command output.

If the versions of the databases on the fixed disks (**TDM-CRNT** and **TDM-BKUP**) and the removable cartridge (**MDAL**) are not the same, stop performing this procedure and contact Tekelec Technical Services. See "Tekelec Technical Services" on page 1-7.

5. Enter the `chg-db:action=restore:src=remove` command.

During command execution, these messages should appear.

```

RESTORE (REMOVABLE) : MASP A - Restore starts on active MASP.
RESTORE (REMOVABLE) : MASP A - Restore starts on standby MASP.
RESTORE (REMOVABLE) : MASP A - MASP(s) will reboot to load data.
RESTORE (REMOVABLE) : MASP A - Restore from removable cartridge complete.
    
```

- Verify that the databases on the removable cartridge (RD BKUP) and the current partitions of both MASP's (FD CRNT) are coherent using the `rept-stat-db` command.

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( ACTV )                TDM 1116 ( STDBY)
      C   LEVEL   TIME LAST BACKUP    C   LEVEL   TIME LAST BACKUP
      - - - - -
FD BKUP  Y       74 04-05-31 21:03:21 GMT  Y       74 04-05-31 21:03:21 GMT
FD CRNT  Y       78                          Y       78
      MDAL 1117
      - - - - -
RD BKUP  Y       74 04-05-31 21:03:21 GMT
```

- Remove the removable cartridge from the removable cartridge drive on the MDAL card. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.



CAUTION: The `init-sys` command causes a complete system reload, and should only be used during periods of low traffic. Using this command ensures that all cards are running the same database, but will interrupt service.

- When the commands have successfully completed, re-initialize the system using the `init-sys` command.

NOTE: The `init-sys` command must be entered twice within 30 seconds for the system to be re-initialized. If the `init-sys` command is not executed twice within 30 seconds, the attempt to re-initialize the system is aborted.

When the `init-sys` command is first entered, this message should appear.

```
rlghncxa03w 04-06-01 07:05:01 GMT EAGLE5 31.6.0
CAUTION: This command causes a complete system reload, and
will result in traffic loss.
Re-enter command within 30 seconds to confirm.
```

When the `init-sys` command is re-entered within the 30 second time limit, this message should appear.

```
rlghncxa03w 04-06-01 07:05:17 GMT EAGLE5 31.6.0
Init System command issued at terminal #3
```

From the time that the `init-sys` command is accepted, you must wait approximately 2 minutes before you can perform step 9 (logging into the system). If the system terminal is in the VT-100/VT-320 mode, the terminal display will be refreshed with non-zero alarm counts. During this 2 minutes interval, an intermediate screen refresh caused by the MASP's role change from active to standby, and from standby to active. This screen refresh is typically a partial refresh and the alarm indicators are set to zero.

If you are logged into the system in the KSR mode, the only response you will receive that you are now able to log into the system is that you will receive UAM 0009, MASP became active. UAM 0009 could be issued twice due to possible transient MASP role change (switching from active to standby). Following the execution of the `init-sys` command, the MASP that was active before the `init-sys` command was entered will be the active MASP when the system has finished reinitializing.

9. Log into the system using the `login` or `act-user` command.

This is an example of the messages that appear when you have successfully logged into the system.

```
NOTICE: This is a private computer system.
Unauthorized access or use may lead to prosecution.

0 LOGIN failures since last successful LOGIN
Last successful LOGIN was on port 4 on 04-06-01 @ 09:34:56
```

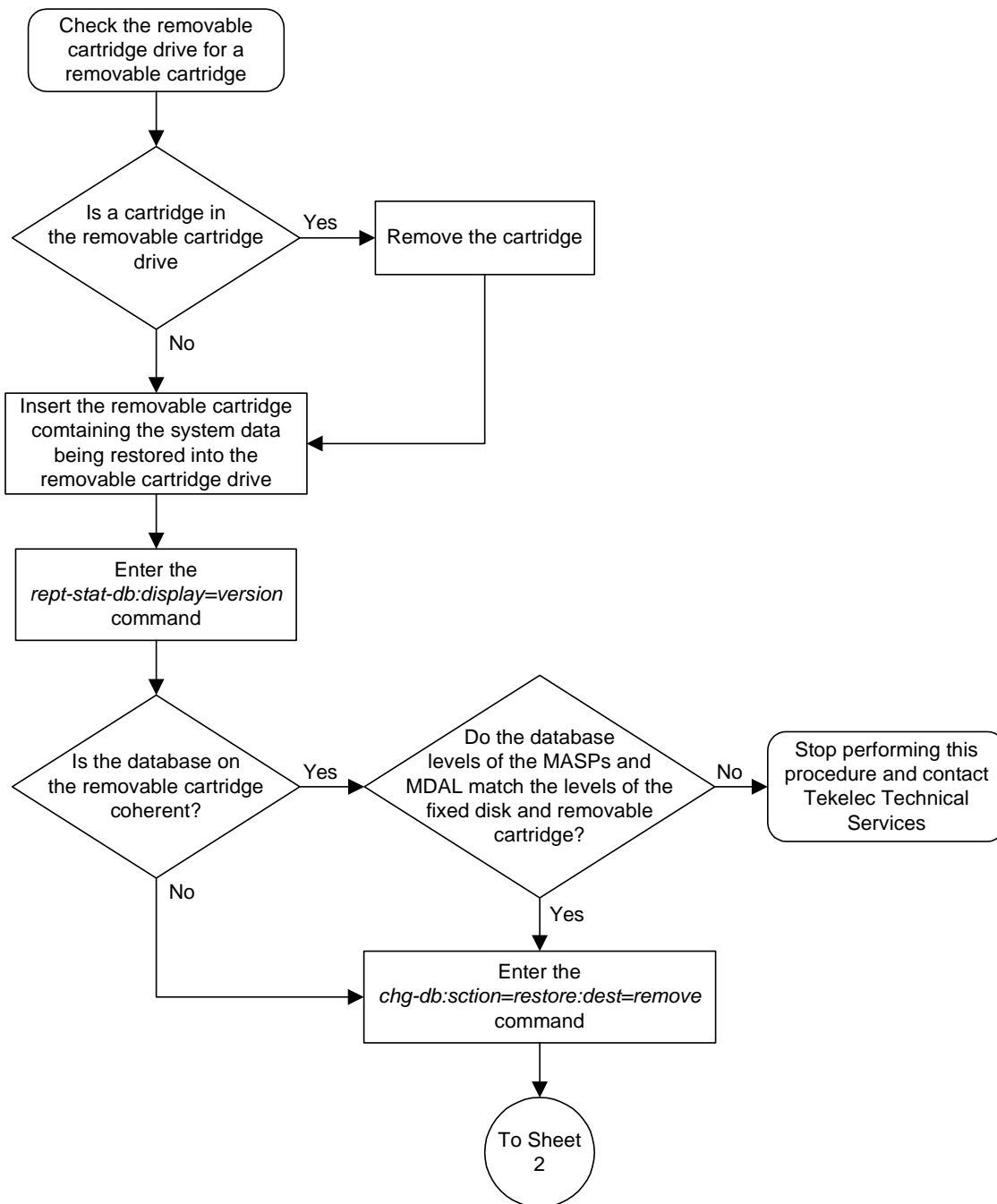
10. Enter the `rept-stat-db:display=all` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
      TDM 1114 ( ACTV )                TDM 1116 ( STDBY)
      C   LEVEL   TIME LAST BACKUP    C   LEVEL   TIME LAST BACKUP
      - - - - -
FD BKUP  Y       74 04-05-31 21:03:21 GMT Y       74 04-05-31 21:03:21 GMT
FD CRNT  Y       78                    Y       78
      MDAL 1117
      - - - - -
RD BKUP  -       -                    -       -

CARD/APPL LOC  C  T  LEVEL           TIME LAST UPDATE   EXCEPTION
-----
SCCP      1101 Y  N  78           04-06-01 23:15:06   -
TDM-CRNT  1114 Y  N  78           04-06-01 23:15:06   -
TDM-BKUP  1114 Y  -  74           04-05-31 21:03:21   -
TDM-CRNT  1116 Y  N  78           04-06-01 23:15:06   -
TDM-BKUP  1116 Y  -  74           04-05-31 21:03:21   -
MDAL      1117 -  -  -            -                   -
SS7ANSI   1201 Y  N  78           04-06-01 23:15:06   -
SS7ANSI   1203 Y  N  78           04-06-01 23:15:06   -
SS7ANSI   1205 Y  N  78           04-06-01 23:15:06   -
CCS7ITU   1207 Y  N  78           04-06-01 23:15:06   -
CCS7ITU   1211 Y  N  78           04-06-01 23:15:06   -
ATMANSI   1217 Y  N  78           04-06-01 23:15:06   -
```

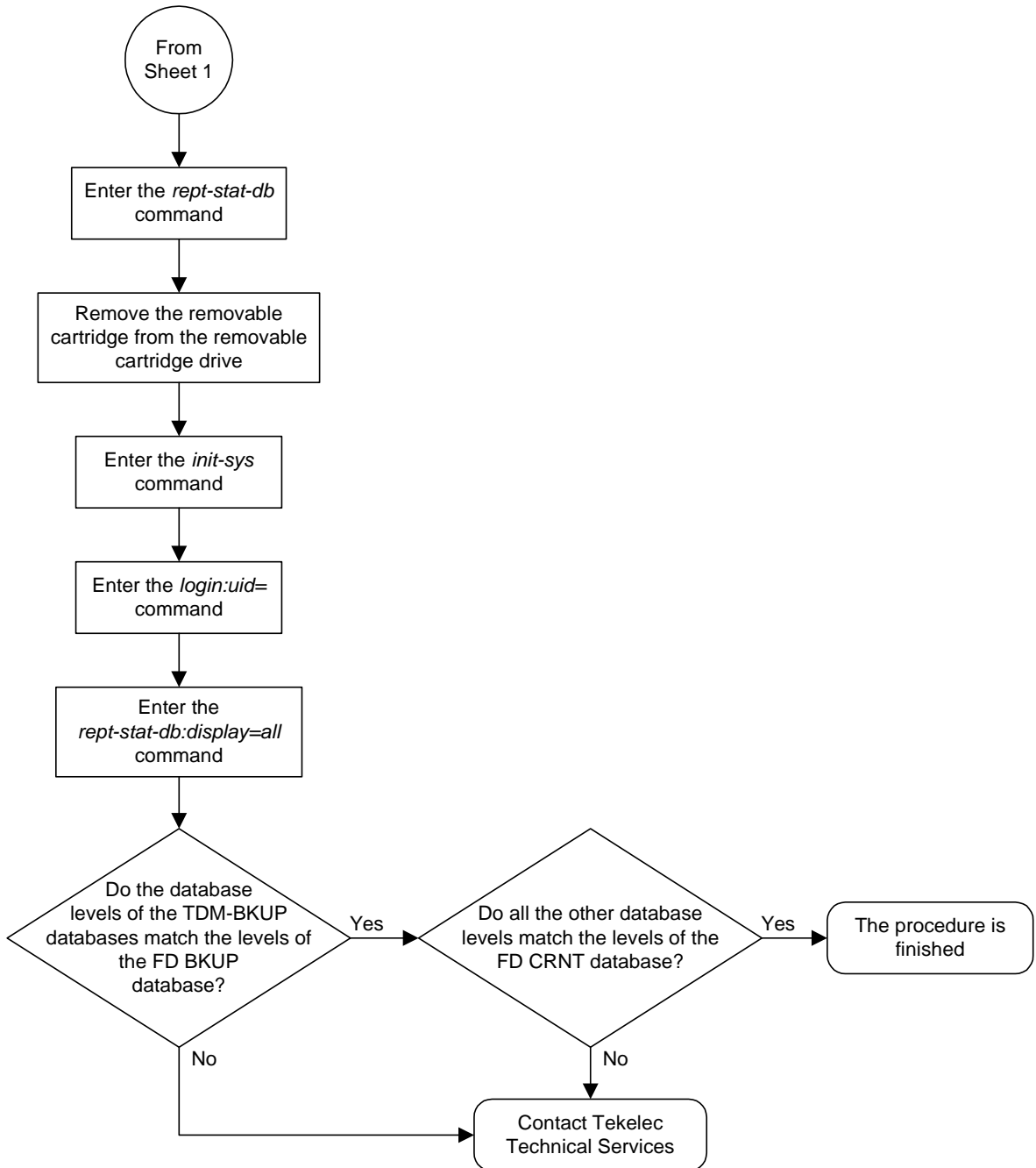
The level for the `TDM-BKUP` database, shown in the `CARD/APPL` field, should be the same as the level for the `FD BKUP` database. All other databases shown in the `CARD/APPL` field should be the same as the level of the `FD CRNT` database. If the levels of the databases are not the same, contact Tekelec Technical Services. See "Tekelec Technical Services" on page 1-7.

Flowchart 2-8. Restoring System Data (Sheet 1 of 2)



Database Management Procedures

Flowchart 2-8. Restoring System Data (Sheet 2 of 2)



Formatting a Removable Cartridge

Use this procedure to prepare a new removable cartridge for use on the system or to take a removable cartridge which was previously used for one purpose and prepare it for the use of another purpose (measurements to system disk and vice versa) using the **format-disk** command. The **format-disk** command uses these parameters.

:type – The type of disk being formatted.

- **system** – A removable cartridge containing system data (GPLs and the database)
- **meas** – A removable cartridge containing measurements data
- **fixed** – The fixed disk of the standby TDM. To format the fixed disk of the standby TDM, go to the “Formatting the Fixed Disk of the Standby TDM” procedure on page 2-92.

:low – Is a low level format being performed on the disk, **yes** or **no**? The default value for this parameter is **yes**.

:force – Format the disk if the disk contains system data, **yes** or **no**. The default value for this parameter is **yes**.

NOTE: Reduce extended execution time when using the **force=yes option by also using the **low=no** option.**

The database in the current (FD CRNT) partition of the active MASP must be coherent. For more information on verifying the database, read “Verifying the Database” on page 2-10.

Measurements must be inhibited before the **format-disk** command can be executed.

A removable cartridge that is write enabled is required. To write enable a removable cartridge, see “Write Enabling the Removable Cartridge” on page 2-7.

- Verify that measurement collection is on or off using the `rtrv-meas-sched` command. This is an example of the possible output. The `COLLECT` field shows whether measurement collection is on or off. In this example, measurement collection is on.

```
rlghncxa03w 04-06-01 12:22:55 GMT EAGLE5 31.5.0
COLLECT      = on
GTWYLSFLTR   = both
-----
SYSTOT-STP   = off
SYSTOT-TT    = off
SYSTOT-STPLAN = on
COMP-LNKSET  = off
COMP-LINK    = on
GTWY-STP     = on
GTWY-LNKSET  = on
MTCD-STP     = on
MTCD-LINK    = on
MTCD-STPLAN  = on
MTCD-LNKSET  = on
```

NOTE: If measurement collection is off, skip this step and go to step 7.

- Inhibit all measurements using the `chg-meas:collect=off` command.



CAUTION: Measurements must be inhibited or the `format-disk` command cannot be executed. The `chg-meas:collect=on` command should not be executed while the `format-disk` command is in progress. If possible, do not inhibit measurements at midnight since doing so can cause the loss of an entire day of measurements. When measurements are inhibited, measurement collection is stopped. For the period of time that measurements are inhibited, those measurements will be lost.

This message should appear.

```
rlghncxa03w 04-06-01 16:12:50 GMT EAGLE5 31.6.0
CHG-MEAS: MASP A - COMPLTD
```

- Verify whether or nor the Measurements Platform option is enabled (**Platform Enabled = on**) using the `rtrv-measopts` command.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
EAGLE MEASUREMENT OPTIONS LIST

Platform Enabled =on
-----
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*.

NOTE: If step 7 shows that the Measurements Platform is not enabled, skip this step and step 9, and go to step 10.

8. Display the status of the MCPMs in the database with the **rept-stat-meas** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0

MEAS SS          PST          SST          AST
              IS-NR          Active      -----
ALARM STATUS =  No Alarms

CARD  VERSION      TYPE  PST          SST          AST
2107 P 101-9-000   MCPM  IS-NR        Active      -----
      IP Link A          IS-NR        Active      Available
2108  101-9-000   MCPM  IS-NR        Active      -----
      IP Link A          IS-NR        Active      Available
2111  101-9-000   MCPM  IS-NR        Active      -----
      IP Link A          IS-NR        Active      Available

CARD 2107 ALARM STATUS = No Alarms
CARD 2108 ALARM STATUS = No Alarms
CARD 2111 ALARM STATUS = No Alarms
```

9. Place all the MCPMs out of service using the **rmv-card** command, specifying the card location of the MCPM. If the MCPM to be placed out of service is the last MCPM that is in service, the **force=yes** parameter must also be specified. For this example, enter these commands.

```
rmv-card:loc=2107
rmv-card:loc=2108
rmv-card:loc=2111:force=yes
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
Card has been inhibited.
```

10. Format the removable cartridge. If you are formatting the removable cartridge for system data, go to step 11. If you are formatting the removable cartridge for measurements data, go to step 12.
-

11. To format a removable cartridge for system data, enter this command.

```
format-disk:type=system
```

NOTE: Because the default value for the `low` parameter (low level format parameter) is `yes`, this command will perform a low level format of the removable cartridge. If you do not wish to perform a low level format of the removable cartridge, the `low=no` parameter must be specified with the `format-disk` command.

If the removable cartridge to be formatted contains system data, the `force=yes` parameter must be specified with the `format-disk` command. All data on the removable cartridge will be lost.

It takes approximately 31 minutes to format a removable cartridge for system data. It may take longer depending on other system activity that is in progress when this command is entered. When this command has successfully completed, these messages should appear.

```
rlghncxa03w 04-06-01 09:44:08 GMT EAGLE5 31.6.0
format-disk:type=system
Command entered at terminal #3.
;

rlghncxa03w 04-06-01 09:44:08 GMT EAGLE5 31.6.0
Format-disk of system removable cartridge started.
;

rlghncxa03w 04-06-01 09:44:08 GMT EAGLE5 31.6.0
Format-disk (removable cartridge) format in progress.
;

rlghncxa03w 04-06-01 09:44:08 GMT EAGLE5 31.6.0
Format-disk (removable cartridge) format in progress.
;

rlghncxa03w 04-06-01 09:44:08 GMT EAGLE5 31.6.0
Format-disk (removable cartridge) format is complete.
;

rlghncxa03w 04-06-01 09:44:08 GMT EAGLE5 31.6.0
Format-disk of system removable cartridge completed.
Measurements collection may be turned on now if desired.
```

If you wish to turn measurement collection on, perform steps 13 and 14, otherwise, this procedure is finished.

12. To format a removable cartridge for measurements data, enter this command.

```
format-disk:type=meas
```

NOTE: Because the default value for the `low` parameter (low level format parameter) is `yes`, this command will perform a low level format of the removable cartridge. If you do not wish to perform a low level format of the removable cartridge, the `low=no` parameter must be specified with the `format-disk` command.

If the removable cartridge to be formatted contains system data, the `force=yes` parameter must be specified with the `format-disk` command. All data on the removable cartridge will be lost.

It takes approximately 27 minutes to format a removable cartridge for measurement data. When this command has successfully completed, these messages should appear.

```
rlghncxa03w 04-06-01 09:44:08 GMT  EAGLE5 31.6.0
format-disk:type=system
Command entered at terminal #3.
;

rlghncxa03w 04-06-01 09:44:08 GMT  EAGLE5 31.6.0
Format-disk of measurements removable cartridge started.
;

rlghncxa03w 04-06-01 09:44:08 GMT  EAGLE5 31.6.0
Format-disk (removable cartridge) format in progress.
;

rlghncxa03w 04-06-01 09:44:08 GMT  EAGLE5 31.6.0
Format-disk (removable cartridge) format in progress.
;

rlghncxa03w 04-06-01 09:44:08 GMT  EAGLE5 31.6.0
Format-disk (removable cartridge) format is complete.
;

rlghncxa03w 04-06-01 09:44:08 GMT  EAGLE5 31.6.0
Format-disk of measurements removable cartridge completed.
Measurements collection may be turned on now if desired.
```

NOTE: If measurement collection was not turned off in step 6, skip this step and step 14, and go to step 15.

13. Turn on the measurements using the `chg-meas:collect=on` command.

This message should appear.

```
rlghncxa03w 04-06-01 16:12:50 GMT  EAGLE5 31.6.0
CHG-MEAS: MASP A - COMPLTD
```

14. Verify that measurement collection is on using the **rtrv-meas-sched** command, shown by the **COLLECT = on** field in the output. This is an example of the possible output.

```
rlghncxa03w 04-06-01 12:22:55 GMT EAGLE5 31.5.0
COLLECT          = on
GTWYLSFLTR      = both
-----
SYSTOT-STP      = off
SYSTOT-TT       = off
SYSTOT-STPLAN   = on
COMP-LNKSET     = off
COMP-LINK       = on
GTWY-STP        = on
GTWY-LNKSET     = on
MTCD-STP        = on
MTCD-LINK       = on
MTCD-STPLAN     = on
MTCD-LNKSET     = on
```

NOTE: If MCPMs were not placed out of service in step 9, skip this step and step 16. This procedure is finished.

15. Place the MCPMs back into service using the **rst-card** specifying the location of each MCPM. For this example, enter these commands.

```
rst-card:loc=2107
```

```
rst-card:loc=2108
```

```
rst-card:loc=2111
```

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

```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 31.6.0
Card has been allowed.
```

16. Display the status of the MCPMs in the database with the **rept-stat-meas** command. This is an example of the possible output.

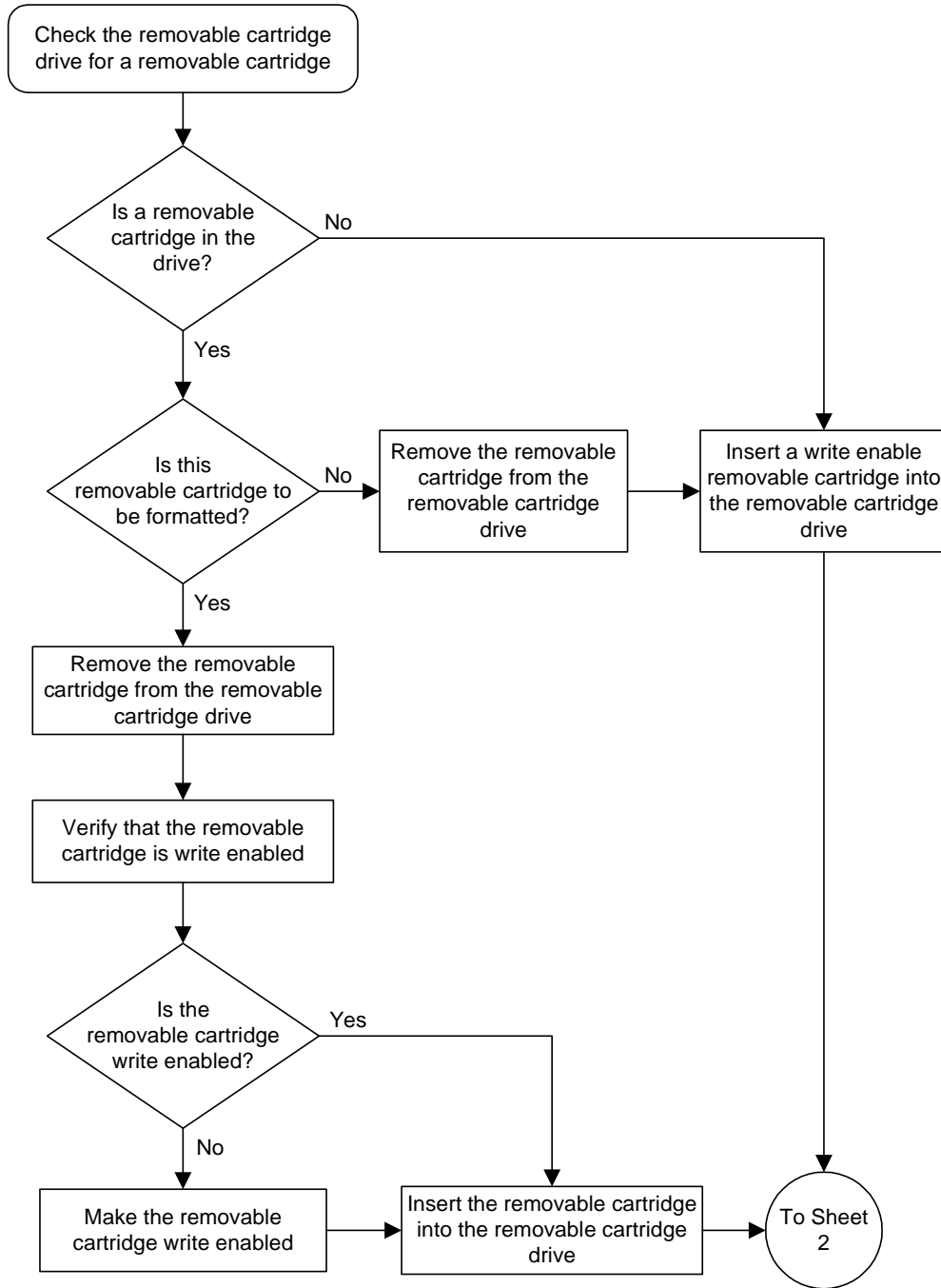
```
rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0

MEAS SS          PST          SST          AST
                IS-NR          Active       -----
ALARM STATUS =  No Alarms

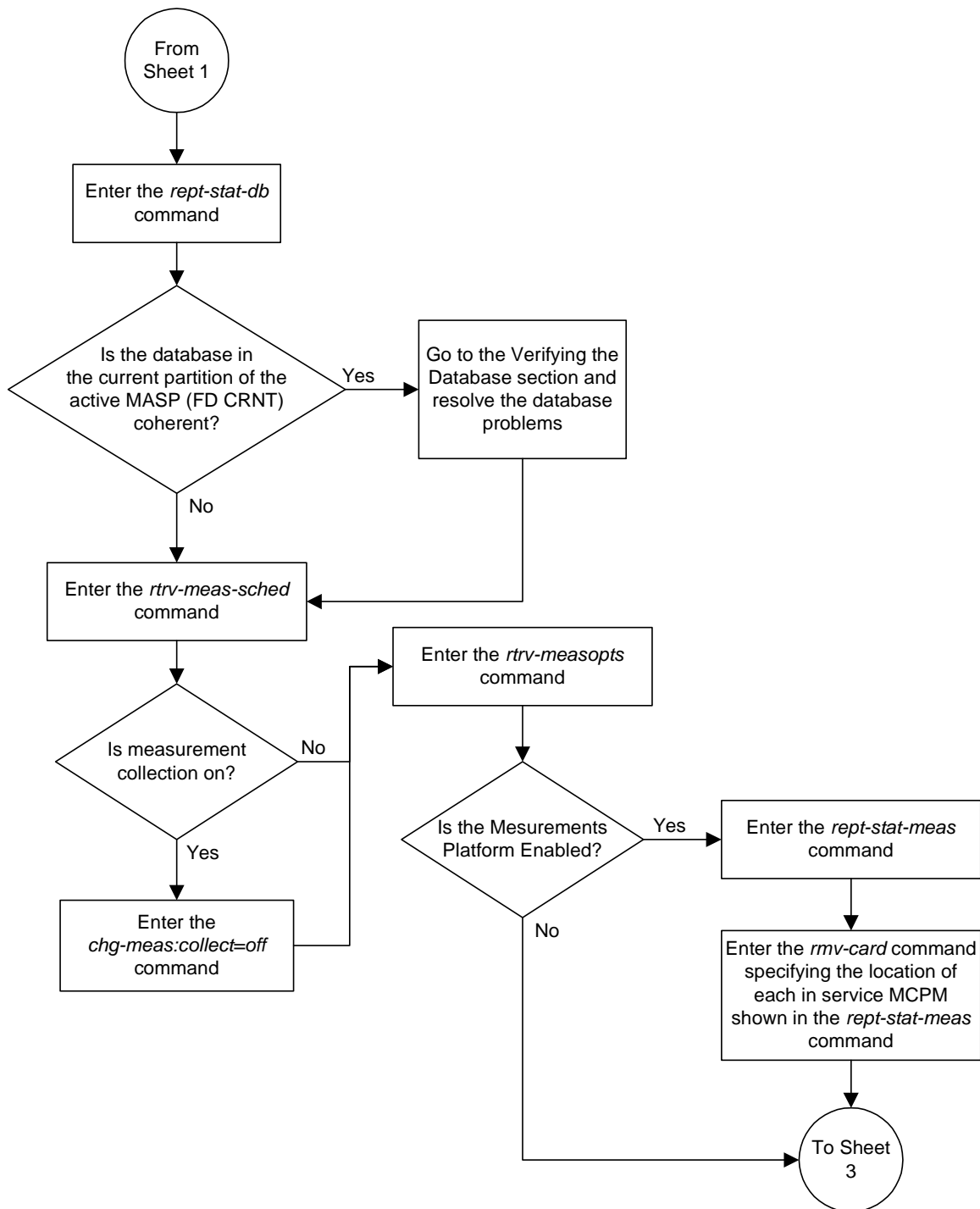
CARD  VERSION    TYPE  PST          SST          AST
2107 P 101-9-000  MCPM  IS-NR        Active       -----
      IP Link A   IS-NR        Active       Available
2108 101-9-000  MCPM  IS-NR        Active       -----
      IP Link A   IS-NR        Active       Available
2111 101-9-000  MCPM  IS-NR        Active       -----
      IP Link A   IS-NR        Active       Available

CARD 2107 ALARM STATUS = No Alarms
CARD 2108 ALARM STATUS = No Alarms
CARD 2111 ALARM STATUS = No Alarms
```

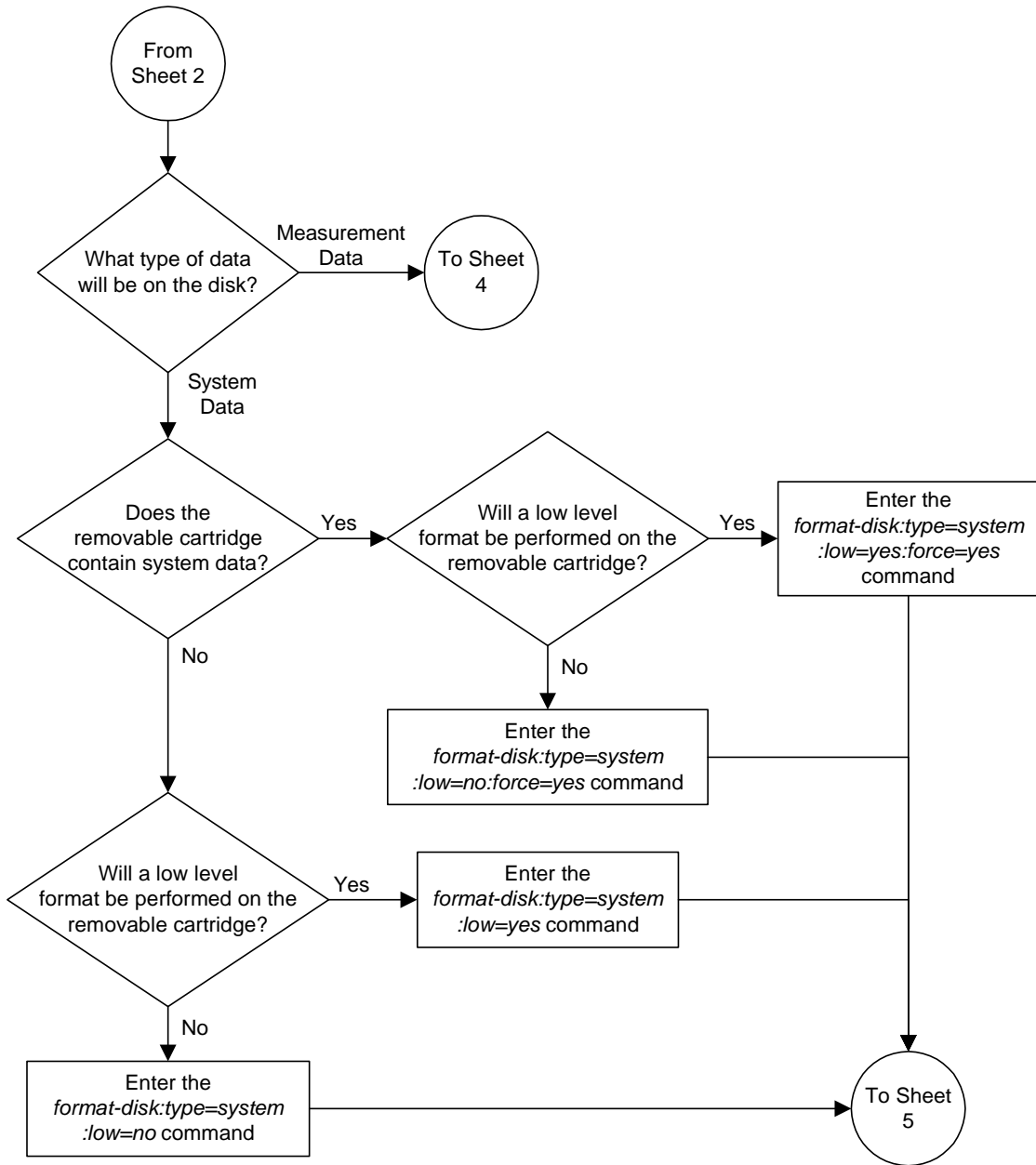
Flowchart 2-9. Formatting the Removable Cartridge (Sheet 1 of 5)



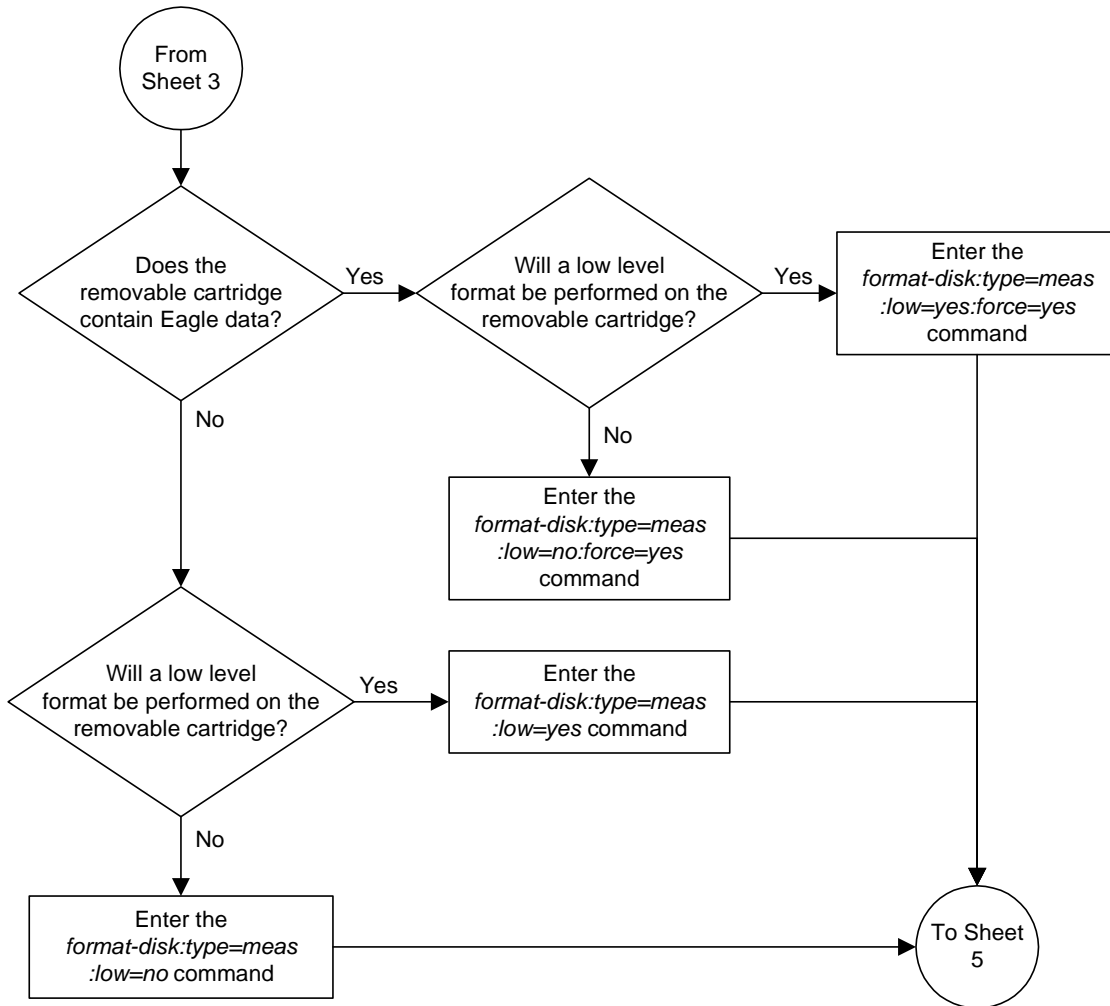
Flowchart 2-9. Formatting the Removable Cartridge (Sheet 2 of 5)



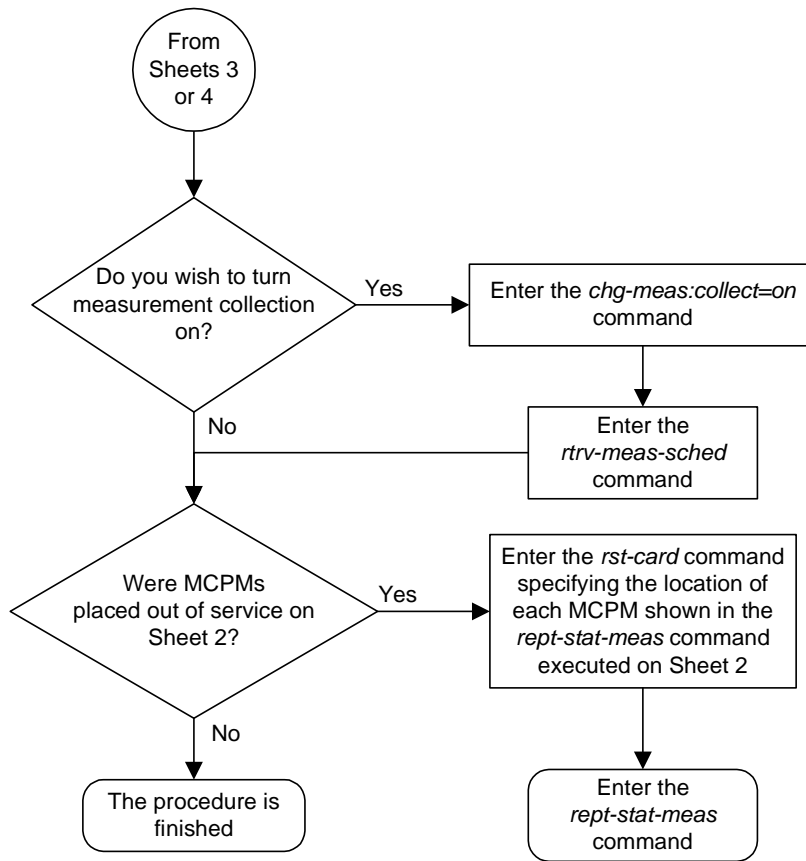
Flowchart 2-9. Formatting the Removable Cartridge (Sheet 3 of 5)



Flowchart 2-9. Formatting the Removable Cartridge (Sheet 4 of 5)



Flowchart 2-9. Formatting the Removable Cartridge (Sheet 5 of 5)



Formatting the Fixed Disk of the Standby TDM

Use this procedure to format the fixed disk of the standby TDM using the **format-disk** command. To format a removable cartridge, go to the “Formatting a Removable Cartridge” procedure on page 2-80.

The **format-disk** command uses these parameters.

:type – The type of disk being formatted.

- **system** – A removable cartridge containing system data (GPLs and the database)
- **meas** – A removable cartridge containing measurements data
- **fixed** – The fixed disk of the standby TDM.

NOTE: If a **format-disk:type=fixed** command failure causes the standby TDM to boot continuously, insert a removable disk that has the same release as the active TDM into the MDAL. The standby TDM can then boot off of the removable disk.

:low – Is a low level format being performed on the disk, **yes** or **no**? The default value for this parameter is **yes**.

:force – Format the disk if the disk contains system data, **yes** or **no**. The default value for this parameter is **yes**.

NOTE: Reduce extended execution time when using the **force=yes** option by also using the **low=no** option.

The database in the current (FD CRNT) partition of the active MASP must be coherent. For more information on verifying the database, read “Verifying the Database” on page 2-10.

Measurements must be inhibited before the **format-disk** command can be executed.

The standby fixed disk cannot be formatted if the security log on the standby fixed disk contains any entries that have not been copied to the FTA area of the fixed disk. This can be verified with the **rept-stat-secu** command. If the security log on the standby fixed disk contains entries that have not been copied to the file transfer area of the fixed disk, copy these entries to the file transfer area using the **copy-secu** command.

Procedure

1. Verify that the database in the current (FD CRNT) partition of the active MASP is coherent using the **rept-stat-db** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:11:34 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
          TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
          C  LEVEL      TIME LAST BACKUP   C  LEVEL      TIME LAST BACKUP
          -  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
FD BKUP  Y           35 04-06-01 10:19:18 GMT Y           35 04-06-01 10:19:18 GMT
FD CRNT  Y           106                       Y           106
          MDAL 1117
          -  - - - - -
RD BKUP  -  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

If the current database on the active MASP is not coherent, go to the “Verifying the Database” section on page 2-10 and resolve the database problem.

2. Verify that measurement collection is on or off using the **rtrv-meas-sched** command. This is an example of the possible output. The **COLLECT** field shows whether measurement collection is on or off. In this example, measurement collection is on.

```
rlghncxa03w 04-06-01 12:22:55 GMT EAGLE5 31.5.0
COLLECT          =  on
GTWYLSFLTR      =  both
-----
SYSTOT-STP      =  off
SYSTOT-TT       =  off
SYSTOT-STPLAN   =  on
COMP-LNKSET     =  off
COMP-LINK       =  on
GTWY-STP        =  on
GTWY-LNKSET     =  on
MTCN-STP        =  on
MTCN-LINK       =  on
MTCN-STPLAN     =  on
MTCN-LNKSET     =  on
```

NOTE: If measurement collection is off, skip this step and go to step 4.

- Inhibit all measurements using the `chg-meas:collect=off` command.



CAUTION: Measurements must be inhibited or the `format-disk` command cannot be executed. The `chg-meas:collect=on` command should not be executed while the `format-disk` command is in progress. If possible, do not inhibit measurements at midnight since doing so can cause the loss of an entire day of measurements. When measurements are inhibited, measurement collection is stopped. For the period of time that measurements are inhibited, those measurements will be lost.

This message should appear.

```
rlghncxa03w 04-06-01 16:12:50 GMT EAGLE5 31.6.0
CHG-MEAS: MASP A - COMPLTD
```

- Verify whether or nor the Measurements Platform option is enabled (**Platform Enabled = on**) using the `rtrv-measopts` command.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
EAGLE MEASUREMENT OPTIONS LIST
```

```
Platform Enabled =on
-----
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*.

NOTE: If step 4 shows that the Measurements Platform is not enabled, skip this step and step 6, and go to step 7.

- Display the status of the MCPMs in the database with the `rept-stat-meas` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0
```

```
MEAS SS          PST          SST          AST
                IS-NR        Active       -----
ALARM STATUS =  No Alarms
```

CARD	VERSION	TYPE	PST	SST	AST
2107	P 101-9-000	MCPM	IS-NR	Active	-----
	IP Link A		IS-NR	Active	Available
2108	101-9-000	MCPM	IS-NR	Active	-----
	IP Link A		IS-NR	Active	Available
2111	101-9-000	MCPM	IS-NR	Active	-----
	IP Link A		IS-NR	Active	Available

```
CARD 2107 ALARM STATUS = No Alarms
CARD 2108 ALARM STATUS = No Alarms
CARD 2111 ALARM STATUS = No Alarms
```

- Place all the MCPMs out of service using the **rmv-card** command, specifying the card location of the MCPM. If the MCPM to be placed out of service is the last MCPM that is in service, the **force=yes** parameter must also be specified. For this example, enter these commands.

```
rmv-card:loc=2107
rmv-card:loc=2108
rmv-card:loc=2111:force=yes
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
Card has been inhibited.
```

- Verify that the security log on the standby MASP contains no entries that must be copied to the FTA area of the fixed disk with the **rept-stat-secu** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:59:06 GMT EAGLE5 31.6.0
-- SINCE LAST UPLOAD -- OLDEST NEWEST LAST
LOC ROLE ENTRIES %FULL OFLO FAIL RECORD RECORD UPLOAD
1114 Active 8312 84 No No 03-12-05 04-06-01 04-05-30
11:23:56 15:59:06 14:02:22

1116 Standby 693 7 No No 03-12-05 04-06-01 04-05-30
11:24:12 14:00:06 14:02:13
```

If the number shown in the **ENTRIES** field for the standby MASP (shown with the entry **Standby** in the **ROLE** field) is 0, go to step 9.

If the number shown in the **ENTRIES** field for the standby MASP is greater than 0, these entries must be copied to the FTA area of the fixed disk. To copy these entries, go to step 8.

For this example, go to step 8.

- Copy the security log entries on the standby MASP to the FTA area on the fixed disk with the **copy-secu** command. For this example, enter the **copy-secu:slog=stb** command. This is an example of the message that should appear.

```
rlghncxa03w 04-06-01 15:59:06 GMT EAGLE5 31.6.0
Security log on TDM 1116 copied to file 961004s.log on TDM 1114
```

9. Format the fixed disk of the standby TDM by entering the `format-disk` command. For this example, the fixed disk of the standby TDM contains system data and a low level format of the fixed disk of the standby TDM is not performed.

```
format-disk:type=fixed:force=yes:low=no
```

NOTE: The `force=yes` parameter must be specified with the `format-disk` command if the fixed disk of the standby TDM to be formatted contains system data. All data on the fixed disk of the standby TDM will be lost.

The `low=no` parameter specified in this command example does not allow a low level format of the fixed disk of the standby TDM to be performed. If you wish to perform a low level format of the fixed disk of the standby TDM, specify the `low=yes` parameter with the `format-disk` command. Because the default value for the `low` parameter is `yes`, the `low` parameter can be omitted when entering the `format-disk` command to perform a low level format of the fixed disk of the standby TDM.

NOTE: If a `format-disk:type=fixed` command failure causes the standby TDM to boot continuously, insert a removable disk that has the same release as the active TDM into the MDAL. The standby TDM can then boot off of the removable disk.

Formatting the fixed disk of the standby TDM can take from 14 minutes to 1 hour and 25 minutes to execute. It may take longer depending on other system activity that is in progress when this command is entered. When this command has successfully completed, these messages should appear.

```
rlghncxa03w 04-06-01 09:44:08 GMT EAGLE5 31.6.0
format-disk:type=fixed:low=no:force=yes
Command entered at terminal #3.
;
rlghncxa03w 04-06-01 09:44:08 GMT EAGLE5 31.6.0
Format-disk of standby fixed disk started.
Extended processing required, please wait.
;
rlghncxa03w 04-06-01 09:44:08 GMT EAGLE5 31.6.0
Format-disk (fixed) format in progress.
;
rlghncxa03w 04-06-01 09:44:08 GMT EAGLE5 31.6.0
Format-disk (fixed) format is complete.
;
rlghncxa03w 04-06-01 09:44:08 GMT EAGLE5 31.6.0
Format-disk of standby fixed disk completed.
Measurements collection may be turned on now if desired.
```

If you wish to turn measurement collection on, go to step 10, otherwise, this procedure is finished.

NOTE: If measurement collection was not turned off in step 3, skip this step and step 11, and go to step 12.

10. If you wish to turn measurement collection on, enter this command.

```
chg-meas:collect=on
```

This message should appear.

```
rlghncxa03w 04-06-01 16:12:50 GMT EAGLE5 31.6.0  
CHG-MEAS: MASP A - COMPLTD
```

11. Verify that measurement collection is on using the **rtrv-meas-sched** command, shown by the **COLLECT = on** field in the output. This is an example of the possible output.

```
rlghncxa03w 04-06-01 12:22:55 GMT EAGLE5 31.5.0  
COLLECT          = on  
GTWYLSFLTR      = both  
-----  
SYSTOT-STP      = off  
SYSTOT-TT       = off  
SYSTOT-STPLAN   = on  
COMP-LNKSET     = off  
COMP-LINK       = on  
GTWY-STP        = on  
GTWY-LNKSET     = on  
MTCD-STP        = on  
MTCD-LINK       = on  
MTCD-STPLAN     = on  
MTCD-LNKSET     = on
```

NOTE: If MCPMs were not placed out of service in step 6, skip this step and step 13. This procedure is finished.

12. Place the MCPMs back into service using the **rst-card** specifying the location of each MCPM. For this example, enter these commands.

```
rst-card:loc=2107
```

```
rst-card:loc=2108
```

```
rst-card:loc=2111
```

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

```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 31.6.0  
Card has been allowed.
```

13. Display the status of the MCPMs in the database with the `rept-stat-meas` command. This is an example of the possible output.

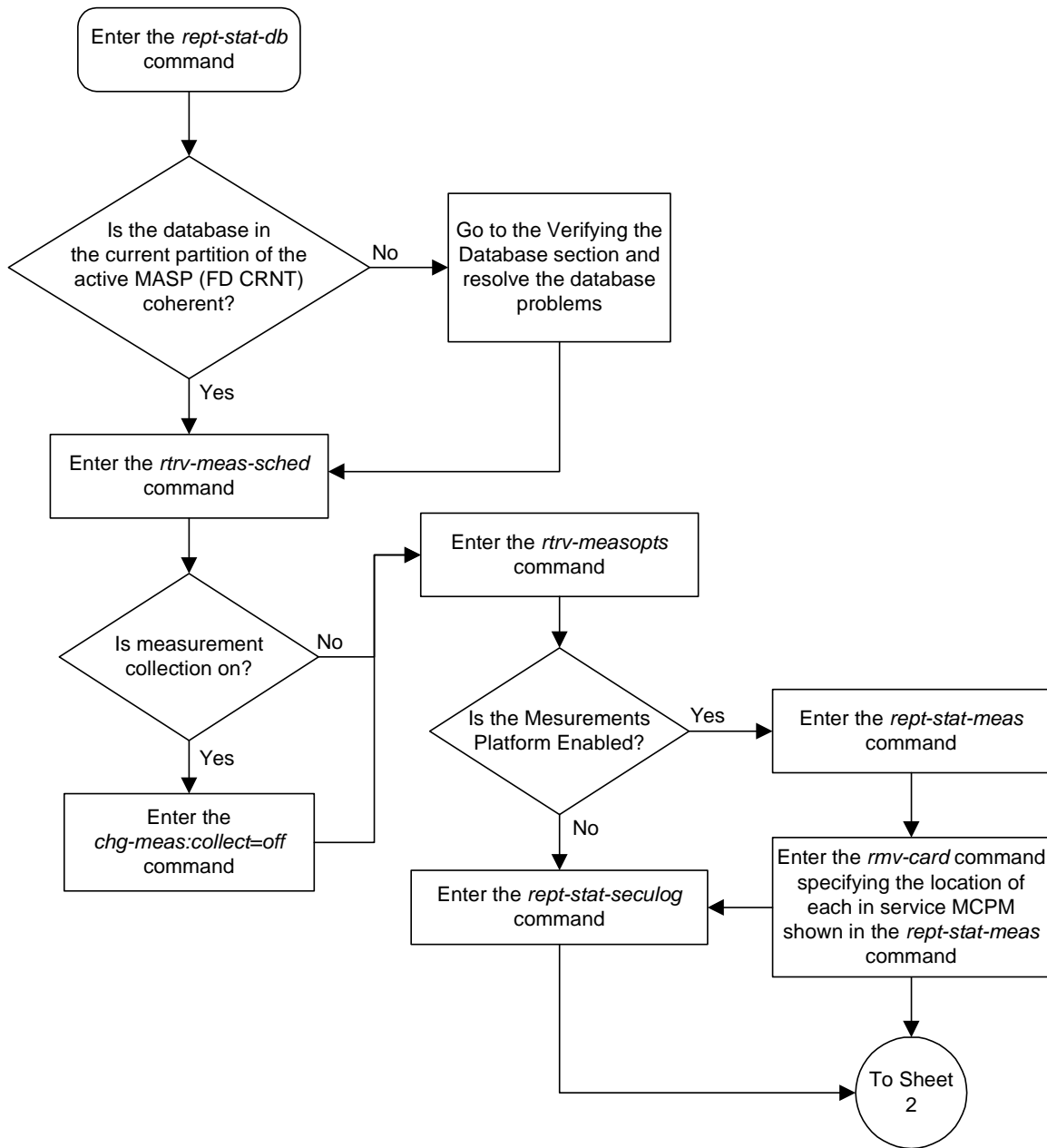
```
rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0
```

```
MEAS SS          PST          SST          AST
                IS-NR        Active      -----
ALARM STATUS =  No Alarms
```

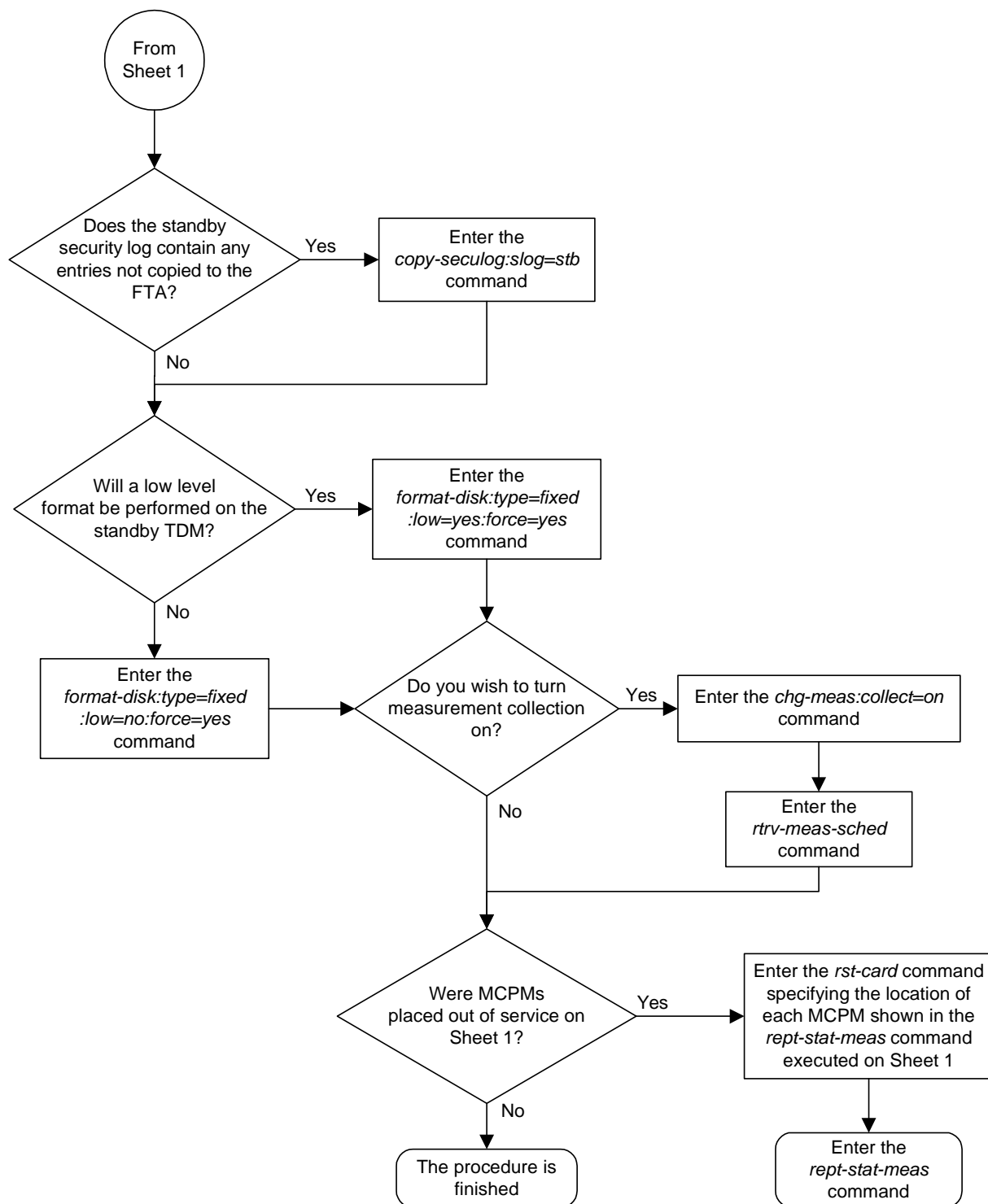
CARD	VERSION	TYPE	PST	SST	AST
2107 P	101-9-000	MCPM	IS-NR	Active	-----
	IP Link A		IS-NR	Active	Available
2108	101-9-000	MCPM	IS-NR	Active	-----
	IP Link A		IS-NR	Active	Available
2111	101-9-000	MCPM	IS-NR	Active	-----
	IP Link A		IS-NR	Active	Available

```
CARD 2107 ALARM STATUS = No Alarms
CARD 2108 ALARM STATUS = No Alarms
CARD 2111 ALARM STATUS = No Alarms
```

Flowchart 2-10. Formatting the Fixed Disk of the Standby TDM (Sheet 1 of 2)



Flowchart 2-10. Formatting the Fixed Disk of the Standby TDM (Sheet 2 of 2)



3

GPL Management Procedures

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Introduction

The GPLs are the application software that allow the various features in the system to work. The system currently uses these GPLs:

- ATMANSI – The application software used for high-speed ANSI ATM signaling links.
- ATMITU – The application software used for high-speed E1 ATM signaling links.
- BPHCAP – The communication software used in place of the IMT GPL on the LIMATM and E1 ATM.
- BPHCAPT – The communication software used in place of the IMT GPL on the newer versions of the LIMATM and E1 ATM.
- BPDCM – The communication software used in place of the IMT GPL on the Database Communications Module (DCM), Database Services Module (DSM), and General Purpose Services Module (GPSM-II).
- BPHMUX – The communication software used on the High Speed Multiplexer (HMUX) card.
- BPMPL – The communication software used in place of the IMT GPL on the Multi-Port LIM (MPL).
- BPMPLT – The communication software used in place of the IMT GPL on the Multi-Port LIM-T (MPLT) and the E1/T1 MIM.
- CCS7ITU – The application software used for CCS7ITU signaling links.
- EBDABLM – The application software used by the TSM or DSM to store the LNP database downloaded from the LSMS for the Enhanced Bulk Download feature. This GPL does not support 24-bit ITU-N point codes.
- EBDADCM – The application software used by the DCM to transmit the LSMS LNP database at high speed over an Ethernet connection for the Enhanced Bulk Download feature. This GPL does not support 24-bit ITU-N point codes.
- EMDC – The application software used by the DCM for the CMIP/OSI measurement collection interface as defined by Bellcore GR-376.
- EMAP – The application software running on the EOAP used for the GR-376 feature.
- EOAM – The application software used by the GPSM-II card for enhanced OAM functions.
- EROUTE – The application software used on the STC (Sentinel Transport Card) for the Eagle with Integrated Sentinel feature. The Sentinel product does not support 24-bit ITU-N point codes.

GPL Management Procedures

- GLS – The application software used for the gateway screening feature.
- IMT – The communication software that operates the IMT bus on all cards except the LIMATM, DCM, DSM, and HMUX.
- IPLIM – The application software used for TCP/IP point-to-point ANSI connectivity.
- IPGWI – The application software used for TCP/IP point-to-multipoint connectivity within an ITU-I or ITU-N network.
- IPLIMI – The application software used for TCP/IP point-to-point ITU connectivity.
- IPS – The application software used for the IP User Interface and FTP Retrieve and Replace features.
- MCP – The application software used on the MCPM (Measurement Collection & Polling Module) for the Measurements Platform feature.
- OAP – The application software running on the OAP used for the SEAS and LNP features. The LNP feature can be enabled only for a quantity of 2 to 12 million numbers. This GPL does not support 24-bit ITU-N point codes.
- SCCP – The application software used for the global title translation and LNP features. The LNP feature can be enabled only for a quantity of 2 to 12 million numbers.
- SS7ANSI – The application software used for SS7 signaling links.
- SS7GX25 – The application software used for X.25 signaling links. This GPL does not support 24-bit ITU-N point codes.
- SS7IPGW – The application software used for TCP/IP point-to-multipoint connectivity within an ANSI network.
- SS7ML – The application software used on the Multi-Port LIM (MPL or MPLT) for SS7 signaling links and on the E1/T1 MIM for E1 and T1 signaling links.
- STPLAN – The application software used by the ACM for the STP LAN feature. This GPL does not support 24-bit ITU-N point codes.
- UTILITY – The application software used by the factory for testing and has no use in the field.
- VSCCP – The application software used for the global title translation, LNP, GFLEX, INP, G-PORT, and EIR features.
- VXWSLAN – The application software used by the DCM for the STP LAN feature. This GPL does not support 24-bit ITU-N point codes.

Managing GPLs

Managing these GPLs consists of loading them onto the system from a removable cartridge, downloading these GPLs to the appropriate cards in the system, then allowing the cards to run these GPLs. The GPLs can be in one of two states, trial and approved.

A trial GPL is a GPL that has not been approved for use and does not match the version number in the system release ID table. The trial GPL is the GPL that the system is not running.

The approved GPL is the GPL that the system should be running and has been approved for use. The approved GPL version number should match the version number of the GPL contained in the system release ID table.

The system release ID table contains the version numbers of the approved GPLs that the system should be running. The system release ID table is contained on the TDMs (Terminal Disk Modules) and on the removable cartridge containing the GPLs that are being loaded onto the system. The GPLs are loaded onto the system from a removable cartridge. To get the GPLs from the removable cartridge onto the system in the approved state, two commands are used, **chg-gpl** and **act-gpl**.

CHG-GPL Command

The **chg-gpl** command copies a GPL from the removable cartridge disk to the TDMs. The new GPL becomes the trial version on each of the TDMs. This command also copies the system release ID table from the removable cartridge to the TDMs. The **chg-gpl** command uses these parameters:

app1 – the GPL being loaded onto the system

ver – the version number of the GPL

audit – Specifies whether the active MASP system release version is to be audited every 90 seconds.

If you are loading a GPL onto the system, the **app1** and **ver** parameters must be specified with the **chg-gpl** command and a removable cartridge containing the GPL being loaded must be in the removable cartridge drive on the MDAL. The only exception to this is if you are loading either the OAP or EMAP GPLs. The **ver** parameter is not required when loading any of these GPLs.

The **audit** parameter is required only when turning the GPL auditing on or off.

ACT-GPL Command

The **act-gpl** command changes the state of the trial GPL from “trial” to “approved.” This is also referred to as activating the GPL. The state of the previously approved GPL is changed from “approved” to “trial.” The **act-gpl** command uses these parameters:

- appl** – the GPL being loaded onto the system
- ver** – the version number of the GPL

All the GPLs can be activated with the **act-gpl** command except for these:

- OAP
- EMAP
- UTILITY

Displaying GPL Information

Two commands can be used to display the GPL information in the database, **rept-stat-gpl** and **rtrv-gpl**. The **rept-stat-gpl** command shows the versions of the GPLs that are running on the cards in the system. The **rtrv-gpl** command shows the versions of the GPLs contained on the fixed disks.

REPT-STAT-GPL Command

The **rept-stat-gpl** command output contains these five columns and displays this information:

- **APPL** – The GPLs contained on the TDMs (Terminal Disk Modules). The TDMs contain the fixed disks.
- **CARD** – The cards that are running the GPLs
- **RUNNING** – The version number of the GPLs the cards are running
- **APPROVED** – The version numbers of the approved GPLs
- **TRIAL** – The version numbers of the trial GPLs

The following is an example of the **rept-stat-gpl** command output.

APPL	CARD	RUNNING	APPROVED	TRIAL
SS7ANSI	1201	114-002-000	114-002-000	114-001-000

The example **rept-stat-gpl** output shows that the card in slot 1201 is running the SS7ANSI GPL, version number 114-002-000, which is also the approved version of the SS7ANSI GPL. The trial version number of the SS7ANSI GPL is 114-001-000.

You can display all the GPLs used by all the cards in the system except the communication GPLs, a specific GPL, or all application and communication GPLs used by all the cards in the system. The communication GPLs are the IMT, BPHCAP, BPHCAPT, BPDCM, BPMPL, and BPMPLT GPLs. The application GPLs are the other GPLs in the system.

If you specify the **rept-stat-gpl** command with no parameters, all the GPLs on all the cards in the system are displayed except for the communication GPLs, as shown in this example.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
EOAM      1113      114-002-000  114-002-000  -----
EOAM      1115      114-002-000  114-002-000  -----
SCCP      1212      114-001-000  114-001-000  114-001-000
VSCCP     1103      114-001-000  114-001-000  114-001-000
SS7ANSI   1201      114-002-000  114-002-000  114-001-000
SS7ANSI   1202      114-002-000  114-002-000  114-001-000
SS7ANSI   1203      114-002-000  114-002-000  114-001-000
SS7ML     1204      114-002-000  114-002-000  114-001-000
SS7ANSI   1205      114-002-000  114-002-000  114-001-000
CCS7ITU   1301      114-001-000  114-001-000  114-001-000
CCS7ITU   1302      114-001-000  114-001-000  114-001-000
IPLIM     1303      114-001-000  114-001-000  114-001-000
ATMANSI   1305      114-001-000  114-001-000  114-001-000
SS7IPGW   1307      114-001-000  114-001-000  114-001-000
ATMANSI   1311      114-001-000  114-001-000  114-001-000
SS7IPGW   2101      114-002-000  114-002-000  114-003-000
EMDC      2103      114-002-000  114-002-000  114-003-000
EMDC      2105      114-002-000  114-002-000  114-002-000
VXWSLAN   2113      114-002-000  114-002-000  114-003-000
VXWSLAN   2205      114-002-000  114-002-000  114-003-000
VXWSLAN   2207      114-002-000  114-002-000  114-003-000
VXWSLAN   2213      114-002-000  114-002-000  114-003-000
IPLIM     2301      114-002-000  114-002-000  114-003-000
IPLIM     2303      114-002-000  114-002-000  114-003-000
IPLIM     2305      114-002-000  114-002-000  114-003-000
IPLIM     2307      114-002-000  114-002-000  114-003-000
EROUTE    2311      114-002-000  114-002-000  114-003-000
EROUTE    2313      114-002-000  114-002-000  114-003-000
EROUTE    2315      114-002-000  114-002-000  114-003-000
MCP       2317      114-002-000  114-002-000  114-003-000
MCP       3101      114-002-000  114-002-000  114-003-000
MCP       3103      114-002-000  114-002-000  114-003-000
OAP       A         028-001-000  028-001-000  -----
OAP       B         028-001-000  028-001-000  -----
EMAP     A         026-015-000  026-015-000  -----
EMAP     B         026-015-000  026-015-000  -----
Command Completed.
```

If a specific GPL, including the communication GPLs, is specified, then all the cards running that GPL are displayed. For example, if the **rept-stat-gpl:appl=ss7ansi** command is entered, then all cards running the SS7ANSI GPL are displayed as shown in the following example.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
SS7ANSI   1201      114-002-000  114-002-000  114-001-000
SS7ANSI   1202      114-002-000  114-002-000  114-001-000
SS7ANSI   1203      114-002-000  114-002-000  114-001-000
SS7ANSI   1205      114-002-000  114-002-000  114-001-000
Command Completed
```

GPL Management Procedures

If a communication GPL (IMT, BPHCAP, BPHCAPT, BPDCM, BPMPL, or BPMPLT) is specified with the **rept-stat-gpl** command, for example, **rept-stat-gpl:appl=bpdc**m, then all cards running the communication GPL are displayed. In the following example, all the cards running the BPDCM GPL are displayed as the output for the **rept-stat-gpl:appl=bpdc**m command.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
BPDCM     1303     002-122-000 002-122-000 002-123-000
BPDCM     1307     002-122-000 002-122-000 002-123-000
BPDCM     2101     002-122-000 002-122-000 002-123-000
BPDCM     2103     002-122-000 002-122-000 002-123-000
BPDCM     2105     002-122-000 002-122-000 002-122-000
BPDCM     2113     002-122-000 002-122-000 002-123-000
BPDCM     2205     002-122-000 002-122-000 002-123-000
BPDCM     2207     002-122-000 002-122-000 002-123-000
BPDCM     2213     002-122-000 002-122-000 002-123-000
BPDCM     2301     002-122-000 002-122-000 002-123-000
BPDCM     2303     002-122-000 002-122-000 002-123-000
BPDCM     2305     002-122-000 002-122-000 002-123-000
BPDCM     2307     002-122-000 002-122-000 002-123-000
BPDCM     2311     002-122-000 002-122-000 002-123-000
BPDCM     2313     002-122-000 002-122-000 002-123-000
BPDCM     2315     002-122-000 002-122-000 002-123-000
BPDCM     2317     002-122-000 002-122-000 002-123-000
BPDCM     3101     002-122-000 002-122-000 002-123-000
BPDCM     3103     002-122-000 002-122-000 002-123-000
Command Completed
```

If the **display=all** parameter is specified with the **rept-stat-gpl** command, then all GPLs, application and communication GPLs used by all the cards in the system are displayed as shown in this example.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
EOAM      1113     114-002-000 114-002-000 114-002-000
           IMT      114-001-000 114-001-000 114-001-003
EOAM      1115     114-002-000 114-002-000 114-002-000
           IMT      114-001-000 114-001-000 114-001-003
SCCP      1212     114-001-000 114-001-000 114-001-000
           IMT      114-001-000 114-001-000 114-001-003
VSCCP     1103     114-001-000 114-001-000 114-001-000
           BPDCM     002-101-000 002-101-000 002-101-003
SS7ANSI   1201     114-002-000 114-002-000 114-001-000
           IMT      114-001-000 114-001-000 114-001-003
SS7ANSI   1202     114-002-000 114-002-000 114-001-000
           IMT      114-001-000 114-001-000 114-001-003
SS7ANSI   1203     114-002-000 114-002-000 114-001-000
           IMT      114-001-000 114-001-000 114-001-003
SS7ML     1204     114-002-000 114-002-000 114-001-000
           BPMPL     002-131-000 002-131-000 002-131-003
SS7ANSI   1205     114-002-000 114-002-000 114-001-000
           IMT      114-001-003 ALM 114-001-000 114-001-003
CCS7ITU   1301     114-001-000 114-001-000 114-001-000
           IMT      114-001-000 114-001-000 114-001-003
CCS7ITU   1302     114-001-000 114-001-000 114-001-000
           IMT      114-001-000 114-001-000 114-001-003
IPLIM     1303     114-001-000 114-001-000 114-001-000
           BPDCM     002-121-000 002-121-000 002-121-003
ATMANSI   1305     114-001-000 114-001-000 114-001-000
           BPHCAP     002-101-000 002-101-000 002-101-003
```

```

SS7IPGW  1307      114-001-000      114-001-000      114-001-000
          BPDCM      002-121-000      002-121-000      002-121-003
ATMANSI  1311      114-001-000      114-001-000      114-001-000
          BPHCAP      002-101-003      ALM      002-101-000      002-101-003
SS7IPGW  2101      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-003      ALM+      002-121-000      002-121-003
EMDC     2103      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
EMDC     2105      114-002-000      114-002-000      114-002-000
          BPDCM      002-121-000      002-121-000      002-121-003
VXWSLAN  2113      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
VXWSLAN  2205      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
VXWSLAN  2207      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
VXWSLAN  2213      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
IPLIM    2301      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
IPLIM    2303      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
IPLIM    2305      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
IPLIM    2307      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
EROUTE   2311      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
EROUTE   2313      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
EROUTE   2315      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
MCP      2317      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
MCP      3101      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
MCP      3103      114-002-000      114-002-000      114-003-000
          BPDCM      002-121-000      002-121-000      002-121-003
BPHMUX   1109      111-001-000      111-001-000      111-001-003
BPHMUX   1110      111-001-000      111-001-000      111-001-003
BPHMUX   1209      111-001-000      111-001-000      111-001-003
BPHMUX   1210      111-001-000      111-001-000      111-001-003
BPHMUX   1309      111-001-000      111-001-000      111-001-003
BPHMUX   1310      111-001-000      111-001-000      111-001-003
BPHMUX   2109      111-001-000      111-001-000      111-001-003
BPHMUX   2110      111-001-000      111-001-000      111-001-003
BPHMUX   2209      111-001-000      111-001-000      111-001-003
BPHMUX   2210      111-001-000      111-001-000      111-001-003
BPHMUX   2309      111-001-000      111-001-000      111-001-003
BPHMUX   2310      111-001-000      111-001-000      111-001-003
BPHMUX   3109      111-001-000      111-001-000      111-001-003
BPHMUX   3110      111-001-000      111-001-000      111-001-003
OAP      A          028-001-000      028-001-000      -----
OAP      B          028-001-001      ALM      028-001-000      -----
EMAP     A          026-015-000      026-015-000      -----
EMAP     B          026-015-001      ALM      026-015-000      -----

```

Command Completed.

The **display=all** and the **app1** parameters cannot be specified in the same command.

GPL Management Procedures

If GPL auditing is on, a minor alarm is generated, and **ALM** is displayed for each GPL in the **RUNNING** column whose version does not match the version of the GPL shown in the system release ID table. The GPL versions in the system release ID table are shown in the **RELEASE** column of the **rtrv-gpl** command output.

If GPL auditing is **off**, the minor alarm is not generated, but **ALM** is displayed for each GPL whose version does not match the version of the GPL shown in the system release ID table. The detection, marking, and reporting of corrupt GPLs continues to be performed and is not affected by turning GPL auditing off.

If a GPL is not found, a version of "-----" is displayed.

If a card is inhibited, "-----" is displayed in the **RUNNING** column.

A plus (+) symbol in the output when the **appl=bphcap**, **appl=bpdcm**, **appl=bpmp1**, **appl=bpmp1t**, or **appl=bphmux** parameter is specified indicates that the BPHCAP GPL, BPHCAPT GPL, BPDPCM GPL, BPMP1 GPL, BPMP1T GPL, or the BPHMUX GPL currently being run on the card has not yet been activated on the card.

RTRV-GPL Command

The **rtrv-gpl** command output contains these six columns and displays this information:

- **APPL** – The GPLs contained on the TDMs.
- **CARD** – The card location of the TDMs, either card locations 1114 or 1116
- **RELEASE** – The version number of the GPL contained in the system release ID table.
- **APPROVED** – The version numbers of the approved GPLs
- **TRIAL** – The version numbers of the trial GPLs
- **REMOVE TRIAL** – The version number of the GPLs contained on the removable cartridge. Entries in the **REMOVE TRIAL** column are shown only if the removable cartridge is inserted into the removable cartridge drive and only for the TDM that is associated with the active MASP. If the removable cartridge is not in the removable cartridge drive, dashes are shown in the **REMOVE TRIAL** column. Dashes are also shown in the **REMOVE TRIAL** column for the TDM that is associated with the standby MASP.

The following is an example of the **rtrv-gpl** command output.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
GPL Auditing ON

APPL      CARD  RELEASE      APPROVED      TRIAL      REMOVE TRIAL
SS7ANSI   1114  114-002-000  114-002-000  114-001-000  114-003-000
SS7ANSI   1116  114-002-000  114-002-000  114-001-000  -----
```

The example `rtrv-gpl` output shows that the version number of the SS7ANSI GPL in the system release ID table on both TDMs is 114-002-000, which is also the approved version of the SS7ANSI GPL. The trial version of the SS7ANSI GPL is 114-001-000. A removable cartridge is in the removable cartridge drive on the MDAL containing another version of the SS7ANSI GPL, version number 114-003-000. The GPL auditing function is on. The TDM in card slot 1114 is associated with the active MASP.

You can display all the GPLs in the system or a specific GPL in the system.

If you specify the `rtrv-gpl` command with no parameters, all the GPLs in the system are displayed as shown in this example.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
UTILITY	1114	144-000-000	144-000-000	144-001-000	144-001-000
UTILITY	1116	144-000-000	144-000-000	-----	-----
EOAM	1114	114-003-000	114-003-000	114-004-000	114-004-000
EOAM	1116	114-003-000	114-003-000	-----	-----
GLS	1114	114-002-000	114-002-000	114-002-000	114-003-000
GLS	1116	114-002-000	114-002-000	114-002-000	-----
SCCP	1114	114-002-000	114-002-000	114-002-000	114-003-000
SCCP	1116	114-002-000	114-002-000	114-002-000	-----
VSCCP	1114	114-002-000	114-002-000	114-002-000	114-003-000
VSCCP	1116	114-002-000	114-002-000	114-002-000	-----
SS7ANSI	1114	114-002-000	114-002-000	114-002-000	114-003-000
SS7ANSI	1116	114-002-000	114-002-000	114-002-000	-----
ATMANSI	1114	114-002-000	114-002-000	114-001-000	114-002-000
ATMANSI	1116	114-002-000	114-002-000	114-001-000	-----
IPLIM	1114	114-002-000	114-002-000	114-002-000	114-003-000
IPLIM	1116	114-002-000	114-002-000	114-002-000	-----
IPLIMI	1114	114-002-000	114-002-000	114-002-000	114-003-000
IPLIMI	1116	114-002-000	114-002-000	114-002-000	-----
SS7IPGW	1114	114-002-000	114-002-000	114-002-000	114-003-000
SS7IPGW	1116	114-002-000	114-002-000	114-002-000	-----
SS7ML	1114	114-002-000	114-002-000	114-002-000	114-003-000
SS7ML	1116	114-002-000	114-002-000	114-002-000	-----
CCS7ITU	1114	114-002-000	114-002-000	114-002-000	114-003-000
CCS7ITU	1116	114-002-000	114-002-000	114-002-000	-----
SS7GX25	1114	114-001-000	114-001-000	114-001-000	114-002-000
SS7GX25	1116	114-001-000	114-001-000	114-001-000	-----
STPLAN	1114	114-001-000	114-001-000	114-001-000	114-002-000
STPLAN	1116	114-001-000	114-001-000	114-001-000	-----
IMT	1114	114-001-000	114-001-000	114-001-000	114-002-000
IMT	1116	114-001-000	114-001-000	114-001-000	-----
BPHCAP	1114	002-101-000	002-101-000	002-100-000	002-101-000
BPHCAP	1116	002-101-000	002-101-000	002-100-000	-----
BPDCM	1114	002-121-000	002-121-000	002-120-000	002-121-000
BPDCM	1116	002-121-000	002-121-000	002-120-000	-----
BPHMUX	1114	111-001-000	111-001-000	111-000-000	111-001-000
BPHMUX	1116	111-001-000	111-001-000	111-000-000	-----
BPMPPL	1114	002-131-000	002-131-000	002-130-000	002-131-000
BPMPPL	1116	002-131-000	002-131-000	002-130-000	-----
BPMPPLT	1114	002-101-000	002-101-000	002-100-000	002-101-000
BPMPPLT	1116	002-101-000	002-101-000	002-100-000	-----
EMDC	1114	114-001-000	114-001-000	114-000-000	114-001-000
EMDC	1116	114-001-000	114-001-000	114-000-000	-----
EBDABLM	1114	114-001-000	114-001-000	114-000-000	114-001-000

GPL Management Procedures

EBDABLM	1116	114-001-000	114-001-000	114-000-000	-----
EBDADCM	1114	114-001-000	114-001-000	114-000-000	114-001-000
EBDADCM	1116	114-001-000	114-001-000	114-000-000	-----
VXWSLAN	1114	114-001-000	114-001-000	114-000-000	114-001-000
VXWSLAN	1116	114-001-000	114-001-000	114-000-000	-----
EROUTE	1114	114-001-000	114-001-000	114-000-000	114-001-000
EROUTE	1116	114-001-000	114-001-000	114-000-000	-----
MCP	1114	114-001-000	114-001-000	114-000-000	114-001-000
MCP	1116	114-001-000	114-001-000	114-000-000	-----
OAP	1114	028-001-000	028-001-000	-----	028-001-000
OAP	1116	028-001-000	028-001-000	-----	-----
EMAP	1114	026-015-000	026-015-000	-----	026-015-000
EMAP	1116	026-015-000	026-015-000	-----	-----

If a specific GPL is specified, then only that GPL is displayed. For example, if the **rtrv-gpl:appl=ss7ansi** command is entered, then only the SS7ANSI GPL is displayed as shown in the following example.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
SS7ANSI	1114	114-002-000	114-002-000	114-001-000	114-003-000
SS7ANSI	1116	114-002-000	114-002-000	114-001-000	-----

If GPL auditing is on, a minor alarm is generated, and **ALM** is displayed for each approved GPL version that does not match the GPL version shown in the **RELEASE** column. If GPL auditing is **off**, the minor alarm is not generated, but **ALM** is displayed for each GPL version that does not match the GPL version shown in the **RELEASE** column. The detection, marking, and reporting of corrupt GPLs continues to be performed and is not affected by turning GPL auditing off.

If a GPL is not found, a version of "-----" is displayed.

Loading a GPL onto the System

This section gives a general overview as to how a GPL is loaded onto the system to be used by the applicable cards. The requirements and steps for each GPL are different and are detailed in the procedures contained in this chapter.

1. A removable cartridge containing the GPL being loaded onto the system is inserted into the removable cartridge drive on the MDAL card. If a specific GPL is displayed with the **rtrv-gpl** command, for example the SS7ANSI GPL, the following would be displayed.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON

APPL      CARD  RELEASE      APPROVED      TRIAL      REMOVE TRIAL
SS7ANSI   1114  114-002-000  114-002-000  114-001-000  114-003-000
SS7ANSI   1116  114-002-000  114-002-000  114-001-000  -----
```

Displaying the SS7ANSI GPL with the **rept-stat-gpl** command would display all the cards running the SS7ANSI GPL, as shown in this example.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
SS7ANSI   1201      114-002-000  114-002-000  114-001-000
SS7ANSI   1202      114-002-000  114-002-000  114-001-000
SS7ANSI   1203      114-002-000  114-002-000  114-001-000
SS7ANSI   1205      114-002-000  114-002-000  114-001-000
Command Completed
```

2. When the **chg-gpl** command is executed, the specific GPL is copied from the removable cartridge to the fixed disks. The specific GPL and the version number of the GPL on the removable cartridge must be specified with the **chg-gpl** command. The version number is found in the **REMOVE TRIAL** column of the **rtrv-gpl** output. For this example the **chg-gpl :appl=ss7ansi:ver=114-003-000** command would be entered at the system terminal. The system release ID table contained on the removable cartridge is also copied to the fixed disks.
3. The new version of the GPL is now the trial version of the GPL and also becomes the version that the system should be running as shown in the examples or the **rtrv-gpl** and **rept-stat-gpl** outputs.

rtrv-gpl:appl=ss7ansi

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON

APPL      CARD  RELEASE      APPROVED      TRIAL      REMOVE TRIAL
SS7ANSI   1114  114-003-000  114-002-000  ALM  114-003-000  114-003-000
SS7ANSI   1116  114-003-000  114-002-000  ALM  114-003-000  -----
```

rept-stat-gpl:appl=ss7ansi

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
SS7ANSI   1201      114-002-000  ALM  114-002-000  114-003-000
SS7ANSI   1202      114-002-000  ALM  114-002-000  114-003-000
SS7ANSI   1203      114-002-000  ALM  114-002-000  114-003-000
SS7ANSI   1205      114-002-000  ALM  114-002-000  114-003-000
Command Completed
```

The **ALM** indicator in the **rtrv-gpl** and the **rept-stat-gpl** outputs indicates that the approved version of the GPL does not match the version in the system release ID table.

- To make the trial version of the GPL the approved version, the **act-gpl** command is executed after the GPL has been copied from the removable cartridge with the **chg-gpl** command (steps 1 to 3 in the Trial GPL section). The trial and approved versions of the specific GPL are swapped as shown in these **rtrv-gpl** and **rept-stat-gpl** output examples.

rtrv-gpl:appl=ss7ansi

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
SS7ANSI	1114	114-003-000	114-003-000	114-002-000	114-003-000
SS7ANSI	1116	114-003-000	114-003-000	114-002-000	-----

The **ALM** indicator is not displayed in the **rtrv-gpl** output because the approved version of the GPL matches the version in the system release ID table.

rept-stat-gpl:appl=ss7ansi

```
rlghncxa03w 04-06-01 11:50:11 GMT EAGLE5 31.6.0
APPL CARD RUNNING APPROVED TRIAL
SS7ANSI 1201 114-002-000 ALM 114-003-000 114-002-000
SS7ANSI 1202 114-002-000 ALM 114-003-000 114-002-000
SS7ANSI 1203 114-002-000 ALM 114-003-000 114-002-000
SS7ANSI 1205 114-002-000 ALM 114-003-000 114-002-000
Command Completed
```

The **ALM** indicator is displayed for the cards that are running the version of the GPL that does not match the version in the system release ID table (shown in the **RELEASE** column of the **rtrv-gpl** output). In this example, the cards are running the trial version which does not match the version in the system release ID table.

- To load the card with the new version of the GPL, the card must be inhibited with the **rmv-card** command, then placed back into service with the **rst-card** command with either the **code=trial** parameter for loading the trial version of the GPL, or the **code=appr** parameter for loading the approved version of the GPL.

The following examples show the outputs of the **rtrv-gpl** and **rept-stat-gpl** commands after the card has been reloaded. The outputs will vary depending on whether or not the new version of the GPL has been made the approved version with the **act-gpl** command, and which version (trial or approved) of the GPL is loaded onto the card.

Example 1

The new GPL is the **APPROVED** version and the card 1201 was reloaded with the **APPROVED** version of the GPL. Card 1201 is now running the **APPROVED** and **RELEASE** versions of the GPL. The **ALM** indicator is not shown in the **rtrv-gpl** output and is not shown for card 1201 in **rept-stat-gpl** output. The **ALM** indicator is shown for cards 1202, 1203, and 1205 because they are not running the **RELEASE** version of the GPL.

RTRV-GPL Output

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
SS7ANSI	1114	114-003-000	114-003-000	114-002-000	114-003-000
SS7ANSI	1116	114-003-000	114-003-000	114-002-000	-----

REPT-STAT-GPL Output

```
rlghncxa03w 04-06-01 11:50:11 GMT EAGLE5 31.6.0
APPL CARD RUNNING APPROVED TRIAL
SS7ANSI 1201 114-003-000 114-003-000 114-002-000
SS7ANSI 1202 114-002-000 ALM 114-003-000 114-002-000
SS7ANSI 1203 114-002-000 ALM 114-003-000 114-002-000
SS7ANSI 1205 114-002-000 ALM 114-003-000 114-002-000
Command Completed
```

Example 2

The new GPL is the **APPROVED** version and the card 1201 was reloaded with the **TRIAL** version of the GPL. Card 1201 is now running the **TRIAL** version of the GPL which is not the **RELEASE** version of the GPL. The **ALM** indicator is not shown in the **rtrv-gpl** output, but is not shown for all the cards in **rept-stat-gpl** output because they are not running the **RELEASE** version of the GPL.

RTRV-GPL Output

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
SS7ANSI	1114	114-003-000	114-003-000	114-002-000	114-003-000
SS7ANSI	1116	114-003-000	114-003-000	114-002-000	-----

REPT-STAT-GPL Output

```
rlghncxa03w 04-06-01 11:50:11 GMT EAGLE5 31.6.0
APPL CARD RUNNING APPROVED TRIAL
SS7ANSI 1201 114-002-000 ALM 114-003-000 114-002-000
SS7ANSI 1202 114-002-000 ALM 114-003-000 114-002-000
SS7ANSI 1203 114-002-000 ALM 114-003-000 114-002-000
SS7ANSI 1205 114-002-000 ALM 114-003-000 114-002-000
Command Completed
```

Example 3

The new GPL is the **TRIAL** version and the card 1201 was reloaded with the **TRIAL** version of the GPL. Card 1201 is now running the **TRIAL** and **RELEASE** versions of the GPL. The **ALM** indicator is shown in the **rtrv-gpl** output, and for all cards in the **rept-stat-gpl** output except card 1201 because they are not running the **RELEASE** version of the GPL.

RTRV-GPL Output

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON

APPL      CARD  RELEASE      APPROVED      TRIAL      REMOVE TRIAL
SS7ANSI   1114  114-003-000  114-002-000  ALM  114-003-000  114-003-000
SS7ANSI   1116  114-003-000  114-002-000  ALM  114-003-000  -----
```

REPT-STAT-GPL Output

```
rlghncxa03w 04-06-01 11:50:11 GMT EAGLE5 31.6.0
APPL      CARD  RUNNING      APPROVED      TRIAL
SS7ANSI   1201  114-003-000      114-002-000  114-003-000
SS7ANSI   1202  114-002-000 ALM  114-002-000  114-003-000
SS7ANSI   1203  114-002-000 ALM  114-002-000  114-003-000
SS7ANSI   1205  114-002-000 ALM  114-002-000  114-003-000
Command Completed
```

Example 4

The new GPL is the **TRIAL** version and the card 1201 was reloaded with the **APPROVED** version of the GPL. Card 1201 is now running the **APPROVED** version of the GPL which is not the **RELEASE** version of the GPL. The **ALM** indicator is shown in the **rtrv-gpl** output, and for all the cards in **rept-stat-gpl** output because they are not running the **RELEASE** version of the GPL.

RTRV-GPL Output

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON

APPL      CARD  RELEASE      APPROVED      TRIAL      REMOVE TRIAL
SS7ANSI   1114  114-003-000  114-002-000  ALM  114-003-000  114-003-000
SS7ANSI   1116  114-003-000  114-002-000  ALM  114-003-000  -----
```

REPT-STAT-GPL Output

```
rlghncxa03w 04-06-01 11:50:11 GMT EAGLE5 31.6.0
APPL      CARD  RUNNING      APPROVED      TRIAL
SS7ANSI   1201  114-002-000 ALM  114-002-000  114-003-000
SS7ANSI   1202  114-002-000 ALM  114-002-000  114-003-000
SS7ANSI   1203  114-002-000 ALM  114-002-000  114-003-000
SS7ANSI   1205  114-002-000 ALM  114-002-000  114-003-000
Command Completed
```

Updating the IMT GPL

This section presents the procedure for updating the **imt** generic program load (GPL). There are two versions of GPLs used on the system, approved and trial versions. The **imt** GPL on the removable cartridge serves as the trial GPL.

The **imt** GPL can be loaded on all cards in the system except LIM-ATMs, E1-ATMs, DCMs, and DSMs.

The removable cartridge that contains the **imt** GPL to be loaded on to the system is required.

Procedure

1. Check the removable cartridge drive on the MDAL card for a removable cartridge. If there is a removable cartridge in the drive, display the **imt** GPLs on the fixed disk and on the removable cartridge using the **rtrv-gpl:appl=imt** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
IMT	1114	114-001-000	114-001-000	-----	-----
IMT	1116	114-001-000	114-001-000	114-002-000	114-002-000

If the version of the **imt** GPL shown in the **REMOVE TRIAL** column of the **rtrv-gpl** output is not the version that is to be loaded onto the cards, remove the cartridge and go to step 2. For more information on removing the removable cartridge from the removable cartridge drive, see “Removing the Removable Cartridge” on page 2-9.

If the version of the **imt** GPL shown in the **REMOVE TRIAL** column of the **rtrv-gpl** output is the version that is to be loaded onto the cards, skip steps 2, 3, and 4, and go to step 5.

If the trial version of the **imt** GPL is to be made the approved version, skip steps 2 through 7, and go to step 8.

-
2. Make sure the removable cartridge containing the new software is “write protected” (NOT write enabled). To write protect a removable cartridge, see “Write Protecting the Removable Cartridge” on page 2-6.
-
3. Insert the removable cartridge containing the **imt** GPL into the removable cartridge drive on the MDAL card. For more information on inserting the removable cartridge in the removable cartridge drive, see “Inserting the Removable Cartridge” on page 2-8.
-

GPL Management Procedures

4. Display the **imt** GPLs on the fixed disk and on the removable cartridge using the **rtrv-gpl:appl=imt** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
GPL Auditing ON

APPL      CARD  RELEASE      APPROVED      TRIAL      REMOVE TRIAL
IMT       1114  114-001-000  114-001-000  -----
IMT       1116  114-001-000  114-001-000  114-002-000  114-002-000
```

5. Verify the **imt** GPLs on the fixed disk and which cards are running the **imt** GPLs using the **rept-stat-gpl:appl=imt** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
IMT       1113      114-001-000  114-001-000  114-002-000
IMT       1115      114-001-000  114-001-000  114-002-000
IMT       1201      114-001-000  114-001-000  114-002-000
IMT       1202      114-001-000  114-001-000  114-002-000
IMT       1203      114-001-000  114-001-000  114-002-000
IMT       1205      114-001-000  114-001-000  114-002-000
IMT       1207      114-001-000  114-001-000  114-002-000
IMT       1211      114-001-000  114-001-000  114-002-000
IMT       1212      114-001-000  114-001-000  114-002-000
Command Completed.
```

6. Change the GPLs, using the **chg-gpl** command and specifying the value for the trial **imt** GPL shown in the REMOVE TRIAL column in the output of the **rtrv-gpl** command used in step 4.

For this example, enter this command.

```
chg-gpl:appl=imt:ver=114-002-000
```

These messages should appear.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
GPL Auditing ON

IMT upload on 1114 completed
IMT upload on 1116 completed
System Release ID table upload 1114 completed
System Release ID table upload 1116 completed
```

7. Load the trial `imt` GPL on to specific cards using the `init-imt-gpl:code=trial` command specifying the location of one of the cards shown in step 5. For this example, the trial `imt` GPL is loaded on to card 1201. Enter the `init-imt-gpl:loc=1201:code=trial` command. If you wish to load the trial `imt` GPL to all cards in the system, enter the `init-imt-gpl:code=trial` command and do not specify the `loc` parameter.



CAUTION: The `init-imt-gpl` command places the specified card out of service, and should only be used during periods of low traffic. This command allows the trial `imt` GPL to be loaded on the specified card, but will interrupt service on that card.

When this command has successfully completed, these messages should appear.

```

rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
Initializing IMT GPL for card 1201.
;

rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
* 0192.0013 * CARD 1201 SS7ANSI      Card is isolated from the system
;

rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
0193.0014      CARD 1201 SS7ANSI      Card is present
;

rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
0194.0096      CARD 1201 SS7ANSI      Card has been reloaded
;

```

NOTE: If the trial version of the `imt` GPL will not be made the approved GPL, skip steps 17 and 18, and go to step 19.

8. Activate the trial GPL, using the `act-gpl` command and specifying the value for the trial `imt` GPL shown in step 6. For this example, enter the `act-gpl:appl=imt:ver=114-002-000` command. These messages should appear.

```

rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
IMT activate on 1114 completed
IMT activate on 1116 completed

```

The `act-gpl:appl=imt:ver=` command makes the trial `imt` GPL the approved `imt` GPL on every card connected to the IMT bus. When the `act-gpl:appl=imt:ver=` command is entered, these messages are displayed on the terminal.

- UIM 1105 – REPT EVT:IMT GPL reloading – displayed after the `act-gpl:appl=imt:ver=` command is entered. The entry, `cards loaded:`, shows that one card out of the total number of cards connected to the IMT bus has been reloaded with the new approved `imt` GPL. For this example, the system has 25 cards connected to the IMT bus.

GPL Management Procedures

- UAM 0014 – Card is present – displayed for each card connected to the IMT bus when GPL version specified in the **act-gpl:appl=imt:ver=** command has been made the approved imt GPL.
- UIM 1106 – REPT COND:IMT GPL reloading – displayed periodically to update the number of cards that have been reloaded, and when the **act-gpl:appl=imt:ver=** command has finished. The entry, **cards loaded:**, shows the number of cards that have been reloaded with the new approved **imt** GPL since the previous UIM 1106 was issued or since UIM 1105 was issued. For this example, 5 of the 25 cards connected to the IMT bus have been reloaded with the new approved **imt** GPL.

When UIM 1106 shows that the number of cards that have been reloaded with the new approved imt GPL is equal to the number of cards connected to the IMT bus (for example, **cards loaded: 25 of 25**), the **act-gpl:appl=imt:ver=** command has finished.

This is an example of these messages and the order in which they appear on the terminal.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
0191.1105  SYSTEM          INFO  REPT EVT:IMT GPL reloading
          cards  loaded:    1 of 25
          Report Date: 04-06-01  Time: 07:01:08
;

rlghncxa03w 04-06-01 07:01:09 GMT EAGLE5 31.6.0
0192.0014  CARD 1201 SS7ANSI  Card is present
;

rlghncxa03w 04-06-01 07:01:10 GMT EAGLE5 31.6.0
0193.0014  CARD 1202 SS7ANSI  Card is present
;

rlghncxa03w 04-06-01 07:01:11 GMT EAGLE5 31.6.0
0194.0014  CARD 1203 SS7ANSI  Card is present
;

rlghncxa03w 04-06-01 07:01:12 GMT EAGLE5 31.6.0
0195.0014  CARD 1204 SS7ANSI  Card is present
;

rlghncxa03w 04-06-01 07:01:12 GMT EAGLE5 31.6.0
0196.0014  CARD 1205 SS7ANSI  Card is present
;

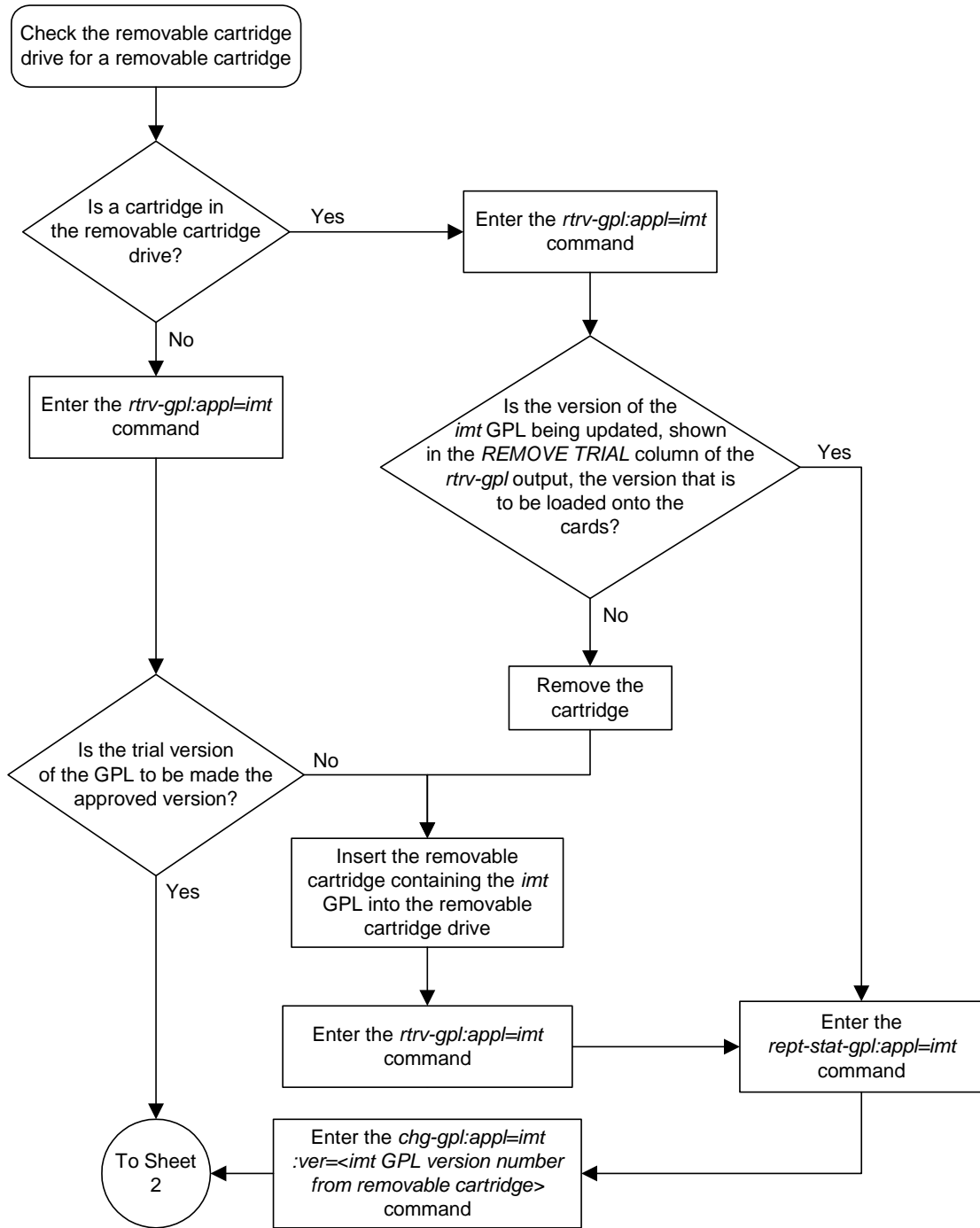
rlghncxa03w 04-06-01 07:01:14 GMT EAGLE5 31.6.0
0197.1106  SYSTEM          INFO  REPT COND:IMT GPL reloading
          cards  loaded:    5 of 25
          Report Date: 04-06-01  Time: 07:01:14
;
```

9. Verify the **imt** GPLs on the cards using the **rept-stat-gpl:appl=imt** command. If any card is not running the approved version of the GPL shown in the **APPROVED** column of the **rept-stat-gpl** output, the indicator **ALM** is displayed next to the GPL version in the **RUNNING** column of the **rept-stat-gpl** output. If the trial **ss7ansi** GPL was only loaded on to card 1201, this is an example of the possible output.

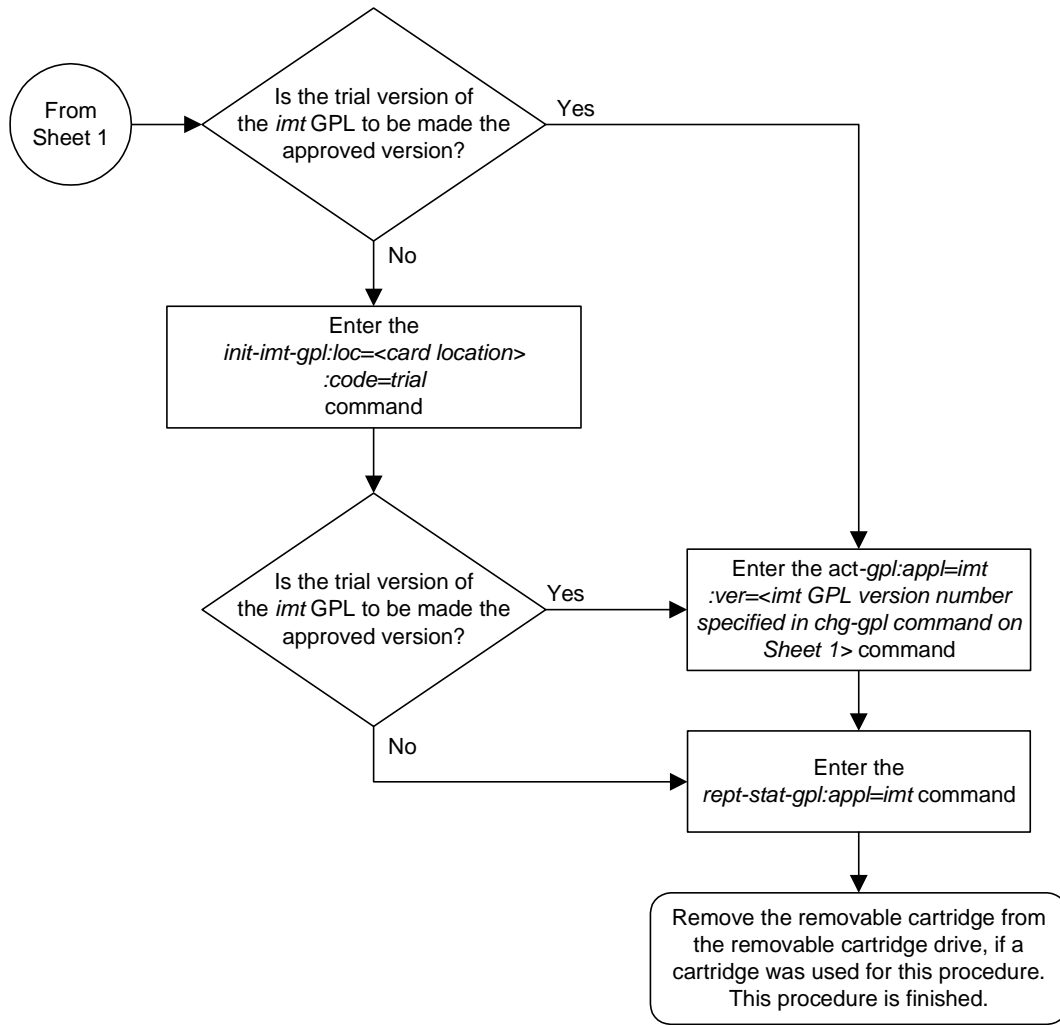
```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
IMT       1113      114-001-000      114-001-000      114-002-000
IMT       1115      114-001-000      114-001-000      114-002-000
IMT       1201      114-002-000 ALM      114-001-000      114-002-000
IMT       1202      114-001-000      114-001-000      114-002-000
IMT       1203      114-001-000      114-001-000      114-002-000
IMT       1205      114-001-000      114-001-000      114-002-000
IMT       1207      114-001-000      114-001-000      114-002-000
IMT       1211      114-001-000      114-001-000      114-002-000
IMT       1212      114-001-000      114-001-000      114-002-000
Command Completed.
```

10. Remove the removable cartridge from the removable cartridge drive on the MDAL card. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.
-

Flowchart 3-1. Updating the IMT GPL (Sheet 1 of 2)



Flowchart 3-1. Updating the IMT GPL (Sheet 2 of 2)



Updating the EOAM GPL

This section presents the procedure for loading the **eoam** generic program load (GPL) on the GPSM-II card in card locations 1113 and 1115 as a trial version from a removable cartridge, then making the trial version of the **eoam** GPL the approved version of the **eoam** GPL. The GPSM-II card in card locations 1113 and 1115 is used in combination with the TDM to form the Maintenance and Administration Subsystem Processor (MASP).

If any card is not running the approved version of the GPL shown in the **RELEASE** column of the **rtrv-gp1** output, the indicator **ALM** is displayed next to the GPL version in the **RUNNING** column of the **rept-stat-gp1** output, and next to the GPL version in the **APPROVED** column in the **rtrv-gp1** output.

If a new version of the **eoam** GPL is being loaded on to the system, the removable cartridge that contains the new version of the **eoam** GPL is required.

Procedure

1. Check the removable cartridge drive on the MDAL card for a removable cartridge. If there is a removable cartridge in the drive, display the **eoam** GPLs on the fixed disk and on the removable cartridge using the **rtrv-gp1:appl=eoam** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
EOAM	1114	114-002-000	114-002-000	114-001-000	114-003-000
EOAM	1116	114-002-000	114-002-000	114-001-000	-----

If the version of the **eoam** GPL shown in the **REMOVE TRIAL** column of the **rtrv-gp1** output is not the version that is to be loaded onto the cards, remove the cartridge and go to step 2. For more information on removing the removable cartridge from the removable cartridge drive, see “Removing the Removable Cartridge” on page 2-9.

If the version of the **eoam** GPL shown in the **REMOVE TRIAL** column of the **rtrv-gp1** output is the version that is to be loaded onto the cards, skip steps 2, 3, 4, and 5, and go to step 6.

If the trial version of the **eoam** GPL is to be made the approved version, skip steps 2 through 7, and go to step 8.

2. Check the removable cartridge drive on the MDAL card for a removable cartridge. If there is a removable cartridge in the drive, remove it. For more information on removing the removable cartridge from the removable cartridge drive, see “Removing the Removable Cartridge” on page 2-9.
-

3. Make sure the removable cartridge containing the new software is “write protected” (NOT write enabled). To write protect a removable cartridge, see “Write Protecting the Removable Cartridge” on page 2-6.

-
4. Insert the removable cartridge containing the **eoam** GPL into the removable cartridge drive on the MDAL card. For more information on inserting the removable cartridge in the removable cartridge drive, see “Inserting the Removable Cartridge” on page 2-8.

-
5. Display the **eoam** GPLs on the fixed disk and on the removable cartridge using the **rtrv-gpl:appl=eoam** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON

APPL      CARD  RELEASE      APPROVED      TRIAL      REMOVE TRIAL
EOAM      1114  114-002-000  114-002-000  114-001-000  114-003-000
EOAM      1116  114-002-000  114-002-000  114-001-000  -----
```

-
6. Load the new version of the **eoam** GPL using the **chg-gpl** command and specifying the value for the trial **eoam** GPL shown in the REMOVE TRIAL column in the output of the **rtrv-gpl** output from either steps 1 or 5. For this example, enter this command.

```
chg-gpl:appl=eoam:ver=114-003-000
```

These messages should appear.

```
rlghncxa03w 04-06-01 11:43:04 GMT EAGLE5 31.6.0
GPL Auditing ON

EOAM  upload on 1114 completed
EOAM  upload on 1116 completed
System Release ID table upload 1114 completed
System Release ID table upload 1116 completed
```

NOTE: If you wish to leave the new version of the **eoam** GPL in the Trial state, skip step 7 and go to step 8.

7. Activate the trial GPL, using the **act-gpl** command and specifying the value for the trial **eoam** GPL shown in step 6. For this example, enter this command.

```
act-gpl:appl=eoam:ver=114-003-000
```

These messages should appear.

```
rlghncxa03w 04-06-01 06:54:39 GMT EAGLE5 31.6.0
EOAM  activate on 1114 completed
EOAM  activate on 1116 completed
```

GPL Management Procedures

8. Verify that the trial **eoam** GPL has been made the approved GPL using the **rtrv-gpl:appl=eoam** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON

APPL      CARD  RELEASE      APPROVED      TRIAL      REMOVE TRIAL
EOAM      1114  114-003-000  114-003-000   114-002-000 114-003-000
EOAM      1116  114-003-000  114-003-000   114-002-000 -----
```

If the new version of the **eoam** GPL was left as the trial version of the **eoam** GPL (step 7 was not performed), the following is an example of the **rtrv-gpl** output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON

APPL      CARD  RELEASE      APPROVED      TRIAL      REMOVE TRIAL
EOAM      1114  114-003-000  114-002-000 ALM  114-003-000 114-003-000
EOAM      1116  114-003-000  114-002-000 ALM  114-003-000 -----
```

9. Verify which cards are running the **eoam** GPLs using the **rept-stat-gpl:appl=eoam** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD  RUNNING      APPROVED      TRIAL
EOAM      1113  114-002-000 ALM  114-003-000  114-002-000
EOAM      1115  114-002-000 ALM  114-003-000  114-002-000
Command Completed
```

If the new version of the **eoam** GPL was left as the trial version of the **eoam** GPL (step 7 was not performed), the following is an example of the **rept-stat-gpl** output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD  RUNNING      APPROVED      TRIAL
EOAM      1113  114-002-000 ALM  114-002-000  114-003-000
EOAM      1115  114-002-000 ALM  114-002-000  114-003-000
Command Completed
```

10. To load the **eoam** GPL, it must be loaded on the standby MASP (GPSM-II) first. To determine which MASP is active, enter the **rept-stat-db** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<
          TDM 1114 ( STDBY)                TDM 1116 ( ACTV )
          C  LEVEL      TIME LAST BACKUP    C  LEVEL      TIME LAST BACKUP
          -----
FD BKUP  Y           35 04-06-01 10:19:18 GMT Y           35 04-06-01 10:19:18 GMT
FD CRNT  Y           106                      Y           106
          MDAL 1117
          -----
RD BKUP  Y           106 04-05-31 20:27:53 GMT
```

The output of the **rept-stat-db** command shows which MASP is active with the indicator (**ACTV**) following the TDM card location. The indicator (**STDBY**) following the TDM card location shows which MASP is standby.

For this example, the MASP associated with TDM 1116 is active and the MASP associated with TDM 1114 is standby.

11. 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. This is an example of the possible output. In this example, the OAP terminals are terminals 6 and 9. If no OAP terminals are shown in the `rtrv-trm` command output, go to step 15.

```
rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
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
```

```
APP  APP
TRM  SERV SS  CARD CLK  DBG  GTT  GWS  MEAS  MON  MPS  SEAS  SLAN
1    YES YES YES  YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
2    YES YES YES  YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
3    YES YES YES  YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
4    YES YES YES  YES  YES  NO   YES  YES  YES  YES  YES  NO  NO
5    YES YES YES  YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
6    YES YES YES  YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
7    NO  YES YES  YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
8    YES 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  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
```


GPL Management Procedures

```
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
```

12. Display the status of the terminals with the **rept-stat-trm** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
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.
```

13. Place the OAP terminals out of service using the **rmv-trm** command. The **force=yes** parameter must be used when placing the last OAP terminal out of service. For this example, enter these commands.

```
rmv-trm:trm=6
rmv-trm:trm=9:force=yes
```

If the status of the OAP terminals shown in the **PST** field in step 12 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.

This message should appear when each of these commands have successfully completed.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Inhibit message sent to terminal

rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Command Completed.
```

14. 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 used in step 13. For this example, enter these commands.

```
chg-trm:trm=6:type=none
```

```
chg-trm:trm=9:type=none
```

This message should appear when these commands have successfully completed.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
CHG-TRM: MASP B - COMPLTD
```

15. Using the outputs of steps 9 and 10 as a guide, place the GPSM-II card making up the standby MASP out of service using the **rmv-card** command. For this example, enter this command.

```
rmv-card:loc=1113
```

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

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Card has been inhibited.
```

16. Put the card that was inhibited in step 15 back into service using the **rst-card** command with either the **code=appr** parameter, to load the approved version of the **eoam** GPL onto the card, or the **code=trial** parameter to load the trial version of the **eoam** GPL onto the card.

For this example, enter this command.

```
rst-card:code=appr:loc=1113
```

If the new version of the **eoam** GPL was left as the trial version of the **eoam** GPL (step 7 was not performed), enter this command.

```
rst-card:code=trial:loc=1113
```

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

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Card has been allowed.
```

17. Verify the **eoam** GPLs on the GPSM-II cards using the **rept-stat-gpl:appl=eoam** command. If any card is not running the release version of the GPL, shown in the **RELEASE** column of the **rtrv-gpl** output in step 8, the indicator **ALM** is displayed next to the GPL version in the **RUNNING** column of the **rept-stat-gpl** output. This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
EOAM      1113      114-003-000      114-003-000      114-002-000
EOAM      1115      114-002-000 ALM      114-003-000      114-002-000
Command Completed
```

If the new version of the **eoam** GPL was left as the trial version of the **eoam** GPL (step 7 was not performed), the following is an example of the **rept-stat-gpl** output.

```
rlghncxa03w 04-06-01 11:50:11 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING          APPROVED        TRIAL
EOAM      1113      114-003-000      114-002-000      114-003-000
EOAM      1115      114-002-000 ALM  114-002-000      114-003-000
Command Completed
```

- 18.** If you do not wish to load the new version of the **eoam** GPL onto the other GPSM-II card, skip this step and go to step 19.

If you wish to load the new trial GPL onto the GPSM-II card making up the active MASP, enter the **init-card** command specifying the location of the GPSM-II card making up active MASP. For this example, enter the **init-card:loc=1115** command. This message should appear.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Init Card command issued to card 1115
```

After the **init-card** command has completed, repeat this procedure from step 15, specifying the card location used in the **init-card** command, making sure to specify the **code=trial** parameter for the **rst-card** command in step 16. This will leave the GPSM-II cards running the new trial GPL and show the **ALM** indicator in the **rtrv-gpl** output. The **ALM** indicator will not be shown in the **rept-stat-gpl** output.

If, after loading the new trial GPL, you wish to make the new trial version of the GPL the approved version of the GPL, and load the new approved GPL onto the cards shown in step 9, repeat this procedure from step 7 for each card shown in step 9, making sure to specify the **code=appr** parameter for the **rst-card** command in step 16. This will leave the GPSM-II cards running the new approved GPL and the **ALM** indicator will not be shown in the **rtrv-gpl** and **rept-stat-gpl** outputs.

If the new trial version of the GPL was made the approved version of the GPL in step 7, and you wish to load the new approved GPL onto the card specified in the **init-card** command, repeat this procedure from step 15 for the card specified in the **init-card** command, making sure to specify the **code=appr** parameter for the **rst-card** command in step 16. This will leave the GPSM-II cards running the new approved GPL and the **ALM** indicator will not be shown in the **rtrv-gpl** and **rept-stat-gpl** outputs.

NOTE: If OAP terminals are not shown in the `rtrv-trm` command output in step 11, skip this step and step 20, and go to step 21.

19. Change the terminal type of the terminals that were changed to **NONE** in step 14 to the terminal type OAP with the `chg-trm` command and the `type=oap` parameter. The terminal type is shown in the TYPE field in the `rtrv-trm` command output in step 11. For this example, enter these commands.

```
chg-trm:trm=6:type=oap
```

```
chg-trm:trm=9:type=oap
```

This message should appear when these commands have successfully completed.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
CHG-TRM: MASP B - COMPLTD
```

20. 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
```

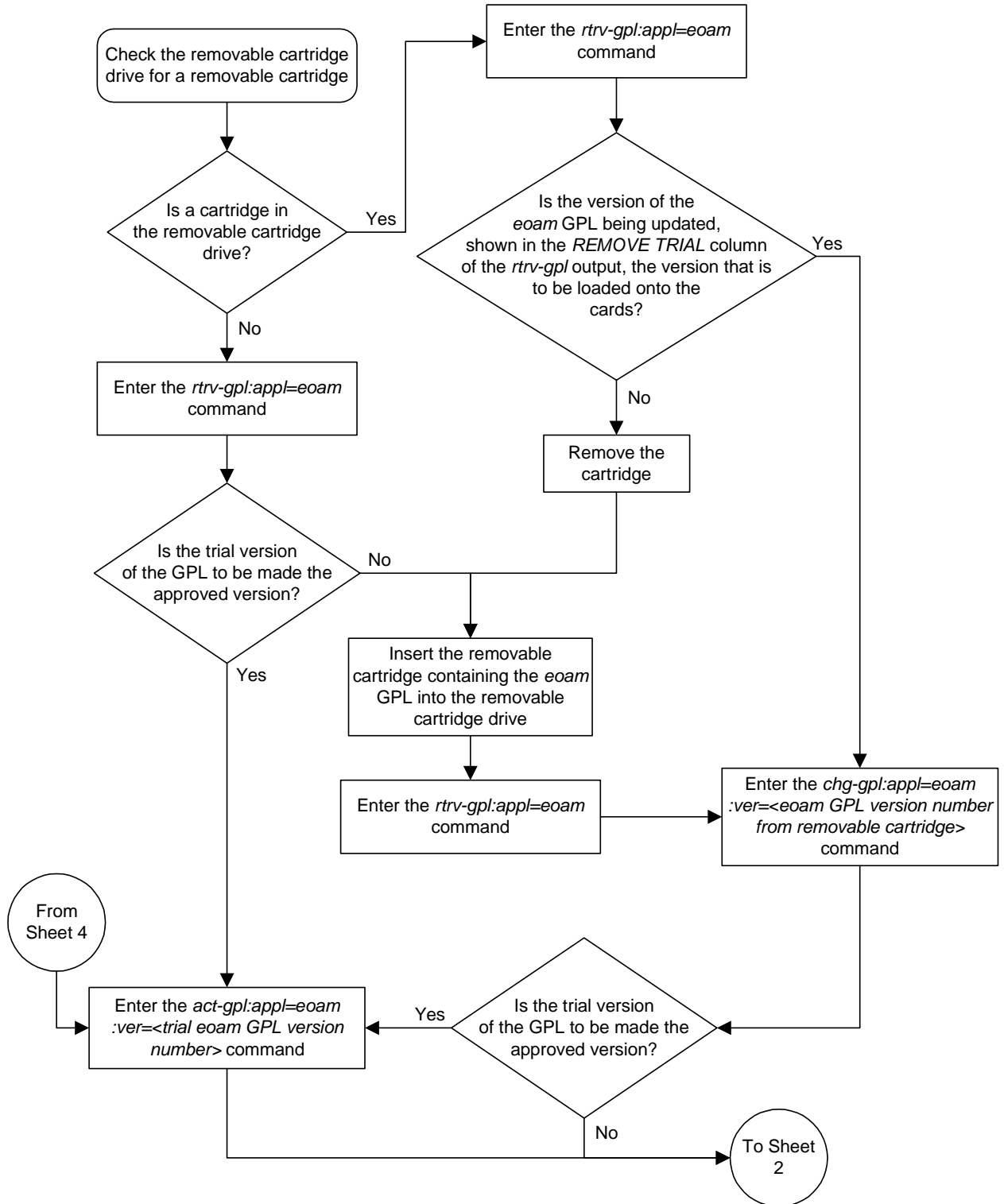
This message should appear when each command has successfully completed.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Allow message sent to terminal
```

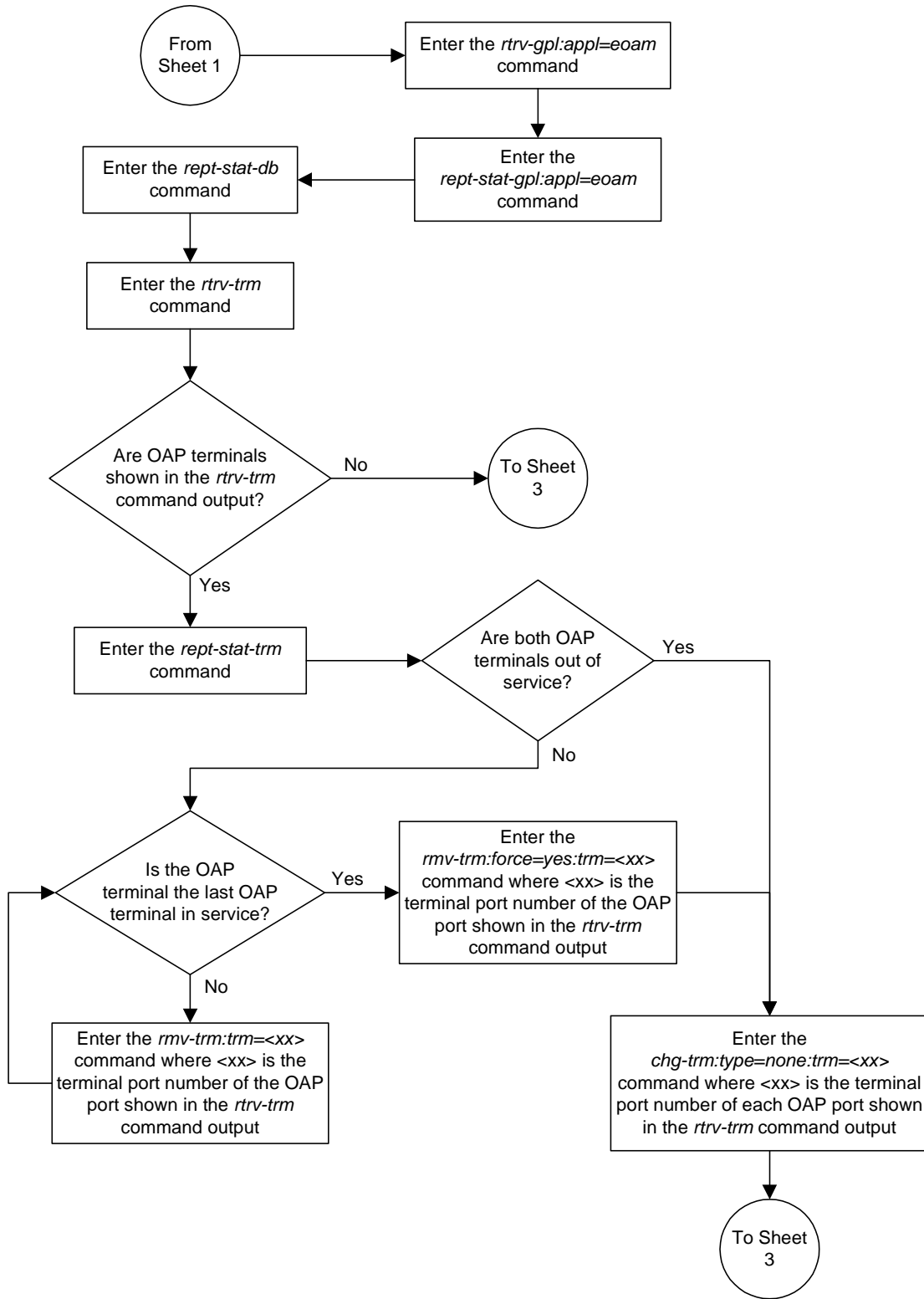
```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Command Completed.
```

21. Remove the removable cartridge from the removable cartridge drive on the MDAL card. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.
-

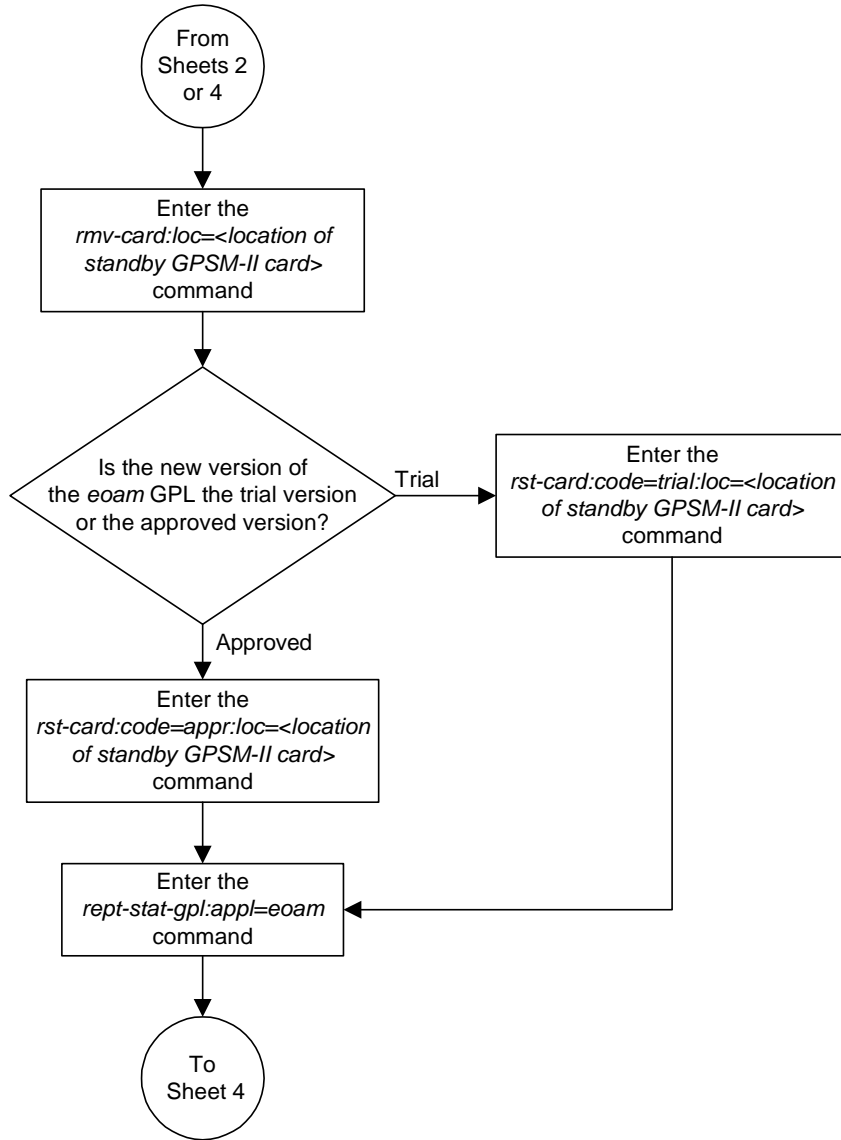
Flowchart 3-2. Updating the EOAM GPL (Sheet 1 of 5)



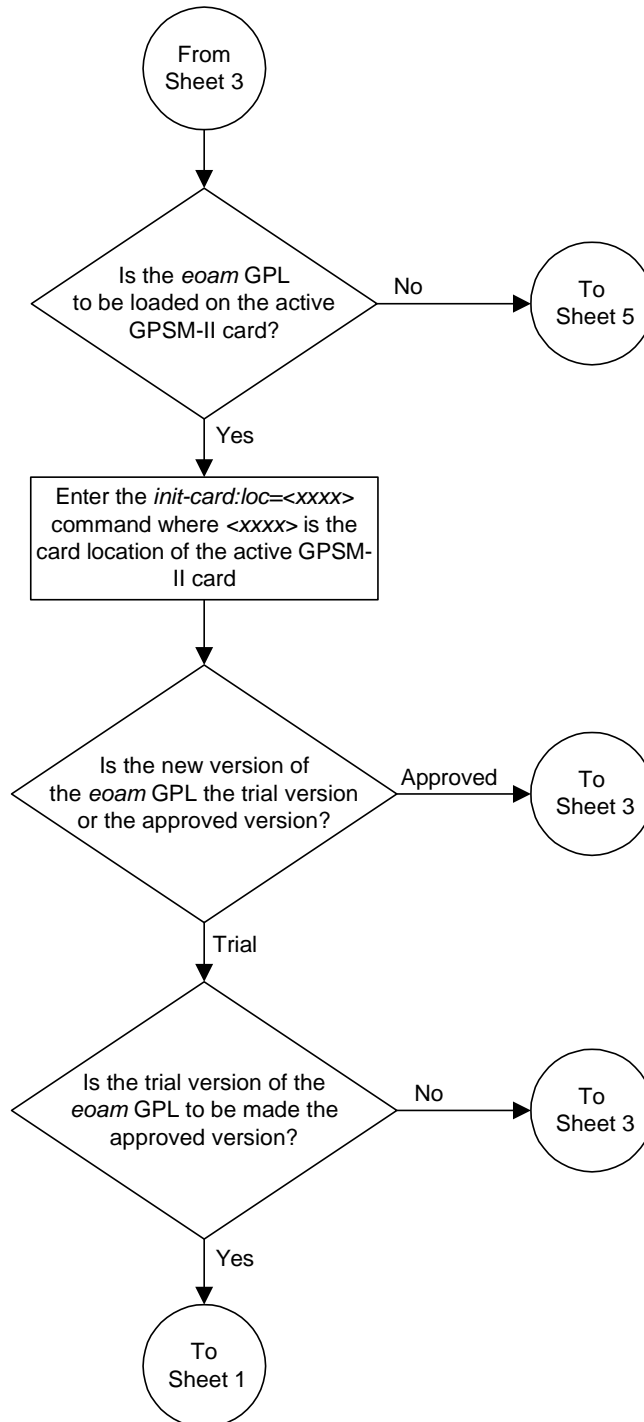
Flowchart 3-2. Updating the EOAM GPL (Sheet 2 of 5)



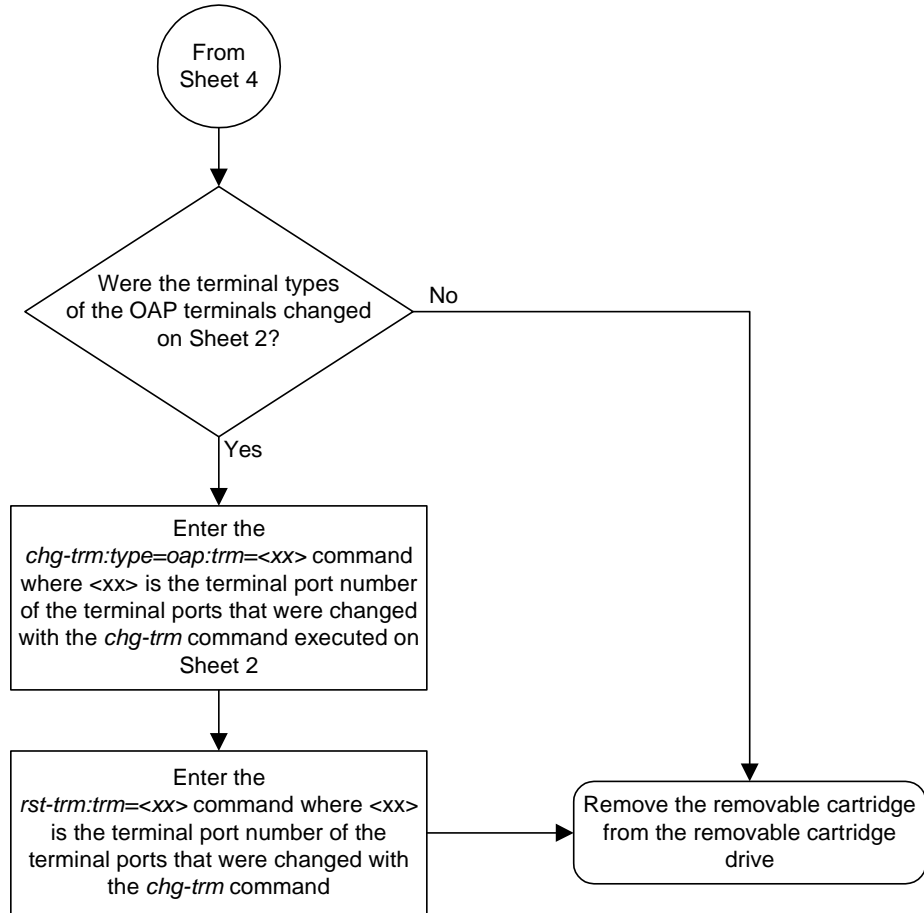
Flowchart 3-2. Updating the EOAM GPL (Sheet 3 of 5)



Flowchart 3-2. Updating the EOAM GPL (Sheet 4 of 5)



Flowchart 3-2. Updating the EOAM GPL (Sheet 5 of 5)



Updating the Signaling Link and Data Link GPLs

This procedure is used to update these GPLs: *ss7ansi*, *ss7gx25*, *ccs7itu*, *ss7ml*, *ss7ipgw*, *iplim*, *iplimi*, *ipgwi*, *atmansi*, *atmitu*, *stplan*, *vxwslan*. These names are used as the value of the *appl* parameter of the *chg-gpl*, *act-gpl*, *rept-stat-gpl*, and *rtrv-gpl* commands.

Signaling links are assigned to cards running these GPLs: *ss7ansi*, *ss7gx25*, *ccs7itu*, *ss7ml*, *ss7ipgw*, *iplim*, *iplimi*, *ipgwi*, *atmansi*, *atmitu*. The signaling link GPLs are assigned to the card types shown in Table 3-1.

Table 3-1. SS7 LIM Card Types

GPL	Card Type
<i>ss7ansi</i> , <i>ccs7itu</i> , & <i>ss7ml</i>	<i>limds0</i> , <i>limocu</i> , <i>limv35</i> , <i>lime1</i> , <i>limch</i> , <i>limt1</i>
<i>ss7gx25</i>	<i>limds0</i> , <i>limocu</i> , <i>limv35</i>
<i>atmansi</i>	<i>limatm</i>
<i>atmitu</i>	<i>lime1atm</i>
<i>ss7ipgw</i> , <i>iplim</i> , <i>iplimi</i> , <i>ipgwi</i>	<i>dcm</i>

Data links are assigned to cards running either the *vxwslan* or *stplan* GPLs. The data link GPLs are assigned to the card types shown in Table 3-2.

Table 3-2. Data Link Card Types

GPL	Card Type
<i>stplan</i>	<i>acmenet</i>
<i>vxwslan</i>	<i>dcm</i>

These GPLs do not support 24-bit ITU-N point codes: *ss7gx25*, *stplan*, *vxwslan*.

The card types shown in Tables 3-1 and 3-2 are the values used for the *type* parameter of the *ent-card* command.

The cards running the **ss7m1** GPL are the Multi-port LIM (MPL) and the E1/T1 MIM and each card can support eight signaling link ports. The **rtrv-card** output shows these cards running either the **ss7ansi** or **ccs7itu** applications, but the **rept-stat-card** and **rept-stat-gpl** outputs shows that these cards are actually running the **ss7m1** GPL. Having these cards configured in the database this way allows these cards to replace the 2-port cards shown in the following list without have to remove the 2-port cards from the database with the **dlt-card** command, then enter the 8-port cards with the **ent-card** command:

- A Multi-Port LIM replacing a 2-port LIM
- An E1/T1 MIM, configured as an E1 card, replacing a 2-port E1 card
- An E1/T1 MIM, configured as an E1 channel card, replacing a 2-port E1 channel card

If the GPL is being updated to a new version, a removable cartridge containing the GPL being updated is required.

Canceling the **REPT-STAT-SLK** and **RTRV-SLK** Commands

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

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

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

Procedure

1. Check the removable cartridge drive on the MDAL card for a removable cartridge. If there is a removable cartridge in the drive, display the GPLs on the fixed disk and on the removable cartridge using the `rtrv-gpl` command with the `appl` parameter value equal to the GPL being updated. These are examples of the possible output.

rtrv-gpl:appl=ss7ml

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
SS7ML	1114	114-002-000	114-002-000	114-001-000	114-003-000
SS7ML	1116	114-002-000	114-002-000	114-001-000	-----

rtrv-gpl:appl=vxwslan

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
VXWSLAN	1114	114-002-000	114-002-000	114-001-000	114-003-000
VXWSLAN	1116	114-002-000	114-002-000	114-001-000	-----

If the version of the GPL shown in the **REMOVE TRIAL** column of the `rtrv-gpl` output is not the version that is to be loaded onto the cards, remove the cartridge and go to step 2. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.

If the version of the GPL shown in the **REMOVE TRIAL** column of the `rtrv-gpl` output is the version that is to be loaded onto the cards, skip steps 2, 3, 4, and 5, and go to step 6.

If the trial version of the GPL is to be made the approved version, skip steps 2 through 7, and go to step 8.

-
2. Make sure the removable cartridge containing the new software is "write protected" (NOT write enabled). To write protect a removable cartridge, see "Write Protecting the Removable Cartridge" on page 2-6.

-
3. Insert the removable cartridge containing the GPL being updated into the removable cartridge drive on the MDAL card. For more information on inserting the removable cartridge in the removable cartridge drive, see "Inserting the Removable Cartridge" on page 2-8.
-

4. Display the GPLs on the fixed disk and on the removable cartridge using the **rtrv-gpl** command with the **appl** parameter value equal to the **appl** parameter value specified in step 1. These are examples of the possible output.

rtrv-gpl:appl=ss7ml

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
SS7ML	1114	114-002-000	114-002-000	114-001-000	114-003-000
SS7ML	1116	114-002-000	114-002-000	114-001-000	-----

rtrv-gpl:appl=vxwslan

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
VXWSLAN	1114	114-002-000	114-002-000	114-001-000	114-003-000
VXWSLAN	1116	114-002-000	114-002-000	114-001-000	-----

5. Change the GPLs, using the **chg-gpl** command and specifying the value for the trial GPL shown in the REMOVE TRIAL column in the output of the **rtrv-gpl** command used in step 4. For this example, enter these commands.

chg-gpl:appl=ss7ml:ver=114-003-000

These messages should appear.

```
rlghncxa03w 04-06-01 11:43:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

```
SS7ML upload on 1114 completed
SS7ML upload on 1116 completed
System Release ID table upload 1114 completed
System Release ID table upload 1116 completed
```

chg-gpl:appl=vxwslan:ver=114-003-000

These messages should appear.

```
rlghncxa03w 04-06-01 11:43:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

```
VXWSLAN upload on 1114 completed
VXWSLAN upload on 1116 completed
System Release ID table upload 1114 completed
System Release ID table upload 1116 completed
```

NOTE: If you wish to leave the new version of the GPL in the Trial state, skip step 6 and go to step 7.

6. Activate the trial GPL, using the **act-gpl** command and specifying the value for the trial GPL shown in step 5. For this example, enter this command.

act-gpl:appl=ss7ml:ver=114-003-000

These messages should appear.

```
rlghncxa03w 04-06-01 06:54:39 GMT EAGLE5 31.6.0
SS7ML activate on 1114 completed
SS7ML activate on 1116 completed
```

act-gpl:appl=vxwslan:ver=114-003-000

These messages should appear.

```
rlghncxa03w 04-06-01 06:54:39 GMT EAGLE5 31.6.0
VXWSLAN activate on 1114 completed
VXWSLAN activate on 1116 completed
```

- Verify that the trial GPL has been made the approved GPL using the **rtrv-gpl** command with the **appl** parameter value equal to the **appl** parameter value specified in steps 6 and 7. For this example, enter these commands.

rtrv-gpl:appl=ss7ml

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON

APPL      CARD  RELEASE      APPROVED      TRIAL      REMOVE TRIAL
SS7ML     1114  114-003-000  114-003-000  114-002-000  114-003-000
SS7ML     1116  114-003-000  114-003-000  114-002-000  -----
```

rtrv-gpl:appl=vxwslan

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON

APPL      CARD  RELEASE      APPROVED      TRIAL      REMOVE TRIAL
VXWSLAN   1114  114-003-000  114-003-000  114-002-000  114-003-000
VXWSLAN   1116  114-003-000  114-003-000  114-002-000  -----
```

If the new version of the GPL was left as the trial version of the GPL (step 6 was not performed), the following is an example of the **rtrv-gpl** output.

rtrv-gpl:appl=ss7ml

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON

APPL      CARD  RELEASE      APPROVED      TRIAL      REMOVE TRIAL
SS7ML     1114  114-003-000  114-002-000  ALM  114-003-000  114-003-000
SS7ML     1116  114-003-000  114-002-000  ALM  114-003-000  -----
```

rtrv-gpl:appl=vxwslan

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON

APPL      CARD  RELEASE      APPROVED      TRIAL      REMOVE TRIAL
VXWSLAN   1114  114-003-000  114-002-000  ALM  114-003-000  114-003-000
VXWSLAN   1116  114-003-000  114-002-000  ALM  114-003-000  -----
```

- Verify which cards are running the GPL using the `rept-stat-gpl` command with the `appl` parameter value equal to the `appl` parameter value specified in step 7. For this example, enter these commands.

```
rept-stat-gpl:appl=ss7ml
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING          APPROVED        TRIAL
SS7ML     1201     114-002-000 ALM  114-003-000   114-002-000
SS7ML     1204     114-002-000 ALM  114-003-000   114-002-000
SS7ML     1211     114-002-000 ALM  114-003-000   114-002-000
SS7ML     1215     114-002-000 ALM  114-003-000   114-002-000
SS7ML     1307     114-002-000 ALM  114-003-000   114-002-000
SS7ML     2111     114-002-000 ALM  114-003-000   114-002-000
SS7ML     2112     114-002-000 ALM  114-003-000   114-002-000
SS7ML     2115     114-002-000 ALM  114-003-000   114-002-000
SS7ML     2116     114-002-000 ALM  114-003-000   114-002-000
Command Completed
```

```
rept-stat-gpl:appl=vxwslan
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING          APPROVED        TRIAL
VXWSLAN   2105     114-002-000 ALM  114-003-000   114-002-000
VXWSLAN   2113     114-002-000 ALM  114-003-000   114-002-000
VXWSLAN   2301     114-002-000 ALM  114-003-000   114-002-000
Command Completed
```

If the new version of the GPL was left as the trial version of the GPL (step 6 was not performed), the following is an example of the `rept-stat-gpl` output.

```
rept-stat-gpl:appl=ss7ml
```

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING          APPROVED        TRIAL
SS7ML     1201     114-002-000 ALM  114-002-000   114-003-000
SS7ML     1204     114-002-000 ALM  114-002-000   114-003-000
SS7ML     1211     114-002-000 ALM  114-002-000   114-003-000
SS7ML     1215     114-002-000 ALM  114-002-000   114-003-000
SS7ML     1307     114-002-000 ALM  114-002-000   114-003-000
SS7ML     2111     114-002-000 ALM  114-002-000   114-003-000
SS7ML     2112     114-002-000 ALM  114-002-000   114-003-000
SS7ML     2115     114-002-000 ALM  114-002-000   114-003-000
SS7ML     2116     114-002-000 ALM  114-002-000   114-003-000
Command Completed
```

```
rept-stat-gpl:appl=vxwslan
```

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING          APPROVED        TRIAL
VXWSLAN   2105     114-002-000 ALM  114-002-000   114-003-000
VXWSLAN   2113     114-002-000 ALM  114-002-000   114-003-000
VXWSLAN   2301     114-002-000 ALM  114-002-000   114-003-000
Command Completed
```

NOTE: If the GPL being updated is either VXWSLAN or STPLAN, skip steps 9 and 10, and go to step 11.

- Display the signaling links associated with the cards shown in step 8. Enter the `rtrv-slk` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:16:37 GMT EAGLE5 31.6.0
```

LOC	PORT	LSN	SLC	TYPE	L2T		L1		ECM	PCR	
					SET	BPS	MODE	TSET		N1	N2
1201	A	lsnmp11	0	LIMDSO	2	56000	---	---	BASIC	---	-----
1201	B	lsnmp12	0	LIMDSO	3	56000	---	---	PCR	76	3800
1201	A1	lsnmp13	0	LIMDSO	2	56000	---	---	PCR	120	5034
1201	B1	lsnmp14	0	LIMDSO	1	56000	---	---	BASIC	---	-----
1204	A	lsnmp11	1	LIMDSO	2	56000	---	---	BASIC	---	-----
1204	B	lsnmp12	1	LIMDSO	3	56000	---	---	PCR	76	3800
1204	A2	lsnmp13	1	LIMDSO	2	56000	---	---	PCR	120	5034
1204	B2	lsnmp15	0	LIMDSO	3	56000	---	---	PCR	76	3800
1211	A	lsnmp11	2	LIMDSO	2	56000	---	---	BASIC	---	-----
1211	B	lsnmp13	2	LIMDSO	2	56000	---	---	PCR	120	5034
1211	A3	lsnmp15	1	LIMDSO	3	56000	---	---	PCR	76	3800
1211	B3	lsnmp16	0	LIMDSO	1	56000	---	---	PCR	120	5034
1215	A1	lsnmp17	0	LIMDSO	1	56000	---	---	BASIC	---	-----
1215	B2	lsnmp11	3	LIMDSO	2	56000	---	---	BASIC	---	-----
1215	A3	lsnmp16	1	LIMDSO	1	56000	---	---	PCR	120	5034
1215	B3	lsnmp17	1	LIMDSO	1	56000	---	---	BASIC	---	-----
1307	A	lsnmp16	2	LIMDSO	1	56000	---	---	PCR	120	5034
1307	B2	lsnmp17	2	LIMDSO	1	56000	---	---	BASIC	---	-----
1307	A3	lsnmp16	3	LIMDSO	1	56000	---	---	PCR	120	5034
1307	B3	lsnmp17	3	LIMDSO	1	56000	---	---	BASIC	---	-----

LOC	PORT	LSN	SLC	TYPE	LP		ATM		VCI	VPI	LL
					SET	BPS	TSEL				
1302	A	atm1302a	5	LIMATM	3	1544000	INTERNAL		35	15	0
1305	A	atm1305a	5	LIMATM	5	1544000	LINE		5	0	2

LOC	PORT	LSN	SLC	TYPE	LP		ATM		VCI	VPI	E1ATM		
					SET	BPS	TSEL				CRC4	SI	SN
2101	A	atmitu1	0	LIME1ATM	5	2.048M	LINE		150	2	ON	1	20
2105	A	atmitu1	1	LIME1ATM	5	2.048M	LINE		35	15	ON	2	15

LOC	PORT	LSN	SLC	TYPE	L2T		PCR		E1	E1	LOC	PORT	TS
					SET	BPS	ECM	N1					
2111	A	lsne145	0	LIME1	1	56000	BASIC	---	-----	2111	2	10	
2112	A	lsne145	1	LIMCH	1	56000	BASIC	---	-----	2111	1	14	
2112	A2	lsne145	2	LIMCH	1	56000	BASIC	---	-----	2111	1	20	

LOC	PORT	LSN	SLC	TYPE	L2T		PCR		T1	T1	LOC	PORT	TS
					SET	BPS	ECM	N1					
2115	A	lsnt145	0	LIMT1	1	56000	BASIC	---	-----	2115	2	3	
2116	A	lsnt145	1	LIMCH	1	56000	BASIC	---	-----	2115	1	11	
2116	A2	lsnt145	2	LIMCH	1	56000	BASIC	---	-----	2115	1	19	

LOC	PORT	LSN	SLC	TYPE	IPLIML2
LOC	PORT	LSN	SLC	TYPE	

10. Using the outputs of steps 8 and 9 as a guide, select a card to load the approved GPL onto. Deactivate the SS7 signaling links on that card using the `dact-slk` command. For this example, enter these commands.

```
dact-slk:loc=1201:port=a
```

```
dact-slk:loc=1201:port=b
```

```
dact-slk:loc=1201:port=a1
```

```
dact-slk:loc=1201:port=b1
```



CAUTION: These command examples place the SS7 signaling links on card 1201 out of service. This will interrupt service on the SS7 signaling links on card 1201 and allow the approved GPL to be loaded on to card 1201.

Do not deactivate all the SS7 signaling links in the system at the same time. Doing so will take all the SS7 signaling links out of service and isolate the system from the network.

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

```
rlghncxa03w 04-06-01 11:45:18 GMT EAGLE5 31.6.0
Deactivate SLK message sent to card
```

NOTE: If the GPL being updated is not VXWSLAN or STPLAN, skip steps 11 and 12, and go to step 13.

11. Display the data links, and their status, associated with the cards shown in step 8. Enter the `rept-stat-dlk` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 17:00:36 GMT EAGLE5 31.6.0
DLK    PST          SST          AST
2105   IS-NR          Avail        ---
2113   IS-NR          Avail        ---
2301   IS-NR          Avail        ---
Command Completed.
```

12. Deactivate the TCP/IP data link on the card (shown in step 11) that you wish to load the trial GPL onto, using the `canc-dlk` command. For this example, enter this command.

```
canc-dlk:loc=2105
```



CAUTION: This command example places the TCP/IP data link on card 2105 out of service. This will interrupt service on the TCP/IP data link on card 2105 and allow the trial GPL to be loaded on to card 2105.

Do not deactivate all the TCP/IP data links in the system at the same time. Doing so will take all the TCP/IP data links out of service and cause the STP LAN feature to be disabled.

If there is only one TCP/IP data link in the system, placing the card out of service will cause the STP LAN feature to be disabled.

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

```
rlghncxa03w 04-06-01 11:45:18 GMT EAGLE5 31.6.0
Deactivate Link message sent to card.
Command Completed.
```

13. Place the card specified in either steps 10 or 12 out of service using the `rmv-card` command. If the card contains the last signaling link in a linkset, the `force=yes` parameter must be specified. For this example, enter this command.

```
rmv-card:loc=1201:force=yes
rmv-card:loc=2105
```

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

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Card has been inhibited.
```

14. Put the cards that were inhibited in step 13 back into service using the `rst-card` command with either the `code=appr` parameter, to load the approved version of the GPL onto the card, or the `code=trial` parameter to load the trial version of the GPL onto the card.

For this example, enter this command.

```
rst-card:code=appr:loc=1201
rst-card:code=appr:loc=2105
```

If the new version of the GPL was left as the trial version of the GPL (step 6 was not performed), enter this command.

```
rst-card:code=trial:loc=1201
rst-card:code=trial:loc=2105
```

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

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Card has been allowed.
```

15. Verify the GPLs on the cards using the **rept-stat-gpl** command with the **appl** parameter value equal to the **appl** parameter value specified in step 8. If any card is not running the release version of the GPL, shown in the **RELEASE** column of the **rtrv-gpl** output in step 7, the indicator **ALM** is displayed next to the GPL version in the **RUNNING** column of the **rept-stat-gpl** output. For this example, enter these commands.

rept-stat-gpl:appl=ss7ml

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
SS7ML     1201     114-003-000      114-003-000      114-002-000
SS7ML     1204     114-002-000 ALM      114-003-000      114-002-000
SS7ML     1211     114-002-000 ALM      114-003-000      114-002-000
SS7ML     1215     114-002-000 ALM      114-003-000      114-002-000
SS7ML     1307     114-002-000 ALM      114-003-000      114-002-000
SS7ML     2111     114-002-000 ALM      114-003-000      114-002-000
SS7ML     2112     114-002-000 ALM      114-003-000      114-002-000
SS7ML     2115     114-002-000 ALM      114-003-000      114-002-000
SS7ML     2116     114-002-000 ALM      114-003-000      114-002-000
Command Completed
```

rept-stat-gpl:appl=vxwslan

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
VXWSLAN   2105     114-003-000      114-003-000      114-002-000
VXWSLAN   2113     114-002-000 ALM      114-003-000      114-002-000
VXWSLAN   2301     114-002-000 ALM      114-003-000      114-002-000
Command Completed
```

If the new version of the GPL was left as the trial version of the GPL (step 6 was not performed), the following is an example of the **rept-stat-gpl** output.

rept-stat-gpl:appl=ss7ml

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:50:11 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
SS7ML     1201     114-003-000      114-002-000      114-003-000
SS7ML     1204     114-002-000 ALM      114-002-000      114-003-000
SS7ML     1211     114-002-000 ALM      114-002-000      114-003-000
SS7ML     1215     114-002-000 ALM      114-002-000      114-003-000
SS7ML     1307     114-002-000 ALM      114-002-000      114-003-000
SS7ML     2111     114-002-000 ALM      114-002-000      114-003-000
SS7ML     2112     114-002-000 ALM      114-002-000      114-003-000
SS7ML     2115     114-002-000 ALM      114-002-000      114-003-000
SS7ML     2116     114-002-000 ALM      114-002-000      114-003-000
Command Completed
```

rept-stat-gpl:appl=vxwslan

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
VXWSLAN   2105      114-003-000      114-002-000      114-003-000
VXWSLAN   2113      114-002-000 ALM      114-002-000      114-003-000
VXWSLAN   2301      114-002-000 ALM      114-002-000      114-003-000
Command Completed
```

NOTE: If the GPL being updated is either VXWSLAN or STPLAN, skip steps 16 and 17, and go to step 18.

- Place the signaling links that were deactivated in step 10 back into service using the **act-slk** command. For this example, enter these commands.

```
act-slk:loc=1201:port=a
act-slk:loc=1201:port=b
act-slk:loc=1201:port=a1
act-slk:loc=1201:port=b1
```

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

```
rlghncxa03w 04-06-01 11:55:49 GMT EAGLE5 31.6.0
Activate SLK message sent to card
```

- Verify that the signaling links activated in step 16 are back in service using the **rept-stat-slk** command with the card location and port containing the signaling link. For this example, enter these commands.

rept-stat-slk:loc=1201:port=a

This is an example of the possible output.

```
rlghncxa03w 04-06-01 13:06:25 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1201,A   lsnmpl1  -----  IS-NR      Avail      ----
  ALARM STATUS      = No Alarms.
  UNAVAIL REASON    = --
```

rept-stat-slk:loc=1201:port=b

This is an example of the possible output.

```
rlghncxa03w 04-06-01 13:06:25 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1201,B   lsnmpl2  -----  IS-NR      Avail      ----
  ALARM STATUS      = No Alarms.
  UNAVAIL REASON    = --
```

rept-stat-slk:loc=1201:port=a1

This is an example of the possible output.

```
rlghncxa03w 04-06-01 13:06:25 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1201,A1  lsnmpl3  -----  IS-NR      Avail      ----
  ALARM STATUS      = No Alarms.
  UNAVAIL REASON    = --
```

```
rept-stat-slk:loc=1201:port=b1
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 13:06:25 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1201,B1  lsnmpl4  -----  IS-NR    Avail    ----
  ALARM STATUS      = No Alarms.
  UNAVAIL REASON    = --
Command Completed.
```

NOTE: If the GPL being updated is not VXWSLAN or STPLAN, skip steps 18 and 19, and go to step 20.

18. Place the TCP/IP data link that was deactivated in step 12 back into service using the **act-dlk** command. For this example, enter this command.

```
act-dlk:loc=2105
```

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

```
rlghncxa03w 04-06-01 11:55:49 GMT EAGLE5 31.6.0
Activate Link message sent to card.
```

19. Verify that the TCP/IP data links activated in step 18 are back in service with the **rept-stat-dlk** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 12:57:50 GMT EAGLE5 31.6.0
DLK      PST      SST      AST
2105     IS-NR    Avail    ---
2113     IS-NR    Avail    ---
2301     IS-NR    Avail    ---
Command Completed.
```

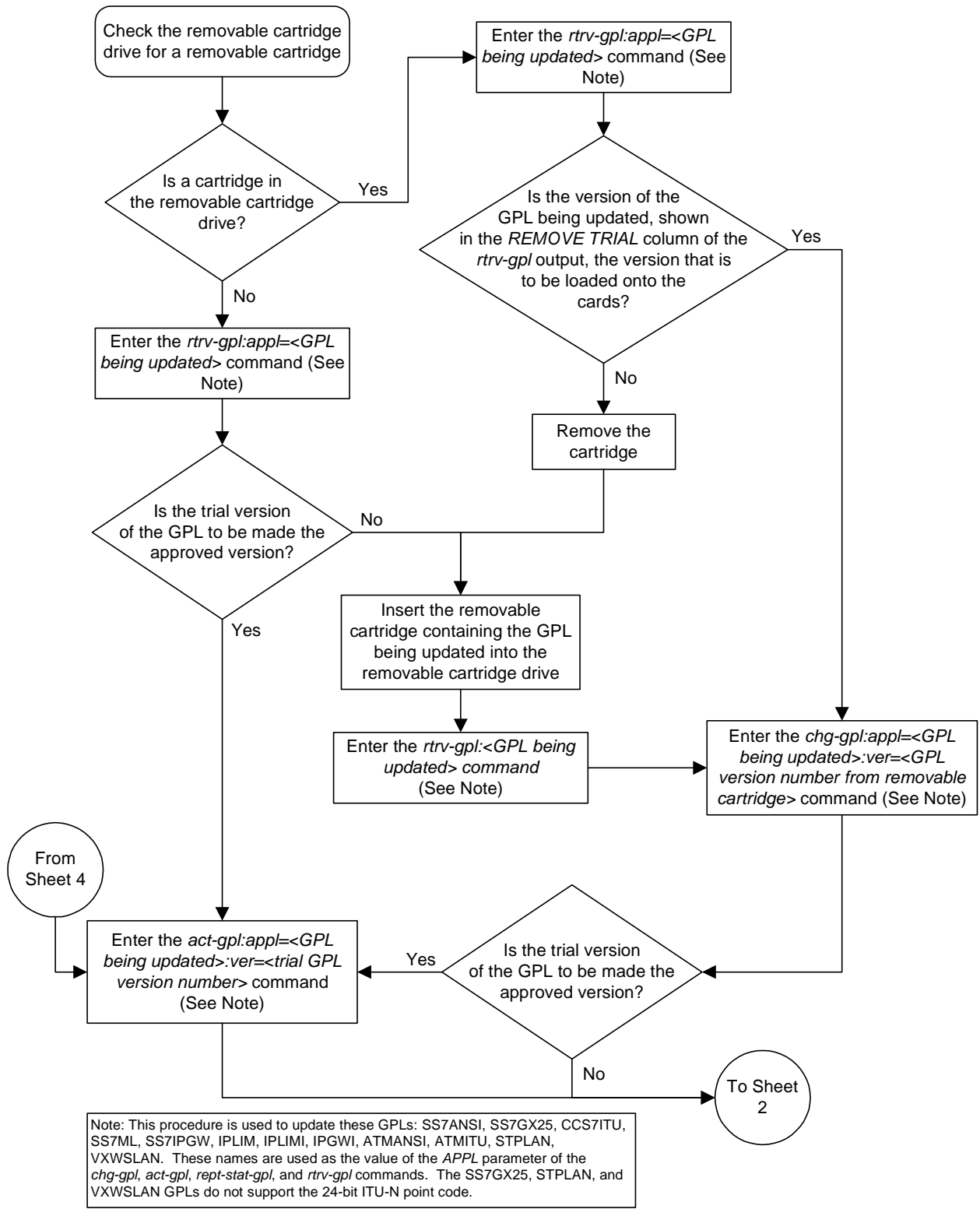
20. If you wish to load the new trial GPL onto the other cards shown in step 8, repeat this procedure from either steps 10 or 12 for each card shown in step 8, making sure to specify the **code=trial** parameter for the **rst-card** command in step 14. This will leave all the cards running the new trial GPL and show the **ALM** indicator in the **rtrv-gp1** output. The **ALM** indicator will not be shown in the **rept-stat-gp1** outputs for these cards.

If, after loading the new trial GPL onto one of the cards, you wish to make the new trial version of the GPL the approved version of the GPL, and load the new approved GPL onto the other cards shown in step 8, repeat this procedure from step 6 for each card shown in step 8, making sure to specify the **code=appr** parameter for the **rst-card** command in step 14. This will leave all the cards running the new approved GPL and the **ALM** indicator will not be shown in the **rtrv-gp1** and **rept-stat-gp1** outputs.

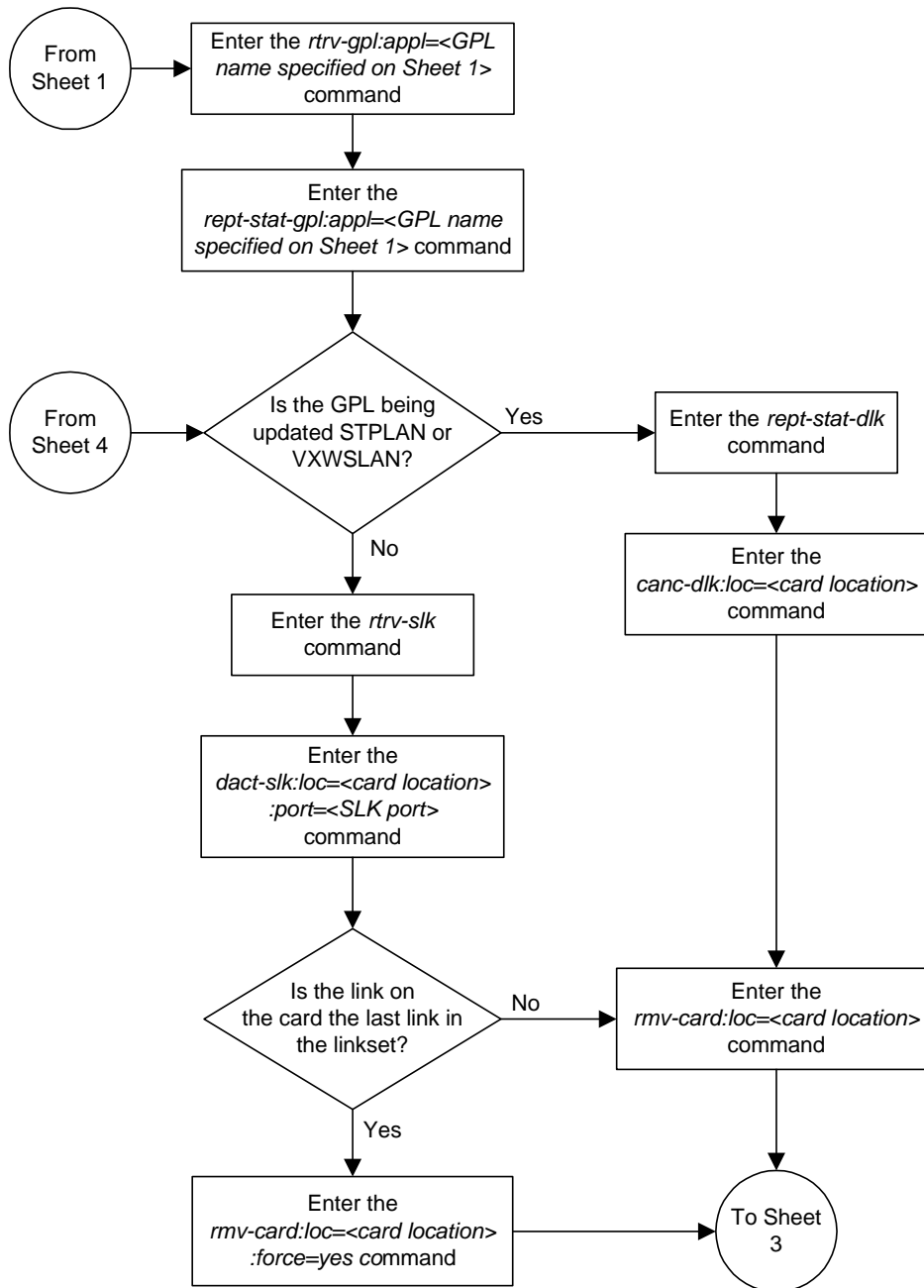
If the new trial version of the GPL was made the approved version of the GPL in step 6, and you wish to load the new approved GPL onto the other cards shown in step 8, repeat this procedure from steps 10 or 12 for the other cards shown in step 8, making sure to specify the **code=appr** parameter for the **rst-card** command in step 14. This will leave all the cards running the new approved GPL and the **ALM** indicator will not be shown in the **rtrv-gp1** and **rept-stat-gp1** outputs.

21. Remove the removable cartridge from the removable cartridge drive on the MDAL card. For more information on removing the removable cartridge from the removable cartridge drive, see “Removing the Removable Cartridge” on page 2-9.
-

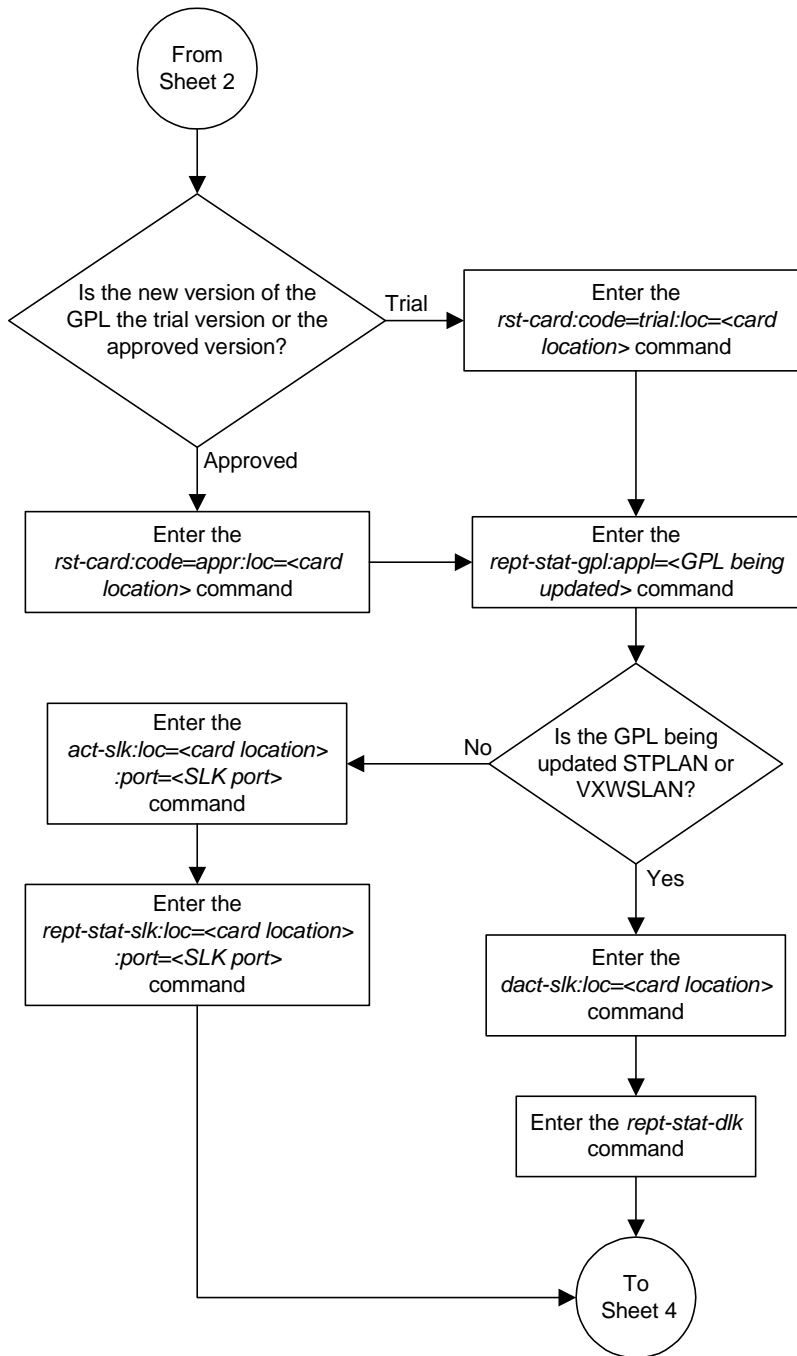
Flowchart 3-3. Updating the Signaling Link and Data Link GPLs (Sheet 1 of 4)



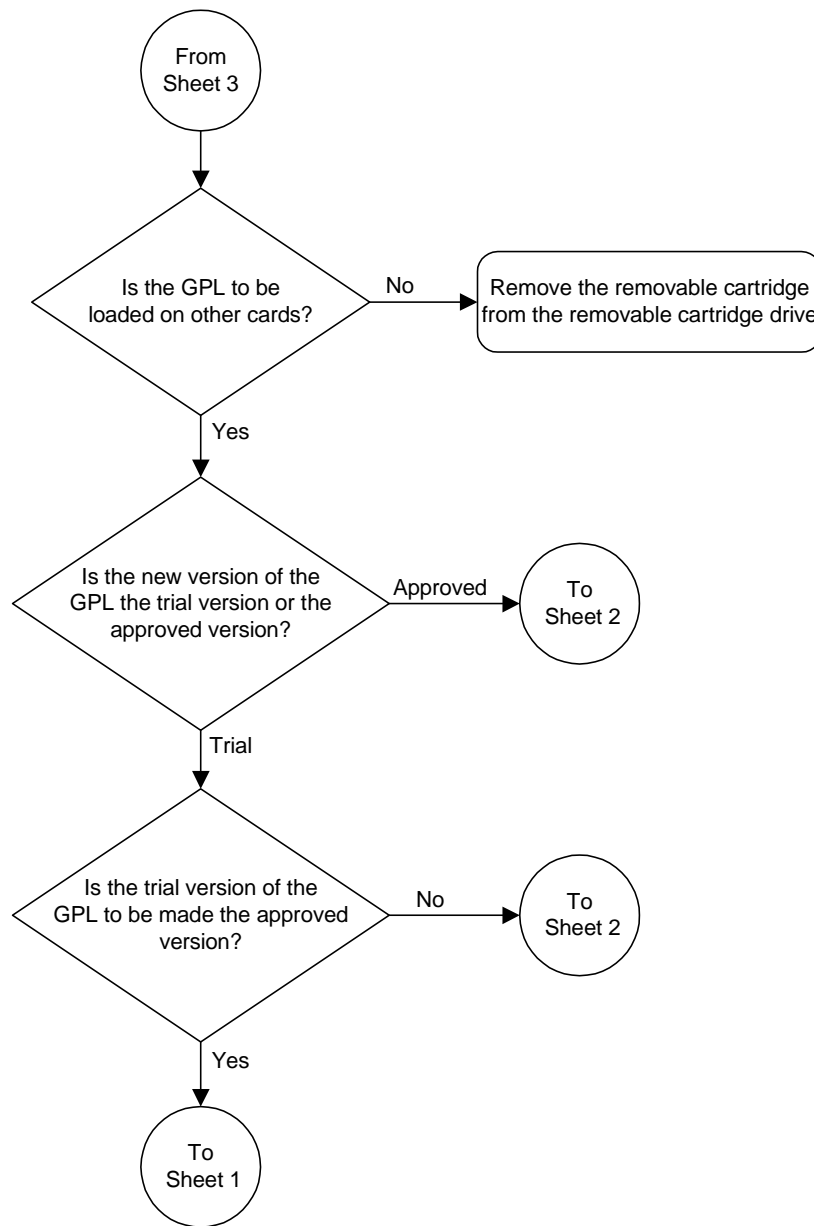
Flowchart 3-3. Updating the Signaling Link and Data Link GPLs (Sheet 2 of 4)



Flowchart 3-3. Updating the Signaling Link and Data Link GPLs (Sheet 3 of 4)



Flowchart 3-3. Updating the Signaling Link and Data Link GPLs (Sheet 4 of 4)



Updating the Service GPLs

This procedure is used to update these GPLs: **sccp**, **vsccp**, **gls**, **ebdadcm**, **ebdablm**, **emdc**, **eroute**, **mcp**, **ips**. These names are used as the value of the **appl** parameter of the **chg-gpl**, **act-gpl**, **rept-stat-gpl**, and **rtrv-gpl** commands.

These GPLs are assigned to the card types shown in Table 3-3.

Table 3-3. Service GPL Card Types

GPL	Card Type
sccp, gls, ebdablm	tsm
vsccp	dsm
ebdadcm, edmc	dcm
eroute	stc
mcp	mcpm
ips	ipsm

These GPLs do not support 24-bit ITU-N point codes: **ebdablm**, **ebdadcm**.

The card types shown in Table 3-3 are the values used for the **type** parameter of the **ent-card** command.

If the GPL is being updated to a new version, a removable cartridge containing the GPL being updated is required.

Procedure

1. Check the removable cartridge drive on the MDAL card for a removable cartridge. If there is a removable cartridge in the drive, display the GPLs on the fixed disk and on the removable cartridge using the **rtrv-gpl** command with the **appl** parameter value equal to the GPL being updated. This is an example of the possible output.

```
rtrv-gpl:appl=vsccp
```

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

```
APPL      CARD  RELEASE      APPROVED      TRIAL      REMOVE TRIAL
VS CCP    1114  114-002-000  114-002-000  114-001-000  114-003-000
VS CCP    1116  114-002-000  114-002-000  114-001-000  -----
```

If the version of the GPL shown in the **REMOVE TRIAL** column of the **rtrv-gpl** output is not the version that is to be loaded onto the cards, remove the cartridge and go to step 2. For more information on removing the removable

cartridge from the removable cartridge drive, see “Removing the Removable Cartridge” on page 2-9.

If the version of the GPL shown in the **REMOVE TRIAL** column of the **rtrv-gpl** output is the version that is to be loaded onto the cards, skip steps 2, 3, 4, and 5, and go to step 6.

If the trial version of the GPL is to be made the approved version, skip steps 2 through 5, and go to step 6.

-
2. Make sure the removable cartridge containing the new software is “write protected” (NOT write enabled). To write protect a removable cartridge, see “Write Protecting the Removable Cartridge” on page 2-6.

-
3. Insert the removable cartridge containing the **sccp** GPL into the removable cartridge drive on the MDAL card. For more information on inserting the removable cartridge in the removable cartridge drive, see “Inserting the Removable Cartridge” on page 2-8.

-
4. Display the GPLs on the fixed disk and on the removable cartridge using the **rtrv-gpl** command with the **appl** parameter value equal to the **appl** parameter value specified in step 1. This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
VSCCP	1114	114-002-000	114-002-000	114-001-000	114-003-000
VSCCP	1116	114-002-000	114-002-000	114-001-000	-----

-
5. Change the GPLs, using the **chg-gpl** command and specifying the value for the trial GPL shown in the **REMOVE TRIAL** column in the output of the **rtrv-gpl** command used in step 4. For this example, enter this command.

chg-gpl:appl=vsccp:ver=114-003-000

These messages should appear.

```
rlghncxa03w 04-06-01 11:43:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

```
VSCCP upload on 1114 completed
VSCCP upload on 1116 completed
System Release ID table upload 1114 completed
System Release ID table upload 1116 completed
```

NOTE: If you wish to leave the new version of the GPL in the Trial state, skip step 6 and go to step 7.

6. Activate the trial GPL, using the **act-gpl** command and specifying the value for the trial GPL shown in step 5. For this example, enter this command.

```
act-gpl:appl=vsccp:ver=114-003-000
```

These messages should appear.

```
rlghncxa03w 04-06-01 06:54:39 GMT EAGLE5 31.6.0
VSCCP activate on 1114 completed
VSCCP activate on 1116 completed
```

7. Verify that the trial GPL has been made the approved GPL using the **rtrv-gpl** command with the **appl** parameter value equal to the **appl** parameter value specified in steps 6 and 7. For this example, enter this command.

```
rtrv-gpl:appl=vsccp
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
VSCCP	1114	114-003-000	114-003-000	114-002-000	114-003-000
VSCCP	1116	114-003-000	114-003-000	114-002-000	-----

If the new version of the GPL was left as the trial version of the GPL (step 6 was not performed), the following is an example of the **rtrv-gpl** output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
VSCCP	1114	114-003-000	114-002-000 ALM	114-003-000	114-003-000
VSCCP	1116	114-003-000	114-002-000 ALM	114-003-000	-----

8. Verify which cards are running the GPL using the **rept-stat-gpl** command with the **appl** parameter value equal to the **appl** parameter value specified in step 7. For this example, enter this command.

```
rept-stat-gpl:appl=vsccp
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL    CARD    RUNNING                APPROVED    TRIAL
VSCCP   1101   114-002-000 ALM    114-003-000    114-002-000
VSCCP   1102   114-002-000 ALM    114-003-000    114-002-000
VSCCP   1103   114-002-000 ALM    114-003-000    114-002-000
Command Completed
```

If the new version of the GPL was left as the trial version of the GPL (step 6 was not performed), the following is an example of the `rept-stat-gpl` output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
VSCCP     1101     114-002-000 ALM     114-002-000     114-003-000
VSCCP     1102     114-002-000 ALM     114-002-000     114-003-000
VSCCP     1103     114-002-000 ALM     114-002-000     114-003-000
Command Completed
```

9. Steps 10 through 17 are performed based on the GPL being updated (shown in the `rept-stat-gpl` output in step 8). The following list shows the steps that are performed for the GPL being updated.

- SCCP or VSCCP – Perform step 10, then go to step 18. Skip steps 11 through 17.
- MCP – Perform step 11, then go to step 18. Skip step 10 and steps 12 through 17.
- EMDC – Perform step 12, then go to step 18. Skip steps 10, 11, and 14 through 17.
- EROUTE – Perform step 13, then go to step 18. Skip steps 10 through 12 and 14 through 17.
- EBDABLM, EBDADCM – Perform step 14, then go to step 18. Skip steps 10 through 13 and 15 through 17.
- IPS – Perform steps 14 through 17, then go to step 18. Skip steps 10 through 13.

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

```
rlghncxa03w 04-06-01 09:57:31 GMT EAGLE5 31.6.0
SCCP SUBSYSTEM REPORT IS-NR      Active      -----
SCCP Cards Configured=3  Cards IS-NR=3
System TPS Alarm Threshold = 80% Total Capacity
System Peak SCCP Load = 4000 TPS
System Total SCCP Capacity = 5100 TPS
CARD  VERSION      PST      SST      AST      MSU USAGE  CPU USAGE
-----
1101  114-002-001  IS-NR      Active  -----      47%      81%
1102  114-002-001  IS-NR      Active  -----      34%      50%
1103  114-002-001  IS-NR      Active  -----      21%      29%
-----
SCCP Service Average MSU Capacity = 36%      Average CPU Capacity = 56%
Command Completed.
```

Skip steps 11 through 17, and go to step 18.

11. Display the status of the MCPMs in the database with the **rept-stat-meas** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0

MEAS SS          PST          SST          AST
              IS-NR          Active      -----
ALARM STATUS =  No Alarms

CARD  VERSION          TYPE  PST          SST          AST
2107 P 114-2-000      MCPM  IS-NR        Active      -----
      IP Link A          IS-NR        Active      Available
2108 114-2-000      MCPM  IS-NR        Active      -----
      IP Link A          IS-NR        Active      Available
2111 114-2-000      MCPM  IS-NR        Active      -----
      IP Link A          IS-NR        Active      Available

CARD 2107 ALARM STATUS = No Alarms
CARD 2108 ALARM STATUS = No Alarms
CARD 2111 ALARM STATUS = No Alarms
```

Skip steps 12 through 17, and go to step 18.

12. Display the status of the DCM-EMDC cards using the **rept-stat-ndc** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0

CARD  VERSION          TYPE  APPL          PST          SST          AST
2205  114-2-0          DCM   EMDC          IS-NR        Active      -----
      DCM A IP CONNECTION  IS-NR        Avail       -----
      OAP A IP CONNECTION  IS-NR        Avail       -----
      OAP A NDC AGENT      IS-NR        Active      -----

CARD  VERSION          TYPE  APPL          PST          SST          AST
2207  114-2-0          DCM   EMDC          IS-NR        Idle        -----
      DCM B IP CONNECTION  IS-NR        Avail       -----
      OAP B IP CONNECTION  IS-NR        Avail       -----
      OAP B NDC AGENT      IS-NR        Idle        -----

NDC Q.3 ASSOCIATION [OAP A]  IS-NR        Avail       -----
DCM-DCM IP CONNECTION        IS-NR        Avail       -----
OAP-OAP SERIAL CONNECTION    IS-NR        Avail       -----

ALARM STATUS:

Command Completed.
```

Skip steps 14 through 17, and go to step 18.

13. Display the status of the STC cards using the **rept-stat-eroute** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0

EROUTE SUBSYSTEM REPORT IS-NR      Active      -----
STC Cards Configured= 8  Cards IS-NR= 8
EISCOPIY BIT = ON
System Threshold = 80% Total Capacity
System Peak EROUTE Load:           8000 Buffers/Sec
System Total EROUTE Capacity:       9600 Buffers/Sec

SYSTEM ALARM STATUS = No Alarms.
```

CARD	VERSION	PST	SST	AST	TVG USAGE	CPU USAGE
1105	114-002-000	IS-NR	Active	-----	35%	52%
1205	114-002-000	IS-NR	Active	-----	35%	52%
1211	114-002-000	IS-NR	Active	-----	35%	52%
1303	114-002-000	IS-NR	Active	-----	35%	52%
1311	114-002-000	IS-NR	Active	-----	35%	52%
1313	114-002-000	IS-NR	Active	-----	35%	52%
2211	114-002-000	IS-NR	Active	-----	35%	52%
2213	114-002-000	IS-NR	Active	-----	35%	52%

```
-----
EROUTE Service Average TVG Capacity = 35% Average CPU Capacity = 52%
```

Skip steps 14 through 17, and go to step 18.

14. Display the status of the IPSMs (if the IPS GPL is being updated), or the cards running the EBDADCM or EBDABLM GPL using the **rept-stat-card** command and specifying the location of the card shown in the **rept-stat-gpl** output in step 8. For this example, enter this command.

rept-stat-card:loc=2301

This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD  VERSION  TYPE  APPL  PST  SST  AST
2301  114-001-000 DCM   EBDADCM IS-NR Active -----

ALARM STATUS      = No Alarms.
BPDCM GPL         = 002-122-000
IMT BUS A         = Conn
IMT BUS B         = Conn
Command Completed.
```

If the EBDABLM or EBDADCM GPLs are being updated, skip steps 15 through 17, and go to step 18.

15. Display the terminal configuration in the database with the **rtrv-trm** command. The IP terminals are shown by the terminal numbers 17 through 40. The **rtrv-trm** output shows the location of the IPSM associated with the IP terminals. This is an example of the possible output.

GPL Management Procedures

```

rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
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  TYPE      LOC          TMOUT  MXINV  DURAL
17   TELNET    3101        60     5      00:30:00
18   TELNET    3101        60     5      00:30:00
19   TELNET    3101        60     5      00:30:00
20   TELNET    3101        60     5      00:30:00
21   TELNET    3101        60     5      00:30:00
22   TELNET    3101        60     5      00:30:00
23   TELNET    3101        60     5      00:30:00
24   TELNET    3101        60     5      00:30:00
25   TELNET    3105        60     5      00:30:00
26   TELNET    3105        60     5      00:30:00
27   TELNET    3105        60     5      00:30:00
28   TELNET    3105        60     5      00:30:00
29   TELNET    3105        60     5      00:30:00
30   TELNET    3105        60     5      00:30:00
31   TELNET    3105        60     5      00:30:00
32   TELNET    3105        60     5      00:30:00
33   TELNET    3111        60     5      00:30:00
34   TELNET    3111        60     5      00:30:00
35   TELNET    3111        60     5      00:30:00
36   TELNET    3111        60     5      00:30:00
37   TELNET    3111        60     5      00:30:00
38   TELNET    3111        60     5      00:30:00
39   TELNET    3111        60     5      00:30:00
40   TELNET    3111        60     5      00:30:00

TRM  TRAF  LINK  SA  SYS  PU  DB
1    NO   YES   NO  YES  NO  YES
2    NO   NO    NO  NO   NO  NO
.
.
.
39   NO   NO    NO  NO   NO  NO
40   NO   NO    NO  NO   NO  NO

APP  APP
TRM  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
.
.
.
39   NO   NO   NO   NO   NO   NO   NO   NO   NO  NO  NO  NO
40   NO   NO   NO   NO   NO   NO   NO   NO   NO  NO  NO  NO

```

16. Display the status of the terminals with the `rept-stat-trm` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
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       -----
17    IS-NR         Active       -----
18    IS-NR         Active       -----
19    IS-NR         Active       -----
20    IS-NR         Active       -----
21    IS-NR         Active       -----
22    IS-NR         Active       -----
23    IS-NR         Active       -----
24    IS-NR         Active       -----
25    IS-NR         Active       -----
26    IS-NR         Active       -----
27    IS-NR         Active       -----
28    IS-NR         Active       -----
29    IS-NR         Active       -----
30    IS-NR         Active       -----
31    IS-NR         Active       -----
32    IS-NR         Active       -----
33    IS-NR         Active       -----
34    IS-NR         Active       -----
35    IS-NR         Active       -----
36    IS-NR         Active       -----
37    IS-NR         Active       -----
38    IS-NR         Active       -----
39    IS-NR         Active       -----
40    IS-NR         Active       -----
```

Command Completed.

17. Place the terminals associated with the IPSM that will be updated with the new IPS GPL out of service using the `rmv-trm` command. For this example, enter these commands.

```
rmv-trm:trm=17
rmv-trm:trm=18
rmv-trm:trm=19
rmv-trm:trm=20
rmv-trm:trm=21
rmv-trm:trm=22
rmv-trm:trm=23
rmv-trm:trm=24
```



CAUTION: Placing these terminals out of service will disable any Telnet sessions running on these terminals.

If the status of the OAP terminals shown in the `PST` field in step 15 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.

This message should appear when each of these commands have successfully completed.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Inhibit message sent to terminal
```

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Command Completed.
```

18. The card that the new version of the GPL will be loaded onto must be out of service. Place the card, selected from the outputs of steps 8, 10, 11, 12, 13 or 14, out of service using the `rmv-card` command. If there is only one of these cards running these GPLs in service (`sccp`, `vsccp`, `gls`, `mcp`), the `force=yes` parameter must be specified with the `rmv-card` command.

For this example, enter this command.

```
rmv-card:loc=1101
```



CAUTION: Do not place all the cards running the same GPL in the system out of service at the same time. Doing so will cause all traffic carried by these cards to be lost and disable the feature associated with these cards.

If there is only one in service card running the GPL being updated in the system, placing the card out of service will cause the traffic carried by this card to be lost and disable the feature associated with this card.

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

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Card has been inhibited.
```

19. Put the card that was inhibited in step 18 back into service using the **rst-card** command with either the **code=appr** parameter, to load the approved version of the GPL onto the card, or the **code=trial** parameter to load the trial version of the GPL onto the card.

For this example, enter this command.

```
rst-card:code=appr:loc=1101
```

If the new version of the **eroute** GPL was left as the trial version of the **eroute** GPL (step 6 was not performed), enter this command.

```
rst-card:code=trial:loc=1101
```

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

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Card has been allowed.
```

20. Verify the GPLs on the cards using the **rept-stat-gpl** command with the **appl** parameter value equal to the **appl** parameter value specified in step 8. If any card is not running the release version of the GPL, shown in the **RELEASE** column of the **rtrv-gpl** output in step 7, the indicator **ALM** is displayed next to the GPL version in the **RUNNING** column of the **rept-stat-gpl** output. For this example, enter these commands.

```
rept-stat-gpl:appl=vsccp
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
VSCCP     1101     114-003-000      114-003-000      114-002-000
VSCCP     1102     114-002-000 ALM      114-003-000      114-002-000
VSCCP     1103     114-002-000 ALM      114-003-000      114-002-000
Command Completed
```

If the new version of the GPL was left as the trial version of the GPL (step 6 was not performed), the following is an example of the **rept-stat-gpl** output.

```
rlghncxa03w 04-06-01 11:50:11 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
VSCCP     1101     114-003-000      114-002-000      114-003-000
VSCCP     1102     114-002-000 ALM      114-002-000      114-003-000
VSCCP     1103     114-002-000 ALM      114-002-000      114-003-000
Command Completed
```

GPL Management Procedures

NOTE: If the IPS GPL is not being updated in this procedure, skip step 21 and 22, and go to step 23.

21. Put the terminals that were placed out of service in step 17 back into service using the `rst-trm` command. For this example, enter these commands.

```
rst-trm:trm=17
```

```
rst-trm:trm=18
```

```
rst-trm:trm=19
```

```
rst-trm:trm=20
```

```
rst-trm:trm=21
```

```
rst-trm:trm=22
```

```
rst-trm:trm=23
```

```
rst-trm:trm=24
```

This message should appear when each of these commands have successfully completed.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0  
Allow message sent to terminal
```

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0  
Command Completed.
```

22. Verify that the terminals are in service with the `rept-stat-trm` command.
 This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
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       -----
17    IS-NR         Active       -----
18    IS-NR         Active       -----
19    IS-NR         Active       -----
20    IS-NR         Active       -----
21    IS-NR         Active       -----
22    IS-NR         Active       -----
23    IS-NR         Active       -----
24    IS-NR         Active       -----
25    IS-NR         Active       -----
26    IS-NR         Active       -----
27    IS-NR         Active       -----
28    IS-NR         Active       -----
29    IS-NR         Active       -----
30    IS-NR         Active       -----
31    IS-NR         Active       -----
32    IS-NR         Active       -----
33    IS-NR         Active       -----
34    IS-NR         Active       -----
35    IS-NR         Active       -----
36    IS-NR         Active       -----
37    IS-NR         Active       -----
38    IS-NR         Active       -----
39    IS-NR         Active       -----
40    IS-NR         Active       -----
```

Command Completed.

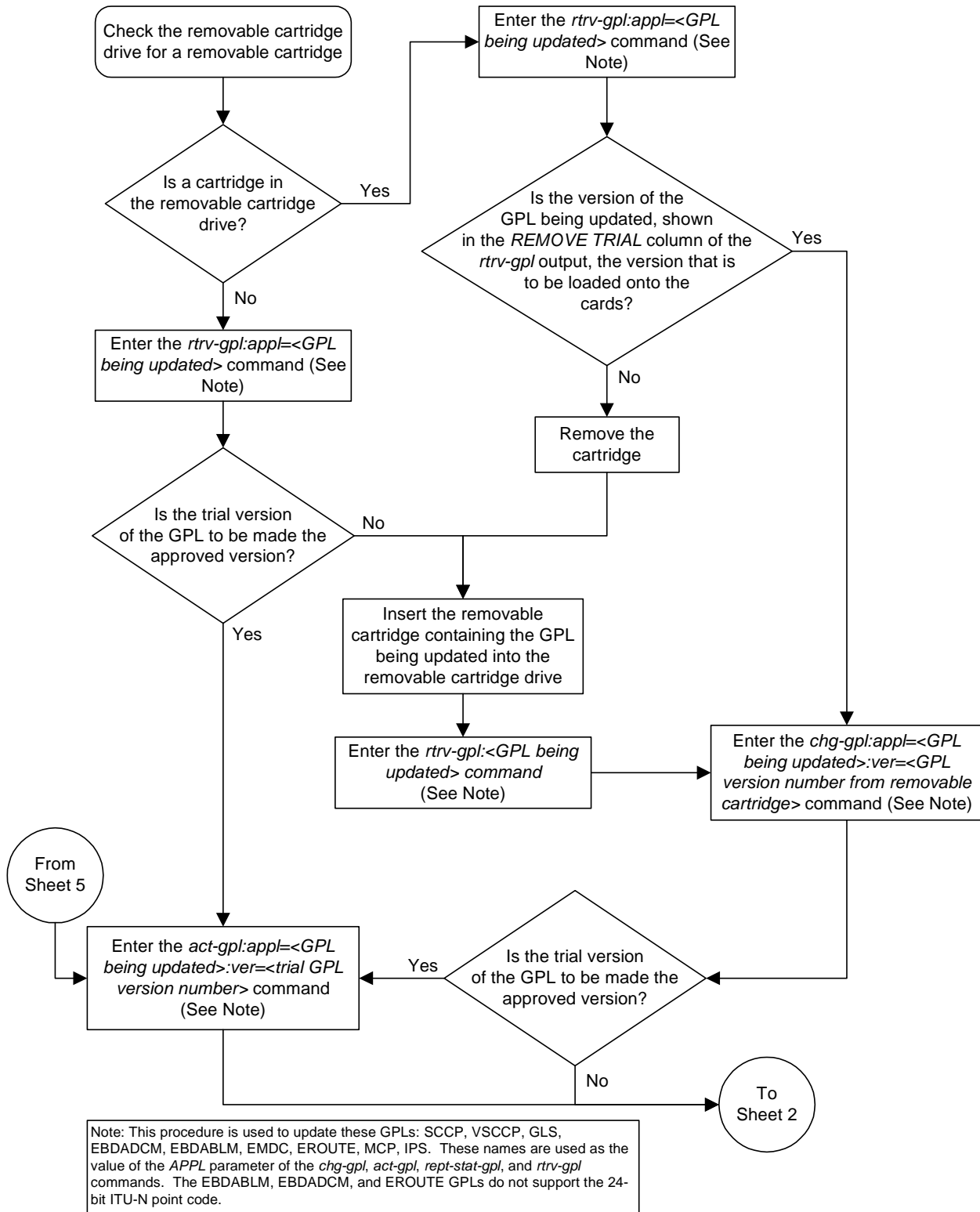
23. If you wish to load the new trial GPL onto the other cards shown in step 8, repeat this procedure from step 18 for each card shown in step 8, making sure to specify the `code=trial` parameter for the `rst-card` command in step 19. This will leave all the cards running the new trial GPL and show the **ALM** indicator in the `rtrv-gpl` output. The **ALM** indicator will not be shown in the `rept-stat-gpl` outputs for these cards.

If, after loading the new trial GPL onto one of the cards, you wish to make the new trial version of the GPL the approved version of the GPL, and load the new approved GPL onto the other cards shown in step 8, repeat this procedure from step 6 for each card shown in step 8, making sure to specify the `code=appr` parameter for the `rst-card` command in step 19. This will leave all the cards running the new approved GPL and the **ALM** indicator will not be shown in the `rtrv-gpl` and `rept-stat-gpl` outputs.

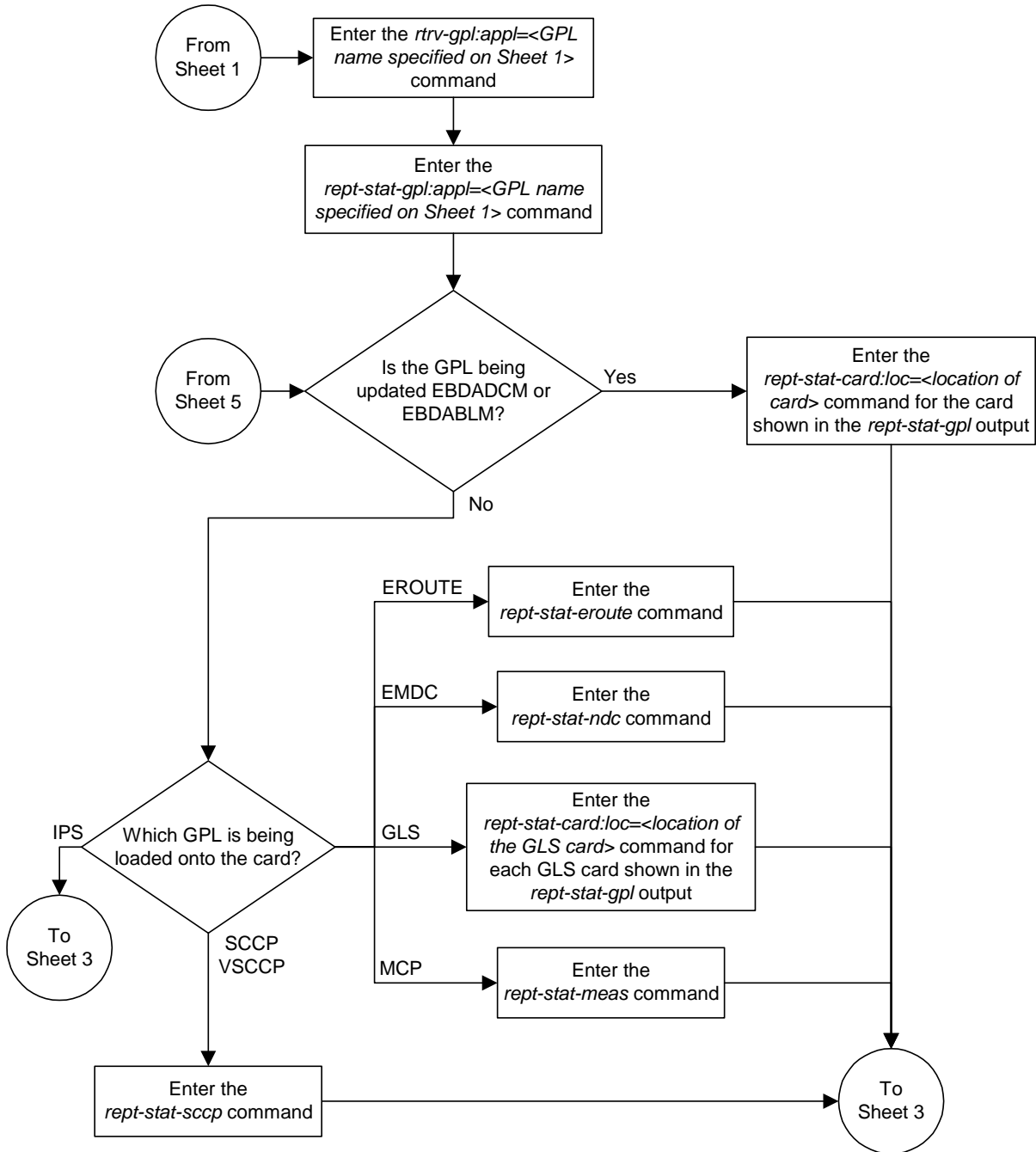
If the new trial version of the GPL was made the approved version of the GPL in step 6, and you wish to load the new approved GPL onto the other cards shown in step 8, repeat this procedure from step 18 for the other cards shown in step 8, making sure to specify the `code=appr` parameter for the `rst-card` command in step 19. This will leave all the cards running the new approved GPL and the **ALM** indicator will not be shown in the `rtrv-gpl` and `rept-stat-gpl` outputs.

-
24. Remove the removable cartridge from the removable cartridge drive on the MDAL card. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.
-

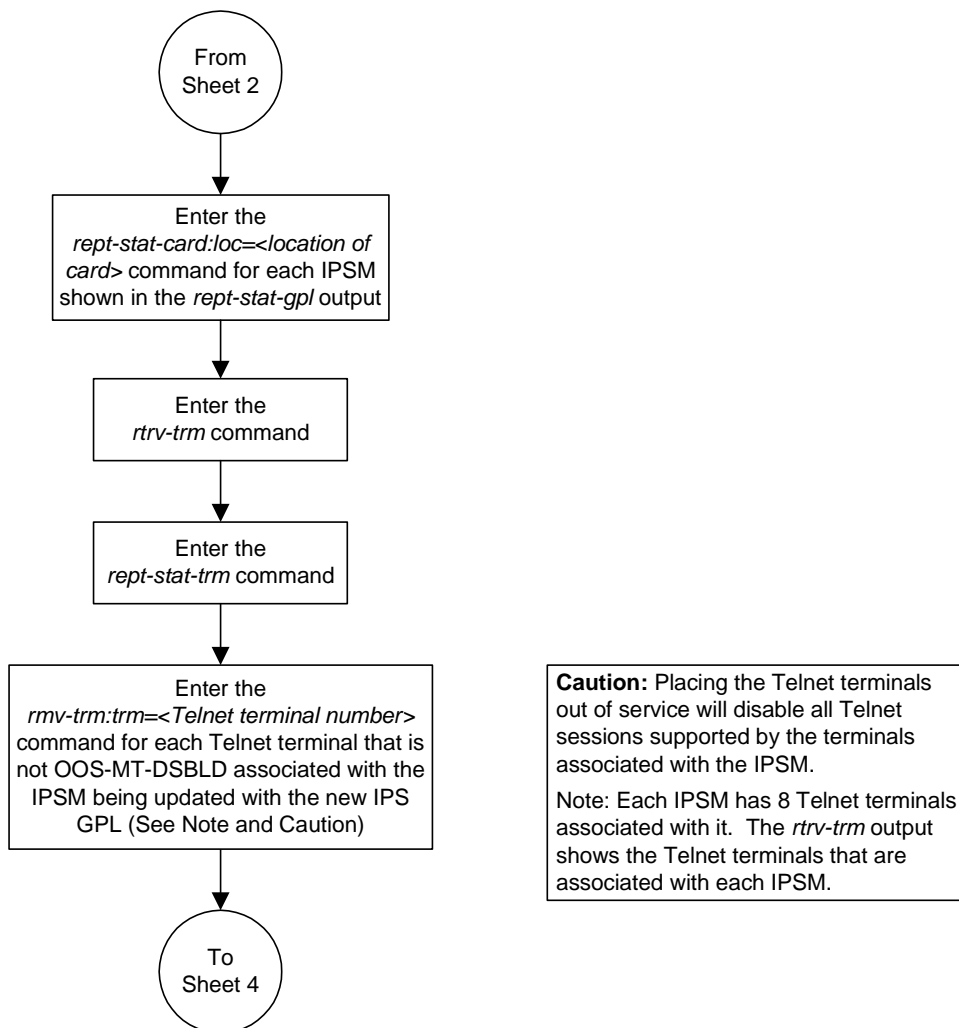
Flowchart 3-4. Updating the Service GPLs (Sheet 1 of 5)



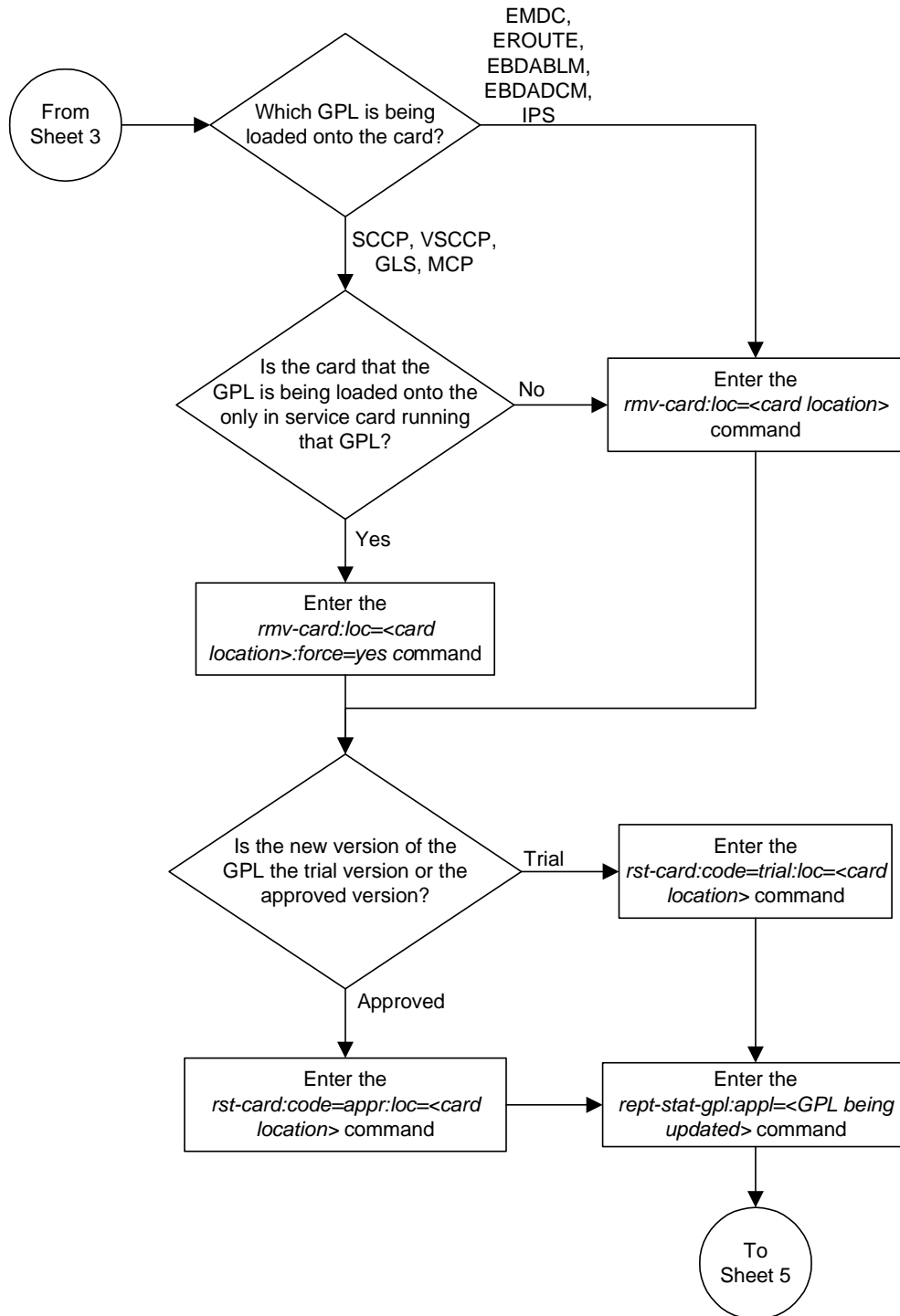
Flowchart 3-4. Updating the Service GPLs (Sheet 2 of 5)



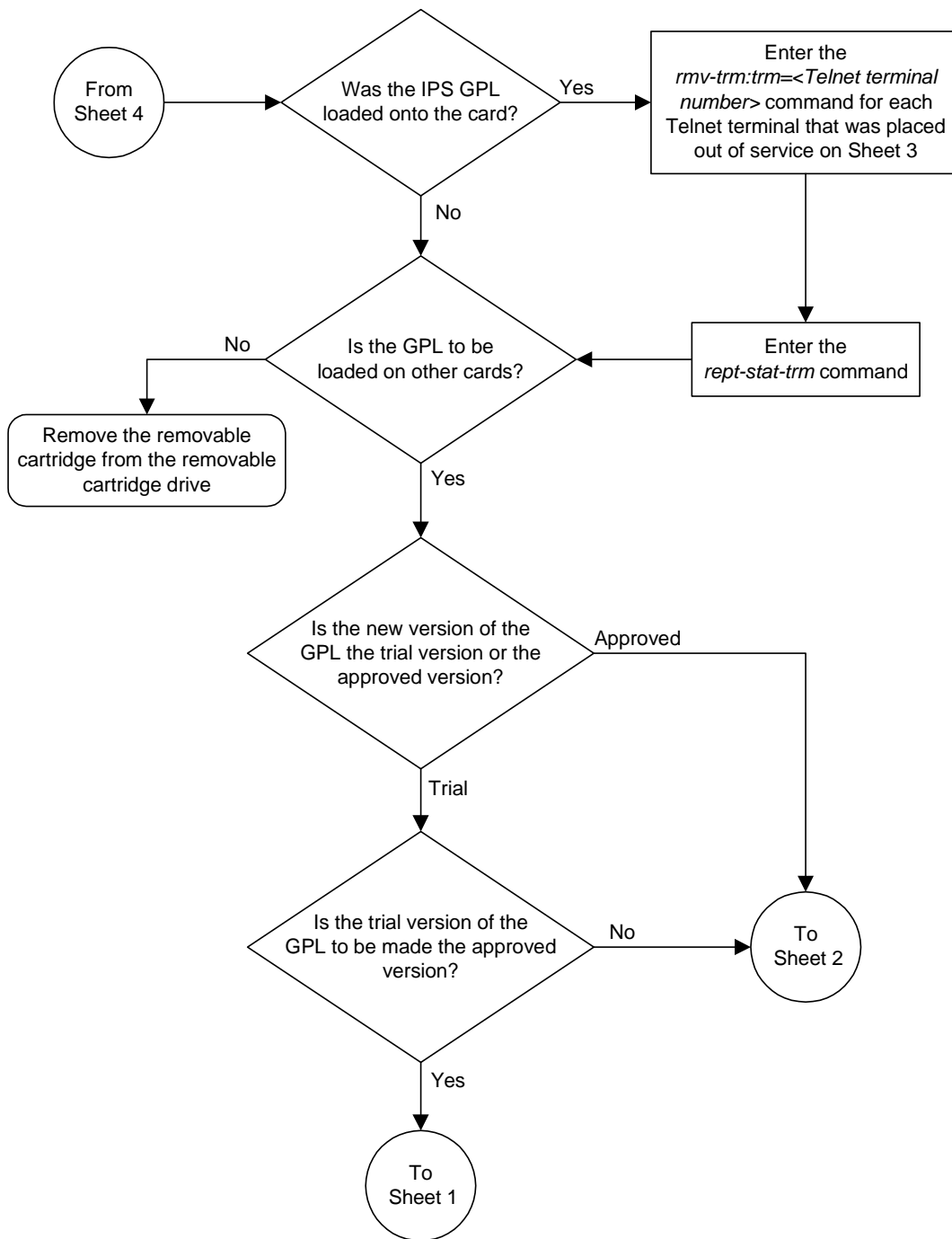
Flowchart 3-4. Updating the Service GPLs (Sheet 3 of 5)



Flowchart 3-4. Updating the Service GPLs (Sheet 4 of 5)



Flowchart 3-4. Updating the Service GPLs (Sheet 5 of 5)



Updating the Flash GPLs

This procedure is used to update these GPLs: **bphcap**, **bphcapt**, **bpmpl**, **bpmplt**, and **bpdcn**. These names are used as the value of the **appl** parameter of the **chg-gpl**, **act-gpl**, **rept-stat-gpl**, and **rtrv-gpl** commands.

The **bphmux** gpl is also a flash GPL that runs only on the HMUX cards and is not covered in this procedure. To update the **bphmux** GPL, go to the "Updating the BPHMUX GPL" procedure on page 3-109.

The flash GPLs are used in place of the IMT GPL on these cards:

- BPHCAP and BPHCAPT – LIM-ATM, LIME1ATM, used for high-speed ATM SS7 signaling links.
- BPMPL – The Multi-Port LIM running the SS7ML application for SS7 signaling links.
- BPMPLT – Multi-Port LIM (MPLT) or E1/T1 MIM running the SS7ML application. The MPLT is used for SS7 signaling links. The E1/T1 MIM is used for either E1 or T1 signaling links.
- BPDCM – Cards running these applications:
 - VXWSLAN – Used to support the STPLAN feature
 - EMDC – Used to support the GR-376 Interface feature
 - EBDADCM – Used to support the Enhanced Bulk Download feature
 - SS7IPGW, IPGWI, IPLIM, or IPLIMI – Used to support IP signaling links
 - VSCCP – Used to support these features: GTT, EGTT, VGTT, MGTT, IGTTLS, LNP, INP, G-FLEX, G-PORT, EIR, XGTT Table Expansion, XMAP Table Expansion
 - EROUTE – Used to support the Eagle with Integrated Sentinel feature
 - MCP – Used to support the Measurements Platform feature.
 - EOAM – Loaded on the GPSM-II card in card locations 1113 and 1115. The GPSM-II cards is used in combination with the TDM to form the Maintenance and Administration Subsystem Processor (MASP).
 - IPS – used to support the IP User Interface and FTP Retrieve and Replace features.

These applications do not support 24-bit ITU-N point codes: **vxwslan**, **ebdablm**, **ebdadcm**. The LNP and INP features and the Sentinel product do not support 24-bit ITU-N point codes.

The card types and applications shown in Table 3-3 are the values shown in the **TYPE** or **APPL** columns of the **rept-stat-card** output.

If the GPL is being updated to a new version, a removable cartridge containing the GPL being updated is required.

Canceling the REPT-STAT-SLK and RTRV-SLK Commands

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

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

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

Procedure

1. Check the removable cartridge drive on the MDAL card for a removable cartridge. If there is a removable cartridge in the drive, display the GPLs on the fixed disk and on the removable cartridge using the `rtrv-gpl` command with the `appl` parameter value equal to the GPL being updated. For this example, enter this command.

```
rtrv-gpl:appl=bpdc
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
BPDCM	1114	114-002-000	114-002-000	114-001-000	114-003-000
BPDCM	1116	114-002-000	114-002-000	114-001-000	-----

If the version of the GPL shown in the **REMOVE TRIAL** column of the `rtrv-gpl` output is not the version that is to be loaded onto the cards, remove the cartridge and go to step 2. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.

If the version of the GPL shown in the **REMOVE TRIAL** column of the `rtrv-gpl` output is the version that is to be loaded onto the cards, skip steps 2, 3, and 4, and go to step 5.

2. Make sure the removable cartridge containing the new software is “write protected” (NOT write enabled). To write protect a removable cartridge, see “Write Protecting the Removable Cartridge” on page 2-6.

-
3. Insert the removable cartridge containing the **bpdc**m GPL into the removable cartridge drive on the MDAL card. For more information on inserting the removable cartridge in the removable cartridge drive, see “Inserting the Removable Cartridge” on page 2-8.

-
4. Display the GPLs on the fixed disk and on the removable cartridge using the **rtrv-gpl** command with the **appl** parameter value equal to the **appl** parameter value specified in step 1. For this example, enter this command.

rtrv-gpl:appl=bpdcm

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
BPDCM	1114	002-122-000	002-122-000	002-121-000	002-123-000
BPDCM	1116	002-122-000	002-122-000	002-121-000	-----

-
5. Change the GPLs, using the **chg-gpl** command and specifying the value for the trial GPL shown in the **REMOVE TRIAL** column in the output of the **rtrv-gpl** command used in step 4. For this example, enter this command.

chg-gpl:appl=bpdcm:ver=002-123-000

These messages should appear.

```
rlghncxa03w 04-06-01 11:43:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

```
BPDCM upload on 1114 completed
BPDCM upload on 1116 completed
System Release ID table upload 1114 completed
System Release ID table upload 1116 completed
```

-
6. Verify that the GPL on the removable cartridge is the trial GPL on the fixed disk using the **rtrv-gpl** command with the **appl** parameter value equal to the **appl** parameter value specified in step 5. For this example, enter this command.

rtrv-gpl:appl=bpdcm

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
BPDCM	1114	002-123-000	002-122-000	ALM 002-123-000	002-123-000
BPDCM	1116	002-123-000	002-122-000	ALM 002-123-000	-----

- Verify the GPLs on the fixed disk and the cards that are running the GPLs using the `rept-stat-gpl` command with the `appl` parameter value equal to the `appl` parameter value specified in step 6. For this example, enter this command.

`rept-stat-gpl:appl=bpdc`

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
BPDCM    1113    002-122-000 ALM    002-122-000    002-123-000
BPDCM    1115    002-122-000 ALM    002-122-000    002-123-000
BPDCM    1303    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2101    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2103    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2105    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2107    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2111    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2113    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2115    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2205    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2207    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2213    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2301    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2303    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2305    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2307    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2311    002-122-000 ALM    002-122-000    002-123-000
BPDCM    3103    002-122-000 ALM    002-122-000    002-123-000
BPDCM    3105    002-122-000 ALM    002-122-000    002-123-000
BPDCM    3107    002-122-000 ALM    002-122-000    002-123-000
Command Completed
```

NOTE: If the GPL being displayed by the `rept-stat-gpl` command is the `bpdc` GPL, the output of the `rept-stat-gpl` command will show any DCMs, DSMs, or GPSM-II cards that are inserted in the system, whether they are configured in the database or not.

- Display the status of the card, shown in the `rept-stat-gpl` output in step 7, that the GPL will be loaded onto using the `rept-stat-card` command and specifying the location of the card. For this example, enter this command.

`rept-stat-card:loc=2105`

This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD  VERSION      TYPE      APPL      PST      SST      AST
2105  114-003-000    DCM      VXWSLAN   IS-NR      Active    -----
ALARM STATUS      = No Alarms.
BPDCM GPL          = 002-122-000
IMT BUS A         = Conn
IMT BUS B         = Conn
SLK A PST         = IS-NR      LS=lsnsspn2  CLI=-----
SCCP SERVICE CARD = 1212
SLAN SERVICE CARD = ----
Command Completed.
```


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9. Steps 10 through 20 are performed based on the application running on the card shown in the **APPL** column in the **rept-stat-card** output in step 8. The following list shows the steps that are performed for the application running on the card being updated with the new flash GPL.
- EMDC, EROUTE, EBDABLM, EBDADCM – Step 8 shows the status of these cards. Skip steps 10 through 20 and go to step 21.
 - ATMANSI, ATMITU, SS7ML, IPLIM, IPLIMI, SS7IPGW, IPGWI – Perform steps 10 and 11, then go to step 21. Skip steps 12 through 20.
 - VXWSLAN – Perform steps 12 and 13, then go to step 21. Skip steps 10 and 11, and steps 14 through 20.
 - VSCCP – Perform step 14, then go to step 21. Skip steps 10 through 13, and steps 15 through 20.
 - MCP – Perform step 15, then go to step 21. Skip the steps 10 through 14, and steps 16 through 20.
 - EOAM – Perform steps 16 through 20, then go to step 21. Skip steps 10 through 15.
 - IPS – Perform steps 17, 18, and 19, then go to step 21. Skip steps 10 through 16 and step 20.
-

10. Display the signaling links associated with the card shown in step 8. Enter the **rtrv-slk** command with the card location specified in step 8. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:16:37 GMT EAGLE5 31.6.0
```

LOC	PORT	LSN	SLC	TYPE	SET	BPS	MODE	TSET	ECM	N1	N2
1201	A	lsn1201a	0	LIMDS0	1	56000	---	---	BASIC	---	---
1201	B	lsn1201b	0	LIMDS0	1	56000	---	---	BASIC	---	---
1201	A1	lsn1201a	1	LIMDS0	1	56000	---	---	BASIC	---	---
1201	B1	lsn1201b	1	LIMDS0	1	56000	---	---	BASIC	---	---
1202	A	lsn1202a	0	LIMV35	2	64000	DTE	---	PCR	76	3800
1202	B	lsn1202b	1	LIMV35	3	64000	DCE	ON	BASIC	---	---
1203	A	lsn1203a	0	LIMV35	1	56000	---	---	PCR	76	3800
1203	B	lsn1203b	0	LIMV35	1	56000	DCE	OFF	PCR	120	5034
1205	A	lsnstpa	0	LIMDS0	1	56000	---	---	BASIC	---	---

LOC	PORT	LSN	SLC	TYPE	SET	BPS	TSEL	VCI	VPI	LL
1302	A	atm1302a	5	LIMATM	3	1544000	EXTERNAL	35	15	0
1305	A	atm1305a	5	LIMATM	5	1544000	LINE	5	0	0
1306	A	lsetC	0	LIMATM	5	1544000	LINE	5	0	0

LOC	PORT	LSN	SLC	TYPE	SET	BPS	TSEL	VCI	VPI	CRC4	SI	SN
3201	A	LS1	0	LIME1ATM	21	2.048M	LINE	5	0	ON	3	0
3202	A	LS1	1	LIME1ATM	23	2.048M	EXTERNAL	35	15	OFF	3	2

LOC	PORT	LSN	SLC	TYPE	SET	BPS	ECM	N1	N2	E1	E1	LOC	PORT	TS
1307	A	e11307a	0	LIME1	1	64000	PCR	76	3800	1307	2	12		
1311	B	e11311b	0	LIME1	1	56000	BASIC	---	---	1307	1	2		
1311	A1	e11311a	0	LIME1	1	56000	BASIC	---	---	1307	1	3		
1311	B3	e11311b	2	LIME1	1	56000	BASIC	---	---	1307	1	7		

LOC	PORT	LSN	SLC	TYPE	SET	BPS	ECM	N1	N2	T1	T1	LOC	PORT	TS
3208	A	t11308a	0	LIMT1	1	56000	PCR	76	3800	3208	2	12		
3212	A	t11312a	1	LIMT1	1	56000	BASIC	---	---	3208	1	1		
3212	B1	t11312b	0	LIMT1	1	56000	BASIC	---	---	3208	1	4		
3212	B3	t11312b	2	LIMT1	1	56000	BASIC	---	---	3208	1	7		

LOC	PORT	LSN	SLC	TYPE	IPLIML2
2303	A	dcm2303a	0	IPLIM	SAALTALI
2305	A	dcm2305a	0	IPLIM	SAALTALI

LOC	PORT	LSN	SLC	TYPE
2307	A	dcm2307a	0	SS7IPGW

11. Deactivate the SS7 signaling links on the card using the `dact-slk` command. For this example, enter these commands.

```
dact-slk:loc=1201:port=a
```

```
dact-slk:loc=1201:port=b
```

```
dact-slk:loc=1201:port=a1
```

```
dact-slk:loc=1201:port=b1
```



CAUTION: These command examples place the SS7 signaling links on card 1201 out of service. This will interrupt service on the SS7 signaling links on card 1201 and allow the approved GPL to be loaded on to card 1201.

Do not deactivate all the SS7 signaling links in the system at the same time. Doing so will take all the SS7 signaling links out of service and isolate the system from the network.

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

```
rlghncxa03w 04-06-01 11:45:18 GMT EAGLE5 31.6.0  
Deactivate SLK message sent to card
```

Skip steps 12 through 20, and go to step 21.

-
12. Display the TCP/IP data links, and their status, associated with the cards shown in steps 7 and 8. Enter the `rept-stat-dlk` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 17:00:36 GMT EAGLE5 31.6.0  
DLK    PST      SST      AST  
1303   IS-NR      Avail    ---  
2101   IS-NR      Avail    ---  
2103   IS-NR      Avail    ---  
2105   IS-NR      Avail    ---  
2113   IS-NR      Avail    ---  
2301   IS-NR      Avail    ---  
Command Completed.
```

13. Deactivate the TCP/IP data link that you wish to load the trial GPL onto, shown in step 12, using the `canc-dlk` command. For this example, enter this command.

```
canc-dlk:loc=2105
```



CAUTION: This command example places the TCP/IP data link on card 2105 out of service. This will interrupt service on the TCP/IP data link on card 2105 and allow the trial GPL to be loaded on to card 2105.

Do not deactivate all the TCP/IP data links in the system at the same time. Doing so will take all the TCP/IP data links out of service and cause the STP LAN feature to be disabled.

If there is only one TCP/IP data link in the system, placing the card out of service will cause the STP LAN feature to be disabled.

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

```
rlghncxa03w 04-06-01 11:45:18 GMT EAGLE5 31.6.0
Deactivate Link message sent to card.
Command Completed.
```

Skip steps 14 through 20, and go to step 21.

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

```
rlghncxa03w 04-06-01 09:57:31 GMT EAGLE5 31.6.0
SCCP SUBSYSTEM REPORT IS-NR      Active      -----
SCCP Cards Configured=3  Cards IS-NR=3
System TPS Alarm Threshold = 80% Total Capacity
System Peak SCCP Load = 3000 TPS
System Total SCCP Capacity = 5100 TPS
CARD  VERSION      PST      SST      AST      MSU USAGE  CPU USAGE
-----
2311  114-002-001  IS-NR      Active  -----    47%      81%
3101  114-002-001  IS-NR      Active  -----    34%      50%
3103  114-002-001  IS-NR      Active  -----    21%      29%
-----
SCCP Service Average MSU Capacity = 34%      Average CPU Capacity = 54%
Command Completed.
```

Skip steps 15 through 20, and go to step 21.

15. Display the status of the MCPMs in the database with the **rept-stat-meas** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0

MEAS SS          PST          SST          AST
                IS-NR          Active       -----
ALARM STATUS =  No Alarms

CARD  VERSION          TYPE  PST          SST          AST
2107 P 114-2-000      MCPM  IS-NR        Active       -----
      IP Link A                IS-NR        Active       Available
2111 114-2-000      MCPM  IS-NR        Active       -----
      IP Link A                IS-NR        Active       Available
2115 114-2-000      MCPM  IS-NR        Active       -----
      IP Link A                IS-NR        Active       Available

CARD 2107 ALARM STATUS = No Alarms
CARD 2108 ALARM STATUS = No Alarms
CARD 2111 ALARM STATUS = No Alarms
```

Skip steps 16 through 20, and go to step 21.

NOTE: Step 16 is performed only if the application running on the card shown in the **rept-stat-card output in step 8 is EOAM. If the application running on the card is IPS, skip step 16 and go to step 17.**

16. To load the **bpdcn** GPL on the GPSM-II, it must be loaded on the standby MASP (GPSM-II) first. To determine which MASP is active, enter the **rept-stat-db** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
DATABASE STATUS: >> OK <<

TDM 1114 ( STDBY)          TDM 1116 ( ACTV )
C  LEVEL      TIME LAST BACKUP      C  LEVEL      TIME LAST BACKUP
-----
FD BKUP  Y          35 04-06-01 10:19:18 GMT  Y          35 04-06-01 10:19:18 GMT
FD CRNT  Y          106                          Y          106
MDAL 1117
-----
RD BKUP  Y          106 04-05-31 20:27:53 GMT
```

The output of the **rept-stat-db** command shows which MASP is active with the indicator (**ACTV**) following the TDM card location. The indicator (**STDBY**) following the TDM card location shows which MASP is standby.

For this example, the MASP associated with TDM 1116 is active and the MASP associated with TDM 1114 is standby.

17. Display the terminal configuration in the database with the `rtrv-trm` command.

If the application running on the card is EOAM, the OAP terminals must be taken out of service. The OAP terminals are shown in the output with the entry `OAP` in the `TYPE` field. If no OAP terminals are shown in the `rtrv-trm` command output, skip steps 18 through 20 and go to step 21.

If the application running on the card is IPS, the Telnet terminals associated with the card shown in step 8 must be taken out of service. The Telnet terminals are shown in the output with the entry `TELNET` in the `TYPE` field.

This is an example of the possible output. In this example, the OAP terminals are terminals 6 and 9. The Telnet terminals that must be taken out of service are terminals 17 to 24.

```
rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
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  TYPE      LOC      TMOUT  MXINV  DURAL
17   TELNET    1201     60     5      00:30:00
18   TELNET    1201     60     5      00:30:00
19   TELNET    1201     60     5      00:30:00
20   TELNET    1201     60     5      00:30:00
21   TELNET    1201     60     5      00:30:00
22   TELNET    1201     60     5      00:30:00
23   TELNET    1201     60     5      00:30:00
24   TELNET    1201     60     5      00:30:00
25   TELNET    1203     60     5      00:30:00
26   TELNET    1203     60     5      00:30:00
27   TELNET    1203     60     5      00:30:00
28   TELNET    1203     60     5      00:30:00
29   TELNET    1203     60     5      00:30:00
30   TELNET    1203     60     5      00:30:00
31   TELNET    1203     60     5      00:30:00
32   TELNET    1203     60     5      00:30:00
33   TELNET    1208     60     5      00:30:00
34   TELNET    1208     60     5      00:30:00
35   TELNET    1208     60     5      00:30:00
36   TELNET    1208     60     5      00:30:00
37   TELNET    1208     60     5      00:30:00
38   TELNET    1208     60     5      00:30:00
39   TELNET    1208     60     5      00:30:00
40   TELNET    1208     60     5      00:30:00

TRM  TRAF  LINK  SA  SYS  PU  DB
1    NO   YES   NO  YES  NO  YES
```

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```

2    NO    NO    NO    NO    NO    NO
.
.
39   NO    NO    NO    NO    NO    NO
40   NO    NO    NO    NO    NO    NO

      APP  APP
TRM  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
.
.
39   NO    NO    NO    NO    NO    NO    NO    NO    NO    NO    NO    NO
40   NO    NO    NO    NO    NO    NO    NO    NO    NO    NO    NO    NO

```

18. Display the status of the terminals with the `rept-stat-trm` command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
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        -----
17    IS-NR        Active        -----
18    IS-NR        Active        -----
19    IS-NR        Active        -----
20    IS-NR        Active        -----
21    IS-NR        Active        -----
22    IS-NR        Active        -----
23    IS-NR        Active        -----
24    IS-NR        Active        -----
25    IS-NR        Active        -----
26    IS-NR        Active        -----
27    IS-NR        Active        -----
28    IS-NR        Active        -----
29    IS-NR        Active        -----
30    IS-NR        Active        -----
31    IS-NR        Active        -----
32    IS-NR        Active        -----
33    IS-NR        Active        -----
34    IS-NR        Active        -----
35    IS-NR        Active        -----
36    IS-NR        Active        -----
37    IS-NR        Active        -----
38    IS-NR        Active        -----
39    IS-NR        Active        -----
40    IS-NR        Active        -----

```

Command Completed.

19. Place the required terminals out of service using the `rmv-trm` command.

If the OAP terminals are being placed out of service, the `force=yes` parameter must be used when placing the last OAP terminal out of service.

To place the OAP terminals out of service in this example, enter these commands.

```
rmv-trm:trm=6
rmv-trm:trm=9:force=yes
```



CAUTION: Placing the OAP terminals out of service will disable the SEAS feature and stop new LNP updates being sent from the LSMS to the Eagle through the OAPs.

To place the Telnet terminals out of service in this example, enter these commands.

```
rmv-trm:trm=17
rmv-trm:trm=18
rmv-trm:trm=19
rmv-trm:trm=20
rmv-trm:trm=21
rmv-trm:trm=22
rmv-trm:trm=23
rmv-trm:trm=24
```



CAUTION: Placing the Telnet terminals out of service will disable any Telnet sessions running on these terminals.

If the status of any of the terminals shown in the `PST` field in step 18 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.

This message should appear when each of these commands have successfully completed.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Inhibit message sent to terminal

rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Command Completed.
```

NOTE: Step 20 is performed only if the OAP terminals were placed out of service in step 19. If the OAP terminals were not placed out of service in step 19, skip step 20 and go to step 21.

20. 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 used in step 19. For this example, enter these commands.

```
chg-trm:trm=6:type=none
```

```
chg-trm:trm=9:type=none
```

This message should appear when these commands have successfully completed.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
CHG-TRM: MASP B - COMPLTD
```

21. Place the card shown in step 8 out of service using the `rmv-card` command.



CAUTION: Multiple cards running the same flash GPL can be updated at the same time with the `init-flash` command (step 22). This requires that the cards in the locations specified with the `init-flash` command in step 22 are out of service. All the cards running a one of these applications (`ss7ml`, `atmansi`, `atmitu`, `iplim`, `iplimi`, `ss7ipgw`, `ipgwi`, `vxwslan`, `vsccp`, `mcp`, `emdc`, `eroute`, and `ips`) can be placed out of service. However, it is recommended that only some of the cards running a specific application are placed out of service. Placing all the cards running a specific application out of service will cause the traffic carried by these cards to be lost and disable the features supported by these cards.



CAUTION: If the `eaom` application is being updated, the card being placed out of service must be the GPSM-II associated with the standby MASP. Both cards running the `eaom` application cannot be placed out of service at the same time.



CAUTION: If there is only one card running these applications (`ss7ml`, `atmansi`, `atmitu`, `iplim`, `iplimi`, `ss7ipgw`, `ipgwi`, `vxwslan`, `vsccp`, `mcp`, `emdc`, `eroute`, or `ips`), shown in the `APPL` column in the `rept-stat-card` output in step 8, in the system, placing the card out of service will cause the traffic carried by this card to be lost and disable the feature that this card supports.

For this example, enter this command.

```
rmv-card:loc=2105
```

NOTE: If more than one card running the same flash GPL is to be updated in step 22, repeat this step for those cards.

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

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Card has been inhibited.
```

If the card is running the **ss7ml**, **iplim**, **iplimi**, **ss7ipgw**, or **ipgwi** applications, and the card contains the last signaling link in a linkset, the **force=yes** parameter must be specified.

If the card is running the **vsccp** or **mcp** applications, and is the last card running that application in service, the **force=yes** parameter must be specified.

NOTE: If you do not wish to reload the TDM clock LCA bitfile, skip steps 22 and 23, and go to step 24.

22. Verify the status of the high-speed clocks by entering the **rept-stat-clk** command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
CARD LOC = 1114 (Standby )   CARD LOC = 1116 (Active  )
PRIMARY BITS   = Active     PRIMARY BITS   = Active
SECONDARY BITS = Idle       SECONDARY BITS = Idle
HS PRIMARY CLK = Active     HS PRIMARY CLK = Active
HS SECONDARY CLK = Idle     HS SECONDARY CLK = Idle
HS CLK TYPE    = RS422      HS CLK TYPE    = RS422
HS CLK LINELEN = LONGHAUL   HS CLK LINELEN = LONGHAUL

                                PST          SST          AST
SYSTEM CLOCK                   IS-NR          Active     -----
ALARM STATUS                    = No Alarms.
# Cards using CLK A = 009      # Cards with bad CLK A = 000
# Cards using CLK B = 000      # Cards with bad CLK B = 000
# Cards using CLK I = 000

                                PST          SST          AST
HS SYSTEM CLOCK                 IS-NR          Active     -----
ALARM STATUS                    = No Alarms.
# Cards using HS CLK A = 002   # Cards with bad HS CLK A = 000
# Cards using HS CLK B = 000   # Cards with bad HS CLK B = 000
# Cards using HS CLK I = 000

Command Completed.
```

If the **rept-stat-clk** output does not show any high-speed clocks (**HS SYSTEM CLOCK**, **HS PRIMARY CLK**, **HS SECONDARY CLK**, **HS CLK TYPE**, and **HS CLK LINELEN** fields), the system does not contain any cards that are capable of using high-speed master timing.

NOTE: If the **HS CLK TYPE** and **HS CLK LINELEN** values shown in step 1 are set to the system default values (**HS CLK TYPE = RS422** and **HS CLK LINELEN = LONGHAUL**), skip step 23 and go to step 24.

23. Visually verify the part numbers of both TDMs in the system. To load the TDM clock LCA bitfile, the part numbers of both TDMs must be 870-0774-15 or later.

If the TDM part numbers are 870-0774-15 or later, go to step 24.

If the TDM part numbers are not 870-0774-15 or later, the TDMs must be replaced with TDM part numbers 870-0743-15 or later. Contact Tekelec Technical Services before replacing the TDMs. See “Tekelec Technical Services” on page 1-7. If the older TDMs are not replaced, this procedure cannot be performed.

24. Load the GPL onto the card inhibited in step 21 using the **init-flash** command with either the **code=trial** parameter to load the trial version of the GPL into the card, or the **code=appr** parameter to load the approved version of the GPL onto the card. For this example, enter this command.

```
init-flash:code=trial:loc=2105
```

When this command has successfully completed, these messages should appear.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
FLASH Memory Downloading for card 2105 Started.
;
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
BPHCAP Downloading for card 2105 Complete.
;
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Command Completed.
```

If the card inhibited in step 21 is a GPSM-II, and you are reloading the TDM clock LCA bitfile, the **initclk=yes** and, if necessary, the **force=yes** parameters must be specified with the **init-flash** command.



CAUTION: If reloading the TDM clock LCA bitfile would cause a system clock outage, the **force=yes** parameter must be used with the **init-flash** command. A system clock outage can be caused by either the system having only one TDM (a simplex MASP configuration) or if the status of the high-speed clocks, shown in the **rept-stat-clk** output in step 22, on the TDM which is not being reset is Fault. A system clock outage will result in a loss of traffic on some or all signaling links.

The following command example loads the GPL onto the GPSM-II card and reloads the TDM clock LCA bitfile.

```
init-flash:initclk=yes:loc=1113:code=trial
```

When this command has successfully completed, these messages should appear.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
FLASH Memory Download for card 1113 Started.
;

rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
FLASH Memory Download for card 1113 Completed.
```

Updating more than One Card at the Same Time

If more than one card running the same flash GPL is being updated, enter the **init-flash** command with these parameters along with the **code=trial** or **code=appr** parameters:

sloc – the first card location in the range of card locations

eloc – the last card location in the range of card locations

appl – the flash GPL being updated

NOTE: The **sloc**, **eloc**, and **appl** parameters cannot be specified with the **loc** parameter. When the **sloc**, **eloc**, and **appl** parameters are specified, only the cards running the GPL specified by the **appl** parameter and within the range specified by the **sloc** and **eloc** parameters are updated. All other cards in the range specified by the **sloc** and **eloc** parameters are skipped.

Entering this example command will update the cards in the locations 1101 to 2115 running the **bpdcn** flash GPL with the trial version of the **bpdcn** GPL.

init-flash:code=trial:sloc=1101:eloc=2115:appl=bpdcn

When this command has successfully completed, these messages should appear.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
FLASH Memory Download for cards 1101 - 2115 Started.
;

rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
FLASH Memory Download for cards 1101 - 2115 Completed.
LOC 1101 : PASSED
LOC 1102 : PASSED
LOC 1112 : PASSED
LOC 2105 : PASSED
LOC 2107 : PASSED
LOC 2111 : PASSED
LOC 2112 : PASSED
LOC 2115 : PASSED

ALL CARD RESULTS PASSED
;

rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Command Completed.
```

When the **init-flash** command has completed successfully, the card specified in the **init-flash** command is rebooted.

25. Put the cards that were inhibited in step 21 back into service using the `rst-card` command with either the `code=trial` parameter if the trial version of the GPL was loaded onto the cards, or the `code=appr` parameter if the approved version of the GPL was loaded onto the cards. For this example, enter this command.

```
rst-card:code=trial:loc=2105
```

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

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Card has been allowed.
```

26. Verify that the trial GPL from step 24 has loaded and that the card has returned to its in-service normal (IS-NR) state using the `rept-stat-card` command. For this example, enter this command.

```
rept-stat-card:loc=2105
```

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
CARD VERSION      TYPE      APPL      PST      SST      AST
2105 114-003-000  DCM      VXWLAN   IS-NR      Active   -----
ALARM STATUS      = No Alarms.
BPDCM GPL         = 002-123-000 +
IMT BUS A         = Conn
IMT BUS B         = Conn
SLK A PST         = IS-NR      LS=lsnssp2  CLI=-----
SCCP SERVICE CARD = 1212
SLAN SERVICE CARD = ----
Command Completed.
```

The '+' symbol indicates that the GPL has not been activated.

NOTE: If the version number of the `bpdc` GPL shown in the `rept-stat-card` command output is different than the version specified in step 5, contact Tekelec Technical Services. See "Tekelec Technical Services" on page 1-7.

27. Activate the trial GPL loaded onto the cards in step 24 using the **act-flash** command. For this example, enter this command.

```
act-flash:loc=2105
```

When this command has successfully completed, these messages should appear.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
FLASH Memory Activation for card 2105 Completed.
;
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Command Completed.
```

Activating more than One Card at the Same Time

If more than one card running the same flash GPL was updated in step 24, enter the **act-flash** command with these parameters:

sloc – the first card location in the range of card locations

e1oc – the last card location in the range of card locations

appl – the flash GPL being activated

NOTE: The **sloc**, **e1oc**, and **appl** parameters cannot be specified with the **loc** parameter. When the **sloc**, **e1oc**, and **appl** parameters are specified, only the cards running the GPL specified by the **appl** parameter and within the range specified by the **sloc** and **e1oc** parameters are updated. All other cards in the range specified by the **sloc** and **e1oc** parameters are skipped.

Entering this example command will activate the flash GPLs on the cards in the locations 1101 to 2115.

```
act-flash:sloc=1101:e1oc=2115:appl=bpdcn
```

When this command has successfully completed, these messages should appear.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
FLASH Memory Activation for cards 1101 - 2115 Started.
;
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
FLASH Memory Activation for cards 1101 - 2115 Completed.
LOC 1101 : PASSED
LOC 1102 : PASSED
LOC 1112 : PASSED
LOC 2105 : PASSED
LOC 2107 : PASSED
LOC 2111 : PASSED
LOC 2112 : PASSED
LOC 2115 : PASSED

ALL CARD RESULTS PASSED
;
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Command Completed.
```

NOTE: If you wish to leave the new version of the GPL in the Trial state, or if the version of the GPL is already the approved version, skip step 28 and go to step 29.

28. Activate the trial GPL, using the **act-gpl** command and specifying the name and version of the trial GPL specified in step 5. For this example, enter this command.

```
act-gpl:appl=bpdcmm:ver=002-123-000
```

These messages should appear.

```
rlghncxa03w 04-06-01 06:54:39 GMT EAGLE5 31.6.0
BPDCM activate on 1114 completed
BPDCM activate on 1116 completed
```

29. Verify the GPLs on the cards using the **rept-stat-gpl** command with the **appl** parameter value equal to the **appl** parameter value specified in step 28. If any card is not running the release version of the GPL, shown in the **RELEASE** column of the **rtrv-gpl** output in step 6, the indicator **ALM** is displayed next to the GPL version in the **RUNNING** column of the **rept-stat-gpl** output. For this example, enter these commands.

This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING              APPROVED            TRIAL
BPDCM     1113     002-122-000 ALM    002-122-000    002-123-000
BPDCM     1115     002-122-000 ALM    002-122-000    002-123-000
BPDCM     1303     002-122-000 ALM    002-123-000    002-122-000
BPDCM     1307     002-122-000 ALM    002-123-000    002-122-000
BPDCM     2101     002-122-000 ALM    002-123-000    002-122-000
BPDCM     2103     002-122-000 ALM    002-123-000    002-122-000
BPDCM     2105     002-123-000    002-123-000    002-122-000
BPDCM     2113     002-122-000 ALM    002-123-000    002-122-000
BPDCM     2205     002-122-000 ALM    002-123-000    002-122-000
BPDCM     2207     002-122-000 ALM    002-123-000    002-122-000
BPDCM     2213     002-122-000 ALM    002-123-000    002-122-000
BPDCM     2301     002-122-000 ALM    002-123-000    002-122-000
BPDCM     2303     002-122-000 ALM    002-123-000    002-122-000
BPDCM     2305     002-122-000 ALM    002-123-000    002-122-000
BPDCM     2307     002-122-000 ALM    002-123-000    002-122-000
BPDCM     2311     002-122-000 ALM    002-123-000    002-122-000
BPDCM     3101     002-122-000 ALM    002-123-000    002-122-000

BPDCM     3103     002-122-000 ALM    002-123-000    002-122-000
BPDCM     3105     002-122-000 ALM    002-123-000    002-122-000
BPDCM     3107     002-122-000 ALM    002-123-000    002-122-000
Command Completed
```

If the new version of the **bpdc**m GPL was left as the trial version of the **bpdc**m GPL (step 28 was not performed), the following is an example of the **rept-stat-gp1** output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
BPDCM    1113    002-122-000 ALM    002-122-000    002-123-000
BPDCM    1115    002-122-000 ALM    002-122-000    002-123-000
BPDCM    1303    002-122-000 ALM    002-122-000    002-123-000
BPDCM    1307    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2101    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2103    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2105    002-123-000      002-122-000    002-123-000
BPDCM    2113    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2205    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2207    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2213    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2301    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2303    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2305    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2307    002-122-000 ALM    002-122-000    002-123-000
BPDCM    2311    002-122-000 ALM    002-122-000    002-123-000
BPDCM    3101    002-122-000 ALM    002-122-000    002-123-000
BPDCM    3103    002-122-000 ALM    002-122-000    002-123-000
BPDCM    3105    002-122-000 ALM    002-122-000    002-123-000
BPDCM    3107    002-122-000 ALM    002-122-000    002-123-000
Command Completed
```

NOTE: If the GPL being displayed by the **rept-stat-gp1** command is the **bpdc**m GPL, the output of the **rept-stat-gp1** command will show any DCMs, DSMs, or GPSM-II cards that are inserted in the system, whether they are configured in the database or not.

NOTE: If the card's application, shown in the **rept-stat-card** output in step 8, is **ss7ml**, **atmansi**, **atmitu**, **iplim**, **iplimi**, **ss7ipgw**, **ipgwi**, perform steps 30 and 31, then go to step 39. Skip steps 33 through 38.

30. Place the signaling links that were deactivated in step 11 back into service using the **act-slk** command. For this example, enter these commands.

```
act-slk:loc=1201:port=a
act-slk:loc=1201:port=b
act-slk:loc=1201:port=a1
act-slk:loc=1201:port=b1
```

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

```
rlghncxa03w 04-06-01 11:55:49 GMT EAGLE5 31.6.0
Activate SLK message sent to card
```


31. Verify that the signaling links activated in step 30 are back in service using the **rept-stat-slk** command with the card location and port containing the signaling link. For this example, enter these commands.

rept-stat-slk:loc=1201:port=a

This is an example of the possible output.

```
rlghncxa03w 04-06-01 13:06:25 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1201,A   lsnmpl1   -----  IS-NR      Avail    ----
  ALARM STATUS      = No Alarms.
  UNAVAIL REASON    = --
```

rept-stat-slk:loc=1201:port=b

This is an example of the possible output.

```
rlghncxa03w 04-06-01 13:06:25 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1201,B   lsnmpl2   -----  IS-NR      Avail    ----
  ALARM STATUS      = No Alarms.
  UNAVAIL REASON    = --
```

rept-stat-slk:loc=1201:port=a1

This is an example of the possible output.

```
rlghncxa03w 04-06-01 13:06:25 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1201,A1  lsnmpl3   -----  IS-NR      Avail    ----
  ALARM STATUS      = No Alarms.
  UNAVAIL REASON    = --
```

rept-stat-slk:loc=1201:port=b1

This is an example of the possible output.

```
rlghncxa03w 04-06-01 13:06:25 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1201,B1  lsnmpl4   -----  IS-NR      Avail    ----
  ALARM STATUS      = No Alarms.
  UNAVAIL REASON    = --
Command Completed.
```

NOTE: If the card's application, shown in the **rept-stat-card** output in step 8, is **vxwslan**, perform steps 32 and 33, then go to step 39. Skip steps 34 through 38.

32. Place the TCP/IP data link that was deactivated in step 13 back into service using the **act-dlk** command. For this example, enter this command.

act-dlk:loc=2105

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

```
rlghncxa03w 04-06-01 11:55:49 GMT EAGLE5 31.6.0
Activate Link message sent to card.
```

33. Verify that the TCP/IP data links activated in step 32 are back in service with the `rept-stat-dlk` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 17:00:36 GMT EAGLE5 31.6.0
DLK   PST           SST           AST
1303  IS-NR          Avail        ---
2101  IS-NR          Avail        ---
2103  IS-NR          Avail        ---
2105  IS-NR          Avail        ---
2113  IS-NR          Avail        ---
2301  IS-NR          Avail        ---
```

NOTE: If the application running on the card is not EOAM, skip steps 34 through 38, and go to step 39.

NOTE: If the application running on the is IPS, perform steps 36 and 37, then go to step 39. Skip steps 34, 35, and 38.

NOTE: If you do not wish to load the new version of the `bpdcn` GPL onto the other GPSM-II card running the EOAM application, skip this step and go to step 35.

34. If you wish to load the new trial GPL onto the GPSM-II card making up the active MASP, enter the `init-card` command specifying the location of the GPSM-II card making up active MASP. For this example, enter the `init-card:loc=1115` command. This message should appear.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Init Card command issued to card 1115
```

After the `init-card` command has completed, repeat this procedure from step 21, specifying the card location used in the `init-card` command, making sure to specify the `code=trial` parameter for the `rst-card` command in step 25. This will leave the GPSM-II cards running the new trial GPL and show the **ALM** indicator in the `rtrv-gpl` output. The **ALM** indicator will not be shown in the `rept-stat-gpl` output.

If, after loading the new trial GPL, you wish to make the new trial version of the GPL the approved version of the GPL, and load the new approved GPL onto the card specified in the `init-card` command, repeat this procedure from step 21 specifying the card location used in the `init-card` command and making sure to specify the `code=appr` parameter for the `rst-card` command in step 25. This will leave the GPSM-II cards running the new approved GPL and the **ALM** indicator will not be shown in the `rtrv-gpl` and `rept-stat-gpl` outputs.

If the new trial version of the GPL was made the approved version of the GPL in step 7, and you wish to load the new approved GPL onto the card specified in the `init-card` command, repeat this procedure from step 21 for the card specified in the `init-card` command, making sure to specify the `code=appr` parameter for the `rst-card` command in step 25. This will leave the GPSM-II cards running the new approved GPL and the **ALM** indicator will not be shown in the `rtrv-gpl` and `rept-stat-gpl` outputs.

NOTE: If OAP terminals are not shown in the `rtrv-trm` command output in step 17, skip steps 35 through 37, and go to step 38.

NOTE: If the application running on the is IPS, skip step 35 and go to step 36.

35. Change the terminal type of the terminals that were changed to **NONE** in step 20 to the terminal type OAP with the `chg-trm` command and the `type=oap` parameter. The terminal type is shown in the TYPE field in the `rtrv-trm` command output in step 17. For this example, enter these commands.

```
chg-trm:trm=6:type=oap
```

```
chg-trm:trm=9:type=oap
```

This message should appear when these commands have successfully completed.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0  
CHG-TRM: MASP B - COMPLTD
```

36. Put the required terminals back into service with the `rst-trm` command.

If OAP terminals were placed out of service in step 19, for this example, enter these commands.

```
rst-trm:trm=6
```

```
rst-trm:trm=9
```

If Telnet terminals were placed out of service in step 19, for this example, enter these commands.

```
rst-trm:trm=17
```

```
rst-trm:trm=18
```

```
rst-trm:trm=19
```

```
rst-trm:trm=20
```

```
rst-trm:trm=21
```

```
rst-trm:trm=22
```

```
rst-trm:trm=23
```

```
rst-trm:trm=24
```

This message should appear when each of these commands have successfully completed.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0  
Allow message sent to terminal
```

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0  
Command Completed.
```

37. Verify that the terminals are in service with the `rept-stat-trm` command.
 This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
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       -----
17    IS-NR         Active       -----
18    IS-NR         Active       -----
19    IS-NR         Active       -----
20    IS-NR         Active       -----
21    IS-NR         Active       -----
22    IS-NR         Active       -----
23    IS-NR         Active       -----
24    IS-NR         Active       -----
25    IS-NR         Active       -----
26    IS-NR         Active       -----
27    IS-NR         Active       -----
28    IS-NR         Active       -----
29    IS-NR         Active       -----
30    IS-NR         Active       -----
31    IS-NR         Active       -----
32    IS-NR         Active       -----
33    IS-NR         Active       -----
34    IS-NR         Active       -----
35    IS-NR         Active       -----
36    IS-NR         Active       -----
37    IS-NR         Active       -----
38    IS-NR         Active       -----
39    IS-NR         Active       -----
40    IS-NR         Active       -----
```

Command Completed.

38. If the new `bpdc` GPL updated in this procedure is not being loaded on the other GPSM-II in the system, this procedure is finished. Remove the removable cartridge from the removable cartridge drive on the MDAL card. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.

If you wish to update one of the other flash GPLs, remove the removable cartridge from the removable cartridge drive on the MDAL card, and repeat this procedure from step 1.

NOTE: If the application running on the card is EOAM, do not perform step 39. This procedure is finished.

39. If you wish to load the new trial GPL onto the other cards, other than the GPSM-II, shown in step 7, repeat this procedure from step 8 for each card, making sure to specify the `code=trial` parameter for the `rst-card` command in step 25. This will leave all the cards running the new trial GPL and show the **ALM** indicator in the `rtrv-gp1` output. The **ALM** indicator will not be shown in the `rept-stat-gp1` output for these cards.

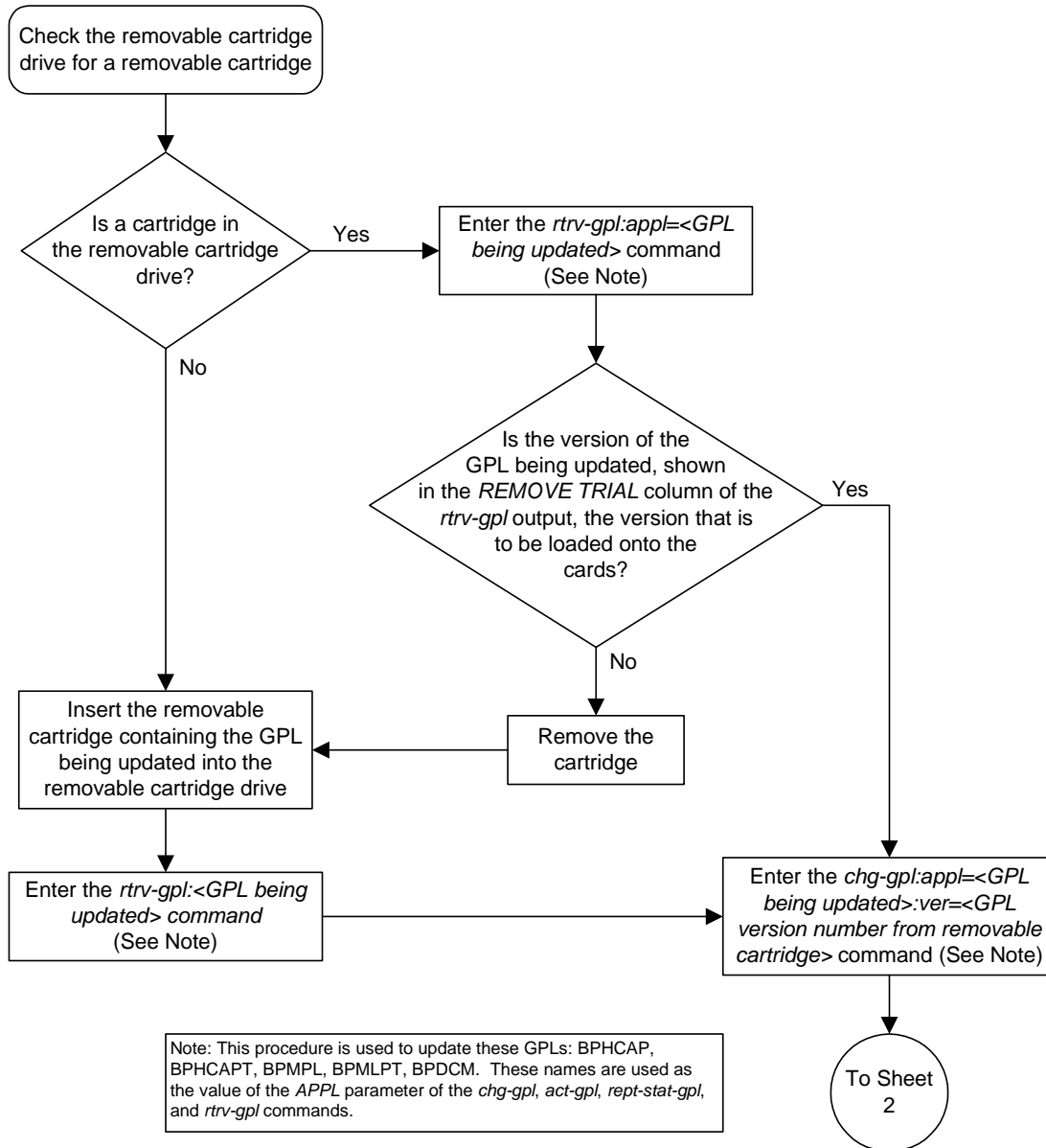
If, after loading the new trial GPL onto one of the cards, you wish to make the new trial version of the GPL the approved version of the GPL, and load the new approved GPL onto the other cards shown in step 7, repeat this procedure from step 8 for each card shown in step 7, making sure to specify the `code=appr` parameter for the `rst-card` command in step 25. This will leave all the cards running the new approved GPL and the **ALM** indicator will not be shown in the `rtrv-gp1` and `rept-stat-gp1` outputs.

If the new trial version of the GPL was made the approved version of the GPL in step 28, and you wish to load the new approved GPL onto the other cards shown in step 7, repeat this procedure from step 8 for the other cards shown in step 7, making sure to specify the `code=appr` parameter for the `rst-card` command in step 25. This will leave all the cards running the new approved GPL and the **ALM** indicator will not be shown in the `rtrv-gp1` and `rept-stat-gp1` outputs.

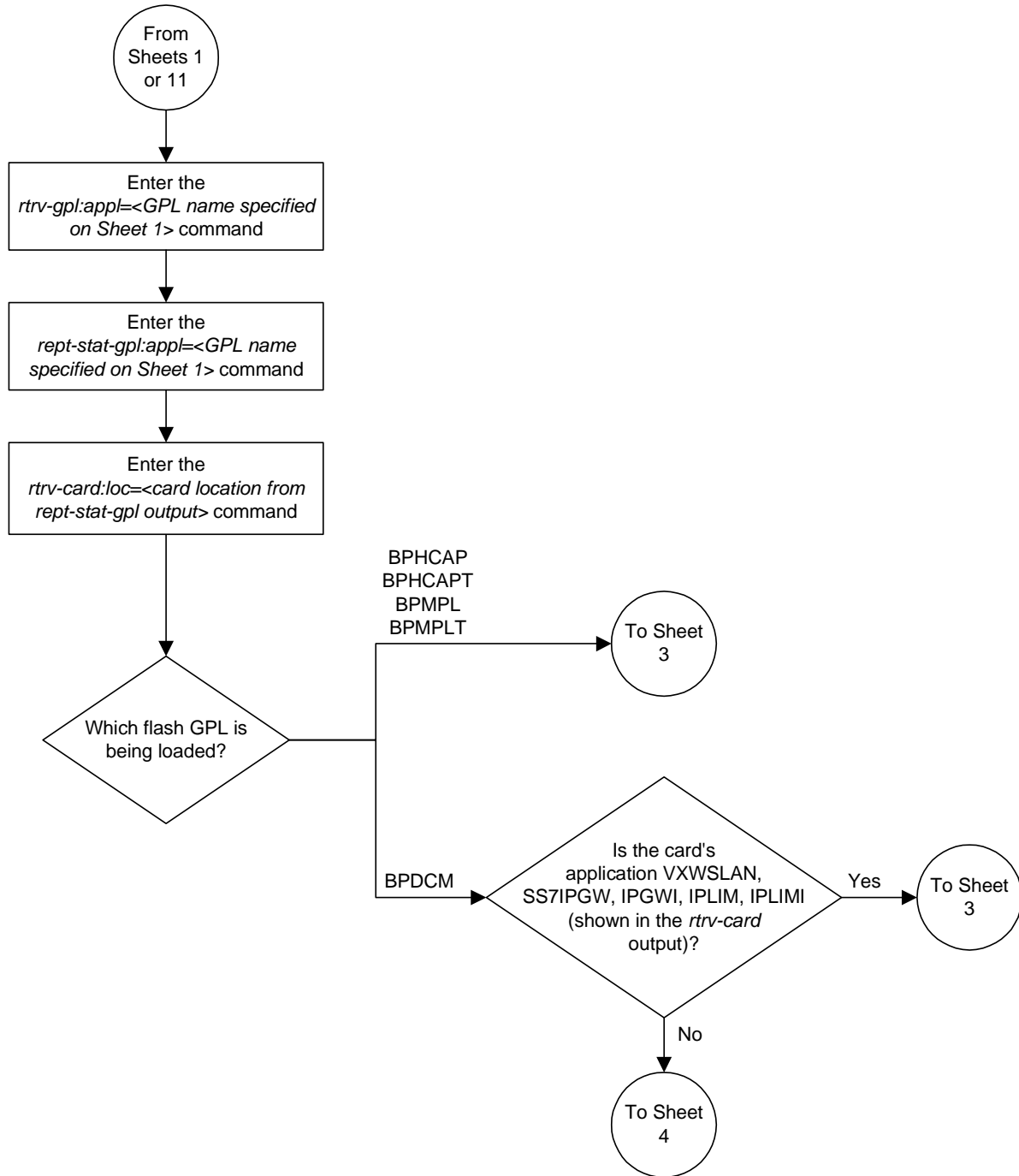
If the new GPL updated in this procedure is not being loaded on the other cards in the system, this procedure is finished. Remove the removable cartridge from the removable cartridge drive on the MDAL card. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.

If you wish to update one of the other flash GPLs, remove the removable cartridge from the removable cartridge drive on the MDAL card, and repeat this procedure from step 1.

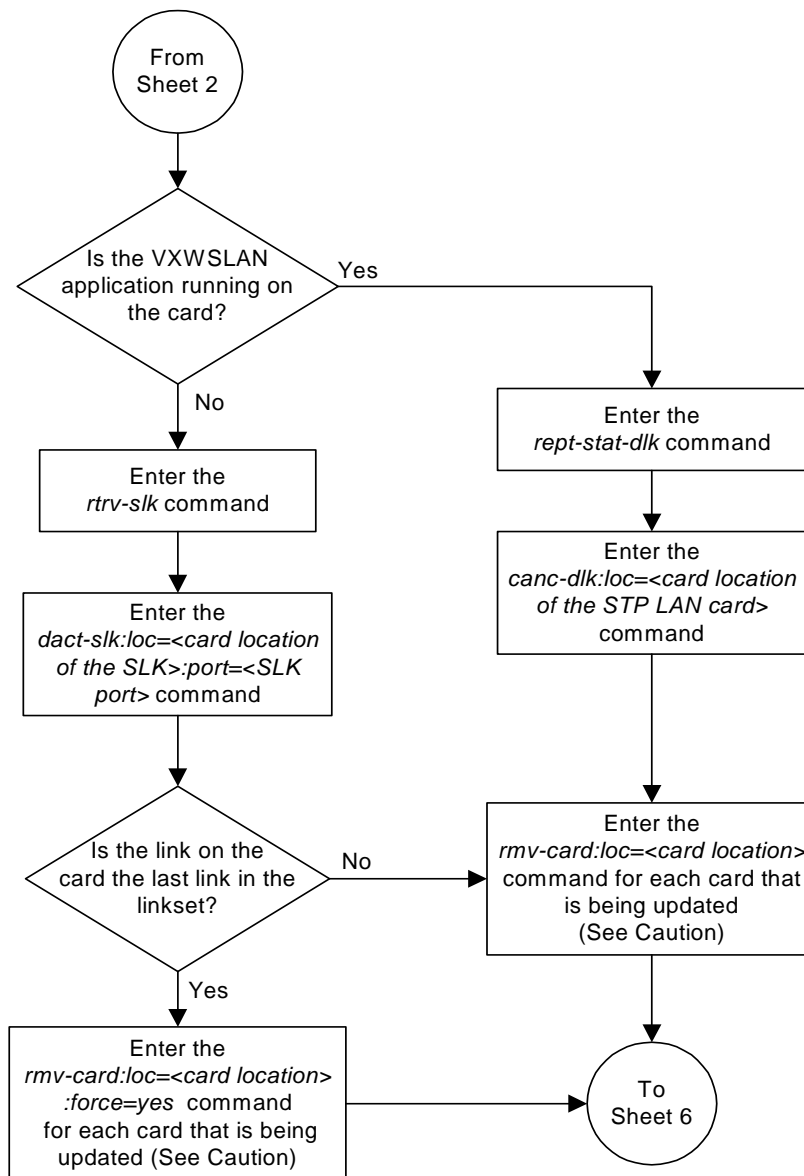
Flowchart 3-5. Updating the Flash GPLs (Sheet 1 of 13)



Flowchart 3-5. Updating the Flash GPLs (Sheet 2 of 13)

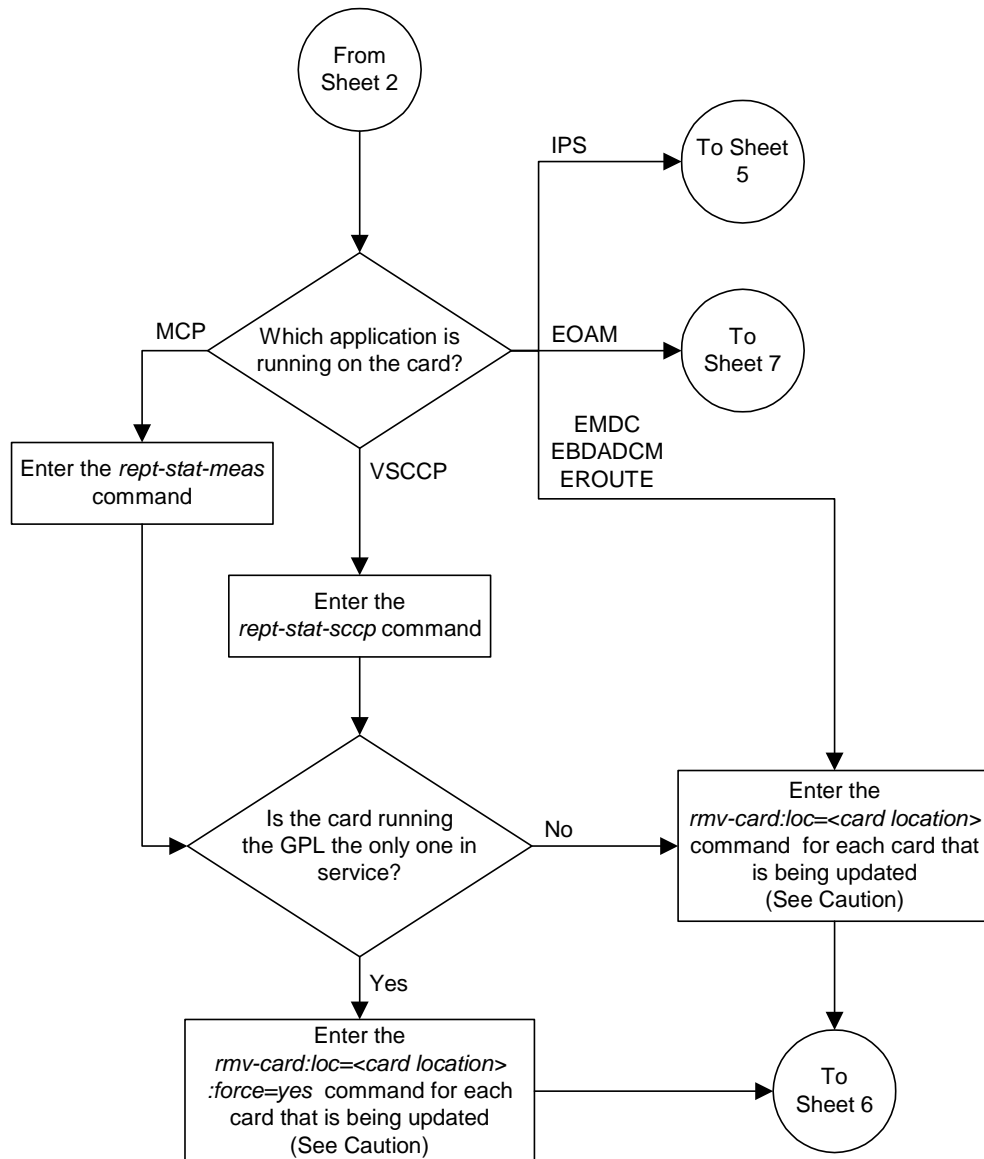


Flowchart 3-5. Updating the Flash GPLs (Sheet 3 of 13)



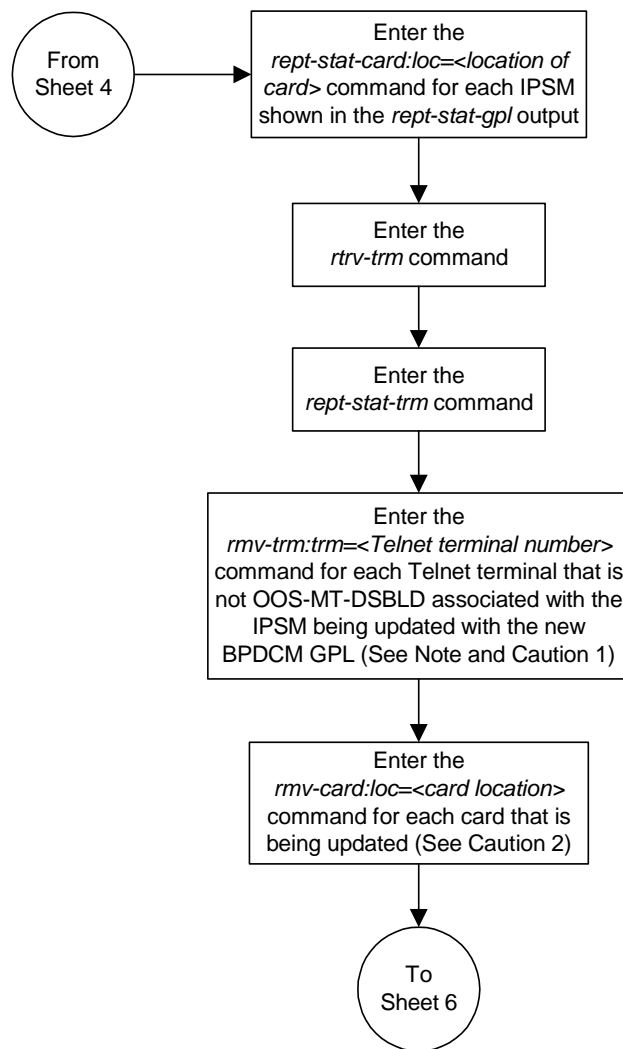
Caution: Multiple cards running the same flash GPL can be updated at the same time with the *init-flash* command. This requires that the cards in the locations specified with the *init-flash* command are out of service. All the cards running a one of these applications (ss7ml, atmansi, atmitu, iplim, iplimi, ss7ipgw, ipgwi, and vxwslan) can be placed out of service. However, it is recommended that only some of the cards running a specific application are placed out of service. Placing all the cards running a specific application out of service will cause the traffic carried by these cards to be lost and disable the features supported by these cards.

Flowchart 3-5. Updating the Flash GPLs (Sheet 4 of 13)



Caution: Multiple cards running the same flash GPL can be updated at the same time with the *init-flash* command. This requires that the cards in the locations specified with the *init-flash* command are out of service. All the cards running a one of these applications (vsccp, mcp, emdc, eroute) can be placed out of service. However, it is recommended that only some of the cards running a specific application are placed out of service. Placing all the cards running a specific application out of service will cause the traffic carried by these cards to be lost and disable the features supported by these cards.

Flowchart 3-5. Updating the Flash GPLs (Sheet 5 of 13)

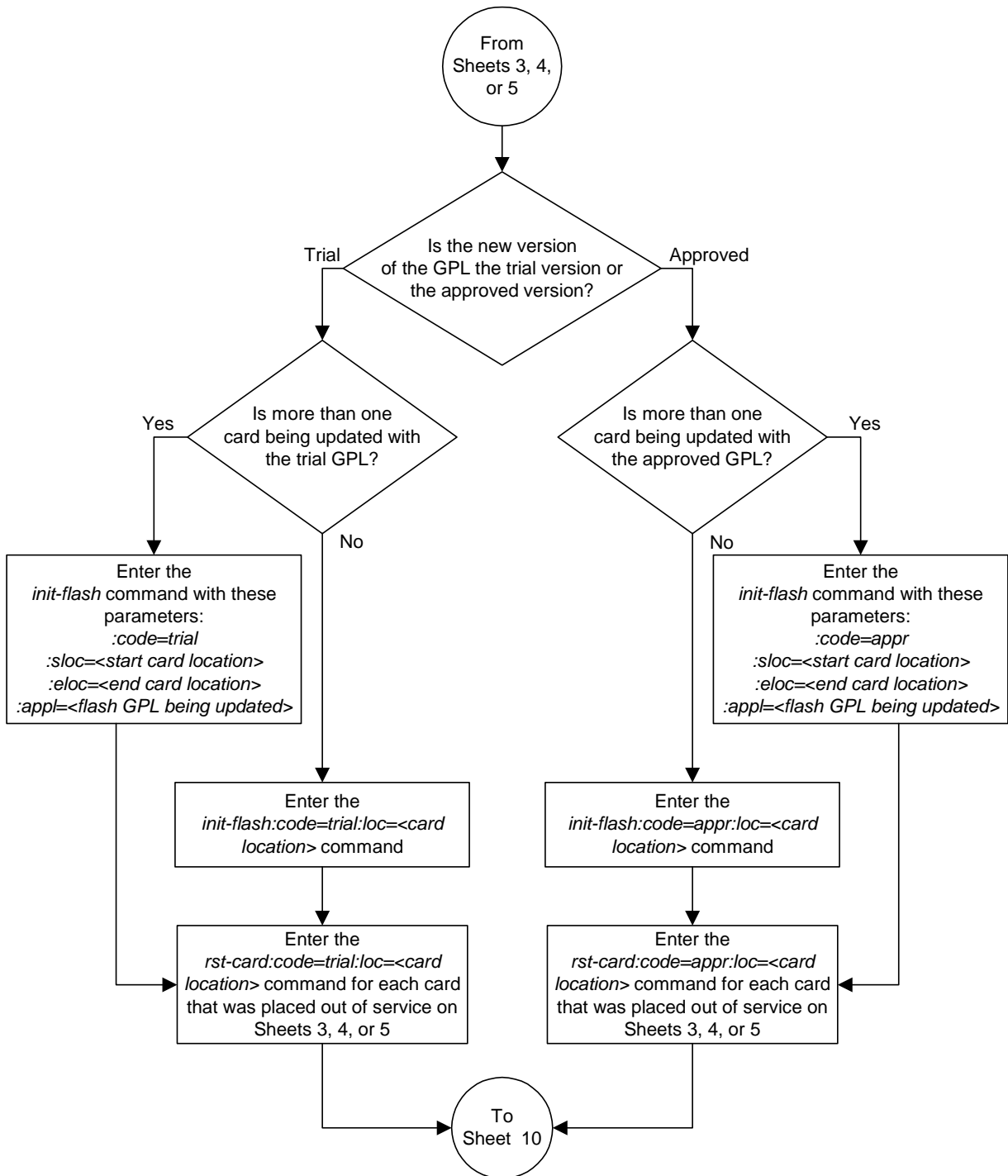


Note: Each IPSM has 8 Telnet terminals associated with it. The *rtv-trm* output shows the Telnet terminals that are associated with each IPSM.

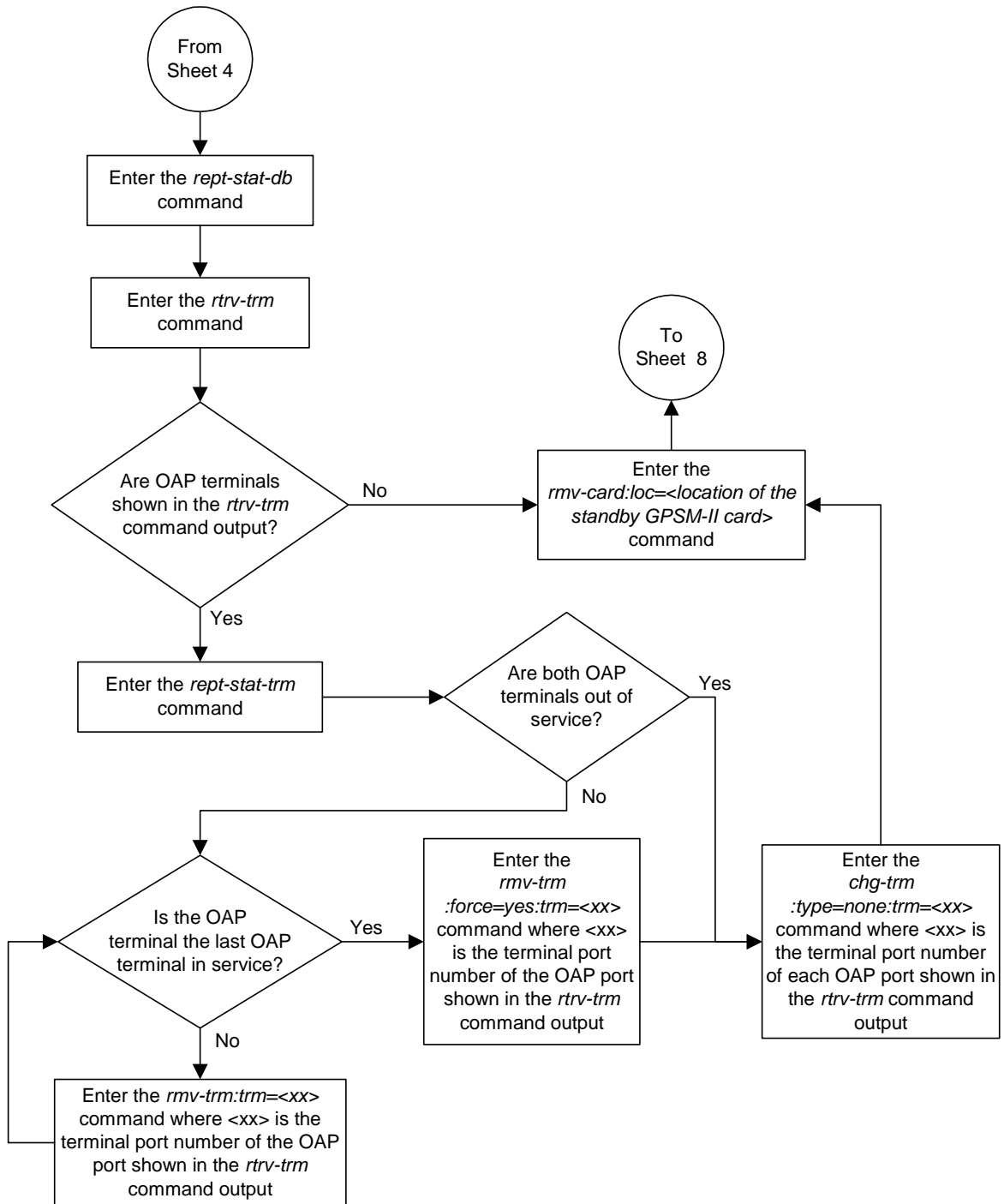
Cautions:

1. Placing the Telnet terminals out of service will disable all Telnet sessions supported by the terminals associated with the IPSM.
2. Multiple cards running the same flash GPL can be updated at the same time with the *init-flash* command. This requires that the cards in the locations specified with the *init-flash* command are out of service. All the IPSMs can be placed out of service at the same time. However, it is recommended that only some of the IPSMs are placed out of service. Placing all the IPSMs out of service will cause the traffic carried by IPSMs to be lost and disable the IP User Interface and FTP Retrieve and Replace features.

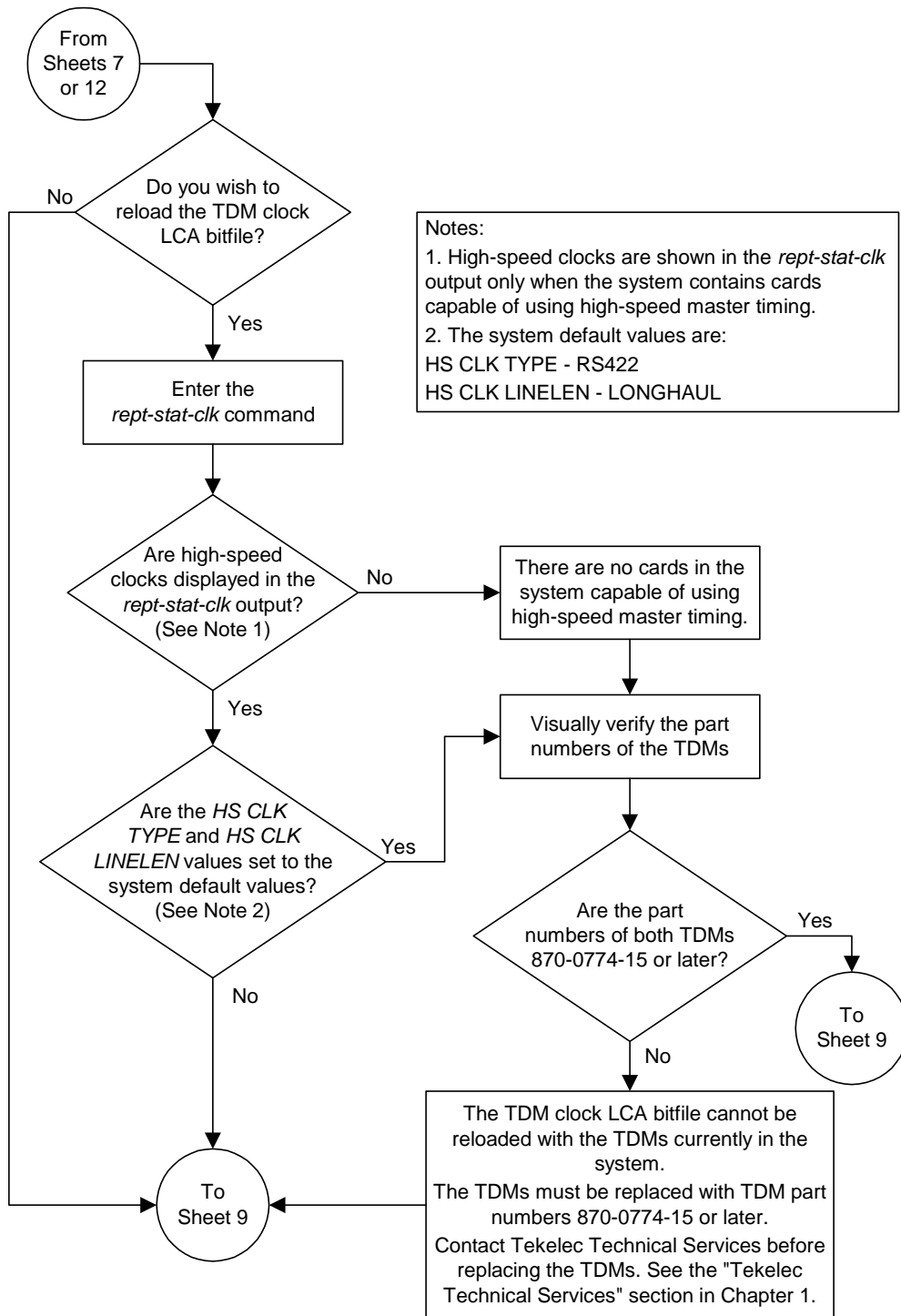
Flowchart 3-5. Updating the Flash GPLs (Sheet 6 of 13)



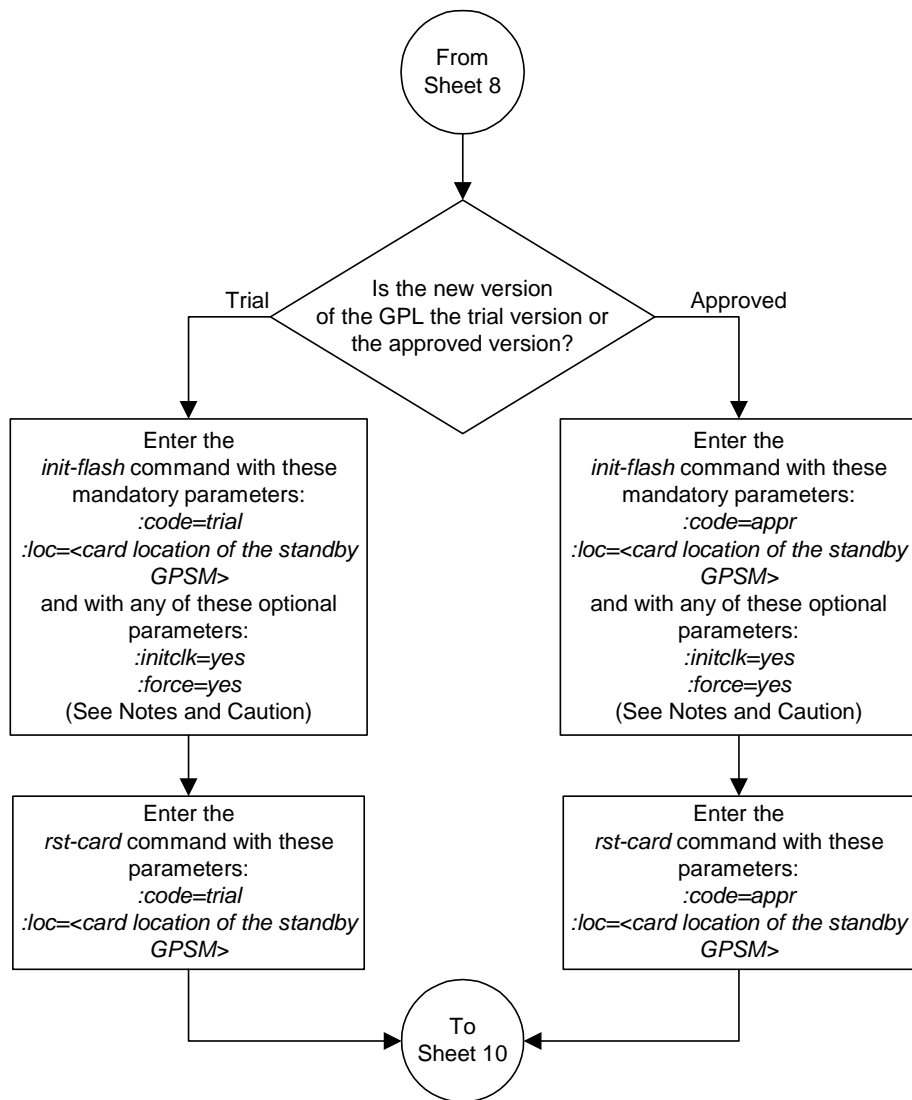
Flowchart 3-5. Updating the Flash GPLs (Sheet 7 of 13)



Flowchart 3-5. Updating the Flash GPLs (Sheet 8 of 13)



Flowchart 3-5. Updating the Flash GPLs (Sheet 9 of 13)

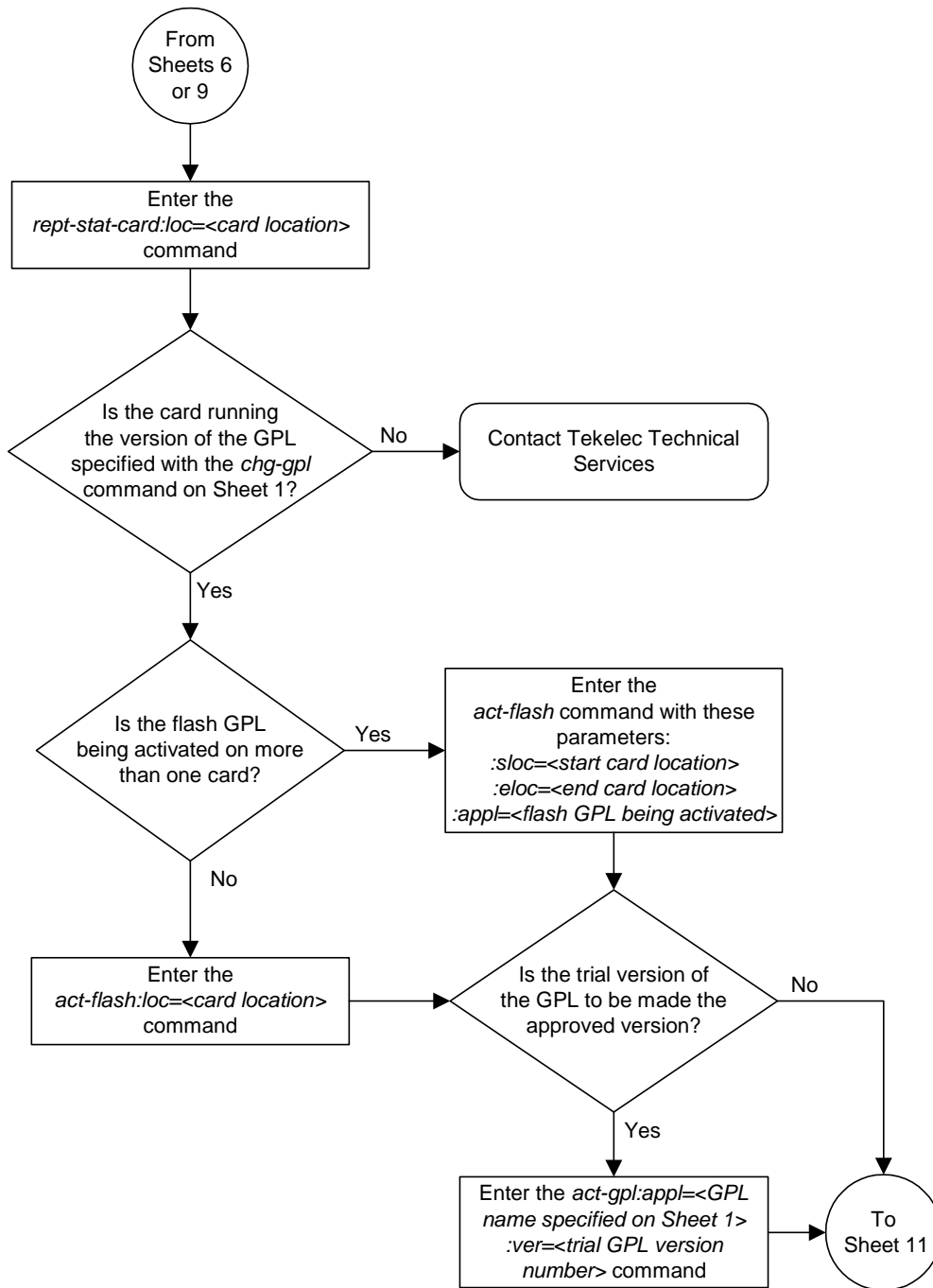


Notes:

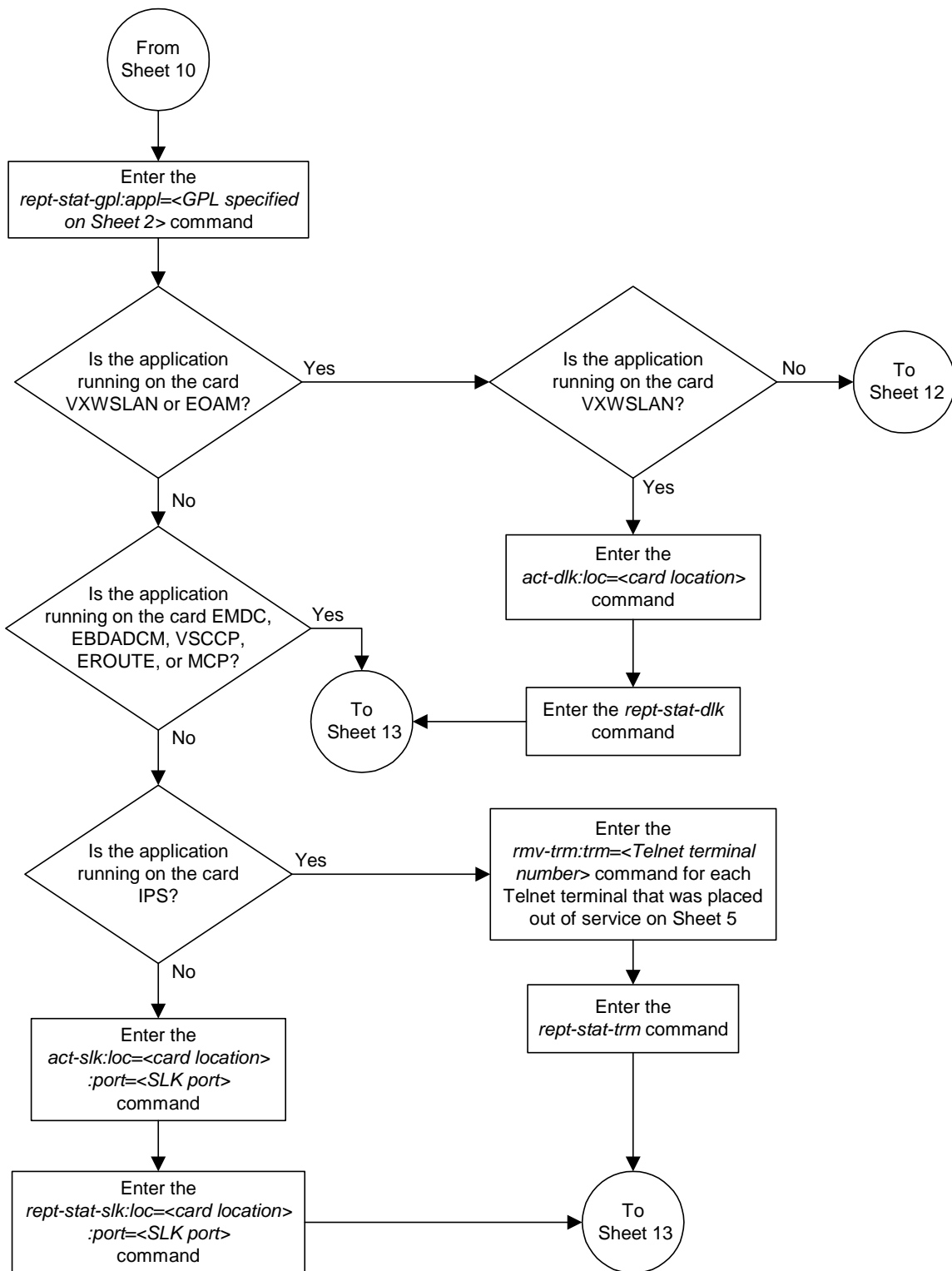
1. The *initclk=yes* parameter can be specified only if the part numbers of the TDMs in the system are 870-0774-15 or later. See Sheet 8.
2. The *force=yes* parameter can be specified only if the *initclk=yes* parameter is specified.
3. The *force=yes* parameter should be used only if the TDM clock LCA bitfile reload would cause a system clock outage. A system clock outage can be caused by either the system having only one TDM (a simplex MASP configuration) or if the status of high-speed clocks on the TDM which is not being reset is Fault. See the *rept-stat-clk* output from Sheet 8.

Caution: A clock outage will result in a loss of traffic on some or all signaling links.

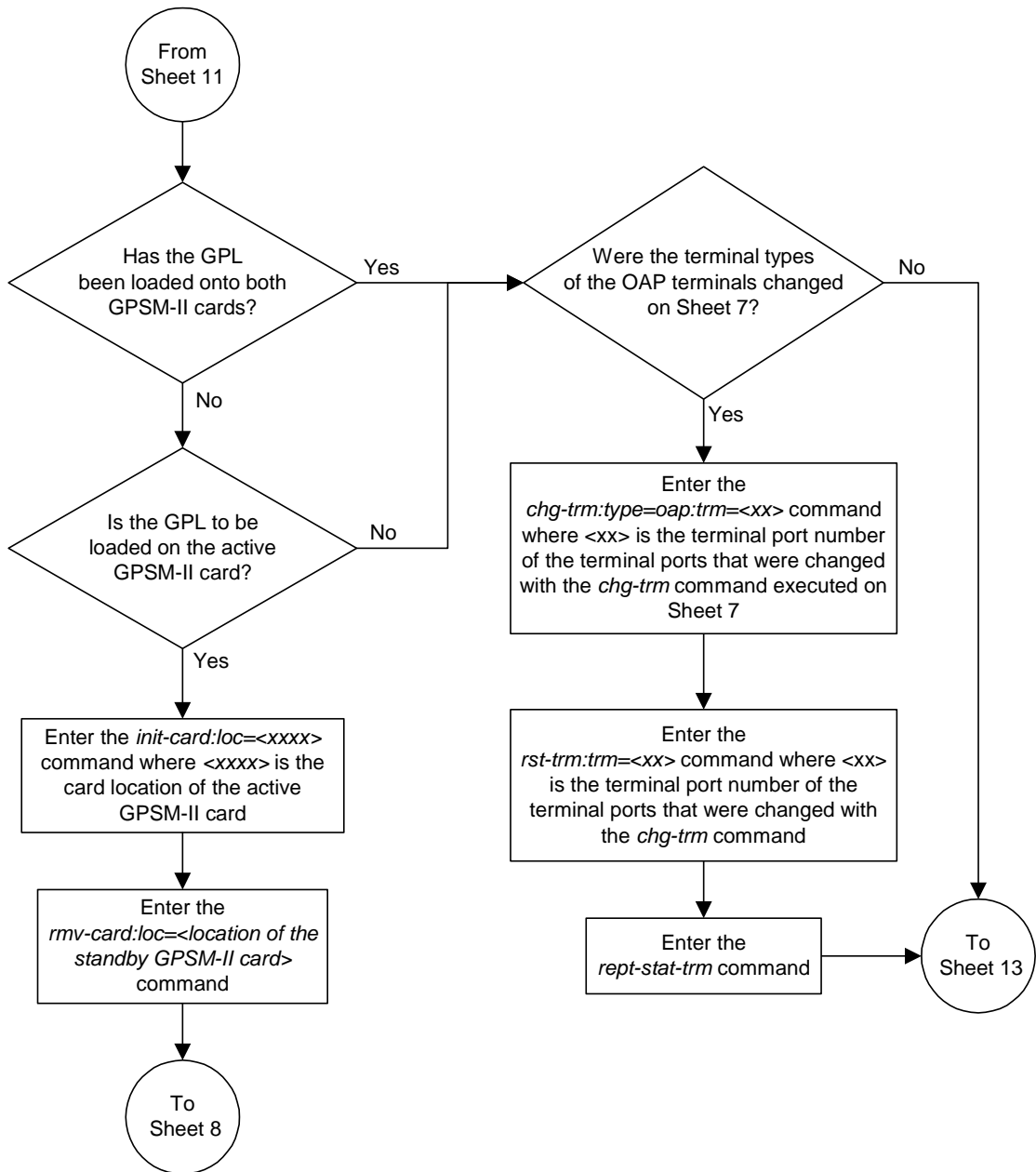
Flowchart 3-5. Updating the Flash GPLs (Sheet 10 of 13)



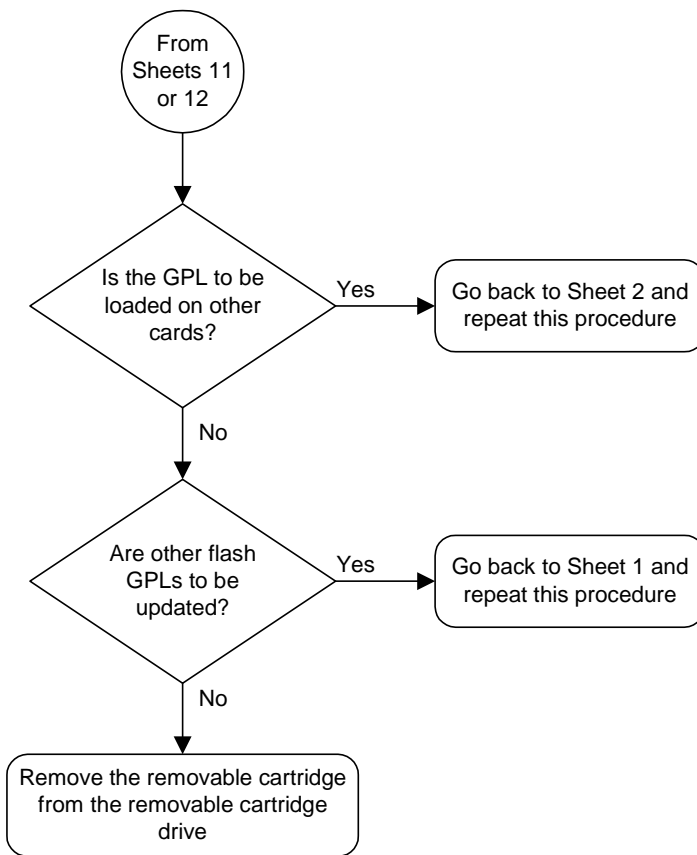
Flowchart 3-5. Updating the Flash GPLs (Sheet 11 of 13)



Flowchart 3-5. Updating the Flash GPLs (Sheet 12 of 13)



Flowchart 3-5. Updating the Flash GPLs (Sheet 13 of 13)



Updating the BPHMUX GPL

This section presents the procedure for updating the **bphmux** generic program load (GPL). The **bphmux** GPL is used by the High-Speed Multiplexer (HMUX) card to control the IMT bus and resides on the fixed disk. The HMUX card resides only in slots 9 and 10 in each shelf in the system.

This section presents the procedure for loading the **bphmux** GPL onto the system as a trial version from a removable cartridge, then making the trial version of the **bphmux** GPL the approved version.

If any card is not running the approved version of the GPL shown in the **APPROVED** column of the **rept-stat-gpl** output, the indicator **ALM** is displayed next to the GPL version in the **RUNNING** column of the **rept-stat-gpl** output.

The removable cartridge that contains the **bphmux** GPL to be loaded on to the system is required.

Procedure

1. Check the removable cartridge drive on the MDAL card for a removable cartridge. If there is a removable cartridge in the drive, remove it. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.

2. Make sure the removable cartridge containing the new software is "write protected" (NOT write enabled). To write protect a removable cartridge, see "Write Protecting the Removable Cartridge" on page 2-6.

3. Insert the removable cartridge containing the **bphmux** GPL into the removable cartridge drive on the MDAL card. For more information on inserting the removable cartridge in the removable cartridge drive, see "Inserting the Removable Cartridge" on page 2-8.

4. Display the **bphmux** GPLs on the fixed disk and on the removable cartridge using the **rtrv-gpl:appl=bphmux** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
BPHMUX	1114	111-002-000	111-002-000	111-001-000	111-003-000
BPHMUX	1116	111-002-000	111-002-000	111-001-000	-----

- Change the GPLs, using the **chg-gpl** command and specifying the value for the trial **bphmux** GPL shown in the **REMOVE TRIAL** column in the output of the **rtrv-gpl** command used in step 4. For this example, enter this command.

chg-gpl:appl=bphmux:ver=111-003-000

These messages should appear.

```
rlghncxa03w 04-06-01 11:43:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

```
BPHMUX upload on 1114 completed
BPHMUX upload on 1116 completed
System Release ID table upload 1114 completed
System Release ID table upload 1116 completed
```

- Verify that the **bphmux** GPL on the removable cartridge is the trial GPL on the fixed disk using the **rtrv-gpl:appl=bphmux** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
BPHMUX	1114	111-003-000	111-002-000 ALM	111-003-000	111-003-000
BPHMUX	1116	111-003-000	111-002-000 ALM	111-003-000	-----

- Verify the **bphmux** GPLs on the fixed disk and the cards that are running the **bphmux** GPLs using the **rept-stat-gpl:appl=bphmux** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL    CARD    RUNNING          APPROVED          TRIAL
BPHMUX  1109    111-002-000 ALM  111-002-000      111-003-000
BPHMUX  1110    111-002-000 ALM  111-002-000      111-003-000
BPHMUX  1209    111-002-000 ALM  111-002-000      111-003-000
BPHMUX  1210    111-002-000 ALM  111-002-000      111-003-000
BPHMUX  1309    111-002-000 ALM  111-002-000      111-003-000
BPHMUX  1310    111-002-000 ALM  111-002-000      111-003-000
BPHMUX  2109    111-002-000 ALM  111-002-000      111-003-000
BPHMUX  2110    111-002-000 ALM  111-002-000      111-003-000
Command Completed
```

- Load the trial **bphmux** GPL onto a card selected from the cards shown in step 7 using the **init-flash:code=trial** command. For this example, enter this command.

init-flash:code=trial:loc=1109

When this command has successfully completed, these messages should appear.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
FLASH Memory Downloading for card 1109 Started.
;
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
BPHMUX Downloading for card 1109 Complete.
;
```

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Command Completed.
```

Updating more than One HMUX Card at the Same Time

Multiple HMUX cards can be updated at the same time with the **init-flash** command. The multiple HMUX cards being updated must be on the same IMT bus. Specifying card locations XX09 for the **sloc** and **eloc** parameters specifies the HMUX cards on IMT bus A. Specifying card locations XX10 for the **sloc** and **eloc** parameters specifies the HMUX cards on IMT bus B.

To update more than one HMUX card on the same IMT bus, enter the **init-flash** command with these parameters along with the **code=trial** or **code=appr** parameters:

sloc – the first card location in the range of card locations

eloc – the last card location in the range of card locations

appl – bphmux

NOTE: The **sloc**, **eloc**, and **appl** parameters cannot be specified with the **loc** parameter.

For example, to update the HMUX cards on IMT Bus B shown in step 7 with the trial version of the **bphmux** GPL, enter this command.

```
init-flash:code=trial:sloc=1110:eloc=2110:appl=bphmux
```

To update the HMUX cards on IMT bus A shown in step 7, the **sloc=1109** and **eloc=2109** parameters would be specified with the **init-flash** command.

When this command has successfully completed, these messages should appear.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
FLASH Memory Download for cards 1110 - 2110 Started.
;
tekelecstp 97-09-09 13:07:15 GMT EAGLE5 31.6.0
FLASH Memory Download for cards 1110 - 2110 Completed.
LOC 1110 : PASSED
LOC 1210 : PASSED
LOC 1310 : PASSED
LOC 2110 : PASSED

ALL CARD RESULTS PASSED
;
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Command Completed.
```

When the **init-flash** command has completed successfully, the card specified in the **init-flash** command is rebooted.

9. Re-initialize the HMUX cards specified in step 8 using the `init-mux` command with the `loc` parameter. For this example, enter this command.

```
init-mux:loc=1109
```

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

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Command Completed.
```

NOTE: Executing this command produces two alarms: 0002 - Card is not running approved GPL, indicating that the version of the `bphmux` GPL running on the card is not the approved version, and 0004 - Card is running non-activated GPL, indicating that the new version of the `bphmux` GPL running on the card has not been activated.

10. Verify that the trial `bphmux` GPL from step 9 has loaded and that the state of the card is in-service normal (IS-NR) state using the `rept-stat-card` command. If more than one card was specified in steps 8 and 9, enter the `rept-stat-card` command for each specified card. For this example, enter this command.

```
rept-stat-card:loc=1109:mode=full
```

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
CARD  VERSION      TYPE      APPL      PST      SST      AST
1109  111-003-000  HMUX      HMUX      IS-NR    Active   -----
  ALARM STATUS      = No Alarms
  TRIAL  VERSION      = 111-003-000
  FPGA  VERSION      = 022-005
Command Completed.
```

NOTE: If the version number of the `bphmux` GPL shown in the `rept-stat-card` command output is different than the version specified in step 5, contact Tekelec Technical Services. See "Tekelec Technical Services" on page 1-7.

11. Activate the trial **bphmux** GPL loaded onto the card in step 8 using the **act-flash** command. For this example, enter this command.

```
act-flash:loc=1109
```

When this command has successfully completed, these messages should appear.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
FLASH Memory Activation for card 1109 Completed.
;
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Command Completed.
```

Activating the BPHMUX GPL on more than One HMUX Card at the Same Time

If more than one HMUX card was specified in step 8, enter the **act-flash** command with these parameters:

sloc – the first card location in the range of card locations

eloc – the last card location in the range of card locations

appl – **bphmux**

NOTE: The **sloc**, **eloc**, and **appl** parameters cannot be specified with the **loc** parameter.

For example, to activate the BPHMUX GPL on the HMUX cards on IMT Bus B shown in step 7 with the trial version of the **bphmux** GPL, enter this command.

```
act-flash:sloc=1110:eloc=2110:appl=bphmux
```

To activate the BPHMUX GPL on the HMUX cards on IMT bus A shown in step 7, the **sloc=1109** and **eloc=2109** parameters would be specified with the **act-flash** command.

When this command has successfully completed, these messages should appear.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
FLASH Memory Activation for cards 1110 - 2110 Started.
;
tekelecstp 97-09-09 13:07:15 GMT EAGLE5 31.6.0
FLASH Memory Activation for cards 1110 - 2110 Completed.
LOC 1110 : PASSED
LOC 1210 : PASSED
LOC 1310 : PASSED
LOC 2110 : PASSED

ALL CARD RESULTS PASSED
;
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Command Completed.
```

12. Verify the **bphmux** GPLs on the fixed disk and the cards that are running the **bphmux** GPLs using the **rept-stat-gpl:appl=bphmux** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
BPHMUX    1109    111-003-000    111-002-000    111-003-000
BPHMUX    1110    111-002-000 ALM  111-002-000    111-003-000
BPHMUX    1209    111-002-000 ALM  111-002-000    111-003-000
BPHMUX    1210    111-002-000 ALM  111-002-000    111-003-000
BPHMUX    1309    111-002-000 ALM  111-002-000    111-003-000
BPHMUX    1310    111-002-000 ALM  111-002-000    111-003-000
BPHMUX    2109    111-002-000 ALM  111-002-000    111-003-000
BPHMUX    2110    111-002-000 ALM  111-002-000    111-003-000
Command Completed
```

NOTE: If you wish to leave the HMUX cards running the trial version of the **bphmux** GPL, skip steps 13 and 14, and go to step 15.

13. Activate the trial GPL, using the **act-gpl** command and specifying the value for the trial **bphmux** GPL shown in step 7. For this example, enter this command.

```
act-gpl:appl=bphmux:ver=111-003-000
```

These messages should appear.

```
rlghncxa03w 04-06-01 06:54:39 GMT EAGLE5 31.6.0
BPHMUX activate on 1114 completed
BPHMUX activate on 1116 completed
```

14. Verify the **bphmux** GPLs on the HMUX cards using the **rept-stat-gpl:appl=bphmux** command. If any card is not running the release version of the GPL, shown in the **RELEASE** column of the **rtrv-gpl** output in step 6, the indicator **ALM** is displayed next to the GPL version in the **RUNNING** column of the **rept-stat-gpl** output. For this example, enter these commands.

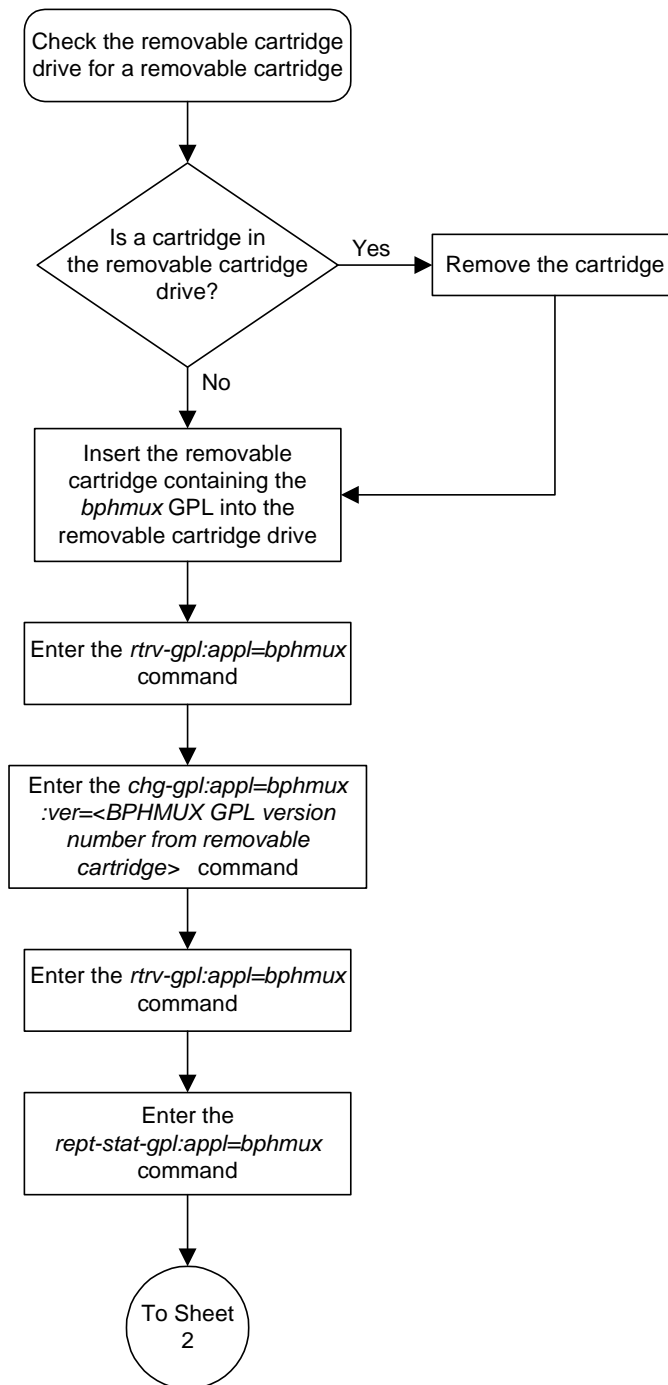
This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:40:26 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
BPHMUX    1109    111-003-000    111-003-000    111-002-000
BPHMUX    1110    111-002-000 ALM  111-003-000    111-002-000
BPHMUX    1209    111-002-000 ALM  111-003-000    111-002-000
BPHMUX    1210    111-002-000 ALM  111-003-000    111-002-000
BPHMUX    1309    111-002-000 ALM  111-003-000    111-002-000
BPHMUX    1310    111-002-000 ALM  111-003-000    111-002-000
BPHMUX    2109    111-002-000 ALM  111-003-000    111-002-000
BPHMUX    2110    111-002-000 ALM  111-003-000    111-002-000
Command Completed
```

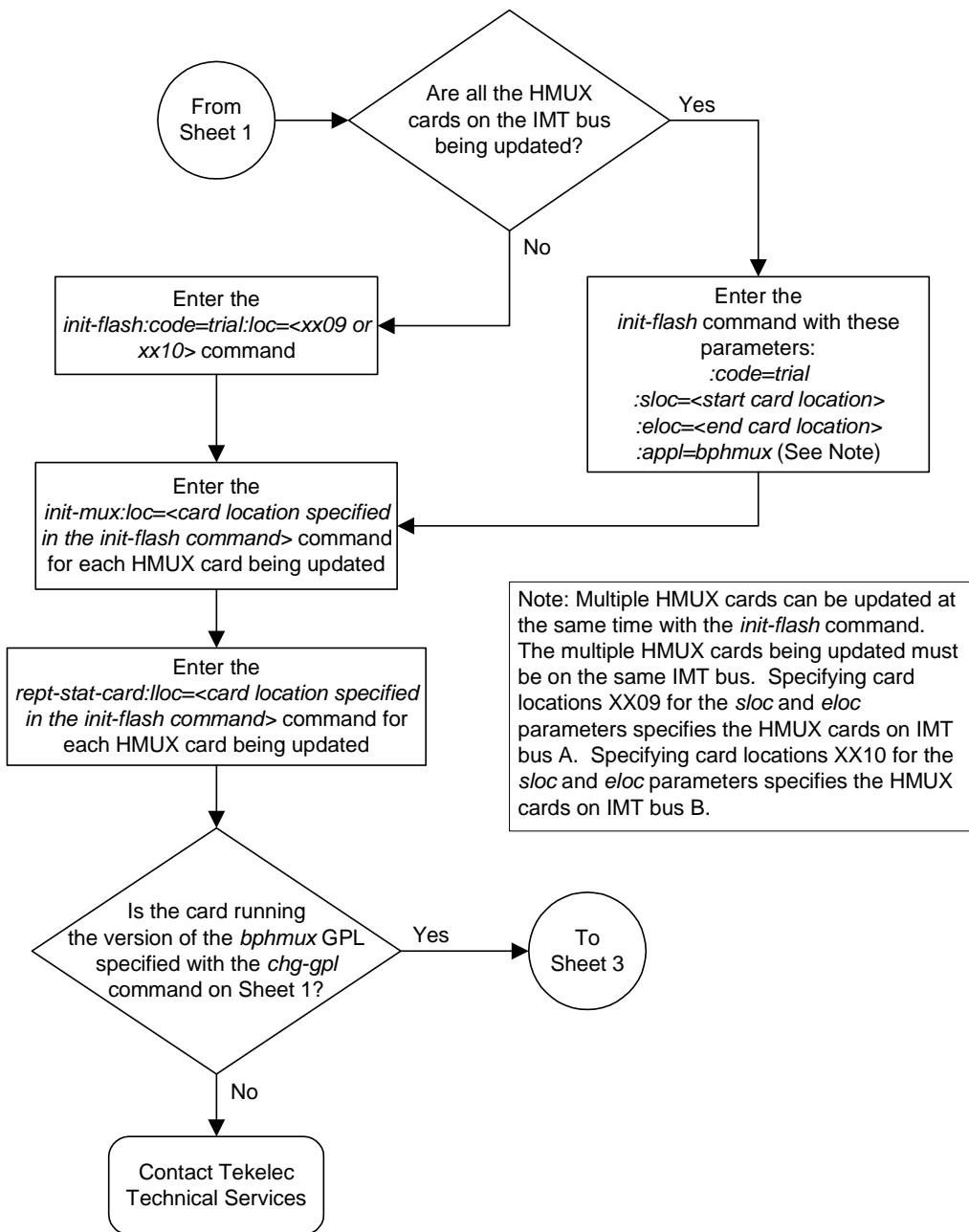
15. To load the **bphmux** GPL on the other HMUX cards, repeat steps 8 through 14 for each card.
-

16. Remove the removable cartridge from the removable cartridge drive on the MDAL card. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.
-

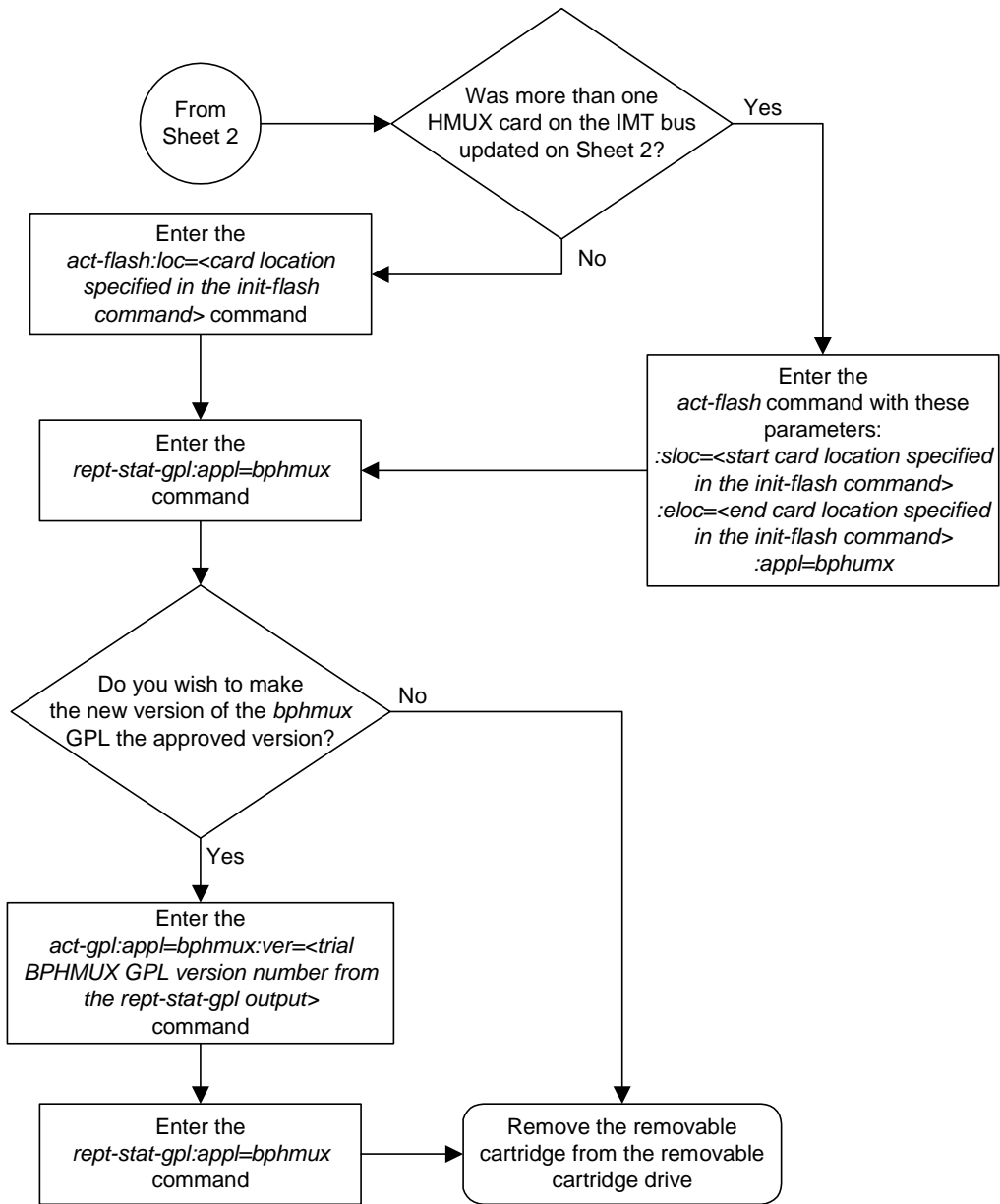
Flowchart 3-6. Updating the BPHMUX GPL (Sheet 1 of 3)



Flowchart 3-6. Updating the BPHMUX GPL (Sheet 2 of 3)



Flowchart 3-6. Updating the BPHMUX GPL (Sheet 3 of 3)



Making the Trial Utility GPL the Approved Utility GPL

This procedure is used to make the trial `utility` generic program load (GPL) the approved `utility` GPL.

The `utility` GPL cannot be loaded and run from the removable cartridge like the other GPLs. The approved version of the `utility` GPL is on the fixed disk. The trial version of the `utility` GPL is located on the removable cartridge. This procedure loads the trial `utility` GPL from the removable cartridge to the fixed disk and makes it the approved `utility` GPL.

The removable cartridge that contains the `utility` GPL to be loaded on to the system is required.

Procedure

1. Check the removable cartridge drive on the MDAL card for a removable cartridge. If there is a removable cartridge in the drive, remove it. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.

2. Make sure the removable cartridge containing the new software is "write protected" (NOT write enabled). To write protect a removable cartridge, see "Write Protecting the Removable Cartridge" on page 2-6.

3. Insert the removable cartridge containing the `utility` GPL into the removable cartridge drive on the MDAL card. For more information on inserting the removable cartridge in the removable cartridge drive, see "Inserting the Removable Cartridge" on page 2-8.

4. Display the `utility` GPLs on the fixed disk and on the removable cartridge using the `rtrv-gpl:appl=utility` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
UTILITY	1114	144-000-000	144-000-000	144-001-000	144-001-000
UTILITY	1116	144-000-000	144-000-000	-----	-----

GPL Management Procedures

5. Change the GPLs, using the **chg-gpl** command and specifying the value for the trial **utility** GPL shown in the output of the **rtrv-gpl** command used in step 4. For this example, enter this command.

```
chg-gpl:appl=utility:ver=144-001-000
```

This message should appear.

```
rlghncxa03w 04-06-01 06:52:20 GMT EAGLE5 31.6.0  
GPL Auditing ON
```

```
UTILITY upload to 1114 completed  
UTILITY upload to 1116 completed  
System Release ID table upload 1114 completed  
System Release ID table upload 1116 completed
```

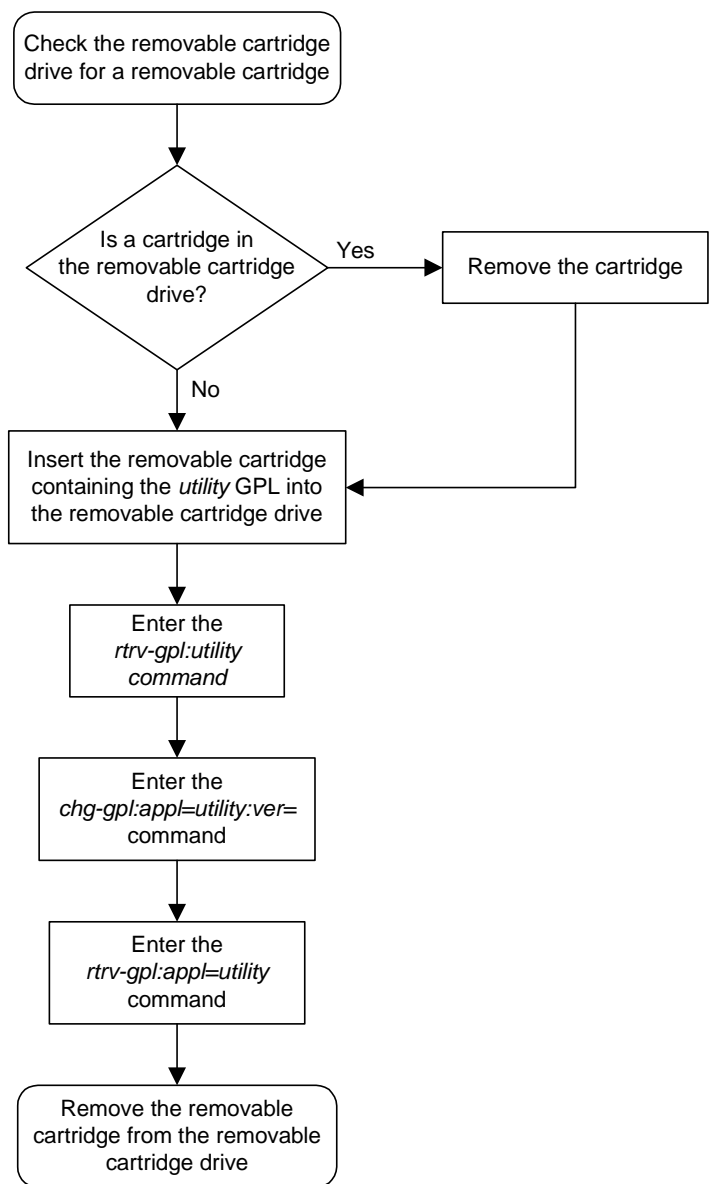
6. Display the **utility** GPLs on the fixed disk and on the removable cartridge using the **rtrv-gpl:appl=utility** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0  
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
UTILITY	1114	144-001-000	144-001-000	144-001-000	144-001-000
UTILITY	1116	144-001-000	144-001-000	-----	-----

7. Remove the removable cartridge from the removable cartridge drive on the MDAL card. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.
-

Flowchart 3-7. Making the Trial Utility GPL the Approved Utility GPL



Updating the OAP GPL

This section presents the procedure for updating the **oap** generic program load (GPL). The **oap** GPL is the software running on the **oap** used for the SEAS and LNP features. The LNP feature can be enabled only for a quantity of 2 to 12 million numbers. This software is assigned a version number using the GPL numbering scheme used by the Eagle GPL version numbers. When the OAP is connected to the Eagle, the **oap** GPL version number is transmitted to the Eagle.

The Eagle's system release ID table contains the version numbers of all the GPLs used on the Eagle, including the **oap** GPL. The **oap** GPL version number must match the number contained in the Eagle's system release ID table. The Eagle's system release ID table contains the approved version number of the **oap** GPL. This version number is shown in the **APPROVED** column of the **rept-stat-gpl** command output and in the **RELEASE** and **APPROVED** columns of the **rtrv-gpl** command outputs. If the **oap** GPL version transmitted to the Eagle does not match the **oap** GPL version number in the Eagle's system release ID table, the indicator **ALM** is displayed next to the GPL version in the **RUNNING** column of the **rept-stat-gpl** output. The **RUNNING** column in the **rept-stat-gpl** command output shows what **oap** GPL version the OAP is actually running. The **ALM** indicator is also displayed next to the **APPROVED** column in the **rtrv-gpl** output.

There is no trial version of the **oap** GPL, so dashes are displayed in the **TRIAL** column in both the **rtrv-gpl** and **rept-stat-gpl** command outputs.

If a removable cartridge is in the removable cartridge drive on the MDAL, the **oap** GPL version number on the removable cartridge is displayed in the **REMOVE TRIAL** column in the **rtrv-gpl** command output.

Only OAPs that are connected to the Eagle are shown in the **rtrv-gpl** and **rept-stat-gpl** command outputs. The OAPs are shown in the **rtrv-gpl** and **rept-stat-gpl** command outputs as OAP A and OAP B. If only one OAP is connected to the Eagle, it is shown **rtrv-gpl** and **rept-stat-gpl** command outputs as OAP A and is the only OAP shown in the **rtrv-gpl** and **rept-stat-gpl** command outputs.

To get rid of the alarm condition caused by the mismatched **oap** GPL versions, either the OAP must be upgraded, or the correct **oap** GPL must be loaded from a removable cartridge using the **chg-gpl:appl=oap** command. To determine which action must be performed, enter the **rept-stat-gpl** command. If the **oap** GPL version shown in the **RUNNING** column is less than the **oap** GPL version shown in the **APPROVED** column, then the OAP must be upgraded using the OAP upgrade procedure in the *Release Documentation* manual. If the **oap** GPL version shown in the **RUNNING** column is greater than the **oap** GPL version shown in the **APPROVED** column, then the **oap** GPL must be loaded from the removable cartridge with the **chg-gpl** command.



CAUTION: The `chg-gpl:appl=oap` command copies the system release ID table from the removable cartridge onto the Eagle. This not only changes the approved version number of the `oap` GPL on the Eagle, but will also change the approved GPL version numbers of any GPLs whose version numbers on the removable cartridge are different from the version numbers that are on the Eagle. This results in the cards not running the approved GPL and the `ALM` indicator will be shown in the `rept-stat-gpl` and `rtrv-gpl` command outputs for that GPL. Go to the procedures for that GPL located in this chapter to clear the `ALM` indicator for that GPL.

The removable cartridge that contains the `oap` GPL to be loaded on to the system is required if the `oap` GPL is to be loaded onto the system using the `chg-gpl` command.

Procedure

1. Display the `oap` GPLs on the fixed disk and on the removable cartridge using the `rtrv-gpl:appl=oap` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
OAP	A	028-003-000	028-003-000	-----	-----
OAP	B	028-003-000	028-003-000	-----	-----

2. Display the `oap` GPLs in the database using the `rept-stat-gpl:appl=oap` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 12:55:34 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
OAP       A         028-004-000 ALM           028-003-000 -----
OAP       B         028-003-000           028-003-000 -----
Command Completed.
```

If the `oap` GPL version shown in the `RUNNING` column is less than the `oap` GPL version shown in the `APPROVED` column, go the OAP Upgrade Procedure in the *Release Documentation* manual.

If the `oap` GPL version shown in the `RUNNING` column is greater than the `oap` GPL version shown in the `APPROVED` column, then the `oap` GPL must be loaded from the removable cartridge with the `chg-gpl` command.

If there are two OAPs connected to the Eagle and they are running different `oap` GPL versions, as shown in the output example in this step, the OAP not showing the `ALM` indicator should be upgraded to run the same `oap` GPL version as the one that has the `ALM` indicator.

Go the OAP Upgrade Procedure in the *Release Documentation* manual and upgrade that OAP, then go to step 3.

For this example, the `oap` GPL must be loaded from the removable cartridge using the `chg-gpl` command. Go to step 3.

3. Check the removable cartridge drive on the MDAL card for a removable cartridge. If there is a removable cartridge in the drive, remove it. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.

-
4. Make sure the removable cartridge containing the new software is "write protected" (NOT write enabled). To write protect a removable cartridge, see "Write Protecting the Removable Cartridge" on page 2-6.

-
5. Insert the removable cartridge containing the `oap` GPL into the removable cartridge drive on the MDAL card. For more information on inserting the removable cartridge in the removable cartridge drive, see "Inserting the Removable Cartridge" on page 2-8.

-
6. Display the `oap` GPLs on the fixed disk and on the removable cartridge using the `rtrv-gpl:appl=oap` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
OAP	A	028-003-000	028-003-000	-----	028-004-000
OAP	B	028-003-000	028-003-000	-----	-----

-
7. Load the `oap` GPL from the removable cartridge using the `chg-gpl:appl=oap` command.

These messages should appear.

```
rlghncxa03w 04-06-01 11:43:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

```
System Release ID table upload 1114 completed
System Release ID table upload 1116 completed
```

-
8. Verify the `oap` GPLs on the fixed disk and on the removable cartridge using the `rtrv-gpl:appl=oap` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
GPL Auditing ON
```

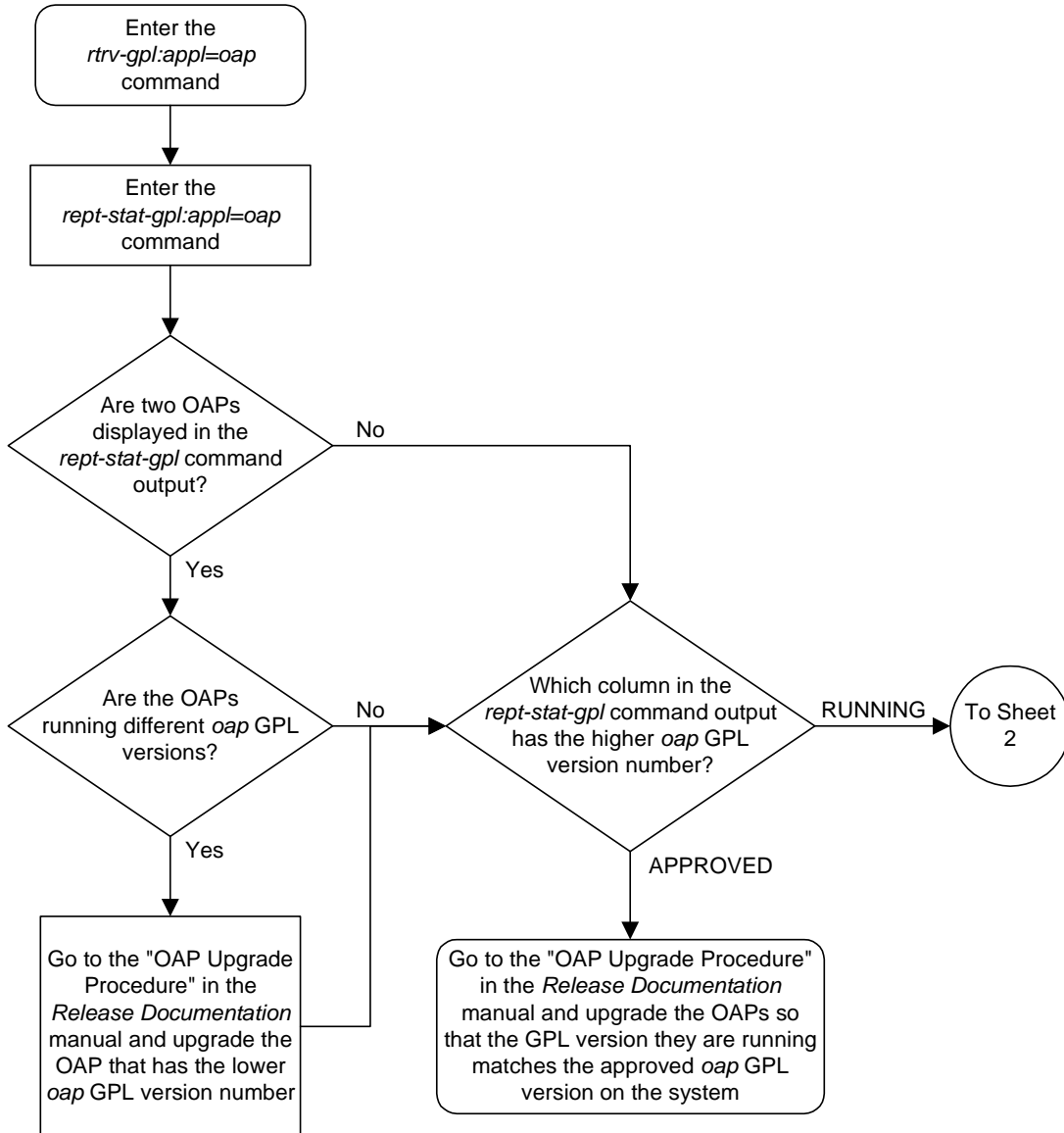
APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
OAP	A	028-004-000	028-004-000	-----	028-004-000
OAP	B	028-004-000	028-004-000	-----	-----

9. Display the `oap` GPLs in the database using the `rept-stat-gpl:appl=oap` command. This is an example of the possible output.

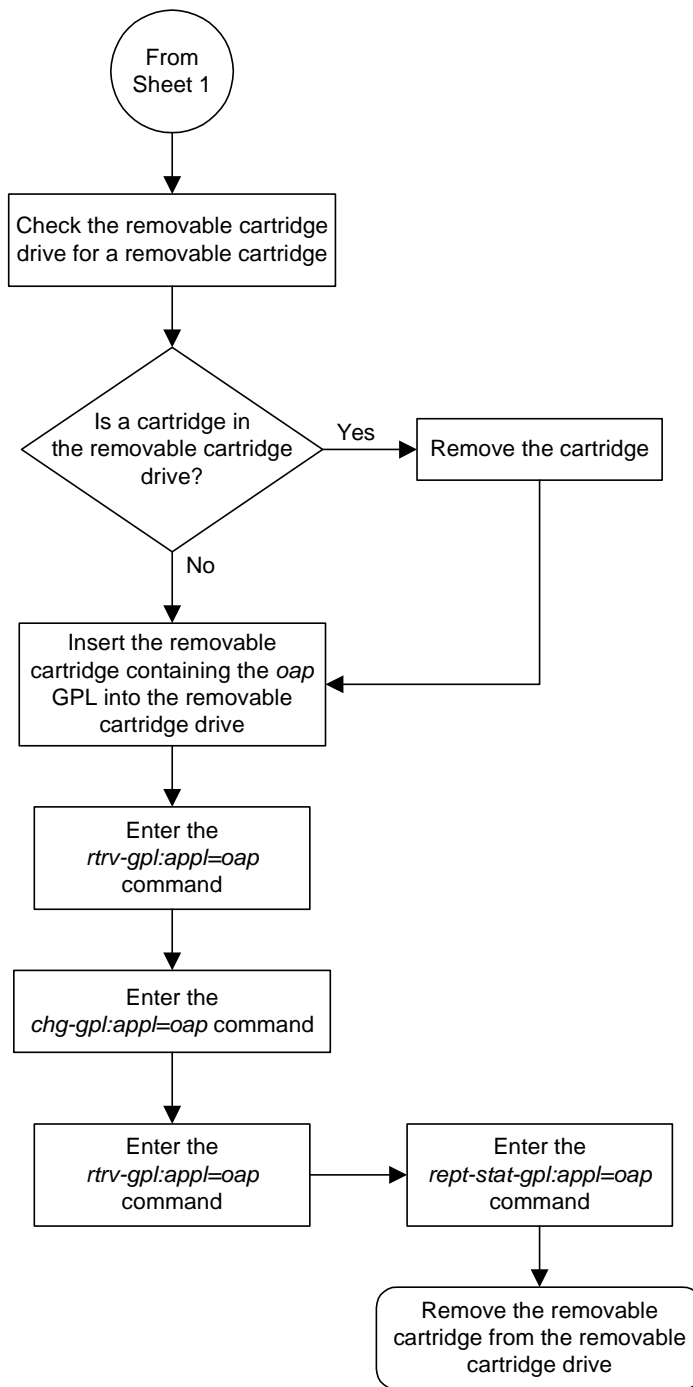
```
rlghncxa03w 04-06-01 12:55:34 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
OAP       A         028-004-000  028-004-000  -----
OAP       B         028-004-000  028-004-000  -----
Command Completed.
```

10. Remove the removable cartridge from the removable cartridge drive on the MDAL card. For more information on removing the removable cartridge from the removable cartridge drive, see “Removing the Removable Cartridge” on page 2-9.
-

Flowchart 3-8. Updating the OAP GPL (Sheet 1 of 2)



Flowchart 3-8. Updating the OAP GPL (Sheet 2 of 2)



Updating the EMAP GPL

This section presents the procedure for updating the **emap** generic program load (GPL). The **emap** GPL is the software that is running on the EOAP used for the GR-376 feature. This software is assigned a version number using the GPL numbering scheme used by the system GPL version numbers. When the EOAP is connected to the system, the **emap** GPL version number is transmitted to the system.

The system's release ID table contains the version numbers of all the GPLs used in the system, including the **emap** GPL. The **emap** GPL version number must match the number contained in the system's release ID table. The system's release ID table contains the approved version number of the **emap** GPL. This version number is shown in the **APPROVED** column of the **rept-stat-gpl** command output and in the **RELEASE** and **APPROVED** columns of the **rtrv-gpl** command outputs. If the **emap** GPL version transmitted to the system does not match the **emap** GPL version number in the system's release ID table, the indicator **ALM** is displayed next to the GPL version in the **RUNNING** column of the **rept-stat-gpl** output. The **RUNNING** column in the **rept-stat-gpl** command output shows what **emap** GPL version the GR-376 EOAP is actually running. The **ALM** indicator is also displayed next to the **APPROVED** column in the **rtrv-gpl** output.

NOTE: There is no trial version of the emap GPL, so dashes are displayed in the TRIAL column in both the rtrv-gpl and rept-stat-gpl command outputs.

If a removable cartridge is in the removable cartridge drive on the MDAL, the **emap** GPL version number on the removable cartridge is displayed in the **REMOVE TRIAL** column in the **rtrv-gpl** command output.

Only the GR-376 EOAPs that are connected to the system are shown in the **rtrv-gpl** and **rept-stat-gpl** command outputs. The GR-376 EOAPs are shown in the **rtrv-gpl** and **rept-stat-gpl** command outputs as EMAP A and EMAP B. If only one GR-376 EOAP is connected to the system, it is shown in the **rtrv-gpl** and **rept-stat-gpl** command outputs as EMAP A and is the only GR-376 EOAP shown in these outputs.

To remove the alarm condition caused by mismatched **emap** GPL versions, either the GR-376 EOAP must be upgraded, or the correct **emap** GPL must be loaded from a removable cartridge using the **chg-gpl:appl=emap** command. To determine which action must be performed, enter the **rept-stat-gpl** command. If the **emap** GPL version shown in the **RUNNING** column is less than the **emap** GPL version shown in the **APPROVED** column, then the GR-376 EOAP must be upgraded using the OAP upgrade procedure in the *Release Documentation* manual. If the **emap** GPL version shown in the **RUNNING** column is greater than the **emap** GPL version shown in the **APPROVED** column, then the **emap** GPL must be loaded from the removable cartridge with the **chg-gpl** command.



CAUTION: The `chg-gpl:appl=emap` command copies the system's release ID table from the removable cartridge onto the system. This not only changes the approved version number of the `emap` GPL on the system, but will also change the approved GPL version numbers of any GPLs whose version numbers on the removable cartridge are different from the version numbers that are on the system. This results in the cards not running the approved GPL and the `ALM` indicator will be shown in the `rept-stat-gpl` and `rtrv-gpl` command outputs for that GPL. Go to the procedures for that GPL located in this chapter to clear the `ALM` indicator for that GPL.

The removable cartridge that contains the `emap` GPL is required to load the `emap` GPL onto the system using the `chg-gpl` command.

Procedure

1. Display the `emap` GPLs on the fixed disk and on the removable cartridge using the `rtrv-gpl:appl=emap` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
EMAP	A	026-015-000	026-015-000	-----	-----
EMAP	B	026-015-000	026-015-000	-----	-----

2. Display the `emap` GPLs in the database using the `rept-stat-gpl:appl=emap` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 12:55:34 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
EMAP      A          026-016-000 ALM           026-015-000  -----
EMAP      B          026-015-000           026-015-000  -----
Command Completed.
```

If the `emap` GPL version shown in the `RUNNING` column is less than the `emap` GPL version shown in the `APPROVED` column, go the OAP Upgrade Procedure in the *Release Documentation* manual.

If the `emap` GPL version shown in the `RUNNING` column is greater than the `emap` GPL version shown in the `APPROVED` column, then the `emap` GPL must be loaded from the removable cartridge with the `chg-gpl` command.

If there are two GR-376 EOAP connected to the system and they are running different `emap` GPL versions, as shown in the output example in this step, the GR-376 EOAP not showing the `ALM` indicator should be upgraded to run the same `emap` GPL version as the one that has the `ALM` indicator.

Go to the OAP Upgrade Procedure in the *Release Documentation* manual and upgrade that GR-376 EOAP, then go to step 3.

For this example, the **emap** GPL must be loaded from the removable cartridge using the **chg-gp1** command. Go to step 3.

-
3. Check the removable cartridge drive on the MDAL card for a removable cartridge. If there is a removable cartridge in the drive, remove it. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.
-
4. Make sure the removable cartridge containing the new software is "write protected" (NOT write enabled). To write protect a removable cartridge, see "Write Protecting the Removable Cartridge" on page 2-6.
-
5. Insert the removable cartridge containing the **emap** GPL into the removable cartridge drive on the MDAL card. For more information on inserting the removable cartridge in the removable cartridge drive, see "Inserting the Removable Cartridge" on page 2-8.
-
6. Display the **emap** GPLs on the fixed disk and on the removable cartridge using the **rtrv-gp1:appl=emap** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
GPL Auditing ON
```

APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
EMAP	A	026-015-000	026-015-000	-----	026-016-000
EMAP	B	026-015-000	026-015-000	-----	-----

-
7. Load the **emap** GPL from the removable cartridge using the **chg-gp1:appl=emap** command.

These messages should appear.

```
rlghncxa03w 04-06-01 11:43:04 GMT EAGLE5 31.6.0
GPL Auditing ON
```

```
System Release ID table upload 1114 completed
System Release ID table upload 1116 completed
```

8. Verify the **emap** GPLs on the fixed disk and on the removable cartridge using the **rtrv-gpl:appl=emap** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 07:01:08 GMT EAGLE5 31.6.0
GPL Auditing ON
```

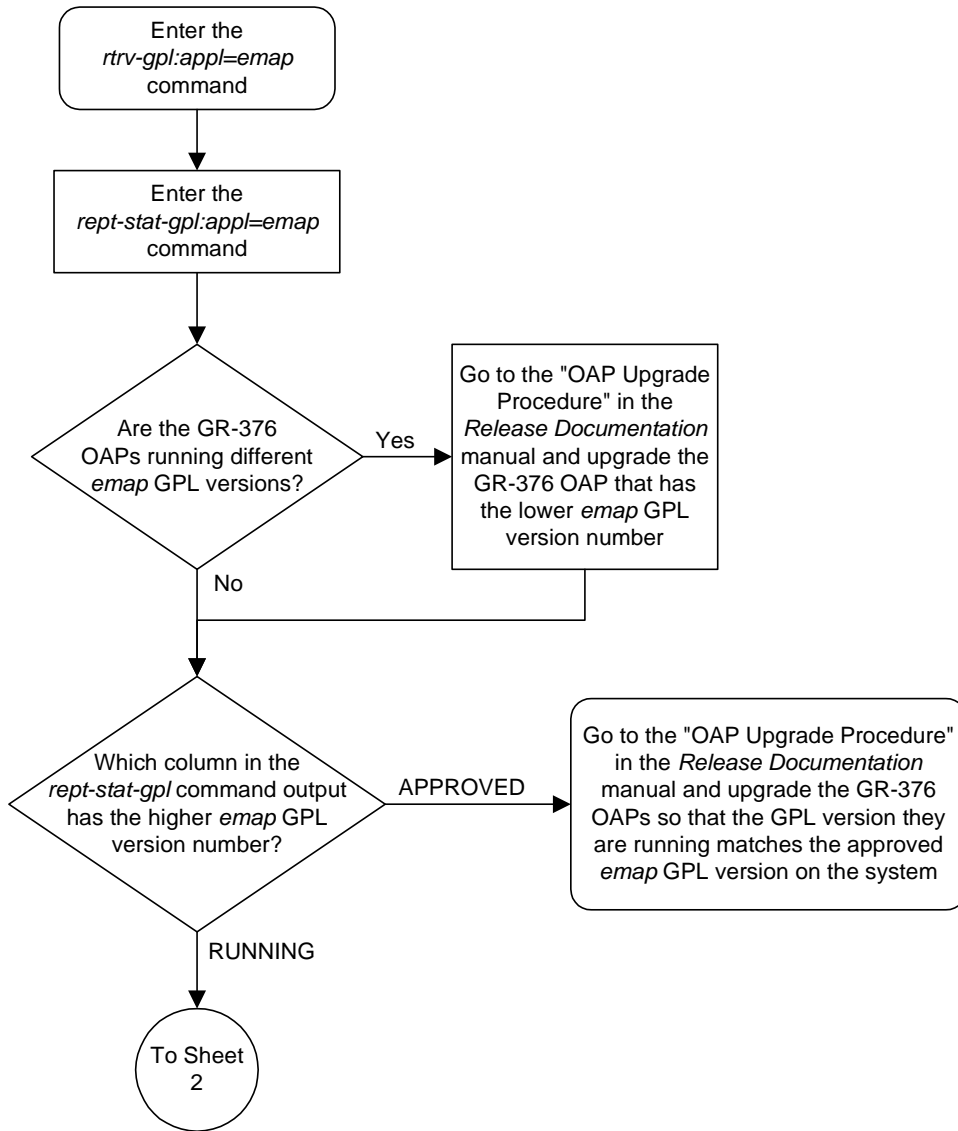
APPL	CARD	RELEASE	APPROVED	TRIAL	REMOVE TRIAL
EMAP	A	026-016-000	026-016-000	-----	026-016-000
EMAP	B	026-016-000	026-016-000	-----	-----

9. Display the **emap** GPLs in the database using the **rept-stat-gpl:appl=emap** command. This is an example of the possible output.

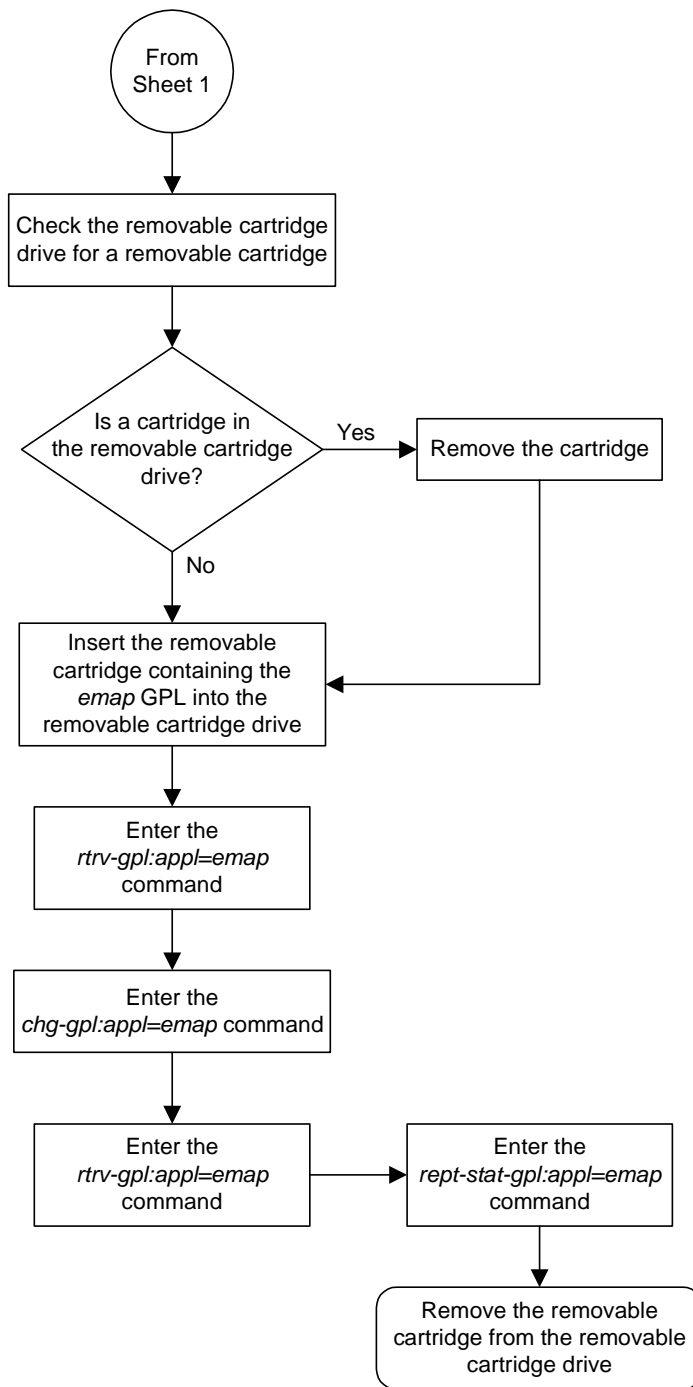
```
rlghncxa03w 04-06-01 12:55:34 GMT EAGLE5 31.6.0
APPL      CARD      RUNNING      APPROVED      TRIAL
EMAP      A          026-016-000  026-016-000  -----
EMAP      B          026-016-000  026-016-000  -----
Command Completed.
```

10. Remove the removable cartridge from the removable cartridge drive on the MDAL card. For more information on removing the removable cartridge from the removable cartridge drive, see "Removing the Removable Cartridge" on page 2-9.
-

Flowchart 3-9. Updating the EMAP GPL (Sheet 1 of 2)



Flowchart 3-9. Updating the EMAP GPL (Sheet 2 of 2)



Reloading the TDM LCA Clock Bitfile

This procedure is used to reload the clock LCA (logic cell array) bitfile on the TDMs using the `init-card` command. To reload the TDM clock LCA bitfile, the GPSM-II card associated with the TDM being reloaded is initialized by entering the `init-card` command with the `initclk=yes` parameter.

It is recommended that the card specified in the `init-card` command is the GPSM-II card in the standby MASP. The `rept-stat-clk` output in step 1 shows which TDM is the standby TDM with the entry (`Standby`) after the TDM's card location. If the TDM in card location 1114 is the standby TDM, card location 1113 must be specified. If the TDM in card location 1116 is the standby TDM, card location 1115 must be specified.

The TDM clock LCA bitfile can be reloaded only on TDMs with part numbers 870-0774-15 or later. If the system contains older TDMs, these TDMs must be replaced with TDMs 870-0774-15 or later to perform this procedure.

NOTE: Contact Tekelec Technical Services before replacing the TDMs. See "Tekelec Technical Services" on page 1-7.

The `init-card` also contains the `force=yes` parameter. The `force=yes` parameter can be used only with the `initclk=yes` parameter. The `force=yes` parameter must be used if reloading the TDM clock LCA bitfile would cause a system clock outage.



CAUTION: A system clock outage can be caused by either the system having only one TDM (a simplex MASP configuration) or if the status of the high-speed clocks, shown in the `rept-stat-clk` output in step 1, on the TDM which is not being reset is Fault. A system clock outage will result in a loss of traffic on some or all signaling links.

Procedure

1. Verify the status of the high-speed clocks by entering the `rept-stat-clk` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
CARD LOC = 1114 (Active )   CARD LOC = 1116 (Standby )
PRIMARY BITS = Active      PRIMARY BITS = Active
SECONDARY BITS = Idle      SECONDARY BITS = Idle
HS PRIMARY CLK = Active    HS PRIMARY CLK = Active
HS SECONDARY CLK = Idle    HS SECONDARY CLK = Idle
HS CLK TYPE = RS422        HS CLK TYPE = RS422
HS CLK LINELEN = LONGHAUL  HS CLK LINELEN = LONGHAUL
```

```

                                PST          SST          AST
SYSTEM CLOCK                    IS-NR          Active      -----
ALARM STATUS = No Alarms.
# Cards using CLK A = 009      # Cards with bad CLK A = 000
# Cards using CLK B = 000      # Cards with bad CLK B = 000
# Cards using CLK I = 000
```

```

                                PST          SST          AST
HS SYSTEM CLOCK                  IS-NR          Active      -----
ALARM STATUS = No Alarms.
# Cards using HS CLK A = 002   # Cards with bad HS CLK A = 000
# Cards using HS CLK B = 000   # Cards with bad HS CLK B = 000
# Cards using HS CLK I = 000
```

Command Completed.

If the `rept-stat-clk` output does not show any high-speed clocks (`HS SYSTEM CLOCK`, `HS PRIMARY CLK`, `HS SECONDARY CLK`, `HS CLK TYPE`, and `HS CLK LINELEN` fields), the system does not contain any cards that are capable of using high-speed master timing.

NOTE: If the `HS CLK TYPE` and `HS CLK LINELEN` values shown in step 1 are set to the system default values (`HS CLK TYPE = RS422` and `HS CLK LINELEN = LONGHAUL`), skip step 2 and go to step 3.

2. Visually verify the part numbers of both TDMs in the system. To load the TDM clock LCA bitfile, the part numbers of both TDMs must be 870-0774-15 or later.

If the TDM part numbers are 870-0774-15 or later, go to step 3.

If the TDM part numbers are not 870-0774-15 or later, the TDMs must be replaced with TDM part numbers 870-0743-15 or later. Contact Tekelec Technical Services before replacing the TDMs. See "Tekelec Technical Services" on page 1-7. If the older TDMs are not replaced, this procedure cannot be performed.

3. Display the terminal configuration in the database with the `rtrv-trm` command.

If any OAP terminals are present, they must be taken out of service. The OAP terminals are shown in the output with the entry `OAP` in the `TYPE` field. If no OAP terminals are shown in the `rtrv-trm` command output, skip steps 4 through 6 and go to step 7.

This is an example of the possible output. In this example, the OAP terminals are terminals 6 and 9.

```

rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
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  TYPE      LOC      TMOUT  MXINV  DURAL
17   TELNET    1201     60     5      00:30:00
18   TELNET    1201     60     5      00:30:00
19   TELNET    1201     60     5      00:30:00
20   TELNET    1201     60     5      00:30:00
21   TELNET    1201     60     5      00:30:00
22   TELNET    1201     60     5      00:30:00
23   TELNET    1201     60     5      00:30:00
24   TELNET    1201     60     5      00:30:00
25   TELNET    1203     60     5      00:30:00
26   TELNET    1203     60     5      00:30:00
27   TELNET    1203     60     5      00:30:00
28   TELNET    1203     60     5      00:30:00
39   TELNET    1203     60     5      00:30:00
30   TELNET    1203     60     5      00:30:00
31   TELNET    1203     60     5      00:30:00
32   TELNET    1203     60     5      00:30:00
33   TELNET    1208     60     5      00:30:00
34   TELNET    1208     60     5      00:30:00
35   TELNET    1208     60     5      00:30:00
36   TELNET    1208     60     5      00:30:00
37   TELNET    1208     60     5      00:30:00
38   TELNET    1208     60     5      00:30:00
39   TELNET    1208     60     5      00:30:00
40   TELNET    1208     60     5      00:30:00

TRM  TRAF  LINK  SA  SYS  PU  DB
1    NO   YES   NO  YES  NO  YES
2    NO   NO    NO  NO   NO  NO
.
.
.
39   NO   NO    NO  NO   NO  NO
40   NO   NO    NO  NO   NO  NO

```

```

APP APP
TRM  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
.
.
.
39    NO  NO NO   NO NO NO  NO NO NO  NO NO NO  NO
40    NO  NO NO   NO NO NO  NO NO NO  NO NO NO  NO

```

4. Display the status of the terminals with the `rept-stat-trm` command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
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    -----
17   IS-NR    Active    -----
18   IS-NR    Active    -----
19   IS-NR    Active    -----
20   IS-NR    Active    -----
21   IS-NR    Active    -----
22   IS-NR    Active    -----
23   IS-NR    Active    -----
24   IS-NR    Active    -----
25   IS-NR    Active    -----
26   IS-NR    Active    -----
27   IS-NR    Active    -----
28   IS-NR    Active    -----
29   IS-NR    Active    -----
30   IS-NR    Active    -----
31   IS-NR    Active    -----
32   IS-NR    Active    -----
33   IS-NR    Active    -----
34   IS-NR    Active    -----
35   IS-NR    Active    -----
36   IS-NR    Active    -----
37   IS-NR    Active    -----
38   IS-NR    Active    -----
39   IS-NR    Active    -----
40   IS-NR    Active    -----

```

Command Completed.

5. Place the OAP terminals out of service using the `rmv-trm` command.

The `force=yes` parameter must be used when placing the last OAP terminal out of service.

To place the OAP terminals out of service in this example, enter these commands.

```
rmv-trm:trm=6
rmv-trm:trm=9:force=yes
```



CAUTION: Placing the OAP terminals out of service will disable the SEAS feature and stop new LNP updates being sent from the LSMS to the Eagle through the OAPs.

If the status of any of the terminals shown in the `PST` field in step 4 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.

This message should appear when each of these commands have successfully completed.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Inhibit message sent to terminal

rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Command Completed.
```

NOTE: Step 6 is performed only if the OAP terminals were placed out of service in step 5. If the OAP terminals were not placed out of service in step 5, skip step 6 and go to step 7.

6. 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 used in step 5. For this example, enter these commands.

```
chg-trm:trm=6:type=none
chg-trm:trm=9:type=none
```

This message should appear when these commands have successfully completed.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
CHG-TRM: MASP B - COMPLTD
```

- Place the GPSM-II card in the standby MASP out of service using the `rmv-card` command.

The `rept-stat-clk` output in step 1 shows which TDM is the standby TDM with the entry (**Standby**) after the TDM's card location. If the TDM in card location 1114 is the standby TDM, card location 1113 must be specified in this step. If the TDM in card location 1116 is the standby TDM, card location 1115 must be specified in this step.

For this example, enter this command.

```
rmv-card:loc=1115
```

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

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Card has been inhibited.
```

- Load the TDM clock LCA bitfile onto the TDM associated with the GPSM-II card inhibited in step 7 using the `init-card` command with the `initclk=yes` parameter and the card location of the standby GPSM-II card.



CAUTION: If reloading the TDM clock LCA bitfile would cause a system clock outage, the `force=yes` parameter must be used with the `init-card` command. A system clock outage can be caused by either the system having only one TDM (a simplex MASP configuration) or if the status of the high-speed clocks, shown in the `rept-stat-clk` output in step 1, on the TDM which is not being reset is Fault. A system clock outage will result in a loss of traffic on some or all signaling links.

For this example, enter this command.

```
init-card:initclk=yes:loc=1115
```

When this command has successfully completed, these messages should appear.

```
rlghncxa03w 04-06-01 13:01:59 GMT EAGLE5 31.6.0
Init Card command issued to card 1115
;

rlghncxa03w 04-06-01 13:01:59 GMT EAGLE5 31.6.0
* 3021.0013 * CARD 1115 EOAM          Card is isolated from the system
;

rlghncxa03w 04-06-01 13:03:10 GMT EAGLE5 31.6.0
3022.0014   CARD 1115 EOAM          Card is present
ASSY SN:   1216115
```

9. Put the GPSM-II card that was inhibited in step 8 back into service using the **rst-card** command with the card location specified in step 8. For this example, enter this command.

```
rst-card:loc=1115
```

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

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Card has been allowed.
```

NOTE: If you do not wish to load the TDM clock LCA bitfile on the other TDM in the system, skip this step and go to step 11.

10. If you wish to load the TDM clock LCA bitfile onto the TDM making up the active MASP, enter the **init-card** command specifying the location of the GPSM-II card making up active MASP. Initializing the GPSM-II card of the active MASP makes the MASPs switch roles. The active MASP becomes the standby MASP, and the standby

For this example, enter the **init-card:loc=1113** command. This message should appear.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
Init Card command issued to card 1113
```

After the **init-card** command has completed, repeat steps 7, 8, and 9, specifying the card location used in the **init-card** command.

11. Verify the status of the high-speed clocks by entering the **rept-stat-clk** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
CARD LOC = 1114 (Standby )   CARD LOC = 1116 (Active )
PRIMARY BITS      = Active   PRIMARY BITS      = Active
SECONDARY BITS   = Idle     SECONDARY BITS   = Idle
HS PRIMARY CLK   = Active   HS PRIMARY CLK   = Active
HS SECONDARY CLK = Idle     HS SECONDARY CLK = Idle
HS CLK TYPE      = RS422    HS CLK TYPE      = RS422
HS CLK LINELEN   = LONGHAUL HS CLK LINELEN   = LONGHAUL

SYSTEM CLOCK      PST        SST        AST
ALARM STATUS      IS-NR      Active     -----
                  = No Alarms.
# Cards using CLK A = 009    # Cards with bad CLK A = 000
# Cards using CLK B = 000    # Cards with bad CLK B = 000
# Cards using CLK I = 000

HS SYSTEM CLOCK   PST        SST        AST
ALARM STATUS      IS-NR      Active     -----
                  = No Alarms.
# Cards using HS CLK A = 002 # Cards with bad HS CLK A = 000
# Cards using HS CLK B = 000 # Cards with bad HS CLK B = 000
# Cards using HS CLK I = 000

Command Completed.
```

NOTE: If OAP terminals are not shown in the `rtrv-trm` command output in step 3, skip steps 12 through 14, and go to step 15.

12. Change the terminal type of the terminals that were changed to **NONE** in step 6 to the terminal type OAP with the `chg-trm` command and the `type=oap` parameter. The terminal type is shown in the TYPE field in the `rtrv-trm` command output in step 3. For this example, enter these commands.

```
chg-trm:trm=6:type=oap
```

```
chg-trm:trm=9:type=oap
```

This message should appear when these commands have successfully completed.

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
CHG-TRM: MASP B - COMPLTD
```

13. If the OAP terminals were placed out of service in step 5, 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
```

This message should appear when each of these commands have successfully completed.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Allow message sent to terminal
```

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Command Completed.
```

14. Verify that the terminals are in service with the **rept-stat-trm** command. This is an example of the possible output.

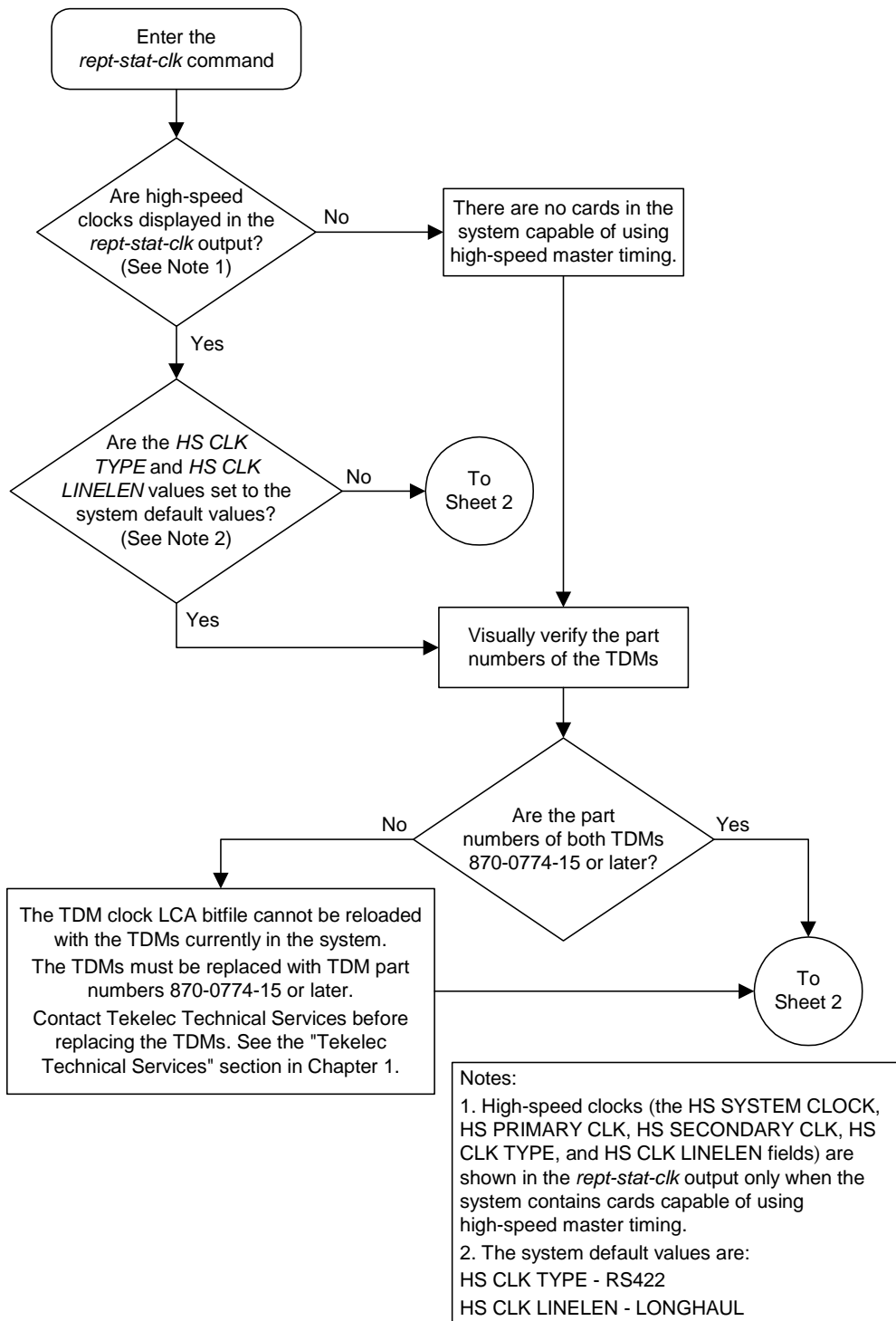
```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
TRM  PST          SST          AST
1    IS-NR        Active       -----
2    IS-NR        Active       -----
3    IS-NR        Active       -----
4    IS-NR        Active       -----
5    IS-NR        Active       -----
6    IS-NR        Active       -----
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       -----
17   IS-NR        Active       -----
18   IS-NR        Active       -----
19   IS-NR        Active       -----
20   IS-NR        Active       -----
21   IS-NR        Active       -----
22   IS-NR        Active       -----
23   IS-NR        Active       -----
24   IS-NR        Active       -----
25   IS-NR        Active       -----
26   IS-NR        Active       -----
27   IS-NR        Active       -----
28   IS-NR        Active       -----
29   IS-NR        Active       -----
30   IS-NR        Active       -----
31   IS-NR        Active       -----
32   IS-NR        Active       -----
33   IS-NR        Active       -----
34   IS-NR        Active       -----
35   IS-NR        Active       -----
36   IS-NR        Active       -----
37   IS-NR        Active       -----
38   IS-NR        Active       -----
39   IS-NR        Active       -----
40   IS-NR        Active       -----
```

Command Completed.

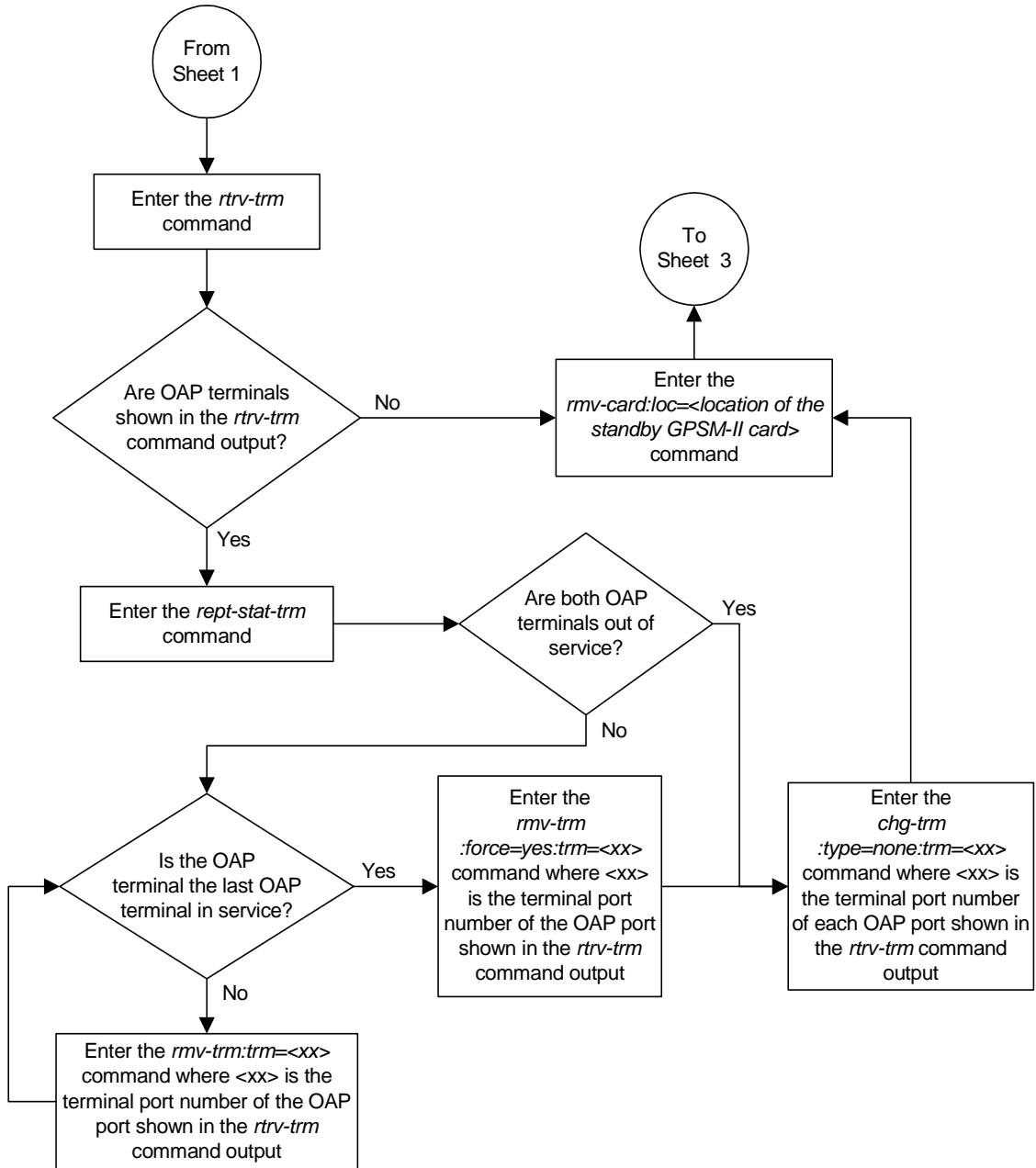
15. Back up the new changes using the **chg-db:action=backup:dest=fixed** command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

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

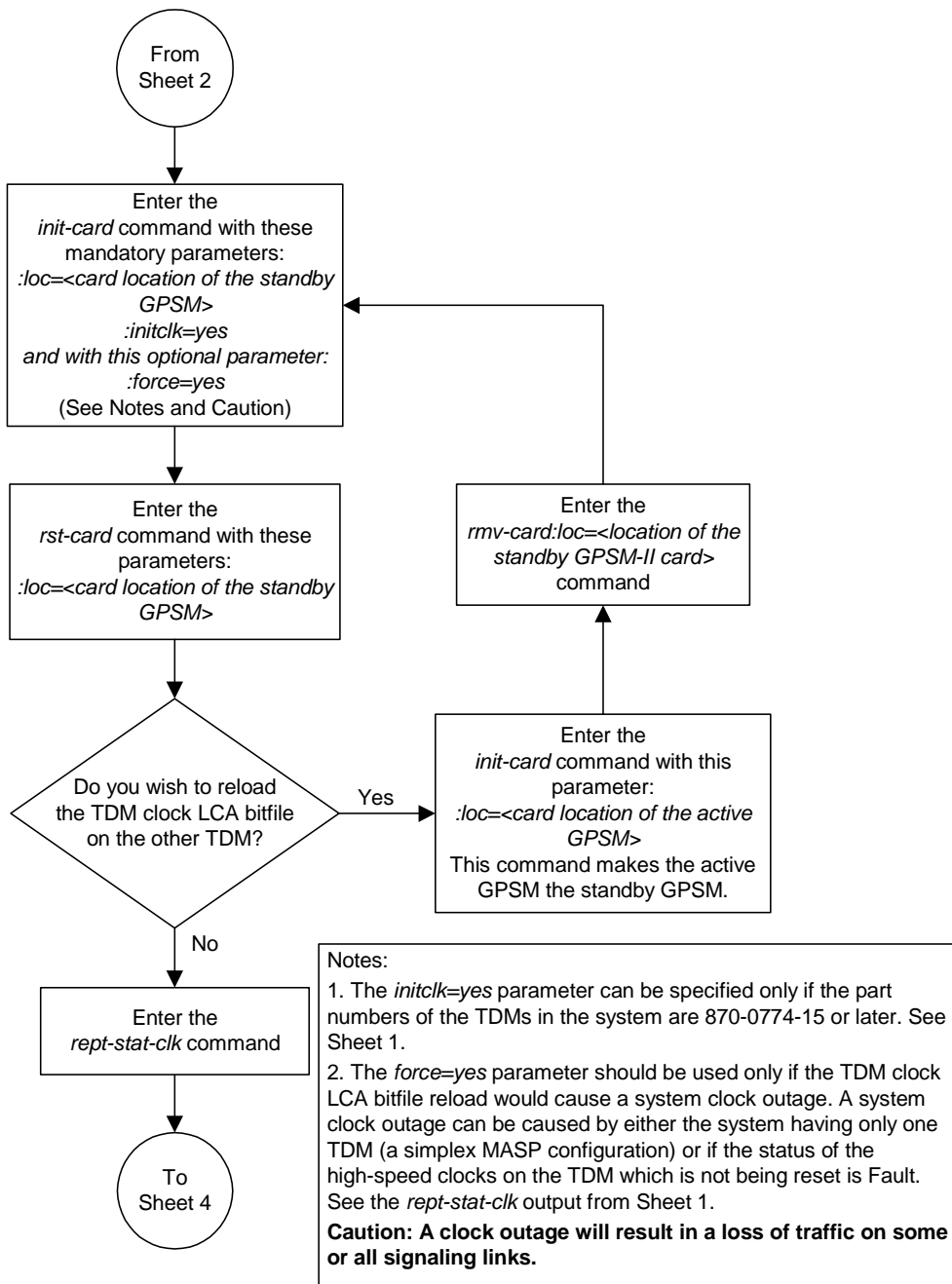
Flowchart 3-10. Reloading the TDM LCA Clock Bitfile (Sheet 1 of 4)



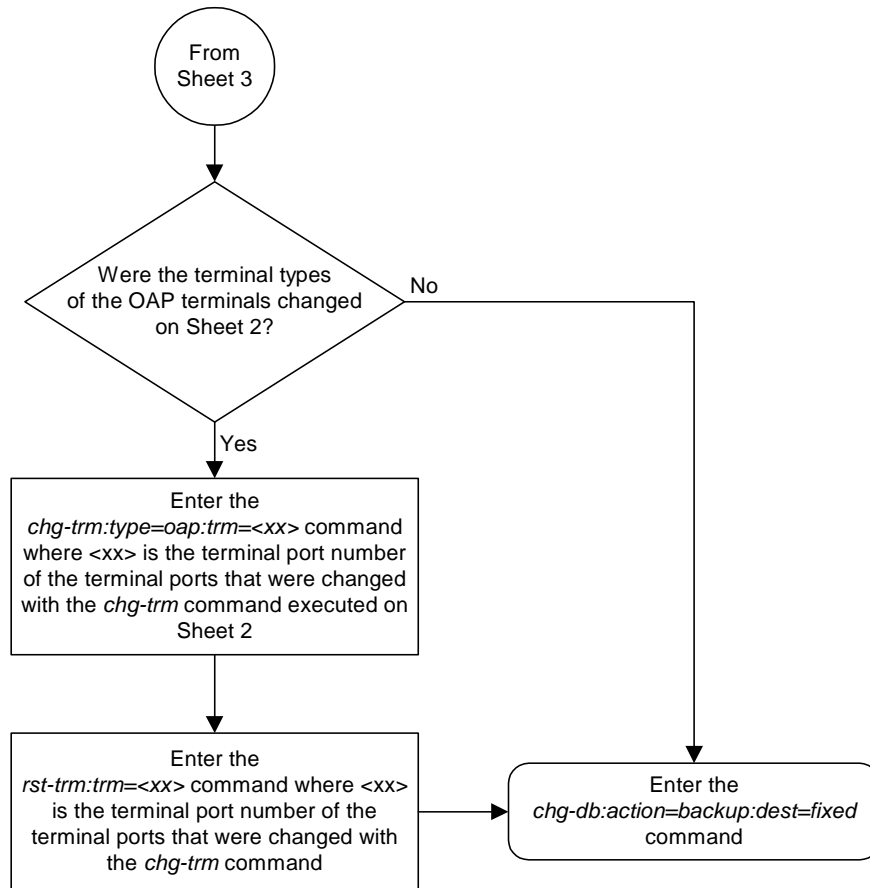
Flowchart 3-10. Reloading the TDM LCA Clock Bitfile (Sheet 2 of 4)



Flowchart 3-10. Reloading the TDM LCA Clock Bitfile (Sheet 3 of 4)



Flowchart 3-10. Reloading the TDM LCA Clock Bitfile (Sheet 4 of 4)



4

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Introduction

This chapter contains system administration procedures. The items discussed in this section are:

- The date and time
- User IDs and passwords
- Terminal configuration
- Shelves
- Cards
- Security Log
- Unauthorized Use Warning Message
- UIM Thresholds
- MCPMs, IP links, and FTP servers for the Measurements Platform
- IPSMs for the IP User Interface (Telnet) feature
- Configuring the Network Security Options
- Configuring the Restore Device State Option

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

Setting the System Clock and Date

This procedure is used to set the system's clock and date.

Procedure

1. To set the date, use the **set-date** command. The date must be entered in the form YYMMDD (YY for the year, MM for the month, and DD for the day of the month). For example, to set the date to March 7, 2003, enter this command.

```
set-date : date = 030307
```

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

```
rlghncxa03w 04-06-01 09:33:19 GMT EAGLE5 31.6.0
Date set complete.
```

2. To set the clock, use the **set-time** command. The time must be entered in the form HHMM (HH for the hour, and MM for the minutes). The hour is based on a 24-hour clock. The time zone can also be specified. If the time zone is not specified, then the system uses the time zone that was entered with the previous **set-time** command. The values for the time zone parameter are shown in Table 4-1. The entry in the Abbreviation column of Table 4-1 is the value to be specified for the time zone parameter.

Table 4-1. Time Zones

Time Zone	Abbreviation	Offset from GMT (hours)
Greenwich Mean Time	GMT	0
US Eastern Daylight Time	EDT	- 4
US Eastern Standard Time	EST	- 5
US Pacific Daylight Time	PDT	- 7
US Pacific Standard Time	PST	- 8
US Mountain Daylight Time	MDT	- 6
US Mountain Standard Time	MST	- 7
US Central Daylight Time	CDT	- 5
US Central Standard Time	CST	- 6
US Hawaiian Daylight Time	HDT	- 9
US Hawaiian Standard Time	HST	- 10
Atlantic Daylight Time	ADT	- 3
Atlantic Standard Time	AST	- 4
Western European Time	WET	0
Universal Time Coordinated	UTC	0

Table 4-1. Time Zones (Continued)

Time Zone	Abbreviation	Offset from GMT (hours)
British Summer Time	BST	+ 1
Western European Summer Time	WEST	+ 1
Central European Time	CET	+ 1
Central European Summer Time	CEST	+ 2
Eastern European Time	EET	+ 2
Eastern European Summer Time	EEST	+ 3
French Summer Time	FST	+ 2
French Winter Time	FWT	+ 1
Brazil Standard Time	BRA	- 3
Middle European Time	MET	+ 1
Middle European Summer Time	MEST	+ 2
Moscow Time	MSK	+ 3
Moscow Summer Time	MSD	+ 4
Australian Eastern Standard Time	AEST	+ 10
Australian Eastern Daylight Time	AEDT	+ 11
Australian Western Standard Time	AWST	+ 8
Australian Western Daylight Time	AWDT	+ 9
Australian Central Standard Time	ACST	+ 9.5
Australian Central Daylight Time	ACDT	+ 10.5
New Zealand Standard Time	NZST	+ 12
New Zealand Daylight Time	NZDT	+ 13
South African Standard Time	SAST	+ 2
China Coast Time	CCT	+ 8
Republic of Korea	ROK	+ 9
India Standard Time	IST	+ 5.5
India Daylight Time	IDT	+ 6.5
Alaska Standard Time	AKST	-9
Alaska Daylight Time	AKDT	-8
Newfoundland Standard Time	NST	-3.5
Newfoundland Daylight Time	NDT	-2.5

System Administration Procedures

For example, to set the time to 14:20 (2:20 PM) in the Greenwich Mean time zone, enter this command.

```
set-time:time=1420:tz=gmt
```

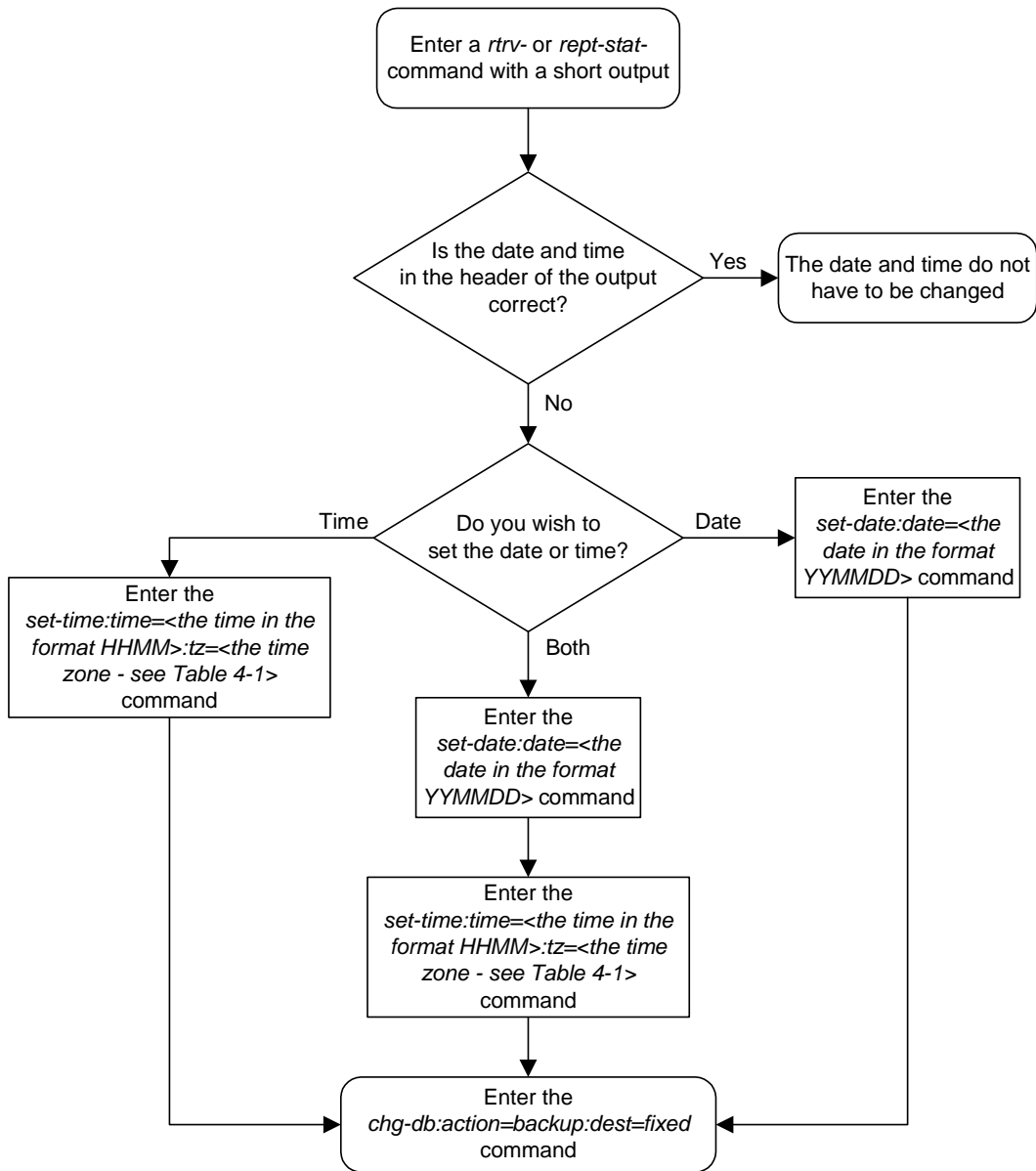
When this command has successfully completed, this message should appear.

```
rlghncxa03w 04-06-01 14:20:00 GMT EAGLE5 31.6.0  
Time set complete.
```

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

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

Flowchart 4-1. Setting the System Clock and Date



Changing the Security Defaults

This procedure is used to change the user ID and password requirements for the Eagle using the `chg-secu-dflt` command. The `chg-secu-dflt` command uses these parameters.

:page – The amount of time, in days, that the specified user’s password can be used before the user must change their password. The value of this parameter applies to all system user IDs unless a different value is specified for a specific user ID with the `ent-user` or `chg-user` command.

:uout – The number of consecutive days that a user ID can remain active in the system and not be used. When the user ID has not been used for the number of days specified by the `uout` parameter, that user ID is no longer valid and the system rejects any attempt to log into the system with that user ID. The value of this parameter applies to all user IDs in the system unless a different value is specified for a specific user ID with the `ent-user` or `chg-user` command.

:multlog – are the user IDs allowed to log on to more than one terminal at any given time.

:minlen – the minimum length of the password

:alpha – the minimum number of alpha characters (a - z)

:num – the minimum number of numeric characters (0 - 9)

:punc – the minimum number of punctuation characters (any printable character that is not an alphabetic character, a numeric character, the space bar)

:wrnln – the line number of the text of the unauthorized use warning message. The unauthorized use warning message can contain from 1 to 20 lines of text.

:wrntx – the text of the line number of the unauthorized use warning message. The each line of text can contain up to 70 alphanumeric characters and must be enclosed in quotes (“”).

This procedure does not use the `wrnln` and `wrntx` parameters. These parameters are used to configure the unauthorized use warning message that is displayed when a user logs into the system. To configure the unauthorized use warning message, go to the “Configuring the Unauthorized Use Warning Message” procedure on page 4-11.

Even though the `minlen` parameter specifies the minimum length of a password, the password must also contain the minimum number characters defined by the `alpha`, `num`, and `punc` parameters.

The examples in this procedure are used to change the security defaults to these values.

page = 100 days

uout = 50 days

multlog = **yes**, to allow the user IDs in the system to log onto more than one terminal at any given time.

minlen = 12 characters

alpha = 2 characters

num = 2 characters

punc = 2 characters

NOTE: When the system is delivered to the user, the database will contain these security default values.

:page = 90 days

:uout = 90 days

:multlog = no

:minlen = 8 characters

:alpha = 1 character

:num = 1 character

:punc = 1 character

The **rtrv-secu-dflt** command uses the **msg** parameter to specify whether the unauthorized use warning message text is displayed in the command output. The **msg** parameter has two values.

yes – the unauthorized use warning message text is displayed.

no – the unauthorized use warning message text is not displayed.

The default value for this parameter is **no**.

Regardless of the value specified for the **msg** parameter, the user ID and password security defaults are displayed in the **rtrv-secu-dflt** command output.

Procedure

1. Display the current security defaults by entering the **rtrv-secu-dflt** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
SECURITY DEFAULTS
-----
PAGE           60
UOUT           90
MULTLOG        NO
MINLEN         8
ALPHA          1
NUM            1
PUNC           1
```

2. Change the current security defaults by entering the **chg-secu-dflt** command. For this example, enter this command.

```
chg-secu-dflt:page=100:uout=50:multlog=yes:minlen=12:alpha=2
:num=2:punc=2
```

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

```
rlghncxa03w 04-06-01 11:43:04 GMT EAGLE5 31.6.0
CHG-SECU-DFLT: MASP A - COMPLTD
```

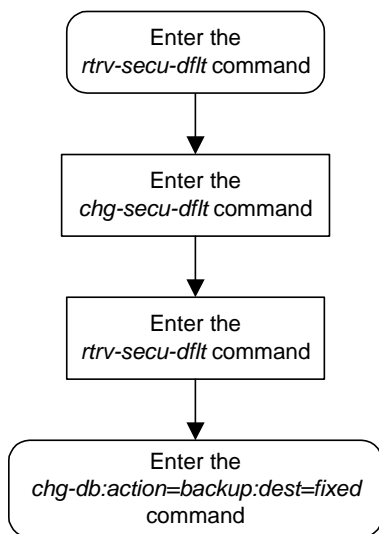
3. Verify the changes with the **rtrv-secu-dflt** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
SECURITY DEFAULTS
-----
PAGE           100
UOUT           50
MULTLOG        YES
MINLEN         12
ALPHA          2
NUM            2
PUNC           2
```

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

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

Flowchart 4-2. Changing the System's Security Defaults



Configuring the Unauthorized Use Warning Message

This procedure is used to configure the unauthorized use warning message that is displayed after a user successfully logs into the system. This message is configured with the **wrnln** and **wrntx** parameters of the **chg-secu-dflt** command. These are all of the parameters of the **chg-secu-dflt** command.

:page – The amount of time, in days, that the specified user's password can be used before the user must change their password. The value of this parameter applies to all user IDs in the system unless a different value is specified for a specific user ID with the **ent-user** or **chg-user** command.

:uout – The number of consecutive days that a user ID can remain active in the system and not be used. When the user ID has not been used for the number of days specified by the **uout** parameter, that user ID is no longer valid and the system rejects any attempt to log into the system with that user ID. The value of this parameter applies to all user IDs in the system unless a different value is specified for a specific user ID with the **ent-user** or **chg-user** command.

:multlog – are the user IDs allowed to log on to more than one terminal at any given time.

:minlen – the minimum length of the password

:alpha – the minimum number of alpha characters (a - z)

:num – the minimum number of numeric characters (0 - 9)

:punc – the minimum number of punctuation characters (any printable character that is not an alphabetic character, a numeric character, the space bar)

:wrnln – the line number of the text of the unauthorized use warning message. The unauthorized use warning message can contain from 1 to 20 lines of text.

:wrntx – the text of the line number of the unauthorized use warning message. The each line of text can contain up to 70 alphanumeric characters and must be enclosed in quotes (""). A text line with no characters can be specified with this text string, "". This prevents the text line from being displayed in the unauthorized use warning message. A blank line is specified with this text string, " ", the blank space character enclosed in double quotes.

The `chg-secu-dflt` parameters `page`, `uout`, `multlog`, `minlen`, `alpha`, `num`, and `punc` are used to change the user ID and password security defaults on the system. To change the user ID and password security defaults, go to the “Changing the Security Defaults” procedure on page 4-7.

NOTE: when the system is delivered to the user, the database will contain this login warning message.

NOTICE: This is a private computer system.
Unauthorized access or use may lead to prosecution.

The example in this procedure is used to change the unauthorized use warning message from the system default message to this message.

```
*****
*   NOTICE: This is a private computer system.           *
*   UNAUTHORIZED ACCESS OR USE WILL BE PROSECUTED        *
*                                                         *
*   02/17/00 Notice!!! System will be upgraded between   *
*               the hours of 2am-3am on 11/23/96         *
*                                                         *
*                                                         *
*****
```

The `rtrv-secu-dflt` command uses the `msg` parameter to specify whether the unauthorized use warning message text is displayed in the command output. The `msg` parameter has two values.

yes – the unauthorized use warning message text is displayed.

no – the unauthorized use warning message text is not displayed.

The default value for this parameter is **no**.

Regardless of the value specified for the `msg` parameter, the user ID and password security defaults are displayed in the `rtrv-secu-dflt` command output.

Procedure

1. Display the current text of the unauthorized use warning message by entering the `rtrv-secu-dflt` command with the `msg=yes` parameter. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:05 GMT  EAGLE5 31.6.0
SECURITY DEFAULTS
-----
PAGE                60
UOUT                90
MULTLOG             NO
MINLEN              8
ALPHA                1
NUM                 1
PUNC                 1
WARNING MESSAGE
-----
1:"NOTICE: This is a private computer system."
2:"Unauthorized access or use may lead to prosecution."
3:" "
4:" "
5:" "
6:" "
7:" "
8:" "
9:" "
10:" "
11:" "
12:" "
13:" "
14:" "
15:" "
16:" "
17:" "
18:" "
19:" "
20:" "
```

2. Change the unauthorized use warning message by entering the **chg-secu-dflt** command with the **wrnln** and **wrntx** parameters. For this example, enter these commands.

```

chg-secu-dflt:wrnln=1:wrntx="*****"
chg-secu-dflt:wrnln=2:wrntx="* NOTICE: This is a private computer.*"
chg-secu-dflt:wrnln=3:wrntx="* UNAUTHORIZED ACCESS OR USE WILL BE PROSECUTED*"
chg-secu-dflt:wrnln=4:wrntx="* .....*"
chg-secu-dflt:wrnln=5:wrntx=" .....*"
chg-secu-dflt:wrnln=6:wrntx="* 11/17/97 Notice!!! System will be upgraded between*"
chg-secu-dflt:wrnln=7:wrntx="* .....*"
chg-secu-dflt:wrnln=8:wrntx="* .....*"
chg-secu-dflt:wrnln=9:wrntx="* .....*"
chg-secu-dflt:wrnln=10:wrntx="*****"
chg-secu-dflt:wrnln=11:wrntx=" "
chg-secu-dflt:wrnln=12:wrntx=" "
chg-secu-dflt:wrnln=13:wrntx=" "
chg-secu-dflt:wrnln=14:wrntx=" "
chg-secu-dflt:wrnln=15:wrntx=" "
chg-secu-dflt:wrnln=16:wrntx=" "
chg-secu-dflt:wrnln=17:wrntx=" "
chg-secu-dflt:wrnln=18:wrntx=" "
chg-secu-dflt:wrnln=19:wrntx=" "
chg-secu-dflt:wrnln=20:wrntx=" "

```

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

```

rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
CHG-SECU-DFLT: MASP A - COMPLTD

```

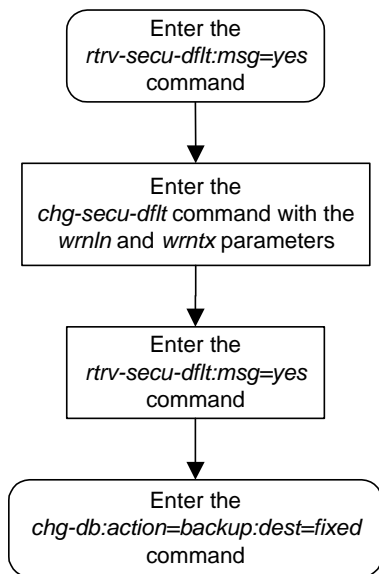
3. Verify the changes with the `rtrv-secu-dflt:msg=yes` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
SECURITY DEFAULTS
-----
PAGE                60
UOUT                90
MULTLOG            NO
MINLEN              8
ALPHA                1
NUM                 1
PUNC                 1
WARNING MESSAGE
-----
1:*****
2:*  NOTICE: This is a private computer system.  *
3:*  UNAUTHORIZED ACCESS OR USE WILL BE PROSECUTED  *
4:*  *
5:*  *
6:*  02/17/00 Notice!!! System will be upgraded between *
7:*  the hours of 2am-3am on 02/07/00  *
8:*  *
9:*  *
10:*****
11:" "
12:""
13:""
14:""
15:""
16:""
17:""
18:""
19:""
20:""
```

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

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

Flowchart 4-3. Configuring the Unauthorized Use Warning Message



Changing the Security Log Characteristics

This procedure is used to change the characteristics of the system's security log using the `chg-attr-secu log` command. The `chg-attr-secu log` command uses these parameters.

:upldalm – whether the security log alarms are on. The security log alarms are:

- **upload required** – the percentage of the maximum capacity of the security log exceeds the value of the `upslg` parameter. The security log entries need to be copied to the file transfer area of the fixed disk.
- **log overflowed** – the security log has become 100% full and log entries are being lost. The security log entries must be copied to the file transfer area of the fixed disk.
- **standby log contains >0 un-uploaded entries** – the security log on the standby fixed disk contains entries that have not been copied to the file transfer area of the fixed disk. Usually, the security log on the standby fixed disk contains no entries, but for some reason, for example, a MASP switchover resulting in the active MASP security log becoming the standby MASP security log, the security log on the standby fixed disk contains uncopied security log entries.

The `upldalm=yes` parameter turns the security log alarms on. The `upldalm=no` turns the security log alarms off. If a security log alarm has been generated, the `upldalm=no` parameter lowers the alarm.

:upslg – the threshold at which the system generates the upload required security log alarm, if the `upldalm=yes` parameter has been specified. The threshold is the percentage of the maximum capacity of the security log.

When the system is delivered to the user, the security log characteristics will be set to these values:

```
:upldalm = yes
```

```
:upslg = 90
```

Procedure

1. Display the current characteristics of the security log by entering the `rtrv-attr-secu log` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
Security log attributes
-----
UPLDALM      no
UPSLG        80
```

2. Change the characteristics of the security log by entering the `chg-attr-secu-log` command. For this example, enter this command.

`chg-attr-secu-log:upldalm=yes:upslg=90`

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

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
CHG-ATTR-SECULOG: MASP A - COMPLTD
```

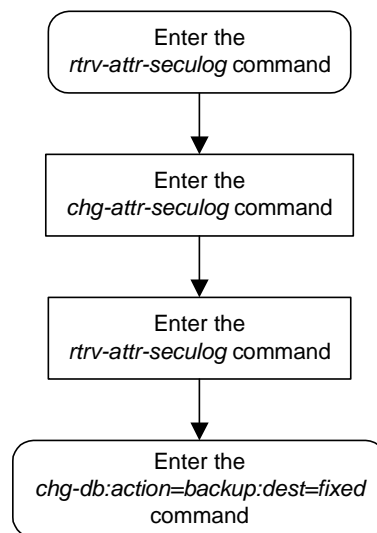
3. Verify the changes with the `rtrv-attr-secu-log` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
Security log attributes
-----
UPLDALM      yes
UPSLG        90
```

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

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

Flowchart 4-4. Changing the Security Log Characteristics



Copying the Security Log to the File Transfer Area

This procedure is used to copy the system's security log to the file transfer area of the fixed disk using the `copy-secuLog` command. The `copy-secuLog` command uses these parameters.

- :dfile** – the name of the file created in the file transfer area containing the security log entries copied with the `copy-secuLog` command.
- :slog** – the security log that is copied to the file transfer area, the security log on the active fixed disk or the standby fixed disk.
- :dloc** – the file transfer area that is receiving the copy of the security log, the file transfer area on the active fixed disk or the file transfer area on the standby fixed disk.

The filename can contain from 1 to 32 characters. If the filename contains special characters such as blank spaces, colons, dashes, periods, ampersands (&), etc. (for example, `eagle123.doc`), the filename must be enclosed in double quotes. For example, `:dfile="eagle123.doc"`.

If a filename is not specified, the system specifies its own filename with this format, `yyymmddx.log`, where `yyymmdd` are the current year/month/day that the security log file was created, and `x` is either `a` for the copy of the security log on the active fixed disk or `s` for the copy of the security log on the standby fixed disk.

Procedure

1. Display the current characteristics of the security log by entering the `rept-stat-secuLog` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
-- SINCE LAST UPLOAD -- OLDEST NEWEST LAST
LOC  ROLE  ENTRIES %FULL OFLO FAIL RECORD RECORD UPLOAD
1114 Active 8312    84   No  No  03-12-05 04-06-01 04-05-30
                               11:23:56 15:59:06 14:02:22

1116 Standby 693     7    No  No  03-12-05 04-06-01 04-05-30
                               11:24:12 14:00:06 14:02:13
```

2. Copy the security log to the file transfer area by entering the `copy-secuLog` command. For this example, copy the security log on the active fixed disk to the file transfer area on the fixed disk. Enter this command.

```
copy-secuLog:dfile=security1.log:slog=act:dloc=act
```

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

```
rlghncxa03w 04-06-17 16:02:37 GMT EAGLE5 31.6.0
Security log on TDM 1114 copied to file security1.log on TDM 1114
```

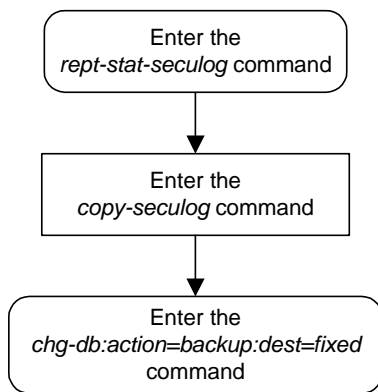
- Verify the changes with the `rept-stat-secu` command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 16:04:43 GMT EAGLE5 31.6.0
-- SINCE LAST UPLOAD -- OLDEST NEWEST LAST
LOC  ROLE  ENTRIES %FULL OFLO FAIL RECORD RECORD UPLOAD
1114 Active 1      1    No  No  04-06-01 04-06-01 04-06-01
      16:04:43 16:04:43 16:02:37

1116 Standby 0      0    No  No  03-12-05 04-06-01 04-05-30
      11:24:12 14:00:06 14:02:13
    
```

Flowchart 4-5. Copying the Security Log to the File Transfer Area



Adding a User to the System

This procedure is used to add a user to the system using the `ent-user` command. This procedure can only be performed if you have been assigned the command class "Security Administration." If the user ID does not exist in the database, the user's characteristics cannot be changed.

NOTE: This procedure can be performed on all terminals (1 - 40) if the Eagle OA&M IP Security Enhancements feature is on. If this feature is on, the entry `YES` is shown for terminals 17 through 40 in the `SECURE` column in the `rtrv-trm` output. The output of the `rtrv-ctrl-feat` command also shows if this feature is on or off. If this feature is off, this procedure can be performed only on terminals 1 through 16. If you wish to use the Eagle OA&M IP Security Enhancements feature, and the feature is not on, go to the "Activating the Eagle OA&M IP Security Enhancement Controlled Feature" procedure on page B-12 to enable and activate this feature.

The `ent-user` command uses these parameters.

`:uid` – The user ID to be added to the database

`:all` – The user has access to all commands in all non-configurable command classes (`dbg`, `link`, `sys`, `sa`, `pu`, `db`, and if the LNP feature is enabled for a quantity of 2 of 12 million numbers, `lnpbas`, `lnpdb`, `lnpsub`).

`:dbg` – The user has access to all commands in the command class "Debug."

`:link` – The user has access to all commands in the command class "Link Maintenance."

`:sys` – The user has access to all commands in the command class "System Maintenance."

`:sa` – The user has access to all commands in the command class "Security Administration."

`:pu` – The user has access to all commands in the command class "Program Update."

`:db` – The user has access to all commands in the command class "Database Administration."

`:lnpbas` – The user has access to all commands in the command class "LNP Basic."

`:lnpdb` – The user has access to all commands in the command class "LNP Database Administration."

`:lnpsub` – The user has access to all commands in the command class "LNP Subscription."

`:cc1 - :cc8` – Eight configurable command classes. These parameters specified whether or not the user has access to the commands in the specified configurable command class. The value of these parameters consist of the configurable command class name (1 alphabetic character followed by 2

alphanumeric characters), and either yes or no. The command class name and the yes or no values are separated by a dash. For example, to assign a user the permission to use the commands in configurable command class **db1**, the **cc1=db1=yes** parameter would be specified.

To specify any configurable command classes, the Command Class Management feature must be enabled and activated. Enter the **rtrv-ctrl-feat** command to verify whether or not the Command Class Management feature is enabled. If the Command Class Management feature is not enabled or activated, go to the “Activating Controlled Features” procedure on page B-3 to enable and activate the Command Class Management feature. Up to 32 configurable command classes can be assigned to users. When the Command Class Management feature is enabled and activated, the configurable command class names are given the names **u01 - u32**. These command class names, the descriptions of these command classes, and the commands assigned to these command classes can be changed using the “Configuring Command Classes” procedure on page 4-83.

The **ent-user** command allows up to eight configurable command classes to be assigned to the user. Use the “Changing User Information” procedure on page 4-35 to assign the other 24 configurable command classes to the user, if desired.

:page – The amount of time, in days, that the specified user’s password can be used before the user must change their password.

If the **page** parameter is not specified with the **ent-user** command, the system uses the value configured for the **page** parameter specified by the **chg-secu-dflt** command to determine the age of the user’s password.

:uout – The number of consecutive days that a user ID can remain active in the system and not be used. When the user ID has not been used for the number of days specified by the **uout** parameter, that user ID is no longer valid and the system rejects any attempt to log into the system with that user ID.

If the **uout** parameter is not specified with the **ent-user** command, the system uses the value configured for the **uout** parameter specified by the **chg-secu-dflt** command to determine the number of consecutive days that a user ID can remain active on the system and not be used

:revoke – Is the specified user ID in service? Any login attempts using a revoked user ID are rejected by the system. The **revoke=yes** parameter cannot be specified for a user ID assigned to the security administration command class.

The words **seas** or **none** cannot be used for user IDs to prevent any conflict with the use of these words in the UID field of the security log. The word **none** in the UID field of the security log refers to any command that was logged that had no user ID associated with it. The word **seas** refers to any command logged in the security log that entered the system on either of the two OAP ports.

System Administration Procedures

To assign a user to the LNP Basic, LNP Database Administration, or LNP subscription command classes, the LNP feature must be enabled for a quantity of 2 to 12 million numbers. This can be verified with the **rtrv-ctrl-feat** command. If the LNP feature is enabled, shown by the entry **LNP TNs**, in the output of the **rtrv-ctrl-feat** command with a quantity of 2 to 12 million numbers, go to the "Enabling the LNP Feature for 2 to 12 Million Numbers" procedure in the *Database Administration Manual - LNP* and enable the LNP feature.

This example shows an **rtrv-secu-user** command output when the LNP feature is turned on and the Command Class Management feature is enabled and activated. If the LNP feature is not enabled, or the ELAP Configuration feature is enabled and activated, the fields **LNPBAS**, **LNPDB**, **LNPSUB** are not shown in the **rtrv-secu-user** command output. If the Command Class Management feature is not enabled and activated, the 32 configurable command classes, shown in the following example as fields **U01 - U32**, are not shown in the **rtrv-secu-user** command output.

An asterisk (*) displayed after the value in the **PAGE** or **UOUT** fields indicates that the system-wide default **page** or **uout** parameter values, as configured on the **chg-secu-dflt** command, is in effect for the user ID.

```
rlghncxa03w 04-06-01 08:33:48 GMT EAGLE5 31.6.0
```

USER ID	AGE	PAGE	UOUT	REV	LINK	SA	SYS	PU	DB	DBG	LNP BAS	LNP DB	LNP SUB		
frodo	750	0	0	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES		
U01	U02	U03	U04	U05	U06	U07	U08	U09	U10	U11	U12	U13	U14	U15	U16
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO
U17	U18	U19	U20	U21	U22	U23	U24	U25	U26	U27	U28	U29	U30	U31	U32
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	YES

USER ID	AGE	PAGE	UOUT	REV	LINK	SA	SYS	PU	DB	DBG	LNP BAS	LNP DB	LNP SUB		
manny	36	60	60	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES		
U01	U02	U03	U04	U05	U06	U07	U08	U09	U10	U11	U12	U13	U14	U15	U16
NO	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
U17	U18	U19	U20	U21	U22	U23	U24	U25	U26	U27	U28	U29	U30	U31	U32
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	YES

USER ID	AGE	PAGE	UOUT	REV	LINK	SA	SYS	PU	DB	DBG	LNP BAS	LNP DB	LNP SUB		
moe	100	30	60	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES		
U01	U02	U03	U04	U05	U06	U07	U08	U09	U10	U11	U12	U13	U14	U15	U16
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO
U17	U18	U19	U20	U21	U22	U23	U24	U25	U26	U27	U28	U29	U30	U31	U32
YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO

USER ID	AGE	PAGE	UOUT	REV	LINK	SA	SYS	PU	DB	DBG	LNP BAS	LNP DB	LNP SUB
jack	10	30	* 30	* NO	YES	YES	YES	YES	YES	YES	YES	YES	YES

```

U01 U02 U03 U04 U05 U06 U07 U08 U09 U10 U11 U12 U13 U14 U15 U16
YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES

U17 U18 U19 U20 U21 U22 U23 U24 U25 U26 U27 U28 U29 U30 U31 U32
YES YES YES YES YES YES NO NO NO NO YES YES YES YES YES NO

```

Canceling the **RTRV-SECU-USER** Command

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

- Press the **F9** function key on the keyboard at the terminal where the **rtrv-secu-user** command was entered.
- Enter the **cancel-cmd** without the **trm** parameter at the terminal where the **rtrv-secu-user** command was entered.
- Enter the **cancel-cmd:trm=<xx>**, where **<xx>** is the terminal where the **rtrv-secu-user** command was entered, from another terminal other than the terminal where the **rtrv-secu-user** command was entered. To enter the **cancel-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 **cancel-cmd** command, go to the *Commands Manual*.

Procedure

1. Verify whether or not the user ID you wish to add to the database is in the database by entering the **rtrv-secu-user** command and specifying the desired user ID with the **uid** parameter. For this example, enter this command.

```
rtrv-secu-user:uid=frodo
```

If the user ID being added to the database is displayed in the **rtrv-secu-user** output, the user ID cannot be used in this procedure. The attributes of the user ID shown in the **rtrv-secu-user** output can be changed in the "Changing User Information" procedure on page 4-35.

If the user ID being added to the database is not in the database, the error message E2199 is displayed.

```
E2199 Cmd Rej: The specified user identification is not defined
```

NOTE: If the `lnpbas`, `lnpdb`, or `lnpsub` parameters are not being specified in this procedure, or the `LNPBAS`, `LNPDB`, or `LNPSUB` fields are shown in the `rtrv-secu-user` output, skip this step, and go to step 3.

2. Verify that the LNP feature is enabled for a quantity of 2 to 12 million numbers, by entering the `rtrv-ctrl-feat` command. If the LNP feature is enabled for a quantity of 2 to 12 million numbers, the quantity shown in the `LNP TNS` field should be 2 to 12 million numbers.
3. The `rtrv-ctrl-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-ctrl-feat` command, see the `rtrv-ctrl-feat` command description in the *Commands Manual*.

If the LNP feature is enabled for a quantity of 2 to 12 million numbers, go to step 3.

If the LNP feature is not enabled, go to the "Enabling the LNP Feature for 2 to 12 Million Numbers" procedure in the *Database Administration Manual - LNP* and enable the LNP feature.

If the ELAP Configuration feature is enabled and activated, the `lnpbas`, `lnpdb`, and `lnpsub` parameters cannot be specified in this procedure.

NOTE: If the `cc1` through `cc8` parameters are not being specified in this procedure, skip steps 3 and 4, and go to step 5. If configurable command classes are shown in the `rtrv-secu-user` output, skip this step, and go to step 4.

4. Verify that the Command Class Management feature is enabled and activated, by entering the `rtrv-ctrl-feat` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
Feature Name          Partnum    Status  Quantity
Command Class Management  893005801  off     ----
```

NOTE: The `rtrv-ctrl-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-ctrl-feat` command, see the `rtrv-ctrl-feat` command description in the *Commands Manual*.

If the Command Class Management feature is enabled and activated (`status = on`), go to step 4.

If the Command Class Management feature is not enabled or activated, go to the "Activating Controlled Features" procedure on page B-3 and enable and activate the Command Class Management feature.

CAUTION: If the Command Class Management feature is temporarily enabled, the configurable command classes can be assigned and used only for the amount of time shown in the `Trial Period Left` column in the `rtrv-ctrl-feat` output.



5. Display the descriptions of the configurable command classes in the database by entering the `rtrv-cmd` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
CMD          CLASS
alw-slk      link, u11
ent-user     sa
unhb-slk     link
rtrv-attr-seculog sa, u31
inh-slk      link, abc
rtrv-meas-sched link, abc, def
act-lbp      link
act-dlk      link
act-slk      link
rtrv-seculog sa, abc, def, ghi
act-lpo      link
blk-slk      link, abc, u23, u31
dact-lbp     link
canc-dlk     link
inh-card     sys
canc-lpo     link, u01, u02, u03, u04, u05, u06, u07, u08, u09, u10,
             u11, u12, u13
canc-slk     link
ublk-slk     link, u01, u02, u03, u04, u05, u06, u07, u08, u09, u10,
             u11, u12, u13, u14, u15, u16, u17, u18, u19, u20, u21,
             u22, u23, u24, u25, u26, u27, u28, u29, u30, u31, u32
rept-x25-meas link
inh-trm      sys, krb
rept-meas    link
ent-lnp-sub  lnpsub, u22

.
.
.

chg-meas     link
tst-dlk      link, krb
tst-slk      link
```

If the desired configurable command class descriptions are not in the database, go to the “Configuring Command Classes” procedure on page 4-83 and configure the desired command classes.

6. After you enter the **ent-user** command, you will be prompted for a password for the user that is being added. The password must meet the requirements defined by the **chg-secu-dflt** command. Once you enter the **ent-user** command, you will not be able to enter any other commands until the user ID and password combination has been accepted by the system. The password requirements must be verified before the **ent-user** command is executed. Display the password requirements by entering the **rtrv-secu-dflt** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
SECURITY DEFAULTS
-----
PAGE             60
UOUT             90
MULTLOG         NO
MINLEN           8
ALPHA            1
NUM              1
PUNC             1
```

The password can contain from one to twelve characters. For this example, the password must contain at least eight characters, no more than twelve, with at least one alpha character (a-z), at least one numeric character (0-9), and at least one punctuation character (any printable character that is not an alphabetic character, a numeric character, the space bar). The password requirements are shown in these fields in the **rtrv-secu-dflt** command output.

- **MINLEN** – the minimum length of the password
- **ALPHA** – the minimum number of alpha characters
- **NUM** – the minimum number of numeric characters
- **PUNC** – the minimum number of punctuation characters

The password is not case sensitive. For security reasons, the password is never displayed on the terminal.

7. Add the new user ID to the database using the **ent-user** command. The user ID must contain 1 alpha character and up to 15 alphanumeric characters. The first character of a user ID must be an alpha character. Even though a period is not an alphanumeric character, one of the 15 alphanumeric characters can be a period.

The other parameters assign command class permissions to the user ID. If **yes** is entered for any of these parameters, the user will have access to that class of commands. If **no** is entered, the user will not have access to that class of commands. These parameters are optional and if not specified, the user is not assigned to that command class. The user is assigned to the Basic command class whether any of these other parameters are specified. Refer to the *Commands Manual* for a list of commands permitted with each command class. For this example, the user ID **frodo** is being added with access to these command classes: link maintenance, system maintenance, database administration, and debug.

The **frodo** user ID will use the values for the **page** and **uout** parameters configured with the **chg-secu-dflt** command. For this example, enter this command.

```
ent-user : uid=frodo : link=yes : sys=yes : db=yes : dbg=yes
:cc1=db1-yes
```

This message should appear.

```
r1ghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
ENT-USER: MASP A - COMPLTD
```

8. You are prompted for a password for the user that is being added. Enter the new password. Make sure that the password meets the password requirements displayed in the output of the **rtrv-secu-dflt** command, executed in step 6.

9. At the prompt **verify password**, re-enter the password that was entered in step 8 again.

10. When the **command executed** message appears, the execution of the command has been completed, and the user ID and password has been added to the database.

11. Verify the changes using the `rtrv-secu-user` command with the user ID specified in step 6. For this example, enter this command.

```
rtrv-secu-user:uid=frodo
```

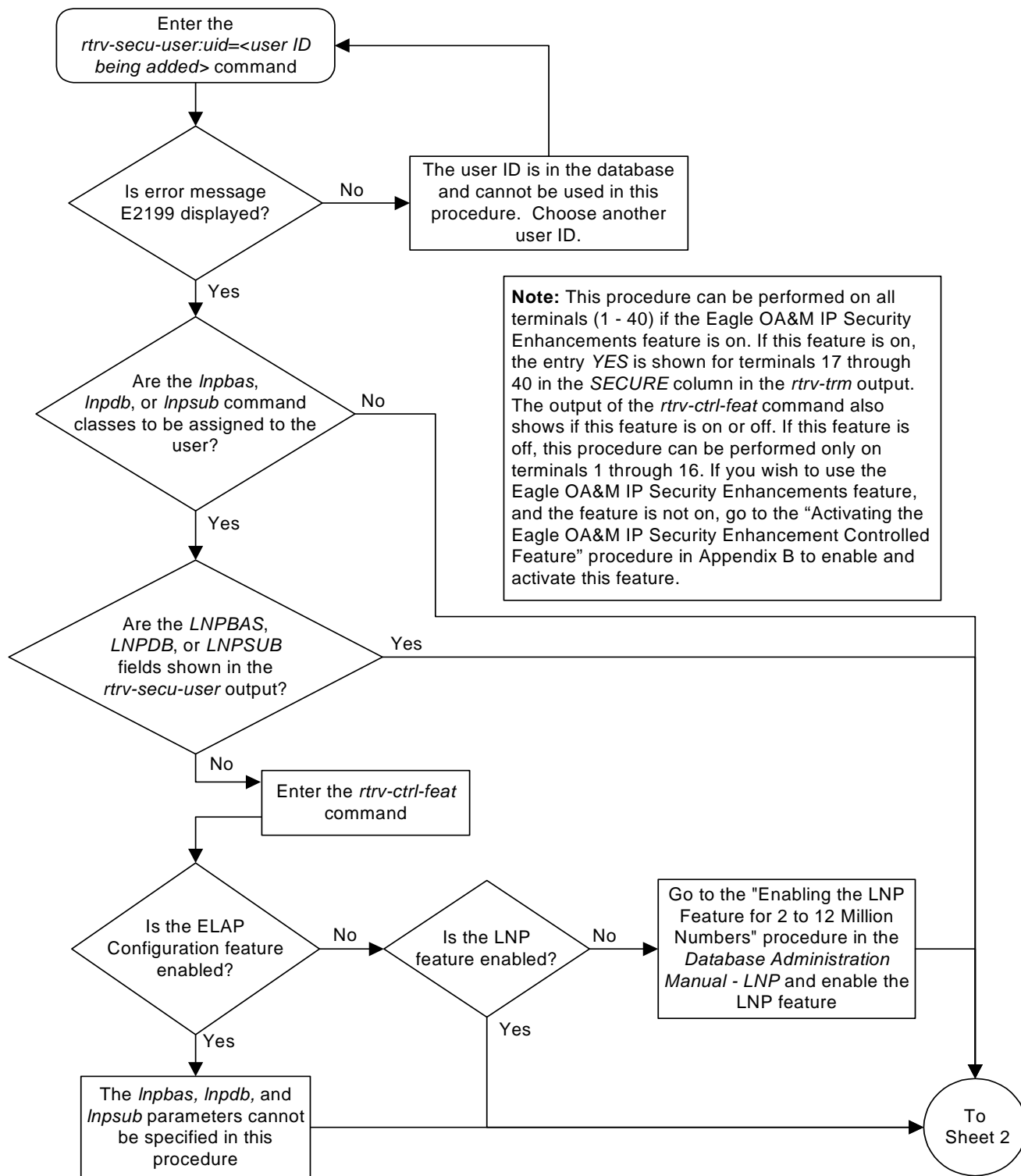
This is an example of the possible output.

```
rlghncxa03w 04-06-01 08:33:48 GMT EAGLE5 31.6.0
                                     LNP LNP LNP
USER ID          AGE PAGE UOUT REV LINK SA  SYS PU  DB  DBG BAS DB  SUB
frodo           0  60 * 90 * NO  YES NO  YES NO  YES YES NO  NO  NO
                                     DB1 U02 U03 U04 U05 U06 U07 U08 U09 U10 U11 U12 U13 U14 U15 U16
                                     YES NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO
                                     U17 U18 U19 U20 U21 U22 U23 U24 U25 U26 U27 U28 U29 U30 U31 U32
                                     NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO
```

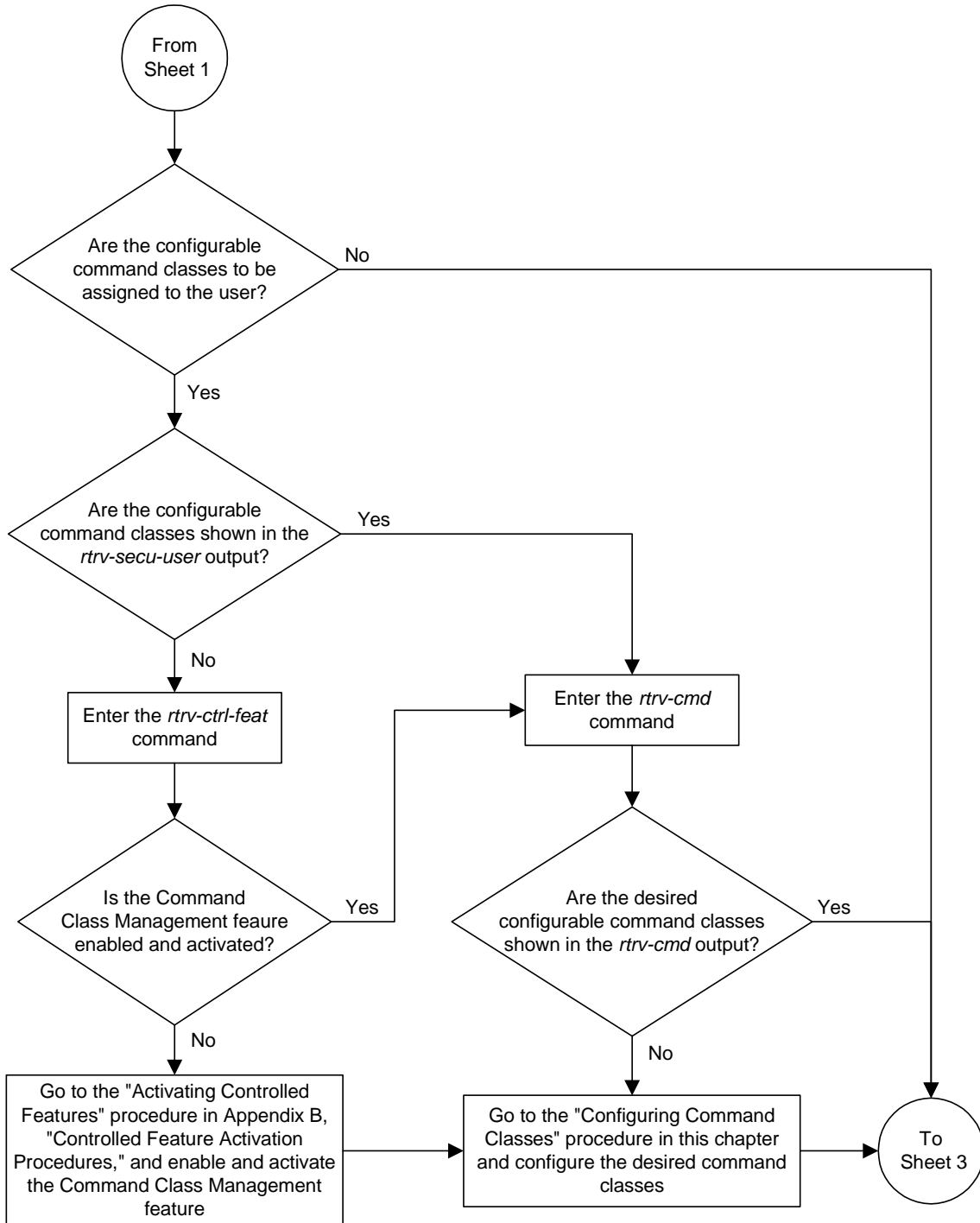
-
12. Back up the new changes using the `chg-db:action=backup:dest=fixed` command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

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

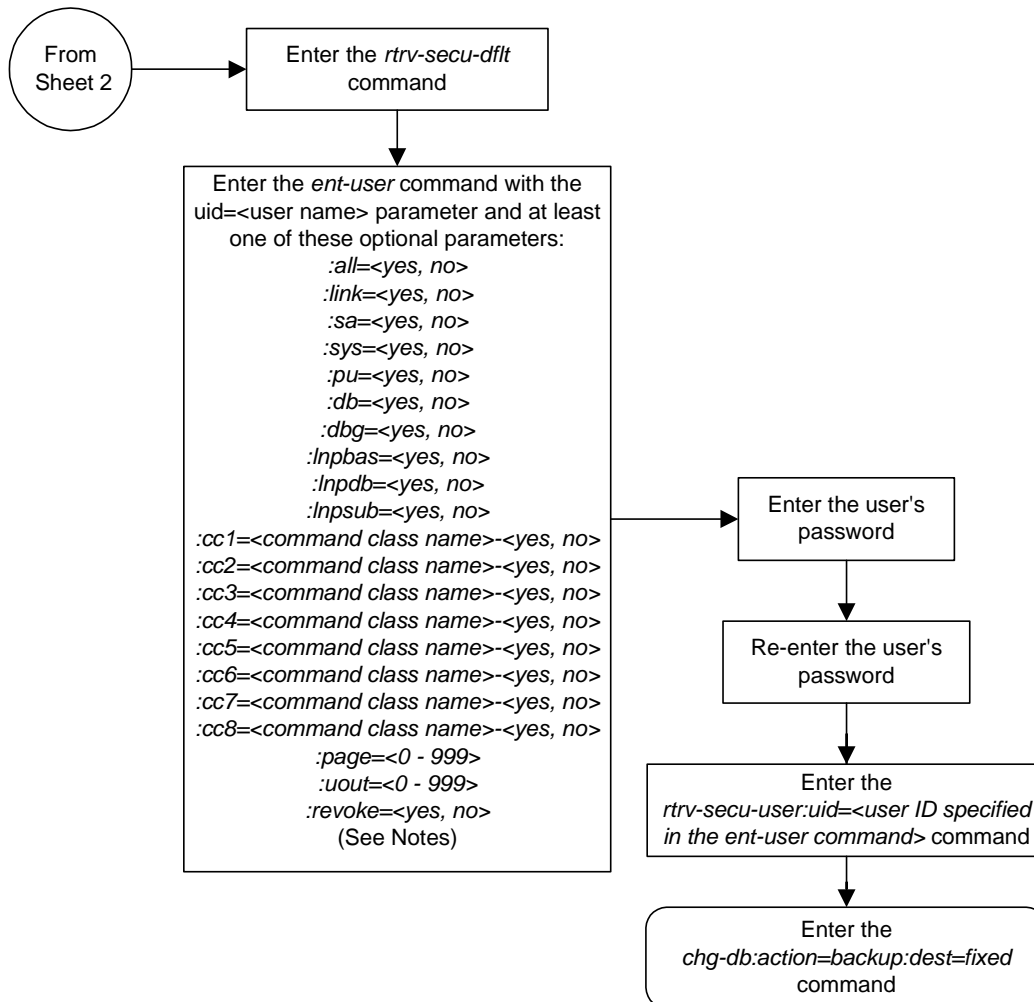
Flowchart 4-6. Adding a User to the System (Sheet 1 of 3)



Flowchart 4-6. Adding a User to the System (Sheet 2 of 3)



Flowchart 4-6. Adding a User to the System (Sheet 3 of 3)



Notes:

1. The *revoke=yes* parameter cannot be specified with the *sa* parameter value is *yes*.
2. To specify the *lnpbas*, *lnpdb*, or *lnpsub* parameters, the LNP feature must be enabled for 2 to 12 million numbers.
3. To specify the *cc1* through *cc8* parameters, the Command Class Management feature must be enabled and activated.
4. The user can have a maximum of 32 configurable command classes assigned. The *ent-user* command can assign up to 8 configurable command classes. Go to the Changing User Information procedure to assign the other 24 configurable command classes to the user.
5. The *all* parameter specifies whether or not all non-configurable command classes (*link*, *sa*, *sys*, *pu*, *db*, *dbg*, *lnpbas*, *lnpdb*, *lnpsub*) can be used by the user,
6. If the *all* parameter and individual non-configurable command classes are specified with the *ent-user* command, the value of the specified individual non-configurable command classes overrides the value of the *all* parameter.

Removing a User from the System

This procedure is used to remove a user from the system using the `dlt-user` command. This procedure can only be performed if you have been assigned the command class "Security Administration." If the user ID does not exist in the database, the user's characteristics cannot be changed.

Procedure

1. Display the user IDs in the database using the `rtrv-secu-user` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 08:33:48 GMT EAGLE5 31.6.0
```

USER ID	AGE	PAGE	UOUT	REV	LINK	SA	SYS	PU	DB	DBG	BAS	DB	SUB	LNP	LNP	LNP
frodo	0	60	*	90	*	NO	YES	NO	YES	NO	YES	YES	NO	NO	NO	NO
	DB1	U02	U03	U04	U05	U06	U07	U08	U09	U10	U11	U12	U13	U14	U15	U16
	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
	U17	U18	U19	U20	U21	U22	U23	U24	U25	U26	U27	U28	U29	U30	U31	U32
	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

USER ID	AGE	PAGE	UOUT	REV	LINK	SA	SYS	PU	DB	DBG	BAS	DB	SUB	LNP	LNP	LNP
manny	36	60	60	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	U01	U02	U03	U04	U05	U06	U07	U08	U09	U10	U11	U12	U13	U14	U15	U16
	NO	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	U17	U18	U19	U20	U21	U22	U23	U24	U25	U26	U27	U28	U29	U30	U31	U32
	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	YES

USER ID	AGE	PAGE	UOUT	REV	LINK	SA	SYS	PU	DB	DBG	BAS	DB	SUB	LNP	LNP	LNP
fred	750	0	0	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	DB1	U02	U03	U04	U05	U06	U07	U08	U09	U10	U11	U12	U13	U14	U15	U16
	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO
	U17	U18	U19	U20	U21	U22	U23	U24	U25	U26	U27	U28	U29	U30	U31	U32
	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO

USER ID	AGE	PAGE	UOUT	REV	LINK	SA	SYS	PU	DB	DBG	BAS	DB	SUB	LNP	LNP	LNP
travist	101	60	*	90	*	NO	YES	NO	YES	NO	NO	YES	YES	YES	YES	YES
	DB1	U02	U03	U04	U05	U06	U07	U08	U09	U10	U11	U12	U13	U14	U15	U16
	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	U17	U18	U19	U20	U21	U22	U23	U24	U25	U26	U27	U28	U29	U30	U31	U32
	YES	YES	YES	YES	YES	NO	NO	NO	NO	YES	YES	YES	YES	YES	YES	NO

- Remove the user ID from the database by using the `dlt-user` command. The `dlt-user` command has only one parameter, `uid`, which is the user ID that you wish to remove from the database. For this example, enter this command.

```
dlt-user:uid=travist
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
DLT-USER: MASP A - COMPLTD
```

- Verify the changes using the `rtrv-secu-user` command and specifying the user ID used in step 2 with the `uid` parameter. For this example, enter this command.

```
rtrv-secu-user:uid=travist
```

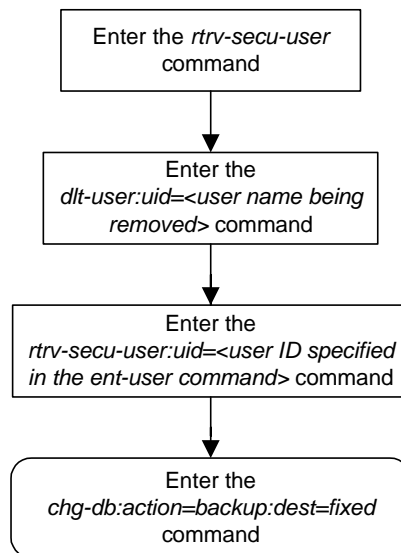
If the user ID was removed in step 2, error message E2199 is displayed.

```
E2199 Cmd Rej: The specified user identification is not defined
```

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

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

Flowchart 4-7. Removing a User from the System



Changing User Information

This procedure is used to change the characteristics of a user on the system using the **chg-user** command. This procedure can only be performed if you have been assigned the command class "Security Administration." If the user ID does not exist in the database, the user's characteristics cannot be changed.

NOTE: The **pid** parameter can be specified for this procedure on all terminals (1 - 40) if the Eagle OA&M IP Security Enhancements feature is on. If this feature is on, the entry **YES** is shown for terminals 17 through 40 in the **SECURE** column in the **rtrv-trm** output. The output of the **rtrv-ctrl-feat** command also shows if this feature is on or off. If this feature is off, the **pid** parameter can be specified for this procedure only on terminals 1 through 16. If you wish to use the Eagle OA&M IP Security Enhancements feature, and the feature is not on, go to the "Activating the Eagle OA&M IP Security Enhancement Controlled Feature" procedure on page B-12 to enable and activate this feature.

The **chg-user** command uses these parameters.

- :uid** – The ID of a user in the database
- :nuid** – New user ID – The new ID of the user specified by the **uid** parameter.
- :pid** – Password ID (only required if changing the password of a user) – The password of the user specified by the **uid** parameter.
- :all** – The user has access to all commands in all command classes.
- :dbg** – The user has access to all commands in the command class "Debug."
- :link** – The user has access to all commands in the command class "Link Maintenance."
- :sys** – The user has access to all commands in the command class "System Maintenance."
- :sa** – The user has access to all commands in the command class "Security Administration."
- :pu** – The user has access to all commands in the command class "Program Update."
- :db** – The user has access to all commands in the command class "Database Administration."
- :lnpbas** – The user has access to all commands in the command class "LNP Basic."
- :lnpdb** – The user has access to all commands in the command class "LNP Database Administration."
- :lnpsub** – The user has access to all commands in the command class "LNP Subscription."

:cc1 - :cc8 – Eight configurable command classes. These parameters specified whether or not the user has access to the commands in the specified configurable command class. The value of these parameters consist of the configurable command class name (1 alphabetic character followed by 2 alphanumeric characters), and either yes or no. The command class name and the yes or no values are separated by a dash. For example, to assign a user the permission to use the commands in configurable command class **db1**, the **cc1=db1=yes** parameter would be specified.

To specify any configurable command classes, the Command Class Management feature must be enabled and activated. Enter the **rtrv-ctrl-feat** command to verify whether or not the Command Class Management feature is enabled. If the Command Class Management feature is not enabled or activated, go to the “Activating Controlled Features” procedure on page B-3 to enable and activate the Command Class Management feature. Up to 32 configurable command classes can be assigned to users. When the Command Class Management feature is enabled and activated, the configurable command class names are given the names **u01 - u32**. These command class names, the descriptions of these command classes, and the commands assigned to these command classes can be changed using the “Configuring Command Classes” procedure on page 4-83.

The **chg-user** command can assign a maximum of eight configurable command classes to the user each time the **chg-user** command is performed.

:page – The amount of time, in days, that the specified user’s password can be used before the user must change their password.

If the **page** parameter is not specified with the **ent-user** command, the system uses the value configured for the **page** parameter specified by the **chg-secu-dflt** command to determine the age of the user’s password.

:uout – The number of consecutive days that a user ID can remain active on the system and not be used. When the user ID has not been used for the number of days specified by the **uout** parameter, that user ID is no longer valid and the system rejects any attempt to log into the system with that user ID.

If the **uout** parameter is not specified with the **ent-user** command, the system uses the value configured for the **uout** parameter specified by the **chg-secu-dflt** command to determine the number of consecutive days that a user ID can remain active on the system and not be used

:revoke – Is the specified user ID in service? Any login attempts using a revoked user ID are rejected by the system. The **revoke=yes** parameter cannot be specified for a user ID assigned to the security administration command class.

:rstls1 – resets the last successful login date for a user ID to the current date. If the user ID is out of service because the user ID has been idle longer than the value of the **uout** parameter defined by either the **ent-user** or **chg-secu-dflt** commands, this parameter brings that user ID back into service.

System Administration Procedures

To assign a user to the LNP Basic, LNP Database Administration, or LNP subscription command classes, the LNP feature must be enabled for a quantity of 2 to 12 million numbers. This can be verified with the **rtrv-ctrl-feat** command. If the LNP feature is enabled, shown by the entry **LNP TNs**, in the output of the **rtrv-ctrl-feat** command with a quantity of 2 to 12 million numbers, go to the "Enabling the LNP Feature for 2 to 12 Million Numbers" procedure in the *Database Administration Manual - LNP* and enable the LNP feature.

This example shows an **rtrv-secu-user** command output when the LNP feature is turned on and the Command Class Management feature is enabled and activated. If the LNP feature is not enabled, or the ELAP Configuration feature is enabled and activated, the fields **LNPBAS**, **LNPDB**, **LNPSUB** are not shown in the **rtrv-secu-user** command output. If the Command Class Management feature is not enabled and activated, the 32 configurable command classes, shown in the following example as fields **U01 - U32**, are not shown in the **rtrv-secu-user** command output.

An asterisk (*) displayed after the value in the **PAGE** or **UOUT** fields indicates that the system-wide default **page** or **uout** parameter values, as configured on the **chg-secu-dflt** command, is in effect for the user ID.

```

rlghncxa03w 04-06-01 08:33:48 GMT EAGLE5 31.6.0

USER ID          AGE PAGE UOUT REV LINK SA  SYS PU  DB  DBG BAS DB  SUB
frodo            750 0    0    NO  YES  YES  YES YES YES YES YES YES YES YES
                U01 U02 U03 U04 U05 U06 U07 U08 U09 U10 U11 U12 U13 U14 U15 U16
                YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES NO
                U17 U18 U19 U20 U21 U22 U23 U24 U25 U26 U27 U28 U29 U30 U31 U32
                YES YES YES YES YES YES YES YES YES YES YES YES NO  NO  NO  NO  YES

USER ID          AGE PAGE UOUT REV LINK SA  SYS PU  DB  DBG BAS DB  SUB
manny            36  60   60   NO  YES  YES  YES YES YES YES YES YES YES YES
                U01 U02 U03 U04 U05 U06 U07 U08 U09 U10 U11 U12 U13 U14 U15 U16
                NO  NO  NO  NO  YES YES YES YES YES YES YES YES YES YES YES YES
                U17 U18 U19 U20 U21 U22 U23 U24 U25 U26 U27 U28 U29 U30 U31 U32
                YES YES YES YES YES YES YES YES YES YES YES YES NO  NO  NO  NO  YES

USER ID          AGE PAGE UOUT REV LINK SA  SYS PU  DB  DBG BAS DB  SUB
moe              100 30   60   YES YES  YES  YES YES YES YES YES YES YES YES
                U01 U02 U03 U04 U05 U06 U07 U08 U09 U10 U11 U12 U13 U14 U15 U16
                YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES NO
                U17 U18 U19 U20 U21 U22 U23 U24 U25 U26 U27 U28 U29 U30 U31 U32
                YES YES YES YES YES YES YES YES YES YES YES YES YES NO  NO  NO

USER ID          AGE PAGE UOUT REV LINK SA  SYS PU  DB  DBG BAS DB  SUB
jack             10  30 * 30 * NO  YES  YES  YES YES YES YES YES YES YES YES
                U01 U02 U03 U04 U05 U06 U07 U08 U09 U10 U11 U12 U13 U14 U15 U16
                YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES
                U17 U18 U19 U20 U21 U22 U23 U24 U25 U26 U27 U28 U29 U30 U31 U32
                YES YES YES YES YES YES NO  NO  NO  NO  YES YES YES YES YES NO

```

Procedure

1. Display the user IDs in the database using the `rtrv-secu-user` command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 08:33:48 GMT EAGLE5 31.6.0
USER ID          AGE PAGE UOUT REV LINK SA  SYS PU  DB  DBG BAS DB  SUB
frodo            0   60 * 90 * NO  YES NO  YES NO  YES YES NO  NO  NO
                DB1 U02 U03 U04 U05 U06 U07 U08 U09 U10 U11 U12 U13 U14 U15 U16
                YES NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO
                U17 U18 U19 U20 U21 U22 U23 U24 U25 U26 U27 U28 U29 U30 U31 U32
                NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO  NO

USER ID          AGE PAGE UOUT REV LINK SA  SYS PU  DB  DBG BAS DB  SUB
manny           36   60   60   NO  YES  YES YES YES YES YES YES YES YES YES
                DB1 U02 U03 U04 U05 U06 U07 U08 U09 U10 U11 U12 U13 U14 U15 U16
                NO  NO  NO  NO  YES YES YES YES YES YES YES YES YES YES YES YES
                U17 U18 U19 U20 U21 U22 U23 U24 U25 U26 U27 U28 U29 U30 U31 U32
                YES YES YES YES YES YES YES YES YES YES YES NO  NO  NO  YES

USER ID          AGE PAGE UOUT REV LINK SA  SYS PU  DB  DBG BAS DB  SUB
fred            750 0    0    NO  YES  YES YES YES YES YES YES YES YES YES
                DB1 U02 U03 U04 U05 U06 U07 U08 U09 U10 U11 U12 U13 U14 U15 U16
                NO  YES YES YES YES YES YES YES YES YES YES YES YES YES YES NO
                U17 U18 U19 U20 U21 U22 U23 U24 U25 U26 U27 U28 U29 U30 U31 U32
                YES YES YES YES YES YES YES YES YES YES YES YES YES YES NO  NO

USER ID          AGE PAGE UOUT REV LINK SA  SYS PU  DB  DBG BAS DB  SUB
travist        101 60 * 90 * NO  YES NO  YES NO  YES YES YES YES YES YES YES YES
                DB1 U02 U03 U04 U05 U06 U07 U08 U09 U10 U11 U12 U13 U14 U15 U16
                YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES
                U17 U18 U19 U20 U21 U22 U23 U24 U25 U26 U27 U28 U29 U30 U31 U32
                YES YES YES YES YES YES NO  NO  NO  NO  YES YES YES YES YES NO

```

NOTE: If the `lnpbas`, `lnpdb`, or `lnpsub` parameters are not being specified in this procedure, or the `LNPBAS`, `LNPDB`, or `LNPSUB` fields are shown in the `rtrv-secu-user` output, skip this step, and go to step 3.

2. Verify that the LNP feature is enabled for a quantity of 2 to 12 million numbers, by entering the `rtrv-ctrl-feat` command. If the LNP feature is enabled for a quantity of 2 to 12 million numbers, the quantity shown in the `LNP TNS` field should be 2 to 12 million numbers.

NOTE: The `rtrv-ctrl-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-ctrl-feat` command, see the `rtrv-ctrl-feat` command description in the *Commands Manual*.

If the LNP feature is enabled for a quantity of 2 to 12 million numbers, go to step 3.

If the LNP feature is not enabled, go to the "Enabling the LNP Feature for 2 to 12 Million Numbers" procedure in the *Database Administration Manual - LNP* and enable the LNP feature.

If the ELAP Configuration feature is enabled and activated, the `lnpbas`, `lnpdb`, and `lnpsub` parameters cannot be specified in this procedure.

NOTE: If the `cc1` through `cc8` parameters are not being specified in this procedure, skip steps 3 and 4, and go to step 5. If configurable command classes are shown in the `rtrv-secu-user` output, skip this step, and go to step 4.

3. Verify that the Command Class Management feature is enabled and activated, by entering the `rtrv-ctrl-feat` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
Feature Name          Partnum    Status    Quantity
Command Class Management  893005801  off      ----
```

NOTE: The `rtrv-ctrl-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-ctrl-feat` command, see the `rtrv-ctrl-feat` command description in the *Commands Manual*.

If the Command Class Management feature is enabled and activated (status = on), go to step 4.

If the Command Class Management feature is not enabled or activated, go to the "Activating Controlled Features" procedure on page B-3 and enable and activate the Command Class Management feature.



CAUTION: If the Command Class Management feature is temporarily enabled, the configurable command classes can be assigned and used only for the amount of time shown in the `Trial Period Left` column in the `rtrv-ctrl-feat` output.

4. Display the descriptions of the configurable command classes in the database by entering the `rtrv-cmd` command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
CMD                CLASS
alw-slk            link, u11
ent-user          sa
unhb-slk          link
rtrv-attr-seculog sa, u31
inh-slk           link, abc
rtrv-meas-sched   link, abc, def
act-lbp           link
act-dlk           link
act-slk           link
rtrv-seculog      sa, abc, def, ghi
act-lpo           link
blk-slk           link, abc, u23, u31
dact-lbp          link
canc-dlk          link
inh-card          sys
canc-lpo          link, u01, u02, u03, u04, u05, u06, u07, u08, u09, u10,
                  u11, u12, u13
canc-slk          link
ublk-slk          link, u01, u02, u03, u04, u05, u06, u07, u08, u09, u10,
                  u11, u12, u13, u14, u15, u16, u17, u18, u19, u20, u21,
                  u22, u23, u24, u25, u26, u27, u28, u29, u30, u31, u32

rept-x25-meas     link
inh-trm           sys, krb
rept-meas         link
ent-lnp-sub       lnpsub, u22

.
.
.

chg-meas          link
tst-dlk           link, krb
tst-slk           link

```

If the desired configurable command class descriptions are not in the database, go to the "Configuring Command Classes" procedure on page 4-83 and configure the desired command classes.

NOTE: A user ID cannot be changed while the user is logged on, except when the `revoke=yes` parameter is specified with the `chg-user` command. It is assumed that if the user ID is being revoked, the intent is to immediately deny the user access to the system. In this case, the user will be logged off when the database is updated.

5. Verify that the user is not logged on the system using the `rept-stat-user` command. If the user is logged on to the system, the `chg-user` command will log the user off the system when the command is executed. Notify the user to log off the system. This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:15 GMT EAGLE5 31.6.0
REPT-STAT-USER COMPLTD
USER ID   TERM#  IDLE SINCE          COMMAND          STATE
fred      3      04-06-01 05:06:43  rept-stat-user  PROCESSING
frodo     13     04-06-01 08:12:23  chg-db          IDLE
manny     1      04-06-01 04:37:56  ent-dlk         IDLE
travist   7      04-06-01 10:06:22  rtrv-meas      IDLE
```

6. Change the user's characteristics using the `chg-user` command.

The `nuid` parameter changes the user ID of a user. This parameter is optional and if not specified, the user ID is not changed. The user ID must contain 1 alpha character and up to 15 alphanumeric characters. The first character of a user ID must be an alpha character. Even though a period is not an alphanumeric character, one of the 15 alphanumeric characters can be a period.

The `pid` parameter specifies whether the password is to be changed. If `no` is selected, the password is not changed. If `yes` is entered, you will be prompted for a new password for the user. Enter the new password for the user. You do not need to know the old password with this command. The password must meet the requirements defined by the `chg-secu-dflt` command. Display the password requirements by entering the `rtrv-secu-dflt` command.

This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
SECURITY DEFAULTS
-----
PAGE           60
UOUT           90
MULTLOG        NO
MINLEN         8
ALPHA          1
NUM            1
PUNC           1
```

The password can contain from one to twelve characters. For this example, the password must contain at least eight characters, no more than twelve, with at least one alpha character (a-z), at least one numeric character (0-9), and at least one punctuation character (any printable character that is not an alphabetic

character, a numeric character, the space bar). The password requirements are shown in these fields in the `rtrv-secu-dflt` command output.

- **MINLEN** – the minimum length of the password
- **ALPHA** – the minimum number of alpha characters
- **NUM** – the minimum number of numeric characters
- **PUNC** – the minimum number of punctuation characters

The password is not case sensitive. For security reasons, the password is never displayed on the terminal.

At the prompt `verify password`, enter the new password again. This `pid` parameter is optional and the default value is `no`.

The other parameters assign command class permissions to the user ID. If `yes` is selected for any of these parameters, the user will have access to that class of commands. If `no` is entered, the user will not have access to that class of commands. These parameters are optional and if not specified, the values are not changed.

For this example, the user ID `manny` is being changed to `bilbo`, and the PU, DB, DBG, and DB1 command class values are changed. Enter this command.

chg-user : uid=manny : nuid=bilbo : pu=no : db=no : dbg=no : db1=yes

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CHG-USER: MASP A - COMPLTD
```

7. Verify the changes using the `rtrv-secu-user` command and specifying the user ID used in step 6 with the `uid` parameter. If the user ID was changed in step 6, specify the new user ID. For this example, enter this command.

rtrv-secu-user:uid=bilbo

This is an example of the possible output.

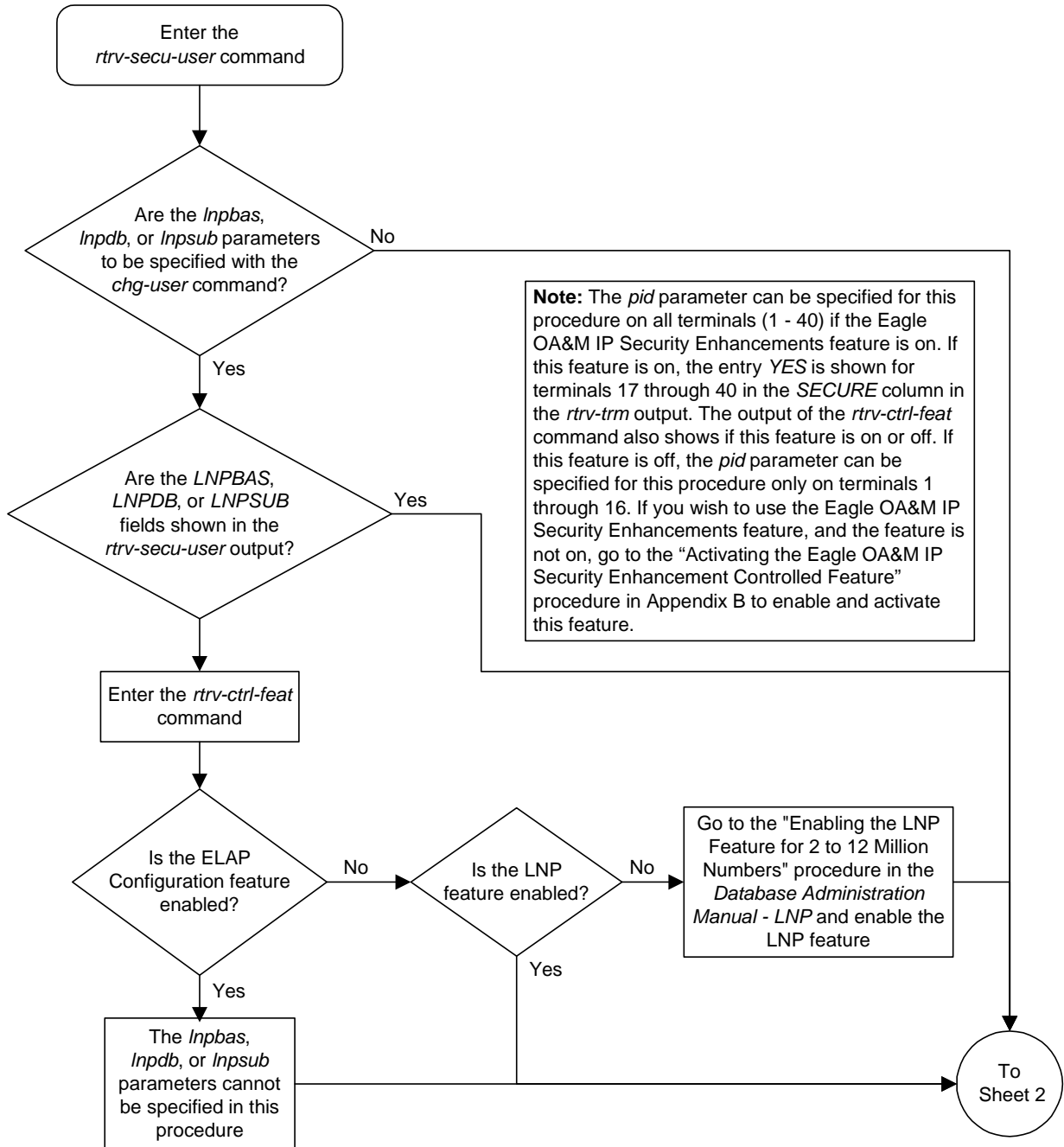
```
rlghncxa03w 04-06-01 08:33:48 GMT EAGLE5 31.6.0
```

USER ID	AGE	PAGE	UOUT	REV	LINK	SA	SYS	PU	DB	DBG	BAS	DB	SUB			
bilbo	36	60	60	NO	YES	YES	YES	NO	NO	NO	YES	YES	YES			
	DB1	U02	U03	U04	U05	U06	U07	U08	U09	U10	U11	U12	U13	U14	U15	U16
	YES	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
	U17	U18	U19	U20	U21	U22	U23	U24	U25	U26	U27	U28	U29	U30	U31	U32
	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	NO	YES

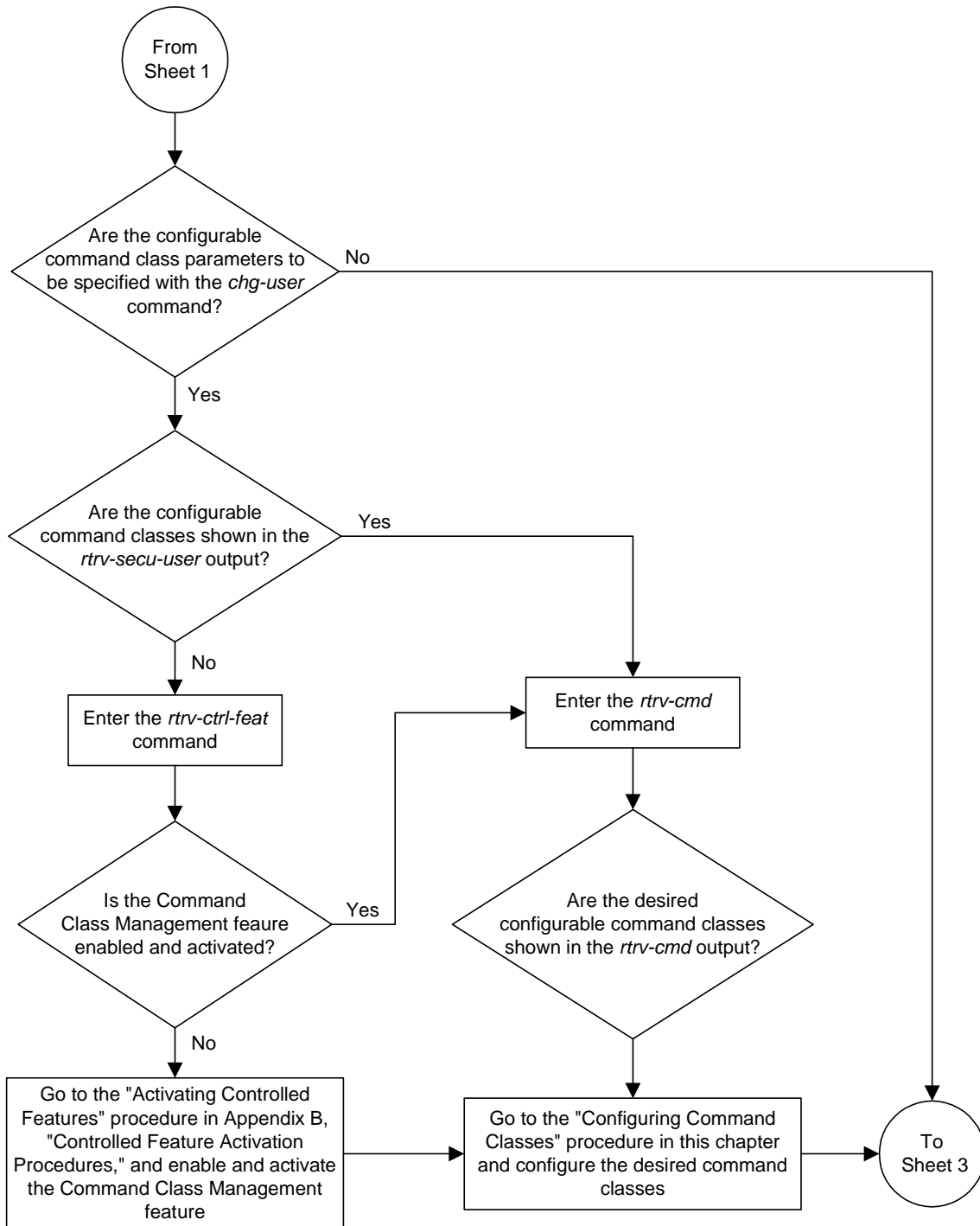
8. Back up the new changes using the `chg-db:action=backup:dest=fixed` command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

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

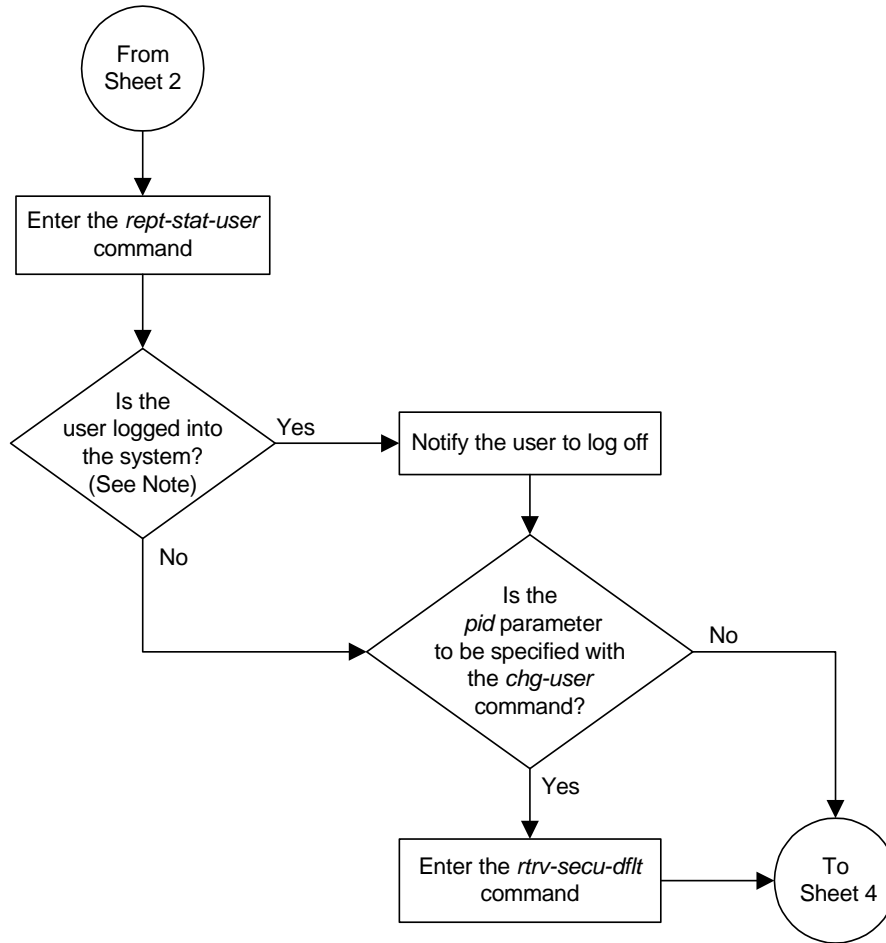
Flowchart 4-8. Changing User Information (Sheet 1 of 5)



Flowchart 4-8. Changing User Information (Sheet 2 of 5)

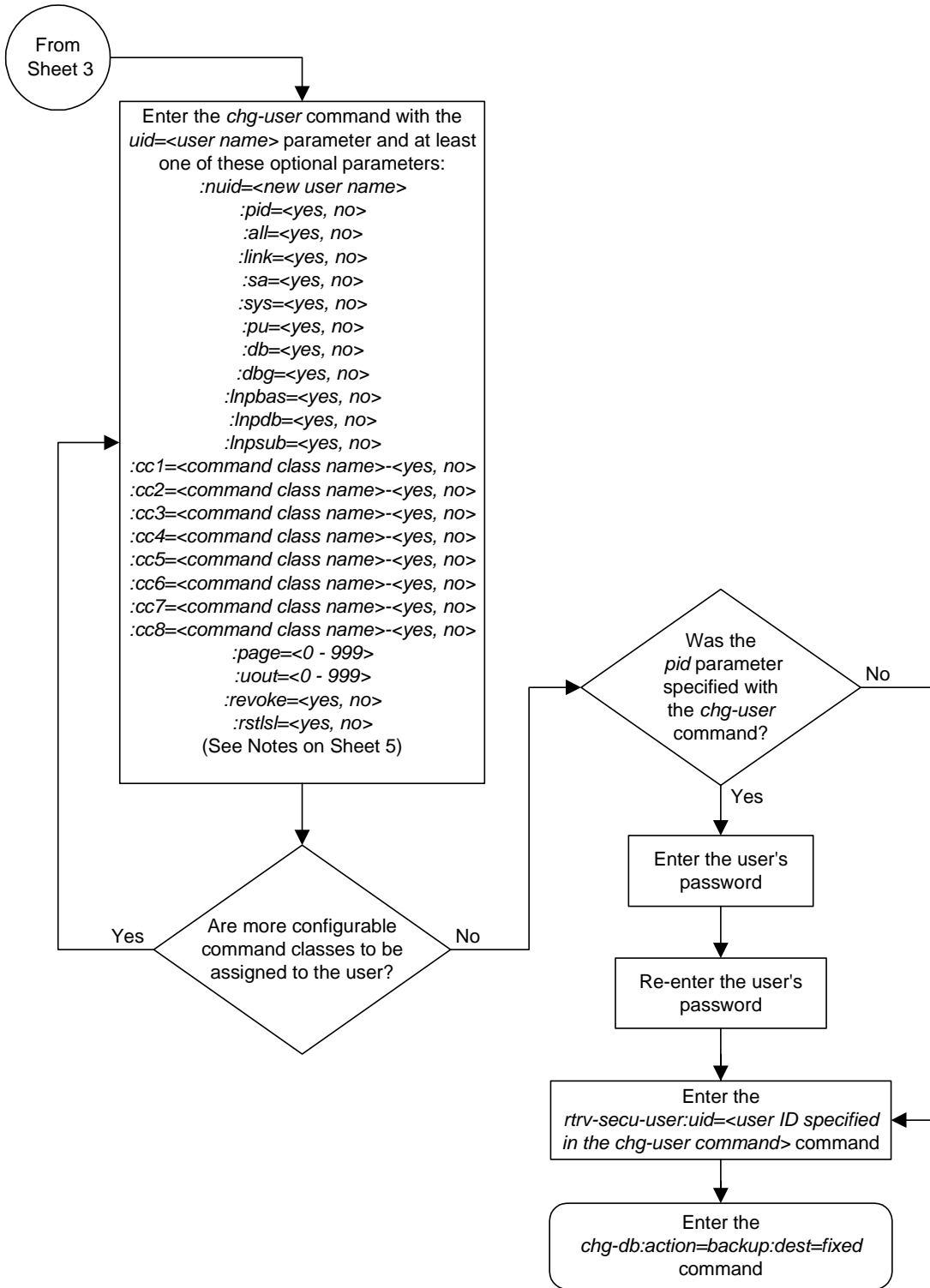


Flowchart 4-8. Changing User Information (Sheet 3 of 5)



Note: A user ID cannot be changed while the user is logged on, except when the *revoke=yes* parameter is specified with the *chg-user* command. It is assumed that if the user ID is being revoked, the intent is to immediately deny the user access to the system. In this case, the user will be logged off when the database is updated.

Flowchart 4-8. Changing User Information (Sheet 4 of 5)



Flowchart 4-8. Changing User Information (Sheet 5 of 5)

Notes:

1. The words SEAS and NONE are reserved by the system and cannot be specified as values for the *nuid* parameter.
2. The *revoke=yes* parameter cannot be specified when the *sa* parameter value is *yes*.
3. To specify the *Inpbas*, *Inpdb*, or *Inpsub* parameters, the LNP feature must be enabled for 2 to 12 million numbers.
4. To specify the *cc1* through *cc8* parameters, the Command Class Management feature must be enabled and activated.
5. The user can have a maximum of 32 configurable command classes assigned.
6. The *all* parameter specifies whether or not all non-configurable command classes (*link*, *sa*, *sys*, *pu*, *db*, *dbg*, *Inpbas*, *Inpdb*, *Inpsub*) can be used by the user.
7. If the *all* parameter and individual non-configurable command classes are specified with the *ent-user* command, the value of the specified individual non-configurable command classes overrides the value of the *all* parameter.
8. The password must adhere to all password provisioning rules as shown in the *rtv-secu-dflt* output. These rules are displayed on the screen when the password prompt is presented.

Changing a Password

There are two different procedures that can be used to change passwords. This procedure allows a specific user to change their own password using the `chg-pid` command. The other procedure is for the system administrator to change the password of any user (see “Changing User Information” on page 4-35).

The rules for the format of the password are determined by the `chg-secu-dflt` command (see the “Changing the Security Defaults” procedure on page 4-7 for more information) and are displayed in the scroll area of the terminal before the password prompt is issued, or by entering the `rtrv-secu-dflt` command.

The password is not case sensitive. For security reasons, the password is never displayed on the terminal.

NOTE: This procedure can be performed on all terminals (1 - 40) if the Eagle OA&M IP Security Enhancements feature is on. If this feature is on, the entry **YES** is shown for terminals 17 through 40 in the **SECURE** column in the `rtrv-trm` output. The output of the `rtrv-ctrl-feat` command also shows if this feature is on or off. If this feature is off, this procedure can be performed only on terminals 1 through 16. If you wish to use the Eagle OA&M IP Security Enhancements feature, and the feature is not on, go to the “Activating the Eagle OA&M IP Security Enhancement Controlled Feature” procedure on page B-12 to enable and activate this feature.

Procedure

1. Log into the system using the `login` or `act-user` command. This is an example of the messages that appear when you have successfully logged onto the system.

```
NOTICE: This is a private computer system.
Unauthorized access or use may lead to prosecution.
```

```
0 LOGIN failures since last successful LOGIN
Last successful LOGIN was on port 4 on 04-06-01 @ 09:12:36
```

2. Enter the `chg-pid` command.

3. At the prompt `enter old password`, enter your current password. This is a security feature of this command. It prevents another user from changing the password of the user that is logged in to the system who may have stepped away from the terminal without logging off.

4. At the prompt **enter new password**, the minimum requirements for passwords are displayed as shown in the following example.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
New password must contain:
- between 1 and 12 characters
- at least 1 alphabetic character(s) ('a' - 'z')
- at least 1 numeric character(s) ('0' - '9')
- at least 1 punctuation character(s) (e.g. $%#@#)
```

Enter your new password making sure that the password meets the minimum requirements for passwords on your system.

If the password is rejected, it did not meet the minimum requirements for passwords. Go back to step 2 and start the process of changing the password again making sure that the new password meets the minimum character requirements.

-
5. At the prompt **verify new password**, enter the password that was entered in step 4 again. If the password is rejected, either the new password entered in this step did not match the password entered in step 4, or the password entered in step 3 did not match the original password. Go back to step 2 and start the process of changing the password again making sure that the current password entered in step 3 is correct and that the new password meets the minimum character requirements shown at the **enter new password** prompt.

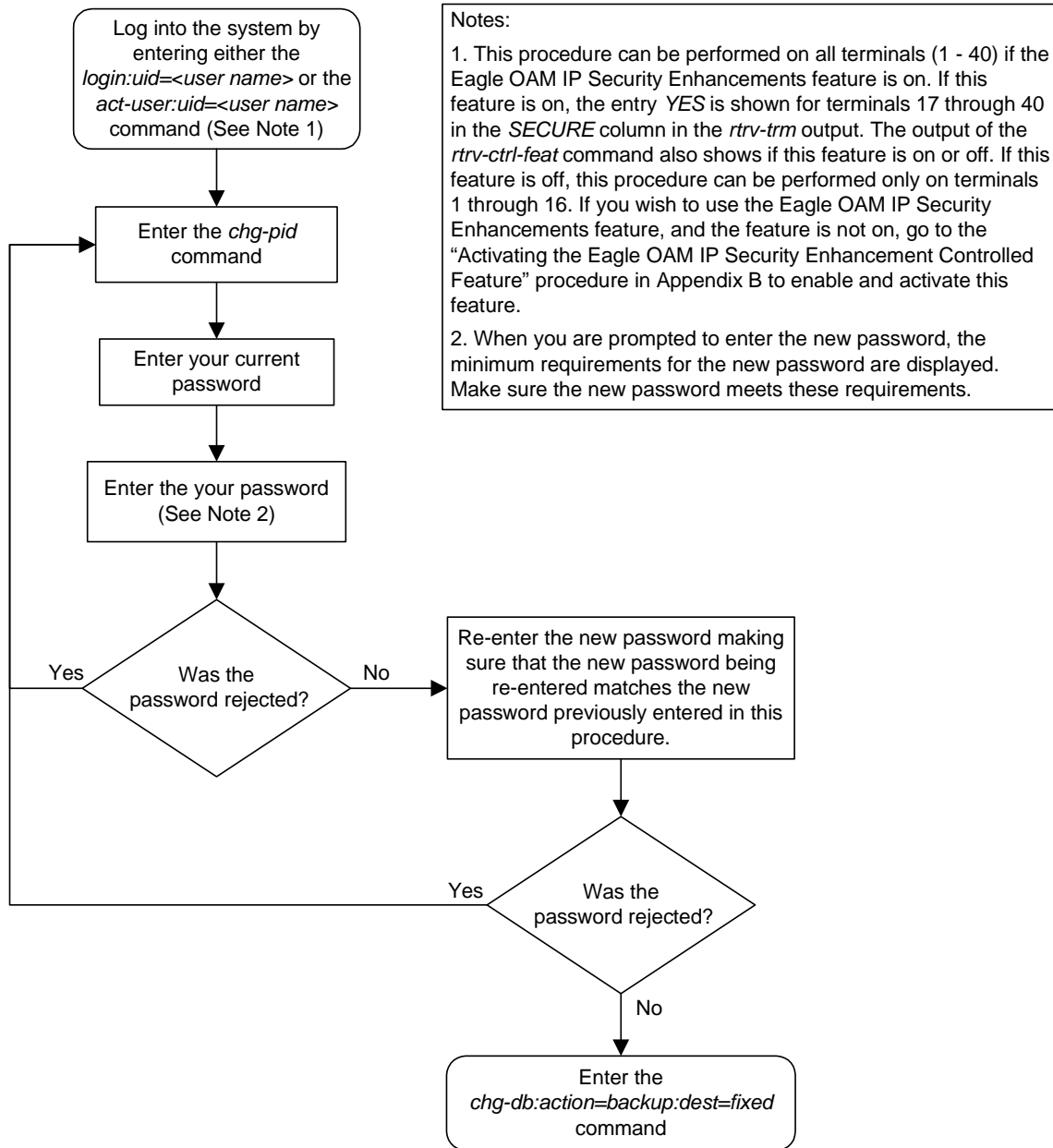
-
6. When the **command executed** message appears, the execution of the command has been completed, and the new password has been entered into the system database. This message should also appear.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CHG-PID: MASP A - COMPLTD
```

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

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

Flowchart 4-9. Changing a Password



Changing Terminal Characteristics

This procedure is used to change the characteristics of a terminal, except for the OAP port and a measurements terminal for a 700 signaling link system, using the **chg-trm** command.

To configure a measurements terminal for a 700 signaling link system, go to the “Configuring the Measurements Terminal for a 700 Signaling Link System” procedure on page 4-134.

To configure a terminal as an OAP port, go to the “Configuring the OAP Port at the Eagle STP” procedure on page A-15.

The communication attributes can be changed on any terminal except on the terminal you are logged on to. The message output group assignments can be changed on any terminal, including the terminal you are logged on to. The **chg-trm** command uses these parameters.

:trm – terminal numbers (1 - 40, terminals 1-16 are serial terminals, terminals 17-40 are telnet terminals)

:baud – Serial port baud rate (2400, 4800, 9600, or 19200)

:sb – The number of stop bits used in communications with the device (1 or 2)

:prty – Parity used by the device (odd, even, none)

:type – The type of device being connected (See the “Terminal Types” section on page 4-55)

:fc – The type of flow control used between the system and the output devices. (sw - software, hw - hardware, both, none)

:tmout – The maximum amount of time, in minutes, that a login session on the specified port can remain idle (that is, no user input) on the port before being automatically logged off. (0 - 99, see the “Security Parameters” section on page 4-57)

:mxinv – The login failure threshold – The number of login attempt failures or attempts to unlock a terminal that can occur on the terminal before the terminal is disabled. (0 - 9, see the “Security Parameters” section on page 4-57)

:dural – The length of time that the terminal is disabled after the login failure threshold has been exceeded. (See the “Security Parameters” section on page 4-57)

:all – Specifies whether or not all unsolicited messages are displayed on the specified terminal (yes or no)

:traf – Specifies whether or not traffic related unsolicited messages are displayed on the specified terminal (yes or no)

:link – Specifies whether or not link maintenance related unsolicited messages are displayed on the specified terminal (yes or no)

- | **:sa** – Specifies whether or not security administration related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:db** – Specifies whether or not database related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:sys** – Specifies whether or not system maintenance related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:pu** – Specifies whether or not program update related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:lnpdb** – Specifies whether or not LNP database administration related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:lnpsub** – Specifies whether or not LNP subscription related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:uimrd** – Specifies whether or not UIM redirect related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:appserv** – Specifies whether or not application server related unsolicited messages are displayed on the specified terminal. (yes or no)
- | **:appss** – Specifies whether or not application subsystem related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:card** – Specifies whether or not card related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:clk** – Specifies whether or not clock related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:dbg** – Specifies whether or not debug related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:gtr** – Specifies whether or not global title translation related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:gws** – Specifies whether or not gateway screening related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:meas** – Specifies whether or not measurements maintenance related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:mon** – Specifies whether or not unsolicited messages related to the Sentinel monitoring functions are displayed on the specified terminal (yes or no)
- | **:mps** – Specifies whether or not MPS related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:seas** – Specifies whether or not SEAS maintenance related unsolicited messages are displayed on the specified terminal (yes or no)
- | **:slan** – Specifies whether or not SLAN maintenance related unsolicited messages are displayed on the specified terminal (yes or no)

The messages assigned to the output message groups defined by the **traf**, **db**, **link**, **sa**, **sys**, **pu**, **lnpdb**, **lnpsub**, **uimrd**, **appserv**, **appss**, **card**, **clk**, **dbg**, **gdt**, **gws**, **meas**, **mon**, **mps**, **seas**, and **slan** parameters are listed in the *Maintenance Manual*.

Certain UIMs (unsolicited information messages) can be assigned to the UIM Redirect output group or remain in their original output message group. The **uimrd** parameters of the **chg-trm** and **chg-stpopts** commands determine which output groups these UIMs are assigned to and how the system handles them.

The **uimrd=yes** parameter of the **chg-stpopts** command tells the system to put these UIMs in the unsolicited UIM redirect output message group. If the **uimrd=no** parameter is specified with the **chg-stpopts** command, the messages remain in their original output message group. The **uimrd=yes** parameter of the **chg-trm** command allows the specified terminals to receive unsolicited UIM redirect output messages.

Table 4-2 shows the combination of the values of both **uimrd** parameters and how the system handles the messages. The unsolicited output group message assignments are listed in the *Maintenance Manual*.

Table 4-2. UIMRD Parameter Combinations

Value of the uimrd parameter with chg-trm command	Value of the uimrd parameter with chg-stpopts command	Action
No	No	The UIMs remain in their original output message group and are output to terminals receiving messages from the original output message group.
No	Yes	The UIMs are in the UIM Redirect output group but are not output to any terminal.
Yes	No	The UIMs remain in their original output message group and are output to terminals receiving messages from the original output message group. Even though the uimrd parameter with the chg-trm command is set to yes , there are no messages in the UIM redirect output group because the uimrd parameter with the chg-stpopts command is set to no . No UIM redirect messages are output to any terminal.
Yes	Yes	The UIMs are in the UIM Redirect output group and are output to terminals receiving unsolicited UIM redirect messages.

If the **type=vt320** or **type=sccs** parameters are specified, the value of the **prty** parameter cannot be **none**. The value of the **prty** parameter must be either **odd** or **even**.

The system requires at least two terminals assigned to the Security Administration command class. The terminal type of a terminal assigned to the Security Administration command class cannot be changed to these terminal types, **printer (:type=printer)**, **none (:type=none)**, or **OAP (:type=oap)**, if the change would leave the system with only one terminal assigned to the Security Administration command class. The command class assignments of the terminal are shown with the **rtrv-secu-trm** command. If the terminal type is being changed to either **oap**, **printer**, or **none**, go to the "Changing Terminal Command Class Assignments" procedure on page 4-73 and make sure that the command class assignment for the terminal being changed does not have the Security Administration command class assigned to it, or change the command class assignment of another terminal to include the Security Administration command class.

If the **all=yes** parameter and the **traf**, **db**, **link**, **sa**, **sys**, **pu**, **lnpdb**, **lnpsub**, **uimrd**, **appserv**, **appss**, **card**, **clk**, **dbg**, **gtt**, **gws**, **meas**, **mon**, **mps**, **seas**, or **slan** parameters are specified, for example, **chg-trm:trm=1:all=yes:pu=no**; all the message output groups are set to **yes** with the exception of the message output groups specified in the **chg-trm** command which are set to **no**. In this example, the value of all the message output groups is **yes (all=yes)** with the exception of the program update message output group which has the value **no (pu=no)**.

The **lnpdb** and **lnpsub** parameters can only be specified if the LNP feature is enabled for a quantity of 2 to 12 million numbers. Enter the **rtrv-ctrl-feat** command to verify the quantity the LNP feature is enabled for. The quantity of LNP telephone numbers is shown in the **LNP TNs** field of the **rtrv-ctrl-feat** command output. If the **all=yes** parameter is specified and the LNP feature is not enabled, or the ELAP Configuration feature is enabled and activated, the values of the **lnpdb** and **lnpsub** parameters are set to **no**. To enable the LNP feature for a quantity of 2 to 12 million numbers, go to the "Enabling the LNP Feature for 2 to 12 Million Numbers" procedure in the *Database Administration Manual - LNP* and enable the LNP feature.

The total value of the terminals' baud rate cannot be greater than 172,032. If the total baud rate of the terminals exceeds 172,032, change the baud rates of the terminals so that the total baud rate is not greater than 172,032.

Only four terminals should be configured to receive unsolicited system maintenance messages (**:sys=yes**).

If the communication attributes (**baud**, **sb**, **prty**, and **fc**) or the terminal type (**type**) for the terminal are being changed, the terminal must be placed out of service with the **rmv-trm** command before the changes can be made. If the terminal being changed is the last OAP port that is in service, the **force=yes** parameter must be used with the **rmv-trm** command.

If only the output message group or security (`tmout`, `mxinv`, `dural`) parameters are being changed, the terminal can remain in service when the `chg-trm` command is executed.

Terminal Types

There are nine terminal types that can be used on the Eagle.

The `VT320` type is the standard terminal used for entering commands, displaying command responses, displaying periodic system status information at screen specific locations, and scrolling unsolicited messages.

The `PRINTER` type is used with printers for recording UAMs, UIMs and echoed command responses.

The `KSR` type mimics older style teleprinters (that is, printers with a keyboard).

The `OAP` type is used to connect directly to the OAP, which provides support for the SEAS and LNP features. The OAP terminal type is not used in this procedure. To configure a terminal as an OAP port, go to the "Configuring the OAP Port at the Eagle STP" procedure on page A-15.

The `SCCS` type is used for some network monitoring and surveillance applications. SCCS terminals are the same as KSR terminals, except a pre-defined "start-of-message" character is added to indicate the beginning of a new command response or unsolicited message.

The `NONE` type is typically used to indicate unused terminals.

The `MGMT` terminal type, or management terminal, provides a machine to machine messaging interface between the Eagle and the customer's network to provide network surveillance.

The `TELNET` terminal type provides up to 24 IP based connections to the system's user interface using a telnet client, in addition to the 16 RS-232 terminals. The telnet terminals are numbered from 17 to 40. The telnet terminals are configured automatically when the IP User Interface (Telnet) feature is enabled and activated, and when the IPSMs are configured in the database. The system can have 3 IPSMs, with each IPSM supporting eight telnet terminals. The `baud`, `prty`, `sb`, and `fc` parameters cannot be specified with the `chg-trm` command for a telnet terminal, but all other terminal parameters can be specified and changed for a telnet terminal. For terminals 17 to 40, the values for the `type` parameter can be only `telnet`, `none`, or `emsalm`.

NOTE: If the `chg-trm` command is executed from a telnet terminal (terminals 17 to 40), only the output group parameters (`all`, `traf`, `link`, `sa`, `db`, `sys`, `pu`, `lnpdb`, `lnpsub`, `uimrd`, `appserv`, `appss`, `card`, `clk`, `dbg`, `gtt`, `gws`, `meas`, `mon`, `mps`, `seas`, `slan`) and the terminal type can be changed.

The **EMSALM** terminal type provides an alarm monitoring capability that displays only UAMs and system alive messages generated by the Eagle. UIMs and autonomous reports are not displayed on the EMSALM terminals, even if the output group settings for these terminals would allow these messages to be displayed on these terminals.



CAUTION: EMSALM terminals can accept login requests and commands, however these operations may interfere with the alarm monitoring functions of the EMSALM terminals and should be performed on another terminal.

The **EMSALM** terminal type can be assigned to any terminal, serial (terminals 1 to 16) or telnet (terminals 17 to 40). When the terminal type is changed to **emsalm**, all the output message group settings for that terminal are set to **yes**, even if any of the output message groups were set to **no** before the terminal type change. These output message group settings can be changed, if desired. The communications attributes (**baud**, **prty**, **sb**, **fc**) and security parameter values (**tmout**, **mxinv**, **dural**) are not changed.



CAUTION: It is recommended that all the output message group settings for an EMSALM terminal are set to **yes**. Changing any of the output message group settings to **no** could prevent alarm messages controlled by the output message group from being displayed on the EMSALM terminal.



CAUTION: If a terminal dedicated to measurements collection is configured (see the "Configuring the Measurements Terminal for a 700 Signaling Link System" procedure on page 4-134), it is recommended that this terminal is not changed to an EMSALM terminal.

When the terminal type is changed from **emsalm** to another terminal type, the output message group settings, communications attributes, and security parameter values are not changed.

When assigning the **EMSALM** terminal type to a serial terminal, the communication attribute (**baud**, **prty**, **sb**, **fc**), security (**tmout**, **mxinv**, **dural**), and output group (**traf**, **db**, **link**, **sa**, **sys**, **pu**, **lnpdb**, **lnpsub**, **uimrd**, **appserv**, **appss**, **card**, **clk**, **dbg**, **gtt**, **gws**, **meas**, **mon**, **mps**, **seas**, **slan**) parameters values can be changed.

When assigning the **EMSALM** terminal type to a telnet terminal, only the security (**tmout**, **mxinv**, **dural**), and output group (**traf**, **db**, **link**, **sa**, **sys**, **pu**, **lnpdb**, **lnpsub**, **uimrd**, **appserv**, **appss**, **card**, **clk**, **dbg**, **gtt**, **gws**, **meas**, **mon**, **mps**, **seas**, **slan**) parameters values can be changed.

Security Parameters

The monitoring of a terminal's idle time (**tmout**) and the automatic logout function only applies to terminal types VT320 (**type=vt320**), KSR, (**type=ksr**), SCCS (**type=sccs**), and MGMT (**type=mgmt**). The **tmout** parameter can be specified with other terminal types, but it will have no effect. The system default value for the **tmout** parameter is 30 minutes. The **tmout=0** parameter value allows the terminal to remain idle indefinitely without being automatically logged off.

To impose a temporary lockout of a terminal after a particular number of login attempt failures or a particular number of attempts to unlock a terminal have occurred, the **mxinv** and **dural** values for that terminal must be greater than 0.

The **mxinv=0** parameter value prevents any temporary lockout of the terminal regardless of the number of successive failed login or unlock attempts that were made at the terminal. No messages are issued regarding the temporary lockout. This action applies even if the **dural** parameter value is greater than 0.

The **dural=0** parameter prevents the terminal from being temporarily locked out. If the **mxinv** parameter value is greater than 0 and the **dural** parameter value is 0, the system issues messages concerning login failure threshold, but the terminal will not be locked out.

The value of the **dural** parameter can be expressed in seconds (0 - 59), minutes and seconds (0 - 5959), or hours, minutes, and seconds (0 - 995959). The value **999999** for the **dural** parameter disables the terminal, when the login failure threshold has been exceeded, for an indefinite period of time. A terminal that is disabled for an indefinite period of time is identified by the entry **INDEF** in the **DURAL** field of the **rtrv-trm** command output. A terminal disabled indefinitely can only be restored to service by inhibiting the terminal with the **rmv-trm** command, then placing it into service with the **rst-trm** command.

When the system is delivered to the user, the **mxinv** and **dural** parameters will be set to these values:

```
:mxinv = 5  
:dural = 0100 (1 minute, 0 seconds)
```

The RTRV-TRM Output

The output of the `rtrv-trm` command is displayed in two parts. The first part displays the communication security attributes of the terminal. The communication attributes of the terminal, **BAUD**, **PRTY** (parity), **SB** (stop bits), and **DBTS** (data bits), are displayed in the **COMM** field of the `rtrv-trm` output and are displayed in this format: BAUD-DBTS-PRTY-SB. The second part of the `rtrv-trm` command output displays the types of unsolicited messages the terminal may receive. An example of the `rtrv-trm` command output is shown in this example.

```

rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
TRM  TYPE      COMM          FC      TMOUT  MXINV  DURAL
3    VT320     9600-7-E-1 SW      30     5      99:59:59

                                LNP LNP
TRM  TRAF LINK SA  SYS PU  DB  DB  SUB  UIMRD
3    NO  YES NO  YES NO  YES YES YES  YES

                                APP  APP
TRM  SERV SS  CARD CLK DBG GTT GWS MEAS MON MPS SEAS SLAN
3    YES YES YES YES YES YES YES YES YES YES NO  NO

```

This example shows a `rtrv-trm` command output when the LNP feature is enabled for a quantity of 2 to 12 million numbers. If the LNP feature is not enabled, or the ELAP Configuration feature is enabled and activated, the fields LNPDB, and LNPSUB are not shown in the `rtrv-trm` command output.

If the terminal is a telnet terminal (terminals 17 to 40) the **COMM** and **FC** fields are not displayed in the `rtrv-trm` output. The card location on the IPSM associated with the telnet terminals is displayed. The security status of the telnet terminal is displayed in the **SECURE** field. If the Eagle OA&M IP Security Enhancements feature is on, the telnet terminal is secure. The entry **yes** is shown in the **SECURE** field. If the Eagle OA&M IP Security Enhancements feature is off, the telnet terminal is not secure. The entry **no** is shown in the **SECURE** field. Appendix B, "Controlled Feature Activation Procedures," contains the procedures to enable and turn on, or turn off the Eagle OA&M IP Security Enhancements feature.

In this example, terminal 3 is running at 9600 baud with 7 data bits, even parity, and 1 stop bit.

Using Telnet Terminals in Place of Serial Terminals

For Eagle releases 29.0 to 30.0, and releases 30.2 and greater with the Eagle OA&M IP Security feature disabled and off, serial terminals must be connected to the Eagle and provisioned in the database because Security Administration commands cannot be executed from a telnet terminal.

For Eagle releases 30.2 and greater, Security Administration commands, in addition to all other commands, can be executed from a telnet terminal only if the Eagle OA&M IP Security feature is enabled and on. The ability to execute commands from a particular terminal is dependent on the terminal command class assignments for that terminal. Even with the ability to execute most Eagle commands from a telnet terminal, it is recommended that at least two serial terminals remain connected to the Eagle. The **act-echo**, **lock**, and **unlock** commands cannot be executed from a telnet terminal. These terminals should be configured with at least Security Administration command class privileges.

By having serial terminals connected to the Eagle, the user would still have access to the Eagle in the event of a telnet terminal connection failure.

Upgrades of the Eagle from a telnet terminal are not supported. When the Eagle is upgraded, the MASPs are upgraded first, followed by the various cards in the Eagle. The cards are upgraded by taking the cards out of service, then placing the cards back into service. When the IPSMs are taken out of service, the telnet sessions running on the IPSMs are disabled. This can result in losing the telnet terminal connection to the Eagle. The Expanded Terminal Output Groups feature, introduced in release 31.3, can create a situation where UIMs required for the upgrade would not be displayed on the same telnet terminal that initiated the upgrade. The upgrade would be difficult to complete if the UIMs generated during the upgrade are not displayed on the same telnet terminal that initiated the upgrade.

The Eagle upgrade procedure recommends that some method to capture command input and output during the upgrade process is used. The telnet terminals do not support capturing the input and output, nor can the Eagle's **act-echo** command be used on a telnet terminal. Because of this limitation, the upgrade procedure should not be executed from a telnet terminal.

For any Eagle release, whether the Eagle OA&M IP Security feature is enabled or not, if applicable, Kermit file transfers, required for the Security Log feature, are not supported from telnet terminals. The Kermit file transfers can be performed only from a serial terminal.

Procedure

1. Display the values of all terminals using the `rtrv-trm` command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
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    VT320      9600-7-E-2 SW      30     9      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    VT320      9600-7-E-1 SW      30     7      00:30:00
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  TYPE      LOC      TMOUT  MXINV  DURAL      SECURE
17   TELNET    1201     60     5      00:30:00  yes
18   TELNET    1201     60     5      00:30:00  yes
19   TELNET    1201     60     5      00:30:00  yes
20   TELNET    1201     60     5      00:30:00  yes
21   TELNET    1201     60     5      00:30:00  yes
22   TELNET    1201     60     5      00:30:00  yes
23   TELNET    1201     60     5      00:30:00  yes
24   TELNET    1201     60     5      00:30:00  yes

TRM  TRAF  LINK  SA  SYS  PU  DB  UIMRD
1    NO   YES   NO  YES  NO  YES YES
2    NO   NO    NO  NO   NO  NO  NO
3    YES  YES   YES NO   YES YES YES
4    YES  NO    NO  NO   NO  NO  NO
5    NO   YES   NO  NO   NO  NO  YES
6    NO   NO    YES NO   NO  NO  NO
7    YES  YES   YES YES  YES YES YES
8    NO   NO    NO  NO   YES NO  YES
9    NO   YES   NO  NO   NO  YES NO
10   NO   NO    NO  NO   NO  NO  YES
11   YES  YES   YES YES  YES YES YES
12   YES  YES   YES YES  YES YES YES
13   NO   YES   NO  NO   NO  NO  YES
14   NO   NO    YES NO   NO  NO  NO
15   YES  YES   YES NO   YES YES YES
16   NO   NO    NO  NO   YES NO  YES
17   NO   NO    NO  NO   NO  NO  NO
18   NO   NO    NO  NO   NO  NO  NO
19   NO   NO    NO  NO   NO  NO  NO
20   NO   NO    NO  NO   NO  NO  NO
21   NO   NO    NO  NO   NO  NO  NO
22   NO   NO    NO  NO   NO  NO  NO
23   NO   NO    NO  NO   NO  NO  NO
24   NO   NO    NO  NO   NO  NO  NO

APP  APP

```

System Administration Procedures

TRM	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
17	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
18	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
19	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
20	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
21	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
22	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
23	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
24	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

NOTE: If the `lnpdb` or `lnpsub` parameters are not being specified in this procedure, or the `LNPDB` or `LNPSUB` fields are shown in the `rtrv-trm` output, skip this step, and go to step 3.

2. Verify that the LNP feature is enabled for a quantity of 2 to 12 million numbers, by entering the `rtrv-ctrl1-feat` command. If the LNP feature is enabled for a quantity of 2 to 12 million numbers, the quantity shown in the `LNP TNs` field should be 2 to 12 million numbers.

NOTE: The `rtrv-ctrl1-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-ctrl1-feat` command, see the `rtrv-ctrl1-feat` command description in the *Commands Manual*.

If the LNP feature is enabled for a quantity of 2 to 12 million numbers, go to step 3.

If the LNP feature is not enabled, go to the "Enabling the LNP Feature for 2 to 12 Million Numbers" procedure in the *Database Administration Manual - LNP* and enable the LNP feature.

If the ELAP Configuration feature is enabled and activated, the `lnpdb` or `lnpsub` parameters cannot be specified in this procedure.

NOTE: If telnet terminals are not being added in this procedure, skip step 3, and go to step 4.

3. If the `rtrv-trm` output in step 1 shows terminals 1 to 16 and you wish to add telnet terminals (`type=telnet`, terminals 17 through 40), go to the "Adding an IPSM" procedure on page 4-168. Adding an IPSM adds eight telnet terminals to the system.

When an IPSM is added to the database, the eight telnet terminals associated with the IPSM are added to the database with default values for the security (`tmout, mxinv, dural`) and output message group (`traf, db, link, sa, sys, pu, lnpdb, lnpsub, uimrd, appserv, appss, card, clk, dbg, gtt, gws, meas, mon, mps, seas, slan`) parameters, and the `telnet` terminal type.

The only actions that can be performed on terminals 17 through 40 is changing the terminal type to either `none`, `telnet`, or `emsalm`, and changing the security (`tmout, mxinv, dural`) and output message group (`traf, db, link, sa, sys, pu, lnpdb, lnpsub, uimrd, appserv, appss, card, clk, dbg, gtt, gws, meas, mon, mps, seas, slan`) parameters.

If terminals 17 through 40 are being changed, go to step 4.

If no changes are being to the telnet terminals, either to the existing telnet terminals, or to the telnet terminals that were added in this step with the "Adding an IPSM" procedure, this procedure is finished.

NOTE: If only the output message group or security parameters are being changed, skip steps 4 through 7, and go to step 8.

4. Display the status of the terminals by entering the `rept-stat-trm` command. This is an example of the possible output (another IPSM added from step 3).

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
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      -----
17    IS-NR         Active      -----
18    IS-NR         Active      -----
19    IS-NR         Active      -----
20    IS-NR         Active      -----
21    IS-NR         Active      -----
22    IS-NR         Active      -----
23    IS-NR         Active      -----
24    IS-NR         Active      -----
```

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```
25   IS-NR      Active      -----
26   IS-NR      Active      -----
27   IS-NR      Active      -----
28   IS-NR      Active      -----
29   IS-NR      Active      -----
30   IS-NR      Active      -----
31   IS-NR      Active      -----
32   IS-NR      Active      -----
```

Command Completed.

5. If the communication attributes (**baud**, **sb**, **prty**, and **fc**) or the terminal type (**type**) for the terminal are being changed, inhibit the terminal you wish to change using the **rmv-trm** command and specify the port you wish to inhibit. If the terminal being changed is the last OAP port that is in service, the **force=yes** parameter must be used with the **rmv-trm** command. The OAP ports are shown by the entry **OAP** in the **TYPE** field in the **rtrv-trm** command output in step 1. For this example, enter these commands.

```
rmv-trm:trm=4
rmv-trm:trm=8
rmv-trm:trm=19
rmv-trm:trm=23
```

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

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Inhibit message sent to terminal

rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Command Completed.
```

6. Verify that the terminal that was inhibited in step 5 is in the OOS-MT-DSBLD state by entering the **rept-stat-trm** command. For this command, enter these commands.

```
rept-stat-trm:trm=4
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
TRM   PST           SST           AST
4     OOS-MT-DSBLD  MANUAL          -----
Command Completed.
```

```
rept-stat-trm:trm=8
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
TRM   PST           SST           AST
8     OOS-MT-DSBLD  MANUAL          -----
Command Completed.
```

```
rept-stat-trm:trm=19
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
TRM  PST          SST          AST
19   OOS-MT-DSBLD  MANUAL          -----
Command Completed.
```

```
rept-stat-trm:trm=23
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
TRM  PST          SST          AST
23   OOS-MT-DSBLD  MANUAL          -----
Command Completed.
```

NOTE: If the terminal type is not being changed to either printer or none, skip this step and go to step 8.

7. Display the command class values of all terminals using the `rtrv-secu-trm` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 12:31:04 GMT EAGLE5 31.6.0
                                     LNP  LNP  LNP
TRM  LINK SA  SYS  PU  DB  DBG  BAS  DB  SUB
1    NO  NO  YES  NO  YES  NO  NO  NO  NO
2    NO  NO  NO  NO  YES  NO  NO  NO  NO
3    YES ***  YES  YES  YES  YES  NO  NO  NO
4    NO  YES  NO  NO  NO  NO  NO  NO  NO
5    YES  NO  NO  NO  YES  YES  NO  NO  NO
6    NO  YES  NO  NO  NO  NO  NO  NO  NO
7    NO  ***  YES  NO  YES  NO  NO  NO  NO
8    NO  NO  NO  NO  NO  NO  NO  NO  NO
9    YES  YES  YES  YES  YES  YES  NO  NO  NO
10   NO  NO  NO  NO  NO  NO  NO  NO  NO
11   YES  NO  YES  NO  YES  YES  NO  NO  NO
12   NO  ***  NO  NO  NO  NO  NO  NO  NO
13   NO  NO  NO  NO  YES  YES  NO  NO  NO
14   NO  YES  NO  NO  YES  YES  NO  NO  NO
15   NO  NO  NO  NO  YES  YES  NO  NO  NO
16   NO  NO  NO  NO  YES  YES  NO  NO  NO
17   NO  NO  YES  NO  YES  NO  NO  NO  NO
18   NO  NO  NO  NO  YES  NO  NO  NO  NO
19   YES  NO  YES  YES  YES  YES  NO  NO  NO
20   NO  YES  NO  NO  NO  NO  NO  NO  NO
21   YES  NO  NO  NO  YES  YES  NO  NO  NO
22   NO  YES  NO  NO  NO  NO  NO  NO  NO
23   NO  NO  YES  NO  YES  NO  NO  NO  NO
24   NO  NO  NO  NO  NO  NO  NO  NO  NO
25   YES  YES  YES  YES  YES  YES  NO  NO  NO
26   NO  NO  NO  NO  NO  NO  NO  NO  NO
27   YES  NO  YES  NO  YES  YES  NO  NO  NO
28   NO  NO  NO  NO  NO  NO  NO  NO  NO
29   NO  NO  NO  NO  YES  YES  NO  NO  NO
30   NO  YES  NO  NO  YES  YES  NO  NO  NO
31   NO  NO  NO  NO  YES  YES  NO  NO  NO
32   NO  NO  NO  NO  YES  YES  NO  NO  NO
```


NOTE: If the terminal type is being changed to either `printer` or `none`, make sure the system has at least two terminals assigned to the Security Administration command class (shown in the `SA` column in the `rtrv-secu-trm` output). If the terminal being changed in this procedure is being removed from the Security Administration command class, and if this change would leave the system with only one terminal assigned to the Security Administration command class, go to the "Changing Terminal Command Class Assignments" procedure on page 4-73 and change the command class assignment of another terminal to include the Security Administration command class.

8. Change the terminal characteristics using the `chg-trm` command. For this example enter this command.

```
chg-trm:trm=4:baud=9600:traf=no:link=yes:sa=yes:db=yes
```

```
chg-trm:trm=19:type=none
```

```
chg-trm:trm=21:sys=yes:link=yes:sa=yes:db=yes  
:lnpbas=yes:lnpdb=yes:tmout=30
```

```
chg-trm:trm=8:type=emsalm
```

```
chg-trm:trm=23:type=emsalm
```

NOTE: If step 5 was not performed in this procedure (placing the terminal out of service), do not specify these parameters with the `chg-trm` command:

- `baud`, `sb`, `prty`, `fc` (the communications attributes of the terminal). These parameters cannot be specified for terminals 17 to 40.
- the terminal type (`type`).



CAUTION: If the terminal type is being changed to `emsalm`, it is recommended that all the output message group settings for an EMSALM terminal are set to `yes`. Changing any of the output message group settings to `no` could prevent alarm messages controlled by the output message group from being displayed on the EMSALM terminal.



CAUTION: If a terminal dedicated to measurements collection is configured (see the "Configuring the Measurements Terminal for a 700 Signaling Link System" procedure on page 4-134), it is recommended that this terminal is not changed to an EMSALM terminal.

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

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0  
CHG-TRM: MASP A - COMPLTD
```

9. Verify the changes made in step 8 by using the `rtrv-trm` command with the terminal number specified in step 8. For this example, enter these commands.

rtrv-trm:trm=4

This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
TRM TYPE COMM FC TMOUT MXINV DURAL
4 VT320 9600-7-E-1 BOTH 30 5 00:30:00

LNP LNP
TRM TRAF LINK SA SYS PU DB DB SUB UIMRD
4 NO YES YES NO NO YES NO NO NO

APP APP
TRM SERV SS CARD CLK DBG GTT GWS MEAS MON MPS SEAS SLAN
4 YES YES YES YES YES NO YES YES YES YES NO NO
```

rtrv-trm:trm=19

This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
TRM TYPE LOC TMOUT MXINV DURAL SECURE
19 NONE 1201 60 5 00:30:00 yes

LNP LNP
TRM TRAF LINK SA SYS PU DB DB SUB UIMRD
19 NO NO NO NO NO NO NO NO NO

APP APP
TRM SERV SS CARD CLK DBG GTT GWS MEAS MON MPS SEAS SLAN
19 NO NO NO NO NO NO NO NO NO NO NO NO
```

rtrv-trm:trm=21

This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
TRM TYPE LOC TMOUT MXINV DURAL SECURE
21 TELNET 1201 30 5 00:30:00 yes

LNP LNP
TRM TRAF LINK SA SYS PU DB DB SUB UIMRD
21 NO YES YES YES NO YES YES YES NO

APP APP
TRM SERV SS CARD CLK DBG GTT GWS MEAS MON MPS SEAS SLAN
21 NO NO NO NO NO NO NO NO NO NO NO NO
```

rtrv-trm:trm=8

```
rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
TRM TYPE COMM FC TMOUT MXINV DURAL
8 EMSALM 19200-7-E-2 BOTH 30 5 00:30:00

LNP LNP
TRM TRAF LINK SA SYS PU DB DB SUB UIMRD
8 YES YES YES YES YES YES YES YES YES YES

APP APP
TRM SERV SS CARD CLK DBG GTT GWS MEAS MON MPS SEAS SLAN
8 YES YES YES YES YES YES YES YES YES YES YES YES
```

System Administration Procedures

```
rtrv-trm:trm=23
rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
TRM TYPE LOC TMOUT MXINV DURAL SECURE
23 EMSALM 1201 60 5 00:30:00 yes

LNP LNP
TRM TRAF LINK SA SYS PU DB DB SUB UIMRD
23 YES YES YES YES YES YES YES YES YES

APP APP
TRM SERV SS CARD CLK DBG GTT GWS MEAS MON MPS SEAS SLAN
23 YES YES YES YES YES YES YES YES YES YES YES
```

NOTE: If the terminal was not inhibited in step 5, skip this step and go to step 11.

10. When the changes are complete, and if the terminal was inhibited in step 5, activate the terminal using the **rst-trm** command. For this example, enter these commands.

```
rst-trm:trm=4
rst-trm:trm=8
rst-trm:trm=19
rst-trm:trm=23
```

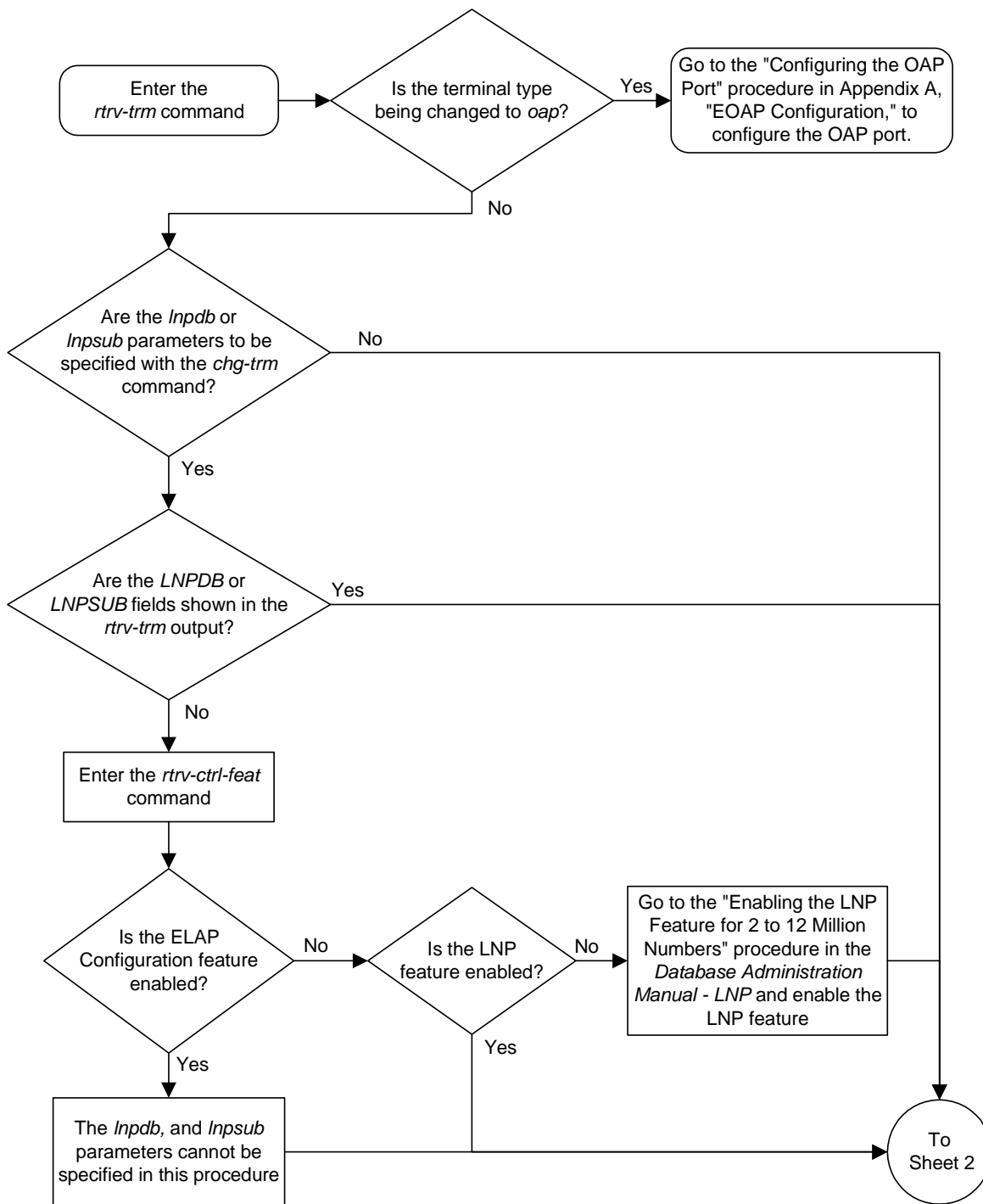
When these commands have successfully completed, this message should appear.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Allow message sent to terminal
```

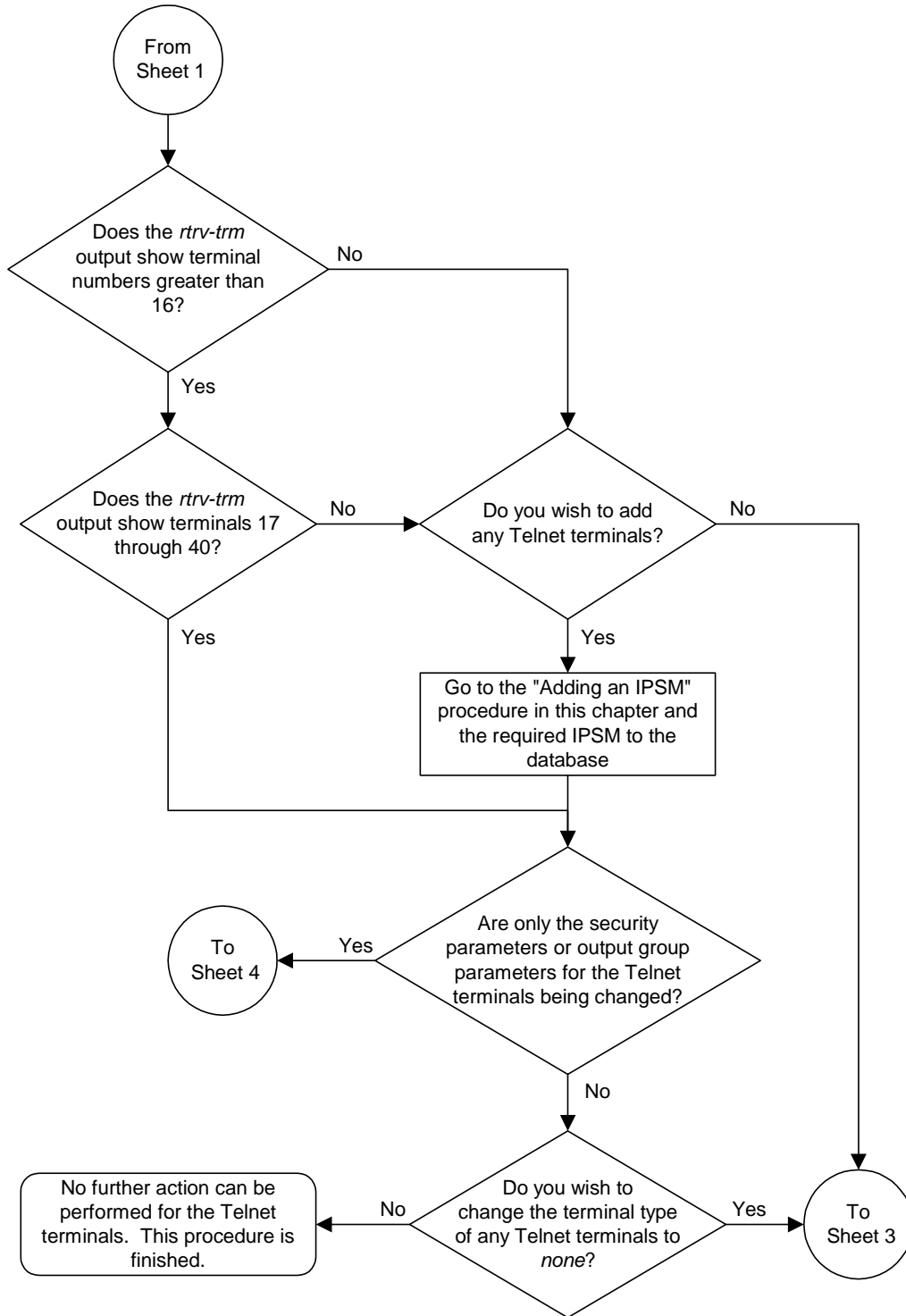
11. Back up the new changes using the **chg-db:action=backup:dest=fixed** command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

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

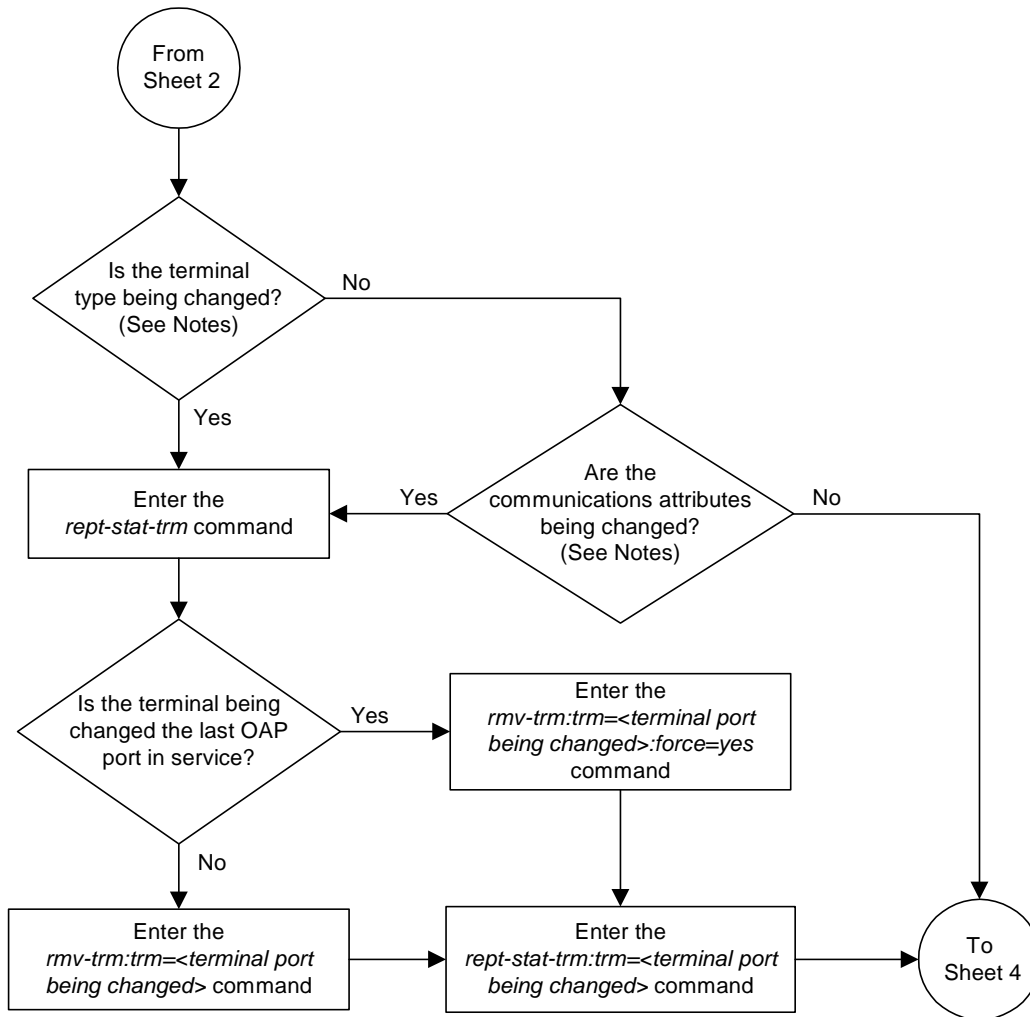
Flowchart 4-10. Changing Terminal Characteristics (Sheet 1 of 5)



Flowchart 4-10. Changing Terminal Characteristics (Sheet 2 of 5)



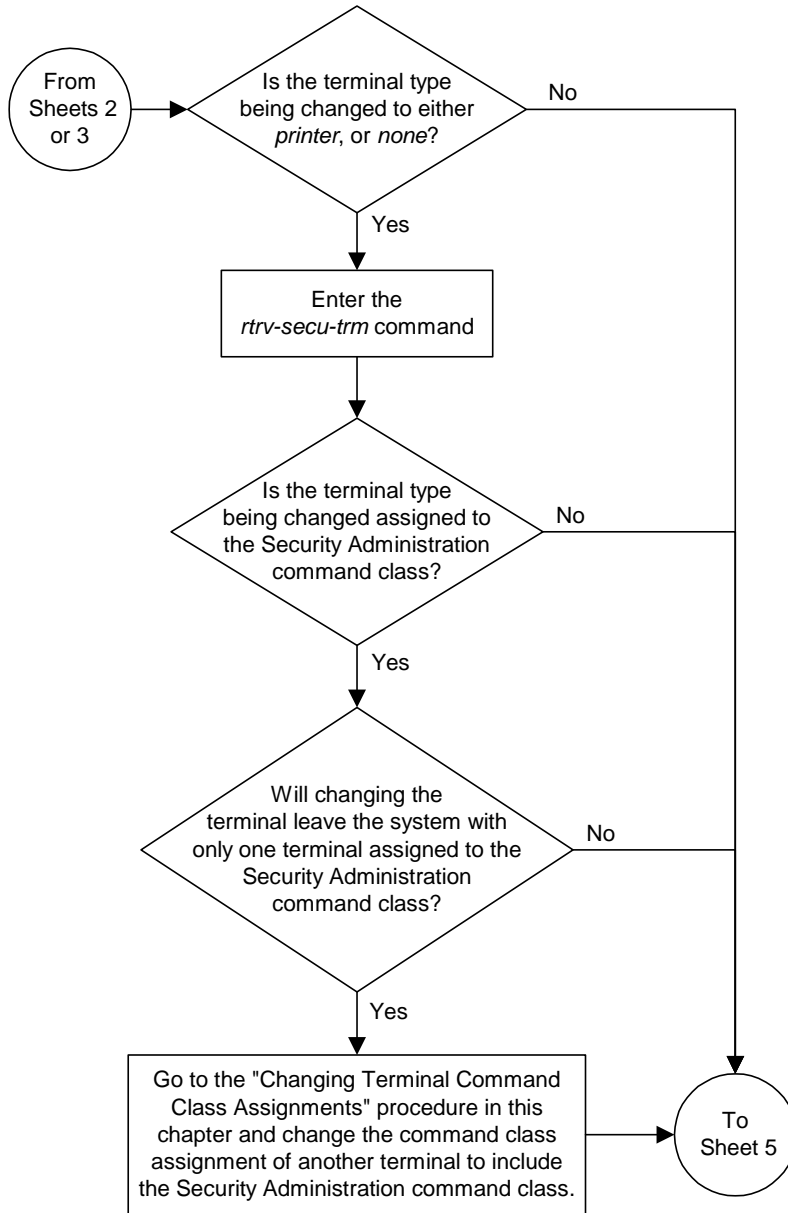
Flowchart 4-10. Changing Terminal Characteristics (Sheet 3 of 5)



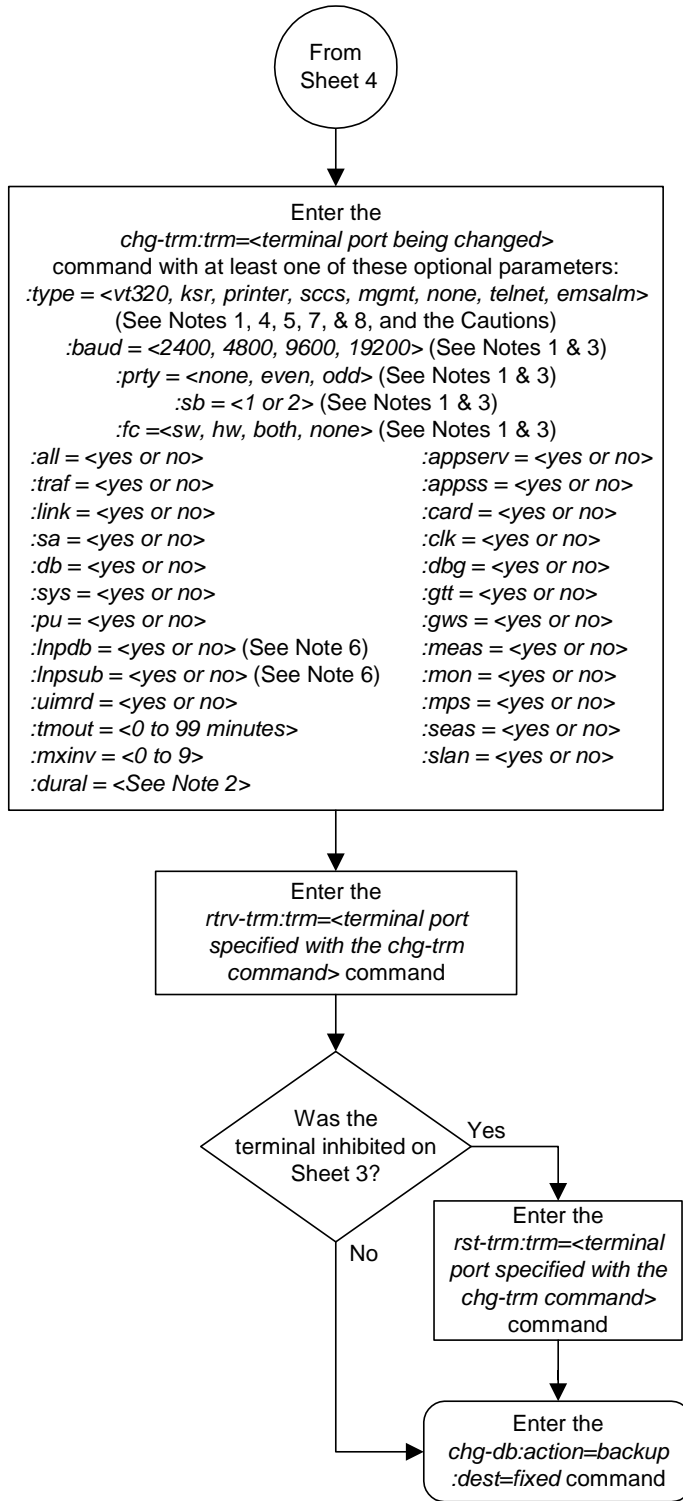
Notes:

1. If the terminal numbers are from 17 to 40, the values for the *type* parameter can be only *telnet*, *none*, or *emsalm*. The communication attributes for these terminals cannot be specified.
2. If the terminal numbers are from 1 to 16, the values for the *type* parameter can be *vt320*, *ksr*, *printer*, *sccs*, *mgmt*, *none*, or *emsalm*. The communication attributes for these terminals can be specified and changed.
3. The communications attributes are defined by these parameters: *baud* (baud rate), *prty* (parity), *sb* (stop bits), and *fc* (flow control).

Flowchart 4-10. Changing Terminal Characteristics (Sheet 4 of 5)



Flowchart 4-10. Changing Terminal Characteristics (Sheet 5 of 5)



Notes:

1. If the terminal was not placed out of service on Sheet 3, this parameter cannot be specified with the *chg-trm* command.
2. The value of the *dural* parameter can be expressed in seconds (0 - 59), minutes and seconds (0 - 5959), or hours, minutes, and seconds (0 - 995959). The value 999999 for the *dural* parameter disables the terminal, when the login failure threshold has been exceeded, for an indefinite period of time.
3. This parameter cannot be specified for terminals 17 through 40.
4. The *type=telnet* parameter cannot be specified for terminals 1 through 16. Valid terminal types for terminals 1 through 16 are *vt320*, *ksr*, *printer*, *sccs*, *mgmt*, *none*, or *emsalm*.
5. For terminals 17 through 40, the value of the *type* parameter can be only *telnet*, *none*, or *emsalm*.
6. The *Inpdb* and *Inpsub* parameters can be specified only if the LNP feature is enabled for 2 to 12 million numbers.
7. The output group settings are set to *yes* when the terminal type is changed to *emsalm*. The output group settings for an EMSALM terminal can be changed.
Caution: It is recommended that all the output message group settings for an EMSALM terminal are set to *yes*. Changing any of the output message group settings to *no* could prevent alarm messages controlled by the output message group from being displayed on the EMSALM terminal.
8. The output group settings are not changed when the terminal type is changed from *emsalm* to another terminal type.
Caution: If a terminal dedicated to measurements collection is configured (see the "Configuring the Measurements Terminal for a 700 Signaling Link System" procedure in this chapter), it is recommended that this terminal is not changed to an EMSALM terminal.

Changing Terminal Command Class Assignments

This procedure is used to change the assignment of command classes to a terminal using the **chg-secu-trm** command. This procedure can only be performed if you have been assigned the command class "Security Administration." This can be useful to restrict the types of commands that can be entered on a system terminal. This procedure can only be performed if you and the terminal have been assigned the command class "Security Administration." The system commands are grouped into these command classes.

- Basic
- Database Administration
- Debug
- Link Maintenance
- Program Update
- Security Administration
- System Maintenance
- LNP Basic
- LNP Database Administration
- LNP Subscription
- 32 Configurable Command Classes

With the **chg-secu-trm** command, only nine of these command classes can be assigned to a terminal. The Basic command class is automatically assigned to every terminal and to every user and is not configurable. Refer to the *Commands Manual* for a list of command classes and the commands assigned to them.

The **chg-secu-trm** command uses these parameters.

:trm – The terminal number

:all – The commands in all non-configurable command classes (**dbg**, **link**, **sys**, **sa**, **pu**, **db**, and if the LNP feature is enabled for a quantity of 2 to 12 million numbers, **lnpbas**, **lnpdb**, **lnpsub**) can be entered on the specified terminal.

:db – Database Administration commands can be entered on the specified terminal.

:dbg – Debug commands can be entered on the specified terminal.

:link – Link Maintenance commands can be entered on the specified terminal.

:pu – Program Update commands can be entered on the specified terminal.

:sa – Security Administration commands can be entered on the specified terminal.

:sys – System Maintenance commands can be entered on the specified terminal.

:lnpbas – LNP Basic commands can be entered on the specified terminal.

:lnpdb – LNP Database Administration commands can be entered on the specified terminal.

:lnpsub – LNP Subscription commands can be entered on the specified terminal.

:cc1 - :cc8 – Eight configurable command classes. These parameters specify whether or not the commands in the specified configurable command class can be entered on the specified terminal. The value of these parameters consist of the configurable command class name (1 alphabetic character followed by 2 alphanumeric characters), and either yes or no. The command class name and the yes or no values are separated by a dash. For example, to allow commands in the configurable command class **db1** from terminal 5, the **cc1=db1=yes** parameter would be specified in the **chg-secu-trm** command for terminal5.

To specify any configurable command classes, the Command Class Management feature must be enabled and activated. Enter the **rtrv-ctrl-feat** command to verify whether or not the Command Class Management feature is enabled. If the Command Class Management feature is not enabled or activated, go to the “Activating Controlled Features” procedure on page B-3 to enable and activate the Command Class Management feature. Up to 32 configurable command classes can be assigned to terminals. When the Command Class Management feature is enabled and activated, the configurable command class names are given the names **u01 - u32**. These command class names, the descriptions of these command classes, and the commands assigned to these command classes can be changed using the “Configuring Command Classes” procedure on page 4-83.

The **chg-secu-trm** command allows up to eight configurable command classes to be assigned to a terminal each time the **chg-secu-trm** command is performed.

If the **all=yes** parameter and the **db, dbg, link, pu, sa, sys, lnpbas, lnpdb,** or **lnpsub** parameter values are specified as **no**, for example, **chg-secu-trm:trm=1:all=yes:pu=no**; all commands can be entered on the specified terminal except those commands in the command class specified with the **chg-secu-trm** command. In this example, all commands can be entered on terminal 1 except for program update commands.

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To assign the LNP Basic, LNP Database Administration, or LNP Subscription command classes to a terminal, the LNP feature must be enabled for a quantity of 2 to 12 million numbers. Enter the `rtrv-ctrl-feat` command to verify the quantity the LNP feature is enabled for. The quantity of LNP telephone numbers is shown in the `LNP TNs` field of the `rtrv-ctrl-feat` command output. To enable the LNP feature for a quantity of 2 to 12 million numbers, go to the "Enabling the LNP Feature for 2 to 12 Million Numbers" procedure in the *Database Administration Manual - LNP* and enable the LNP feature.

The values of the `lnpbas`, `lnpdb`, and `lnpsub` parameters are shown in the `LNPBAS`, `LNPDB`, and the `LNPSUB` fields of the `rtrv-secu-trm` command output. These fields can only be displayed if the LNP feature is enabled for a quantity of 2 to 12 million numbers.

The terminal command class assignments cannot be changed for the specified terminal if a user is currently logged onto that terminal. This can be verified with the `rept-stat-user` command.

At least two terminals in the system must always be assigned to the security administration command class to prevent the system from becoming unadministerable.

It is possible that a terminal with the terminal type of `printer`, `oap`, or `none` can be assigned to the Security Administration command class. Terminals with these terminal types are not counted as having Security Administration authority since commands cannot be administered from these terminal types and is shown in the `rtrv-secu-trm` output report as "***" instead of `yes`.

When the system is delivered to the user, the terminal command class assignments will be set to the system default values for these parameters.

```
all = no
db = no
dbg = no
link = no
pu = no
sa = yes
sys = no
lnpbas = no
lnpdb = no
lnpsub = no
```

The examples in this procedure are used to change the command class assignments to the terminal assigned to port 4 to these values: Link Maintenance = yes, Security Administration = no, Program Update = yes, Database Administration = yes.

Procedure

1. Display the command class values of all terminals using the `rtrv-secu-trm` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 12:31:04 GMT EAGLE5 31.6.0
                                LNP LNP LNP
TRM  LINK SA  SYS  PU  DB  DBG  BAS  DB  SUB
1    NO  NO  YES  NO  YES  NO  YES  YES  YES
2    NO  NO  NO   NO  YES  NO  YES  NO  NO
3    YES *** YES  YES  YES  YES  NO  NO  NO
4    NO  YES NO   NO  NO  NO  NO  NO  NO
5    YES NO  YES  NO  YES  YES  NO  NO  NO
6    NO  NO  NO   NO  NO  NO  NO  NO  NO
7    NO  NO  YES  NO  YES  NO  NO  NO  NO
8    NO  NO  NO   NO  NO  NO  NO  NO  NO
9    YES YES YES  YES  YES  YES  NO  NO  NO
10   NO  NO  NO   NO  NO  NO  NO  NO  NO
11   YES NO  YES  NO  YES  YES  NO  NO  NO
12   NO  NO  NO   NO  NO  NO  NO  NO  NO
13   NO  NO  NO   NO  YES  YES  NO  NO  NO
14   NO  NO  NO   NO  YES  YES  NO  NO  NO
15   NO  NO  NO   NO  YES  YES  NO  NO  NO
16   NO  NO  NO   NO  YES  YES  NO  NO  NO
```

NOTE: If the `lnpbas`, `lnpdb`, or `lnpsub` parameters are not being specified in this procedure, or the `LNPBAS`, `LNPDB`, or `LNPSUB` fields are shown in the `rtrv-secu-trm` output, skip this step, and go to step 3.

2. Verify that the LNP feature is enabled for a quantity of 2 to 12 million numbers, by entering the `rtrv-ctrl-feat` command. If the LNP feature is enabled for a quantity of 2 to 12 million numbers, the quantity shown in the `LNP TNS` field should be 2 to 12 million numbers.

NOTE: The `rtrv-ctrl-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-ctrl-feat` command, see the `rtrv-ctrl-feat` command description in the *Commands Manual*.

If the LNP feature is enabled for a quantity of 2 to 12 million numbers, go to step 3.

If the LNP feature is not enabled, go to the "Enabling the LNP Feature for 2 to 12 Million Numbers" procedure in the *Database Administration Manual - LNP* and enable the LNP feature.

If the ELAP Configuration feature is enabled and activated, the `lnpbas`, `lnpdb`, and `lnpsub` parameters cannot be specified in this procedure.

NOTE: If the `cc1` through `cc8` parameters are not being specified in this procedure, skip steps 3 and 4, and go to step 5. If configurable command classes are shown in the `rtrv-secu-trm` output, skip this step, and go to step 4.

3. Verify that the Command Class Management feature is enabled and activated, by entering the `rtrv-ctrl-feat` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
Feature Name          Partnum    Status    Quantity
Command Class Management 893005801  off      ----
```

NOTE: The `rtrv-ctrl-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-ctrl-feat` command, see the `rtrv-ctrl-feat` command description in the *Commands Manual*.

If the Command Class Management feature is enabled and activated (status = on), go to step 4.

If the Command Class Management feature is not enabled or activated, go to the “Activating Controlled Features” procedure on page B-3 and enable and activate the Command Class Management feature.



CAUTION: If the Command Class Management feature is temporarily enabled, the configurable command classes can be assigned and used only for the amount of time shown in the `Trial Period Left` column in the `rtrv-ctrl-feat` output.

4. Display the descriptions of the configurable command classes in the database by entering the **rtrv-cmd** command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
CMD                CLASS
alw-slk            link, u11
ent-user          sa
unhb-slk          link
rtrv-attr-seculog sa, u31
inh-slk           link, abc
rtrv-meas-sched   link, abc, def
act-lbp           link
act-dlk           link
act-slk           link
rtrv-seculog      sa, abc, def, ghi
act-lpo           link
blk-slk           link, abc, u23, u31
dact-lbp          link
canc-dlk          link
inh-card          sys
canc-lpo          link, u01, u02, u03, u04, u05, u06, u07, u08, u09, u10,
u11, u12, u13
canc-slk          link
ublk-slk          link, u01, u02, u03, u04, u05, u06, u07, u08, u09, u10,
u11, u12, u13, u14, u15, u16, u17, u18, u19, u20, u21,
u22, u23, u24, u25, u26, u27, u28, u29, u30, u31, u32

rept-x25-meas     link
inh-trm           sys, krb
rept-meas         link
ent-lnp-sub       lnpsub, u22

.
.
.

chg-meas          link
tst-dlk           link, krb
tst-slk           link

```

If the desired configurable command class descriptions are not in the database, go to the “Configuring Command Classes” procedure on page 4-83 and configure the desired command classes.

5. Verify that no users are logged onto the terminal whose command class assignments you wish to change using the **rept-stat-user** command. If the user is logged onto the terminal, notify the user to log off the terminal. This is an example of the possible output.

```

rlghncxa03w 04-06-01 09:12:15 GMT EAGLE5 31.6.0
REPT-STAT-USER COMPLTD
USER ID   TERM#  IDLE SINCE          COMMAND          STATE
fred      3      04-06-01 05:06:43  rept-stat-user  PROCESSING
frodo     13     04-06-01 08:12:23  chg-db          IDLE
manny     1      04-06-01 04:37:56  ent-dlk         IDLE
travist   7      04-06-01 10:06:22  rtrv-meas      IDLE

```

6. If you wish to change the Security Administration command class assignment of the specified terminal to **no** (**:sa=no**), make sure the system has at least two terminals assigned to the Security Administration command class. This is shown in the output of step 1, the **rtrv-secu-trm** command output, with the entry **YES** in the **SA** field. If this procedure would leave the system with only one terminal assigned to the Security Administration command class, use the **chg-secu-trm** command and change another terminal's assignment to the Security Administration command class from **NO** to **YES**. For this example, enter the **chg-secu-trm:trm=1:sa=yes** command.

7. Change the command class assignments of the terminal using the **chg-secu-trm** command. For this example enter this command.

```
chg-secu-trm:trm=4:link=yes:sa=no:pu=yes:db=yes
```

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

```
rlghncxa03w 04-06-01 12:31:04 GMT EAGLE5 31.6.0
CHG-SECU-TRM: MASP A - COMPLTD
```

8. Verify the changes made in step 7 by using the **rtrv-secu-trm** command with the port number specified in step 7. For this example, enter this command.

```
rtrv-secu-trm:trm=4
```

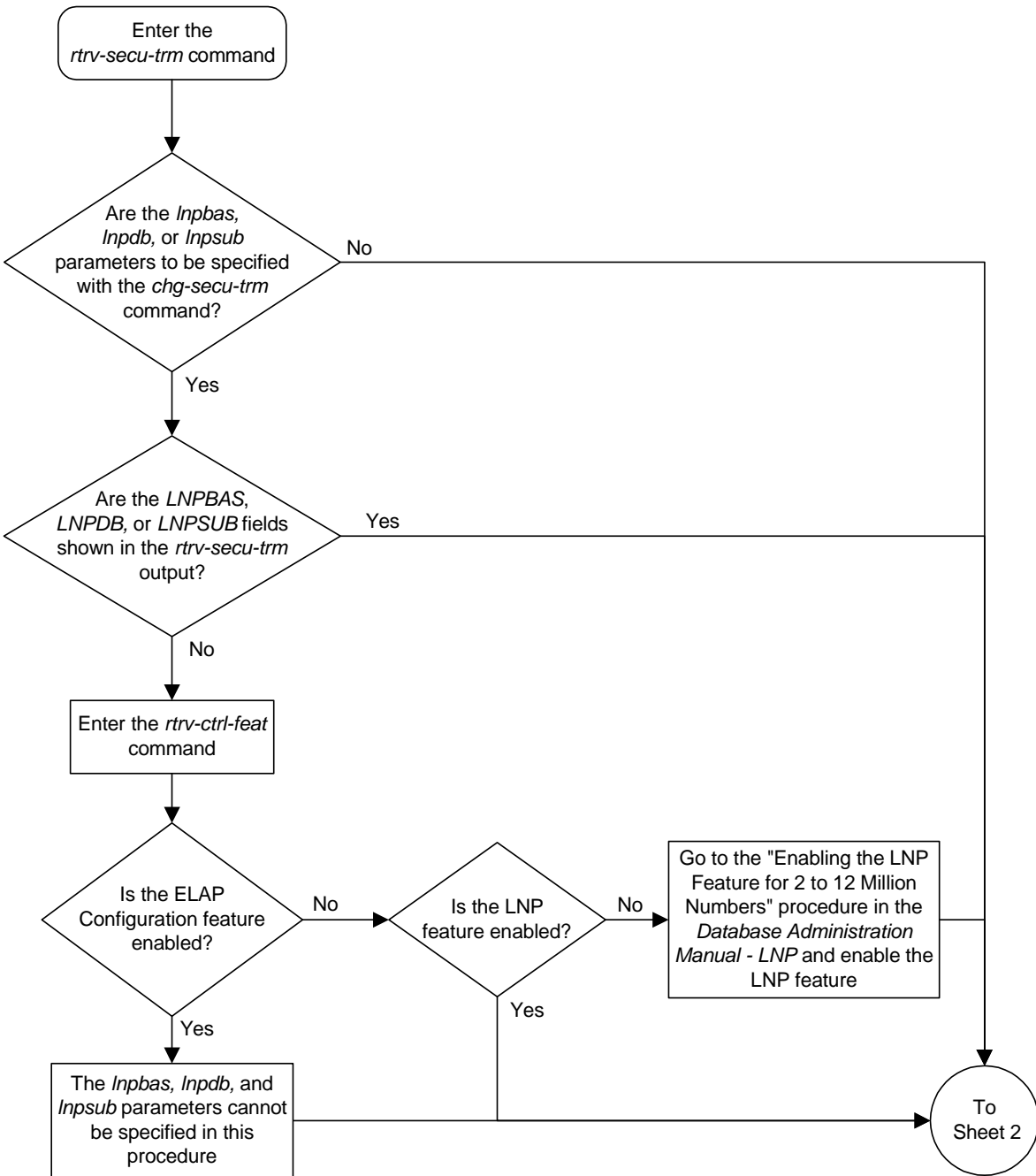
This is an example of the possible output.

```
rlghncxa03w 04-06-01 12:31:04 GMT EAGLE5 31.6.0
                                     LNP LNP LNP
TRM   LINK SA  SYS  PU   DB   DBG  BAS  DB   SUB
4     YES  NO  NO   YES  YES  NO   NO   NO   NO
```

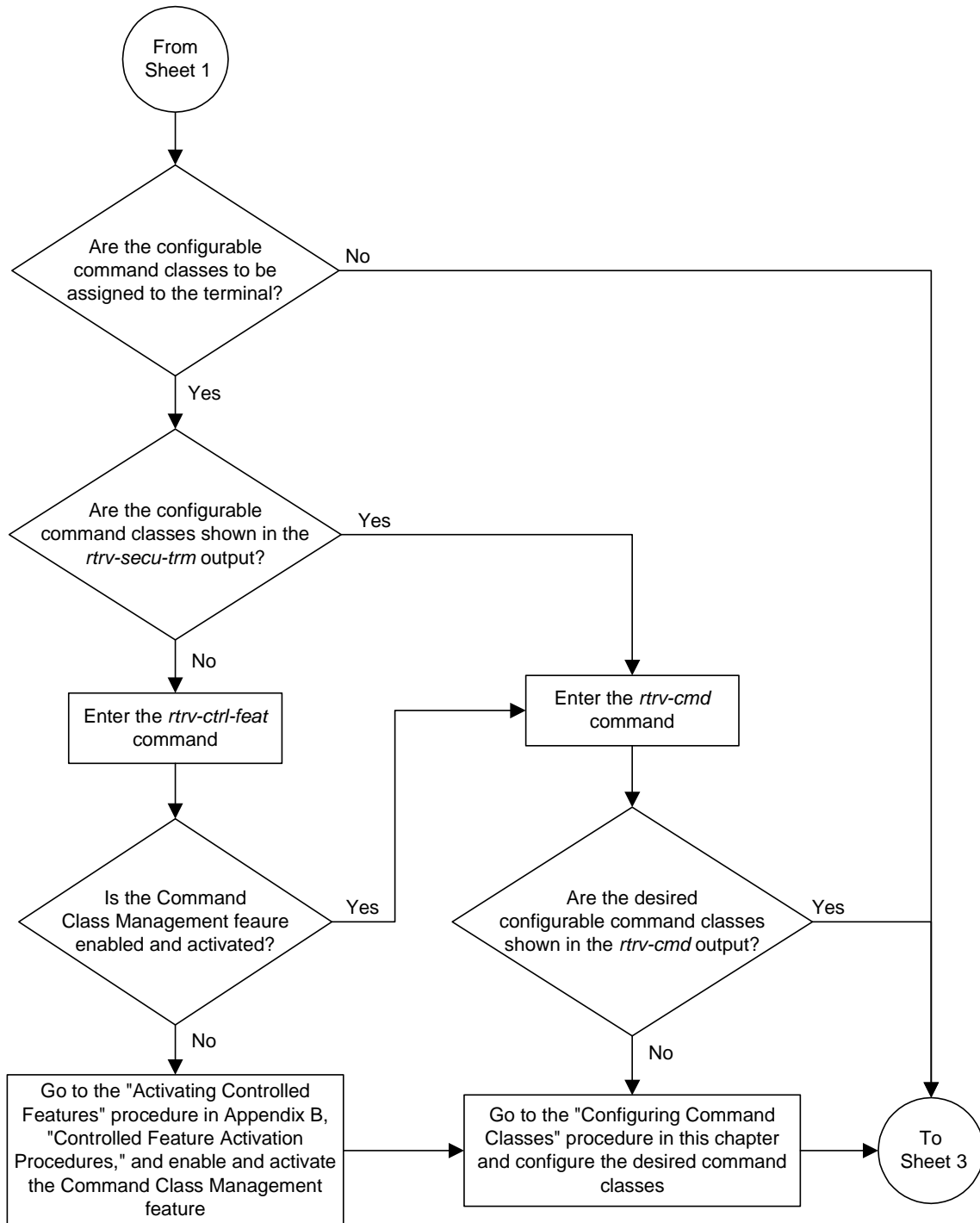
9. Back up the new changes using the **chg-db:action=backup:dest=fixed** command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

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

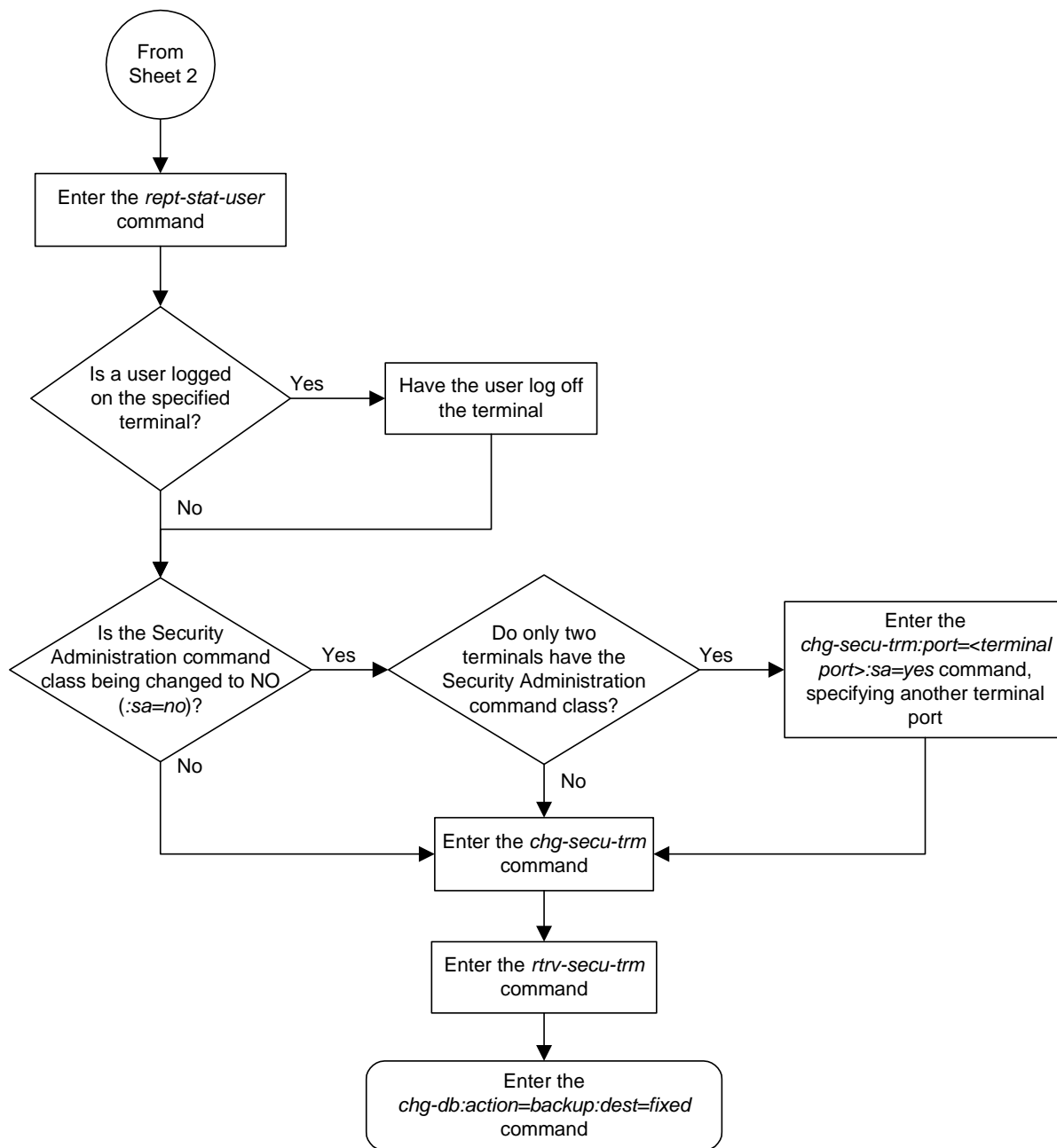
Flowchart 4-11. Changing Terminal Command Class Assignments (Sheet 1 of 3)



Flowchart 4-11. Changing Terminal Command Class Assignments (Sheet 2 of 3)



Flowchart 4-11. Changing Terminal Command Class Assignments (Sheet 3 of 3)



Configuring Command Classes

This procedure is used to assign different names to the 32 configurable command classes, and to assign commands to these configurable command classes.

The system still has the non-configurable 10 command classes: Basic, Database Administration, Debug, Link Maintenance, Program Update, Security Administration, System Maintenance, LNP Basic, LNP Database Administration, LNP Subscription.

The Command Class Management feature allows commands from any of these non-configurable command classes to be placed into another command class, which can be assigned to a user or terminal. This gives greater control over the commands that users can use, and to the commands that can be executed from a given terminal. For example, a user needs to use only these commands:

**rtrv-card, rtrv-ls, rtrv-slk, rtrv-dstn, rtrv-rte, rtrv-lnp-serv,
rtrv-lnp-sub, rtrv-user, rtrv-secu-user, rept-stat-db, rept-stat-card,
rept-stat-slk, rept-stat-ls, rtrv-gpl, rept-stat-gpl, rept-stat-rte,
rept-meas.**

To give this user access to these commands without the Command Class Management feature would require the user to be assigned to these command classes: Database, LNP Basic, Security Administration, System Maintenance, Program Update, and Link Maintenance. In addition to giving access to the commands this user needs, this user has access to all the commands in these command classes. This would also allow the user to add, change, or remove database entities (cards, signaling links, routes, etc.), to inhibit signaling links, enable features with either the **chg-feat** or **enable-ctrl-feat** command that you may not want turned on.

The Command Class Management feature allows these commands to be placed in their own command class which can be assigned to the user. Once the new command class is configured with these commands, the commands will be in their original command classes as well as the new configured command class. The user can be restricted to executing the commands in the new configured command class.

Commands can also be removed from configurable command classes.

When the Command Class Management controlled feature is enabled and activated, these command classes are created with the names U01, U02, U03, ... U32. The names of these command classes, and the descriptions of these command classes can be changed with the **chg-cmdclass** command. The **chg-cmdclass** command uses these parameters.

:class – The current class name, shown in the **rtrv-cmdclass** command output.

:nclass – The new command class name consisting of 1 alphabetic character and 2 alpha-numeric characters.

:descr – The description of the new command class consisting of 1 alphabetic character and up to 31 alpha-numeric characters, enclosed in double quotes.

Commands can be assigned to these configurable command classes using the **chg-cmd** command. The **chg-cmd** command uses these parameters.

:cmd – The command being added or removed from the configurable command class.

:class1 - :class8 – The name of the configurable command class that command is being added to or removed from with either yes (to add the command) or no (to remove the command) separated by a dash. For example, to add a command to configurable class **db1**, the **class1=db1-yes** parameter would be specified.

Up to eight configurable command classes can be specified with the **chg-cmd** command. To assign the command to more than eight configurable command classes, the repeat **chg-cmd** command until the desired number of configurable command classes, up to 32, have been specified.

To configure command classes, the Command Class Management feature must be enabled and activated. Enter the **rtrv-ctrl-feat** command to verify whether or not the Command Class Management feature is enabled. If the Command Class Management feature is not enabled or activated, go to the "Activating Controlled Features" procedure on page B-3 to enable and activate the Command Class Management feature.

To add commands from the LNP Basic, LNP Database Administration, or LNP Subscription command classes, the LNP feature must be enabled for a quantity of 2 to 12 million numbers. Enter the **rtrv-ctrl-feat** command to verify the quantity the LNP feature is enabled for. The quantity of LNP telephone numbers is shown in the **LNP TNs** field of the **rtrv-ctrl-feat** command output. To enable the LNP feature for a quantity of 2 to 12 million numbers, go to the "Enabling the LNP Feature for 2 to 12 Million Numbers" procedure in the *Database Administration Manual - LNP* and enable the LNP feature.

Procedure

1. Verify that the Command Class Management feature is enabled and activated, by entering the `rtrv-ctrl-feat` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
Feature Name          Partnum    Status    Quantity
Command Class Management 893005801  off      ----
```

NOTE: The `rtrv-ctrl-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-ctrl-feat` command, see the `rtrv-ctrl-feat` command description in the *Commands Manual*.

If the Command Class Management feature is enabled and activated (status = on), go to step 2.

If the Command Class Management feature is not enabled or activated, go to the “Activating Controlled Features” procedure on page B-3 and enable and activate the Command Class Management feature.



CAUTION: If the Command Class Management feature is temporarily enabled, the configurable command classes can be assigned and used only for the amount of time shown in the `Trial Period Left` column in the `rtrv-ctrl-feat` output.

2. Display the descriptions of the configurable command classes in the database by entering the `rtrv-cmd` command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
CMD          CLASS
alw-slk      link, u11
ent-user     sa
unhb-slk     link
rtrv-attr-seculog sa, u31
inh-slk      link, abc
rtrv-meas-sched link, abc, def
act-lbp      link
act-dlk      link
act-slk      link
rtrv-seculog sa, abc, def, ghi
act-lpo      link
blk-slk      link, abc, u23, u31
dact-lbp     link
canc-dlk     link
inh-card     sys
canc-lpo     link, u01, u02, u03, u04, u05, u06, u07, u08, u09, u10,
u11, u12, u13
canc-slk     link
ublk-slk     link, u01, u02, u03, u04, u05, u06, u07, u08, u09, u10,
u11, u12, u13, u14, u15, u16, u17, u18, u19, u20, u21,
u22, u23, u24, u25, u26, u27, u28, u29, u30, u31, u32

rept-x25-meas link
inh-trm      sys, krb
rept-meas    link
ent-lnp-sub  lnpsub, u22

.
.
.

chg-meas     link
tst-dlk      link, krb
tst-slk      link

```

If the desired configurable command class descriptions are in the database, and the commands are in the desired command classes, no further action is necessary. This procedure is finished.

NOTE: If the name of a configurable command class is not being changed, skip steps 3 and 4, and go to step 5.

3. Display the configurable command class descriptions by entering the **rtrv-cmdclass** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
CLASS          DESCR
link           link maintenance commands
sa             security administration commands
sys           system maintenance commands
db            database administration commands
dbg           debug commands
pu            program update commands
lnpbas        lnp basic commands
lnpdb         lnp database commands
lnpsub        lnp subscription commands
u01           configurable command class 1
krb           my command class description
u03           configurable command class 3
dab           your command class description
u05           configurable command class 5
.
.
.
u32           configurable command class 32
```

4. Change the configurable command class name or description by entering the **chg-cmdclass** command. For this example, enter these commands.

```
chg-cmdclass:class=u01:nclass=db1:descr="retrieve database
commands"
```

```
chg-cmdclass:class=dab:nclass=s15
```

```
chg-cmdclass:class=u03:descr="user commands 3"
```

NOTE: The command classes link, sa, sys, db, dbg, pu, lnpbas, lnpdb, and lnpsub cannot be changed.

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

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
CHG-CMDCLASS: MASP A - COMPLTD
```

- Verify the changes by entering the `rtrv-cmdclass` command, specifying the command class name, or new command class name if the command class name was changed, used in step 4. For this example, enter these commands.

```
rtrv-cmdclass:class=db1
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
CLASS          DESCR
db1            retrieve database commands
```

```
rtrv-cmdclass:class=s15
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
CLASS          DESCR
s15            your command class description
```

```
rtrv-cmdclass:class=u03
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
CLASS          DESCR
u03            user commands 3
```

NOTE: If commands from the LNPBAS, LNPDB, or LNPSUB command classes are not being added to a configurable command class, or if the LNPBAS, LNPDB, and LNPSUB command classes are shown in the `rtrv-cmdclass` output in step 3 or in the `rtrv-cmd` output in step 2, skip this step, and go to step 7.

- Verify that the LNP feature is enabled for a quantity of 2 to 12 million numbers, by entering the `rtrv-ctrl-feat` command. If the LNP feature is enabled for a quantity of 2 to 12 million numbers, the quantity shown in the `LNP TNs` field should be 2 to 12 million numbers.

NOTE: The `rtrv-ctrl-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-ctrl-feat` command, see the `rtrv-ctrl-feat` command description in the *Commands Manual*.

If the LNP feature is enabled for a quantity of 2 to 12 million numbers, go to step 7.

If the LNP feature is not enabled, go to the "Enabling the LNP Feature for 2 to 12 Million Numbers" procedure in the *Database Administration Manual - LNP* and enable the LNP feature.

If the ELAP Configuration feature is enabled and activated, commands from the LNPBAS, LNPDB, and LNPSUB command classes cannot be specified in this procedure.

7. Add or remove a command from the desired command classes by entering the **chg-cmd** command. For this example, enter these commands.

```
chg-cmd:cmd=rtrv-card:class1=db1=yes
```

```
chg-cmd:cmd=tst-dlk:class1=krb-no
```

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

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0  
CHG-CMD: MASP A - COMPLTD
```

Up to eight configurable command classes can be specified with the **chg-cmd** command. If you wish to assign the command to more than eight configurable command classes, but no more than 32 configurable command classes, repeat this step until the desired configurable command class assignments have been made.

8. Verify the changes by entering the **rtrv-cmd** command specifying the **cmd** parameter value used in step 7. For this example, enter these commands.

```
rtrv-cmd:cmd=rtrv-card
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0  
CMD CLASS  
rtrv-card db, db1
```

```
rtrv-cmd:cmd=tst-dlk
```

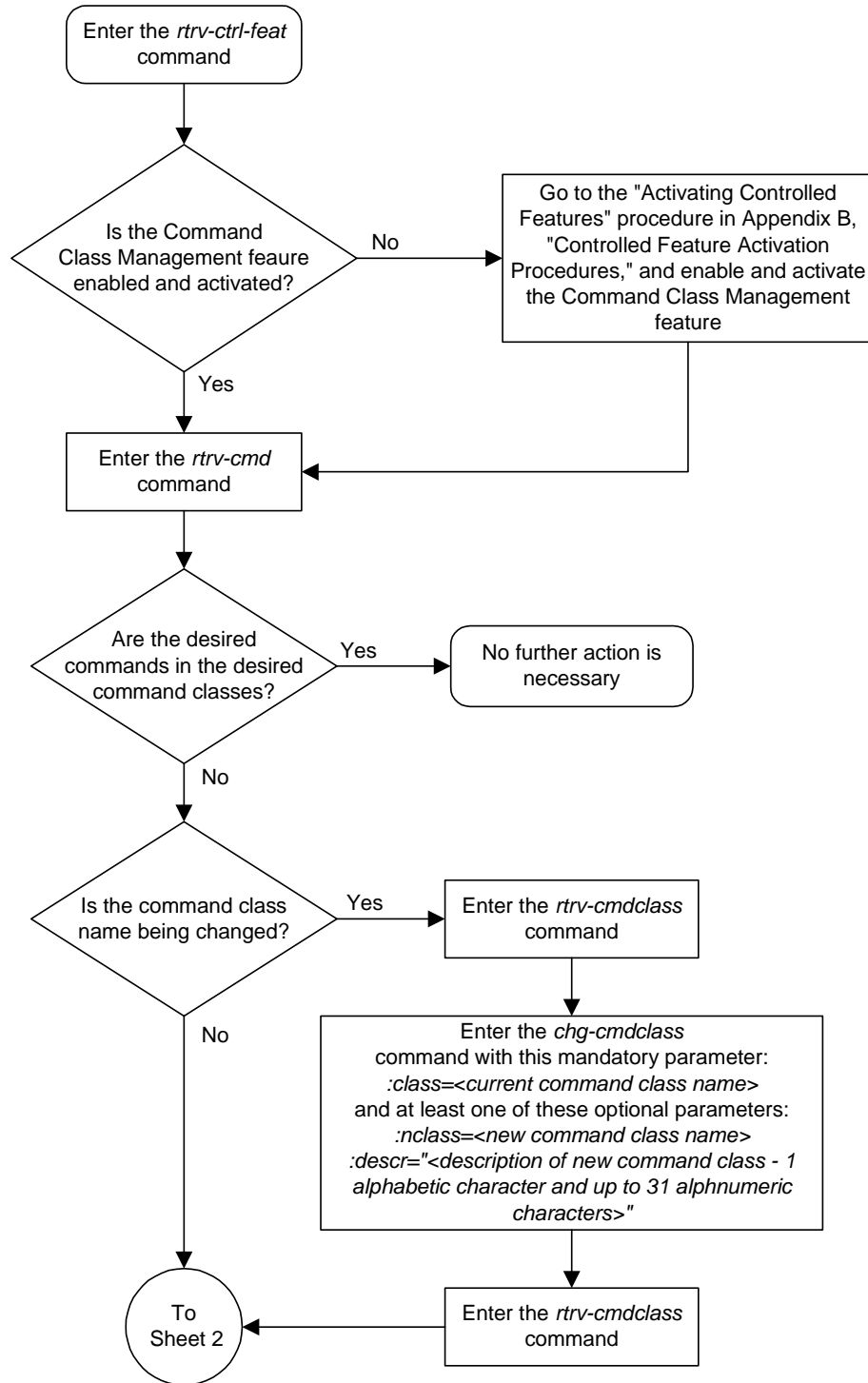
This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0  
CMD CLASS  
tst-dlk link
```

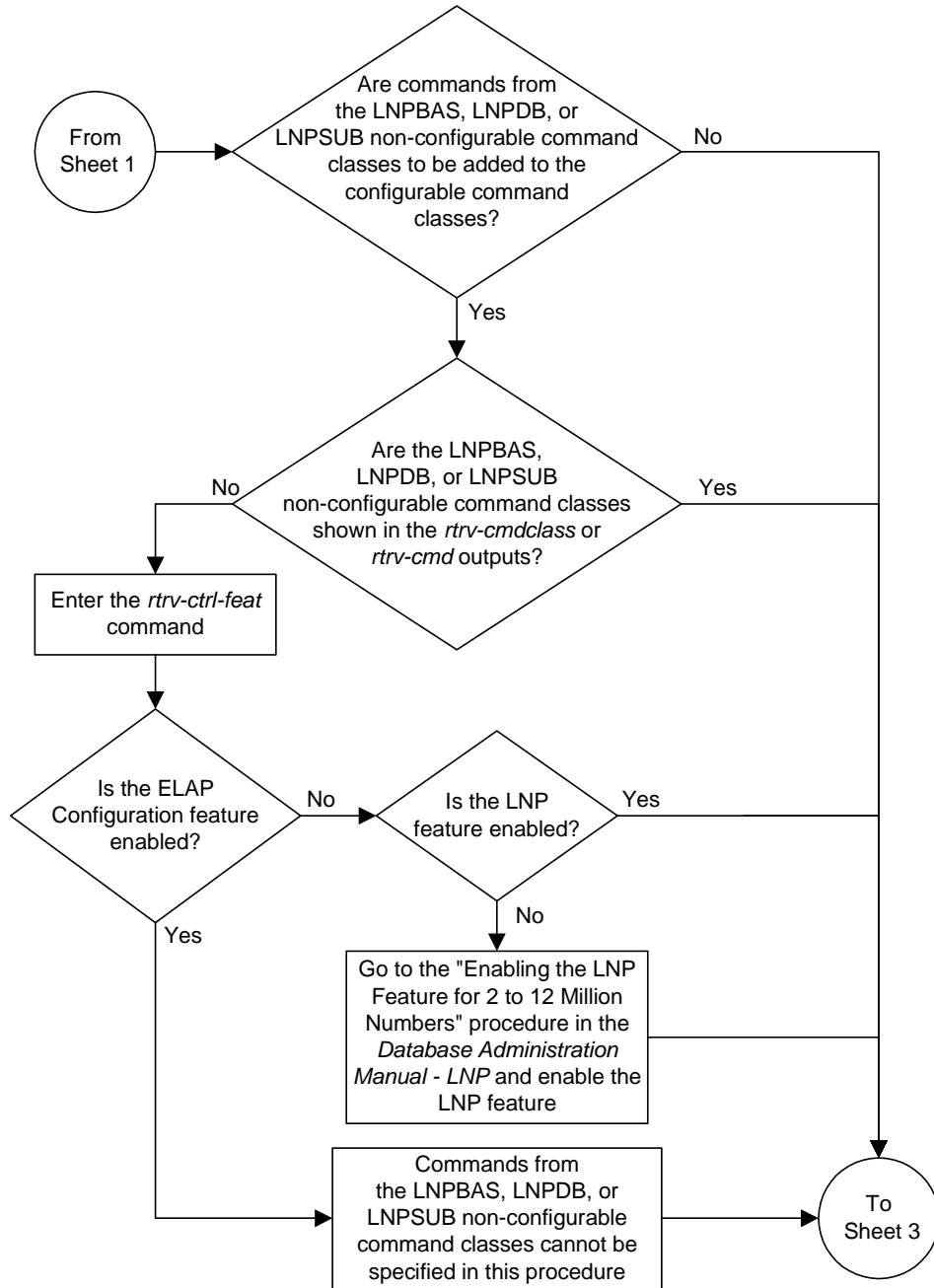
9. Back up the new changes using the **chg-db:action=backup:dest=fixed** command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

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

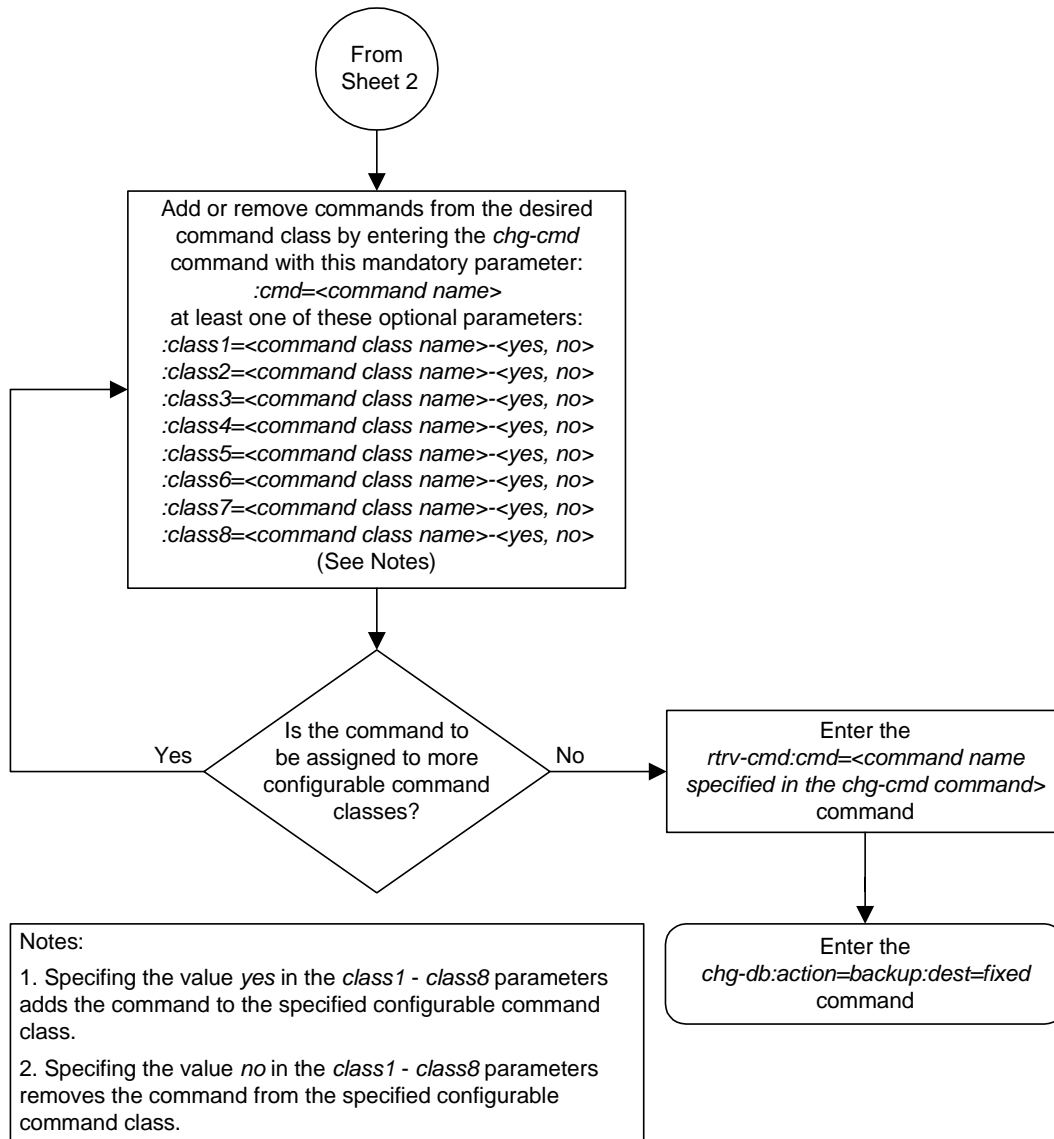
Flowchart 4-12. Configuring Command Classes (Sheet 1 of 3)



Flowchart 4-12. Configuring Command Classes (Sheet 2 of 3)



Flowchart 4-12. Configuring Command Classes (Sheet 3 of 3)



Adding a Shelf

This procedure is used to add a shelf to the database using the `ent-shlf` command. The shelf may not already exist in the database. The control shelf (Shelf 1100) cannot be added to the database. The `ent-shlf` command uses these parameters.

:type – The shelf type. There is only one shelf type that can be added to the database, an extension shelf, shown by the value for this parameter as `ext`.

:loc – The shelf location

The examples in this procedure are used to add an extension shelf to frame 3 of the system.

Procedure

1. Display the current shelf information using the `rtrv-shlf` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
SHELF DISPLAY
FRAME SHELF          TYPE
  1      1          CONTROL
  1      2          EXTENSION
  1      3          EXTENSION
  2      2          EXTENSION
```

2. Add the shelf using the `ent-shlf` command. For this example, the shelf to be added is the first shelf in frame 3. Enter this command.

```
ent-shlf:loc=3100:type=ext
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
ENT-SHLF: MASP A - COMPLTD
```

3. Verify the changes using the `rtrv-shlf` command. This is an example of the possible output.

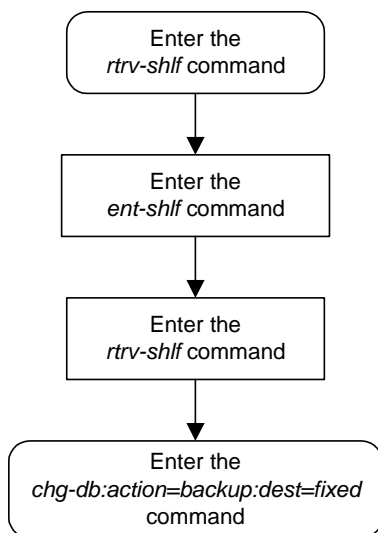
```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
SHELF DISPLAY
FRAME SHELF          TYPE
  1      1          CONTROL
  1      2          EXTENSION
  1      3          EXTENSION
  2      2          EXTENSION
  3      1          EXTENSION
```

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

```

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

Flowchart 4-13. Adding a Shelf



Removing a Shelf

This procedure is used to remove a shelf from the database using the `dlt-shlf` command. If the shelf to be removed does not exist in the database, it cannot be removed. The control shelf (Shelf 1100) cannot be removed from the database. The `dlt-shlf` command has only one parameter, `loc`, which is the location of the shelf.

Before a shelf can be removed from the database, all of the cards in that shelf must be removed from the database. The procedures for removing these cards are based on the application that is assigned to these cards. Table 4-3 shows the location of these procedures.

Table 4-3. Card Removal Procedures

Card Application	Procedure
SS7ANSI, ATMANSI, CCS7ITU, ATMITU	<p>"Removing an SS7 LIM" on page 4-117</p> <p>"Removing an E1 Card" in Appendix A, "E1 Interface," in the <i>Database Administration Manual - SS7</i></p> <p>"Removing a T1 Card" in Appendix B, "T1 Interface," in the <i>Database Administration Manual - SS7</i></p>
SS7GX25	"Removing an X.25 LIM" in Chapter 2, "X.25 Gateway Configuration," in the <i>Database Administration Manual - Features</i>
SCCP	<p>"Removing an SCCP Card" in Chapter 2, "Global Title Translation (GTT) Overview," in the <i>Database Administration Manual - Global Title Translation</i></p> <p>"Removing an SCCP Card" in Chapter 2, "LNP Configuration," in the <i>Database Administration Manual - LNP</i></p>
VSCCP	
GLS	"Removing a GLS Card" in Chapter 2, "Gateway Screening (GWS) Overview," in the <i>Database Administration Manual - Gateway Screening</i>
STPLAN, VXWSLAN	"Removing an STP LAN Card" in Chapter 3, "STP LAN Configuration," in the <i>Database Administration Manual - Features</i>
EBDADCM	"Removing the DCM for the LSMS High-Speed Operations" in Chapter 4, "Preparing the Eagle for High-Speed Operations," in the <i>LNP Database Synchronization Manual - Eagle/LSMS</i>
EBDABLM	"Removing the BLM for the LSMS High-Speed Operations" in Chapter 4, "Preparing the Eagle for High-Speed Operations," in the <i>LNP Database Synchronization Manual - Eagle/LSMS</i>
EMDC	Chapter 5, "Replacement Procedures," in the <i>Feature Manual - GR-376</i>
IPLIM, IPLIMI, SS7IPGW, IPGWI	"Removing an IP Card" in Chapter 3, "IP ⁷ Secure Gateway Configuration Procedures," in the <i>Database Administration Manual - IP⁷ Secure Gateway</i>

Table 4-3. Card Removal Procedures (Continued)

Card Application	Procedure
EROUTE	"Removing an STC Card" in Chapter 6, "Eagle Support for Integrated Sentinel Configuration," in the <i>Database Administration Manual - Features</i>
MCP	"Removing an MCPM" on page 4-146
IPS	"Removing an IPSM" on page 4-179
Note: These card applications do not support 24-bit ITU-N point codes: SS7GX25, STPLAN, VXWSLAN, EBDADCM, EBDABLM. The LNP feature and the Sentinel product do not support 24-bit ITU-N point codes.	



CAUTION: If any card in the shelf is the last card of that type in service, removing that card from the database will cause the traffic handled by that card to be lost or the feature requiring that card to be disabled. See Table 4-4 for a description of the effect that removing the last card type that is in service has on the system.

Table 4-4. Effect of Removing the Last In-Service Card Type from the Database

Card type	Application assigned to card	Effect on system
LIMDS0, LIMOCU, LIMV35, LIME1, LIMT1, LIMCH	SS7ANSI	SS7 traffic is lost.
LIMATM	ATMANSI	
LIMDS0, LIMOCU, LIMV35, LIME1, LIMT1, LIMCH	CCS7ITU	ITU traffic is lost.
LIME1ATM	ATMITU	
LIMDS0, LIMOCU, LIMV35	SS7GX25	X.25 traffic is lost.
TSM	SCCP	Global title translation traffic is lost. If the LNP feature is enabled, LNP traffic is also lost. If the INP, G-PORT, G-FLEX, or EIR features are on, INP, G-PORT, G-FLEX, or EIR traffic is also lost.
DSM	VSCCP	
TSM	GLS	Gateway screening feature is disabled.

Table 4-4. Effect of Removing the Last In-Service Card Type from the Database (Continued)

Card type	Application assigned to card	Effect on system
ACMENET	STPLAN	STP LAN feature is disabled.
DCM	VXWSLAN	
	EBDADCM	High-speed bulk download of the LNP database from the LSMS is disabled
TSM	EBDABLM	
DCM	EMDC	The GR-376 Interface feature is disabled
DCM	IPLIM	Point-to-point connectivity for ANSI networks in the IP ⁷ Secure Gateway is disabled.
	IPLIMI	Point-to-point connectivity for ITU networks in the IP ⁷ Secure Gateway is disabled.
	SS7IPGW	Point-to-multipoint connectivity for ANSI networks in the IP ⁷ Secure Gateway is disabled.
	IPGWI	Point-to-multipoint connectivity for ITU networks in the IP ⁷ Secure Gateway is disabled.
STC	EROUTE	Monitoring of the system by the Sentinel is disabled.
MCPM	MCP	The Measurements Platform feature is disabled.
IPSM	IPS	IP Telnet sessions and the IP User Interface (Telnet) feature are disabled.

The examples in this procedure are used to remove shelf 1200 from the database.

Procedure

1. Display the cards in the database using the `rtrv-card` command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD  TYPE      APPL      LSET NAME      PORT SLC LSET NAME      PORT SLC
1101  TSM          SCCP      -----      --  --  -----      --  --
1102  TSM          GLS       -----      --  --  -----      --  --
1113  GSPM         EOAM
1114  TDM-A
1115  GSPM         EOAM
1116  TDM-B
1117  MDAL
1118  RESERVED
1201  LIMDS0      SS7ANSI    sp2           A    0    sp1           B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1202  LIMV35      SS7ANSI    sp4           A    0    -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1203  LIMDS0      SS7ANSI    sp3           A    0    -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1204  LIMDS0      SS7ANSI    sp3           A    1    -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1205  LIMDS0      CCS7ITU    nsp3          A    0    nsp4          B    0
1206  LIMDS0      SS7ANSI    nsp3          A    1    nsp4          B    1
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1207  LIMV35      SS7GX25    nsp1          A    0    -----      --  --
1208  LIMV35      SS7GX25    nsp1          A    1    -----      --  --
1211  TSM          SCCP      -----      --  --  -----      --  --
1212  TSM          GLS       -----      --  --  -----      --  --
1213  TSM          EBDABLM   -----      --  --  -----      --  --
1215  DCM          VXWSLAN   -----      --  --  -----      --  --
1217  DCM          EBDADCM   -----      --  --  -----      --  --
1301  LIMATM      ATMANSI    lsnatm1      A    0    -----      --  --
1305  DCM          VXWSLAN   -----      --  --  -----      --  --
1307  LIMDS0      SS7ANSI    sp2           A    1    nsp3          B    2
1308  LIMATM      ATMANSI    lsnatm1      A    1    -----      --  --
1317  DCM          VXWSLAN   -----      --  --  -----      --  --

```

In this example, these cards must be removed from the database: 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1211, 1212, 1213, 1215, and 1217.

NOTE: If the `rtrv-card` output shows that the shelf being removed from the database does not contain any cards running the SCCP or VSCCP applications, skip this step and go to step 3.

2. Verify whether or not that the global title translation (GTT), or enhanced global title translation (EGTT) features are on, by entering the `rtrv-feat` command. If these features are on, these entries appear in the `rtrv-feat` command output:

- `GTT - GTT = on`
- `EGTT - EGTT = 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*.

3. Verify that the LNP feature is enabled, by entering the `rtrv-ctrl-feat` command. If the LNP feature is enabled, the quantity shown in the `LNP TNS` field should be greater than zero.

NOTE: The `rtrv-ctrl-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-ctrl-feat` command, see the `rtrv-ctrl-feat` command description in the *Commands Manual*.

4. Based on the application assigned to the cards in the shelf to be removed, and the output of the `rtrv-feat` or `rtrv-ctrl-feat` command, if applicable, perform the appropriate procedures shown in Table 4-3 on page 4-95 and remove all the cards from the shelf. The application assigned to the card is shown in the `APPL` field of the `rtrv-card` command output in step 1.
-

5. Remove the shelf from the database using the `dlt-shlf` command. For this example, enter this command.

```
dlt-shlf:loc=1200
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0  
DLT-SHLF: MASP A - COMPLTD
```

6. Verify the changes with the `rtrv-shlf` command and specify the location of the shelf. For this example, enter this command.

```
rtrv-shlf:loc=1200
```

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

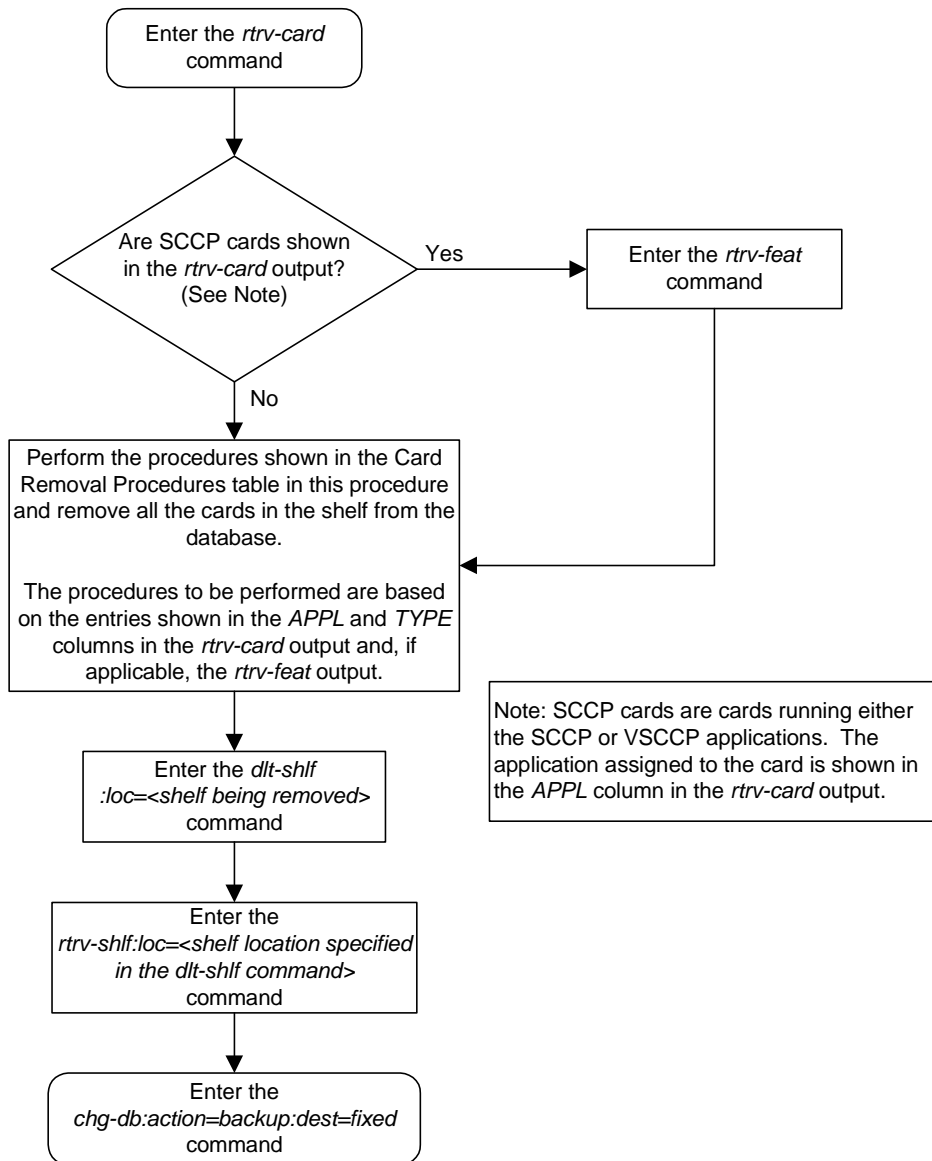
```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0  
SHELF DISPLAY LOCATION=1200  
FRAME SHELF          TYPE
```

```
This shelf is UNEQUIPPED in the database.
```

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

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

Flowchart 4-14. Removing a Shelf



Adding an SS7 LIM

This procedure is used to add a low-speed SS7 LIM (link interface module) to the database using the `ent-card` command. The SS7 LIM cannot be added if it exists in the database.

NOTES:

1. LIM-E1 or LIMCH cards for E1 signaling links are configured in the database using the procedures in Appendix A, "E1 Interface," in the *Database Administration Manual - SS7*.
2. LIM-T1 or LIMCH cards for T1 signaling links are configured in the database using the procedures in Appendix B, "T1 Interface," in the *Database Administration Manual - SS7*.
3. LIM-ATM or LIME1ATM cards for ATM high-speed signaling links are configured in the database using the procedures in Appendix C, "ATM Signaling Link Configuration," in the *Database Administration Manual - SS7*.
4. IP cards (DCMs used for IP links) are configured in the database using the procedures in Chapter 3, "IP⁷ Secure Gateway Configuration Procedures," in the *Database Administration Manual - SS7*.
5. X.25 LIMs are configured in the database using the procedures in Chapter 2, "X.25 Gateway Configuration," in the *Database Administration Manual - Features*.

Linksets and routes associated with X.25 LIMs do not support 24-bit ITU-N point codes.

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.
- `:app1` – The application software or GPL that is assigned to the card.
- `:force` – If the global title translation feature is on, the `force=yes` parameter allows the LIM to be added to the database even if the current SCCP transactions-per-second threshold (see the `chg-th-sccp` command description in the *Commands Manual*) is unable to support the additional SCCP transaction-per-second capacity created by adding the LIM. The default value for this parameter is `no`, which does not allow the LIM to be added to the database unless there are enough SCCP cards in the database. If the global title translation feature is not on, this parameter has no meaning and should not be used.

NOTE: For more information on using the `force` parameter, see "Using the FORCE Parameter" on page 4-104.

NOTE: If the `force=yes` parameter is used to add a LIM to the database, it is recommended that you increase the SCCP transactions-per-second capacity of the system by adding additional SCCP cards to the database after the LIM is added to avoid losing GTT traffic.

Table 4-5 shows the valid card type (`type`) and card application (`appl`) combinations for the SS7 LIMs being added to the database and the names and part numbers of the hardware. This can be used to verify that the SS7 LIM being added to the database matches the card physically installed in the system. A maximum of 63 Multipoint LIMs can be configured in the database. See the "Determining the Number of High-Speed and Low-Speed Signaling Links" section of Appendix D, "Reference Information," in the *Database Administration Manual - SS7* for information on how to determine the quantities of the different types of signaling links the system can have.

Table 4-5. SS7 LIM Card Type and Card Application Combinations

Card Name	Part Number	Card Type (:type)	Application Type (:appl)
LIM or LIM-AINF	870-1014-XX 870-1488-XX	limds0, limocu, limv35	ss7ansi, ccs7itu
EILA	870-2049-XX	limds0, limocu, limv35	ss7ansi, ccs7itu
LIM-DS0	870-1009-XX 870-1485-XX	limds0	ss7ansi, ccs7itu
LIM-OCU	870-1010-XX 870-1486-XX	limocu	ss7ansi, ccs7itu
LIM-V.35	870-1012-XX 870-1487-XX	limv35	ss7ansi, ccs7itu
MPL	870-2061-XX	limds0	ss7ansi

The LIM, LIM-AINF, or EILA is a link interface module using the AINF interface and can be installed in place of the LIM-DS0, LIM-OCU, or LIM-V.35. It is configured in the database as either a LIM-DS0, LIM-OCU, or LIM-V.35 card.

The MPL is the Multipoint LIM. The MPL contains eight SS7 signaling link ports as opposed to the LIM-DS0, LIM-OCU, LIM-V.35, LIM, LIM-AINF, or EILA, which contains only two SS7 signaling link ports.

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 on page 4-93.

The examples in this procedure are used to add the cards shown in Table 4-6 to the database.

Table 4-6. Example Card Configuration

Card Type	Application	Card Location
limds0	ss7ansi	1305
limocu	ccs7itu	1205
limv35	ss7ansi	1202
limds0 (MPL)	ss7ansi	1311

Using the FORCE Parameter

When LIMs or DCMs containing IP links, also known as SS7 cards, are added to the database and the global title translation feature is on, the system must contain enough SCCP cards to handle the number of SCCP transactions per second the SS7 cards will send to the SCCP cards.

The global title translation feature is on if the entries **SCCP** or **VSCCP** are shown in the **APPL** field of the **rtrv-card** command output. The entry **GTT = on** in the **rtrv-feat** command output also shows that the global title translation feature is on.

An SCCP card is either a TSM running the SCCP application, or a DSM running the VSCCP application. Table 4-7 shows the maximum number of transactions per second that an SCCP card can handle.

Table 4-7. Number of Transactions per Second for each SCCP Card

Type of SCCP Card	Transactions per Second
TSM	850
DSM	1700

The system uses the live SCCP transactions-per-second and the number of SCCP transactions the SS7 card can deliver to the SCCP cards to determine if the additional LIM card transactions-per-second rating will exceed the SCCP transactions-per-second threshold. Table 4-8 shows the card types that can be in the database, card applications that can be assigned to these cards, the type of signaling link that is assigned to the card running that application, and the number of SCCP transactions the card can deliver to an SCCP card. Please refer to Tables 4-7 and 4-8 to determine the transactions-per-second rating of a card.

Table 4-8. SS7 Card Applications and Signaling Link Types

Card Type	Card Application	Signaling Link Assigned to the Card	Number of SCCP Transactions per Second
limds0	ss7ansi, ss7gx25, ccs7itu	Low-speed signaling link	53
limocu	ss7ansi, ss7gx25, ccs7itu	Low-speed signaling link	53
limv35	ss7ansi, ss7gx25, ccs7itu	Low-speed signaling link	53
limds0 (Multi-Port LIM)	ss7ansi	Low-speed signaling link	186
lime1 & limch (2-port LIM-E1)	ss7ansi, ccs7itu	E1 signaling link	53
lime1, limt1, limch (8-port E1/T1 MIM)	ss7ansi, ccs7itu	E1 and T1 signaling links	53
limatm	atmansi	High-speed signaling link	480
lime1atm	atmitu	E1 ATM high-speed signaling link	480
dcm	iplim, iplimi	IP Link	1000

The **rept-stat-sccp** output shows the status of the SCCP cards and the GTT (Global Title Translation), G-Flex (GSM Flexible Numbering), or INP (INAP-based Number Portability) services executing on those cards. This command also displays the SCCP capacity threshold, in the **System TPS Alarm Threshold** field, and the average SCCP capacity, in the **SCCP Service Average MSU Capacity** field. The **MSU USAGE** field shows the percentage of MSUs each SCCP card is processing.

```

rlghncxa03w 00-10-12 09:12:36 GMT EAGLE5 31.6.0
SCCP SUBSYSTEM REPORT IS-NR Active -----
SCCP Cards Configured=2 Cards IS-NR=2
System TPS Alarm Threshold = 80% Total Capacity
System Peak SCCP Load = 550 TPS
System Total SCCP Capacity = 1700 TPS

CARD   VERSION      PST          SST          AST          MSU USAGE  CPU USAGE
-----
1101   113-001-000  IS-NR       Active       -----     47%        54%
1301   113-001-000  IS-NR       Active       -----     34%        31%
-----
SCCP Service Average MSU Capacity = 41%      Average CPU Capacity = 43%
Command Completed.
    
```

If the **mode=perf** parameter is specified with the **rept-stat-sccp** command, the general SCCP traffic performance including the total number of SCCP transactions per second the system currently contains. The SCCP capacity threshold is shown in the **System TPS Alarm Threshold** field, and the average SCCP capacity is shown in the **AVERAGE MSU USAGE** field.

```

rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
SCCP SUBSYSTEM REPORT IS-NR Active -----
SCCP Cards Configured=2 Cards IS-NR=2
System TPS Alarm Threshold = 80% Total Capacity
System Peak SCCP Load = 550 TPS
System Total SCCP Capacity = 1700 TPS

```

TPS STATISTICS

```

=====
CARD   CPU      TOTAL   CLASS 0   Class 1
      USAGE  MSU RATE TVG RATE TVG RATE
-----
1101   54%      850     770      80
1301   31%      490     400      90
-----

```

```

AVERAGE MSU USAGE = 44%
AVERAGE CPU USAGE = 24%
TOTAL MSU RATE     = 1440

```

STATISTICS FOR PAST 30 SECONDS

```

=====
TOTAL TRANSACTIONS: 5400
TOTAL ERRORS:      5
Command Completed.

```

For more information on the **rept-stat-sccp** command, go to the *Commands Manual*.

When a new SS7 card is being added to the database, the number of transactions per second the new SS7 card is expected to deliver to the SCCP card is added to the average number of transactions per second the existing SS7 cards are delivering to the SCCP cards. If this sum is above the SCCP card threshold, the **ent-card** command is rejected with command rejected error message E3715.

```

E3715 Cmd Rej: SYSTEM CURRENT RATED TPS UNABLE TO SUPPORT ADDITIONAL SS7
CARD - USE FORCE=YES

```

A warning message is also displayed in the scroll area of the terminal display.

```

WARNING: Insufficient system TPS to support addition of new SS7 card.

```

The SS7 card can still be added to the database by adding more SCCP cards to the database, by raising the SCCP alarm threshold with the **chg-th-sccp** command, or by specifying the **force=yes** parameter with the **ent-card** command. When the **force=yes** parameter is specified, the **ent-card** command is accepted, but the warning message is displayed in the scroll area of the terminal display.

If the system does not have enough SCCP cards in the database and the **force=yes** parameter is used with the **ent-card** command, it is recommended that the required number of SCCP cards be added to the database after the SS7 card is added to avoid losing GTT traffic.

To add more SCCP cards to the database, perform the "Adding an SCCP Card" procedure in the *Database Administration Manual - Global Title Translation*.

Procedure

1. Display the cards in the database using the `rtrv-card` command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD  TYPE      APPL      LSET NAME      PORT  SLC  LSET NAME      PORT  SLC
1101  TSM          SCCP      -----      --   --  -----      --   --
1102  TSM          GLS       -----      --   --  -----      --   --
1113  GSPM         EOAM
1114  TDM-A
1115  GSPM         EOAM
1116  TDM-B
1117  MDAL
1118  RESERVED
1201  LIMDS0      SS7ANSI   sp2           A     0    sp1           B     0
-----      --   --  -----      --   --
-----      --   --  -----      --   --
-----      --   --  -----      --   --
1203  LIMDS0      SS7ANSI   sp3           A     0    -----      --   --
-----      --   --  -----      --   --
-----      --   --  -----      --   --
-----      --   --  -----      --   --
1204  LIMDS0      SS7ANSI   sp3           A     1    -----      --   --
-----      --   --  -----      --   --
-----      --   --  -----      --   --
-----      --   --  -----      --   --
1206  LIMDS0      SS7ANSI   nsp3          A     1    nsp4          B     1
-----      --   --  -----      --   --
-----      --   --  -----      --   --
-----      --   --  -----      --   --
1207  LIMV35      SS7GX25   nsp1          A     0    -----      --   --
1208  LIMV35      SS7GX25   nsp1          A     1    -----      --   --
1216  ACMENET     STPLAN   -----      --   --  -----      --   --
1301  TSM          SCCP      -----      --   --  -----      --   --
1308  LIMDS0      SS7ANSI   sp6           A     1    sp7           B     0
-----      --   --  -----      --   --
-----      --   --  -----      --   --
-----      --   --  -----      --   --
-----      --   --  -----      --   --
1314  LIMDS0      SS7ANSI   sp7           A     1    sp5           B     1
-----      --   --  -----      --   --
-----      --   --  -----      --   --
-----      --   --  -----      --   --
-----      --   --  -----      --   --
1317  ACMENET     STPLAN   -----      --   --  -----      --   --

```

The cards should be distributed throughout the system for proper power distribution. Refer to the *Installation Manual* for the shelf power distribution.

If the `rtrv-card` command output shows the entry `SCCP` or `VSCCP` in the `APPL` field, then the global title translation field is on. If the global title translation feature is on, go to step 3 and verify that the database contains enough `SCCP` cards to support the number of LIMs the database will contain when the new LIM is added to the database.

If there are no `SCCP` cards shown in the `rtrv-card` output, go to step 2 to verify whether or not the global title translation feature is on.

- Verify whether or not that the global title translation feature is on, by entering the `rtrv-feat` command. If the global title translation feature is on, the entry `GTT = on` appears in the `rtrv-feat` command output.

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

If the global title translation feature is not on, skip the verification of the number of SCCP cards in step 3, and go to step 4.

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

```
rlghncxa03w 00-10-12 09:12:36 GMT EAGLE5 31.6.0
SCCP SUBSYSTEM REPORT IS-NR Active -----
SCCP Cards Configured=2 Cards IS-NR=2
System TPS Alarm Threshold = 80% Total Capacity
System Peak SCCP Load = 550 TPS
System Total SCCP Capacity = 1700 TPS
```

CARD	VERSION	PST	SST	AST	MSU USAGE	CPU USAGE
1101	113-001-000	IS-NR	Active	-----	47%	54%
1301	113-001-000	IS-NR	Active	-----	34%	31%

```
SCCP Service Average MSU Capacity = 41% Average CPU Capacity = 43%
Command Completed.
```

If there are not enough SCCP cards, the `force=yes` parameter must be specified with the `ent-card` command. Additional SCCP cards can be added to the database by performing the "Adding an SCCP Card" procedure in the *Database Administration Manual - Global Title Translation*.

-
- Using Table 4-5 on page 4-103 as a reference, verify that the card has been physically installed into the proper location.
-
- Add the card using the `ent-card` command. If the global title translation feature is on and the outputs of either the `rtrv-card` command (step 1) or the `rept-stat-sccp` command (step 3) shows that there are not enough SCCP cards to support the number of LIMs the database will contain when the new LIM is added to the database, the `force=yes` parameter must be specified with the `ent-card` command. For more information on using the `force` parameter, see "Using the FORCE Parameter" on page 4-104.

For this example, enter these commands.

```
ent-card:loc=1202:type=limv35:appl=ss7ansi
ent-card:loc=1205:type=limocu:appl=ccs7itu
ent-card:loc=1305:type=limds0:appl=ss7ansi
ent-card:loc=1311:type=limds0:appl=ss7ansi
```

System Administration Procedures

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
ENT-CARD: MASP A - COMPLTD
```

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

```
rtrv-card:loc=1202
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD  TYPE      APPL      LSET NAME      PORT SLC LSET NAME      PORT SLC
1202  LIMV35      SS7ANSI      -----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
```

```
rtrv-card:loc=1205
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD  TYPE      APPL      LSET NAME      PORT SLC LSET NAME      PORT SLC
1205  LIMOCU      CCS7ITU      -----      --  --  -----      --  --
```

```
rtrv-card:loc=1305
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD  TYPE      APPL      LSET NAME      PORT SLC LSET NAME      PORT SLC
1305  LIMDS0      SS7ANSI      -----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
```

```
rtrv-card:loc=1311
```

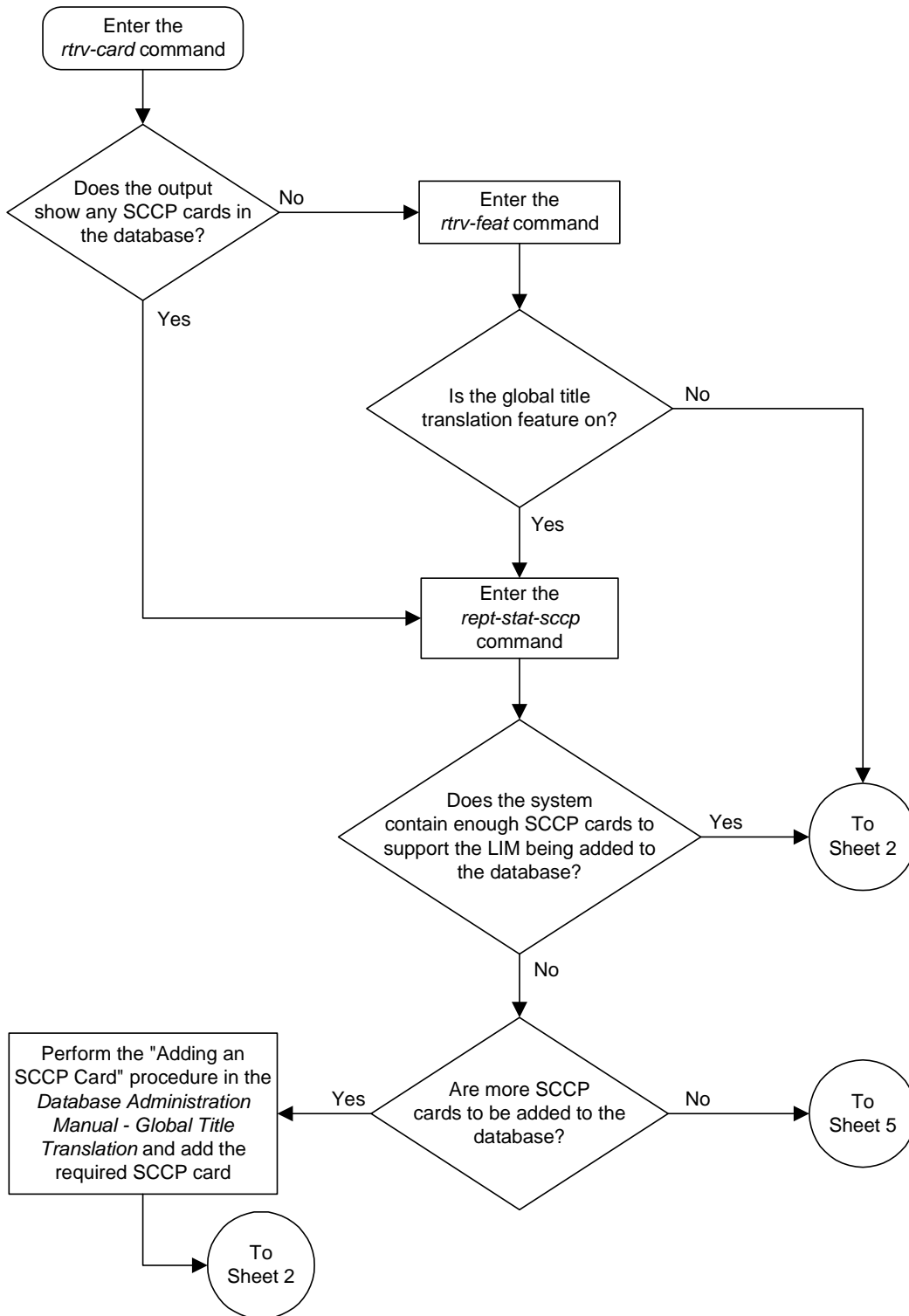
This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD  TYPE      APPL      LSET NAME      PORT SLC LSET NAME      PORT SLC
1311  LIMDS0      SS7ANSI      -----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
```

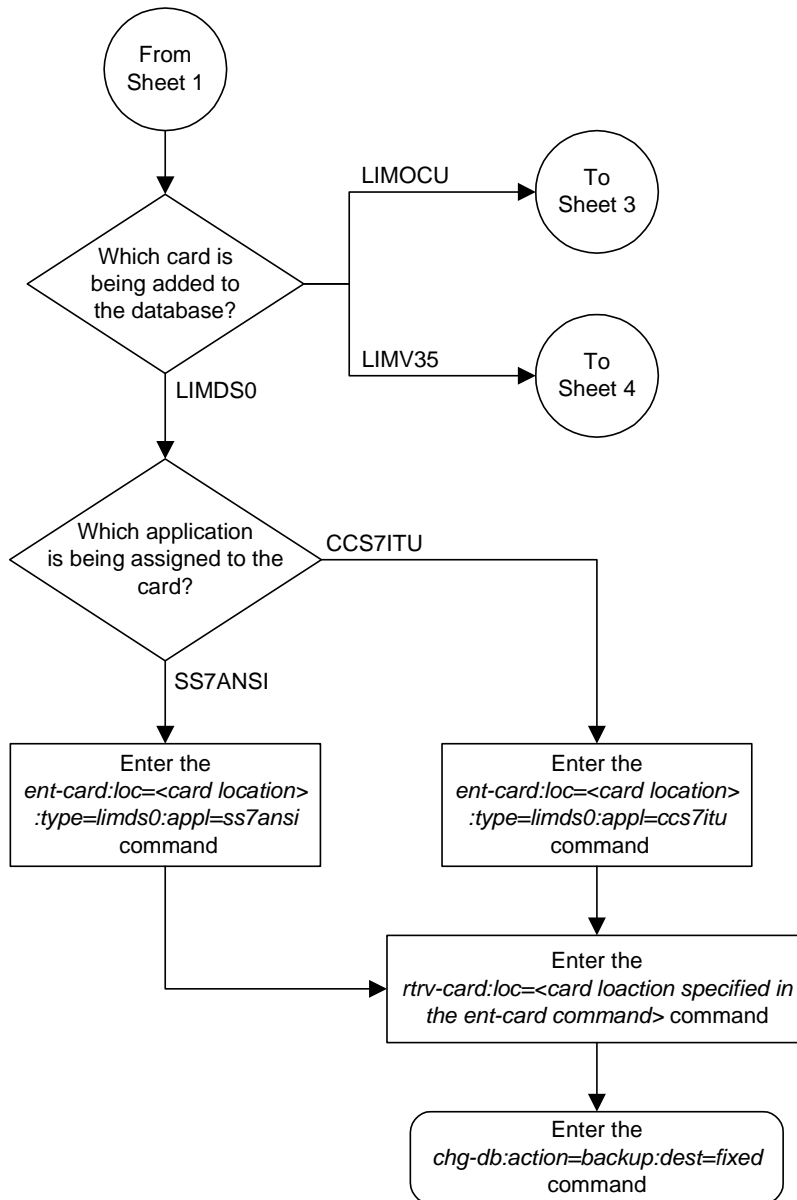
7. Back up the new changes using the **chg-db:action=backup:dest=fixed** command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

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

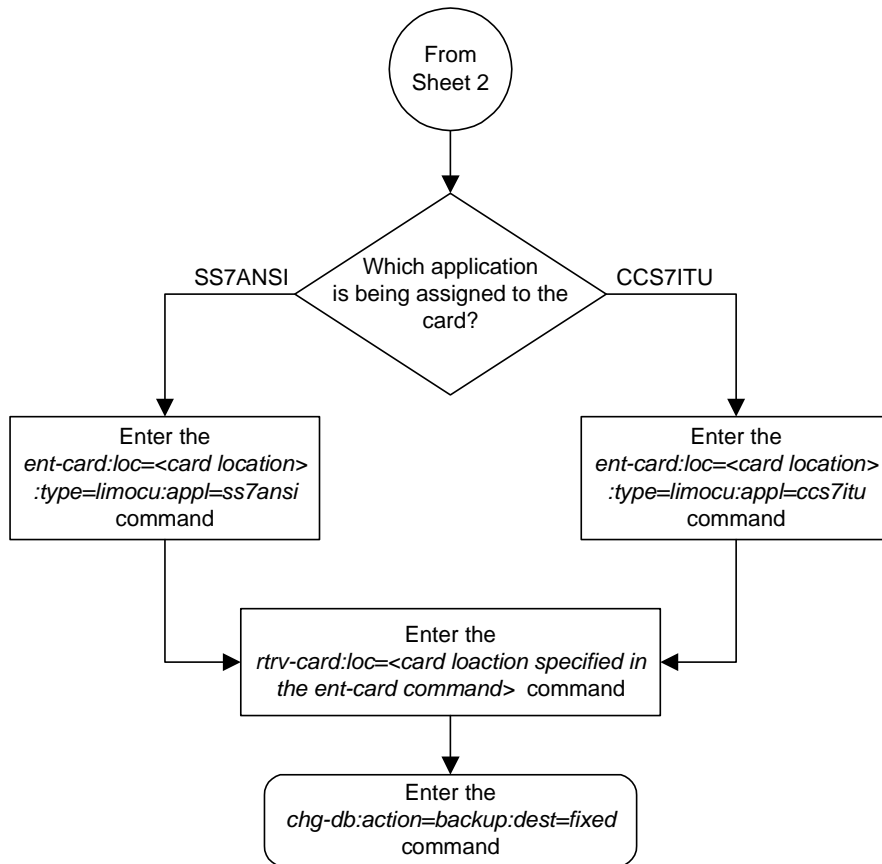
Flowchart 4-15. Adding an SS7 LIM (Sheet 1 of 7)



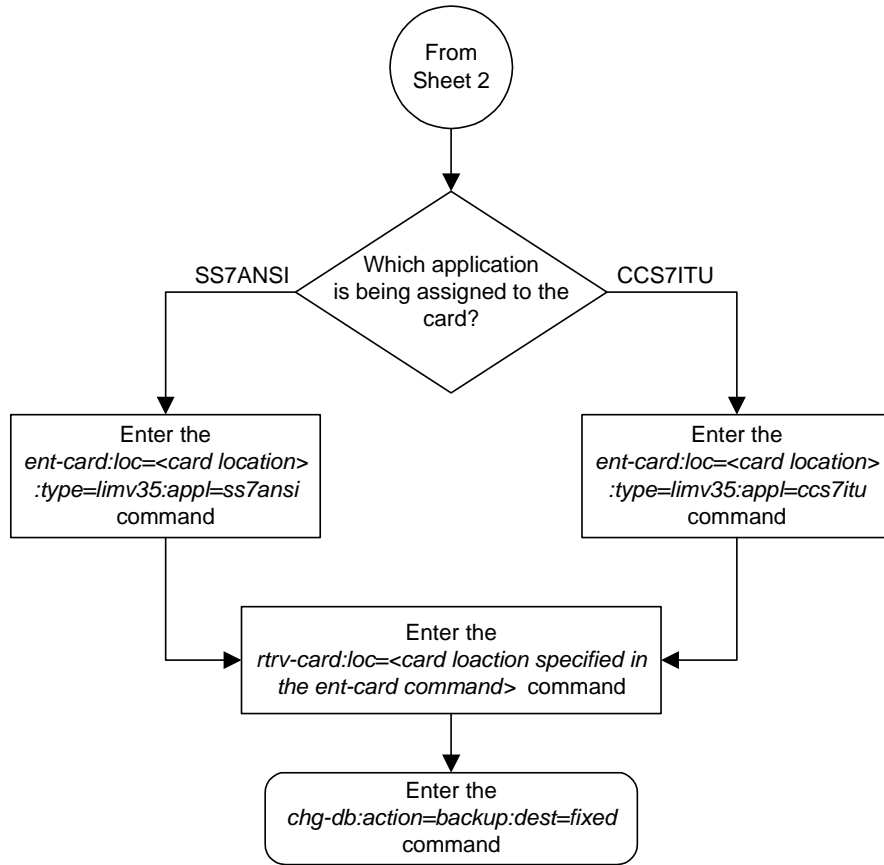
Flowchart 4-15. Adding an SS7 LIM (Sheet 2 of 7)



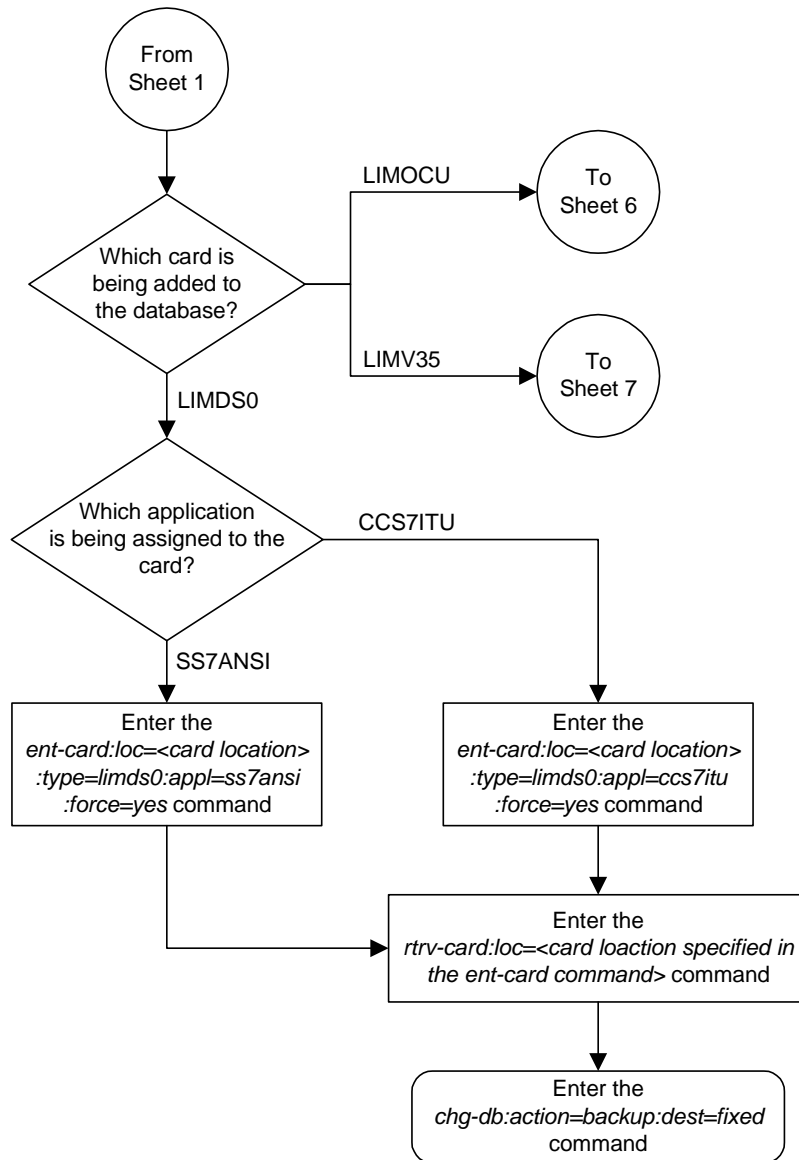
Flowchart 4-15. Adding an SS7 LIM (Sheet 3 of 7)



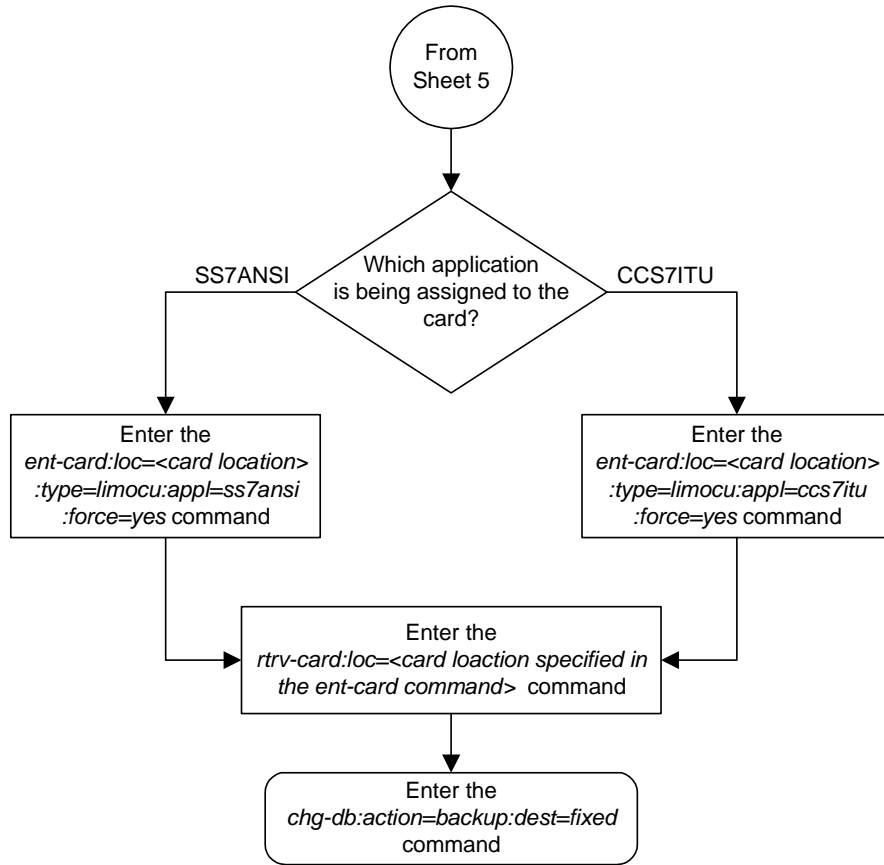
Flowchart 4-15. Adding an SS7 LIM (Sheet 4 of 7)



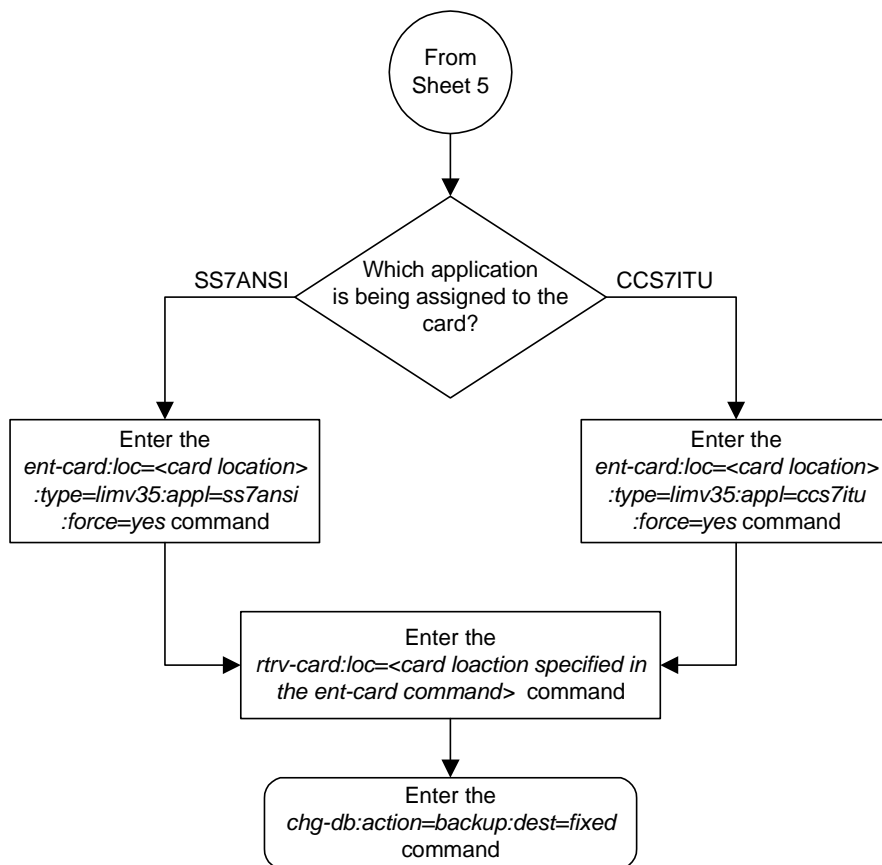
Flowchart 4-15. Adding an SS7 LIM (Sheet 5 of 7)



Flowchart 4-15. Adding an SS7 LIM (Sheet 6 of 7)



Flowchart 4-15. Adding an SS7 LIM (Sheet 7 of 7)



Removing an SS7 LIM

This procedure is used to remove an SS7 LIM (link interface module) from the database using the `dlr-card` command. The card cannot be removed if it does not exist in the database.

No SS7 signaling links can be assigned to the card you wish to remove from the database.



CAUTION: If the SS7 LIM is the last SS7 LIM in service, removing this card from the database will cause SS7 traffic to be lost and isolate the system from the network.

NOTES:

1. LIM-E1 or LIMCH cards for E1 signaling links are removed from the database using the procedures in Appendix A, "E1 Interface," in the *Database Administration Manual - SS7*.
2. LIM-T1 or LIMCH cards for T1 signaling links are removed from the database using the procedures in Appendix B, "T1 Interface," in the *Database Administration Manual - SS7*.
3. IP cards (DCMs used for IP links) are removed from the database using the procedures in Chapter 3, "IP⁷ Secure Gateway Configuration Procedures," in the *Database Administration Manual - IP⁷ Secure Gateway*.
4. X.25 LIMs are removed from the database using the procedures in Chapter 2, "X.25 Gateway Configuration," in the *Database Administration Manual - Features*.

Linksets and routes associated with X.25 LIMs do not support 24-bit ITU-N point codes.

The examples in this procedure are used to remove the SS7 LIMs in card location 1201, 1311, and 1318.

Canceling the `REPT-STAT-CARD` Command

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

- Press the **F9** function key on the keyboard at the terminal where the `rept-stat-card` command was entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rept-stat-card` command was entered.
- Enter the `canc-cmd:trm=<xx>`, where `<xx>` is the terminal where the `rept-stat-card` command was entered, from another terminal other 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, go to the *Commands Manual*.

Procedure

1. Display the cards in the database using the `rtrv-card` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD  TYPE      APPL      LSET NAME      PORT SLC LSET NAME      PORT SLC
1101  TSM          SCCP      -----      --  --  -----      --  --
1102  TSM          GLS       -----      --  --  -----      --  --
1103  DCM          VXWLAN    -----      --  --  -----      --  --
1113  GSPM         EOAM      -----      --  --  -----      --  --
1114  TDM-A
1115  GSPM         EOAM      -----      --  --  -----      --  --
1116  TDM-B
1117  MDAL
1118  RESERVED
1201  LIMDS0      SS7ANSI    sp2           A    0    sp1           B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1202  LIMDS0      SS7ANSI    sp2           A    1    nsp3          B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1202  LIMV35      SS7GX25    lsnngwy       A    0    -----      --  --
1203  LIMDS0      SS7ANSI    sp3           A    0    -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1204  LIMDS0      SS7ANSI    sp3           A    1    -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1205  LIMOCU      CCS7ITU    itu1          A    0    -----      --  --
1206  LIMDS0      SS7ANSI    nsp3          A    1    nsp4          B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1207  LIMV35      SS7GX25    nsp1          A    0    -----      --  --
1208  LIMV35      SS7GX25    nsp1          A    1    -----      --  --
1212  TSM          SCCP      -----      --  --  -----      --  --
1214  TSM          GLS       -----      --  --  -----      --  --
1215  DCM          VXWLAN    -----      --  --  -----      --  --
1301  LIMATM      ATMANSI    lsnatm1       A    0    -----      --  --
1305  DCM          VXWLAN    -----      --  --  -----      --  --
1308  LIMDS0      SS7ANSI    sp6           A    0    sp7           B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1311  LIMDS0      SS7ANSI    sp2           A    2    sp1           B    1
sp7           A1   1    sp3           B1   2
-----      --  --  -----      --  --
-----      --  --  -----      --  --
```

System Administration Procedures

```

1315 LIMDS0 SS7ANSI sp7 A 2 sp5 B 0
----- -- -- ----- -- --
----- -- -- ----- -- --
----- -- -- ----- -- --
1318 LIMATM ATMANSI lsnatm1 A 1 ----- -- --

```

- An SS7 LIM is identified by the entries **SS7ANSI**, **CCS7ITU**, or **ATMANSI** in the **APPL** field. Display the status of the SS7 signaling links on the card you wish to remove by entering the **rept-stat-slk** command, specifying the card location and port. The card location is shown in the **CARD** field of the **rtrv-card** command output.

For this example, enter these commands.

```
rept-stat-slk:loc=1201:port=a
```

This is an example of the possible output.

```

rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1201,A   sp2      ----- IS-NR      Avail     ----
ALARM STATUS      = No Alarms.
UNAVAIL REASON    = --
Command Completed.

```

```
rept-stat-slk:loc=1201:port=b
```

This is an example of the possible output.

```

rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1201,B   sp1      ----- IS-NR      Avail     ----
ALARM STATUS      = No Alarms.
UNAVAIL REASON    = --
Command Completed.

```

```
rept-stat-slk:loc=1318:port=a
```

This is an example of the possible output.

```

rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1318,A   lsnatm1 ----- IS-NR      Avail     ----
ALARM STATUS      = No Alarms.
UNAVAIL REASON    = --
Command Completed.

```

```
rept-stat-slk:loc=1311:port=a
```

This is an example of the possible output.

```

rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1311,A   sp2      ----- IS-NR      Avail     ----
ALARM STATUS      = No Alarms.
UNAVAIL REASON    = --
Command Completed.

```

```
rept-stat-slk:loc=1311:port=a1
```

This is an example of the possible output.

```

rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1311,A1  sp7      ----- IS-NR      Avail     ----
ALARM STATUS      = No Alarms.
UNAVAIL REASON    = --
Command Completed.

```

```
rept-stat-slk:loc=1311:port=b
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1311,B   sp1      -----  IS-NR    Avail    ----
  ALARM STATUS      = No Alarms.
  UNAVAIL REASON    = --
Command Completed.
```

```
rept-stat-slk:loc=1311:port=b1
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
SLK      LSN      CLLI      PST      SST      AST
1311,B1  sp3      -----  IS-NR    Avail    ----
  ALARM STATUS      = No Alarms.
  UNAVAIL REASON    = --
Command Completed.
```

-
3. Deactivate the links to the card that are not in an OOS-MT-DSBLD state using the `dact-slk` command. For this example, enter these commands.

```
dact-slk:loc=1201:port=a
```

```
dact-slk:loc=1201:port=b
```

```
dact-slk:loc=1318:port=a
```

```
dact-slk:loc=1311:port=a
```

```
dact-slk:loc=1311:port=a1
```

```
dact-slk:loc=1311:port=b
```

```
dact-slk:loc=1311:port=b1
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
Deactivate Link message sent to card
```

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

`rept-stat-card:stat-nr`

This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0
CARD  VERSION      TYPE  APPL    PST      SST      AST
1101  113-003-000    TSM   SCCP    IS-NR    Active   ---
1102  113-003-000    TSM   GLS     IS-NR    Active   ---
1103  113-002-000    ACMENET STPLAN  IS-NR    Active   ---
1104  113-002-000    ACMENET STPLAN  IS-NR    Active   ---
1109  113-003-000    HMUX   BPHMUX  IS-NR    Active   ---
1110  113-003-000    HMUX   BPHMUX  IS-NR    Active   ---
1201  113-003-000    LIMDS0 SS7ANSI  IS-NR    Active   ---
1202  113-002-000    LIMV35 SS7GX25  IS-NR    Active   ---
1203  113-003-000    LIMDS0 SS7ANSI  IS-NR    Active   ---
1204  113-003-000    LIMDS0 SS7ANSI  IS-NR    Active   ---
1205  113-003-000    LIMOCU CCS7ITU  IS-NR    Active   ---
1206  113-003-000    LIMDS0 SS7ANSI  IS-NR    Active   ---
1207  113-002-000    LIMV35 SS7GX25  IS-NR    Active   ---
1208  113-002-000    LIMV35 SS7GX25  IS-NR    Active   ---
1209  113-003-000    HMUX   BPHMUX  IS-NR    Active   ---
1210  113-003-000    HMUX   BPHMUX  IS-NR    Active   ---
1212  113-003-000    TSM   SCCP    IS-NR    Active   ---
1214  113-003-000    TSM   GLS     IS-NR    Active   ---
1216  113-002-000    ACMENET STPLAN  IS-NR    Active   ---
1301  113-003-000    LIMATM ATMANSI  IS-NR    Active   ---
1304  113-002-000    ACMENET STPLAN  IS-NR    Active   ---
1305  113-003-000    LIMDS0 SS7ANSI  IS-NR    Active   ---
1308  113-003-000    LIMDS0 SS7ANSI  IS-NR    Active   ---
1309  113-003-000    HMUX   BPHMUX  IS-NR    Active   ---
1310  113-003-000    HMUX   BPHMUX  IS-NR    Active   ---
1311  113-003-000    LIMDS0 SS7ANSI  IS-NR    Active   ---
1314  113-003-000    LIMDS0 SS7ANSI  IS-NR    Active   ---
1317  113-002-000    ACMENET STPLAN  IS-NR    Active   ---
1318  113-003-000    LIMATM ATMANSI  IS-NR    Active   ---
```

- If the signaling links on the card to be removed from the database is the last signaling link in a linkset, the **force=yes** parameter must be used with the **dlt-slk** command. To verify this, enter the **rtrv-ls** command with the linkset name shown in step 1 (**LSET NAME** field) or in step 2 (**LSN** field). For this example, enter these commands.

rtrv-ls:lsn=sp1

This is an example of the possible output

```
rlghncxa03w 04-06-01 16:31:35 GMT EAGLE5 31.6.0

LSN          APCA  (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
sp1          240-020-000  scr1  1  1  yes A  2  off off off yes  off

CLLI          TFATCABMLQ MTPRSE ASL8 IPGWAPC
----- 2          yes  yes  no

LOC  PORT  SLC  TYPE      L2T          L1          PCR  PCR
SET  BPS  MODE TSET  ECM  N1  N2
1201 B    0    LIMDS0  1  56000  ---  ---  BASIC ---  -----
1311 B    0    LIMDS0  1  56000  ---  ---  BASIC ---  -----

LOC  PORT  SLC  TYPE      LP          ATM          VCI  VPI  LL
SET  BPS  TSEL

LOC  PORT  SLC  TYPE      LP          ATM          E1ATM
SET  BPS  TSEL  VCI  VPI  CRC4 SI SN

LOC  PORT  SLC  TYPE      IPLIML2

LOC  PORT  SLC  TYPE

LOC  PORT  SLC  TYPE      L2T          PCR  PCR  E1  E1
SET  BPS  ECM  N1  N2  LOC  PORT  TS

LOC  PORT  SLC  TYPE      L2T          PCR  PCR  T1  T1
SET  BPS  ECM  N1  N2  LOC  PORT  TS
```

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

rtrv-ls:lsn=sp2

This is an example of the possible output

```
rlghncxa03w 04-06-01 16:31:35 GMT EAGLE5 31.6.0

LSN          APCA  (SS7)  SCRN  SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
sp2          240-030-000  scr1  1  1  yes A  3  off off off yes  off

CLLI          TFATCABMLQ MTPRSE ASL8 IPGWAPC
----- 2          yes  yes  no

LOC  PORT  SLC  TYPE      L2T          L1          PCR  PCR
SET  BPS  MODE TSET  ECM  N1  N2
1201 A    0    LIMDS0  1  56000  ---  ---  BASIC ---  -----
1202 A    1    LIMDS0  1  56000  ---  ---  BASIC ---  -----
1311 A    2    LIMDS0  1  56000  ---  ---  BASIC ---  -----

LOC  PORT  SLC  TYPE      LP          ATM          VCI  VPI  LL
SET  BPS  TSEL

LOC  PORT  SLC  TYPE      LP          ATM          E1ATM
SET  BPS  TSEL  VCI  VPI  CRC4 SI SN

LOC  PORT  SLC  TYPE      IPLIML2
```

System Administration Procedures

```

LOC  PORT  SLC  TYPE
                                L2T          PCR  PCR  E1  E1
LOC  PORT  SLC  TYPE  SET  BPS    ECM    N1  N2  LOC  PORT  TS
                                L2T          PCR  PCR  T1  T1
LOC  PORT  SLC  TYPE  SET  BPS    ECM    N1  N2  LOC  PORT  TS

```

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

rtrv-ls:lsn=lsnatm1

This is an example of the possible output

rlghncxa03w 04-06-01 16:31:35 GMT EAGLE5 31.6.0

```

LSN          APCA  (SS7)  SCRNR  L3T  SLT          GWS  GWS  GWS
lsnatm1     240-040-000  scr1  1  1  yes  A  2  off  off  off  yes  off

```

```

CLLI          TFATCABMLQ  MTPRSE  ASL8  IPGWAPC
-----  2          yes  yes  no

```

```

LOC  PORT  SLC  TYPE          L2T          L1          PCR  PCR
SET  BPS    MODE  TSET    ECM    N1  N2

```

```

LOC  PORT  SLC  TYPE          LP          ATM
SET  BPS    TSEL    VCI    VPI  LL
1301  A  0  LIMATM  3  1544000  INTERNAL  35  15
1318  A  1  LIMATM  5  1544000  LINE      5  0

```

```

LOC  PORT  SLC  TYPE          LP          ATM          E1ATM
SET  BPS    TSEL    VCI    VPI  CRC4  SI  SN

```

```

LOC  PORT  SLC  TYPE          IPLIML2

```

```

LOC  PORT  SLC  TYPE

```

```

LOC  PORT  SLC  TYPE          L2T          PCR  PCR  E1  E1
SET  BPS    ECM    N1  N2  LOC  PORT  TS

```

```

LOC  PORT  SLC  TYPE          L2T          PCR  PCR  T1  T1
SET  BPS    ECM    N1  N2  LOC  PORT  TS

```

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

rtrv-ls:lsn=sp3

This is an example of the possible output

```
rlghncxa03w 04-06-01 16:31:35 GMT EAGLE5 31.6.0
                                L3T SLT
LSN          APCA (SS7)  SCRNL SET SET BEI LST LNKS GWSA GWSM GWSL SLSCI NIS
sp3          240-050-000 scr1 1 1  yes A 3  off off off  yes  off

          CLLI          TFATCABMLQ MTPRSE ASL8 IPGWAPC
          ----- 2          yes  yes  no

                                L2T          L1          PCR PCR
LOC PORT SLC TYPE          SET BPS          MODE TSET  ECM  N1  N2
1203 A 0 LIMDS0 1 56000 --- --- BASIC --- -----
1204 A 1 LIMDS0 1 56000 --- --- BASIC --- -----
1311 B1 2 LIMDS0 1 56000 --- --- BASIC --- -----

                                LP          ATM
LOC PORT SLC TYPE          SET BPS          TSEL          VCI  VPI  LL

                                LP          ATM          E1ATM
LOC PORT SLC TYPE          SET BPS          TSEL          VCI  VPI  CRC4 SI SN

LOC PORT SLC TYPE          IPLIML2

LOC PORT SLC TYPE

                                L2T          PCR PCR  E1  E1
LOC PORT SLC TYPE          SET BPS          ECM  N1  N2  LOC PORT TS

                                L2T          PCR PCR  T1  T1
LOC PORT SLC TYPE          SET BPS          ECM  N1  N2  LOC PORT TS
```

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

rtrv-ls:lsn=sp7

This is an example of the possible output

```
rlghncxa03w 04-06-01 16:31:35 GMT EAGLE5 31.6.0
                                L3T SLT          GWS GWS GWS
LSN          APCA (SS7)  SCRNL SET SET BEI LST LNKS ACT MES DIS SLSCI NIS
sp7          240-060-000 scr1 1 1  yes A 3  off off off  yes  off

          CLLI          TFATCABMLQ MTPRSE ASL8 IPGWAPC
          ----- 2          yes  yes  no

                                L2T          L1          PCR PCR
LOC PORT SLC TYPE          SET BPS          MODE TSET  ECM  N1  N2
1308 B 0 LIMDS0 1 56000 --- --- BASIC --- -----
1311 A1 1 LIMDS0 1 56000 --- --- BASIC --- -----
1315 A 2 LIMDS0 1 56000 --- --- BASIC --- -----

                                LP          ATM
LOC PORT SLC TYPE          SET BPS          TSEL          VCI  VPI  LL

                                LP          ATM          E1ATM
LOC PORT SLC TYPE          SET BPS          TSEL          VCI  VPI  CRC4 SI SN

LOC PORT SLC TYPE          IPLIML2

LOC PORT SLC TYPE
```

System Administration Procedures

LOC	PORT	SLC	TYPE	L2T	BPS	ECM	PCR	PCR	E1	E1	
				SET			N1	N2	LOC	PORT	TS
LOC	PORT	SLC	TYPE	L2T	BPS	ECM	PCR	PCR	T1	T1	
				SET			N1	N2	LOC	PORT	TS

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

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

```
rmv-card:loc=1201
```

```
rmv-card:loc=1318
```

```
rmv-card:loc=1311
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0  
Card has been inhibited.
```

7. Remove the signaling links on the specified card by using the **dlt-slk** command. If the output of step 5 shows that the signaling link being removed is the last signaling link in a linkset, the **force=yes** parameter must be used. For this example, enter these commands.

```
dlt-slk:loc=1201:port=a
```

```
dlt-slk:loc=1201:port=b
```

```
dlt-slk:loc=1318:port=a
```

```
dlt-slk:loc=1311:port=a
```

```
dlt-slk:loc=1311:port=a1
```

```
dlt-slk:loc=1311:port=b:force=yes
```

```
dlt-slk:loc=1311:port=b1
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0  
DLT-SLK: MASP A - COMPLTD
```

8. Remove the card using the **dlt-card** command. The **dlt-card** command has only one parameter, **loc**, which is the location of the card. For this example, enter these commands.

```
dlt-card:loc=1201
```

```
dlt-card:loc=1318
```

```
dlt-card:loc=1311
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0  
DLT-CARD: MASP A - COMPLTD
```

9. Verify the changes using the **rtrv-card** command specifying the card that was removed in step 8. For this example, enter these commands.

```
rtrv-card:loc=1201
```

```
rtrv-card:loc=1318
```

```
rtrv-card:loc=1311
```

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

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

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

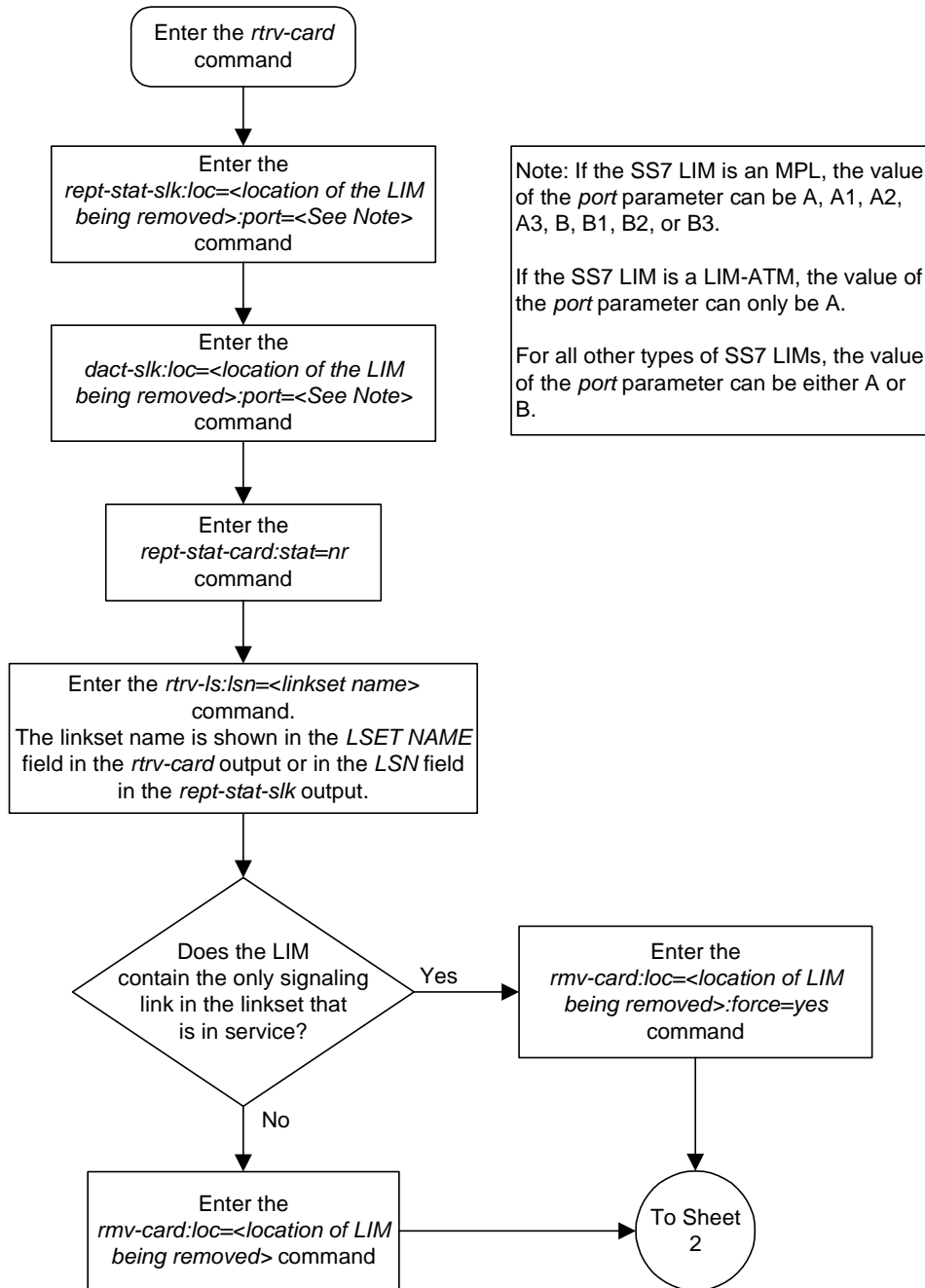
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
```

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

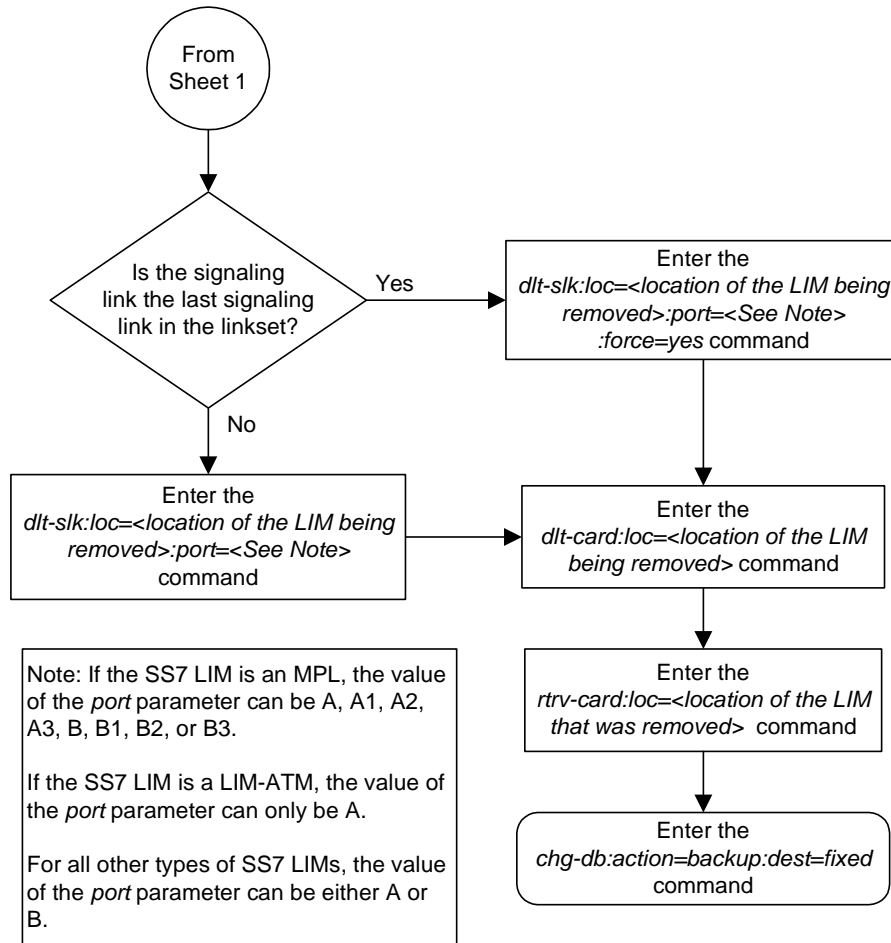
```
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
```

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

Flowchart 4-16. Removing an SS7 LIM (Sheet 1 of 2)



Flowchart 4-16. Removing an SS7 LIM (Sheet 2 of 2)



Configuring the UIM Threshold

This procedure is used to configure the threshold (the number of times during a specified period of time) a specific UIM (unsolicited information message) is displayed at a system terminal using the `set-uim-acthresh` command.

The `set-uim-acthresh` command uses these parameters.

:uimn – The number of the UIM that the threshold is being created for, or the threshold being changed. The number of the UIM must exist in the Eagle. See the *Maintenance Manual* for a list of the UIMs that can be displayed.

:limit – The number of UIMs that can be displayed in the amount of time specified by the `intrvl` parameter.

:intrvl – The amount of time, in minutes, that the number of UIMs specified by the `limit` parameter can be displayed at the system terminal.

:force – The `force=yes` parameter allows the `limit` parameter to be set to 0 should the conditions at the Eagle make this action necessary. Setting the `limit` parameter to 0 prevents the specified UIM, and the information contained in the UIM, from being displayed at the system terminal. It is highly recommended that the `limit` parameter value is not set to 0.

When the `limit=0` and the `force=yes` parameters are specified with the `set-uim-acthresh` command, this message appears in the scroll area of the terminal display.

Caution: Setting `LIMIT=0` suppresses UIM permanently

When creating a new UIM threshold, both the `limit` and `intrvl` parameters must be specified with the `set-uim-acthresh` command.

If you are changing an existing UIM threshold, either the `limit` or `intrvl` parameters must be specified with the `set-uim-acthresh` command.

The examples used in this procedure change the time interval for the existing UIM threshold for UIM 1155 from 30 minutes to 20 minutes, the number of UIMs displayed for existing UIM threshold for UIM 1162 from 100 to 25, and to create a new UIM threshold to display UIM 1075 for 175 times in 30 minutes. These changes are shown in Table 4-9.

Table 4-9. Example UIM Threshold Configuration

UIM Number	Old Limit	Old Time Interval	New Limit	New Time Interval
1155	50	30	No Change	20
1162	100	5	25	No Change
1075	N/A	N/A	175	30

Procedure

1. Display the UIM thresholds in the database using the `rtrv-uim-acthresh` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 08:50:12 GMT EAGLE5 31.6.0
UIMN      LIMIT      INTRVL
1155      50          30
1162      100         5
1216      200         15
```

The UIM Threshold Table is (3 of 499) 1% full.

2. Configure the UIM threshold using the `set-uim-acthresh` command. For this example, enter these commands.

```
set-uim-acthresh:uimn=1155:intrvl=20
```

```
set-uim-acthresh:uimn=1162:limit=25
```

```
set-uim-acthresh:uimn=1075:limit=175:intrvl=30
```

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

```
rlghncxa03w 04-06-01 08:50:12 GMT EAGLE5 31.6.0
SET-UIM-ACTHRESH: MASP A - COMPLTD
```

3. Verify the changes using the `rtrv-uim-acthresh` command. This is an example of the possible output.

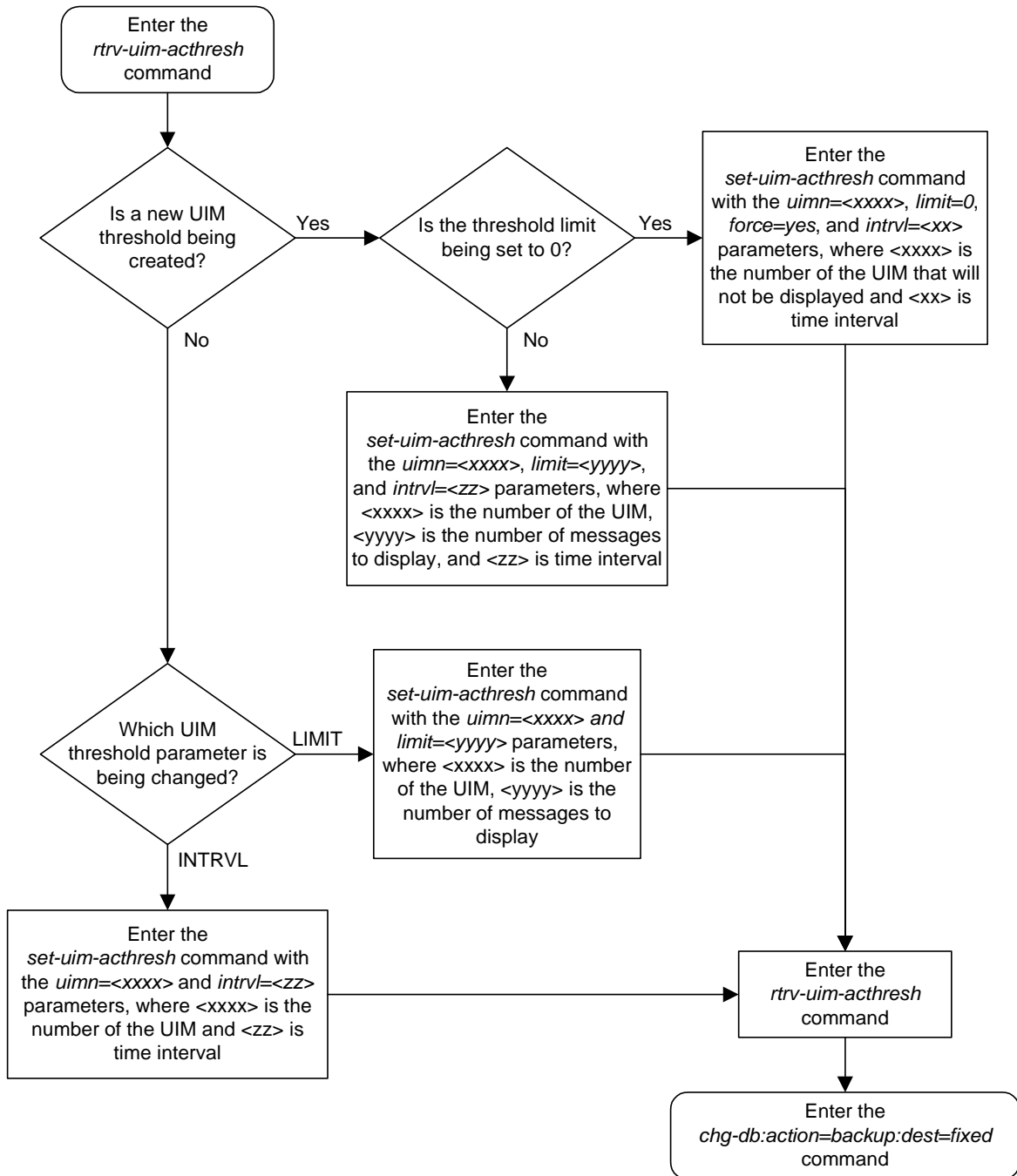
```
rlghncxa03w 04-06-01 08:50:12 GMT EAGLE5 31.6.0
UIMN      LIMIT      INTRVL
1075      175         30
1155      50          20
1162      25          5
1216      200         15
```

The UIM Threshold Table is (4 of 499) 1% full.

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

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

Flowchart 4-17. Configuring the UIM Threshold



Removing a UIM Threshold

This procedure is used to remove a UIM threshold from the database using the `dlt-uim-acthresh` command. The `dlt-uim-acthresh` command has only one parameter, `uimn`, which specifies the UIM number of the UIM threshold that is being removed from the database.

The UIM threshold must be in the database.

The example in this procedure removes the UIM threshold for UIM 1216 from the database.

Procedure

1. Display the UIM thresholds in the database using the `rtrv-uim-acthresh` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 08:50:12 GMT EAGLE5 31.6.0
UIMN      LIMIT      INTRVL
1075      175         30
1155      50          20
1162      25          5
1216      200         15
```

The UIM Threshold Table is (4 of 499) 1% full.

2. Remove a UIM threshold from the database using the `dlt-uim-acthresh` command. For this example, enter this command.

```
dlt-uim-acthresh:uimn=1216
```

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

```
rlghncxa03w 04-06-01 08:50:12 GMT EAGLE5 31.6.0
DLT-UIM-ACTHRESH: MASP A - COMPLTD
```

3. Verify the changes using the `rtrv-uim-acthresh` command. This is an example of the possible output.

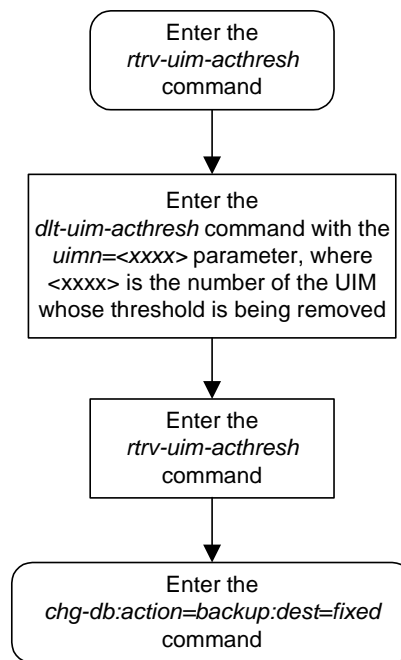
```
rlghncxa03w 04-06-01 08:50:12 GMT EAGLE5 31.6.0
UIMN      LIMIT      INTRVL
1075      175         30
1155      50          20
1162      25          5
```

The UIM Threshold Table is (3 of 499) 1% full.

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

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

Flowchart 4-18. Removing a UIM Threshold



Configuring the Measurements Terminal for a 700 Signaling Link System

This procedure is used to configure a terminal to collect measurement reports on a system that contains from 501 to 700 signaling links. The `chg-trm` command is used to configure this terminal and uses these parameters to configure this terminal.

NOTE: The terminal being configured in this procedure must be terminals 1 through 16. Telnet terminals cannot be specified in this procedure.

NOTE: If the system contains more than 700 signaling links, do not perform this procedure. The Measurements Platform is required to collect measurement reports for systems containing more the 700 signaling links. See the *Maintenance Manual* for more information on the Measurements Platform.

`:trm` – Serial port number

`:baud` – Serial port baud rate

`:sb` – The number of stop bits used in communications with the device

`:prty` – Parity used by the device

`:type` – The type of device being connected.

`:fc` – The type of flow control used between the system and the output devices (vt320 terminal, modem, printer, or KSR terminal, or OAP port).

`:tmout` – The maximum amount of time that a login session on the specified port can remain idle (that is, no user input) on the port before being automatically logged off.

`:mxinv` – The login failure threshold

`:dural` – The length of time that the terminal is disabled after the login failure threshold has been exceeded.

`:all` – All unsolicited messages are received by the specified port

`:traf` – Traffic measurement related unsolicited messages are received by the specified port

NOTE: There are other parameters that can be used with the `chg-trm` command but these parameters cannot be used in this procedure. For more information on these parameters, go to the “Changing Terminal Characteristics” procedure on page 4-51, or to the `chg-trm` command description in the *Commands Manual*.

The measurement terminal must be configured with these parameter values:

- **trm**=<terminal being changed>
- **baud**=19200
- **type**=ksr
- **traf**=yes – all other output message groups must be set to no.

The other parameters listed in this procedure do not have to be specified with the **chg-trm** command. If these parameters are not specified with the **chg-trm** command, these default values will be assigned to the measurements terminal:

- **prty** – even
- **sb** – 1
- **fc** – sw (software)
- **tmout** – 30 minutes
- **mxinv** – 5
- **dural** – 100 (1 minute, 0 seconds)

The terminal must be placed out of service before it can be configured.

If the terminal being changed has output message groups other than **traf** set to **yes**, the **all=no** parameter must be specified with the **chg-trm** command. The **chg-trm** command can then be specified with the **traf=yes** parameter.

The messages assigned to the output message groups defined by the **traf** parameters are listed in the *Maintenance Manual*.

The **tmout**, **dural**, and **mxinv** parameters can be applied to this terminal. See the “Security Parameters” section on page 4-57 for more information on these parameters.

The total value of the terminals’ baud rate cannot be greater than 172,032. If the total baud rate of the terminals exceeds 172,032, change the baud rates of the terminals so that the total baud rate is not greater than 172,032.

The output of the **rtrv-trm** command is displayed in two parts. The first part displays the communication security attributes of the terminal. The communication attributes of the terminal, **BAUD**, **PRTY** (parity), **SB** (stop bits), and **DBTS** (data bits), are displayed in the **COMM** field of the **rtrv-trm** output and are displayed in this format: BAUD-DBTS-PRTY-SB. The second part of the **rtrv-trm** command output displays the types of unsolicited messages the terminal may receive. An example of the **rtrv-trm** command output is shown in this example.

```

rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
TRM TYPE      COMM          FC      TMOUT MXINV DURAL
3   VT320     9600-7-E-1 SW      30     5      99:59:59

                                LNP LNP
TRM TRAF LINK SA  SYS PU  DB  DB  SUB  UIMRD
3   NO  YES  NO  YES NO  YES YES YES  YES

      APP  APP
TRM  SERV SS  CARD CLK DBG GTT GWS MEAS MON MPS SEAS SLAN
3   YES  YES YES  YES YES YES YES YES  YES YES NO  NO

```

This example shows an **rtrv-trm** command output when the LNP feature is enabled for a quantity of 2 to 12 million numbers. If the LNP feature is not enabled, or the ELAP Configuration feature is enabled and activated, the fields **LNPDB**, and **LNPSUB** are not shown in the **rtrv-trm** command output.

In this example, terminal 3 is running at 9600 baud with 7 data bits, even parity, and 1 stop bit.

The examples in this procedure are used to configure terminal 1 as the measurements terminal.

Procedure

1. Display the values of all terminals using the `rtrv-trm` command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
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    VT320      9600-7-E-2 SW      30      9      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    VT320      9600-7-E-1 SW      30      7      00:30:00
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  UIMRD
1    NO  YES  NO  NO  NO  YES  YES
2    NO  NO   NO  NO  NO  NO   NO
3    YES YES  YES NO  YES  YES  YES
4    YES NO   NO  NO  NO  NO   NO
5    NO  YES  NO  NO  NO  NO   YES
6    NO  NO   YES NO  NO  NO   NO
7    YES YES  YES YES  YES  YES  YES
8    NO  NO   NO  NO  YES  NO   YES
9    NO  YES  NO  NO  NO  YES  NO
10   NO  NO   NO  NO  NO  NO   YES
11   YES YES  YES YES  YES  YES  YES
12   YES YES  YES YES  YES  YES  YES
13   NO  YES  NO  NO  NO  NO   YES
14   NO  NO   YES NO  NO  NO   NO
15   YES YES  YES NO  YES  YES  YES
16   NO  NO   NO  NO  YES  NO   YES

APP  APP
TRM  SERV SS  CARD CLK  DBG  GTT  GWS  MEAS  MON  MPS  SEAS  SLAN
1    YES YES YES  YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
2    YES YES YES  YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
3    YES YES YES  YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
4    YES YES YES  YES  YES  NO   YES  YES  YES  YES  YES  NO  NO
5    YES YES YES  YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
6    YES YES YES  YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
7    NO  YES YES  YES  YES  YES  YES  YES  YES  YES  YES  NO  NO
8    YES 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  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

```

2. Inhibit the terminal you wish to change using the **rmv-trm** command and specify the port you wish to inhibit. If the terminal being changed is the last OAP port that is in service, the **force=yes** parameter must be used with the **rmv-trm** command. The OAP ports are shown by the entry **OAP** in the **TYPE** field in the **rtrv-trm** command output in step 1. For this example, enter this command.

```
rmv-trm:trm=1
```

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

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Inhibit message sent to terminal
```

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Command Completed.
```

3. Verify that the terminal that was inhibited in step 5 is in the OOS-MT-DSBLD state by entering the **rept-stat-trm** command. For this command, enter this command.

```
rept-stat-trm:trm=1
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
TRM  PST          SST          AST
1    OOS-MT-DSBLD  MANUAL      -----
Command Completed.
```

4. Configure the measurements terminal using the **chg-trm** command and making sure that only the **traf** output message group is set to **yes**.
 - a. If the output of the **rtrv-trm** command output in step 1 shows that all the output message groups are set to no, then only the **traf=yes** parameter needs to be specified for the output message group assignments as show in this example.


```
chg-trm:trm=1:type=ksr:baud=19200:traf=yes
```
 - b. If however, the **rtrv-trm** command output shows that output message groups other than **traf** are set to **yes**, the **chg-trm** command must be entered with the **all=no** and the **traf=yes** parameter as shown in this example.


```
chg-trm:trm=1:type=ksr:baud=19200:traf=yes:all=no
```

For this example enter the command shown in substep b.

When the **chg-trm** command has successfully completed, this message should appear.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
CHG-TRM: MASP A - COMPLTD
```

5. Verify the changes made in step 4 by using the **rtrv-trm** command with the port number specified in step 4. For this example, enter this command.

```
rtrv-trm:trm=1
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
TRM TYPE COMM FC TMOUT MXINV DURAL
1 KSR 19200-7-E-1 SW 30 5 00:01:00

TRM TRAF LINK SA SYS PU DB UIMRD
1 YES NO NO NO NO NO NO

APP APP
TRM SERV SS CARD CLK DBG GTT GWS MEAS MON MPS SEAS SLAN
1 NO NO NO NO NO NO NO NO NO NO NO NO
```

6. When the changes are complete, and if the terminal was inhibited in step 5, activate the terminal using the **rst-trm** command. For this example, enter this command.

```
rst-trm:trm=1
```

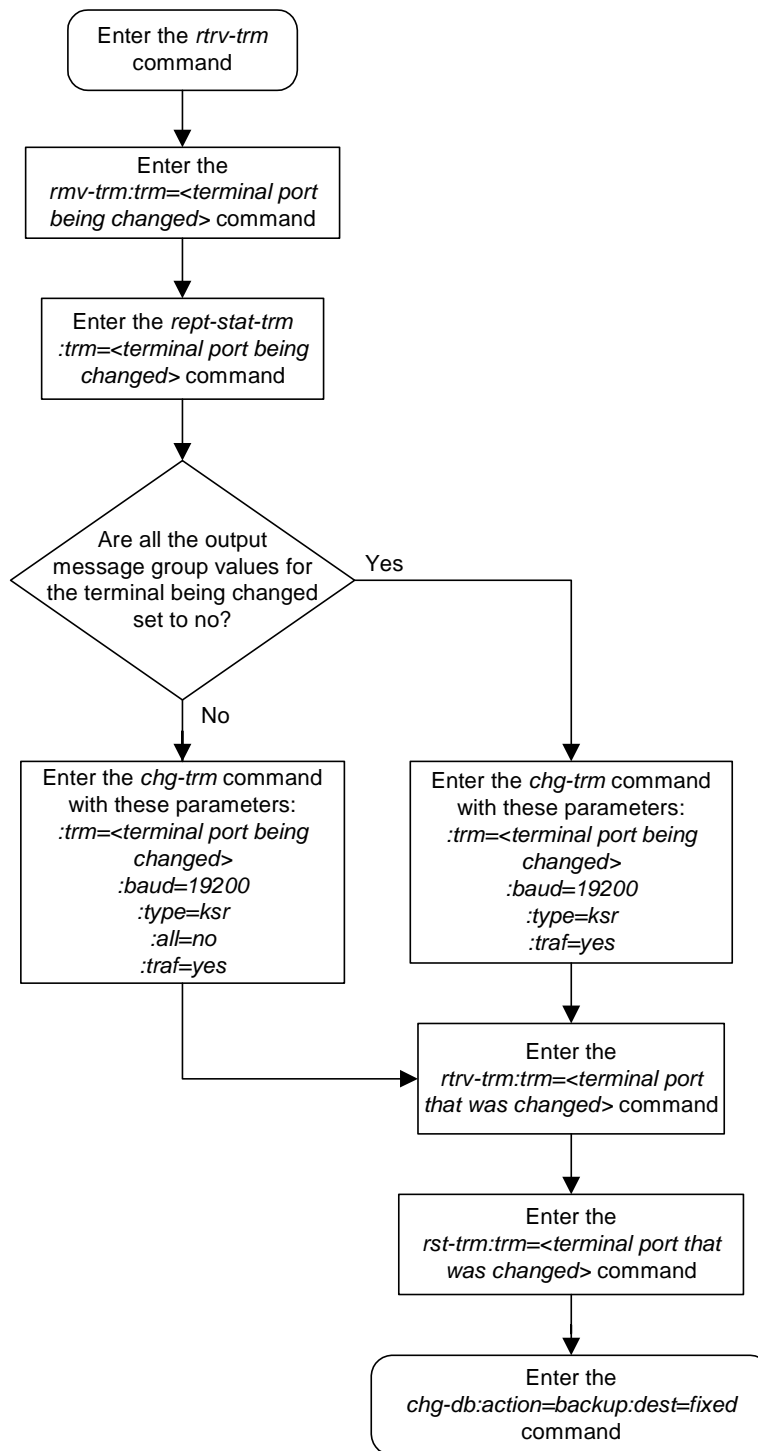
When this command has successfully completed, this message should appear.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Allow message sent to terminal
```

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

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

Flowchart 4-19. Configuring the Maintenance Terminal for a 700 Signaling Link System



Adding an MCPM

This procedure is used to add an MCPM (Measurement Collection & Polling Module), used for the Measurements Platform feature, to the database using the `ent-card` command. The MCPM provides an interface between the Eagle and the customer's network. The Measurements Platform provides a dedicated processor for collecting and transferring measurements data to a customer supplied FTP server.

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 `mcpm`.

`:app1` – The application software or GPL that is assigned to the card. For this procedure, the value of this parameter is `mcp`.

`: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 does not apply to configuring MCPMs and should not be used.

The Measurements Platform feature requires a minimum of 2 MCPM cards (part number 870-2372-03 or later) with at least 2 GB of memory per card.

The Measurements Platform feature must be on in order to add an MCPM to the database. This can be verified with the `rtrv-feat` command. To enable the Measurements Platform feature, the `measplat=on` parameter must be specified with the `chg-feat` command.

NOTE: The Measurements Platform feature must be purchased before turning on the feature. If you are not sure whether you have purchased the Measurements Platform feature, contact your Tekelec Sales Representative or Account Representative.

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 on page 4-93.

After all required MCPMs have been configured in the database, go to the "Configuring the Measurements Platform Feature" procedure on page 4-150 and configure the IP links for these MCPMs and enable the Measurement Platform feature, if necessary.

The examples in this procedure are used to add an MCPM in card location 2107.

Procedure

1. Verify that the MCPM (part number 870-2372-03 or later) being added to the database has been physically installed into the proper location.

2. Connect the Ethernet cables from the customer's network to Port A of the MCPM.

3. Display the cards in the database using the `rtrv-card` command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD  TYPE      APPL      LSET NAME      PORT SLC  LSET NAME      PORT SLC
1101  TSM          SCCP          -----      --  --  -----      --  --
1102  TSM          GLS           -----      --  --  -----      --  --
1103  DCM          VXWLAN       -----      --  --  -----      --  --
1113  GSPM         EOAM          -----      --  --  -----      --  --
1114  TDM-A        -----      --  --  -----      --  --
1115  GSPM         EOAM          -----      --  --  -----      --  --
1116  TDM-B        -----      --  --  -----      --  --
1117  MDAL         -----      --  --  -----      --  --
1118  RESERVED     -----      --  --  -----      --  --
1201  LIMDS0       SS7ANSI      sp2           A    0    sp1           B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1202  LIMDS0       SS7ANSI      sp2           A    1    nsp3          B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1203  LIMDS0       SS7ANSI      sp3           A    0    -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1204  LIMDS0       SS7ANSI      sp3           A    1    -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1205  LIMOCU       CCS7ITU      itu1          A    0    -----      --  --
1206  LIMDS0       SS7ANSI      nsp3          A    1    nsp4          B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1207  LIMV35       SS7GX25      nsp1          A    0    -----      --  --
1208  LIMV35       SS7GX25      nsp1          A    1    -----      --  --
1212  TSM          SCCP          -----      --  --  -----      --  --
1214  TSM          GLS           -----      --  --  -----      --  --
1215  DCM          VXWLAN       -----      --  --  -----      --  --
1301  LIMATM       ATMANSI      lsnatm1       A    0    -----      --  --
1303  STC          EROUTE       -----      --  --  -----      --  --
1305  DCM          VXWLAN       -----      --  --  -----      --  --
1308  LIMDS0       SS7ANSI      sp6           A    0    sp7           B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --

```

System Administration Procedures

1311	LIMDS0	SS7ANSI	sp2	A	2	sp1	B	1
			sp7	A1	1	sp3	B1	2
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
1315	LIMDS0	SS7ANSI	sp7	A	2	sp5	B	0
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
1318	LIMATM	ATMANSI	lsnatm1	A	1	-----	--	--
2101	STC	EROUTE	-----	--	--	-----	--	--
2103	STC	EROUTE	-----	--	--	-----	--	--
2105	STC	EROUTE	-----	--	--	-----	--	--

The cards should be distributed throughout the system for proper power distribution. Refer to the *Installation Manual* for the shelf power distribution.

NOTE: If the `rtrv-card` output from step 3 shows an MCPM card, shown by the entries `MCPM` in the `TYPE` column and `MCP` in the `APPL` column, skip steps 4 and 5, and go to step 6.

4. Verify that the Measurements Platform feature is enabled by entering the `rtrv-feat` command. If the Measurements Platform feature is on, the `MEASPLAT` field should be set to `on`. For this example, the Measurements Platform feature is off.

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

NOTE: If the Measurements Platform feature is on, skip step 5 and go to step 6.

5. Turn the Measurements Platform feature on by entering this command.

```
chg-feat:measplat=on
```

NOTE: Once the Measurements Platform feature is turned on with the `chg-feat` command, it cannot be turned off.

The Measurements Platform feature must be purchased before turning on the feature. If you are not sure whether you have purchased the Measurements Platform feature, contact your Tekelec Sales Representative or Account Representative.

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

```
rlghncxa03w 04-06-01 21:18:37 GMT EAGLE5 31.6.0
CHG-FEAT: MASP A - COMPLTD
```

6. Add the MCPM using the **ent-card** command. For this example, enter this commands.

```
ent-card:loc=2107:type=mcpm:appl=mcp
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
ENT-CARD: MASP A - COMPLTD
```

7. Verify the changes using the **rtrv-card** command with the card location specified in step 6. For this example, enter this command.

```
rtrv-card:loc=2107
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD   TYPE      APPL      LSET NAME      PORT SLC LSET NAME      PORT SLC
2107   MCPM        MCP       -----      --  --  -----      --  --
```

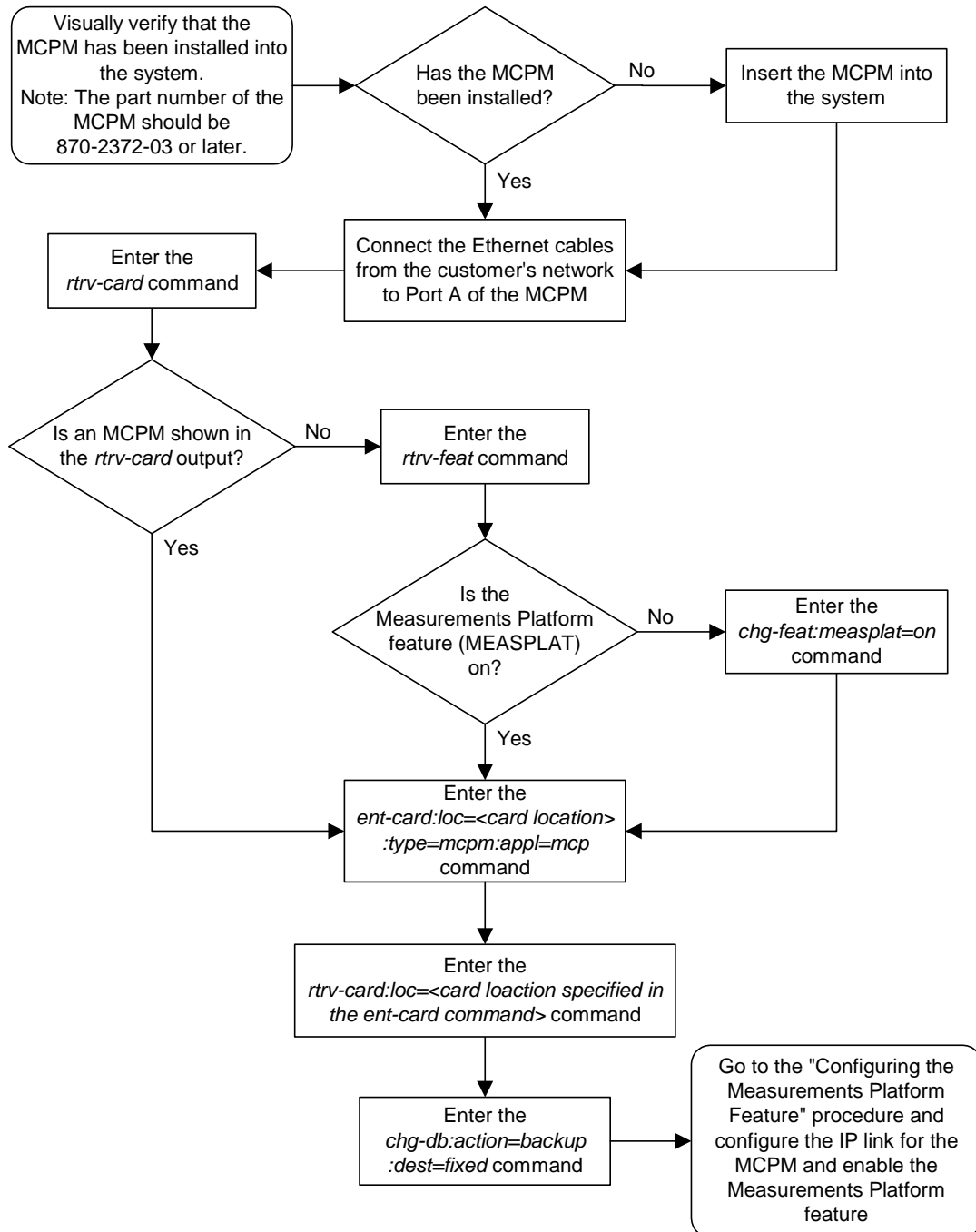
8. Back up the new changes using the **chg-db:action=backup:dest=fixed** command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

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

9. Go to the “Configuring the Measurements Platform Feature” procedure on page 4-150 and configure the IP links for these MCPMs and enable the Measurement Platform feature, if necessary.
-

Flowchart 4-20. Adding an MCPM

NOTE: Before executing this procedure, make sure you have purchased the Measurements Platform feature. If you are not sure whether you have purchased the Measurements Platform feature, contact your Tekelec Sales Representative or Account Representative.



Removing an MCPM

This procedure is used to remove an MCPM (Measurement Collection & Polling Module) from the database using the `dlt-card` command.



CAUTION: If the MCPM is the last MCPM in service, removing this card from the database will disable the Measurements Platform feature.

The examples in this procedure are used to remove the MCPM in card location 2107.

Canceling the REPT-STAT-CARD Command

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

- Press the **F9** function key on the keyboard at the terminal where the `rept-stat-card` command was entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rept-stat-card` command was entered.
- Enter the `canc-cmd:trm=<xx>`, where `<xx>` is the terminal where the `rept-stat-card` command was entered, from another terminal other 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, go to the *Commands Manual*.

Procedure

1. Display the cards in the database using the `rtrv-card` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD   TYPE      APPL      LSET NAME      PORT SLC LSET NAME      PORT SLC
1101   TSM        SCCP      -----      --  --  -----      --  --
1102   TSM        GLS       -----      --  --  -----      --  --
1103   DCM        VXWSLAN  -----      --  --  -----      --  --
1113   GSPM       EOAM
1114   TDM-A
1115   GSPM       EOAM
1116   TDM-B
1117   MDAL
1118   RESERVED
```

System Administration Procedures

1201	LIMDS0	SS7ANSI	sp2	A	0	sp1	B	0
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
1202	LIMDS0	SS7ANSI	sp2	A	1	nsp3	B	0
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
1203	LIMDS0	SS7ANSI	sp3	A	0			
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
1204	LIMDS0	SS7ANSI	sp3	A	1			
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
1205	LIMOCU	CCS7ITU	itu1	A	0			
1206	LIMDS0	SS7ANSI	nsp3	A	1	nsp4	B	0
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
1207	LIMV35	SS7GX25	nsp1	A	0			
1208	LIMV35	SS7GX25	nsp1	A	1			
1212	TSM	SCCP						
1214	TSM	GLS						
1215	DCM	VXWLAN						
1301	LIMATM	ATMANSI	lsnatm1	A	0			
1303	STC	EROUTE						
1305	DCM	VXWLAN						
1308	LIMDS0	SS7ANSI	sp6	A	0	sp7	B	0
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
1311	LIMDS0	SS7ANSI	sp2	A	2	sp1	B	1
			sp7	A1	1	sp3	B1	2
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
1315	LIMDS0	SS7ANSI	sp7	A	2	sp5	B	0
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
1318	LIMATM	ATMANSI	lsnatm1	A	1			
2101	STC	EROUTE						
2103	STC	EROUTE						
2105	STC	EROUTE						
2107	MCPM	MCP						
2108	MCPM	MCP						
2111	MCPM	MCP						

An MCPM is identified by the entries **MCPM** in the **TYPE** field and **MCP** in the **APPL** field.

2. Display the status of the MCPMs in the database with the `rept-stat-meas` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0

MEAS SS          PST          SST          AST
                IS-NR          Active       -----
ALARM STATUS =  No Alarms

CARD  VERSION          TYPE  PST          SST          AST
2107 P 101-9-000      MCPM  IS-NR        Active       -----
      IP Link A                IS-NR        Active       Available
2108 101-9-000      MCPM  IS-NR        Active       -----
      IP Link A                IS-NR        Active       Available
2111 101-9-000      MCPM  IS-NR        Active       -----
      IP Link A                IS-NR        Active       Available

CARD 2107 ALARM STATUS = No Alarms
CARD 2108 ALARM STATUS = No Alarms
CARD 2111 ALARM STATUS = No Alarms
```

3. Inhibit the MCPM using the `rmv-card` command, specifying the card location of the MCPM. If the MCPM to be inhibited is the last MCPM that is in service, the `force=yes` parameter must also be specified. For this example, enter this command.

```
rmv-card:loc=2107
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
Card has been inhibited.
```

4. Remove the card using the `dlt-card` command. The `dlt-card` command has only one parameter, `loc`, which is the location of the card. For this example, enter these commands.

```
dlt-card:loc=2107
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
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 these commands.

```
rtrv-card:loc=2107
```

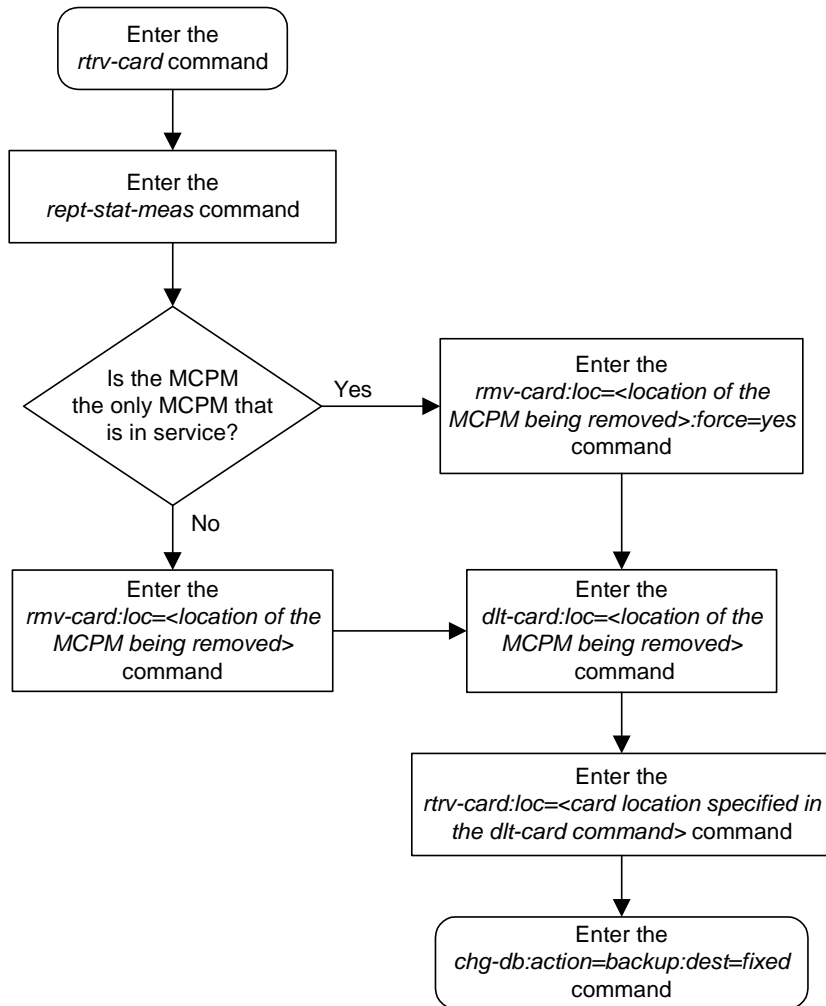
When this command has successfully completed, this message should appear.

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

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

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

Flowchart 4-21. Removing an MCPM



Configuring the Measurements Platform Feature

This procedure is used to configure IP communications link between the Eagle and the customer's network, and to enable the Measurements Platform on the Eagle using these commands:

- **ent-ip-host** – Configuring the IP host of the MCPM
- **chg-ip-card** – Configuring the IP address of the MCPM
- **chg-ip-lnk** – Configuring the IP link assigned to the MCPM
- **chg-measopts** – Enabling the Measurements Platform option

These commands contain parameters that are not used in this procedure. The *Commands Manual* contains a full description of these commands.

The Measurements Platform also requires 2 FTP servers. The FTP servers are configured in the database with one of these procedures.

- “Adding an FTP Server” procedure on page 4-158
- “Changing an FTP Server” procedure on page 4-164

MCPMs must be configured in the database before this procedure can be performed. This can be verified with the **rtrv-card** command.

Procedure

1. Display the cards in the database using the **rtrv-card** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD  TYPE      APPL      LSET NAME      PORT SLC LSET NAME      PORT SLC
1101  TSM          SCCP      -----      --  --  -----      --  --
1102  TSM          GLS       -----      --  --  -----      --  --
1103  DCM          VXWLAN    -----      --  --  -----      --  --
1113  GSPM         EOAM
1114  TDM-A
1115  GSPM         EOAM
1116  TDM-B
1117  MDAL
1118  RESERVED
1201  LIMDS0      SS7ANSI    sp2           A    0    sp1           B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1202  LIMDS0      SS7ANSI    sp2           A    1    nsp3          B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1203  LIMDS0      SS7ANSI    sp3           A    0    -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
```

System Administration Procedures

```

1204 LIMDS0 SS7ANSI sp3 A 1 ----- -- --
----- -- -- ----- -- --
----- -- -- ----- -- --
----- -- -- ----- -- --
1205 LIMOCU CCS7ITU itu1 A 0 ----- -- --
1206 LIMDS0 SS7ANSI nsp3 A 1 nsp4 B 0
----- -- -- ----- -- --
----- -- -- ----- -- --
----- -- -- ----- -- --
1207 LIMV35 SS7GX25 nsp1 A 0 ----- -- --
1208 LIMV35 SS7GX25 nsp1 A 1 ----- -- --
1212 TSM SCCP ----- -- -- ----- -- --
1214 TSM GLS ----- -- -- ----- -- --
1215 DCM VXWLAN ----- -- -- ----- -- --
1301 LIMATM ATMANSI lsnatm1 A 0 ----- -- --
1303 STC EROUTE ----- -- -- ----- -- --
1305 DCM VXWLAN ----- -- -- ----- -- --
1308 LIMDS0 SS7ANSI sp6 A 0 sp7 B 0
----- -- -- ----- -- --
----- -- -- ----- -- --
----- -- -- ----- -- --
----- -- -- ----- -- --
1311 LIMDS0 SS7ANSI sp2 A 2 sp1 B 1
sp7 A1 1 sp3 B1 2
----- -- -- ----- -- --
----- -- -- ----- -- --
----- -- -- ----- -- --
1315 LIMDS0 SS7ANSI sp7 A 2 sp5 B 0
----- -- -- ----- -- --
----- -- -- ----- -- --
----- -- -- ----- -- --
1318 LIMATM ATMANSI lsnatm1 A 1 ----- -- --
2101 STC EROUTE ----- -- -- ----- -- --
2103 STC EROUTE ----- -- -- ----- -- --
2105 STC EROUTE ----- -- -- ----- -- --
2107 MCPM MCP ----- -- -- ----- -- --
2108 MCPM MCP ----- -- -- ----- -- --
2111 MCPM MCP ----- -- -- ----- -- --

```

If no MCPMs are configured in the database, identified by the entries **MCPM** in the **TYPE** field and **MCP** in the **APPL** field, go to the “Adding an MCPM” procedure on page 4-141 and configure the required MCPMs.

2. Display the current IP host information in the database by entering the **rt rv-ip-host** command. The following is an example of the possible output.

```

rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
IPADDR          HOST
150.1.1.2       GW102.NC.TEKELEC.COM
150.1.1.3       GW103.NC.TEKELEC.COM

IP Host table is (2 of 512) 1% full

```

3. Assign an IP host to the MCPM using the **ent-ip-host** command. For this example, enter this command.

```
ent-ip-host:host=gw100.nc.tekelec.com:ipaddr=150.1.1.1
```

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

```

rlghncxa03w 04-06-01 21:18:37 GMT EAGLE5 31.6.0
ENT-IP-HOST: MASP A - COMPLTD

```

4. Display the status of the MCPMs in the database with the `rept-stat-meas` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0

MEAS SS          PST          SST          AST
                IS-NR        Active      -----
ALARM STATUS =  No Alarms

CARD  VERSION      TYPE  PST          SST          AST
2107 P 101-9-000   MCPM  IS-NR        Active      -----
      IP Link A
2108 101-9-000   MCPM  IS-NR        Active      Available
      IP Link A
2111 101-9-000   MCPM  IS-NR        Active      -----
      IP Link A

CARD 2107 ALARM STATUS = No Alarms
CARD 2108 ALARM STATUS = No Alarms
CARD 2111 ALARM STATUS = No Alarms
```

NOTE: If the status of the MCPM that the IP link is being assigned to is **OOS-MT-DSBLD**, skip step 5 and go to step 6.

5. Inhibit the MCPM using the `rmv-card` command, specifying the card location of the MCPM. If the MCPM to be inhibited is the last MCPM that is in service, the `force=yes` parameter must also be specified. For this example, enter this command.

```
rmv-card:loc=2107
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
Card has been inhibited.
```

6. Display the current TCP/IP parameters associated with card in the database by entering the `rtrv-ip-card` command. The following is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
LOC 2108
SRCHORDR LOCAL
DNSA      150.1.1.2
DNSB      -----
DEFROUTER 150.1.1.25
DOMAIN    NC.TEKELEC.COM

LOC 2111
SRCHORDR LOCAL
DNSA      150.1.1.3
DNSB      -----
DEFROUTER 150.1.1.28
DOMAIN    NC.TEKELEC.COM
```


- Assign a default router to the MCPM using the **chg-ip-card** command with these parameters: **loc**, **srchordr**, **domain**, and **defrouter**. For this example, enter this command.

```
chg-ip-card:loc=2107:srchordr=local:domain=nc.tekelec.com
:defrouter=150.1.1.50
```

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

```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 31.6.0
CHG-IP-CARD: MASP A - COMPLTD
```

- Display the IP link assignments using the **rtrv-ip-lnk** command. The following is an example of the possible output.

```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 31.6.0
LOC  PORT  IPADDR          SUBMASK          DUPLEX  SPEED  MACTYPE  AUTO  MCAST
2108  A      150.123.123.123 255.255.255.0   -----  100    ---      ---  YES
2111  A      150.123.123.125 255.255.255.0   -----  100    ---      ---  YES
```

- Assign an IP link to the MCPM using the **chg-ip-lnk** command with these parameters: **loc**, **port=a**, **ipaddr**, **submask**, **speed=100**, **mcast=yes**. The IP address used in this command must be the IP address specified in the **ent-ip-host** command in step 3. For this example, enter this command.

```
chg-ip-lnk:loc=2107:port=a:ipaddr=150.1.1.1
:submask=255.255.255.0:speed=100:mcast=yes
```

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

```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 31.6.0
CHG-IP-LNK: MASP A - COMPLTD
```

- Place the MCPM back into service using the **rst-card** specifying the location of the MCPM. For this example, enter this command.

```
rst-card:loc=2107
```

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

```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 31.6.0
Card has been allowed.
```

- Verify the status of the MCPM using the **rept-stat-meas** command, specifying the location of the MCPM. For this example, enter this command.

```
rept-stat-meas:loc=2107
```

```
rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0

MEAS  SS                PST           SST           AST
                IS-NR        Active       -----
ALARM STATUS = No Alarms

CARD  VERSION          TYPE  PST           SST           AST
2107  P 101-9-000        MCPM  IS-NR        Active       -----
      IP Link A                IS-NR        Active       Available

CARD 2107 ALARM STATUS = No Alarms
```

12. Display the FTP Server configuration using the `rtrv-ftp-serv` command.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
FTP Client Security: OFF

APP          IPADDR          LOGIN          PRIO
-----
meas        1.255.0.100     ftpmeas3      3
  Path:     ~meas\local
meas        1.255.0.101     ftpmeas2      2
  Path:     \tmp\measurements\backup\dat

FTP SERV table is (2 of 10) 20% full
```

The system allows only two FTP servers for the Measurements Platform. If no FTP servers, or one FTP server is in the database, go to the “Adding an FTP Server” procedure on page 4-158 and add the required FTP server. If there are two FTP servers in the database, and you wish to change one or both of these FTP servers, go to the “Changing an FTP Server” procedure on page 4-164.

13. Verify whether or not the Measurements Platform option is enabled (**Platform Enabled = on**) using the `rtrv-measopts` command.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
EAGLE MEASUREMENT OPTIONS LIST

Platform Enabled =on
-----
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*.

NOTE: If the Measurements Platform option in step 13 is enabled, skip this step and go to step 15.

14. Enable the Measurements Platform option using the `chg-measopts` command with the `platformenabled` parameter. For this example, enter this command.

```
chg-measopts:platformenabled=on
```

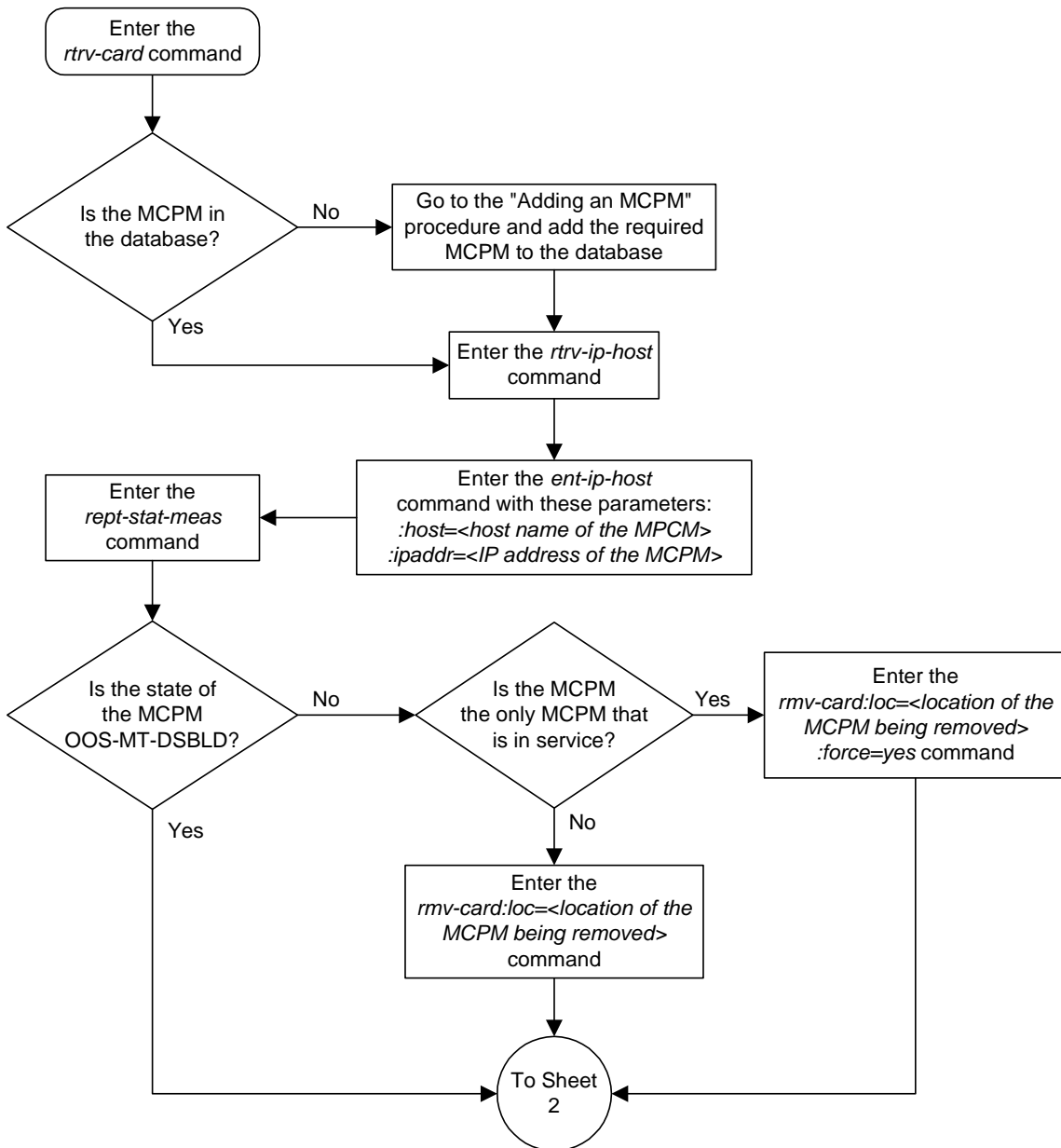
When the `chg-measopts` command has successfully completed, this message should appear.

```
rlghncxa03w 04-06-01 00:22:57 GMT EAGLE5 31.6.0
CHG-MEAS-OPTS: MASP A - COMPLTD
```

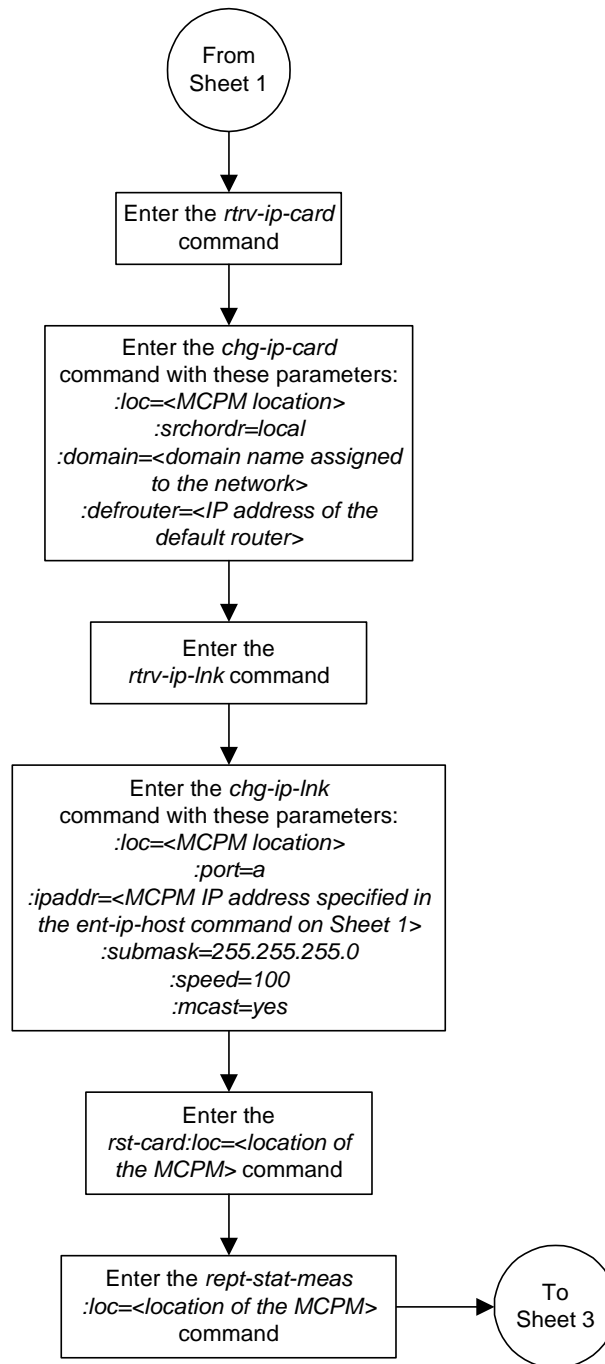
15. Back up the new changes using the `chg-db:action=backup:dest=fixed` command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

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

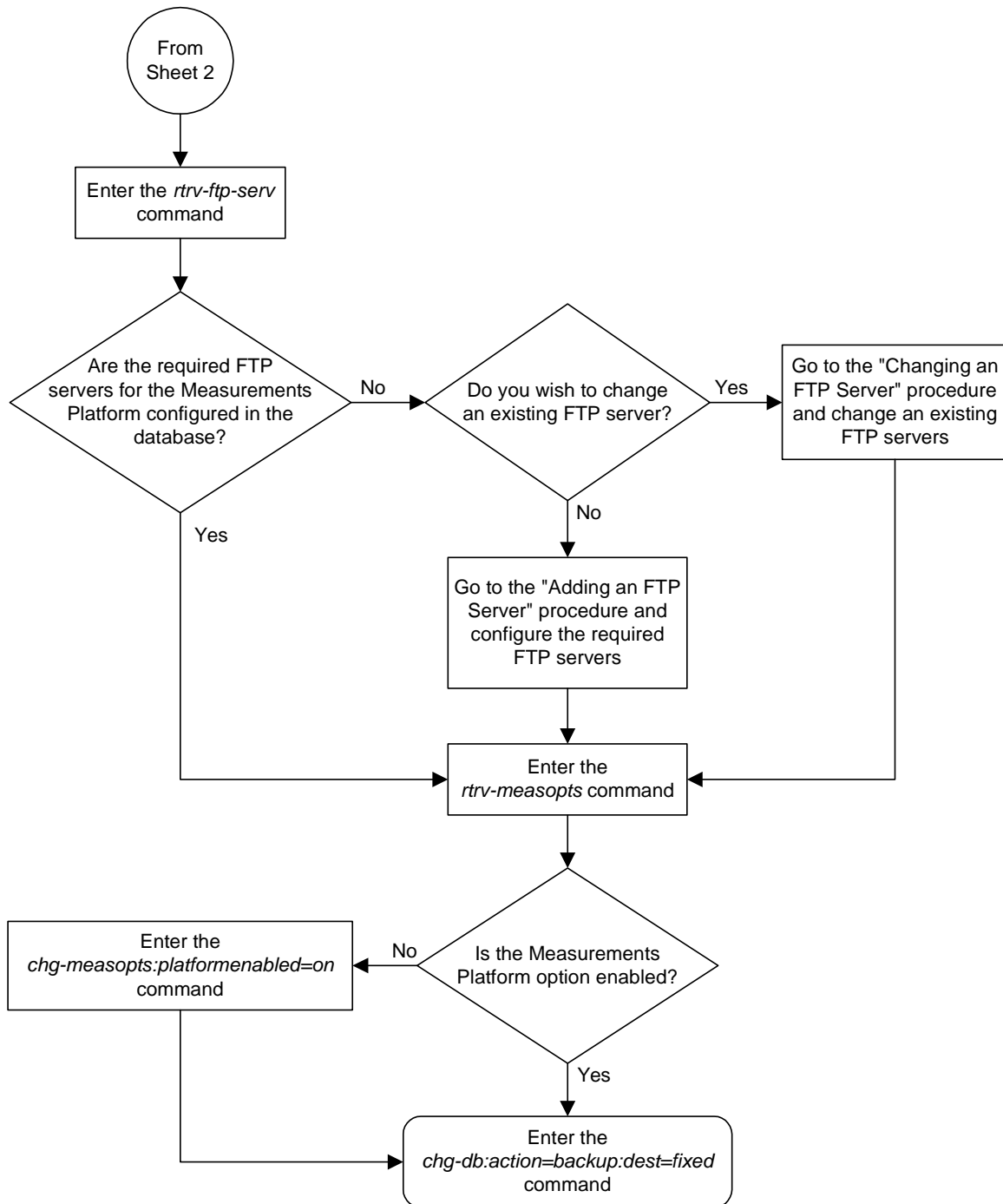
Flowchart 4-22. Configuring the Measurements Platform Feature (Sheet 1 of 3)



Flowchart 4-22. Configuring the Measurements Platform Feature (Sheet 2 of 3)



Flowchart 4-22. Configuring the Measurements Platform Feature (Sheet 3 of 3)



Adding an FTP Server

This procedure is used to add FTP servers using the `ent-ftp-serv` command.

The `ent-ftp-serv` command uses these parameters.

`:app` – The application of the FTP server. There are two values for the `app` parameter:

- `meas` – The FTP servers for the Measurements Platform
- `user` – The FTP servers for the FTP Retrieve and Replace feature.



CAUTION: While this procedure can be used to add a USER FTP server, any USER FTP servers entered by this procedure will be overwritten by the FTP server configuration information sent to the Eagle by the FTP-Based Table Retrieve Application (FTRA).

`:ipaddr` – The IP address of the FTP server.

`:login` – The name of the FTP server client.

`:path` – The path to the file on the Eagle that is to be sent to the FTP server.

`:prio` – The priority of the FTP server, from 1 to 10.

Only two FTP servers can be configured for the Measurements Platform feature.

Only two FTP servers can be configured for the FTP Retrieve and Replace feature.

The `app/ipaddr` parameter combination must be unique in the database.

The `login` parameter value can contain from 1 to 15 alpha-numeric characters. The alphabetic characters can be both upper and lower case characters.

The `path` parameter value is a mixed-case quoted character string with a valid FTP path format that can contain up to 100 characters.

After the FTP server is added to the database with the `ent-ftp-serv` command, the user is prompted for a password for this FTP server. The password can contain from 1 to 15 alpha-numeric characters. The alphabetic characters must be both upper and lower case characters. The password is not shown on the terminal screen as it is being entered and is not shown in the `rtrv-ftp-serv` output.

If the Eagle OA&M IP Security Enhancement Controlled Feature is enabled and activated, the FTP servers configured in this procedure must be secure FTP servers. The FTP-Based Table Retrieve Application (FTRA) and the Measurements Platform must support secure shell connections to the Eagle. Enter the `rtrv-ctrl-feat` command to verify whether or not the Eagle OA&M IP Security Enhancement Controlled Feature is enabled and activated.

Because CSV measurement data files do not have unique names across multiple STPs, include the CLLI of the STP in the FTP server path for `meas` FTP servers.

Procedure

1. Display the FTP servers in the database using the `rtrv-ftp-serv` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
FTP Client Security: ON

APP          IPADDR          LOGIN          PRIO
-----
meas        1.255.0.100    ftpmeas3      3
    Path:  ~meas\local

FTP SERV table is (1 of 10) 10% full
```

2. Add the FTP server to the database using the `ent-ftp-serv` command. For this example, enter this command.

```
ent-ftp-serv:app=meas:ipaddr=1.255.0.101:login=ftpmeas2:prio=2
:path="\tmp\measurements\backup\dat"

ent-ftp-serv:app=user:ipaddr=1.255.0.100:login=ftpuser1:prio=3
:path="\tmp\user"

ent-ftp-serv:app=user:ipaddr=1.255.0.102:login=ftpuser5:prio=7
:path="\tmp\backup\user"
```



CAUTION: While this procedure can be used to add a USER FTP server, any USER FTP servers entered by this procedure will be overwritten by the FTP server configuration information sent to the Eagle by the FTP-Based Table Retrieve Application (FTRA).

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

```
rlghncxa03w 04-06-01 21:18:37 GMT EAGLE5 31.6.0
FTP SERV table is (4 of 10) 40% full
ENT-FTP-SERV: MASP A - COMPLTD
```

3. Enter a password for the FTP server added in step 2 at the `PASSWORD:` prompt. The password is not shown on the terminal screen as it is entered. The password can contain from 1 to 15 alpha-numeric characters. The alphabetic characters must be both upper and lower case characters.
-

4. Display the changes using the `rtrv-ftp-serv` command. The following is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
FTP Client Security: ON

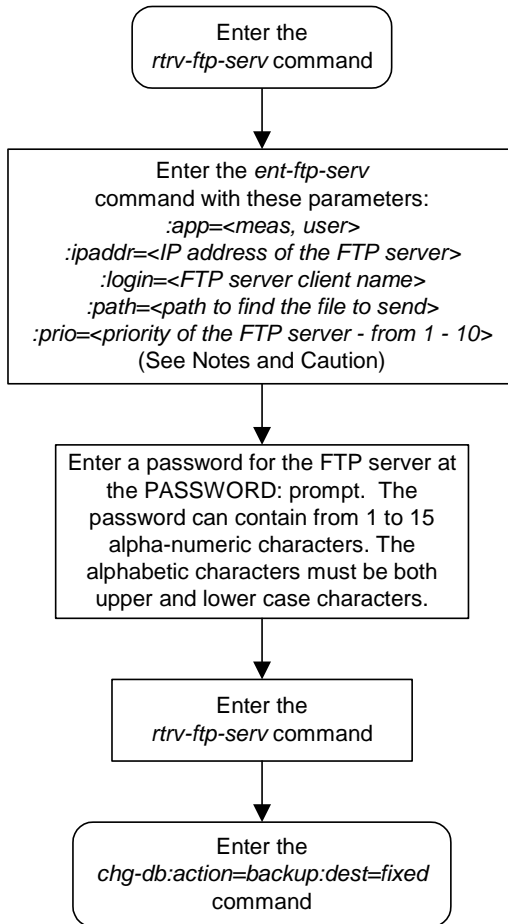
APP          IPADDR          LOGIN          PRIO
-----
meas         1.255.0.100     ftpmeas3      3
  Path:      ~meas\local
meas         1.255.0.101     ftpmeas2      2
  Path:      \tmp\measurements\backup\dat
user         1.255.0.100     ftpuser1      3
  Path:      \tmp\user
user         1.255.0.102     ftpuser5      7
  Path:      \tmp\backup\user

FTP SERV table is (4 of 10) 40% full
```

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

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

Flowchart 4-23. Adding an FTP Server



Notes:

1. Only 2 FTP servers for the Measurement Platform (:app=meas) can be configured in the database.
2. Only 2 FTP servers for the FTP Retrieve and Replace feature (:app=user) can be configured in the database.
3. The login parameter value can contain from 1 to 15 alpha-numeric characters. The alphabetic characters can be both upper and lower case characters.
4. The path parameter value is a mixed-case quoted character string with a valid FTP path format that can contain up to 100 characters.
5. If the Eagle OAM IP Security Enhancement Controlled Feature is enabled and activated, the FTP servers configured in this procedure must be secure FTP servers and secure shell clients must be available. The FTP-Based Table Retrieve Application (FTRA) and the Measurements Platform must support secure shell connections to the Eagle. Enter the rtrv-ctrl-feat command to verify whether or not the Eagle OAM IP Security Enhancement Controlled Feature is enabled and activated.
6. Because CSV measurement data files do not have unique names across multiple STPs, include the CLLI of the STP in the FTP server path for meas FTP servers.

Caution: This procedure can be used to add a USER FTP server, but any USER FTP servers entered by this procedure will be overwritten by the FTP server configuration information sent to the Eagle by the FTP-Based Table Retrieve Application (FTRA). It is recommended that USER FTP servers be added at the FTRA. For more information on adding USER FTP servers at the FTRA, see the *FTP-Based Table Retrieve Application (FTRA) User Guide*, P/N 910-4341.

Removing an FTP Server

This procedure is used to remove an FTP server from the database using the `dlt-ftp-serv` command.

The `dlt-ftp-serv` command uses these parameters.

`:app` – The application of the FTP server. There are two values for the `app` parameter:

- `meas` – The FTP servers for the Measurements Platform
- `user` – The FTP servers for the FTP Retrieve and Replace feature.

`:ipaddr` – The IP address of the FTP server.



CAUTION: Removing all FTP servers for an application will disable the feature supported by the FTP servers.

Procedure

1. Display the FTP servers in the database using the `rtrv-ftp-serv` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
FTP Client Security: ON
```

APP	IPADDR	LOGIN	PRI0
meas	1.255.0.100	ftpmeas3	3
Path:	~meas\local		
meas	1.255.0.101	ftpmeas2	2
Path:	\tmp\measurements\backup\dat		
user	1.255.0.100	ftpuser1	3
Path:	\tmp\user		
user	1.255.0.102	ftpuser5	7
Path:	\tmp\backup\user		

```
FTP SERV table is (4 of 10) 40% full
```

2. Remove an FTP server from the database using the `dlt-ftp-serv` command. For this example, enter this command.

```
dlt-ftp-serv:app=meas:ipaddr=1.255.0.101
```

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

```
rlghncxa03w 04-06-01 21:18:37 GMT EAGLE5 31.6.0
FTP SERV table is (1 of 10) 10% full
DLT-FTP-SERV: MASP A - COMPLTD
```

3. Display the changes using the **rtrv-ftp-serv** command. The following is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
FTP Client Security: ON
```

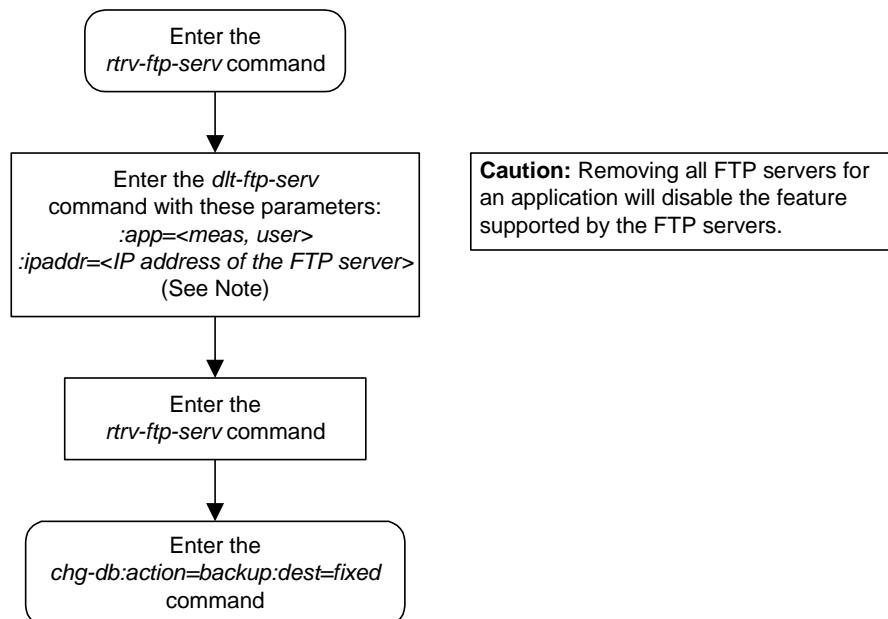
APP	IPADDR	LOGIN	PRIO
meas	1.255.0.100	ftpmeas3	3
Path: ~meas\local			
user	1.255.0.100	ftpuser1	3
Path: \tmp\user			
user	1.255.0.102	ftpuser5	7
Path: \tmp\backup\user			

FTP SERV table is (3 of 10) 30% full

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

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

Flowchart 4-24. Removing an FTP Server



Changing an FTP Server

This procedure is used to change the values assigned to an FTP server using the `chg-ftp-serv` command.

The `chg-ftp-serv` command uses these parameters.

`:app` – The application of the FTP server. There are two values for the `app` parameter:

- `meas` – The FTP servers for the Measurements Platform
- `user` – The FTP servers for the FTP Retrieve and Replace feature.



CAUTION: While this procedure can be used to change a USER FTP server configuration, any USER FTP server configurations changed by this procedure will be overwritten by the FTP server configuration information sent to the Eagle by the FTP-Based Table Retrieve Application (FTRA).

`:ipaddr` – The IP address of the FTP server.

`:login` – The name of the FTP server client.

`:path` – The path to the file on the Eagle that is to be sent to the FTP server.

`:prio` – The priority of the FTP server, from 1 to 10.

The `app` and `ipaddr` parameters must be specified with the `chg-ftp-serv` command. The IP address of the FTP server cannot be changed with the `chg-ftp-serv` command. If you wish to change the IP address of the FTP server, the FTP server must first be removed with the “Removing an FTP Server” procedure on page 4-162, then re-entered with the new IP address using the “Changing an FTP Server” procedure on page 4-164.

The `login` parameter value can contain from 1 to 15 alpha-numeric characters. The alphabetic characters can be both upper and lower case characters.

The `path` parameter value is a mixed-case quoted character string with a valid FTP path format that can contain up to 100 characters.

If the `login` parameter value is changed, the user is prompted for a password for this FTP server. The password can contain from 1 to 15 alpha-numeric characters. The alphabetic characters must be both upper and lower case characters. The password is not shown on the terminal screen as it is being entered and is not shown in the `rtrv-ftp-serv` output.

If the Eagle OA&M IP Security Enhancement Controlled Feature is enabled and activated, the FTP servers configured in this procedure must be secure FTP servers. The FTP-Based Table Retrieve Application (FTRA) and the Measurements Platform must support secure shell connections to the Eagle. Enter the `rtrv-ctrl-feat` command to verify whether or not the Eagle OA&M IP Security Enhancement Controlled Feature is enabled and activated.

Because CSV measurement data files do not have unique names across multiple STPs, include the CLLI of the STP in the FTP server path for `meas` FTP servers.

Procedure

1. Display the FTP servers in the database using the `rtrv-ftp-serv` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
FTP Client Security: ON
```

APP	IPADDR	LOGIN	PRIO
meas	1.255.0.100	ftpmeas3	3
	Path: ~meas\local		
meas	1.255.0.101	ftpmeas2	2
	Path: \tmp\measurements\backup\dat		
user	1.255.0.100	ftpuser1	3
	Path: \tmp\user		
user	1.255.0.102	ftpuser5	7
	Path: \tmp\backup\user		

```
FTP SERV table is (4 of 10) 40% full
```

2. Change the FTP server to the database using the `chg-ftp-serv` command. For this example, enter this command.

```
chg-ftp-serv:app=meas:ipaddr=1.255.0.101:login=meas25:prio=1
```

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

```
rlghncxa03w 04-06-01 21:18:37 GMT EAGLE5 31.6.0
CHG-FTP-SERV: MASP A - COMPLTD
```

NOTE: If the login parameter was not specified in step 2, skip this step and go to step 4.

3. Enter a password for the FTP server changed in step 2 at the `PASSWORD:` prompt. The password is not shown on the terminal screen as it is entered. The password can contain from 1 to 15 alpha-numeric characters. The alphabetic characters must be both upper and lower case characters.
-

4. Display the changes using the `rtrv-ftp-serv` command. The following is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
FTP Client Security: ON

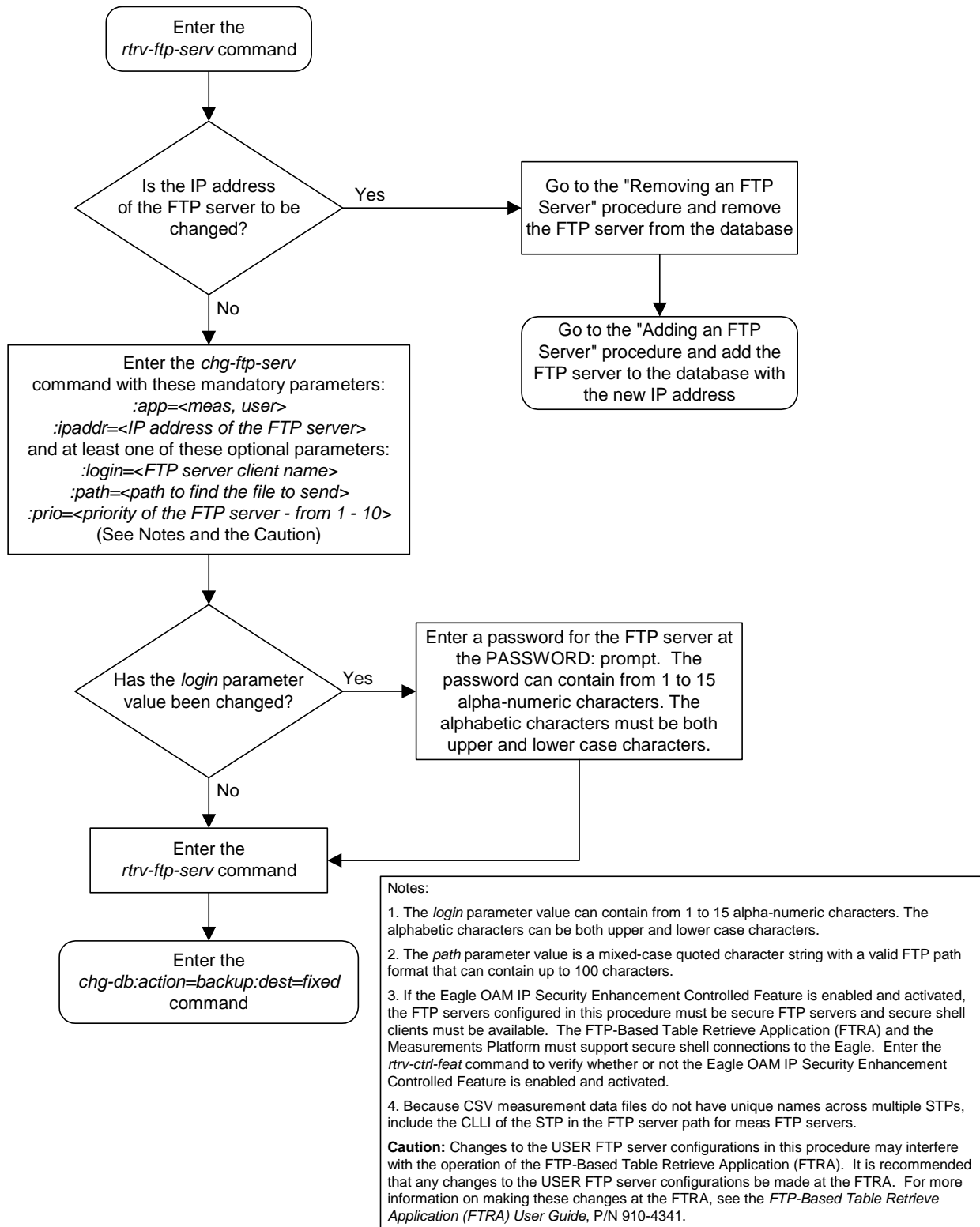
APP          IPADDR          LOGIN          PRIO
-----
meas         1.255.0.100     ftpmeas3       3
  Path:      ~meas\local
meas         1.255.0.101     meas25         1
  Path:      \tmp\measurements\backup\dat
user         1.255.0.100     ftpuser1       3
  Path:      \tmp\user
user         1.255.0.102     ftpuser5       7
  Path:      \tmp\backup\user

FTP SERV table is (4 of 10) 40% full
```

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

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

Flowchart 4-25. Changing an FTP Server



Adding an IPSM

This procedure is used to add an IPSM (IP Services Module), used for the IP User Interface feature, to the database using the **ent-card** command. The IPSM provides eight IP based connections to the system's user interface through a telnet client.

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 **ipsm**.
- :app1** – The application software or GPL that is assigned to the card. For this procedure, the value of this parameter is **ips**.
- :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 does not apply to configuring IPSMs and should not be used.

The IP User Interface (Telnet) feature is not required to be enabled and activated in order to add an IPSM, but the IP User Interface (Telnet) feature must be enabled and activated so that the user can use a telnet client to establish a connection to the Eagle. This can be verified with the **rtrv-ctrl-feat** command. To enable and activate the IP User Interface (Telnet) feature, go to the "Activating Controlled Features" procedure on page B-3.

The IP User Interface feature must be enabled and activated to add an IPSM to the database. This can be verified with the **rtrv-ctrl-feat** command. To enable and activate the IP User Interface feature, go to the "Activating Controlled Features" procedure on page B-3.

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 on page 4-93.

If the Eagle OA&M IP Security Enhancement feature is enabled and activated, shown in the **rtrv-ctrl-feat** output, when an IPSM is installed into the Eagle, UIM 1493, SSH Host Keys Regenerated, is displayed. UIM 1493 contains the public host key fingerprint which is used to establish a secure connection with an SSH client. If the secure connection is to be made with the FTRA, the public host key fingerprint displayed in UIM 1493 must be added to the **hosts.xml** file in the FTRA. Record the public host key fingerprint information displayed in UIM 1493 if a secure connection to the FTRA will be made. For more information about editing the **hosts.xml** file on the FTRA, see the *FTP-Based Table Retrieve Application (FTRA) User Guide*, P/N 910-4341.

An IP link must be assigned to the IPSM. The IP links can be verified using the **rtrv-ip-lnk** command. IP links are configured using the **ent-ip-host** and **chg-ip-lnk** commands.

After an IPSM is configured in the database and placed into service, eight telnet terminals are configured in the database with default values for the security and output group parameters. If you wish to change the security and output group parameter values, go to the “Changing Terminal Characteristics” procedure on page 4-51.

The examples in this procedure are used to add an IPSM in card location 2107.

Procedure

1. Display the cards in the database using the `rtrv-card` command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD  TYPE      APPL  LSET NAME      PORT  SLC  LSET NAME      PORT  SLC
1101  TSM          SCCP  -----      --   --  -----      --   --
1102  TSM          GLS   -----      --   --  -----      --   --
1103  DCM          VXWLAN -----      --   --  -----      --   --
1113  GSPM         EOAM  -----      --   --  -----      --   --
1114  TDM-A
1115  GSPM         EOAM  -----      --   --  -----      --   --
1116  TDM-B
1117  MDAL
1118  RESERVED
1201  LIMDS0      SS7ANSI  sp2          A    0    sp1          B    0
-----      --   --  -----      --   --
-----      --   --  -----      --   --
1202  LIMDS0      SS7ANSI  sp2          A    1    nsp3         B    0
-----      --   --  -----      --   --
-----      --   --  -----      --   --
1203  LIMDS0      SS7ANSI  sp3          A    0    -----      --   --
-----      --   --  -----      --   --
-----      --   --  -----      --   --
1204  LIMDS0      SS7ANSI  sp3          A    1    -----      --   --
-----      --   --  -----      --   --
-----      --   --  -----      --   --
1205  LIMOCU      CCS7ITU  itu1         A    0    -----      --   --
1206  LIMDS0      SS7ANSI  nsp3         A    1    nsp4         B    0
-----      --   --  -----      --   --
-----      --   --  -----      --   --
-----      --   --  -----      --   --
1207  LIMV35      SS7GX25  nsp1         A    0    -----      --   --
1208  LIMV35      SS7GX25  nsp1         A    1    -----      --   --
1212  TSM          SCCP  -----      --   --  -----      --   --
1214  TSM          GLS   -----      --   --  -----      --   --
1215  DCM          VXWLAN -----      --   --  -----      --   --
1301  LIMATM      ATMANSI  lsnatm1     A    0    -----      --   --
1303  STC          EROUTE  -----      --   --  -----      --   --
1305  DCM          VXWLAN -----      --   --  -----      --   --
1308  LIMDS0      SS7ANSI  sp6          A    0    sp7          B    0
-----      --   --  -----      --   --
-----      --   --  -----      --   --
-----      --   --  -----      --   --

```

1311	LIMDS0	SS7ANSI	sp2	A	2	sp1	B	1
			sp7	A1	1	sp3	B1	2
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
1315	LIMDS0	SS7ANSI	sp7	A	2	sp5	B	0
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
			-----	--	--	-----	--	--
1318	LIMATM	ATMANSI	lsnatm1	A	1	-----	--	--
2101	STC	EROUTE	-----	--	--	-----	--	--
2103	STC	EROUTE	-----	--	--	-----	--	--
2105	STC	EROUTE	-----	--	--	-----	--	--

The cards should be distributed throughout the system for proper power distribution. Refer to the *Installation Manual* for the shelf power distribution.

NOTE: The system can contain a maximum of 3 IPSMs. If the `rtrv-card` output shows that there are three IPSMs in the system, this procedure cannot be performed.

-
2. Install the IPSM into the proper card location.

If the OA&M IP Security Enhancements feature is enabled and activated, UIM 1493, SSH Host Keys Regenerated, is displayed when the IPSM is installed into the card location. UIM 1493 contains the public host key fingerprint which is used to establish a secure connection with an SSH client. If the secure connection is to be made with the FTRA, the public host key fingerprint displayed in UIM 1493 must be added to the `hosts.xml` file in the FTRA. Record the public host key fingerprint information displayed in UIM 1493 if a secure connection to the FTRA will be made. For more information about editing the `hosts.xml` file on the FTRA, see the *FTP-Based Table Retrieve Application (FTRA) User Guide*, P/N 910-4341.

-
3. Add the IPSM using the `ent-card` command. For this example, enter this commands.

```
ent-card:loc=2107:type=ipsm:appl=ips
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
Telnet auto-provisioning activated, 8 terminals are being added:
Telnet terminal 17 Added at location 2107.
Telnet terminal 18 Added at location 2107.
Telnet terminal 19 Added at location 2107.
Telnet terminal 20 Added at location 2107.
Telnet terminal 21 Added at location 2107.
Telnet terminal 22 Added at location 2107.
Telnet terminal 23 Added at location 2107.
Telnet terminal 24 Added at location 2107.
```

```
ENT-CARD: MASP A - COMPLTD
```

System Administration Procedures

- Verify the changes using the `rtrv-card` command with the card location specified in step 3. For this example, enter this command.

```
rtrv-card:loc=2107
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD  TYPE      APPL      LSET NAME      PORT SLC LSET NAME      PORT SLC
2107  IPSM        IPS      -----      --  --  -----      --  --
```

- verify that the terminals shown as added in step 3 have been added by entering the `rtrv-trm` command. the following is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
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    VT320      9600-7-E-2 SW      30     9     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    VT320      9600-7-E-1 SW      30     7     00:30:00
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  TYPE      LOC      TMOUT MXINV DURAL      SECURE
17   TELNET    2107     60     5     00:30:00
18   TELNET    2107     60     5     00:30:00
19   TELNET    2107     60     5     00:30:00
20   TELNET    2107     60     5     00:30:00
21   TELNET    2107     60     5     00:30:00
22   TELNET    2107     60     5     00:30:00
24   TELNET    2107     60     5     00:30:00

TRM  TRAF LINK SA  SYS PU  DB  UIMRD
1    NO  YES NO  YES NO  YES YES
2    NO  NO  NO  NO  NO  NO  NO
3    YES YES YES NO  YES YES YES
4    YES NO  NO  NO  NO  NO  NO
5    NO  YES NO  NO  NO  NO  YES
6    NO  NO  YES NO  NO  NO  NO
7    YES YES YES YES YES YES YES
8    NO  NO  NO  NO  YES NO  YES
9    NO  YES NO  NO  NO  YES NO
10   NO  NO  NO  NO  NO  NO  YES
11   YES YES YES YES YES YES YES
12   YES YES YES YES YES YES YES
13   NO  YES NO  NO  NO  NO  YES
14   NO  NO  YES NO  NO  NO  NO
15   YES YES YES NO  YES YES YES
16   NO  NO  NO  NO  YES NO  YES
17   NO  NO  NO  NO  NO  NO  NO
18   NO  NO  NO  NO  NO  NO  NO
```

```

19 NO NO NO NO NO NO NO
20 NO NO NO NO NO NO NO
21 NO NO NO NO NO NO NO
22 NO NO NO NO NO NO NO
23 NO NO NO NO NO NO NO
24 NO NO NO NO NO NO NO

```

```

      APP APP
TRM  SERV SS CARD CLK DBG GTT GWS MEAS MON MPS SEAS SLAN
1    YES YES YES YES YES YES YES YES YES YES YES NO NO
2    YES YES YES YES YES YES YES YES YES YES YES NO NO
3    YES YES YES YES YES YES YES YES YES YES YES NO NO
4    YES YES YES YES YES NO YES YES YES YES YES NO NO
5    YES YES YES YES YES YES YES YES YES YES YES NO NO
6    YES YES YES YES YES YES YES YES YES YES YES NO NO
7    NO YES YES YES YES YES YES YES YES YES YES NO NO
8    YES 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 YES
10   YES YES YES YES YES YES YES YES YES YES YES YES YES
11   NO 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 NO
13   NO 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 NO
15   NO 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 NO
17   NO NO NO NO NO NO NO NO NO NO NO NO NO NO
18   NO NO NO NO NO NO NO NO NO NO NO NO NO NO
19   NO NO NO NO NO NO NO NO NO NO NO NO NO NO
20   NO NO NO NO NO NO NO NO NO NO NO NO NO NO
21   NO NO NO NO NO NO NO NO NO NO NO NO NO NO
22   NO NO NO NO NO NO NO NO NO NO NO NO NO NO
23   NO NO NO NO NO NO NO NO NO NO NO NO NO NO
24   NO NO NO NO NO NO NO NO NO NO NO NO NO NO

```

If you wish to change the output parameter values for the telnet terminals added in this procedure, perform the “Changing Terminal Characteristics” procedure on page 4-51.

-
6. Display the current IP host information in the database by entering the `rtrv-ip-host` command. The following is an example of the possible output.

```

rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
IPADDR          HOST
150.1.1.2      GW102.NC.TEKELEC.COM
150.1.1.3      GW103.NC.TEKELEC.COM

IP Host table is (2 of 512) 1% full

```

-
7. Assign an IP host to the IPSM using the `ent-ip-host` command. For this example, enter this command.

```
ent-ip-host:host=ip.nc.tekelec.com:ipaddr=150.1.1.1
```

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

```

rlghncxa03w 04-06-01 21:18:37 GMT EAGLE5 31.6.0
ENT-IP-HOST: MASP A - COMPLTD

```

8. Display the IP link data assigned to the IPSM using the `rtrv-ip-lnk` command with the IPSM's location and the `port=a` parameter. For this example, enter this command.

```
rtrv-ip-lnk:loc=2107:port=a
```

The following is an example of the possible output.

```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 31.6.0
LOC  PORT IPADDR          SUBMASK          DUPLEX  SPEED  MACTYPE AUTO MCAST
2107  A    -----  -----  HALF    10    DIX    NO  NO
```

9. Assign an IP link to the IPSM using the `chg-ip-lnk` command with these parameters: `loc`, `port=a`, `ipaddr`, `submask`, `speed=100`. The IP address used in this command must be the IP address specified in the `ent-ip-host` command in step 7. For this example, enter this command.

```
chg-ip-lnk:loc=2107:port=a:ipaddr=150.1.1.1
:submask=255.255.255.0:speed=100
```

NOTE: If either the `ipaddr` or `submask` parameters are specified, then both parameters must be specified, unless the `ipaddr=0.0.0.0` parameter is specified, then the `submask` parameter is not required. The `ipaddr=0.0.0.0` parameter disables the IP link.

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

```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 31.6.0
CHG-IP-LNK:  MASP A - COMPLTD
```

10. Verify the changes made in step 8 using the `rtrv-ip-lnk` command and specifying the card location and port values used in step 8. For this example, enter this command.

```
rtrv-ip-lnk:loc=2107:port=a
```

The following is an example of the possible output.

```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 31.6.0
LOC  PORT IPADDR          SUBMASK          DUPLEX  SPEED  MACTYPE AUTO MCAST
2107  A    150.1.1.1      255.255.255.0  HALF    100    DIX    NO  NO
```

11. Display the IP card attributes of the IPSM using the `rtrv-ip-card` command specifying the IPSM's location. For this example, enter this command.

```
rtrv-ip-card:loc=2107
```

The following is an example of the possible output.

```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 31.6.0
LOC 2107
  SRCHORDR  SRVR
  DNSA      -----
  DNSB      -----
  DEFROUTER -----
  DOMAIN    -----
```

12. Change the IP card attributes of the IPSM using the `chg-ip-card` command with these values: IPSM card location, local search order, domain, and the default router for the IPSM. For this example, enter this command.

```
chg-ip-card:loc=2107:srchordr=local:domain=ip.nc.tekelec.com
:defrouter=150.1.1.250
```

The following is an example of the possible output.

NOTE: The network portion of the default router's IP address (defrouter) must be the same as the network portion of the IP address specified in the ent-ip-host (step 6) and chg-ip-lnk (step 8) commands. The last octet of the default router's IP address must be 250.

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

```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 31.6.0
CHG-IP-CARD: MASP A - COMPLTD
```

13. Verify the changes made in step 11 using the `rtrv-ip-card` command specifying the IPSM's location. For this example, enter this command.

```
rtrv-ip-card:loc=2107
```

The following is an example of the possible output.

```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 31.6.0
LOC 2107
  SRCHORDR  LOCAL
  DNSA      -----
  DNSB      -----
  DEFROUTER 150.1.1.250
  DOMAIN    ip.nc.tekelec.com
```

14. Verify that the IP User Interface (Telnet) feature is enabled and activated, and if secure connections to the Eagle are to be used, verify that the OA&M IP Security Enhancements feature is enabled and activated by entering the `rtrv-ctrl-feat` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
Feature Name          Partnum   Status   Quantity
Telnet                893005701 off      ----
```

NOTE: The rtrv-ctrl-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-ctrl-feat command, see the rtrv-ctrl-feat command description in the *Commands Manual*.

If the IP User Interface (Telnet) feature is enabled and activated (`status = on`), go to step 15.

If the IP User Interface (Telnet) feature is not enabled or activated, go to the "Activating Controlled Features" procedure on page B-3 and enable and activate the IP User Interface (Telnet) feature.

If UIM 1493 was displayed when the IPSM was installed in step 2, the OA&M IP Security Enhancements feature is enabled and activated. If the OA&M IP

Security Enhancements feature is enabled and activated (**status = on**), go to step 15.

If the OA&M IP Security Enhancements feature is not enabled or activated, and secure connections are to the Eagle are to be used, go to the “Activating the Eagle OA&M IP Security Enhancement Controlled Feature” procedure on page B-12 and enable and activate the OA&M IP Security Enhancements feature.

-
15. Place the IPSM into service using the **rst-card** specifying the location of the IPSM. For this example, enter this command.

```
rst-card:loc=2107
```

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

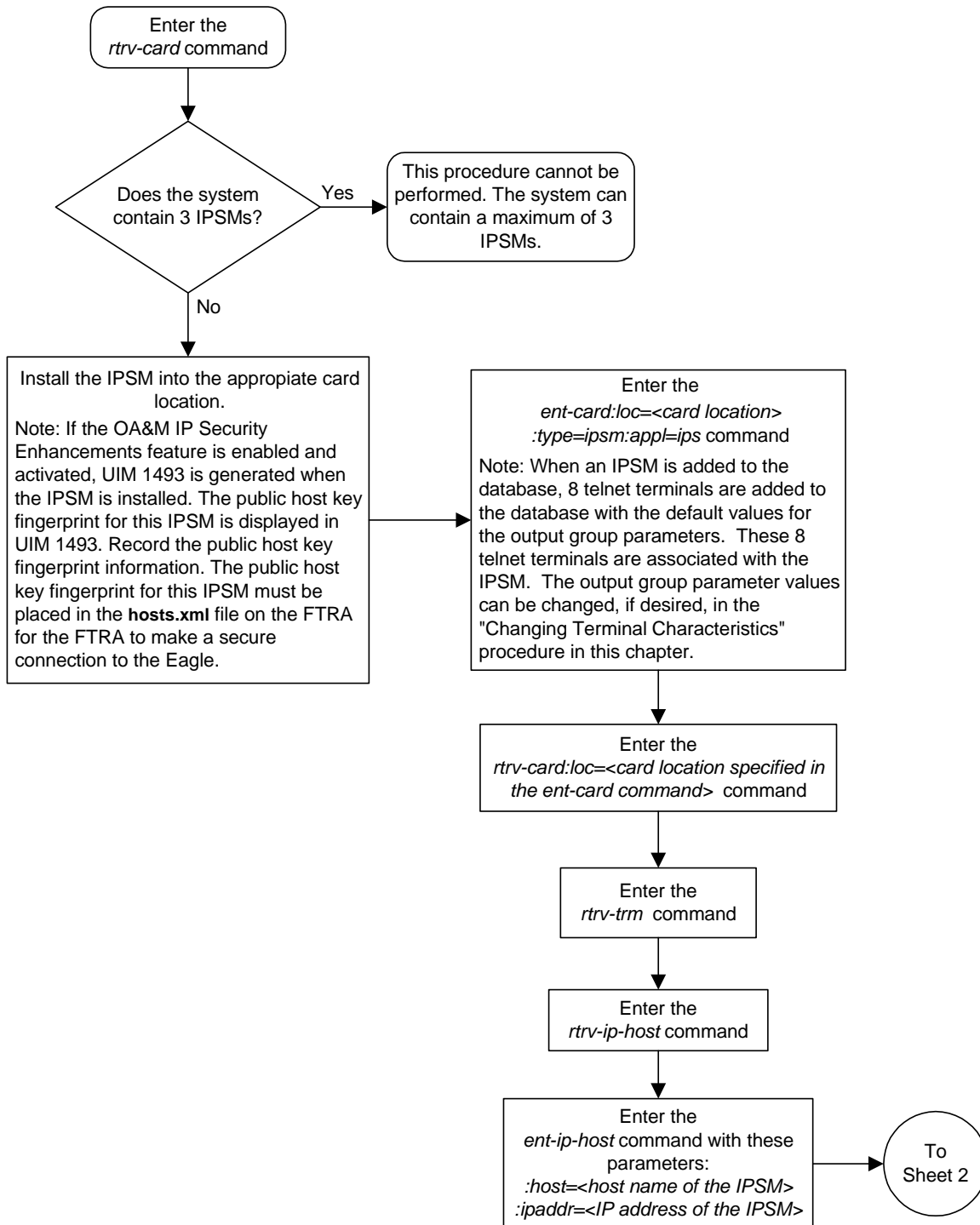
```
rlghncxa03w 04-06-01 21:20:37 GMT EAGLE5 31.6.0  
Card has been allowed.
```

If the OA&M IP Security Enhancements feature is enabled and activated, UIM 1494, SSH Host Keys Loaded, is displayed. UIM 1494 contains the public host key fingerprint which is used to establish a secure connection with an SSH client. If the secure connection is to be made with the FTRA, the public host key fingerprint displayed in UIM 1494 must be added to the **hosts.xml** file in the FTRA. If the public host key fingerprint was not recorded in step 2, record the public host key fingerprint information displayed in UIM 1494 if a secure connection to the FTRA will be made. For more information about editing the **hosts.xml** file on the FTRA, see the *FTP-Based Table Retrieve Application (FTRA) User Guide*, P/N 910-4341.

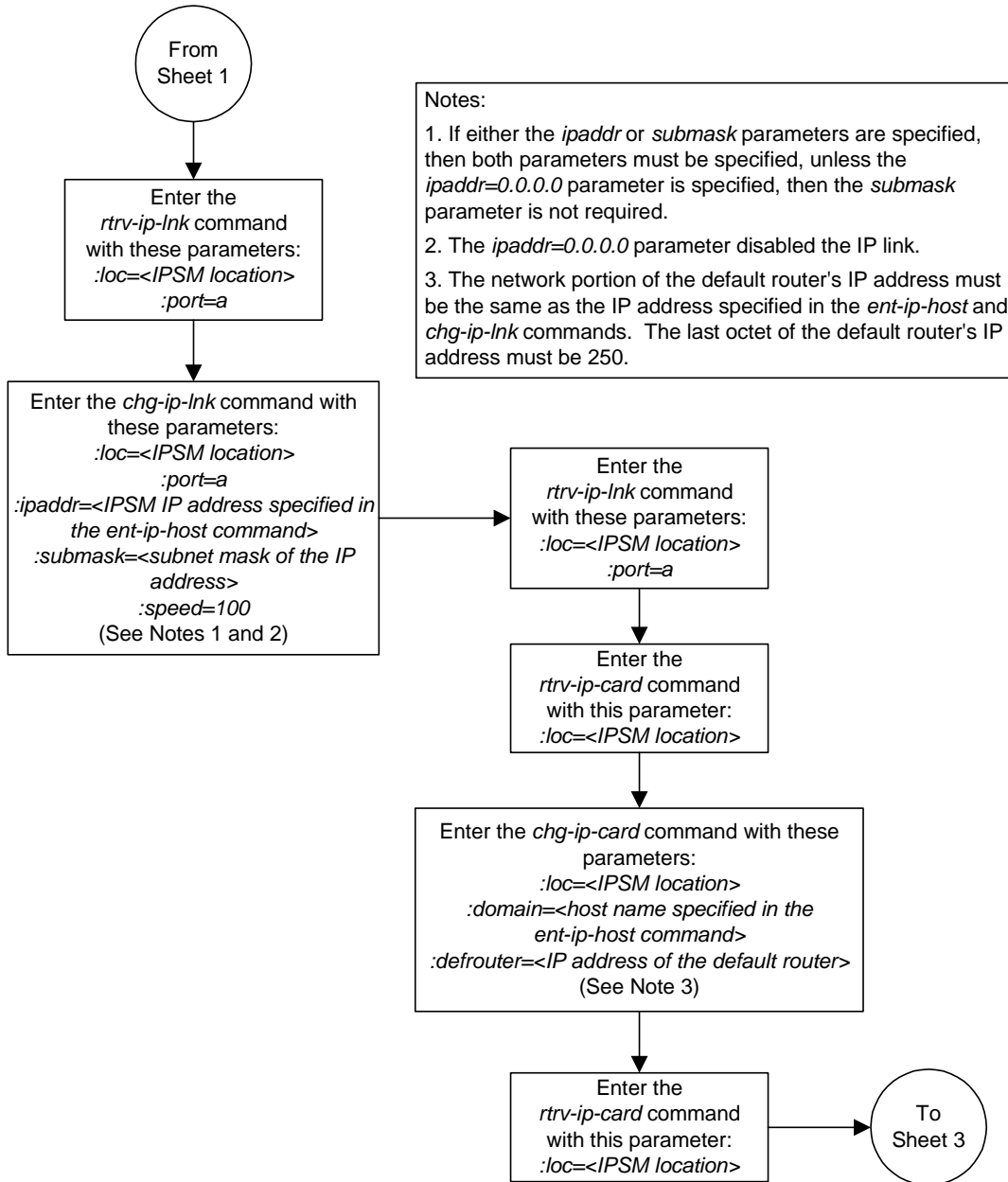
-
16. Back up the new changes using the **chg-db:action=backup:dest=fixed** command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

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

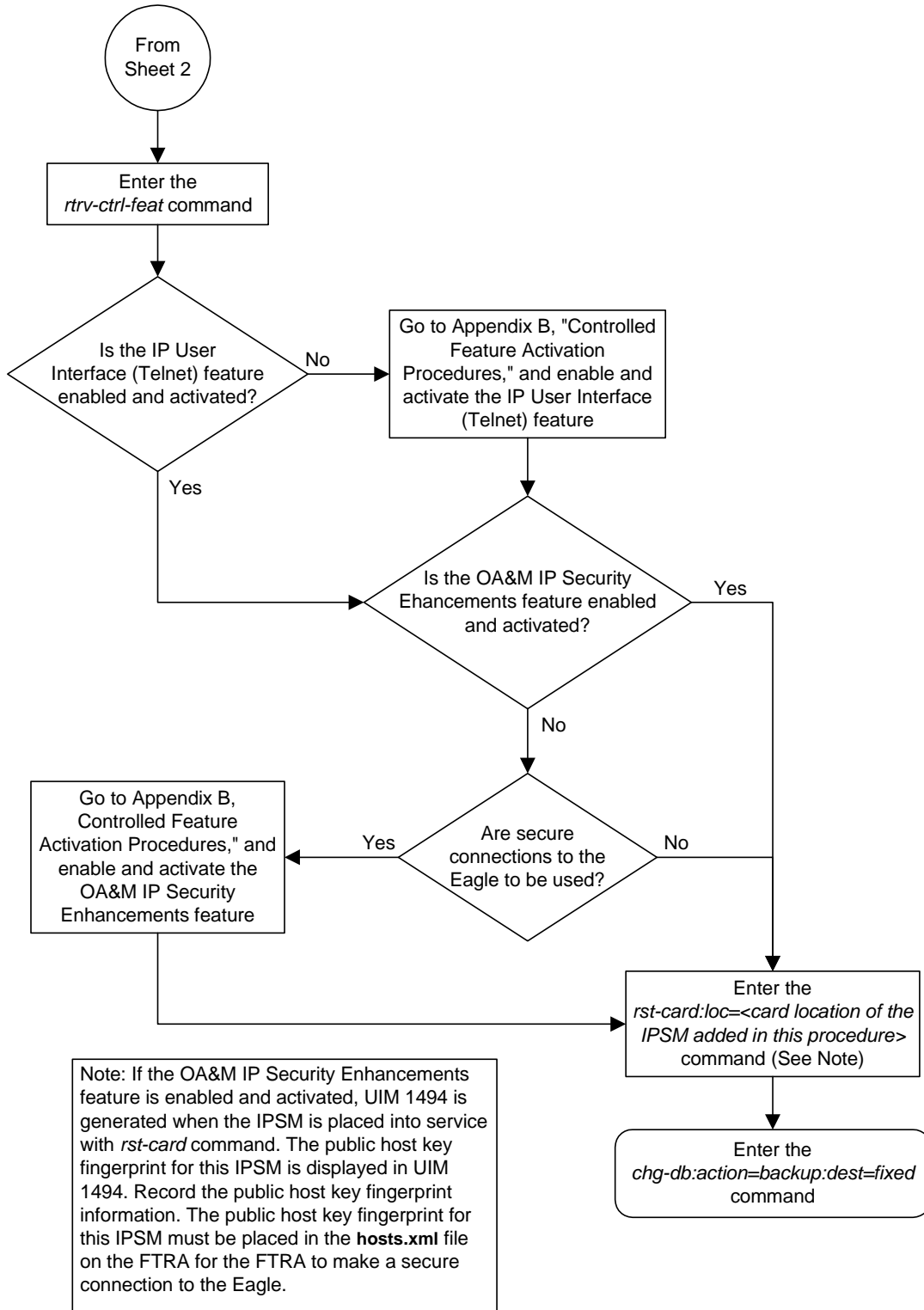
Flowchart 4-26. Adding an IPSM (Sheet 1 of 3)



Flowchart 4-26. Adding an IPSM (Sheet 2 of 3)



Flowchart 4-26. Adding an IPSM (Sheet 3 of 3)



Removing an IPSM

This procedure is used to add an IPSM (IP Services Module) from the database using the `dlt-card` command.



CAUTION: If the IPSM is the last IPSM in service, removing this card from the database will disable the IP User Interface (Telnet) feature.

All terminals associated with the IPSM being removed must be out of service. The terminals are displayed using the `rtrv-trm` command. The state of the terminals is displayed using the `rept-stat-trm` command.

The examples in this procedure are used to remove the IPSM in card location 2107.

Canceling the REPT-STAT-CARD Command

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

- Press the **F9** function key on the keyboard at the terminal where the `rept-stat-card` command was entered.
- Enter the `canc-cmd` without the `trm` parameter at the terminal where the `rept-stat-card` command was entered.
- Enter the `canc-cmd:trm=<xx>`, where `<xx>` is the terminal where the `rept-stat-card` command was entered, from another terminal other 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, go to the *Commands Manual*.

Procedure

1. Display the cards in the database using the `rtrv-card` command. This is an example of the possible output.

```

rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
CARD  TYPE      APPL      LSET NAME      PORT SLC LSET NAME      PORT SLC
1101  TSM          SCCP      -----      --  --  -----      --  --
1102  TSM          GLS       -----      --  --  -----      --  --
1103  DCM          VXWLAN    -----      --  --  -----      --  --
1113  GSPM         EOAM
1114  TDM-A
1115  GSPM         EOAM
1116  TDM-B
1117  MDAL
1118  RESERVED
1201  LIMDS0      SS7ANSI   sp2           A    0    sp1           B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1202  LIMDS0      SS7ANSI   sp2           A    1    nsp3          B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1203  LIMDS0      SS7ANSI   sp3           A    0    -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1204  LIMDS0      SS7ANSI   sp3           A    1    -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1205  LIMOCU      CCS7ITU   itu1          A    0    -----      --  --
1206  LIMDS0      SS7ANSI   nsp3          A    1    nsp4          B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1207  LIMV35      SS7GX25   nsp1          A    0    -----      --  --
1208  LIMV35      SS7GX25   nsp1          A    1    -----      --  --
-----      --  --  -----      --  --
1212  TSM          SCCP      -----      --  --  -----      --  --
1214  TSM          GLS       -----      --  --  -----      --  --
1215  DCM          VXWLAN    -----      --  --  -----      --  --
1301  LIMATM      ATMANSI   lsnatm1      A    0    -----      --  --
1303  STC         EROUTE   -----      --  --  -----      --  --
1305  DCM          VXWLAN    -----      --  --  -----      --  --
1308  LIMDS0      SS7ANSI   sp6           A    0    sp7           B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1311  LIMDS0      SS7ANSI   sp2           A    2    sp1           B    1
sp7           A1   1    sp3           B1   2
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1315  LIMDS0      SS7ANSI   sp7           A    2    sp5           B    0
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
-----      --  --  -----      --  --
1318  LIMATM      ATMANSI   lsnatm1      A    1    -----      --  --

```

System Administration Procedures

```
2101  STC      EROUTE  -----  --  --  -----  --  --
2103  STC      EROUTE  -----  --  --  -----  --  --
2105  STC      EROUTE  -----  --  --  -----  --  --
2107  IPSM     IPS       -----  --  --  -----  --  --
2108  IPSM     IPS       -----  --  --  -----  --  --
2111  IPSM     IPS       -----  --  --  -----  --  --
```

An IPSM is identified by the entries **IPSM** in the **TYPE** field and **IPS** in the **APPL** field.

2. Display the status of the IPSM being removed from the database with the **rept-stat-card** command and specifying the card location of the IPSM. For this example, enter this command.

```
rept-stat-card:loc=2107
```

This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0
CARD  VERSION      TYPE      APPL      PST          SST          AST
2107  114-001-000  IPSM      IPS        IS-NR        Active       -----

ALARM STATUS      = No Alarms.
BPDCM GPL         = 002-122-000
IMT BUS A         = Conn
IMT BUS B         = Conn
Command Completed.
```

If the IPSM is out of service, shown by the entry **OOS-MT-DSBLD** in the **PST** column, skip steps 3 through 5, and go to step 6.

3. Display the terminals using the **rtrv-trm** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
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    VT320     9600-7-E-2   SW      30     9      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    VT320     9600-7-E-1   SW      30     7      00:30:00
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  TYPE      LOC          TMOUT  MXINV  DURAL      SECURE
17   TELNET    2107         60     5      00:30:00  yes
18   TELNET    2107         60     5      00:30:00  yes
19   TELNET    2107         60     5      00:30:00  yes
20   TELNET    2107         60     5      00:30:00  yes
21   TELNET    2107         60     5      00:30:00  yes
22   TELNET    2107         60     5      00:30:00  yes
```

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23	TELNET	2107		60	5	00:30:00	yes
24	TELNET	2107		60	5	00:30:00	yes
25	TELNET	2108		60	5	00:30:00	yes
26	TELNET	2108		60	5	00:30:00	yes
27	TELNET	2108		60	5	00:30:00	yes
28	TELNET	2108		60	5	00:30:00	yes
29	TELNET	2108		60	5	00:30:00	yes
30	TELNET	2108		60	5	00:30:00	yes
31	TELNET	2108		60	5	00:30:00	yes
32	TELNET	2108		60	5	00:30:00	yes
33	TELNET	2111		60	5	00:30:00	yes
34	TELNET	2111		60	5	00:30:00	yes
35	TELNET	2111		60	5	00:30:00	yes
36	TELNET	2111		60	5	00:30:00	yes
37	TELNET	2111		60	5	00:30:00	yes
38	TELNET	2111		60	5	00:30:00	yes
39	TELNET	2111		60	5	00:30:00	yes
40	TELNET	2111		60	5	00:30:00	yes

TRM	TRAF	LINK	SA	SYS	PU	DB	UIMRD
1	NO	YES	NO	YES	NO	YES	YES
2	NO	NO	NO	NO	NO	NO	NO
.							
.							
39	NO	NO	NO	NO	NO	NO	NO
40	NO	NO	NO	NO	NO	NO	NO

TRM	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
.												
.												
39	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
40	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

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4. Display the status of the terminals by entering the `rept-stat-trm` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
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    -----
17  IS-NR      Active    -----
18  IS-NR      Active    -----
19  IS-NR      Active    -----
20  IS-NR      Active    -----
21  IS-NR      Active    -----
22  IS-NR      Active    -----
23  IS-NR      Active    -----
24  IS-NR      Active    -----
25  IS-NR      Active    -----
26  IS-NR      Active    -----
27  IS-NR      Active    -----
28  IS-NR      Active    -----
29  IS-NR      Active    -----
30  IS-NR      Active    -----
31  IS-NR      Active    -----
32  IS-NR      Active    -----
33  IS-NR      Active    -----
34  IS-NR      Active    -----
35  IS-NR      Active    -----
36  IS-NR      Active    -----
37  IS-NR      Active    -----
38  IS-NR      Active    -----
39  IS-NR      Active    -----
40  IS-NR      Active    -----
```

Command Completed.

NOTE: If all the terminals associated with the IPSM being removed from the database are out of service, shown by the entry OOS-MT-DSBLD in the PST column, skip step 5 and go to step 6.

- Place the terminals associated with the IPSM being removed out of service using the `rmv-trm` command. For this example, enter these commands.

```
rmv-trm:trm=17
rmv-trm:trm=18
rmv-trm:trm=19
rmv-trm:trm=20
rmv-trm:trm=21
rmv-trm:trm=22
rmv-trm:trm=23
rmv-trm:trm=24
```



CAUTION: Placing these terminals out of service will disable any Telnet sessions running on these terminals.

If the status of any terminals associated with the IPSM being removed shown in the `PST` field in step 4 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.

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

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Inhibit message sent to terminal

rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Command Completed.
```

- Place the IPSM out of service using the `rmv-card` command, specifying the card location of the IPSM. For this example, enter this command.

```
rmv-card:loc=2107
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
Card has been inhibited.
```

- Remove the card using the `dlt-card` command. The `dlt-card` command has only one parameter, `loc`, which is the location of the card. For this example, enter these commands.

```
dlt-card:loc=2107
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
DLT-CARD: MASP A - COMPLTD
```

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8. Verify the changes using the **rtrv-card** command specifying the card that was removed in step 7. For this example, enter these commands.

```
rtrv-card:loc=2107
```

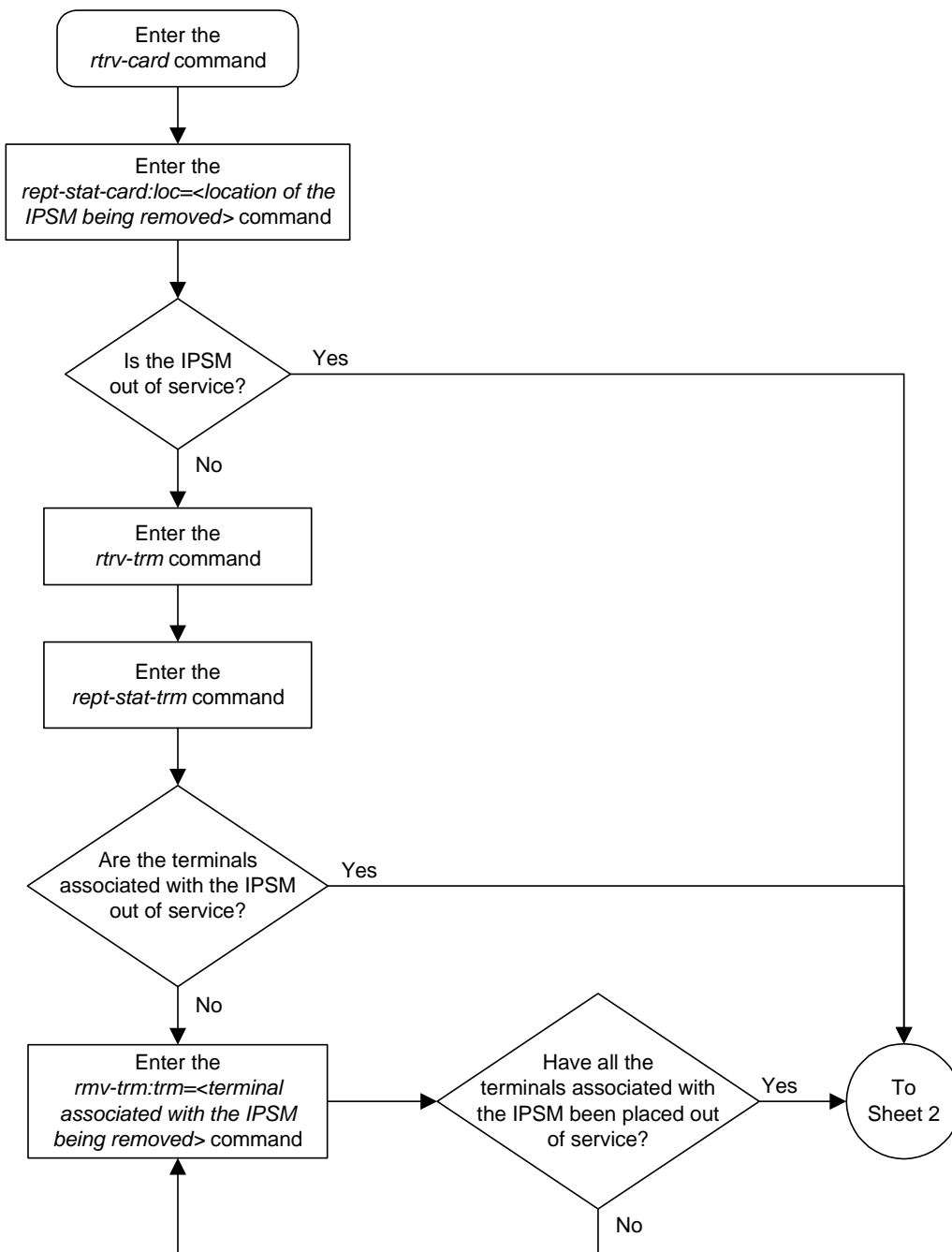
When this command has successfully completed, this message should appear.

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

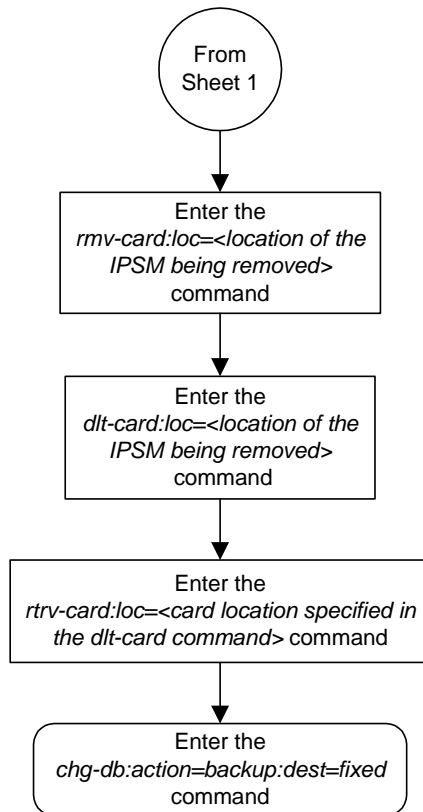
9. Back up the new changes using the **chg-db:action=backup:dest=fixed** command. These messages should appear, the active Maintenance and Administration Subsystem Processor (MASP) appears first.

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

Flowchart 4-27. Removing an IPSM (Sheet 1 of 2)



Flowchart 4-27. Removing an IPSM (Sheet 2 of 2)



Configuring the Options for the Network Security Enhancements Feature

This procedure is used to configure the system to enhance its network security by discarding messages that should not be received. Four options are set using the `chg-stpopts` command to support this feature.

- **SECMTPSID** – The system should not receive a message where the OPC is equal to the system's own true, secondary or capability point codes.
- **SECMTPMATE** – The system should not receive a message with the true, secondary, or capability point code of the mate STP other than across the C link.
- **SECMTPSNM** – the system should not receive an MTP network management message unless:
 - The OPC is an adjacent point code
 - The system has a route to the OPC of the MTP network management message on the linkset which the message was received.
 - The system has a route to the destination field in the message (if applicable to the concerned message) on the linkset which the message was received.
- **SECMTPSCMG** – the system should not receive an SCCP network management message unless:
 - The system has a route to the OPC of the SCMG message on the linkset, on which the message was received.
 - The system has a route to the affected point code in the message on the linkset on which the message was received.

This option will only apply to SSP and SOR messages. This feature will not affect the following messages: SSA, SST, SOG, SBR, SNR and SRT.

Each of these options have four values which determine how the system handles the messages controlled by the options.

- **NOTIFY** – The specified option is active and UIMs are generated.
- **SILENT** – The specified option is active, but no UIMs are generated.
- **TEST** – The specified option is not active, but UIMS are generated as if the option was active.
- **OFF** – The specified option is not active.

The system default value for each of these options is OFF.

To set these options, the Network Security Enhancements feature must be enabled and activated. This can be verified with the `rtrv-ctrl-feat` command. To enable and activate the Network Security Enhancements feature, go to the “Activating Controlled Features” procedure on page B-3.

If the Network Security Enhancements feature is not enabled and activated, the Network Security Enhancement options are not displayed in the `rtrv-stpopts` output.

When the Network Security Enhancements feature is enabled and activated for the first time, each option is displayed in the `rtrv-stpopts` output with the system default value (OFF). When the Network Security Enhancements feature is enabled and activated after the feature was disabled, each option is displayed in the `rtrv-stpopts` output with the value that the option was assigned when the feature was disabled.

Procedure

1. Display the Network Security Enhancements options using the `rtrv-stpopts` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
STP OPTIONS
-----
SECMTPSID          notify
SECMPMATE          test
SECMTPSNM          silent
SECMTPSCMG         off
```

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

NOTE: If the Network Security Enhancement options are shown in the `rtrv-stpopts` output in step 1, skip step 2, and go to step 3.

2. Verify that the Network Security Enhancements feature is enabled and activated, by entering the `rtrv-ctrl-feat` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
Feature Name          Partnum    Status    Quantity
Network Security Enhance 893009101 off      ----
```

NOTE: The `rtrv-ctrl-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-ctrl-feat` command, see the `rtrv-ctrl-feat` command description in the *Commands Manual*.

If the Network Security Enhancements feature is not enabled or activated, go to the “Activating Controlled Features” procedure on page B-3 and enable and activate the Network Security Enhancements feature.



CAUTION: If the Network Security Enhancements feature is temporarily enabled, the Network Security Enhancement options can be set and used only for the amount of time shown in the `Trial Period Left` column in the `rtrv-ctrl-feat` output.

-
3. Change the Network Security Enhancement options. For this example, enter this command.

```
chg-stpopts:secmtpsid=silent:secmpmate=notify
:secmtpsnm=notify:secmtpscmg=notify
```

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

```
rlghncxa03w 04-06-01 00:22:57 GMT EAGLE5 31.6.0
CHG-STPOPTS: MASP A - COMPLTD
```

-
4. Verify the changes using the `rtrv-stpopts` command. This is an example of the possible output.

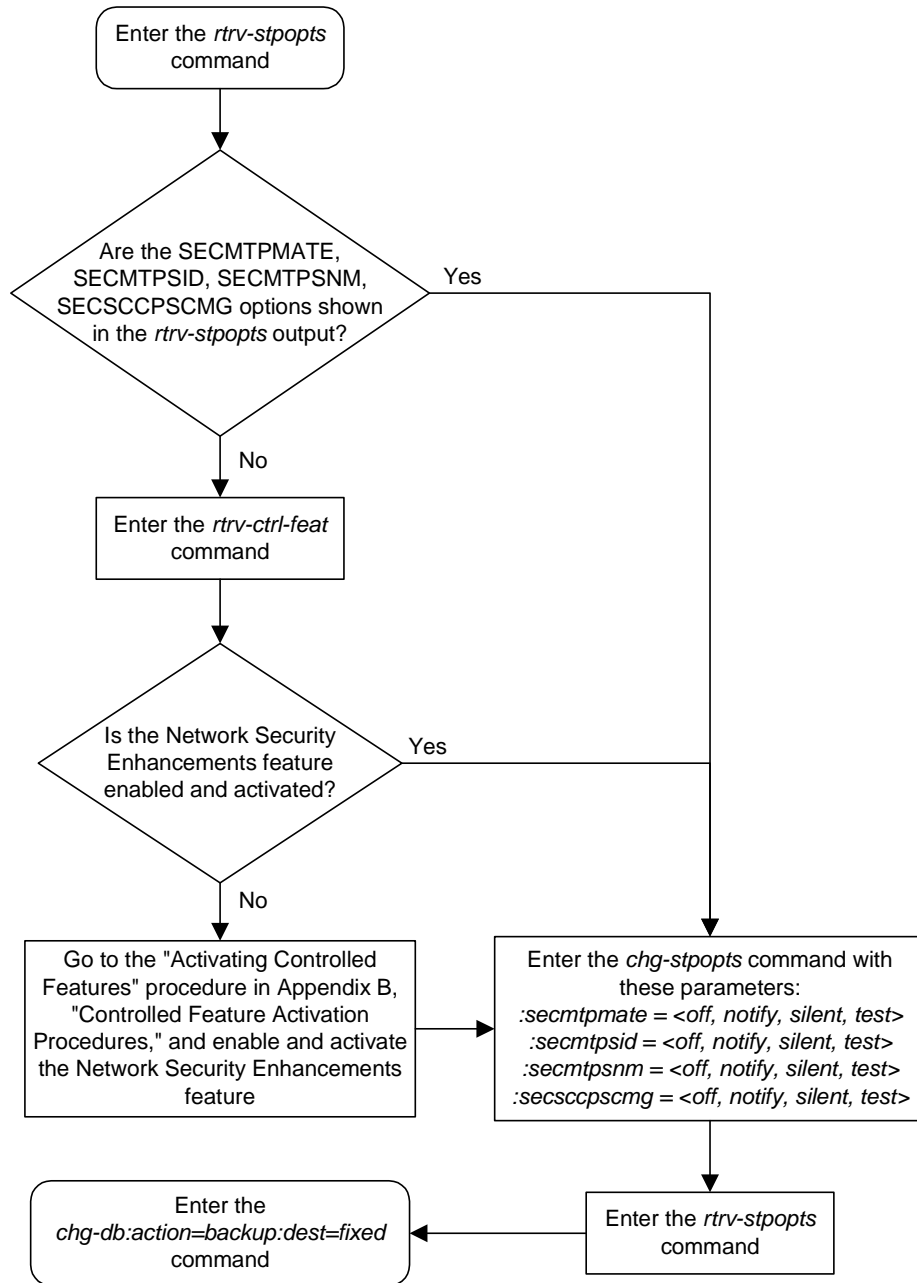
```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
STP OPTIONS
-----
SECMTPSID          silent
SECMPMATE          notify
SECMTPSNM          notify
SECMTPSCMG         notify
```

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

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

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

Flowchart 4-28. Configuring the Options for the Network Security Enhancements Feature



Configuring the Restore Device State Option

This procedure is used to configure the restore device state option using the **chg-stpopts** command and the **rstrdev** parameter. The **rstrdev** parameter has two values, **on** or **off**. The system default value is **off**.

If the value of the restore device state option is off (**rstrdev=off**), the system does not retain the manually initiated state (for example, OOS-MT-DSBLD) for the signaling links, TCP/IP data links, cards, or the terminals after either the **init-sys** command is executed, or when a MASP role change occurs (the active MASP becomes the standby MASP and the standby MASP becomes the active MASP). After the **init-sys** command executes, the system attempts to bring all provisioned links, cards, and terminals on line, including those that were previously out of service. You will need to manually put each device back into its previous state after the system is back on line. If the **init-sys** command is being executed, it is advisable to print or electronically capture the output of the Eagle's **rept-stat-slk**, **rept-stat-dlk**, **rept-stat-card**, and **rept-stat-trm** commands for reference before issuing the **init-sys** command. During a MASP role change, current processing for the role change occurs and the state of the out-of-service devices may change. To restore a device to its previous state, issue the appropriate inhibit/deactivate command listed in the *Commands Manual* in the Related Commands section for each of the above **rept-stat** commands.

If the value of the restore device state option is on (**rstrdev=on**), the state the signaling links, TCP/IP data links, cards, and terminals is not changed after the **init-sys** command is executed or a MASP role change occurs. No manual intervention is required to put the device back into its previous state after the system is back on line.

If the restore device state option is on (**rstrdev=on**) and the database is being restored with the **chg-db:action=restore** command, the state of the cards, SS7 signaling links, TCP/IP data links, and terminals before the **chg-db:action=restore** and **init-sys** commands are performed will not be maintained after these commands are performed. The persistent device state table becomes obsolete and is disabled. UIM 1257 is generated.

```
rlghncxa03w 04-06-01 16:07:48 GMT EAGLE5 31.6.0
1234.1257     SYSTEM          INFO  DB Restore has cleared and disabled PDS
```


Procedure

1. Display the existing values for the restore device state parameter by entering the `rtrv-stpopts` command. The value for the restore device state parameter is shown in the `RSTRDEV` field. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
STP OPTIONS
-----
RSTRDEV                off
```

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

2. Change the restore device state parameter. For this example, enter this command.

```
chg-stpopts:rstrdev=on
```

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

```
rlghncxa03w 04-06-01 00:22:57 GMT EAGLE5 31.6.0
CHG-STPOPTS: MASP A - COMPLTD
```

3. Verify the changes using the `rtrv-stpopts` command. This is an example of the possible output.

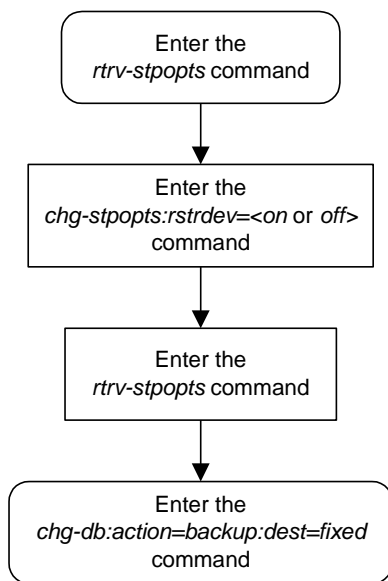
```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
STP OPTIONS
-----
RSTRDEV                on
```

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

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.
```

Flowchart 4-29. Configuring the Restore Device State Option





EOAP Provisioning Procedures

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Overview

This appendix describes initial implementation of the Embedded Operations System Support Applications Processor (EOAP) and the configuration of the Eagle STP to support either the EOAP or the Texas Micro OAP. Perform these procedures after the EOAP shelf or the Texas Micro OAP has been powered up.

NOTE 1: Throughout this appendix, the term EOAP is used only when referring to the specific EOAP hardware platform. The term OAP is used when referring to the functions performed by either the EOAP hardware or the Texas Micro OAP or when referring to either type of OAP.

NOTE 2: Perform all procedures logged in as “root” unless specified otherwise.

NOTE 3: In the event of a failure, repeat the section in which the failure occurred. If the failure re-occurs, contact technical services for assistance.

NOTE 4: Some of the following steps require use of function keys. To press function keys on a VT-520 terminal, type <Esc> plus the number or use the corresponding PF key. For example, to press function key F2, type <Esc>-2 or press the PF2 key. A quick reference guide to *vi* text editor commands is provided on page A-81.

OAPs are named and addressed according to their MMI port number on the Eagle STP backplane. OAP-A can use any MMI port, as long as OAP-B is assigned to a higher-numbered MMI port. The `act-oap-config` command will send the configuration information to the corresponding OAP. Depending on the differences in configuration, outages are possible.

On the EOAP hardware platform, when facing the front of the EOAP chassis, OAP-A is on the left side and OAP-B the right side. For the Texas Micro OAP, the designation of OAP A and OAP-B is solely dependent of the MMI port they are connected to.

If the host name, IP address, or net mask of the OAPs needs to be modified, configure the OAPs one by one. Always modify EOAP-A first. When these parameters are modified, the OAP needs to be rebooted to utilize the new data. Rebooting might take up to 10 minutes and the connection to SEAS will be lost during this time.

If for any reason, the Eagle STP fails to deliver the OAP configuration to an OAP, or an OAP fails to utilize it, the OAP may be configured incorrectly or the OAP might be receiving bad data. This condition will be detected but not automatically corrected. The Eagle STP will generate an alarm within 10 seconds of any mismatch in Eagle STP and OAP databases. When the databases are back in synchronization, the Eagle STP will clear the alarm within 5 seconds. Note that there can be two alarms raised, one for each OAP.

EOAP Provisioning Procedures

Tools and Equipment

The following tools and equipment are required for provisioning the EOAP for the first time:

- VT-520 display unit(s) or equivalent
 - connected to EOAP-A and EOAP-B
 - connected to Eagle STP
- System information sheet for each GR-376 EOAP processor card containing
 - system's hostname
 - customer's network IP address.
- Any of the following general information that is applicable to the customer's system
 - customer's subnet netmask
 - customer's network default router IP address
 - number of configured EOAPs (single or dual)
 - LSMS system identity (main or shadow)
 - network service access point (MNSAP) of the main LSMS system
 - session selector (MSSEL) of the main LSMS system
 - presentation selector (MPSEL) of the main LSMS system
 - network service access point (SNSAP) of the shadow LSMS system
 - session selector (SSSEL) of the shadow LSMS system
 - presentation selector (SPSEL) of the shadow LSMS system
 - SEAC common language location identifier (SEACCLLI)
 - X.25 packet size (7 or 8)
 - X.25 mode (DCE or DTE)

Initial Implementation

This section provides the procedures for the initial implementation of the EOAP. These procedures are:

1. "Configuring System Parameters (Eagle Releases 27.2 and Earlier)" procedure

NOTE: For Eagle Release 28.1, refer to the OAP Upgrade procedure for comparable steps. The OAP Upgrade procedure is included in the Release Documentation of your Documentation Suite, in the Upgrade Kit, or on the Customer Secure website.

2. "Installing UAL Software (Eagle Releases 27.2 and Earlier)" procedure on page A-8

NOTE: For Eagle Release 28.1, refer to the OAP Upgrade procedure for comparable steps. The OAP Upgrade procedure is included in the Release Documentation of your Documentation Suite, in the Upgrade Kit, or on the Customer Secure website.

3. "Configuring the OAP Port at the Eagle STP" procedure on page A-15
4. "Configuring the OAP from the Eagle STP Terminal" procedure on page A-25.

Procedures 1 and 2 apply to the EOAP platform only. If your system has Eagle Release 27.2 and earlier installed, perform all four procedures described here. If your system has Eagle Release 28.1 software installed, refer to the OAP Upgrade procedure to perform initial EOAP configuration, and then continue with procedures 3 and 4. Procedures 3 and 4 are used with either the EOAP platform or the Texas Micro OAP platform. If you are configuring an OAP for the Texas Micro OAP platform, perform only procedures 3 and 4. For reprovisioning individual OAP settings for either hardware platform, go to section "Reprovisioning" on page A-60.

Configuring System Parameters (Eagle Releases 27.2 and Earlier)

Procedure

1. After a manual or automatic first boot, the EOAP boots up in configuration mode.
-

2. Perform the System Identification Procedures with the following settings when prompted:

```
What type of terminal are you using: 3 DEC VT100      <Enter>
Read the screen navigation information              <F2> or <Esc>-<2>
```

A series of screens will request the following information. Use function keys to complete screens and confirm selections.

To begin the System Identification, select continue: <F2> or <Esc>-<2>

```
Hostname:          tekelec-xxx                      <F2> or <Esc>-<2>
```

Where "xxx" is the actual number for this GR-376 EOAP

```
Networked?:       [x] yes                          <F2> or <Esc>-<2>
```

```
IP Address:       <Enter the loghost ip address>    <F2> or <Esc>-<2>
```

```
Verify your selections                               <F2> or <Esc>-<2>
```

```
Name service:     [x] none                          <F2> or <Esc>-<2>
```

```
Verify your selections                               <F2> or <Esc>-<2>
```

```
System part of a subnet?: [x] no                    <F2> or <Esc>-<2>
```

```
Regions:          [x] United States                <F2> or <Esc>-<2>
```

```
Time zone:        [x] Eastern                      <F2> or <Esc>-<2>
```

```
Date/Time:        <Use Default>                   <F2> or <Esc>-<2>
```

```
Verify your selections                               <F2> or <Esc>-<2>
```

The system will now complete the boot process.

3. The system now prompts you for the root password:

```
Root password: <root password>      <ENTER>
```

```
Re-enter root password: <root password><ENTER>
```

4. After the processing of the System Identification Procedure has completed, the system completes the boot process and return to the console login prompt.

NOTE: The X.25 and OSI license daemons will fail to find valid license keys. They will be configured in the next step.

Installing UAL Software (Eagle Releases 27.2 and Earlier)

The *CloneCheck.sh* script will perform a full system checkout to ensure that all the software was entered and configured correctly. If all checks pass, the UAL software can then be installed and the default instance created.

Procedure

1. Log in as root; enter these commands:

```
Console login: root
```

```
Password: <root password>
```

2. Insert the UAL software CD in the CD-ROM drive of the EOAP.
-

3. Start the *CloneCheck.sh* script; enter this command:

```
# /scripts/CloneCheck.sh
```

The following menu appears:

```

/-----\
|           OAP Operational Checkout           |
|-----|
| The following items will be checked         |
| for proper operational capabilities:         |
| -Host Name                                 |
| -Host ID                                   |
| -OSI Version                               |
| -X.25 Version                              |
| -DSET Version                              |
| -OSI, X.25 and DSET license keys          |
| -Available Drive Space                    |
| -Operational OSI and X.25 daemons        |
| -Commented "Autopush" statement          |
|-----|
| A status report will be displayed         |
| upon completion of the checkout.         |
|-----\

```

4. In the Option field, type 1 and press ENTER.

After approximately 1 minute, a status report is generated indicating which tests passed and which tests failed. Depending on the outcome of the tests, complete one of the following steps:

- If any failures were detected, call Tekelec Technical Services.

- If no errors were detected during the check, the UAL installation begins by asking for the type of media used (1 for tape and 2 for CD). Type 2 and press ENTER to continue installing the UAL software.

5. Once the UAL installation completes, the default instance will be created (ignore any messages about failing to kill processes). A message will appear indicating the instance was created successfully, then the shell prompt will appear.

6. Type the following command to determine the X25CONFIG setting:

```
# more /ccsosmr/MR.os54/DEFAULTS
```

The default setting for X25CONFIG is L1P3 (dual EOAP configuration) as shown in the following output. If you are configuring a dual configuration EOAP, go to step 9. If you are configuring a single configuration EOAP, continue with step 7.

```
#####
# This shell is the configuration file to set up a OAP instance
# Please do not change any thing other than the customizable
# parameters: STPclliCode= SEASclliCod= X25CONFIG=
#             DsetDirectory= mgr_psel= mgr_ssel= mgr_nsap=
#####
# The following parameters should not be changed
#####
export STPclliCode SEASclliCod X25CONFIG HOSTNAME
HOSTNAME=`uname -n`
DsetDirectory=/usr/local/Dset/2.4
mgr_tsel=
agent_tsel=
agent_nsap=rk6
agent_psel=sup
agent_ssel=agt
#####
# STPclliCode= is the 11-bytes CLLI code that EAGLE/OAP uses
# SEASclliCod= is the 11-bytes CLLI code that SEAS/MF/CCSOSMR uses
# X25CONFIG= is the X.25 link and PVC configuration
# L2P3 <= (2 link, 3 PVC each), L2P5 <= (2 link, 5 PVC each)
# L1P3 <= (1 link, 3 PVC), L1P10 <= (1 link, 10 PVC)
# L1P6 <= (1 link, 6 PVC)
# mgr_psel= is the OSI presentation selector for the LSMS supagent
# which this EMS will bind.
# mgr_ssel= is the OSI session selector for the LSMS supagent to
# which this EMS will bind for the LSMS manager
# Note: The mgr_psel and mgr_ssel must match the EMS_PSEL
# and EMS_SSEL specified in the LSMS configuration in
# the config/supported.cfg configuration file. The
# agent_psel and agent_ssel above should NOT be changed.
# mgr_nsap= is the OSI network layer service access point
# Use the IP address of the machine(server) running the
# LSMS supagent in hex.
# class_tt Translation type used for CLASS messages obtained from Eagle
# lidb_tt Translation type used for LIDB messages obtained from Eagle
# cnam_tt Translation type used for CNAM messages obtained from Eagle
# isvm_tt Translation type used for ISVM messages obtained from Eagle
#####
# The following parameters MUST be customized for each OAP
```

```
#####
STPcliCode=NBWKNJNB01W
SEAScliCod=SEASNJPYRRC
X25CONFIG=L1P3
DsetDirectory=/usr/local/Dset/2.4
mgr_psel=xyz
mgr_ssel=abc
mgr_nsap=0x12121212
class_tt=0
lidb_tt=0
cnam_tt=0
isvm_tt=0
#####
```

← Change to L1P3 for dual configuration

-
7. Make sure the X25CONFIG parameter is set to **L1P3** for a dual configuration or to **L2P3** for a single configuration. If the X25CONFIG parameter is not correct, use the *vi* editor and change it in the `/ccsomsr/MR.os54/DEFAULTS` file. Save the file.
-

8. Eject the UAL software CD.

```
# eject
```

9. Gracefully reboot the EOAP to activate the new instance.

- a. Shut down the OAP application first using the following command:

```
% ccsmr all.down
```

- b. Shut down the running processes and the database using the following command:

```
# /usr/sbin/init 6
```

The EOAP automatically reboots after this command. The reboot process is completed when your screen shows `The system is ready` and returns you to a login prompt.

10. Log into the EOAP as **ccsproj**:

Console login: **ccsproj**

New password: **<ccsproj password>**

Confirm password: **<ccsproj password>**

The system displays output similar to the following:

```
Last login: Mon Aug 25 11:21:14 from 198.89.40.248
Sun Microsystems Inc.   SunOS 5.4           Generic July 1994
You have new mail.
tekelec-27:ccsproj:200->
```

NOTE: Some of the example output may vary from one installation to another.

11. Verify the EOAP is running the expected processes; enter these commands:

```
% cd /ccsosmr/<instance>/bin
```

where *<instance>* is the name of the default instance created in step 5.

```
% ccsmr all.status
```

The system displays output similar to the following:

```
***** System (msDI) registration report starts *****
***** date/time==> Wed May 29 14:29:35 2000
* Process=(msDI00), Host (apg3)/PID=(870): IPC directory daemon
* Process=(ysT300), Host (apg3)/PID=(915):
* Process=(ysA201), Host (apg3)/PID=(920): UAL Timeout/PVC state cntl daemon
* Process=(ysA301), Host (apg3)/PID=(938): UAL Multi-Seg. Re-assembly daemon
* Process=(ysA401), Host (apg3)/PID=(954): UAL conf. fail/clear daemon
* Process=(ysA001), Host (apg3)/PID=(970): OS Contract OS to NE daemon
* Process=(ysT100), Host (apg3)/PID=(989):
* Process=(ysAD01), Host (apg3)/PID=(1012): UAL test msg echo daemon
* Process=(ysT200), Host (apg3)/PID=(1001):
! Process=(ysA101), Host (apg3)/PID=(1037): UAL/X.25 PVC daemon
! Process=(ysA102), Host (apg3)/PID=(1053): UAL/X.25 PVC daemon
! Process=(ysA103), Host (apg3)/PID=(1069): UAL/X.25 PVC daemon
* Process=(ysTT00), Host (apg3)/PID=(1130):
* Process=(emsAgent), Host (apg3)/PID=(611): EmsAgent
* Process=(emsStatusUpdate), Host (ralph)/PID=(12144): EMS Agent Status
```

NOTE: Only applicable processes are listed. The host and PID output will vary. The processes marked with “!” will vary depending on the X.25 configuration in the DEFAULTS file. In a single EOAP configuration, six X.25 processes are listed. In a dual EOAP configuration, only three X.25 processes are listed.

12. Perform this step at the Eagle STP terminal to activate the configuration:

Update EOAP-A by entering this command:

```
act-oap-config:oap=a:force=yes
```

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
ACT-OAP-CONFIG: MASP A - COMPLTD
```

13. For a SEAS-only configuration, execute the `seasOnly.sh` script to configure the `all.up` script in the instance directory for SEAS ONLY operation (this step will disable LNP functionality; if LNP functionality must be restored, a new instance must be created).

As "root" at the EOAP terminal, enter this command:

```
# /scripts/seasOnly.sh
```

14. Make a backup copy of the LNP version of the `all.up` script. Enter these commands:

```
# cd /ccsosmr/modelSTP/shell
```

```
# cp -p all.up all.up.lnp
```

15. Put the permanent copy of the the SEAS-only version of the `all.up` script into place; enter this command:

```
# cp -p ../../<instance_name>/shell/all.up .
```

NOTE: The final character of this command is a dot. There is a space between the word `all.up` and the final dot of the command.

16. Check that the SEAS-only version of the `all.up` script is in place. If the SEAS-only version is in place, the root prompt will return with no output as shown below.

```
# grep ems all.up
```

```
#
```

NOTE: If the LNP version is still in place, the screen output will show commands for starting the `emsAgent` and `emsStatusUpdate`. If this happens, repeat this fix from the beginning.

17. Make a backup copy of the LNP version of the `emsAgent.status` file; enter these commands:

```
# cd /ccsosmr/modelSTP/work
```

```
# cp -p emsAgent.status emsAgent.status.lnp
```

18. Put the permanent copy of the the SEAS-only version of the aemsAgent.status script into place; enter this command:

```
# cp ../../<instance_name>/work/emsAgent.status .
```

NOTE: The final character of this command is a dot. There is a space between the word `all.up` and the final dot of the command.

19. Check that the SEAS-only version of the `emsAgent.status` script is in place. Your output should match the example output exactly.

```
# cat emsAgent.status
```

```
123.123.123.123 1 1
```

NOTE: If the LNP version is still in place, the screen output will show the following: `123.123.123.123 0 0`

If your output shows that the LNP version is still in place, repeat steps 14 through 19.

20. Gracefully reboot the EOAP.

- a. Shut down the OAP application first using the following command:

```
% ccsmr all.down
```

- b. Shut down the running processes and the database using the following command:

```
# /usr/sbin/init 6
```

The EOAP automatically reboots after this command. The reboot process is completed when your screen shows `The system is ready` and returns you to a login prompt.

21. Log into the EOAP as `ccsproj`:

```
Console login: ccsproj
```

```
New password: <ccsproj password>
```

```
Confirm password: <ccsproj password>
```

The system displays output similar to the following:

```
Last login: Mon Aug 25 11:21:14 from 198.89.40.248
Sun Microsystems Inc. SunOS 5.4 Generic July 1994
You have new mail.
tekelec-27:ccsproj:200->
```

NOTE: Some of the example output may vary from one installation to another.

22. Verify the EOAP is running the expected processes; enter these commands:

```
% cd /ccsosmr/<instance>/bin
```

where <instance> is the name of the default instance created in step 5.

```
% ccsmr all.status
```

The system displays output similar to the following:

```
***** System (msDI) registration report starts *****
***** date/time==> Wed May 29 14:29:35 2000
* Process=(msDI00), Host(apg3)/PID=(870): IPC directory daemon
* Process=(ysT300), Host(apg3)/PID=(915):
* Process=(ysA201), Host(apg3)/PID=(920): UAL Timeout/PVC state cntl daemon
* Process=(ysA301), Host(apg3)/PID=(938): UAL Multi-Seg. Re-assembly daemon
* Process=(ysA401), Host(apg3)/PID=(954): UAL conf. fail/clear daemon
* Process=(ysA001), Host(apg3)/PID=(970): OS Contract OS to NE daemon
* Process=(ysT100), Host(apg3)/PID=(989):
* Process=(ysAD01), Host(apg3)/PID=(1012): UAL test msg echo daemon
* Process=(ysT200), Host(apg3)/PID=(1001):
! Process=(ysA101), Host(apg3)/PID=(1037): UAL/X.25 PVC daemon
! Process=(ysA102), Host(apg3)/PID=(1053): UAL/X.25 PVC daemon
! Process=(ysA103), Host(apg3)/PID=(1069): UAL/X.25 PVC daemon
* Process=(ysTT00), Host(apg3)/PID=(1130):
* Process=(emsAgent), Host(apg3)/PID=(611): EmsAgent
* Process=(emsStatusUpdate), Host(ralph)/PID=(12144): EMS Agent Status
```

NOTE: Only applicable processes are listed. The host and PID output will vary. The processes marked with “!” will vary depending on the X.25 configuration in the DEFAULTS file. In a single EOAP configuration, six X.25 processes are listed. In a dual EOAP configuration, only three X.25 processes are listed.

Perform the next procedure at the Eagle STP terminal.

Configuring the OAP Port at the Eagle STP

Use this procedure to configure the ports on the Terminal Disk Module (TDM) that are used to provide the links to the Embedded Operations System Support Applications Processor (EOAP) or the Texas Micro OAP for the SEAS or Local Number Portability (LNP) feature using the **chg-trm** command.

The **chg-trm** command uses these parameters:

- :trm** – Serial port number
- :type** – The type of device being connected (**type=oap**).

To configure the OAP port, either the SEAS feature must be on or the LNP feature must be enabled for a quantity of 2 to 12 million numbers. If the SEAS feature is on, the entry **SEAS = on** is shown in the **rtrv-feat** command output. If the SEAS feature is off, enter the **chg-feat:seas=on** command to turn the SEAS feature on. If the LNP enabled for a quantity of 2 to 12 million numbers, the entry **LNP TNs** is shown in the **rtrv-ctrl-feat** command output with a quantity of 2 to 12 million numbers. If the LNP feature is not enabled, go to the "Enabling the LNP Feature for 2 to 12 Million Numbers" procedure in the *Database Administration Manual - LNP* and enable the LNP feature. If the ELAP Configuration feature is enabled and activated, the OAP port can be configured only if the SEAS feature is on.

NOTE: Once the SEAS feature is turned on on with the **chg-feat** command, or the LNP feature is enabled with the **enable-ctrl-feat** command, they cannot be turned off or disabled.

Before executing this procedure, make sure you have purchased the SEAS or LNP features. If you are not sure if you have purchased the SEAS or LNP features, contact your Tekelec Sales Representative or Account Representative.

Only two OAP ports can be configured. The number of OAPs, thus OAP ports, required depends on the features the OAPs are to be used with. Table A-1 shows the OAP feature requirements.

Table A-1. OAP Feature Requiriements

Feature	Number of OAPs Required
SEAS only	1
LNP only *	2
SEAS and LNP *	2
* The LNP feature can be enabled only for 2 to 12 million numbers.	

When the **type=oap** parameter is specified with the **chg-trm** command, none of the communication attribute parameters, **baud** (the baud rate of the terminal port), **prty** (the parity of the terminal port), **sb** (the number of stop bits for the terminal port's RS-232 connection), and **fc** (the type of flow control for the terminal port's RS-232 connection), can be specified. These parameters are defaulted to these values:

```
baud = 19200    sb = 1
prty = even     fc = sw
```

The **chg-trm** command contains other optional parameters that can be used when configuring an OAP port. These parameters are not shown here because they are not required for configuring an OAP port. These parameters are explained in more detail in the "Changing Terminal Characteristics" procedure on page 4-51, or in the **chg-trm** command descriptions in the *Commands Manual*.

The total value of the terminals' baud rate cannot be greater than 172,032. If the total baud rate of the terminals (including the two OAP ports) exceeds 172,032, go to the "Changing Terminal Characteristics" procedure on page 4-51 and change the baud rates of the other terminals so that the total baud rate is not greater than 172,032.

The system requires at least two terminals assigned to the Security Administration command class. The terminal type of a terminal assigned to the Security Administration command class cannot be changed to the OAP terminal type (**type=oap**), if the change would leave the system with only one terminal assigned to the Security Administration command class. The command class assignments of the terminal are shown with the **rtrv-secu-trm** command. If the terminal type is being changed to **oap**, go to the "Changing Terminal Command Class Assignments" procedure on page 4-73 and make sure that the command class assignment for the terminal port being changed does not have the Security Administration command class assigned to it, or change the command class assignment of another terminal to include the Security Administration command class.

Procedure

1. Verify that the SEAS feature is on (**SEAS = on**) using the **rtrv-feat** command.

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

NOTE: If the OAP is not to be used for the SEAS feature, or the SEAS feature is on, skip step 2 and go to step 3.

2. Turn the SEAS feature on by entering this command.

```
chg-feat:seas=on
```

NOTE: Once the SEAS feature is turned on with the **chg-feat** command, it cannot be turned off.

The SEAS 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 SEAS feature, contact your Tekelec Sales Representative or Account Representative.

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

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0  
CHG-FEAT: MASP A - COMPLD
```

NOTE: If the OAP will not be used with the LNP feature, skip this step and go to step 4.

3. Verify that the LNP feature is enabled for a quantity of 2 to 12 million numbers, by entering the **rtrv-ctrl-feat** command. If the LNP feature is enabled for a quantity of 2 to 12 million numbers, the quantity shown in the **LNP TNS** field should be 2 to 12 million numbers.

NOTE: The **rtrv-ctrl-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-ctrl-feat** command, see the **rtrv-ctrl-feat** command description in the *Commands Manual*.

If the LNP feature is enabled for a quantity of 2 to 12 million numbers, go to step 4.

If the LNP feature is not enabled, go to the "Enabling the LNP Feature for 2 to 12 Million Numbers" procedure in the *Database Administration Manual - LNP* and enable the LNP feature.

If the ELAP Configuration feature is enabled and activated, the OAP port can be configured only if the SEAS feature is on.

4. Display the values of all terminals using the `rtrv-trm` command. This is an example of the possible output:

```

rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
TRM  TYPE      COMM          FC      TMOUT MXINV DURAL
1    VT320      9600-7-E-1 SW      60      5      99:59:59
2    KSR        9600-7-E-1 HW      30      5      INDEF
3    KSR        9600-7-E-1 SW      60      0      00:00:00
4    VT320      2400-7-E-1 BOTH    60      5      00:30:00
5    VT320      9600-7-O-1 NONE    30      5      00:00:30
6    VT320      9600-7-E-2 SW      30      9      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    VT320      9600-7-E-1 SW      30      7      00:30:00
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      4800-7-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

                                LNP LNP
TRM  TRAF LINK SA  SYS PU  DB  DB  SUB  UIMRD
1    NO  YES  NO  YES NO  YES YES YES  YES
2    NO  NO   NO  NO  NO  NO  NO  NO  NO
3    YES YES  YES YES YES YES NO  NO  YES
4    YES NO   NO  NO  NO  NO  NO  NO  NO
5    NO  YES  NO  NO  NO  NO  YES NO  YES
6    NO  NO   YES NO  NO  NO  YES YES NO
7    YES YES  YES YES YES YES YES YES YES
8    NO  NO   NO  NO  YES NO  NO  NO  NO
9    NO  YES  NO  NO  NO  YES YES YES YES
10   NO  NO   NO  NO  NO  YES NO  NO  NO
11   YES YES  YES YES YES YES YES YES YES
12   YES YES  YES YES YES YES YES YES NO
13   NO  YES  NO  NO  NO  NO  YES YES YES
14   NO  NO   YES NO  NO  NO  NO  YES NO
15   YES YES  YES NO  YES YES YES YES YES
16   NO  NO   NO  NO  YES NO  YES NO  NO

                                APP APP
TRM  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 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   YES YES YES YES YES YES YES YES YES YES YES YES
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

```

The first part of the output displays the communication security attributes of the terminal port. The communication attributes of the terminal port, **BAUD**, **PRTY** (parity), **SB** (stop bits), and **DBTS** (data bits), are displayed in the **COMM** field of the **rtrv-trm** output and are displayed in this format: **BAUD-DBTS-PRTY-SB**. The second part of the **rtrv-trm** command output displays the types of unsolicited messages the terminal port may receive.

5. Place the terminal you wish to change out of service using the **rmv-trm** command and specifying the ports you wish to place out of service. For the configuration example of this procedure, enter these commands:

```
rmv-trm:trm=4
```

```
rmv-trm:trm=10
```

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

```
rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
Inhibit message sent to terminal

rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
Command Completed.
```

6. Verify that the terminal that was placed out of service in step 5 is in the **OOS-MT-DSBLD** state by entering the **rept-stat-trm** command. This is an example of the possible output:

```
rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
TRM   PST           SST           AST
1     IS-NR          Active       -----
2     IS-NR          Active       -----
3     IS-NR          Active       -----
4     OOS-MT-DSBLD  Manual      -----
5     IS-NR          Active       -----
6     IS-NR          Active       -----
7     IS-NR          Active       -----
8     IS-NR          Active       -----
9     IS-NR          Active       -----
10    OOS-MT-DSBLD  Manual      -----
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.
```

7. Display the command class values of all terminals using the `rtrv-secu-trm` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 12:31:04 GMT EAGLE5 31.6.0
TRM  LINK SA  SYS  PU  DB  DBG
1    NO  NO  YES  NO  YES  NO
2    NO  NO  NO  NO  YES  NO
3    YES ***  YES  YES  YES  YES
4    NO  YES NO  NO  NO  NO
5    YES NO  NO  NO  YES  YES
6    NO  YES NO  NO  NO  NO
7    NO  *** YES  NO  YES  NO
8    NO  NO  NO  NO  NO  NO
9    YES YES YES  YES  YES  YES
10   NO  NO  NO  NO  NO  NO
11   YES NO  YES  NO  YES  YES
12   NO  *** NO  NO  NO  NO
13   NO  NO  NO  NO  YES  YES
14   NO  YES NO  NO  YES  YES
15   NO  NO  NO  NO  YES  YES
16   NO  NO  NO  NO  YES  YES
```

NOTE: If the terminal type is being changed to either `printer` or `none`, make sure the system has at least two terminals assigned to the Security Administration command class (shown in the SA column in the `rtrv-secu-trm` output). If the terminal being changed in this procedure is being removed from the Security Administration command class, and if this change would leave the system with only one terminal assigned to the Security Administration command class, go to the “Changing Terminal Command Class Assignments” procedure on page 4-73 and change the command class assignment of another terminal to include the Security Administration command class.

8. Change the terminal characteristics using the `chg-trm` command. For this example enter these commands:

```
chg-trm:trm=4:type=oap
```

```
chg-trm:trm=10:type=oap
```

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

```
rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
CHG-TRM: MASP A - COMPLTD
```

9. Verify the changes made in step 8 by using the `rtrv-trm` command with the port number specified in step 8. Enter these commands:

```
rtrv-trm:trm=4
```

```
rtrv-trm:trm=10
```

These are examples of the possible output:

EOAP Provisioning Procedures

rtrv-trm:trm=4

```
rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
TRM TYPE COMM FC TMOUT MXINV DURAL
4 OAP 19200-7-E-1 SW 30 5 00:30:00

LNP LNP
TRM TRAF LINK SA SYS PU DB DB SUB UIMRD
4 NO NO NO NO NO NO NO NO NO

APP APP
TRM SERV SS CARD CLK DBG GTT GWS MEAS MON MPS SEAS SLAN
4 YES YES YES YES YES NO YES YES YES YES NO NO
```

rtrv-trm:trm=10

```
rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
TRM TYPE COMM FC TMOUT MXINV DURAL
10 OAP 19200-7-E-1 SW 30 5 00:30:00

LNP LNP
TRM TRAF LINK SA SYS PU DB DB SUB UIMRD
10 NO NO NO NO NO NO NO NO NO

APP APP
TRM SERV SS CARD CLK DBG GTT GWS MEAS MON MPS SEAS SLAN
10 YES YES YES YES YES YES YES YES YES YES YES YES
```

-
10. Return the terminals to service that were taken out of service in step 5 using the **rst-trm** command. For this example, enter these commands:

rst-trm:trm=4

rst-trm:trm=10

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

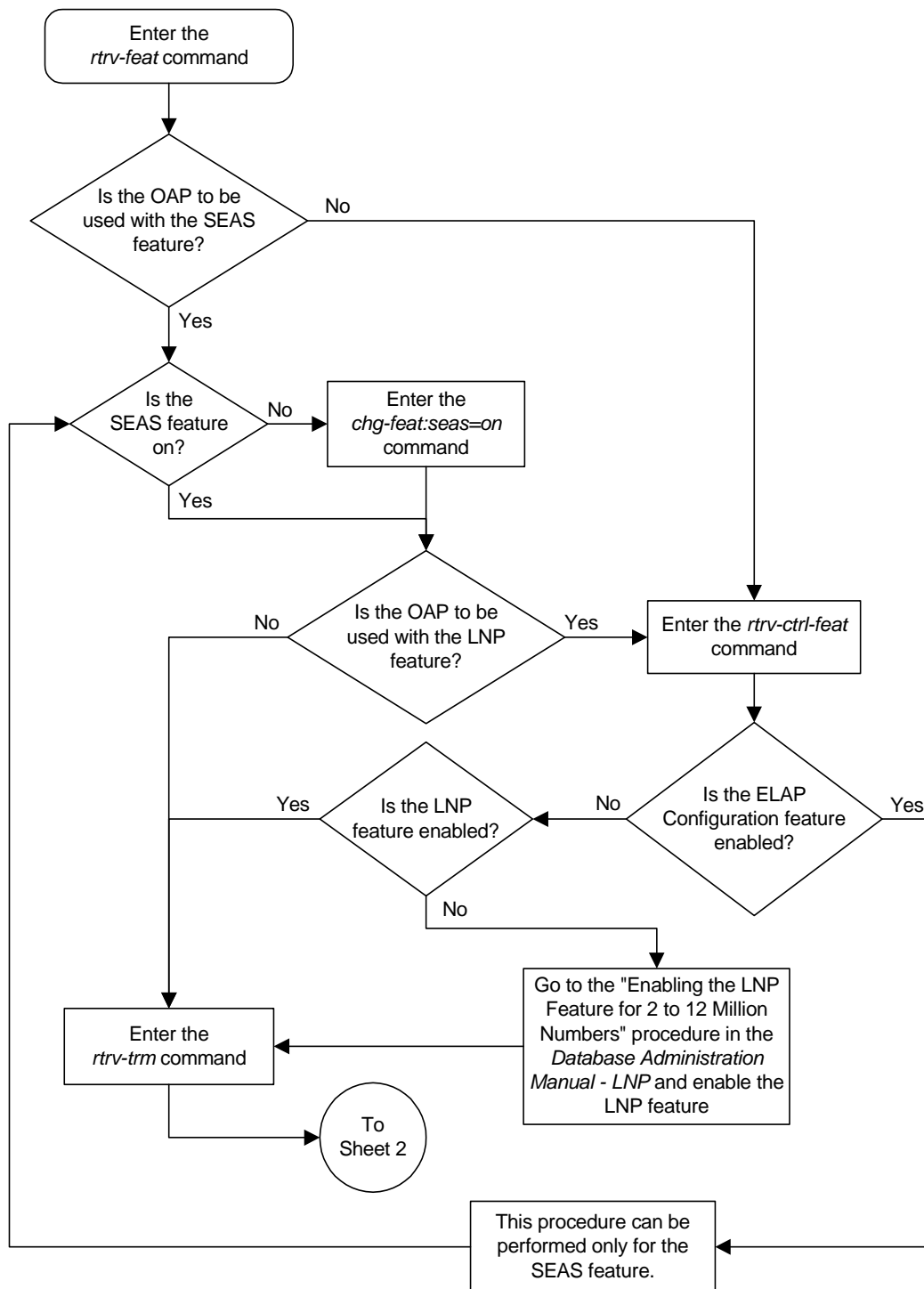
```
rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
Allow message sent to terminal

rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
Command Completed.
```

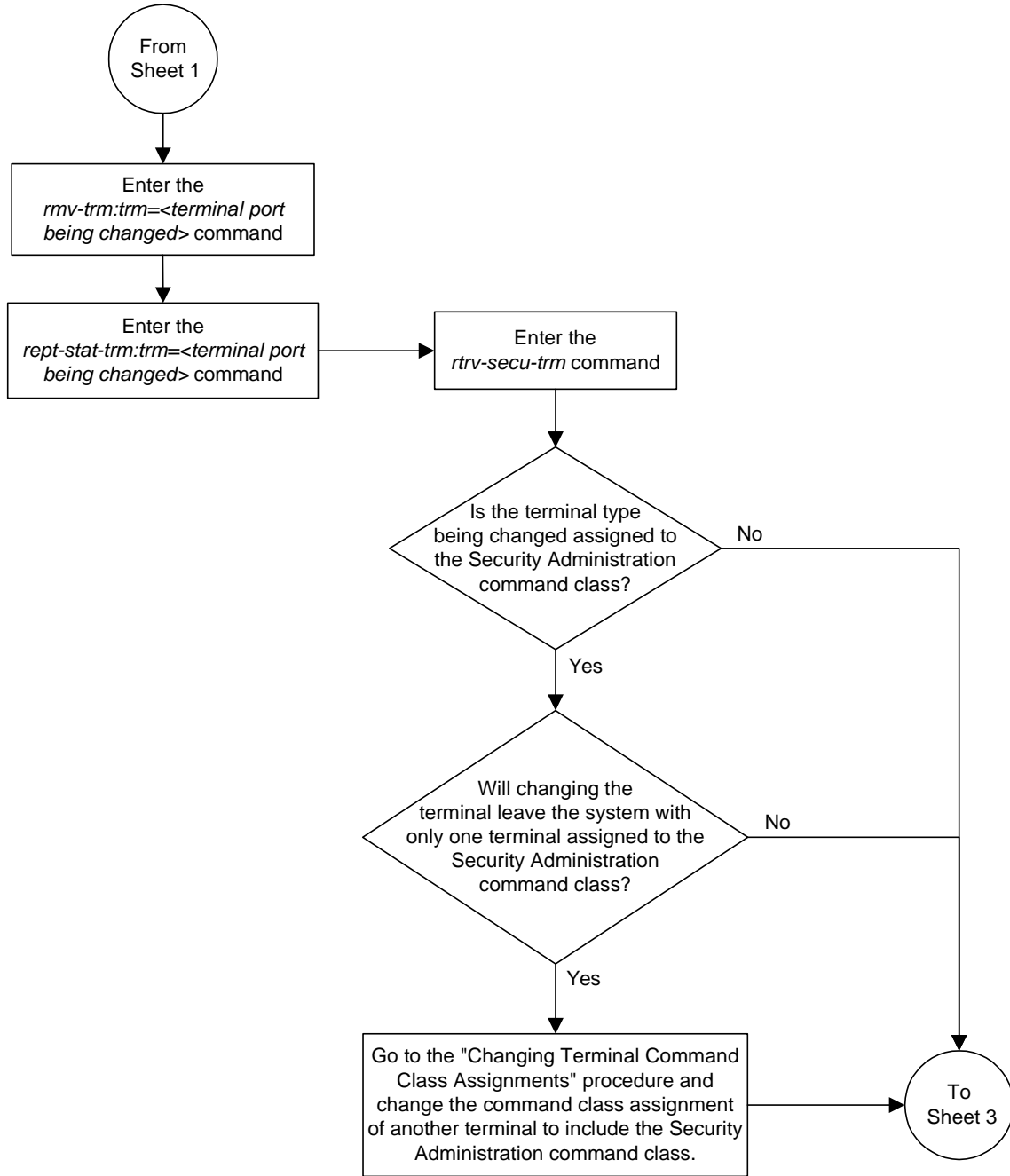
-
11. Back up the changes using the **chg-db:action=backup:dest=fixed** command. The following messages appear; the active Maintenance and Administration Subsystem Processor (MASP) message appears first:

```
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.
```

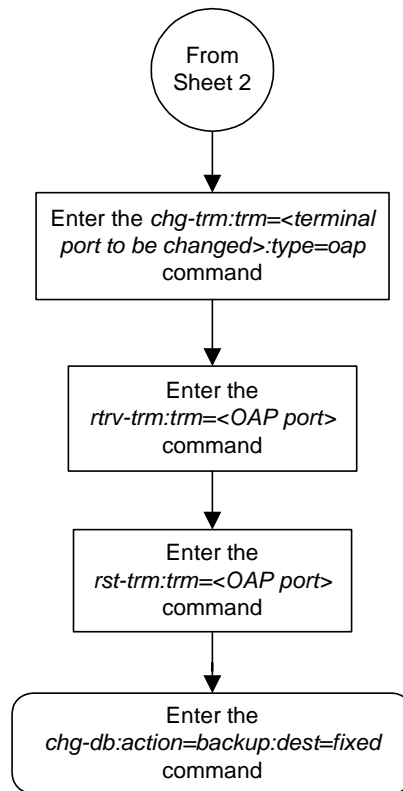
Flowchart A-1. Configuring the OAP Port (Sheet 1 of 3)



Flowchart A-1. Configuring the OAP Port (Sheet 2 of 3)



Flowchart A-1. Configuring the OAP Port (Sheet 3 of 3)



Configuring the OAP from the Eagle STP Terminal

This procedure is used to configure the OAP for the SEAS or LNP features using these commands:

- **chg-oap-config**
- **act-oap-config**

NOTE: These commands enable you to configure the OAP from the Eagle STP terminal. After the initial configuration is performed, you should no longer perform OAP configuration from a terminal directly connected to the OAP.

This procedure can be used to configure the Texas Micro OAPs or the Embedded OAPs (EOAPs). This procedure cannot be used to upgrade the EOAP software. Upgrading the EOAP software is covered in the EOAP Upgrade Procedures in the *Release Documentation* manual and is beyond the scope of this procedure.

Configuring the Eagle STP Database

Use the **chg-oap-config** command to configure the database with the OAP configuration information. The system updates the OAP by sending the information to the specified OAP with the **act-oap-config** command.

The **chg-oap-config** command uses these parameters:

- **:aname** – The name assigned to OAP A consisting of one alphabetic character followed by 1 to 13 alphanumeric characters. The value of the **aname** parameter must be enclosed in double quotes.
- **:bname** – The name assigned to OAP B consisting of one alphabetic character followed by 1 to 13 alphanumeric characters. The value of the **bname** parameter must be enclosed in double quotes.
- **:aipaddr** – The IP address of OAP-A
- **:bipaddr** – The IP address of OAP-B
- **:anmask** – The netmask of OAP-A
- **:bnmask** – The netmask of OAP-B
- **:arouter** – The IP address of the default router assigned to OAP-A
- **:brouter** – The IP address of the default router assigned to OAP-B
- **:cfg** – The number of OAPs being configured, either a single OAP (**sng1**) or both OAPs (**dua1**).
- **:lsms** – The LSMS system identified as the current LSMS to associate the OAP with, either the main LSMS (**main**) or the shadow LSMS (**shadow**).
- **:mnsap** – The IP address of the main LSMS
- **:msse1** – The session selector of the main LSMS

- :mpsel** – The presentation selector of the main LSMS
- :snsap** – The IP address of the shadow LSMS
- :sssel** – The session selector of the shadow LSMS
- :spsel** – The presentation selector of the shadow LSMS
- :seacc11i** – The common language location identifier (CLLI) of the SEAC the OAP is connecting to.
- :x25ps** – The X.25 package size for the link to the SEAC, either 7 or 8.
- :x25mode** – The mode of the X.25 link to the SEAC, either **DCE** or **DTE**.

NOTE: The **chg-oap-config** command allows you to change the parameters one at a time or several at a time (in no specific order).

Refer to the *Eagle STP Commands Manual* for additional information on the **chg-oap-config** command.

Updating the OAP



CAUTION: Before an OAP can be updated with the **act-oap-config** command, the OAP configuration data must be configured in the database as shown in Table A-4 on page A-30 and Table A-5 on page A-31 or the specified OAP may lose SEAS and LNP connectivity.

Use the **act-oap-config** command to update the OAPs with the configuration data entered into the database.

The **act-oap-config** command uses these parameters:

- :oap** – The OAP being updated, OAP A (**a**), OAP B (**b**), or both OAPs (**a11**). Because the **act-oap-config** command may take the OAP out of service, it is highly recommended that only one OAP be updated at a time (so do not use the "all" parameter). A more detailed explanation of this recommendation is given below. If only a single OAP was specified with the **cfg=sng1** parameter of **chg-oap-config** command, the **oap=a11** only updates OAP A.
- :force** – Force the system to update only one OAP in a dual configuration, **yes** or **no**.

Refer to the *Eagle STP Commands Manual* for additional information on the **act-oap-config** command.

OAPs are named and addressed according to their MMI port number on the Eagle STP backplane. OAP-A can use any MMI port, as long as OAP-B is assigned to a higher-numbered MMI port. The **act-oap-config** command will send the configuration information to the corresponding OAP. Depending on the differences in configuration, outages are possible.

EOAP Provisioning Procedures

On the EOAP hardware platform, when facing the front of the EOAP chassis, OAP-A is on the left side and OAP-B the right side. For the Texas Micro OAP, the designation of OAP A and OAP-B is solely dependent of the MMI port they are connected to.

When the OAPs are updated with the `act-oap-config` command, the configuration data for OAP A, as configured by the `chg-oap-config` command, is delivered to OAP B and the configuration data for OAP B is delivered to OAP A. Depending on how the OAPs are configured in the database, this can present problems for the OAPs including both OAPs going out of service because the configuration information for the OAPs is not correct. Update only one OAP at a time.

In addition, although the `act-oap-config` command completes immediately, processing on the OAP may take over 10 minutes depending on which parameters changed and which OAP hardware is installed. Also, whenever parameters are changed, the OAP reboots to use the new data. The reboot interrupts the connection between that OAP and the SEAC or LSMS. By updating only one OAP at a time, the system and the SEAC or LSMS will not be isolated, as one OAP is always connected to the SEAC or LSMS. Table A-2 shows the action and approximate completion time that you can expect after updating a group of OAP parameters. You do not need to perform the actions manually; they are all automatic when the `act-oap-config` command is executed.

Table A-2. Performance Impact of `act-oap-config` Parameters

Configured Parameter Group	OAP Action					
	Restart LSMS Links	Restart LSMS and SEAS Links	Bring Down, Rebuild, Bring Up LSMS and SEAS Links	Bring Down LSMS and SEAS Links; Reboot OAP	Bring Down and Rebuild LSMS and SEAS Links; Reboot OAP	Total Time Required (in seconds)
<u>Group A</u> mpsel/spsel mssel/sssels mnsap/snsap serv	X					≤ 65
Group B x25ps, x25mode		X				≤ 260
Group C cli, seaccli			X			≤ 320

Table A-2. Performance Impact of `act-oap-config` Parameters (Continued)

Configured Parameter Group	OAP Action					
	Restart LSMS Links	Restart LSMS and SEAS Links	Bring Down, Rebuild, Bring Up LSMS and SEAS Links	Bring Down LSMS and SEAS Links; Reboot OAP	Bring Down and Rebuild LSMS and SEAS Links; Reboot OAP	Total Time Required (in seconds)
Group D <code>aname/bname</code> <code>aipaddr/bipaddr</code> <code>anmask, bnmask</code> <code>arouter/brouter</code>				X		≤ 560
Group A and B		X				≤ 260
Groups A and C			X			≤ 320
Groups A and D				X		≤ 560
Group A, B, and C			X			≤ 320
Group A, B, and D				X		≤ 560
Groups A, C, and D			X	X		≤ 620
Group B and C			X			≤ 320
Group B and D			X	X		≤ 620
Group B, C, and D			X	X		≤ 620
Groups C and D					X	≤ 620

Before the `oap=a`, `oap=b`, or `oap=all` parameters are specified using the `act-oap-config` command, the link from the system to the specified OAP must be in service. The status of the terminal ports assigned to the OAP terminal type can be verified with the `rept-stat-trm` command. The entry `IS-NR` (in-service normal) must appear in the `PST` field of the `rept-stat-trm` command output for the `act-oap-config` command to be successfully executed.

The `force=yes` parameter must be specified with the `oap=a` or `oap=b` parameters.

OAP Checksums and Alarms

The `chg-oap-config` command allows you to enter one or several parameters at a time. If the required information for a feature has already been configured in the database, you do not have to re-enter all the parameters for that feature when you make a change. It is mandatory, however, that the configuration data in the system database and the OAP database match.

Table A-3 shows the fields of the `rtrv-oap-config` command output that must be configured depending on which feature is on. Table A-4 also shows the parameters of the `chg-oap-config` command that are used to configure the OAP configuration data.

Table A-3. Fields Displayed for the `RTRV-OAP-CONFIG` Command

Feature	Fields Displayed	Required Entry before Configuration can be sent to the OAP	CHG-OAP-CONFIG Parameter
SEAS	SEAC CLI	An entry is required if the SEAS feature is on.	<code>seacc11i</code>
	X25 Packet Size	An entry is required if the SEAS feature is on.	<code>x25ps</code>
	X25 Mode	An entry is required if the SEAS feature is on.	<code>x25mode</code>
LNP *	Active LSMS	An entry is required if the LNP feature is enabled*.	<code>lsms</code>
	Main LSMS NSAP	An entry is required if the <code>lsms=main</code> parameter is specified.	<code>mnsap</code>
	Main LSMS SSEL	An entry is required if the <code>lsms=main</code> parameter is specified.	<code>mpsel</code>
	Main LSMS PSEL	An entry is required if the <code>lsms=main</code> parameter is specified.	<code>mssel</code>
	Shadow LSMS NSAP	An entry is required if the <code>lsms=shadow</code> parameter is specified.	<code>snsap</code>
	Shadow LSMS SSEL	An entry is required if the <code>lsms=shadow</code> parameter is specified.	<code>spsel</code>
	Shadow LSMS PSEL	An entry is required if the <code>lsms=shadow</code> parameter is specified.	<code>sssel</code>

Table A-3. Fields Displayed for the **RTRV-OAP-CONFIG** Command

Feature	Fields Displayed	Required Entry before Configuration can be sent to the OAP	CHG-OAP-CONFIG Parameter
Either SEAS or LNP feature*	Hostname	An entry is required.	aname and bname
	IP Address	An entry is required if the LNP feature is enabled.*	aipaddr and bipaddr
	IP Netmask	An entry may be required depending on the network configuration.	anmask and bnmask
	Default Router	An entry may be required depending on the network configuration.	arouter and brouter
	Config	An entry is required.	cfg
* The LNP feature can be enabled only for a quantity of 2 to 12 million numbers.			

Table A-4 shows other data not shown in the **rtrv-oap-config** command output that must be provisioned in the database before the OAP configuration can be updated.

Table A-4. Other Data Required for Updating the OAP Configuration

Feature	Data Required Before an OAP can be Updated
Either SEAS or LNP features*	System CLI - configured with the cli parameter of the chg-sid command
LNP*	The LNP services class , lidb , cnam , and isvm configured with the serv parameter of either the ent-lnp-serv or chg-lnp-serv command
* The LNP feature can be enabled only for a quantity of 2 to 12 million numbers.	

To keep OAP parameters in sync with the Eagle STP system, a checksum is created using all of the OAP configuration data stored on the system (shown in Tables A-5 and A-6). The OAP also calculates this checksum based on the data it has. The OAP returns this checksum with every maintenance poll. The Eagle STP system compares the checksums, and generates the following alarm (UAM 0364) within ten seconds of any mismatch:

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
* 1501.0364 * OAP A Configuration data checksum mismatch
```


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The alarm is cleared when a maintenance poll returns a checksum that matches the Eagle STP system's checksum, indicating that the databases are back in sync. The system clears the alarm within five seconds. The following UAM (UAM 0365) clears the alarm:

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
1502.0365      OAP A      Configuration data checksum alarm cleared
```



CAUTION: If any of the data shown in Table A-3 on page A-29 is not properly configured when the OAP configuration data is sent to the OAP, the OAP may go out of service.

Example OAP Initial Configuration

The examples in this procedure are used to initially configure a dual-configuration OAP with the settings shown in Table A-5. For a single configuration OAP, configure OAP-A only.

Table A-5. Example OAP Initial Configuration

Description	Parameter	OAP A	OAP B
Hostname	:aname :bname	tekelec-12	tekelec-13
IP Address	:aipaddr :bipaddr	192.106.175.025	192.106.175.026
IP Netmask	:anmask :bnmask	255.255.255.000	255.255.255.000
Default Router	:arouter :brouter	128.132.064.001	128.132.064.001
Configuration	:cfg	dual	dual
SEAC CLI	:seaccli	RLGHNCXB14Y	RLGHNCXB14Y
X.25 Packet Size	:x25ps	8	8
X.25 Mode	:x25mode	DTE	DTE
Active LSMS	:lsms	main	main
Main LSMS NSAP	:mnsap	198.102.115.125	198.102.115.125
Main LSMS SSEL	:sssel	emss	emss
Main LSMS PSEL	:spsel	emsp	emsp

Procedure

1. Verify that the SEAS feature is on (**SEAS = on**) using the **rtrv-feat** command.

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

NOTE: If the OAP is not to be used for the SEAS feature, or the SEAS feature is on, skip step 2 and go to step 3.

2. Turn on the SEAS feature by entering this command:

```
chg-feat:seas=on
```

NOTE: Once the SEAS feature is turned on with the **chg-feat** command, it cannot be turned off. The SEAS feature is optional and must be purchased before you turn on the feature with the **chg-feat** command. If you are not sure whether you have purchased the SEAS feature, contact your Tekelec Sales Representative or Account Representative.

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
CHG-FEAT: MASP A - COMPLD
```

NOTE: If the OAP will not be used with the LNP feature, skip this step and go to step 4.

3. Verify that the LNP feature is enabled for a quantity of 2 to 12 million numbers, by entering the **rtrv-ctrl-feat** command. If the LNP feature is enabled for a quantity of 2 to 12 million numbers, the quantity shown in the **LNP TNs** field should be 2 to 12 million numbers.

NOTE: The **rtrv-ctrl-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-ctrl-feat** command, see the **rtrv-ctrl-feat** command description in the *Commands Manual*.

If the LNP feature is enabled for a quantity of 2 to 12 million numbers, go to step 4.

If the LNP feature is not enabled, go to the "Enabling the LNP Feature for 2 to 12 Million Numbers" procedure in the *Database Administration Manual - LNP* and enable the LNP feature.

If the ELAP Configuration feature is enabled and activated, the OAP port can be configured only if the SEAS feature is on.

EOAP Provisioning Procedures

- For the OAPs to be configured by the `chg-oap-config` command, the OAP ports must be out of service. To find which terminal ports are the OAP ports, display the terminal configuration in the database using the `rtrv-trm` command. The OAP ports are shown by the entry **OAP** in the **TYPE** field, as shown in bold in the example `rtrv-trm` output. This is an example of the possible output:

```

rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
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    OAP      19200-7-E-1 SW 30    5    00:30:00
5    VT320      9600-7-O-1 NONE    30      5      00:00:30
6    VT320      9600-7-E-2 SW      30      9      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    VT320      9600-7-E-1 SW      30      7      00:30:00
10   OAP      19200-7-E-1 SW 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  UIMRD
1    NO   YES   NO  YES  NO  YES  YES
2    NO   NO    NO  NO   NO  NO   NO
3    YES  YES   YES NO   YES  YES  YES
4    NO NO NO NO NO NO YES
5    NO   YES   NO  NO   NO  NO   YES
6    NO   NO    YES NO   NO  NO   NO
7    YES  YES   YES YES  YES  YES  YES
8    NO   NO    NO  NO   YES  NO   YES
9    NO   YES   NO  NO   NO  YES  NO
10   YES YES YES YES YES YES YES
11   YES  YES   YES YES  YES  YES  YES
12   YES  YES   YES YES  YES  YES  YES
13   NO   YES   NO  NO   NO  NO   YES
14   NO   NO    YES NO   NO  NO   NO
15   YES  YES   YES NO   YES  YES  YES
16   NO   NO    NO  NO   YES  NO   YES

APP  APP
TRM  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   YES  YES  YES   YES  YES  YES  YES  YES  YES  YES  YES  YES
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
17 NO NO NO NO NO NO NO NO NO NO NO NO
18 NO NO NO NO NO NO NO NO NO NO NO NO
19 NO NO NO NO NO NO NO NO NO NO NO NO
20 NO NO NO NO NO NO NO NO NO NO NO NO
21 NO NO NO NO NO NO NO NO NO NO NO NO
22 NO NO NO NO NO NO NO NO NO NO NO NO
23 NO NO NO NO NO NO NO NO NO NO NO NO
24 NO NO NO NO NO NO NO NO NO NO NO NO

```

-
5. Verify the status of the OAP ports displayed in step 4. An out-of-service OAP port is shown by the entry **OOS-MT-DSBLD** in the **PST** field. This is an example of the possible output:

```

rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
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 either OAP terminal is not out-of-service, go to step 6. If both OAP terminals are out-of-service, go to step 8.

-
6. Place the OAP terminal out of service using the **rmv-trm** command and specifying the ports. Enter these commands:

```
rmv-trm:trm=4
```

```
rmv-trm:trm=10
```

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

```

rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
Inhibit message sent to terminal

rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
Command Completed.

```

7. Verify that the OAP ports that was placed out of service in step 6 is in the OOS-MT-DSBLD state by entering the `rept-stat-trm` command. This is an example of the possible output:

```
rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
TRM   PST           SST           AST
1     IS-NR         Active       -----
2     IS-NR         Active       -----
3     IS-NR         Active       -----
4     OOS-MT-DSBLD Manual       -----
5     IS-NR         Active       -----
6     IS-NR         Active       -----
7     IS-NR         Active       -----
8     IS-NR         Active       -----
9     IS-NR         Active       -----
10    OOS-MT-DSBLD Manual       -----
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.
```

8. Display the current OAP configuration by entering the `rtrv-oap-config` command. The output will show the EOAPs not configured. This is an example of the possible output:

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
OAP CONFIGURATION REPORT

DATA                               OAP A                               OAP B
Hostname                           <Not configured>                   <Not configured>
IP Address                          <Not configured>                   <Not configured>
IP Netmask                          <Not configured>                   <Not configured>
Default Router                      <Not configured>                   <Not configured>
Config                              <Not configured>                   <Not configured>
SEAC CLLI                           <Not configured>                   <Not configured>
X25 Packet Size                     <Not configured>                   <Not configured>
X25 Mode                            <Not configured>                   <Not configured>
Active LSMS                         <Not configured>                   <Not configured>
Main LSMS NSAP                      <Not configured>                   <Not configured>
Main LSMS SSEL                      <Not configured>                   <Not configured>
Main LSMS PSEL                      <Not configured>                   <Not configured>
Shadow LSMS NSAP                   <Not configured>                   <Not configured>
Shadow LSMS SSEL                   <Not configured>                   <Not configured>
Shadow LSMS PSEL                   <Not configured>                   <Not configured>
```

When both the SEAS and LNP features are on, all the fields of the `rtrv-oap-config` output are displayed. This output example shows all the fields of the `rtrv-oap-config` output. If only the SEAS or LNP feature is on, then only fields related to the feature that is on are displayed. Table A-3 on page A-29 shows the fields that are displayed when the SEAS and LNP features are on.

Before the OAP configuration can be sent to the specified OAP with the `act-oap-config` command, certain fields of the `rtrv-oap-config` command output must be correctly configured depending on whether the SEAS or LNP features are on or not. If these fields do contain incorrect entries and the OAP

configuration is sent to the specified OAP, the specified OAP may go out of service. Table A-3 on page A-29 also shows the fields that must be correctly configured before the OAP configuration is sent to the specified OAP.

9. Make sure that there are no alarms for either OAP. If only the SEAS feature is on, enter the **rept-stat-seas** command. If only the LNP feature is on, enter the **rept-stat-lsms** command. If both the SEAS and LNP features are on, enter both the **rept-stat-seas** and **rept-stat-lsms** commands.

The following are examples of the possible output:

rept-stat-seas

```
rlghncxa03w 04-06-01 15:59:06 GMT EAGLE5 31.6.0
SEAS Subsystem Report      IS-NR      Active  -----
SEAS Interfaces Configured = 2  Interfaces IS-NR = 2
```

	GPL	PST	SST	AST
SEAS 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
X.25 Link	A1		IS-NR	Active
X.25 Link	B1		IS-NR	Active

```
SEAS SYSTEM  ALARM STATUS = No Alarms.
OAP A        ALARM STATUS = No Alarms.
OAP B        ALARM STATUS = No Alarms.
X25 Link A1  ALARM STATUS = No Alarms.
X25 Link A2  ALARM STATUS = No Alarms.
X25 Link B1  ALARM STATUS = No Alarms.
X25 Link B2  ALARM STATUS = No Alarms.
```

```
X25 A1 PVCs IS-NR   = 1,2,3
X25 A1 PVCs OOS-MT = ---
X25 B1 PVCs IS-NR   = 1,2,3
X25 B1 PVCs OOS-MT = ---
```

```
X25 A2 PVCs IS-NR   = 1,2,3
X25 A2 PVCs OOS-MT = ---
X25 B2 PVCs IS-NR   = 1,2,3
X25 B2 PVCs OOS-MT = ---
```

```
Command Completed.
```

EOAP Provisioning Procedures

rept-stat-lsms

```
rlghncxa03w 04-06-01 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 alarms are shown for the OAPs in either the **rept-stat-seas** or **rept-stat-lsms** outputs, contact the Tekelec Technical Services department (see "Tekelec Technical Services" on page 1-7).

NOTE: When steps 9 through 13 are performed, UAM 0364 will be generated indicating that the OAP configuration data on the OAP and the Eagle STP do not match.

10. If you upgraded from a single-configuration to OAP to a dual-configuration OAP, configure the Eagle STP database with the new number of OAPs:

```
chg-oap-config:config=dual
```

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
CHG-OAP-CONFIG: MASP A - COMPLTD
```

11. Configure the new hostname:

```
chg-oap-config:aname="tekelec-12"
```

```
chg-oap-config:bname="tekelec-13"
```

where:

:aname is a 14-character (1 alphabetic character followed by 1 to 13 alphanumeric characters) hostname for OAP-A. The value must be enclosed in quotes ("").

:bname is a 14-character (1 alphabetic character followed by 1 to 13 alphanumeric characters) hostname for OAP-B. The value must be enclosed in quotes ("").

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
CHG-OAP-CONFIG: MASP A - COMPLTD
```

12. Configure the IP network for the LNP feature, and optionally, for the SEAS feature. Enter the following command and parameter required:

```
chg-oap-config:aipaddr=192.106.175.025
```

```
chg-oap-config:bipaddr=192.106.175.026
```

where:

:aipaddr is the OAP-A IP address (network service access point).

:bipaddr is the OAP-B IP address (network service access point).

The following parameters may or may not be required for both LNP and SEAS features depending on your network configuration:

:amask or **:bmask** is the the netmask for OAP-A or OAP-B. If you are unsure as to whether your network requires this configuration, check with your Information Services department.

:arouter or **:brouter** is the IP address of the default router assigned to OAP-A or OAP-B. If you are unsure as to whether your network requires this configuration, check with your Information Services department.

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
CHG-OAP-CONFIG: MASP A - COMPLTD
```

13. Configure the SEAS network. Enter the following command with these three required parameters:

```
chg-oap-config:seacc11i="rlghncxb14y":x25ps=8:x25mode=dte
```

where:

:seacc11i is the 11-character (1 alphabetic character followed by 1 to 10 alphanumeric characters) common language location identifier (CLLI) of the SEAC that the OAP is connecting to. The value must be enclosed in quotes ("").

:x25ps is the x.25 package size for the link to the SEAC. The value is either 7 or 8.

:x25mode is the mode of the X.25 link to the SEAC.

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0  
CHG-OAP-CONFIG: MASP A - COMPLTD
```

14. Configure the LNP LSMS network. Enter the following command with these required parameters:

```
chg-oap-config:lsms=main:mnsap=198.102.115.125:mpsel=emsp:mssel=emss
```

where:

:mnsap is the IP address (network service access point) of the main LSMS.

:mpsel is the 1 to 4 alphanumeric character presentation selector of the main LSMS.

:mssel is the 1 to 4 alphanumeric character session selector of the main LSMS.

If a shadow LSMS exists, the following parameters are also required:

:snsap is the IP address of the shadow LSMS

:spsel is the 1 to 4 alphanumeric character presentation selector of the shadow LSMS

:sssel is the 1 to 4 alphanumeric character session selector of the shadow LSMS

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0  
CHG-OAP-CONFIG: MASP A - COMPLTD
```

15. Verify the changes in the database using the `rtrv-oap-config` command. This is an example of the possible output. The fields that have changed in this example are shown in bold.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
OAP CONFIGURATION REPORT
```

DATA	OAP A	OAP B
Hostname	tekelec-12	tekelec-13
IP Address	192.106.175.025	192.106.175.026
IP Netmask	255.255.255.000	255.255.255.000
Default Router	128.132.064.001	128.132.064.001
Config	dual	dual
SEAC CLLI	RLGHNCXB14Y	RLGHNCXB14Y
X25 Packet Size	8	8
X25 Mode	DTE	DTE
Active LSMS	main	main
Main LSMS NSAP	198.102.115.125	198.102.115.125
Main LSMS SSEL	emss	emss
Main LSMS PSEL	emsp	emsp
Shadow LSMS NSAP	<Not configured>	<Not configured>
Shadow LSMS SSEL	<Not configured>	<Not configured>
Shadow LSMS PSEL	<Not configured>	<Not configured>

16. For the OAPs to be updated by the `act-oap-config` command, the OAP ports must be in service. Return the OAP ports to service that were inhibited in step 6. Use the `rst-trm` command. For this example, enter these commands:

```
rst-trm:trm=4
```

```
rst-trm:trm=10
```

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

```
rlghncxa03w 04-06-01 15:08:45 EDT EAGLE5 31.6.0
Allow message sent to terminal
```

17. Verify that the OAP ports are returned to service by entering the **rept-stat-trm** command.

This is an example of the possible output:

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
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 entry **IS-NR** is not shown in the **PST** field of the **rept-stat-trm** output, the OAP port has not been returned to service. Contact the Tekelec Technical Services department (see "Tekelec Technical Services" on page 1-7).

18. If the LNP feature is on, display the LNP services in the database with the **rtrv-lnp-serv** command. Before the OAP configuration can be updated with the **act-oap-config** command, the LNP translation type services **CLASS**, **LIDB**, **CNAM**, and **ISVM** must be defined in the database. This is an example of the possible output; the required LNP services contained in the output example are shown in bold:

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
SERV   TT   TTN       DV      ALIAS
AIN    15   AINGTE    TCAP    235
      236
      240
IN     30   INGTE     TCAP    150
      175
LIDB  20   LIDB     SCCP   80
CLASS 25   CLASSGTE SCCP   ---
UDF1   201  UDF1      SCCP    ---
UDF3   100  UFD3      SCCP    40
      45
WNP    50   WNP50     TCAP    ---

TT-SERV TABLE IS (12 of 256) 5% FULL
```

If the LNP translation type services **CLASS**, **LIDB**, **CNAM**, and **ISVM** are not shown in the output of the **rtrv-lnp-serv** command, go to procedure "Adding an LNP Service" in the *Eagle STP Database Administration Manual - LNP* and add the required translation types to the database. In this output example, the **ISVM** and **CNAM** LNP translation type services are not in the database.

NOTE: Performing step 18 clears the alarm condition indicated by UAM 0364 and generates UAM 0365 indicating that the OAP configuration data on the OAP and the Eagle STP match.

19. Send the OAP configuration data to the OAP using the **act-oap-config** command. If only one OAP is being updated, the **force=yes** parameter must be specified with the **act-oap-config** command, unless the **cfg=sngl** parameter was specified with the **chg-oap-config** command. If only one OAP is being updated, perform steps a and b in Method A for the specific OAP.

If the **cfg=dual** parameter was specified with the **chg-oap-config** command, both OAPs must be updated. Use one of the following methods:

Method A updates one OAP at a time using the **force=yes** parameter. This method allows SEAS and LNP traffic to continue being sent to the system while the OAP configuration is being updated. It can take up to 15 minutes to update the configuration of the OAP, during which time the OAP being updated will be out of service.

Method B updates both OAPs at the same time using the **oap=all** parameter. This method will take both OAPs out of service and may interrupt all SEAS and LNP traffic to the system. This is NOT recommended. **Method A is the preferred method.**

Method A: Perform steps a through d in this method for each OAP, one OAP at a time.

- a Update OAP A by entering this command:

```
act-oap-config:oap=a:force=yes
```

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
ACT-OAP-CONFIG: MASP A - COMPLTD
```

- b. Wait 15 minutes, then enter either the **rept-stat-seas** (if only the SEAS feature is on) or **rept-stat-lsms** (if only the LNP feature is on) commands to make sure that there are no alarms for OAP A. If both the SEAS and LNP features are on, then enter both commands to verify that there are no alarms for OAP A.

These are examples of the possible output:

EOAP Provisioning Procedures

rept-stat-seas

```
rlghncxa03w 04-06-01 15:59:06 GMT EAGLE5 31.6.0
SEAS Subsystem Report      IS-NR      Active  -----
SEAS Interfaces Configured = 2  Interfaces IS-NR = 2
```

	GPL		PST	SST	AST
SEAS 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	-----
X.25 Link	A1		IS-NR	Active	-----
X.25 Link	B1		IS-NR	Active	-----

```
SEAS SYSTEM ALARM STATUS = No Alarms.
OAP A        ALARM STATUS = No Alarms.
OAP B        ALARM STATUS = No Alarms.
X25 Link A1 ALARM STATUS = No Alarms.
X25 Link A2 ALARM STATUS = No Alarms.
X25 Link B1 ALARM STATUS = No Alarms.
X25 Link B2 ALARM STATUS = No Alarms.
```

```
X25 A1 PVCs IS-NR    = 1,2,3
X25 A1 PVCs OOS-MT  = ---
X25 B1 PVCs IS-NR    = 1,2,3
X25 B1 PVCs OOS-MT  = ---
```

```
X25 A2 PVCs IS-NR    = 1,2,3
X25 A2 PVCs OOS-MT  = ---
X25 B2 PVCs IS-NR    = 1,2,3
X25 B2 PVCs OOS-MT  = ---
```

Command Completed.

rept-stat-lsms

```
rlghncxa03w 04-06-01 14:59:11 GMT Release 31.6.0
GPL          PST          SST          AST
```

	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.

- c. Update OAP B by entering this command.

```
act-oap-config:oap=b:force=yes
```

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
ACT-OAP-CONFIG: MASP A - COMPLTD
```

- d. Wait 15 minutes, then enter either the **rept-stat-seas** (if only the SEAS feature is on) or **rept-stat-lsms** (if only the LNP feature is on) commands to make sure that there are no alarms for OAP B. If both the SEAS and LNP features are on, then enter both commands to verify that there are no alarms for OAP B.

These are examples of the possible output:

```
rept-stat-seas
```

```
rlghncxa03w 04-06-01 15:59:06 GMT EAGLE5 31.6.0
SEAS Subsystem Report      IS-NR      Active      -----
SEAS Interfaces Configured = 2  Interfaces IS-NR = 2
```

	GPL	PST	SST	AST
SEAS 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
X.25 Link	A1	IS-NR	Active	-----
X.25 Link	B1	IS-NR	Active	-----

```
SEAS SYSTEM ALARM STATUS = No Alarms.
OAP A       ALARM STATUS = No Alarms.
OAP B       ALARM STATUS = No Alarms.
X25 Link A1 ALARM STATUS = No Alarms.
X25 Link A2 ALARM STATUS = No Alarms.
X25 Link B1 ALARM STATUS = No Alarms.
X25 Link B2 ALARM STATUS = No Alarms.
```

```
X25 A1 PVCs IS-NR      = 1,2,3
X25 A1 PVCs OOS-MT     = ---
X25 B1 PVCs IS-NR      = 1,2,3
X25 B1 PVCs OOS-MT     = ---
```

```
X25 A2 PVCs IS-NR      = 1,2,3
X25 A2 PVCs OOS-MT     = ---
X25 B2 PVCs IS-NR      = 1,2,3
X25 B2 PVCs OOS-MT     = ---
```

```
Command Completed.
```

EOAP Provisioning Procedures

rept-stat-lsms

```
rlghncxa03w 04-06-01 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 alarms are shown for the OAPs in either the **rept-stat-seas** or **rept-stat-lsms** outputs, contact the Tekelec Technical Services department (see "Tekelec Technical Services" on page 1-7).

Method B: Perform steps a through d to update both OAPs at the same time. This method is NOT recommended.

a Enter the following command:

```
act-oap-config:oap=all
```

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
ACT-OAP-CONFIG: MASP A - COMPLTD
```

b. Wait 15 minutes, then enter either the **rept-stat-seas** (if only the SEAS feature is on) or **rept-stat-lsms** (if only the LNP feature is on) commands to make sure that there are no alarms for the OAPs. If both the SEAS and LNP features are on, then enter both commands to verify that there are no alarms for the OAPs. This is an example of the possible output:

rept-stat-seas

```
rlghncxa03w 04-06-01 15:59:06 GMT EAGLE5 31.6.0
SEAS Subsystem Report      IS-NR      Active  -----
SEAS Interfaces Configured = 2  Interfaces IS-NR = 2
```

	GPL	PST	SST	AST
SEAS 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	-----
X.25 Link	A1	IS-NR	Active	-----
X.25 Link	B1	IS-NR	Active	-----

```
SEAS SYSTEM ALARM STATUS = No Alarms.
OAP A        ALARM STATUS = No Alarms.
OAP B        ALARM STATUS = No Alarms.
X25 Link A1 ALARM STATUS = No Alarms.
X25 Link A2 ALARM STATUS = No Alarms.
X25 Link B1 ALARM STATUS = No Alarms.
X25 Link B2 ALARM STATUS = No Alarms.
```

```
X25 A1 PVCs IS-NR    = 1,2,3
X25 A1 PVCs OOS-MT  = ---
X25 B1 PVCs IS-NR    = 1,2,3
X25 B1 PVCs OOS-MT  = ---
```

```
X25 A2 PVCs IS-NR    = 1,2,3
X25 A2 PVCs OOS-MT  = ---
X25 B2 PVCs IS-NR    = 1,2,3
X25 B2 PVCs OOS-MT  = ---
```

Command Completed.

rept-stat-lsms

```
rlghncxa03w 04-06-01 14:59:11 GMT Release 31.6.0
GPL PST SST AST
```

	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.
```

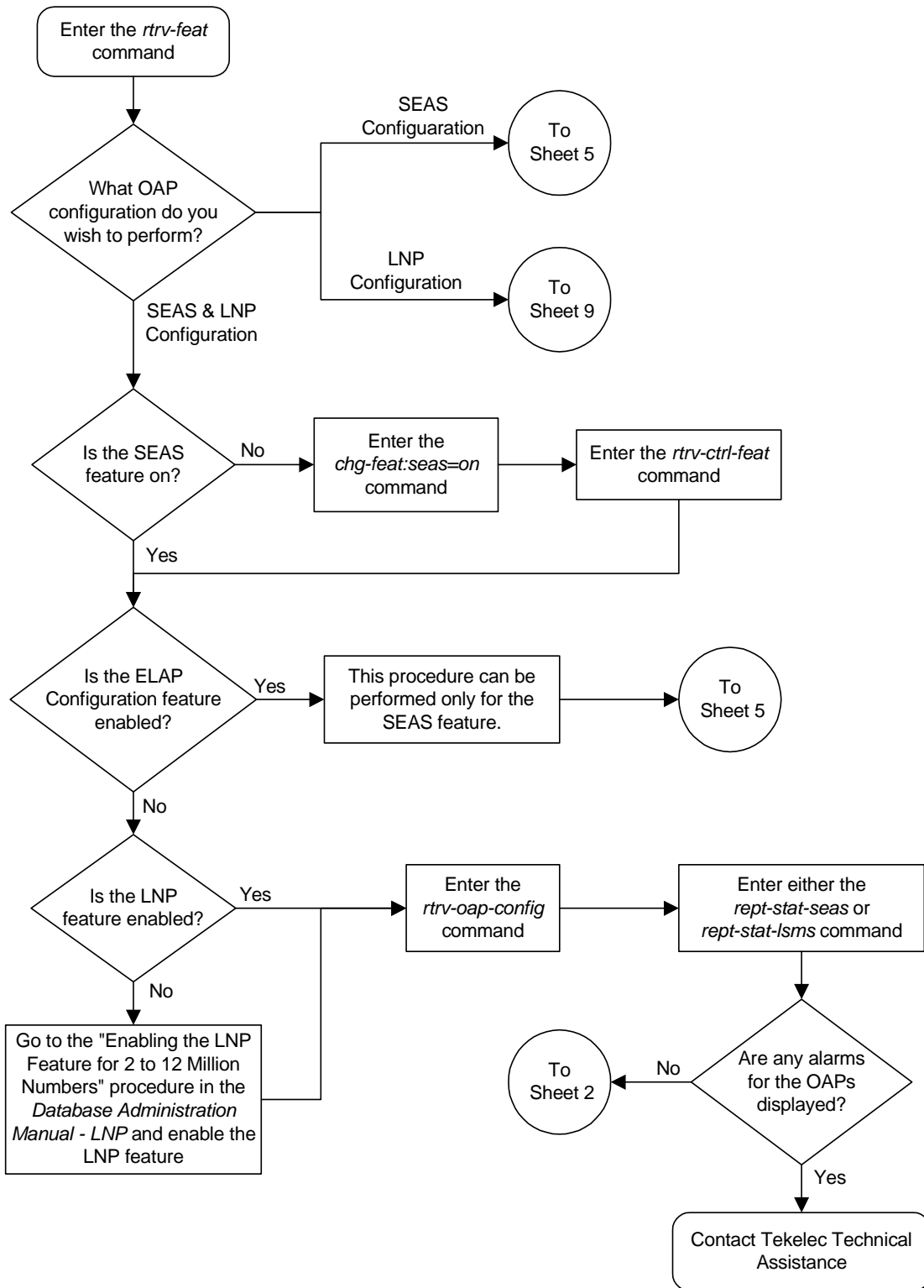
Command Completed.

If alarms are shown for the OAPs in either the **rept-stat-seas** or **rept-stat-lsms** outputs, contact the Tekelec Technical Services department (see "Tekelec Technical Services" on page 1-7).

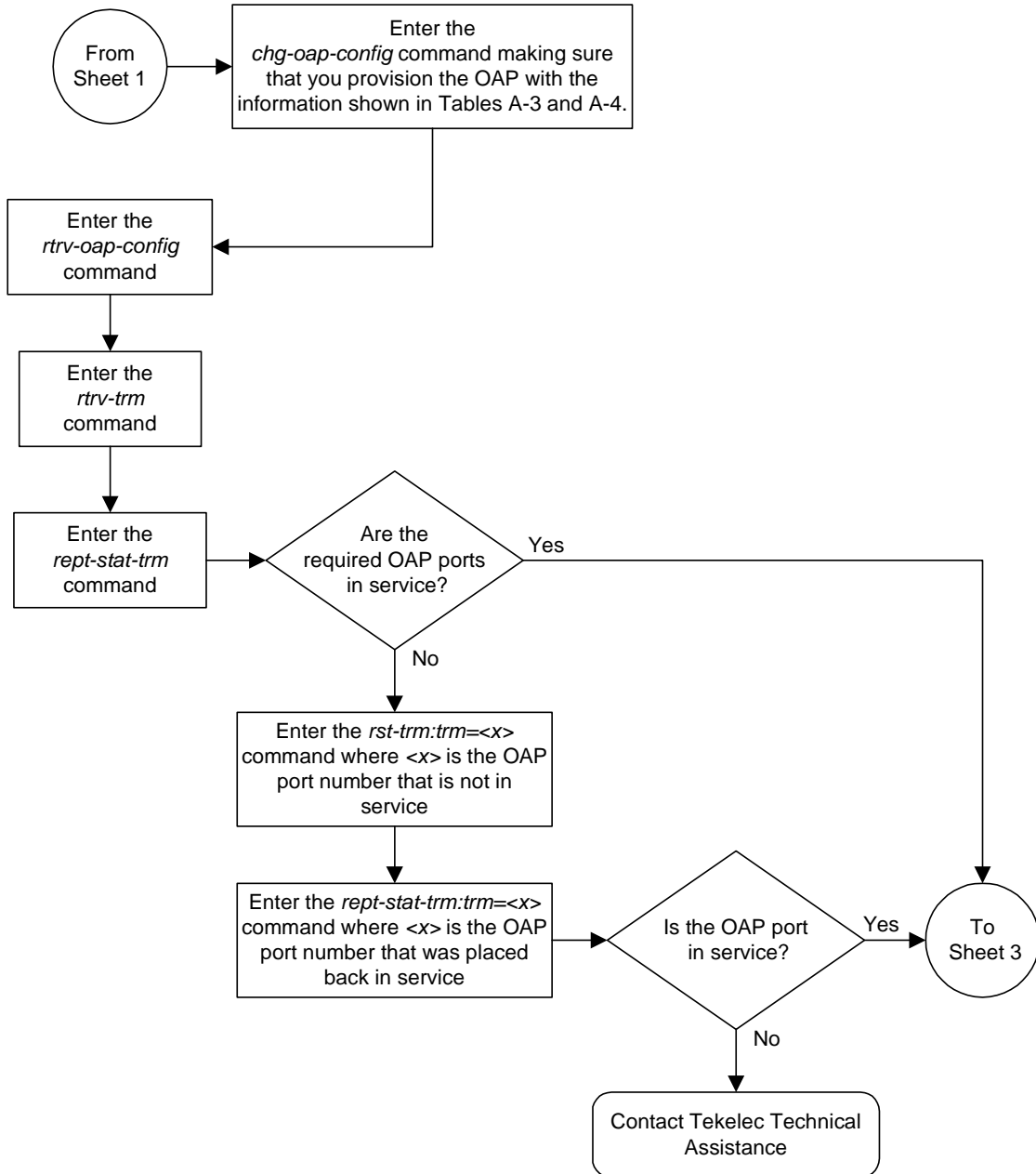
20. Back up the changes using the **chg-db:action=backup:dest=fixed** command. These messages appear; the active Maintenance and Administration Subsystem Processor (MASP) message appears first:

```
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.
```

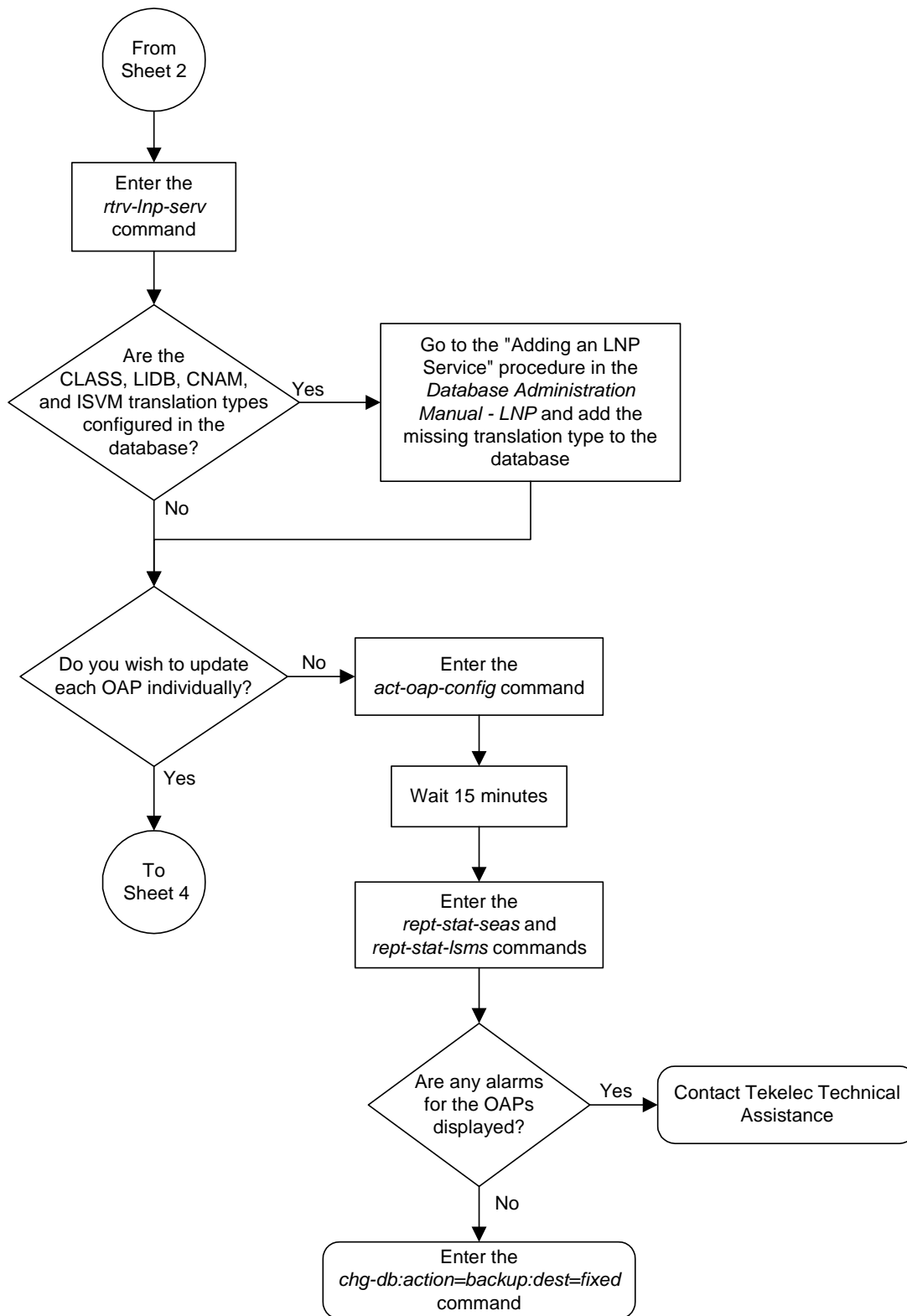
Flowchart A-2. Configuring the OAP from the Eagle STP (Sheet 1 of 12)



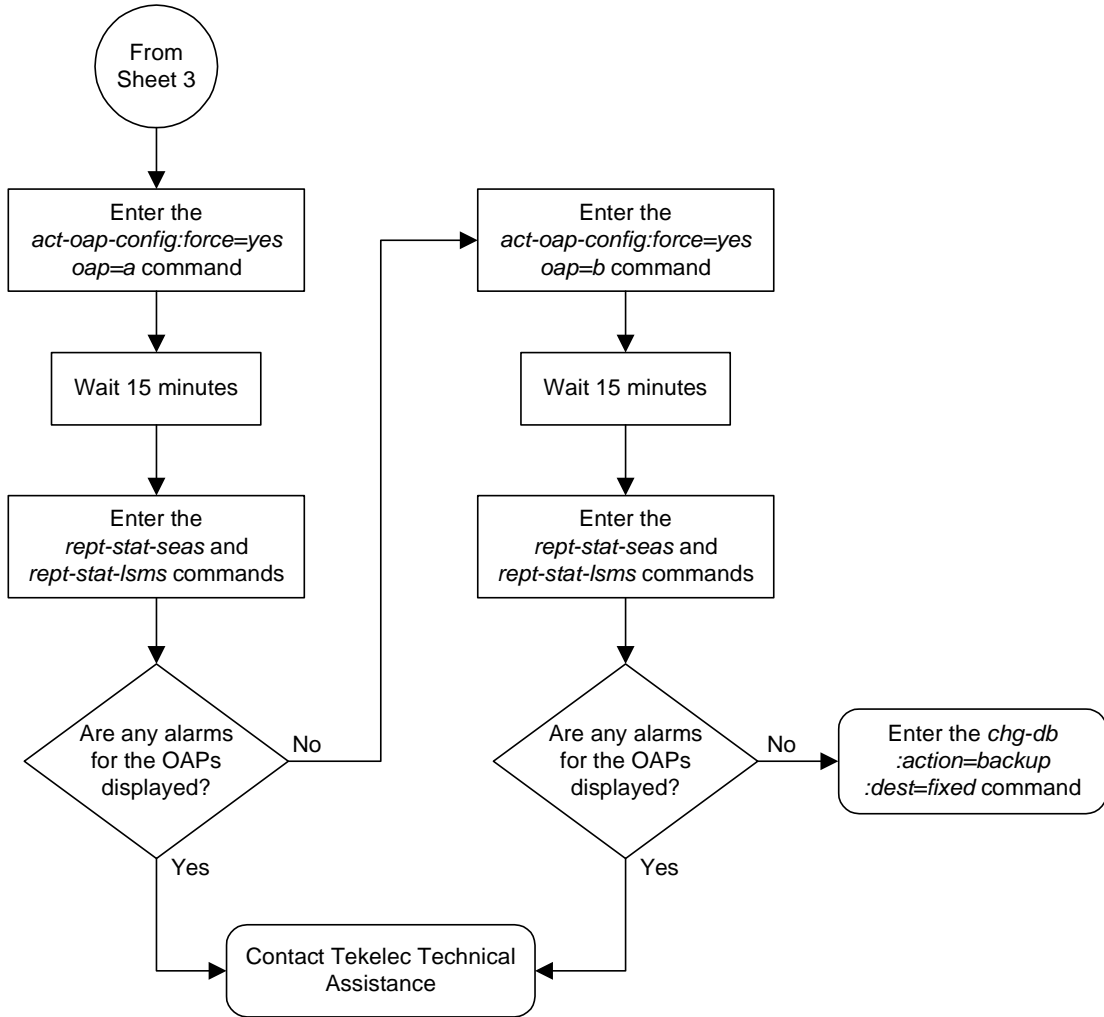
Flowchart A-2. Configuring the OAP from the Eagle STP (Sheet 2 of 12)



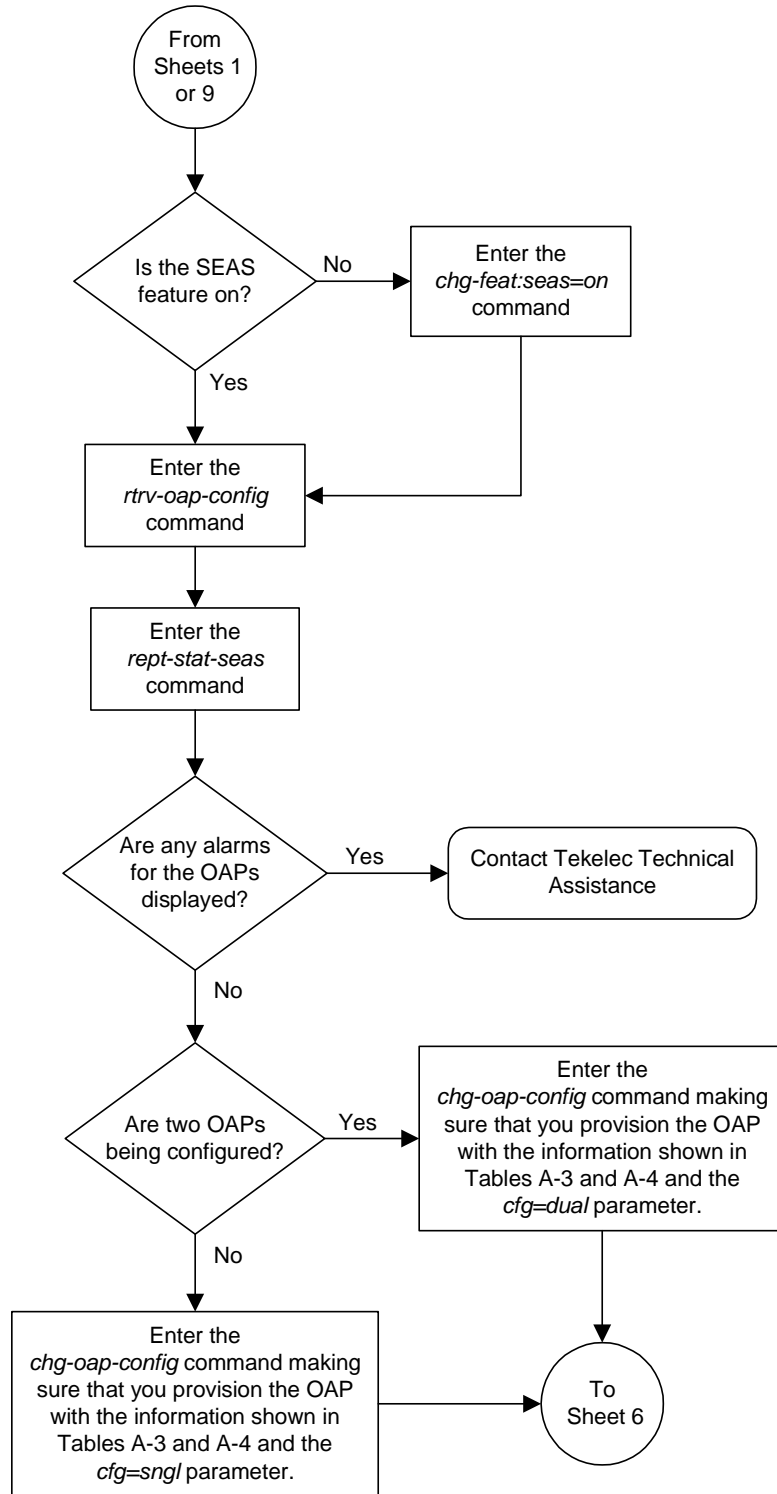
Flowchart A-2. Configuring the OAP from the Eagle STP (Sheet 3 of 12)



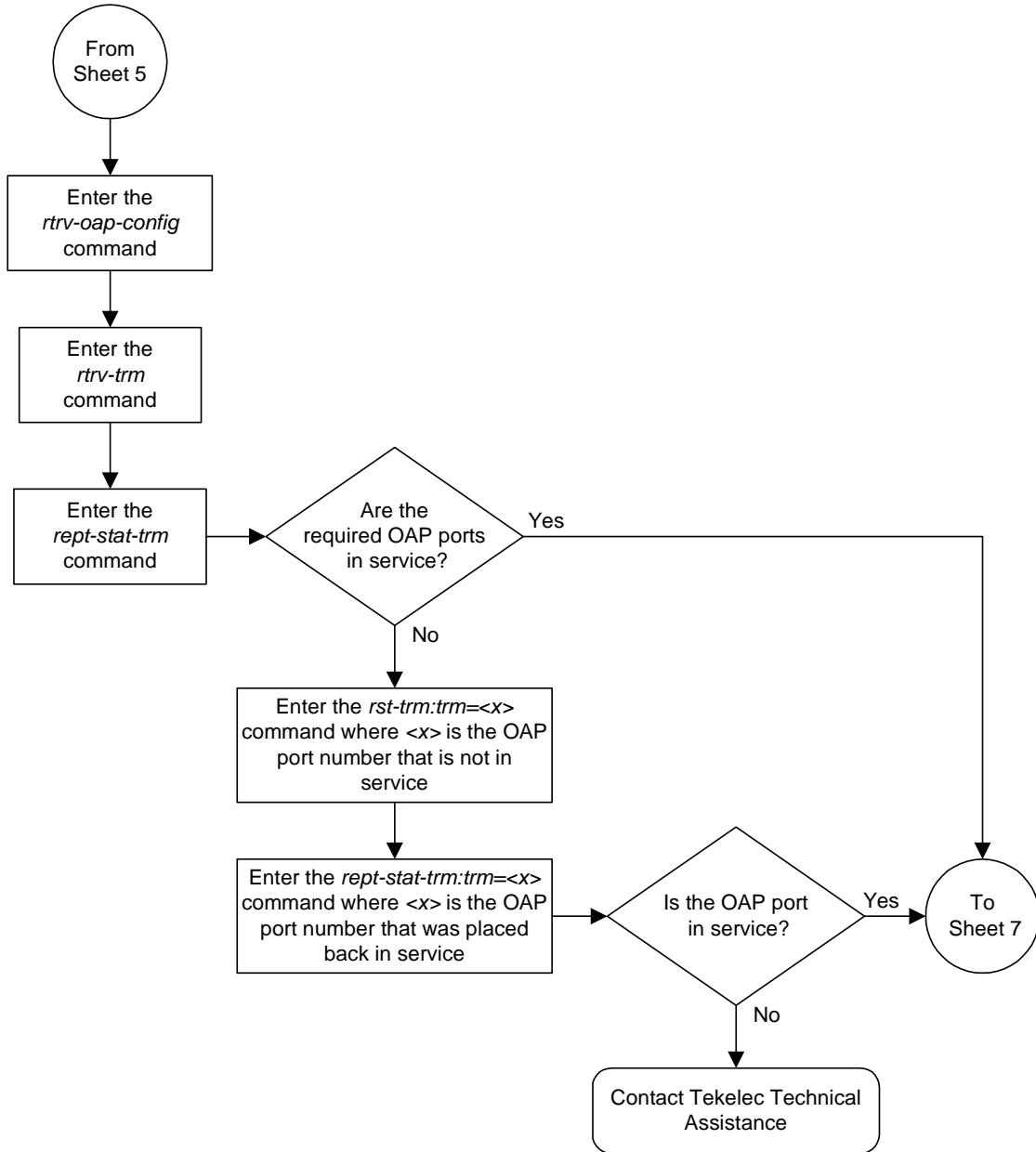
Flowchart A-2. Configuring the OAP from the Eagle STP (Sheet 4 of 12)



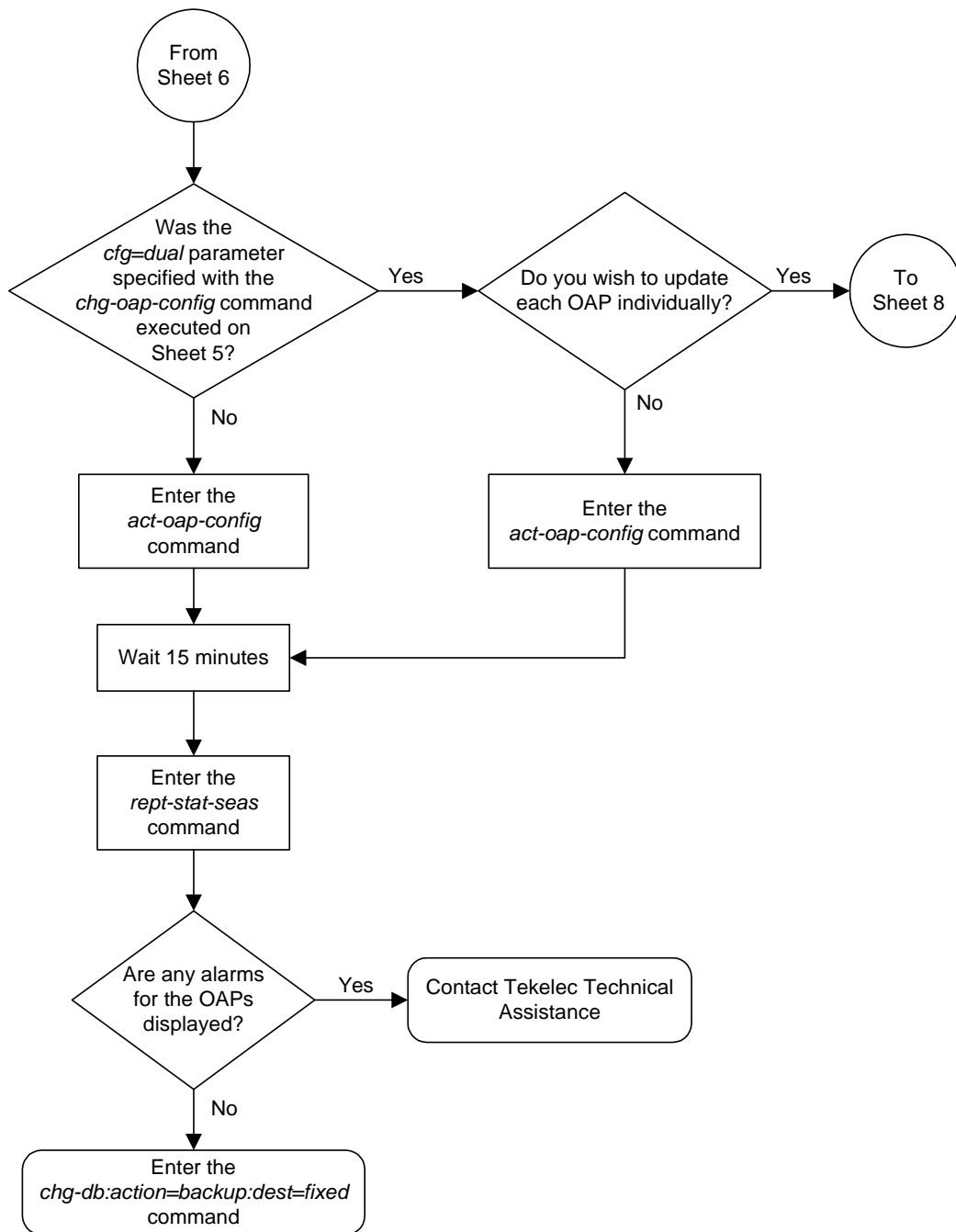
Flowchart A-2. Configuring the OAP from the Eagle STP (Sheet 5 of 12)



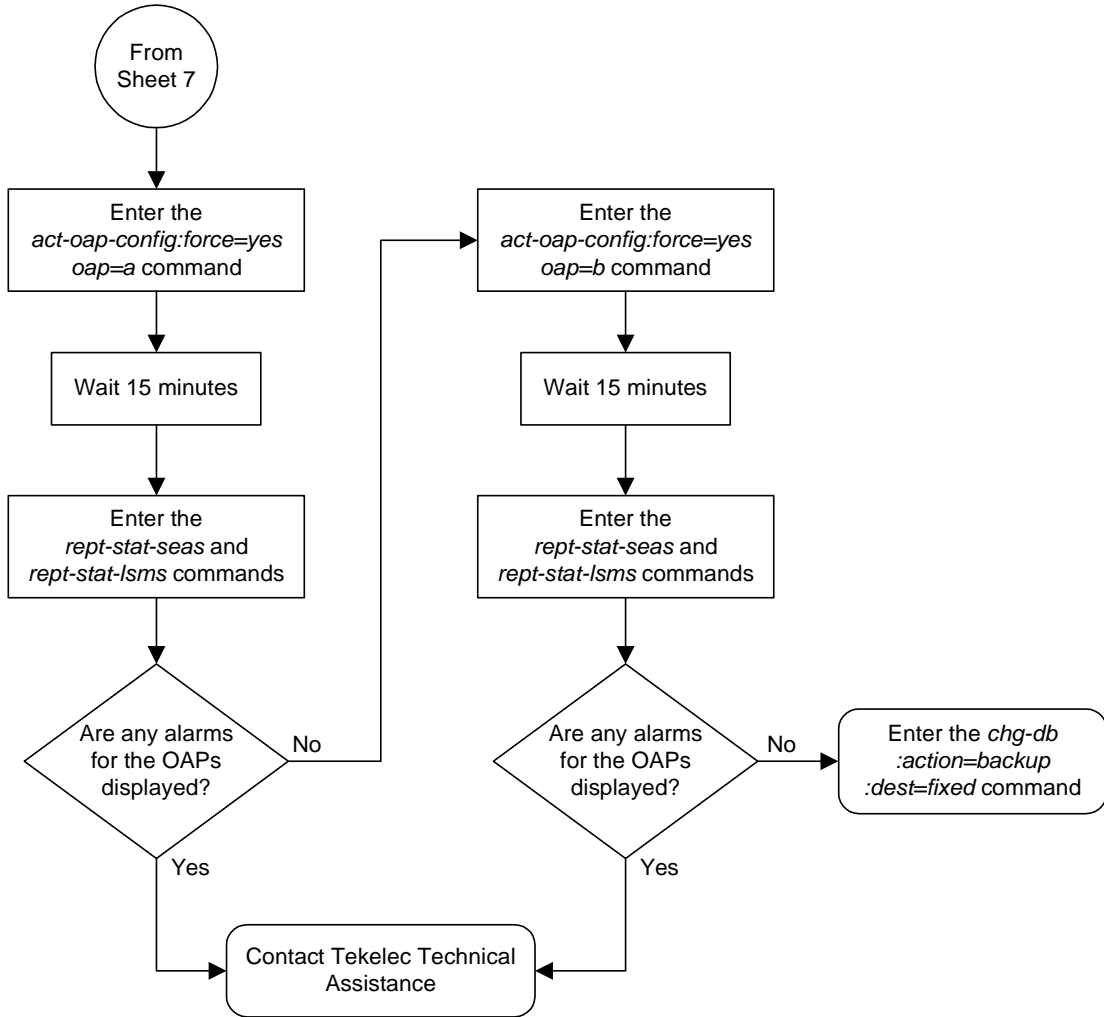
Flowchart A-2. Configuring the OAP from the Eagle STP (Sheet 6 of 12)



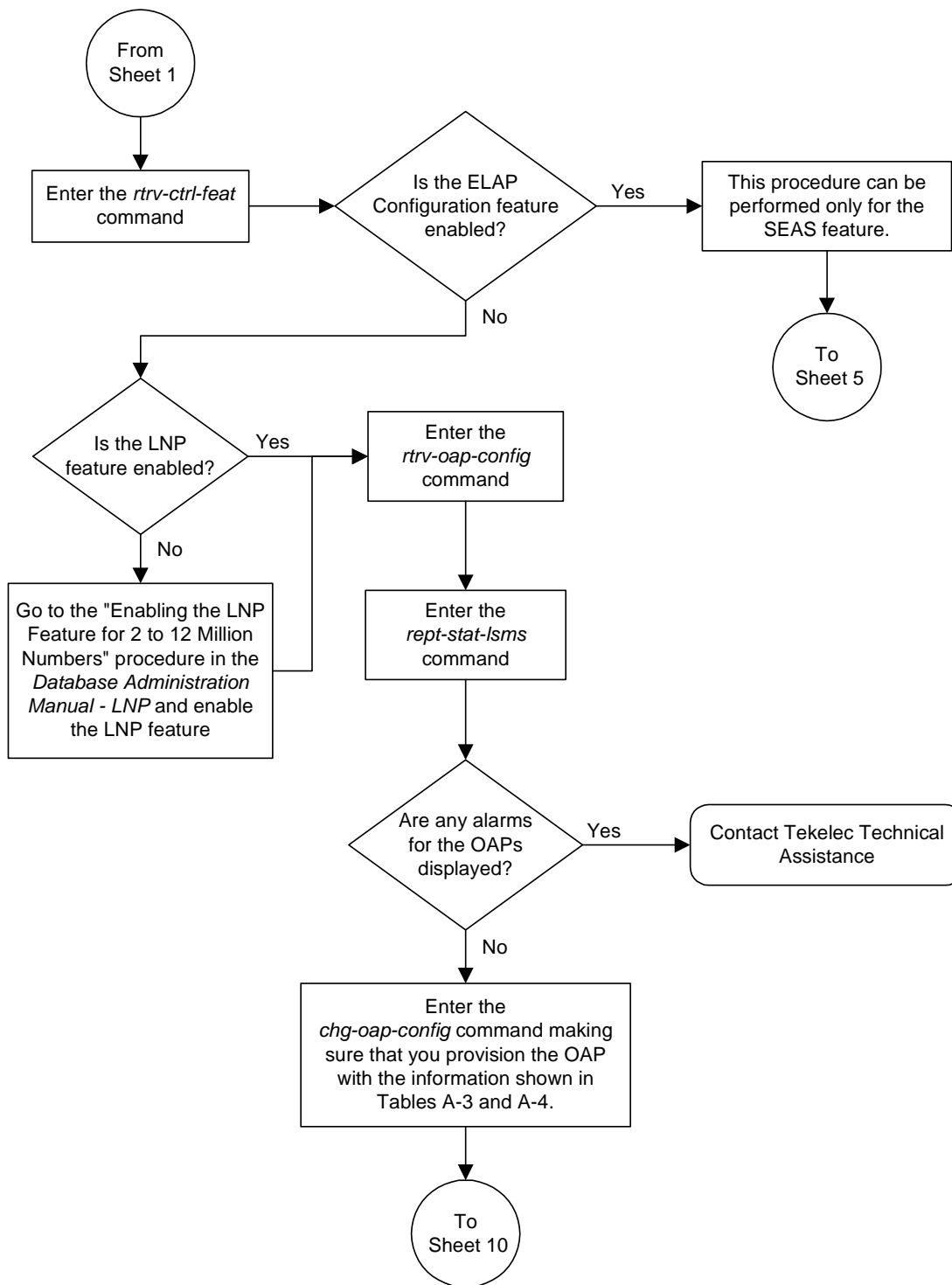
Flowchart A-2. Configuring the OAP from the Eagle STP (Sheet 7 of 12)



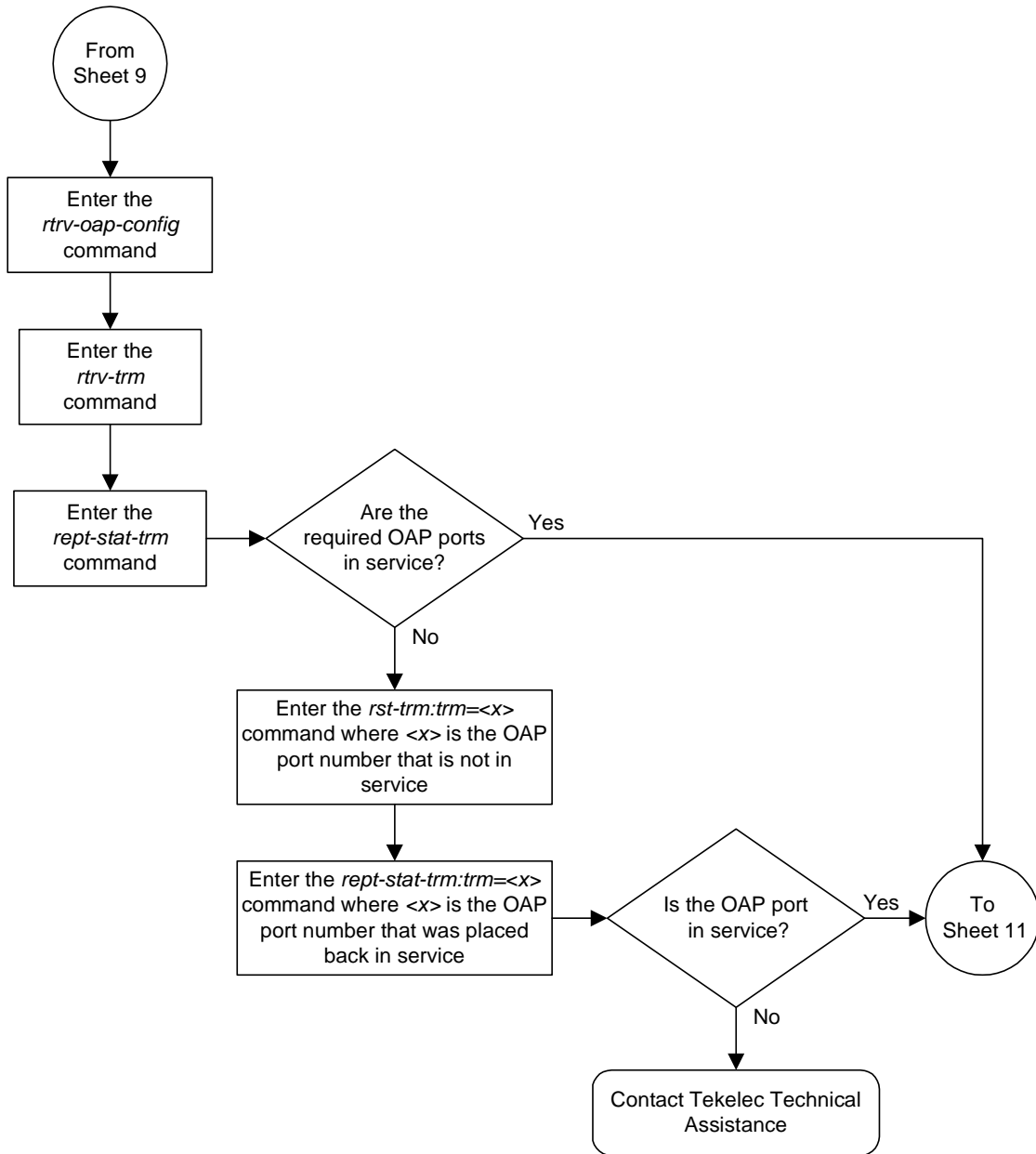
Flowchart A-2. Configuring the OAP from the Eagle STP (Sheet 8 of 12)



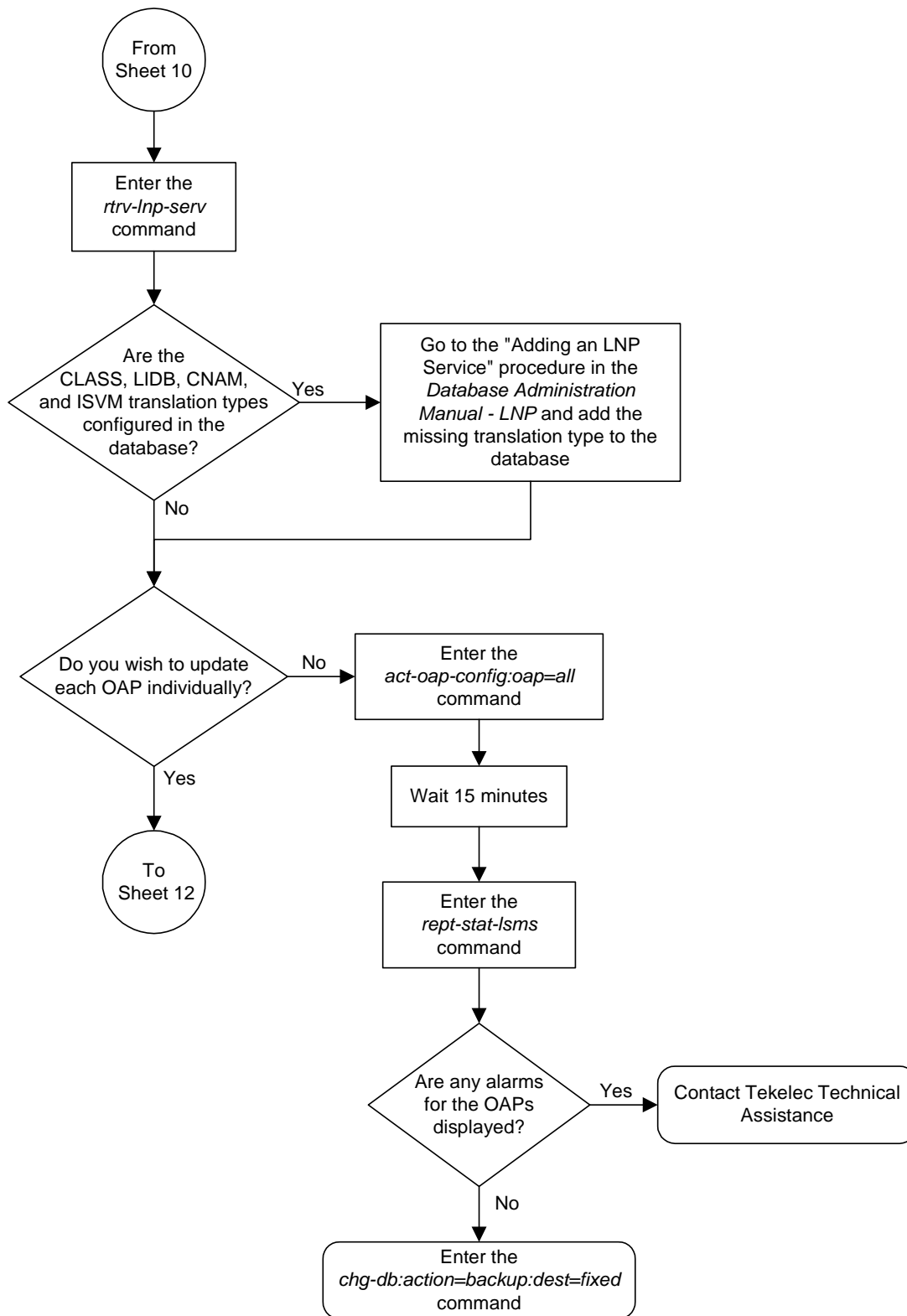
Flowchart A-2. Configuring the OAP from the Eagle STP (Sheet 9 of 12)



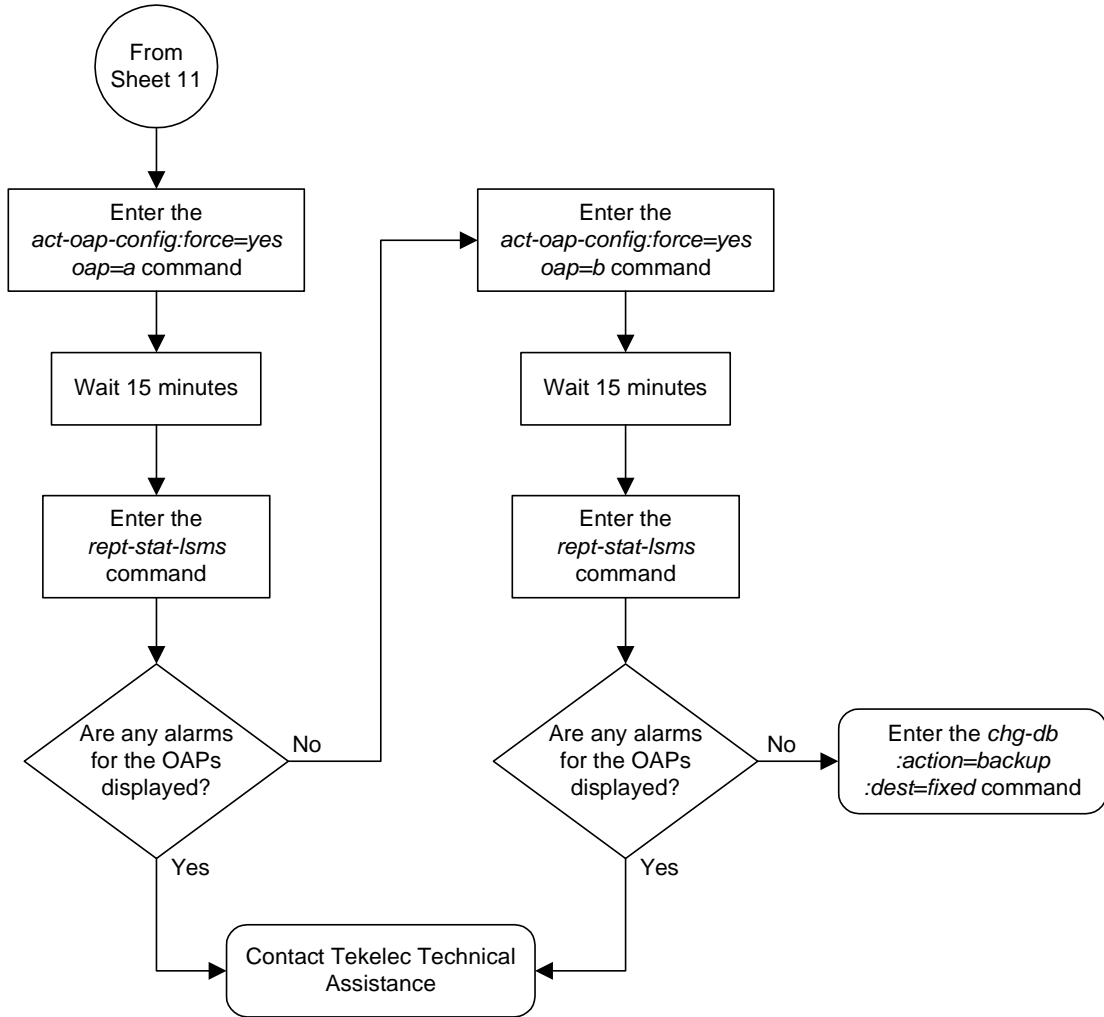
Flowchart A-2. Configuring the OAP from the Eagle STP (Sheet 10 of 12)



Flowchart A-2. Configuring the OAP from the Eagle STP (Sheet 11 of 12)



Flowchart A-2. Configuring the OAP from the Eagle STP (Sheet 12 of 12)



Reprovisioning

Changing the OAP Configuration from the Eagle STP Terminal

Use this procedure if you need to change OAP settings, for example, the number of OAPs after you have upgraded to a dual configuration, the host ID, or the IP address. Skip the steps that do not apply to your configuration.

NOTE: The `chg-oap-config` command is valid only if either the SEAS or the LNP feature is turned on.

Example of OAP Configuration Changes

The examples in this procedure are used to change a dual-configuration OAP with the settings shown in Table A-6. For a single configuration OAP, configure OAP-A only.

Table A-6. Example OAP Initial Configuration

Description	Parameter	OAP A	OAP B
Hostname	<code>:aname</code> <code>:bname</code>	tekelec-22	tekelec-23
IP Address	<code>:aipaddr</code> <code>:bipaddr</code>	192.106.175.005	192.106.175.006
IP Netmask	<code>:anmask</code> <code>:bnmask</code>	255.255.255.001	255.255.255.001
Default Router	<code>:arouter</code> <code>:brouter</code>	128.132.064.005	128.132.064.005
Configuration	<code>:cfg</code>	dual	dual
SEAC CLI	<code>:seaccli</code>	RLGHNCXB18Y	RLGHNCXB18Y
X.25 Packet Size	<code>:x25ps</code>	7	7
X.25 Mode	<code>:x25mode</code>	DCE	DCE
Shadow LSMS	<code>:lsms</code>	shadow	shadow
Shadow LSMS NSAP	<code>:mnsap</code>	198.102.115.105	198.102.115.105
Shadow LSMS SSEL	<code>:sssel</code>	shws	shws
Shadow LSMS PSEL	<code>:spsel</code>	shwp	shwp

When configuring the OAP, the system generates a UAM 0364 because the OAP configuration in the database does not match the OAP configuration on the OAP:

```
rlghncxa03w 04-06-01 11:11:28 GMT EAGLE5 31.6.0
* 1501.0364 * OAP A Configuration data checksum mismatch
```

EOAP Provisioning Procedures

The alarm is cleared when a maintenance poll returns a checksum that matches the Eagle STP's checksum, indicating that the databases are synchronized. The Eagle STP clears the alarm within five seconds. The following UAM clears the alarm:

```
RLGHNCXA03W 00-03-07 11:11:28 GMT EAGLE5 31.6.0
nnnn.0365 OAP A Configuration data checksum alarm cleared
```

Procedure

1. For the OAPs to be configured by the `chg-oap-config` command, the OAP ports must be out of service. To find which terminal ports are the OAP ports, display the terminal configuration in the database using the `rtrv-trm` command. The OAP ports are shown by the entry `OAP` in the `TYPE` field, as shown in bold in the example `rtrv-trm` output. This is an example of the possible output:

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
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    OAP      19200-7-E-1 SW   30    5     00:30:00
5    VT320      9600-7-O-1 NONE 30    5     00:00:30
6    VT320      9600-7-E-2 SW   30    9     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    VT320      9600-7-E-1 SW   30    7     00:30:00
10   OAP      19200-7-E-1 SW   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  UIMRD
1    NO   YES   NO  YES  NO  YES  YES
2    NO   NO    NO  NO   NO  NO   NO
3    YES  YES   YES NO   YES  YES  YES
4    NO   NO    NO  NO   NO  NO   YES
5    NO   YES   NO  NO   NO  NO   YES
6    NO   NO    YES NO   NO  NO   NO
7    YES  YES   YES YES  YES  YES  YES
8    NO   NO    NO  NO   YES  NO   YES
9    NO   YES   NO  NO   NO  YES  NO
10   YES  YES   YES YES  YES  YES  YES
11   YES  YES   YES YES  YES  YES  YES
12   YES  YES   YES YES  YES  YES  YES
13   NO   YES   NO  NO   NO  NO   YES
14   NO   NO    YES NO   NO  NO   NO
15   YES  YES   YES NO   YES  YES  YES
16   NO   NO    NO  NO   YES  NO   YES
```

```
APP  APP
TRM  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	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
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

- Verify the status of the OAP port(s) to be inhibited. For a dual-configuration OAP, both OAP ports must be out of service. This is an example of the possible output:

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
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 port is not out-of-service, go to step 3. If the OAP port is out-of-service, go to step 5.

- Place the OAP port(s) out of service using the `rmv-trm` command and specifying the ports. Enter these commands:

```
rmv-trm:trm=4
```

```
rmv-trm:trm=10
```

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

```
rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
Inhibit message sent to terminal

rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
Command Completed.
```

- Verify that the OAP port that was taken out of service in step 3 is in the OOS-MT-DSBLD state by entering the `rept-stat-trm` command. This is an example of the possible output:

```
rlghncxa03w 04-06-01 00:57:31 GMT EAGLE5 31.6.0
TRM   PST           SST           AST
1     IS-NR          Active        -----
2     IS-NR          Active        -----
3     IS-NR          Active        -----
4     OOS-MT-DSBLD  Manual       -----
5     IS-NR          Active        -----
6     IS-NR          Active        -----
7     IS-NR          Active        -----
8     IS-NR          Active        -----
9     IS-NR          Active        -----
10    OOS-MT-DSBLD  Manual       -----
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.
```

- Display the current OAP configuration by entering the `rtrv-oap-config` command. This is an example of the possible output:

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
OAP CONFIGURATION REPORT

DATA                OAP A                OAP B
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
OAP CONFIGURATION REPORT

DATA                OAP A                OAP B
Hostname            tekelec-12           tekelec-13
IP Address          192.106.175.025      192.106.175.026
IP Netmask          255.255.255.000      255.255.255.000
Default Router      128.132.064.001      128.132.064.001
Config              dual                  dual
SEAC CLLI           RLGHCXB14Y           RLGHCXB14Y
X25 Packet Size     8                     8
X25 Mode            DTE                   DTE
Active LSMS         main                  main
Main LSMS NSAP      198.102.115.125      198.102.115.125
Main LSMS SSEL      emss                  emss
Main LSMS PSEL      emsp                  emsp
Shadow LSMS NSAP    <Not configured>     <Not configured>
Shadow LSMS SSEL    <Not configured>     <Not configured>
Shadow LSMS PSEL    <Not configured>     <Not configured>
```

When both the SEAS and LNP features are on, all the fields of the `rtrv-oap-config` output are displayed. This output example shows all the fields of the `rtrv-oap-config` output. If only the SEAS or LNP feature is on, then only fields related to the feature that is on are displayed. Table A-3 on page A-29 shows the fields that are displayed when the SEAS and LNP features are on.

Before the OAP configuration can be sent to the specified OAP with the **act-oap-config** command, certain fields of the **rtrv-oap-config** command output must be correctly configured depending on whether the SEAS or LNP features are on or not. If these fields do contain incorrect entries and the OAP configuration is sent to the specified OAP, the specified OAP may go out of service. Table A-3 on page A-29 also shows the fields that must be correctly configured before the OAP configuration is sent to the specified OAP.

6. Make sure that there are no alarms for either OAP. If only the SEAS feature is on, enter the **rept-stat-seas** command. If only the LNP feature is on, enter the **rept-stat-lsms** command. If both the SEAS and LNP features are on, enter both the **rept-stat-seas** and **rept-stat-lsms** commands.

The following are examples of the possible output:

rept-stat-seas

```
rlghncxa03w 04-06-01 15:59:06 GMT EAGLE5 31.6.0
SEAS Subsystem Report      IS-NR      Active      -----
SEAS Interfaces Configured = 2  Interfaces IS-NR = 2
```

	GPL	PST	SST	AST	
SEAS 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	----
X.25 Link	A1		IS-NR	Active	----
X.25 Link	B1		IS-NR	Active	----

```
SEAS SYSTEM ALARM STATUS = No Alarms.
OAP A        ALARM STATUS = No Alarms.
OAP B        ALARM STATUS = No Alarms.
X25 Link A1 ALARM STATUS = No Alarms.
X25 Link A2 ALARM STATUS = No Alarms.
X25 Link B1 ALARM STATUS = No Alarms.
X25 Link B2 ALARM STATUS = No Alarms.
```

```
X25 A1 PVCs IS-NR      = 1,2,3
X25 A1 PVCs OOS-MT    = ---
X25 B1 PVCs IS-NR      = 1,2,3
X25 B1 PVCs OOS-MT    = ---
```

```
X25 A2 PVCs IS-NR      = 1,2,3
X25 A2 PVCs OOS-MT    = ---
X25 B2 PVCs IS-NR      = 1,2,3
X25 B2 PVCs OOS-MT    = ---
```

```
Command Completed.
```

rept-stat-lsms

```
rlghncxa03w 04-06-01 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 alarms are shown for the OAPs in either the **rept-stat-seas** or **rept-stat-lsms** outputs, contact the Tekelec Technical Services department (see "Tekelec Technical Services" on page 1-7).

NOTE: When steps 7 through 11 are performed, UAM 0364 will be generated indicating that the OAP configuration data on the OAP and the Eagle STP do not match.

- If you upgraded from a single-configuration OAP to a dual-configuration OAP, configure the Eagle STP database with the new number of OAPs:

chg-oap-config:config=dual

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
CHG-OAP-CONFIG: MASP A - COMPLTD
```

- Configure the new hostname; for example, enter these commands:

chg-oap-config:aname="tekelec-22"

chg-oap-config:bname="tekelec-23"

where:

:aname is a 14-character (1 alphabetic character followed by 1 to 13 alphanumeric characters) hostname for OAP-A. The value must be enclosed in quotes ("").

:bname is a 14-character (1 alphabetic character followed by 1 to 13 alphanumeric characters) hostname for OAP-B. The value must be enclosed in quotes ("").

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
CHG-OAP-CONFIG: MASP A - COMPLTD
```

9. Configure the IP network for the LNP feature, and optionally, for the SEAS feature. For example, enter these commands:

```
chg-oap-config:aipaddr=192.106.175.005
```

```
chg-oap-config:bipaddr=192.106.175.006
```

where:

:aipaddr is the OAP-A IP address (network service access point).

:bipaddr is the OAP-B IP address (network service access point).

The following parameters may or may not be required for both LNP and SEAS features depending on your network configuration:

:amask or **:bmask** is the the netmask for OAP-A or OAP-B. If you are unsure as to whether your network requires this configuration, check with your Information Services department.

:arouter or **:brouter** is the IP address of the default router assigned to OAP-A or OAP-B. If you are unsure as to whether your network requires this configuration, check with your Information Services department.

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
CHG-OAP-CONFIG: MASP A - COMPLTD
```

10. Configure the SEAS network. For example, enter these commands:

```
chg-oap-config:seaccli="rlghncxb18y":x25ps=7:x25mode=dce
```

where:

:seaccli is the 11-character (1 alphabetic character followed by 1 to 10 alphanumeric characters) common language location identifier (CLLI) of the SEAC that the OAP is connecting to. The value must be enclosed in quotes ("").

:x25ps is the x.25 package size for the link to the SEAC. The value is either 7 or 8.

:x25mode is the mode of the X.25 link to the SEAC.

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
CHG-OAP-CONFIG: MASP A - COMPLTD
```

11. Configure the LNP LSMS network. Enter the following command with these required parameters:

```
chg-oap-config:lsms=shadow:snsap=198.102.115.105
:spsel=shwp:sssel=shws
```

where:

:snsap is the IP address of the shadow LSMS

:spsel is the 1 to 4 alphanumeric character presentation selector of the shadow LSMS

:sssel is the 1 to 4 alphanumeric character session selector of the shadow LSMS

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
CHG-OAP-CONFIG: MASP A - COMPLTD
```

12. Verify the changes in the database using the **rtrv-oap-config** command. Confirm the correctness of all settings before continuing to the next step. This is an example of the possible output. The fields that have changed in this example are shown in bold.

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
OAP CONFIGURATION REPORT
```

DATA	OAP A	OAP B
Hostname	tekelec-22	tekelec-23
IP Address	192.106.175.005	192.106.175.006
IP Netmask	255.255.255.001	255.255.255.001
Default Router	128.132.064.005	128.132.064.005
Config	dual	dual
SEAC CLLI	RLGHNCXB18Y	RLGHNCXB18Y
X25 Packet Size	7	7
X25 Mode	DCE	DCE
Active LSMS	main	main
Main LSMS NSAP	198.102.115.125	198.102.115.125
Main LSMS SSEL	emss	emss
Main LSMS PSEL	emsp	emsp
Shadow LSMS NSAP	198.102.115.105	198.102.115.105
Shadow LSMS SSEL	shws	shws
Shadow LSMS PSEL	shws	shws

13. For the OAPs to be updated by the **act-oap-config** command, the OAP ports must be in service. Return the OAP ports to service that were inhibited in step 6. Use the **rst-trm** command. For this example, enter these commands:

```
rst-trm:trm=4
```

```
rst-trm:trm=10
```

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

```
rlghncxa03w 04-06-01 15:08:45 EDT EAGLE5 31.6.0
Allow message sent to terminal
```

14. Verify that the OAP ports are returned to service by entering the **rept-stat-trm** command.

This is an example of the possible output:

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
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 entry **IS-NR** is not shown in the **PST** field of the **rept-stat-trm** output, the OAP port has not been returned to service. Contact the Tekelec Technical Services department (see "Tekelec Technical Services" on page 1-7).

15. If the LNP feature is on, display the LNP services in the database with the **rtrv-lnp-serv** command. Before the OAP configuration can be updated with the **act-oap-config** command, the LNP translation type services CLASS, LIDB, CNAM, and ISVM must be defined in the database. This is an example of the possible output; the required LNP services contained in the output example are shown in bold:

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
SERV  TT   TTN      DV      ALIAS
AIN   15   AINGTE   TCAP    235
      236
      240
IN    30   INGTE    TCAP    150
      175
LIDB  20   LIDB     SCCP    80
CLASS 25   CLASSGTE SCCP    ---
UDF1  201  UDF1     SCCP    ---
UDF3  100  UFD3     SCCP    40
      45
WNP   50   WNP50    TCAP    ---

TT-SERV TABLE IS (12 of 256) 5% FULL
```

If the LNP translation type services CLASS, LIDB, CNAM, and ISVM are not shown in the output of the **rtrv-lnp-serv** command, go to procedure "Adding an LNP Service" in the *Eagle STP Database Administration Manual - LNP* and add the required translation types to the database. In this output example, the ISVM and CNAM LNP translation type services are not in the database.

NOTE: Performing step 16 clears the alarm condition indicated by UAM 0364 and generate UAM 0365 indicating that the OAP configuration data on the OAP and the Eagle STP match.

16. Send the OAP configuration data to the OAP using the `act-oap-config` command. If only one OAP is being updated, the `force=yes` parameter must be specified with the `act-oap-config` command, unless the `cfg=sngl` parameter was specified with the `chg-oap-config` command. If only one OAP is being updated, perform steps a and b in Method A for the specific OAP.

If the `cfg=dual` parameter was specified with the `chg-oap-config` command, both OAPs must be updated. Use one of the following methods:

Method A updates one OAP at a time using the `force=yes` parameter. This method allows SEAS and LNP traffic to continue being sent to the system while the OAP configuration is being updated. It can take up to 15 minutes to update the configuration of the OAP, during which time the OAP being updated will be out of service.

Method B updates both OAPs at the same time using the `oap=all` parameter. This method will take both OAPs out of service and may interrupt all SEAS and LNP traffic to the system. This is not recommended. **Method A is the preferred method.**

Method A: Perform steps a through d in this method for each OAP, one OAP at a time.

- a Update OAP A by entering this command:

```
act-oap-config:oap=a:force=yes
```

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0  
ACT-OAP-CONFIG: MASP A - COMPLTD
```

- b. Wait 15 minutes, then enter either the `rept-stat-seas` (if only the SEAS feature is on) or `rept-stat-lsms` (if only the LNP feature is on) commands to make sure that there are no alarms for OAP A. If both the SEAS and LNP features are on, then enter both commands to verify that there are no alarms for OAP A.

These are examples of the possible output:

rept-stat-seas

```
rlghncxa03w 04-06-01 15:59:06 GMT EAGLE5 31.6.0
SEAS Subsystem Report      IS-NR      Active  -----
SEAS Interfaces Configured = 2  Interfaces IS-NR = 2
```

	GPL	PST	SST	AST
SEAS 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	-----
X.25 Link	A1	IS-NR	Active	-----
X.25 Link	B1	IS-NR	Active	-----

```
SEAS SYSTEM ALARM STATUS = No Alarms.
OAP A        ALARM STATUS = No Alarms.
OAP B        ALARM STATUS = No Alarms.
X25 Link A1 ALARM STATUS = No Alarms.
X25 Link A2 ALARM STATUS = No Alarms.
X25 Link B1 ALARM STATUS = No Alarms.
X25 Link B2 ALARM STATUS = No Alarms.
```

```
X25 A1 PVCs IS-NR    = 1,2,3
X25 A1 PVCs OOS-MT  = ---
X25 B1 PVCs IS-NR    = 1,2,3
X25 B1 PVCs OOS-MT  = ---
```

```
X25 A2 PVCs IS-NR    = 1,2,3
X25 A2 PVCs OOS-MT  = ---
X25 B2 PVCs IS-NR    = 1,2,3
X25 B2 PVCs OOS-MT  = ---
```

Command Completed.

rept-stat-lsms

```
rlghncxa03w 04-06-01 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.

c. Update OAP B by entering this command.

act-oap-config:oap=b:force=yes

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
ACT-OAP-CONFIG: MASP A - COMPLTD
```


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- d. Wait 15 minutes, then enter either the **rept-stat-seas** (if only the SEAS feature is on) or **rept-stat-lsms** (if only the LNP feature is on) commands to make sure that there are no alarms for OAP B. If both the SEAS and LNP features are on, then enter both commands to verify that there are no alarms for OAP B.

These are examples of the possible output:

rept-stat-seas

```
rlghncxa03w 04-06-01 15:59:06 GMT EAGLE5 31.6.0
SEAS Subsystem Report      IS-NR      Active  -----
SEAS Interfaces Configured = 2  Interfaces IS-NR = 2
```

	GPL	PST	SST	AST
SEAS 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	-----
X.25 Link	A1	IS-NR	Active	-----
X.25 Link	B1	IS-NR	Active	-----

```
SEAS SYSTEM ALARM STATUS = No Alarms.
OAP A        ALARM STATUS = No Alarms.
OAP B        ALARM STATUS = No Alarms.
X25 Link A1 ALARM STATUS = No Alarms.
X25 Link A2 ALARM STATUS = No Alarms.
X25 Link B1 ALARM STATUS = No Alarms.
X25 Link B2 ALARM STATUS = No Alarms.
```

```
X25 A1 PVCs IS-NR      = 1,2,3
X25 A1 PVCs OOS-MT     = ---
X25 B1 PVCs IS-NR      = 1,2,3
X25 B1 PVCs OOS-MT     = ---
```

```
X25 A2 PVCs IS-NR      = 1,2,3
X25 A2 PVCs OOS-MT     = ---
X25 B2 PVCs IS-NR      = 1,2,3
X25 B2 PVCs OOS-MT     = ---
```

Command Completed.

rept-stat-lsms

```
rlghncxa03w 04-06-01 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 alarms are shown for the OAPs in either the **rept-stat-seas** or **rept-stat-lsms** outputs, contact the Tekelec Technical Services department (see "Tekelec Technical Services" on page 1-7).

Method B: Perform steps a through d to update both OAPs at the same time. This method is NOT recommended.

a Enter the following command:

```
act-oap-config:oap=all
```

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

```
rlghncxa03w 04-06-01 11:34:04 GMT EAGLE5 31.6.0
ACT-OAP-CONFIG: MASP A - COMPLTD
```

b. Wait 15 minutes, then enter either the **rept-stat-seas** (if only the SEAS feature is on) or **rept-stat-lsms** (if only the LNP feature is on) commands to make sure that there are no alarms for the OAPs. If both the SEAS and LNP features are on, then enter both commands to verify that there are no alarms for the OAPs. This is an example of the possible output:

```
rept-stat-seas
```

```
rlghncxa03w 04-06-01 15:59:06 GMT EAGLE5 31.6.0
SEAS Subsystem Report      IS-NR      Active      -----
SEAS Interfaces Configured = 2  Interfaces IS-NR = 2
```

	GPL	PST	SST	AST
SEAS 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	-----
X.25 Link	A1	IS-NR	Active	-----
X.25 Link	B1	IS-NR	Active	-----

```
SEAS SYSTEM  ALARM STATUS = No Alarms.
OAP A        ALARM STATUS = No Alarms.
OAP B        ALARM STATUS = No Alarms.
X25 Link A1  ALARM STATUS = No Alarms.
X25 Link A2  ALARM STATUS = No Alarms.
X25 Link B1  ALARM STATUS = No Alarms.
X25 Link B2  ALARM STATUS = No Alarms.
```

```
X25 A1 PVCs IS-NR    = 1,2,3
X25 A1 PVCs OOS-MT  = ---
X25 B1 PVCs IS-NR    = 1,2,3
X25 B1 PVCs OOS-MT  = ---
```

```
X25 A2 PVCs IS-NR    = 1,2,3
X25 A2 PVCs OOS-MT  = ---
X25 B2 PVCs IS-NR    = 1,2,3
X25 B2 PVCs OOS-MT  = ---
```

```
Command Completed.
```

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rept-stat-lsms

```
rlghncxa03w 04-06-01 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.
```

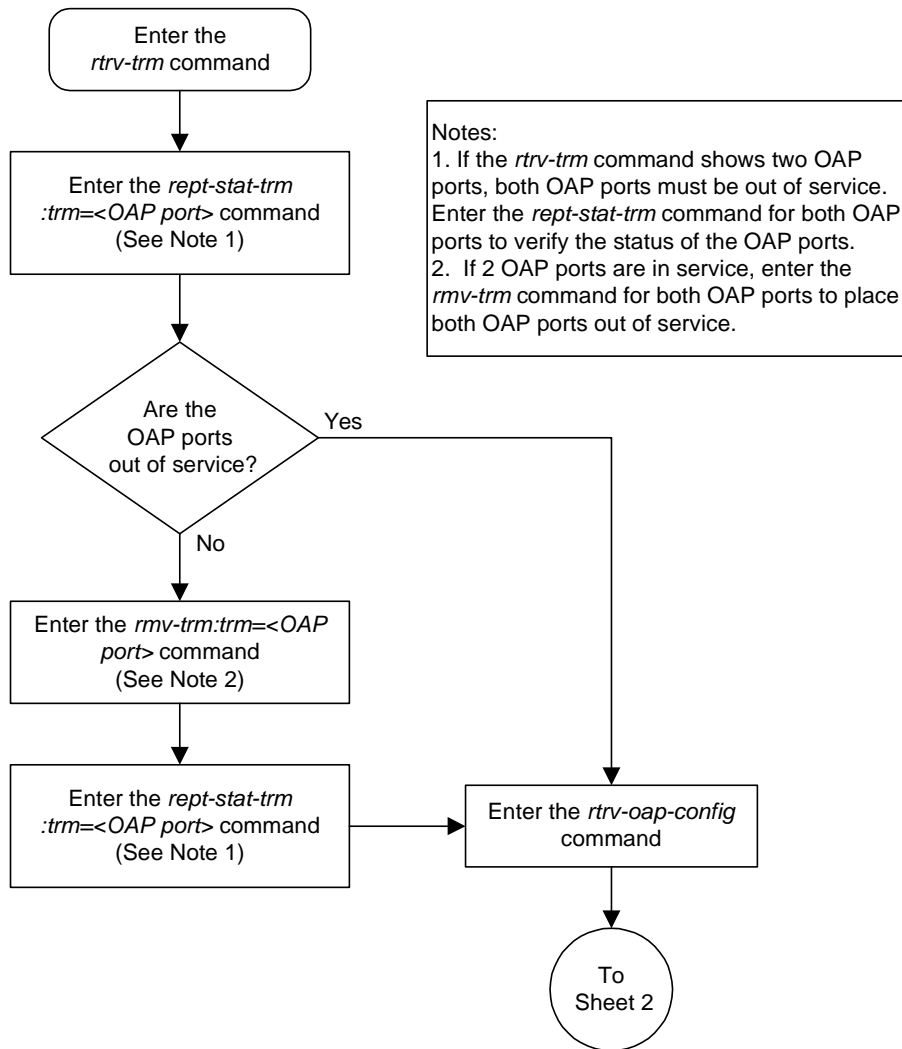
Command Completed.

If alarms are shown for the OAPs in either the **rept-stat-seas** or **rept-stat-lsms** outputs, contact the Tekelec Technical Services department (see "Tekelec Technical Services" on page 1-7).

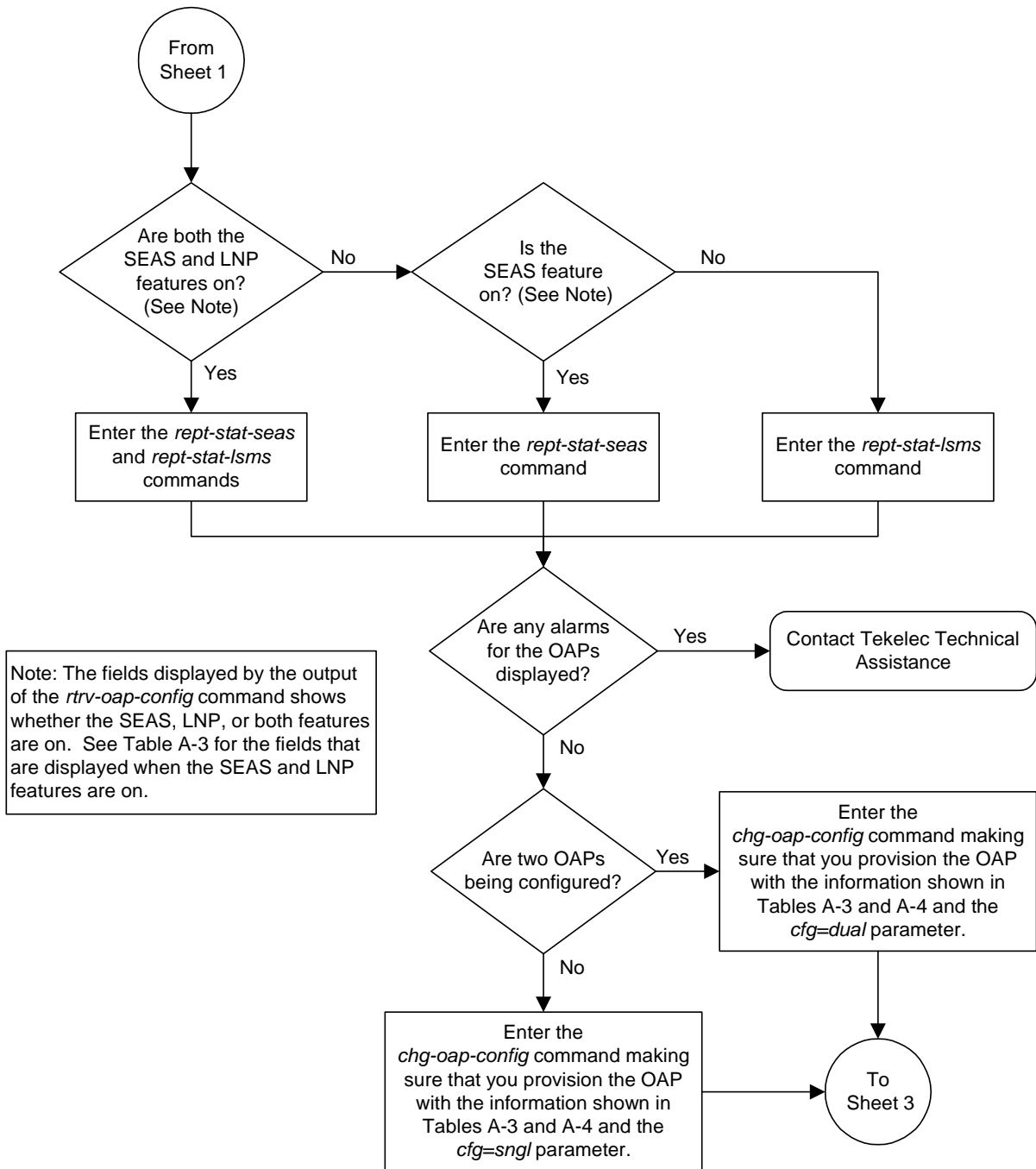
-
17. Back up the changes using the **chg-db:action=backup:dest=fixed** command. These messages appear; the active Maintenance and Administration Subsystem Processor (MASP) message appears first:

```
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.
```

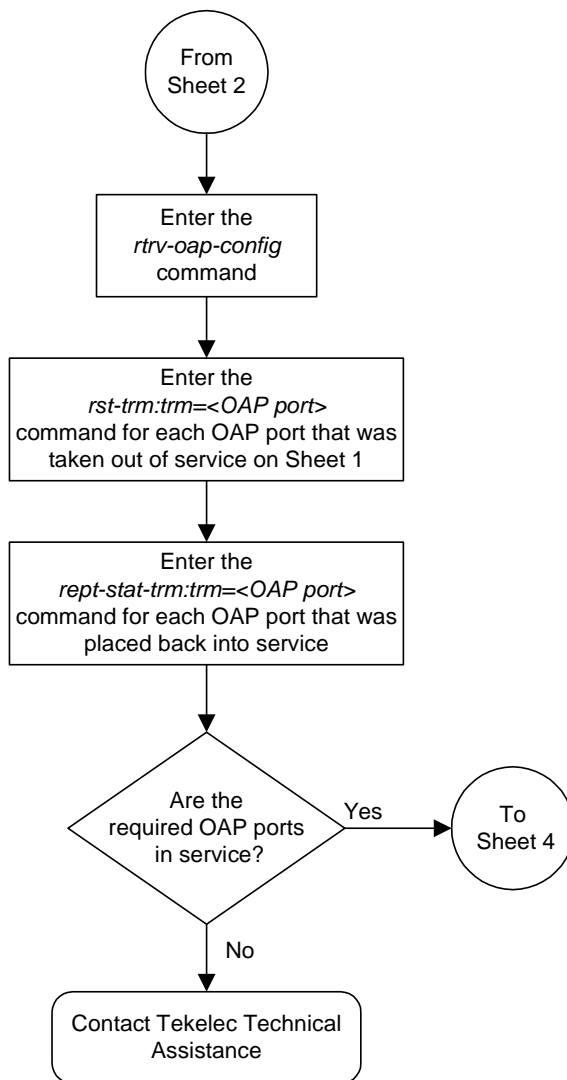
Flowchart A-3. Changing the OAP Configuration from the Eagle STP Terminal (Sheet 1 of 7)



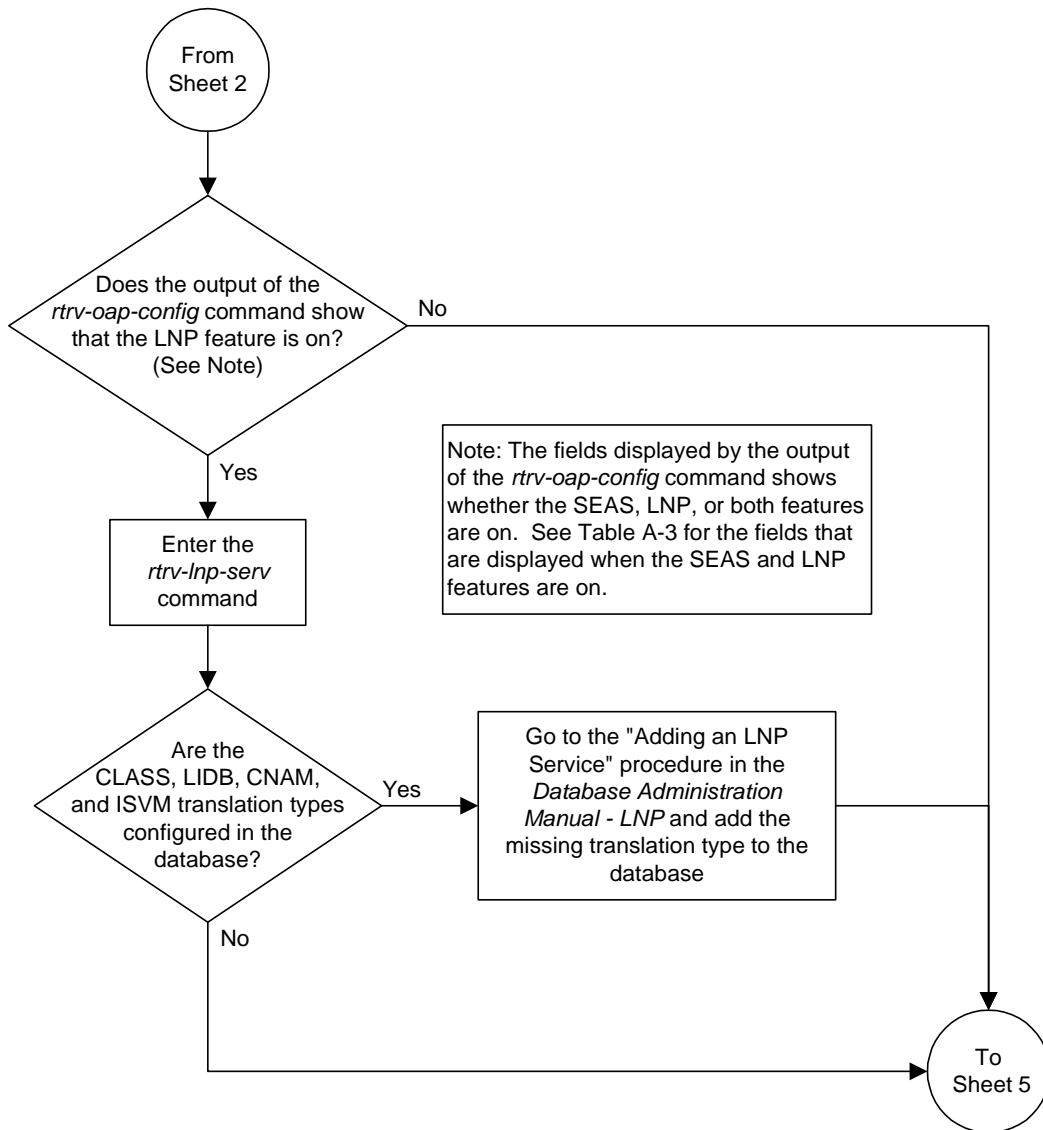
Flowchart A-3. Changing the OAP Configuration from the Eagle STP Terminal (Sheet 2 of 7)



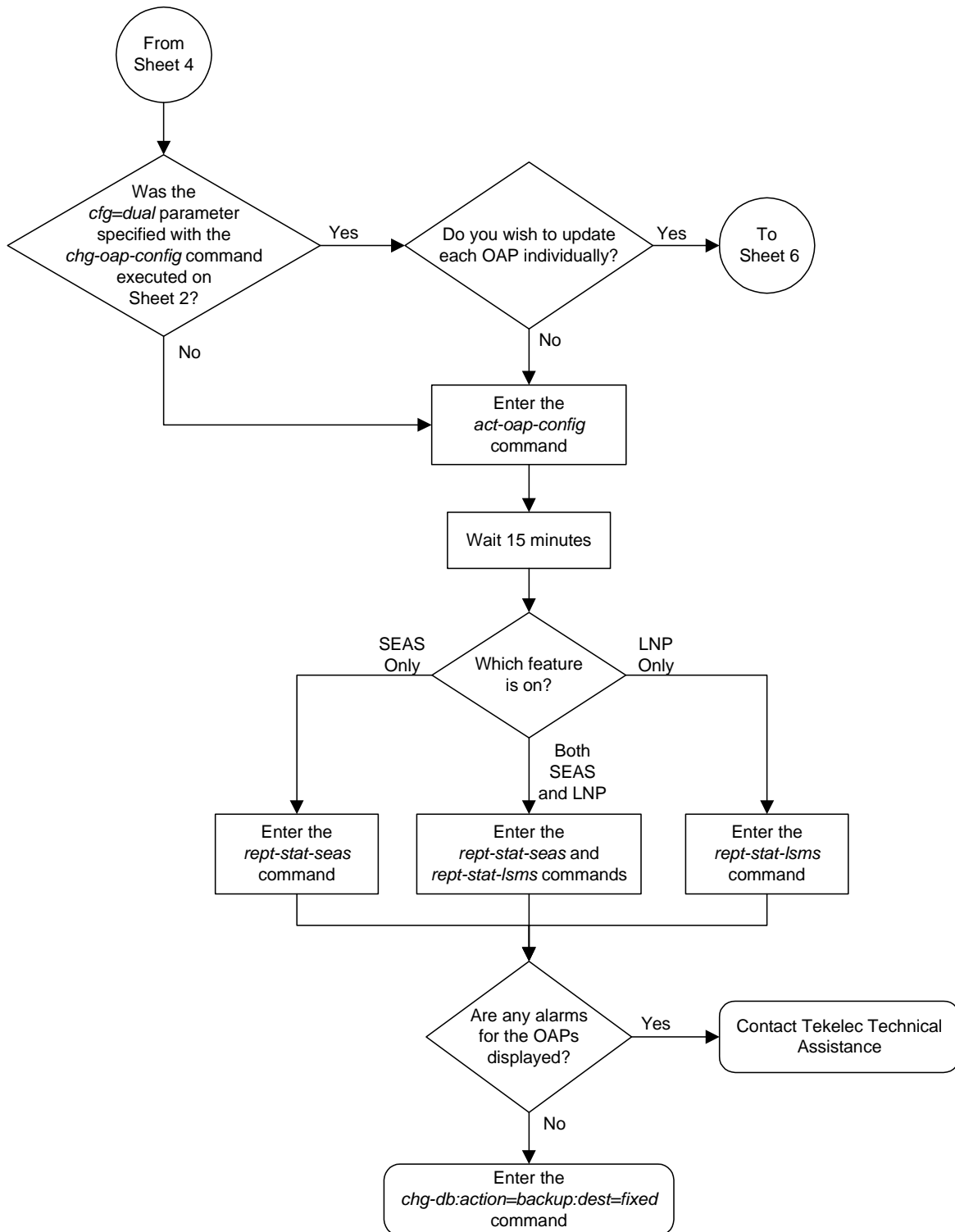
Flowchart A-3. Changing the OAP Configuration from the Eagle STP Terminal (Sheet 3 of 7)



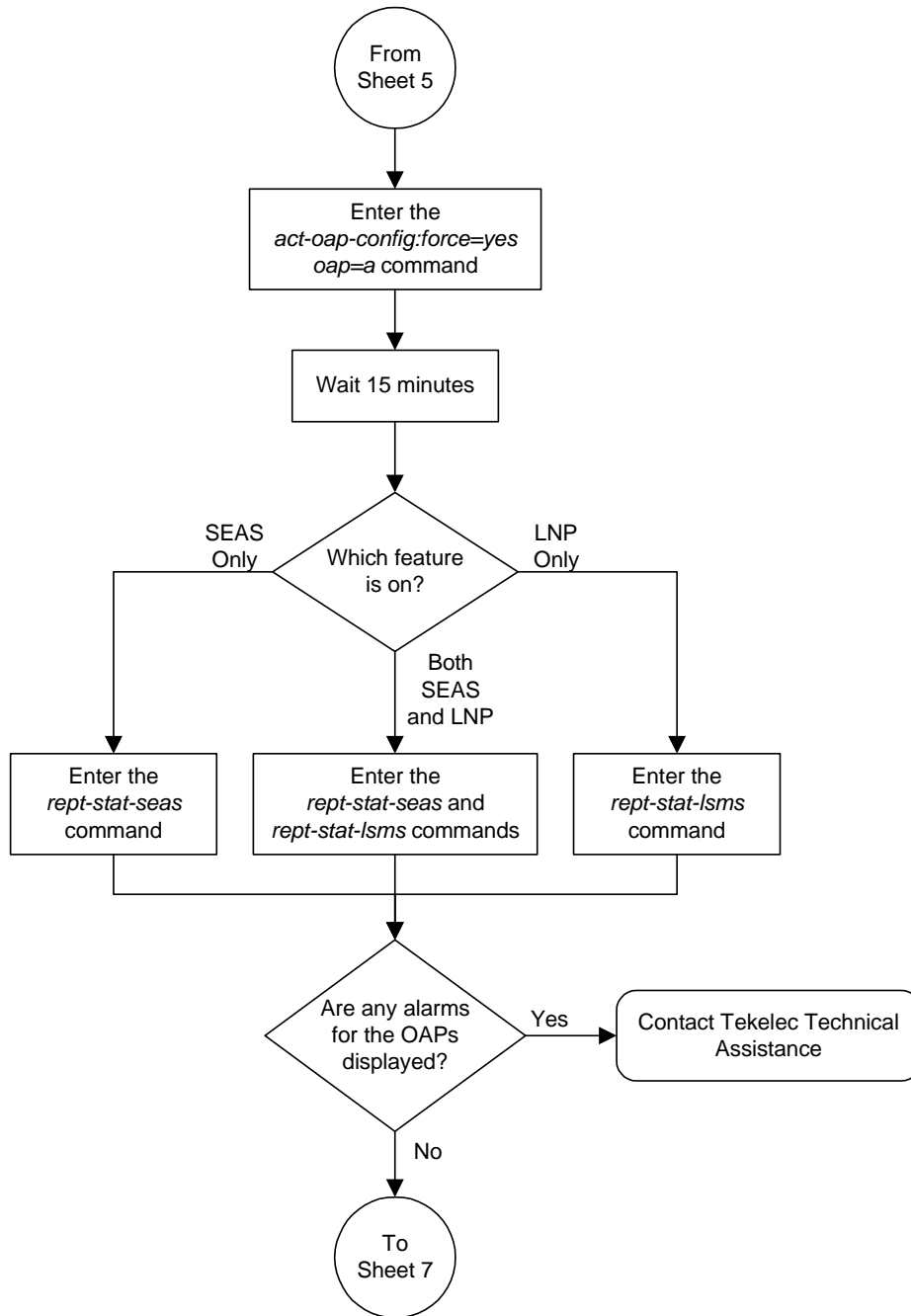
Flowchart A-3. Changing the OAP Configuration from the Eagle STP Terminal (Sheet 4 of 7)



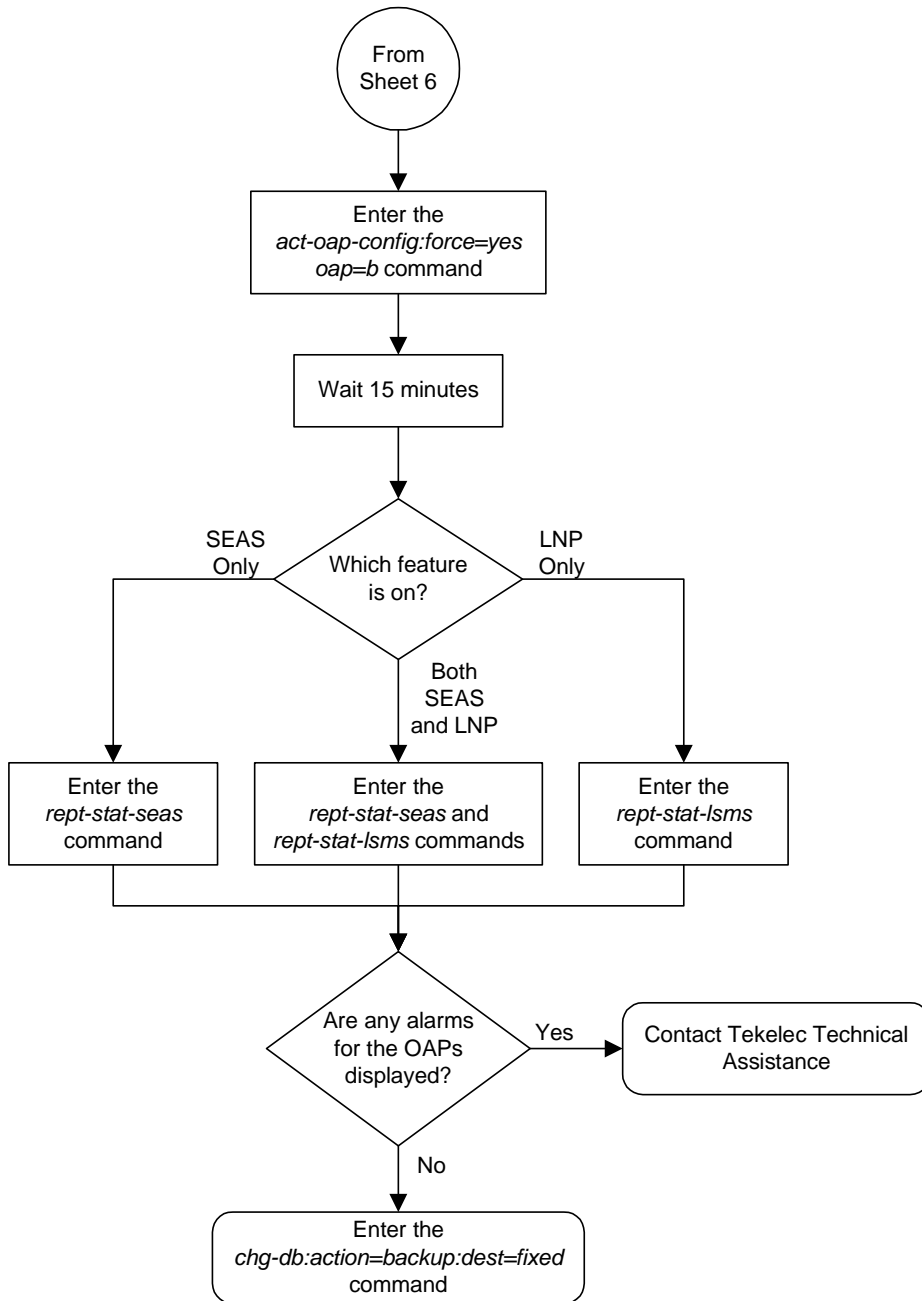
Flowchart A-3. Changing the OAP Configuration from the Eagle STP Terminal (Sheet 5 of 7)



Flowchart A-3. Changing the OAP Configuration from the Eagle STP Terminal (Sheet 6 of 7)



Flowchart A-3. Changing the OAP Configuration from the Eagle STP Terminal (Sheet 7 of 7)



VI Editor Quick Reference

<p>Invoke <i>vi</i> by typing <i>vi <filename></i>. <i>vi</i> begins in command mode. Start input mode with any of the “Entering Text” commands listed below. Return to command mode by typing the command again. Commands with a # before them denote to repeat the command a number of times or to move to the line of the same number.</p>		
Function	Command	Description
Scrolling	CTRL-d	scroll down a half screen
	CTRL-u	scroll up a half screen
	CTRL-f	scroll forward a screen
	CTRL-b	scroll backward a screen
Cursor Positioning	<#>j	down # of lines
	<#>k	up # of lines
	<#>h	left # of spaces
	<#>l	right # of spaces
	arrow keys	replace h, j, k, and l commands
	<#>G	line # of the file
	G	last line of the file
	H	top of the screen
	M	middle of the screen
	L	last line of the screen
	0 (zero)	beginning of current line
	\$	end of current line
Entering Text	a	append text after cursor
	i	insert text before cursor
	o	open a new line below the current line
	O	open a new line above the current line

<p>Invoke <i>vi</i> by typing <i>vi <filename></i>. <i>vi</i> begins in command mode.</p> <p>Start input mode with any of the “Entering Text” commands listed below.</p> <p>Return to command mode by typing the command again.</p> <p>Commands with a # before them denote to repeat the command a number of times or to move to the line of the same number.</p>		
Function	Command	Description
Changing Text	<#>x	delete # of characters after and including cursor
	<#>dd	delete # of lines including current line
	D	delete remainder of line to the right of cursor
	J	join next line to the current line
	r	replace character with the next typed character
Copying Changes	<#>yy or <#>Y	yank # of lines, including current line to clipboard
	P	put line from clipboard below the current line
Undoing Changes	u	undoes last command
	U	undoes all changes made to current line before leaving line
Searching and Replacing	/pattern	search for next occurrence of pattern
	?pattern	search for preceding occurrence of pattern
	n	repeat the last search in the same direction
	N	repeat the last search in the opposite direction
Saving Text and Exiting vi	:w	write to disk and remain in vi
	:q	quit, ignoring changes since last <i>w</i>
	:q!	emphatic quit; use when <i>q</i> fails
	:wq	write to disk and quit vi
	ZZ	same as <i>:wq</i>
Miscellaneous	.	repeat last change
	u	undo last change

B

Controlled Feature Activation Procedures

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Activating the Eagle OAM IP Security Enhancement Controlled Feature	B-12
Activating the 15 Minute Measurements Controlled Feature.....	B-26
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Introduction

Controlled features are features that are activated using a feature access key. These features can either be on or off, or features that operate at a particular performance level. Only the controlled features that are used in this manual are covered in this appendix.

The feature access key allows the user to enable and activate a controlled feature in the system by entering either a permanent feature access key or a temporary feature access key. By requiring a feature access key to enable and activate a controlled feature, unauthorized enabling and activation of a controlled feature can be prevented. The feature access key is supplied by Tekelec.

Features enabled with a permanent feature access key remain enabled for as long as the system remains in service. Once features are permanently enabled, they cannot be disabled.

Features enabled with a temporary feature access key are enabled for only 30 days. On the twenty-third day, seven days before the temporary key expires, a major alarm (UAM 0367) is generated to inform the user that the one or more temporary feature access keys will expire soon.

```
0367.0181  ** SYSTEM      Temp Key(s) expiring soon.
```

If a temporary feature access key expires, the controlled feature is disabled and a critical alarm (UAM 0368) is generated.

```
0368.0181  *C SYSTEM      Temp Key(s) have expired.
```

Any attempts to enable the controlled feature with the temporary feature access key are rejected. The controlled feature can be enabled only by entering the permanent feature access key for the controlled feature.

To clear the critical alarm (UAM 0368), the user can either enter the **chg-ctrl-feat** command with the **alarm=clear** parameter, or permanently enable the controlled feature by entering the permanent feature access key for the controlled feature.

If the critical alarm is cleared with the **chg-ctrl-feat** command, the controlled feature is disabled and cannot be enabled with the temporary feature access key. The feature can be enabled only by entering the permanent feature access key for the controlled feature.

Activating Controlled Features

This procedure is used to enable and activate these controlled features, Command Class Management, IP User Interface, and Network Security Enhancements, using the feature's part number and a feature access key for each feature.

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 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.

NOTE: To enter and lock the system's serial number, the **ent-serial-num** command must be entered twice, once to add the correct serial number to the database with the **serial** parameter, then again with the **serial** and the **lock=yes** parameters to lock the serial number. You should verify that the serial number in the database is correct before locking the serial number. The serial number can be found on a label affixed to the control shelf (shelf 1100).

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.

The part numbers for the Command Class Management, IP User Interface, and Network Security Enhancements features are:

- Command Class Management – 893005801
- Telnet (IP User Interface) – 893005701
- Network Security Enhancements – 893009101

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 04-06-01 21:15:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
```

Feature Name	Partnum	Status	Quantity
IPGWx Signaling TPS	893012814	on	20000
ISUP Normalization	893000201	on	----
Command Class Management	893005801	off	----
LNP Short Message Service	893006601	on	----
Intermed GTT Load Sharing	893006901	off	----
XGTT Table Expansion	893006101	off	----
XMAP Table Expansion	893007710	on	3000
Large System # Links	893005910	on	2000
Routesets	893006401	on	6000

```
The following features have been temporarily enabled:
```

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

```
The following features have expired temporary keys:
```

Feature Name	Partnum
Zero entries found.	

If the **rtrv-ctrl-feat** output shows that the controlled feature is permanently enabled, and its status is **on**, no further action is necessary.

If the controlled feature is permanently enabled, and its status is **off**, skip steps 2 through 4, and go to step 5.

If the controlled feature is temporarily enabled, and you wish to permanently enable this feature, or the temporary feature access key for that feature has expired, skip steps 2 and 3, and go to step 4.

Controlled Feature Activation Procedures

If the controlled feature is to remain temporarily enabled, and its status is **off**, skip steps 2 through 4, and go to step 5. If the feature's status is **on**, no further action is necessary.

If the controlled feature is to remain temporarily enabled, and its status is **on**, no further action is necessary.

NOTE: If the `rtrv-ctrl-feat` output in step 1 shows any controlled features, skip steps 2 and 3, and go to step 4.

2. Display the serial number in the database with the `rtrv-serial-num` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
System serial number = ntxxxxxxxxxxxxxx

System serial number is not locked.

rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
Command Completed
```

NOTE: If the serial number is correct and locked, skip steps 3, 4, and 5, and go to step 6. If the serial number is correct but not locked, skip steps 3 and 4, and go to step 5. If the serial number is not correct, but is locked, this feature cannot be enabled and the remainder of this procedure cannot be performed. Contact Tekelec Technical Services to get an incorrect and locked serial number changed. See "Tekelec Technical Services" on page 1-7. The serial number can be found on a label affixed to the control shelf (shelf 1100).

3. Enter the correct serial number into the database using the `ent-serial-num` command with the `serial` parameter.

For this example, enter this command.

```
ent-serial-num:serial=<system's correct serial number>
```

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

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
ENT-SERIAL-NUM: MASP A - COMPLTD
```

4. Verify that the serial number entered into step 3 was entered correctly using the `rtrv-serial-num` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
System serial number = nt00001231

System serial number is not locked.

rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
Command Completed
```

If the serial number was not entered correctly, repeat steps 3 and 4 and re-enter the correct serial number.

- Lock the serial number in the database by entering the `ent-serial-num` command with the serial number shown in step 2, if the serial number shown in step 2 is correct, or with the serial number shown in step 4, if the serial number was changed in step 3, and with the `lock=yes` parameter.

For this example, enter this command.

```
ent-serial-num:serial=<system's serial number>:lock=yes
```

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

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
ENT-SERIAL-NUM: MASP A - COMPLTD
```

- Enable the controlled feature with either a permanent key or temporary key by entering the `enable-ctrl-feat` command. For this example, enter these commands.

```
enable-ctrl-feat:partnum=893005801:fak=xxxxxxxxxxxxxxxx
```

```
enable-ctrl-feat:partnum=893005701:fak=xxxxxxxxxxxxxxxx
```

```
enable-ctrl-feat:partnum=893009101:fak=xxxxxxxxxxxxxxxx
```

NOTE: The values for the feature access key (the `fak` parameter) are provided by Tekelec. The feature access key determines if the controlled feature is permanently or temporarily enabled. 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 04-06-01 21:15:37 GMT EAGLE5 31.6.0
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

NOTE: If a temporarily enabled feature was permanently enabled in step 4, and the status of the temporarily enabled feature was on, skip step 5 and go to step 6.

- The controlled features enabled in step 4 must be activated using the `chg-ctrl-feat` command, specifying the controlled feature part number used in step 4 and the `status=on` parameter. For this example, enter these commands.

```
chg-ctrl-feat:partnum=893005801:status=on
```

```
chg-ctrl-feat:partnum=893005701:status=on
```

```
chg-ctrl-feat:partnum=893009101:status=on
```

When the `chg-ctrl-feat` command has successfully completed, the following message should appear.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
CHG-CTRL-FEAT: MASP B - COMPLTD
```

Controlled Feature Activation Procedures

8. Verify the changes by entering the **rtrv-ctrl-feat** command with the part number specified in step 5.

```
rtrv-ctrl-feat:partnum=893005801
```

The following is an example of the possible output.

```
rlghncxa03w 04-06-01 21:16:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
Feature Name          Partnum    Status  Quantity
Command Class Management 893005801  on      ----
```

```
rtrv-ctrl-feat:partnum=893005701
```

The following is an example of the possible output.

```
rlghncxa03w 04-06-01 21:16:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
Feature Name          Partnum    Status  Quantity
Telnet                893005701  on      ----
```

```
rtrv-ctrl-feat:partnum=893009101
```

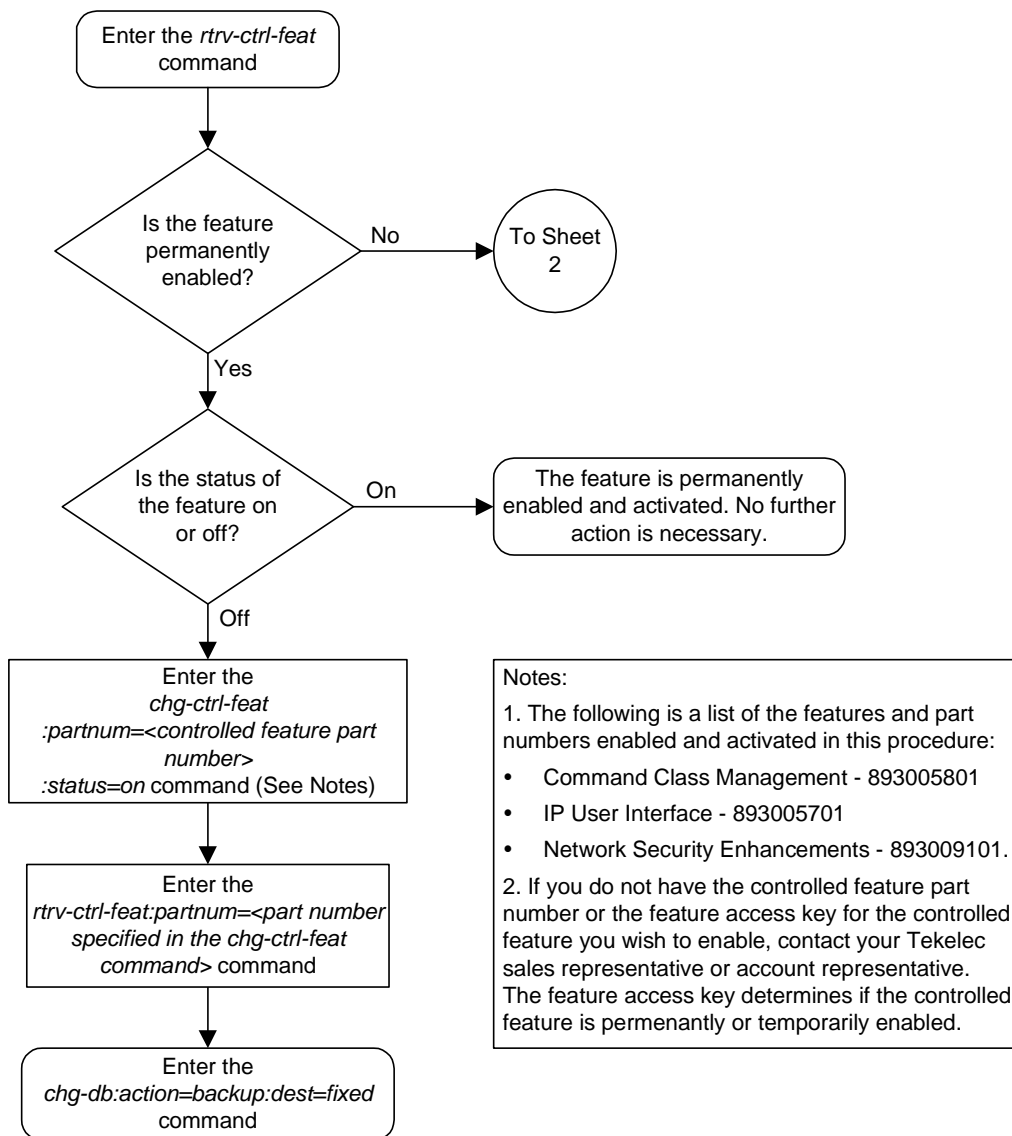
The following is an example of the possible output.

```
rlghncxa03w 04-06-01 21:16:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
Feature Name          Partnum    Status  Quantity
Network Security Enhance 893009101  on      ----
```

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

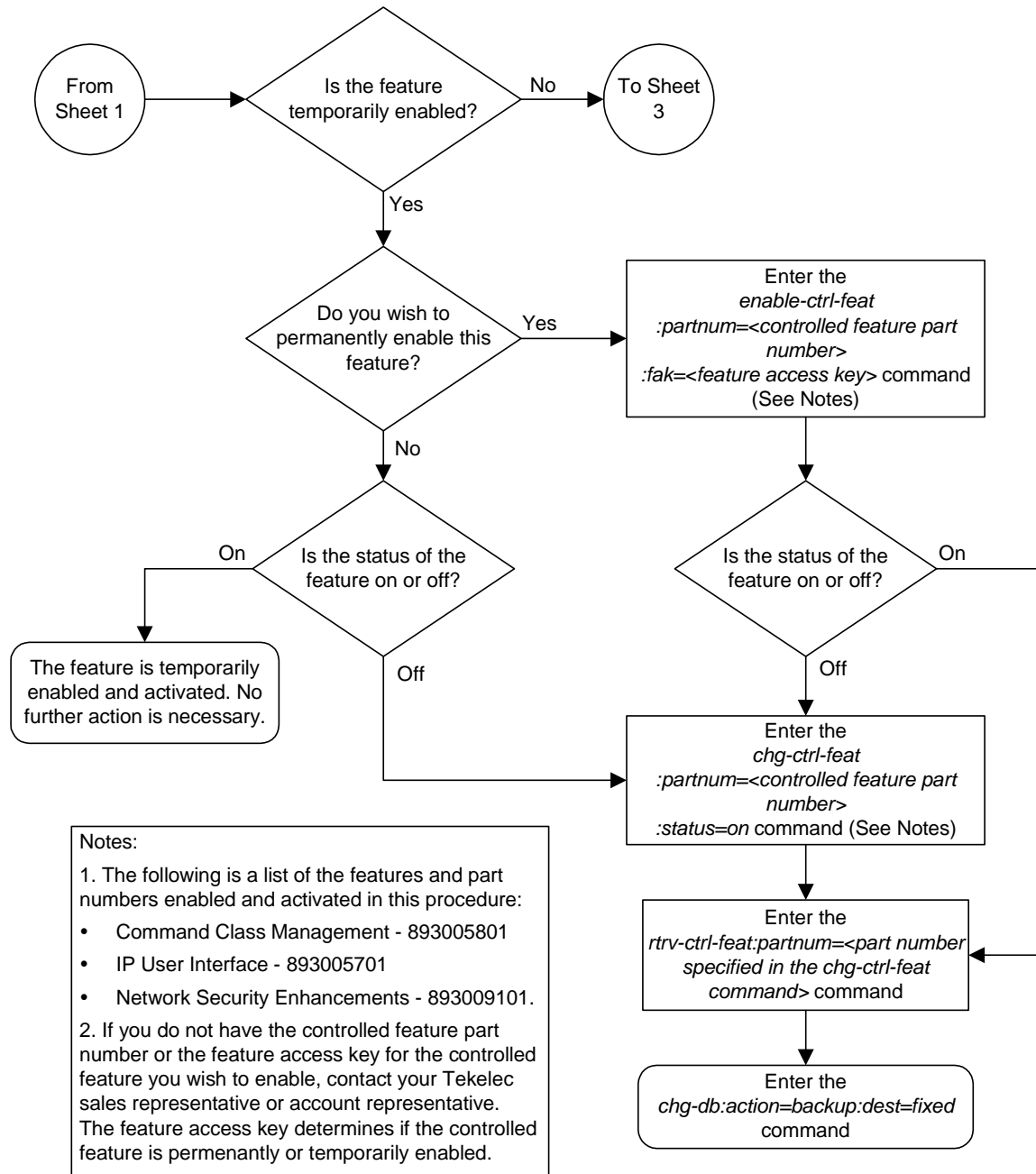
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Flowchart B-1. Activating Controlled Features (Sheet 1 of 4)

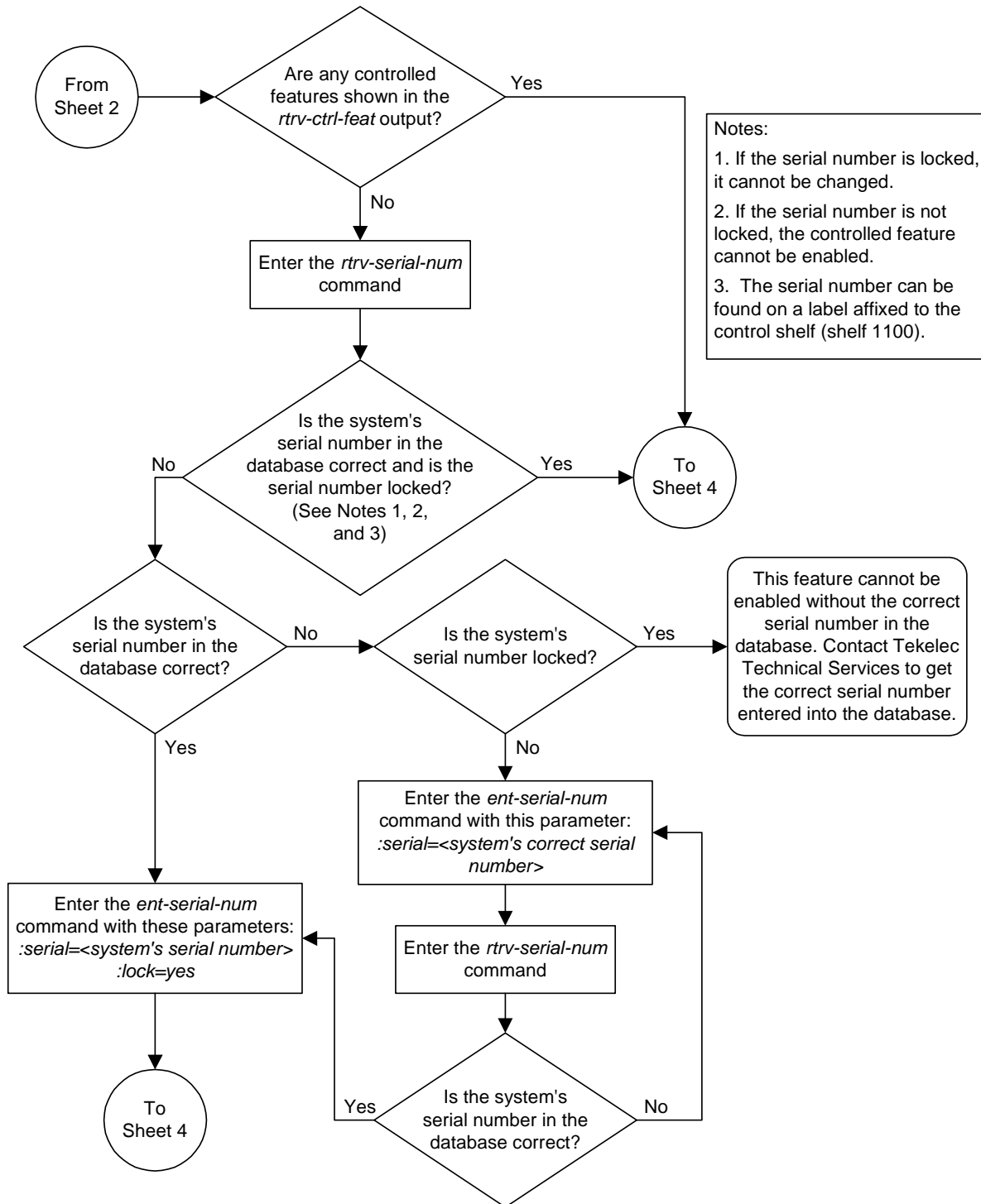


Controlled Feature Activation Procedures

Flowchart B-1. Activating Controlled Features (Sheet 2 of 4)

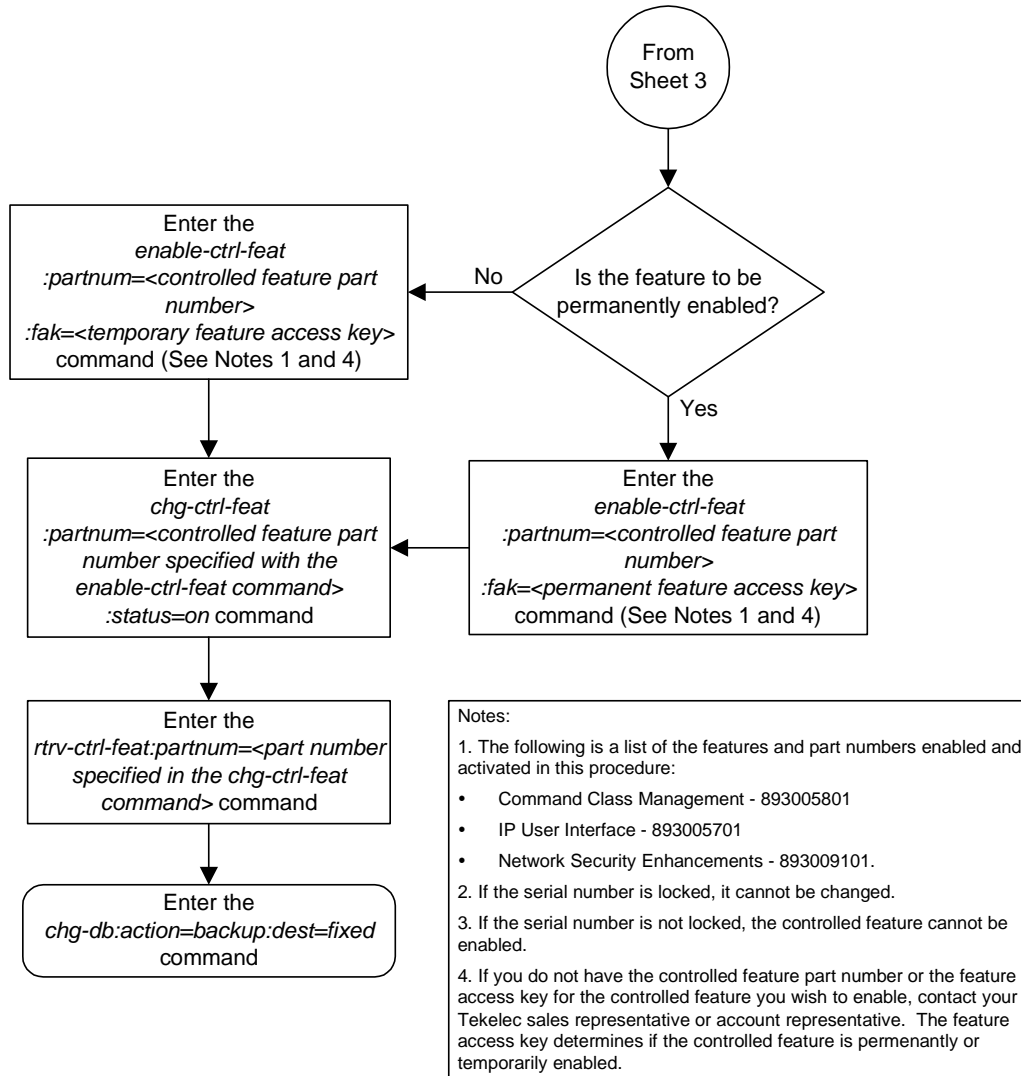


Flowchart B-1. Activating Controlled Features (Sheet 3 of 4)



Controlled Feature Activation Procedures

Flowchart B-1. Activating Controlled Features (Sheet 4 of 4)



Activating the Eagle OA&M IP Security Enhancement Controlled Feature

This procedure is used to enable and activate the Eagle OAM IP Security Enhancement Controlled Feature, using the feature's part number and a feature access key. This feature provides secure IP connections used by the IP User Interface (Telnet)FTP Retrieve and Replace features.

With the IP User Interface feature, a secure shell connection is established between the Eagle and the telnet terminals allowing passwords to be sent over the connection. This allows the system administrator to add new users to the Eagle (with the `ent-user` command) and to change the passwords of existing users (with the `pid` parameter of the `chg-user` command) from a telnet terminal.

If the Eagle OA&M IP Security Enhancements is enabled and activated, the FTRA must be configured to support secure connections to the Eagle. Go to the *FTP-Based Table Retrieve Application (FTRA) User Guide*, P/N 910-4341, for more information on using secure connections with the FTRA.

The Measurements Platform must support secure FTP servers. Go to the "Adding an FTP Server" procedure on page 4-158 for more information on configuring secure FTP servers for the Measurements Platform.



CAUTION: If Eagle OA&M IP Security Enhancements feature is activated with a temporary feature access key and that key expires, secure shell connections will become non-secure. Passwords can be transmitted on a non-secure connection, but cannot be assigned or changed. The `ent-user` command and `pid` parameter of the `chg-user` command cannot be used. File transfers using secure FTP cannot be performed unless non-secure FTP servers are available. It is recommended that the FTRA and the Measurements Platform is configured with secure and non-secure FTP servers.

To enable and activate this feature, the `enable-ctrl-feat`, `ent-serial-num`, and `chg-ctrl-feat` commands are used. For more information on these commands, go to the "Activating Controlled Features" procedure on page B-3, or the *Commands Manual*.

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 04-06-01 21:15:37 GMT EAGLE5 31.6.0
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	----

Controlled Feature Activation Procedures

```
Intermed GTT Load Sharing 893006901 off ----
XGTT Table Expansion      893006101 off ----
XMAP Table Expansion      893007710 on   3000
Large System # Links      893005910 on   2000
Routesets                  893006401 on   6000
```

The following features have been temporarily enabled:

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

The following features have expired temporary keys:

```
Feature Name          Partnum
Zero entries found.
```

If the `rtrv-ctrl-feat` output shows that the controlled feature is permanently enabled, and its status is `on`, no further action is necessary.

If the controlled feature is permanently enabled, and its status is `off`, skip steps 2 through 6, and go to step 7.

If the controlled feature is temporarily enabled, and you wish to permanently enable this feature, or the temporary feature access key for that feature has expired, skip steps 2 through 5, and go to step 6.

If the controlled feature is to remain temporarily enabled, and its status is `off`, skip steps 2 through 6, and go to step 7. If the feature's status is `on`, no further action is necessary.

If the controlled feature is to remain temporarily enabled, and its status is `on`, no further action is necessary.

NOTE: If the `rtrv-ctrl-feat` output in step 1 shows any controlled features, skip steps 2 through 5, and go to step 6.

2. Display the serial number in the database with the `rtrv-serial-num` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
System serial number = ntxxxxxxxxxxxxxxx
System serial number is not locked.
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
Command Completed
```

NOTE: If the serial number is correct and locked, skip steps 3, 4, and 5, and go to step 6. If the serial number is correct but not locked, skip steps 3 and 4, and go to step 5. If the serial number is not correct, but is locked, this feature cannot be enabled and the remainder of this procedure cannot be performed. Contact Tekelec Technical Services to get an incorrect and locked serial number changed. See "Tekelec Technical Services" on page 1-7. The serial number can be found on a label affixed to the control shelf (shelf 1100).

3. Enter the correct serial number into the database using the `ent-serial-num` command with the `serial` parameter.

For this example, enter this command.

```
ent-serial-num:serial=<system's correct serial number>
```

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

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
ENT-SERIAL-NUM: MASP A - COMPLTD
```

4. Verify that the serial number entered into step 3 was entered correctly using the `rtrv-serial-num` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
System serial number = nt00001231
```

System serial number is not locked.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
Command Completed
```

If the serial number was not entered correctly, repeat steps 3 and 4 and re-enter the correct serial number.

5. Lock the serial number in the database by entering the `ent-serial-num` command with the serial number shown in step 2, if the serial number shown in step 2 is correct, or with the serial number shown in step 4, if the serial number was changed in step 3, and with the `lock=yes` parameter.

For this example, enter this command.

```
ent-serial-num:serial=<system's serial number>:lock=yes
```

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

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
ENT-SERIAL-NUM: MASP A - COMPLTD
```

6. Enable the controlled 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=893400001:fak=<feature access key>
```

NOTE: The values for the feature access key (the `fak` parameter) are provided by Tekelec. The feature access key determines if the controlled feature is permanently or temporarily enabled. 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 04-06-01 21:15:37 GMT EAGLE5 31.6.0
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

Controlled Feature Activation Procedures

NOTE: If the feature was temporarily enabled before being permanently enabled in step 6, and the status of the temporarily enabled feature was on, skip steps 7 through 12, and go to step 13.

- Before the status of the Eagle OAM IP Security Enhancements controlled feature can be changed to **on**, all ISPMs, if present, must be taken out of service. Before the ISPMs can be taken out of service, all telnet terminals associated with the IPSMs must be taken out of service. Enter the **rtrv-trm** command to display the terminals in the database. The following is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:08 GMT EAGLE5 31.6.0
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    VT320      9600-7-E-2 SW      30      9      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    VT320      9600-7-E-1 SW      30      7      00:30:00
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  TYPE      LOC      TMOUT  MXINV  DURAL      SECURE
17   TELNET    2107     60      5      00:30:00
18   TELNET    2107     60      5      00:30:00
19   TELNET    2107     60      5      00:30:00
20   TELNET    2107     60      5      00:30:00
21   TELNET    2107     60      5      00:30:00
22   TELNET    2107     60      5      00:30:00
23   TELNET    2107     60      5      00:30:00
24   TELNET    2107     60      5      00:30:00
25   TELNET    2108     60      5      00:30:00
26   TELNET    2108     60      5      00:30:00
27   TELNET    2108     60      5      00:30:00
28   TELNET    2108     60      5      00:30:00
29   TELNET    2108     60      5      00:30:00
30   TELNET    2108     60      5      00:30:00
31   TELNET    2108     60      5      00:30:00
32   TELNET    2108     60      5      00:30:00
33   TELNET    2111     60      5      00:30:00
34   TELNET    2111     60      5      00:30:00
35   TELNET    2111     60      5      00:30:00
36   TELNET    2111     60      5      00:30:00
37   TELNET    2111     60      5      00:30:00
38   TELNET    2111     60      5      00:30:00
39   TELNET    2111     60      5      00:30:00
40   TELNET    2111     60      5      00:30:00

TRM  TRAF  LINK  SA  SYS  PU  DB  UIMRD
1    NO   YES  NO  YES  NO  YES  YES
2    NO   NO   NO  NO  NO  NO  NO
.
.
.
39   NO   NO   NO  NO  NO  NO  NO
40   NO   NO   NO  NO  NO  NO  NO
```

```

APP APP
TRM  SERV SS  CARD CLK DBG GTT GWS MEAS MON MPS SEAS SLAN
1    YES  YES YES  YES YES YES  YES YES YES  YES YES NO  NO
2    YES  YES YES  YES YES YES  YES YES YES  YES YES NO  NO
.
.
.
39   NO   NO NO   NO  NO NO   NO NO NO   NO NO NO  NO
40   NO   NO NO   NO  NO NO   NO NO NO   NO NO NO  NO

```

NOTE: If the `rtrv-trm` output in step 7 shows no telnet terminals, skip steps 8 through 11, and go to step 12.

8. Display the status of the IPSMs by entering the `rept-stat-card` command with the card location of each IPSM shown in the output of step 7.

rept-stat-card:loc=2107

This is an example of the possible output.

```

rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0
CARD  VERSION      TYPE      APPL      PST      SST      AST
2107  114-001-000  IPSM      IPS       IS-NR    Active   -----

ALARM STATUS      = No Alarms.
BPDCM GPL         = 002-122-000
IMT BUS A         = Conn
IMT BUS B         = Conn
Command Completed.

```

rept-stat-card:loc=2108

This is an example of the possible output.

```

rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0
CARD  VERSION      TYPE      APPL      PST      SST      AST
2108  114-001-000  IPSM      IPS       IS-NR    Active   -----

ALARM STATUS      = No Alarms.
BPDCM GPL         = 002-122-000
IMT BUS A         = Conn
IMT BUS B         = Conn
Command Completed.

```

rept-stat-card:loc=2111

This is an example of the possible output.

```

rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0
CARD  VERSION      TYPE      APPL      PST      SST      AST
2111  114-001-000  IPSM      IPS       IS-NR    Active   -----

ALARM STATUS      = No Alarms.
BPDCM GPL         = 002-122-000
IMT BUS A         = Conn
IMT BUS B         = Conn
Command Completed.

```

If all the IPSMs are out of service, shown by the entry `OOS-MT-DSBLD` in the `PST` column, skip steps 9 and 10, and go to step 11.

Controlled Feature Activation Procedures

9. Display the status of the terminals by entering the `rept-stat-trm` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
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    -----
17  IS-NR      Active    -----
18  IS-NR      Active    -----
19  IS-NR      Active    -----
20  IS-NR      Active    -----
21  IS-NR      Active    -----
22  IS-NR      Active    -----
23  IS-NR      Active    -----
24  IS-NR      Active    -----
25  IS-NR      Active    -----
26  IS-NR      Active    -----
27  IS-NR      Active    -----
28  IS-NR      Active    -----
29  IS-NR      Active    -----
30  IS-NR      Active    -----
31  IS-NR      Active    -----
32  IS-NR      Active    -----
33  IS-NR      Active    -----
34  IS-NR      Active    -----
35  IS-NR      Active    -----
36  IS-NR      Active    -----
37  IS-NR      Active    -----
38  IS-NR      Active    -----
39  IS-NR      Active    -----
40  IS-NR      Active    -----
```

Command Completed.

NOTE: If all the terminals associated with the IPSMs being taken out of service are out of service, shown by the entry `OOS-MT-DSBLD` in the `PST` column, skip step 10 and go to step 11.

10. Place the terminals associated with the IPSMs being taken out of service using the `rmv-trm` command with the terminal number shown in step 7. For this example, enter these commands.

```
rmv-trm:trm=17
rmv-trm:trm=18
rmv-trm:trm=19
rmv-trm:trm=20
rmv-trm:trm=21
rmv-trm:trm=22
rmv-trm:trm=23
rmv-trm:trm=24
rmv-trm:trm=25
rmv-trm:trm=26
rmv-trm:trm=27
rmv-trm:trm=28
rmv-trm:trm=29
rmv-trm:trm=30
rmv-trm:trm=31
rmv-trm:trm=32
rmv-trm:trm=33
rmv-trm:trm=34
rmv-trm:trm=35
rmv-trm:trm=36
rmv-trm:trm=37
rmv-trm:trm=38
rmv-trm:trm=39
rmv-trm:trm=40
```



CAUTION: Placing these terminals out of service will disable any Telnet sessions running on these terminals.

If the status of any terminals associated with the IPSM being removed shown in the `PST` field in step 9 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.

Controlled Feature Activation Procedures

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

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Inhibit message sent to terminal
```

```
rlghncxa03w 04-06-01 15:08:45 GMT EAGLE5 31.6.0
Command Completed.
```

11. Place the IPSMs out of service using the **rmv-card** command, specifying the card location of the IPSM. For this example, enter this command.

```
rmv-card:loc=2107
```

```
rmv-card:loc=2108
```

```
rmv-card:loc=2111
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0
Card has been inhibited.
```

12. The controlled feature enabled in step 6 must be activated using the **chg-ctrl-feat** command, specifying the controlled feature part number used in step 6 and the **status=on** parameter. For this example, enter this command.

```
chg-ctrl-feat:partnum=893400001:status=on
```

When the **chg-ctrl-feat** command has successfully completed, the following message should appear.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
CHG-CTRL-FEAT: MASP B - COMPLTD
```

13. Verify the changes by entering the **rtrv-ctrl-feat** command with the part number specified in step 12.

```
rtrv-ctrl-feat:partnum=893400001
```

The following is an example of the possible output.

```
rlghncxa03w 04-06-01 21:16:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
Feature Name          Partnum    Status    Quantity
EAGLE OAM IP Security 893400001 on        ----
```

NOTE: If steps 7 through 11 were not performed, skip steps 14 and 15, and go to step 16.

14. Place the terminals that were taken out of service in step 10 back into service by entering the `rst-trm` command with the terminal numbers specified in step 10. For this example, enter these commands.

```
rst-trm:trm=17
rst-trm:trm=18
rst-trm:trm=19
rst-trm:trm=20
rst-trm:trm=21
rst-trm:trm=22
rst-trm:trm=23
rst-trm:trm=24
rst-trm:trm=25
rst-trm:trm=26
rst-trm:trm=27
rst-trm:trm=28
rst-trm:trm=29
rst-trm:trm=30
rst-trm:trm=31
rst-trm:trm=32
rst-trm:trm=33
rst-trm:trm=34
rst-trm:trm=35
rst-trm:trm=36
rst-trm:trm=37
rst-trm:trm=38
rst-trm:trm=39
rst-trm:trm=40
```

15. Place the ISPMs back into service by entering the **rst-card** command with the card locations specified in step 11. For this example, enter this command.

```
rst-card:loc=2107
```

```
rst-card:loc=2108
```

```
rst-card:loc=2111
```

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

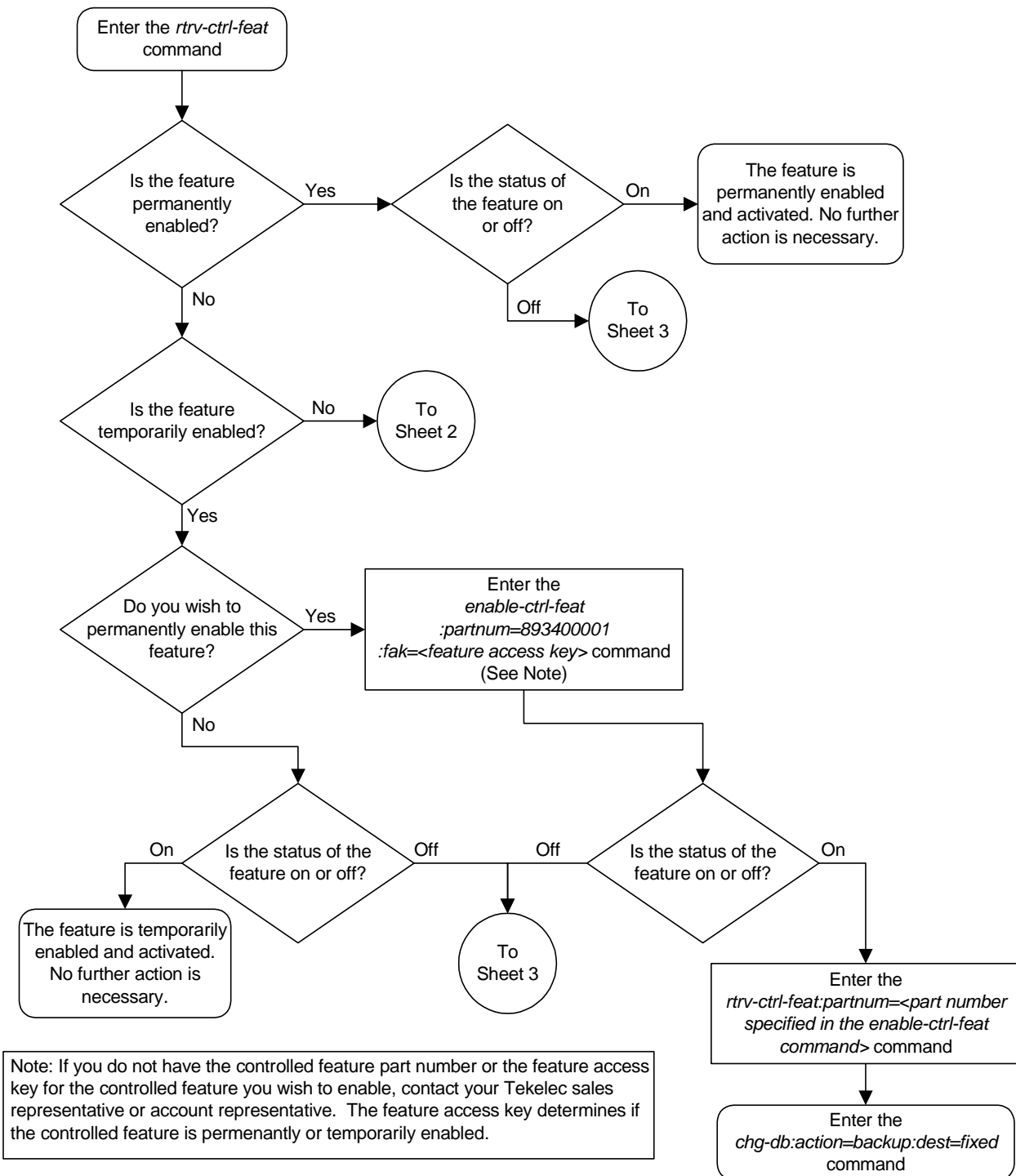
```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0  
Card has been allowed.
```

When the IPSPMs are placed into service with the **rst-card** command, UIM 1494, SSH Host Keys Loaded, is displayed. UIM 1494 contains the public host key fingerprint which is used to establish a secure connection with an SSH client. If the secure connection is to be made with the FTRA, the public host key fingerprint displayed in UIM 1494 must be added to the **hosts.xml** file in the FTRA. Record the public host key fingerprint information displayed in UIM 1494 if a secure connection to the FTRA will be made. For more information about editing the **hosts.xml** file on the FTRA, see the *FTP-Based Table Retrieve Application (FTRA) User Guide*, P/N 910-4341.

16. 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.

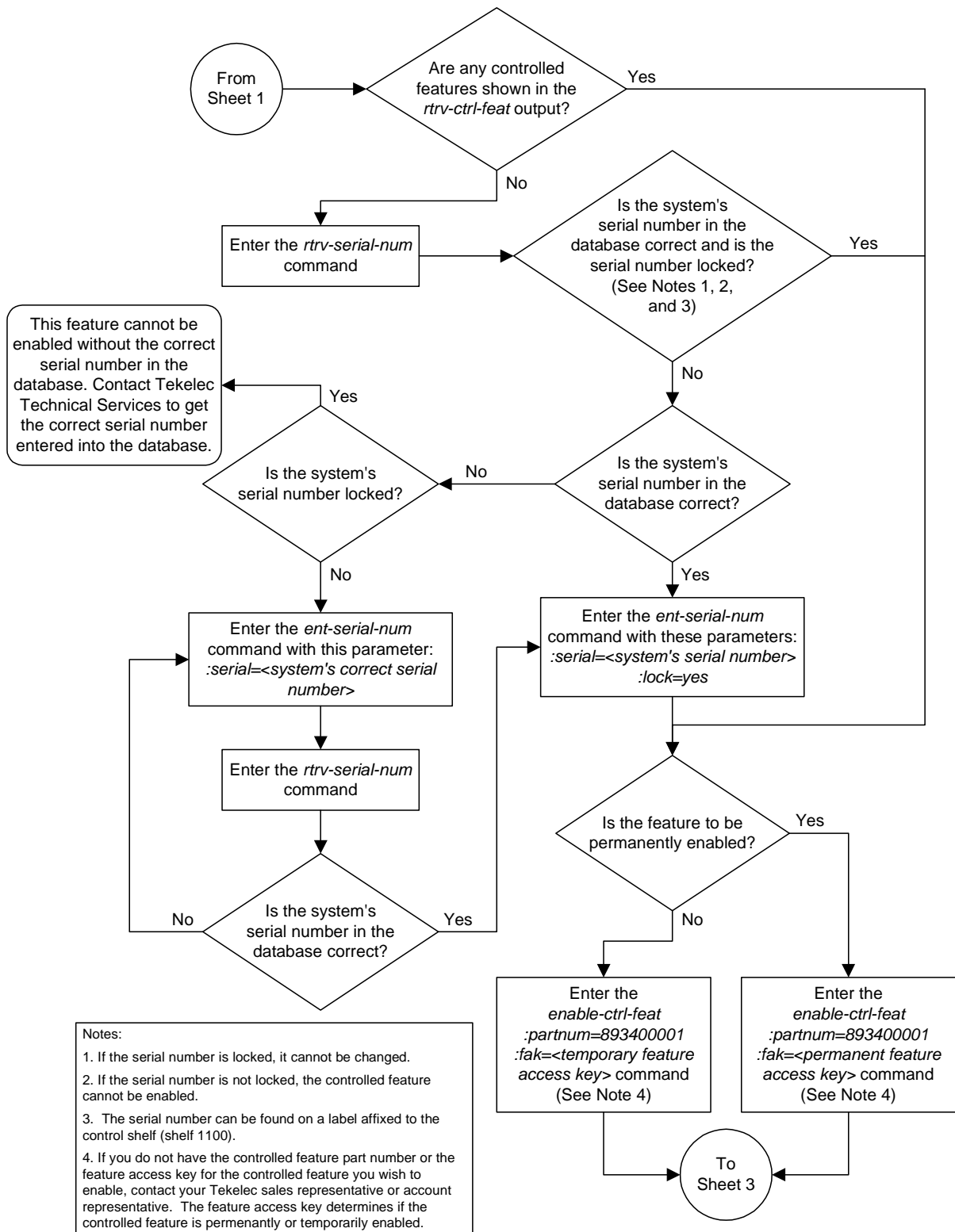
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.  
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.  
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.  
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Flowchart B-2. Activating the Eagle OAM IP Security Enhancement Controlled Feature (Sheet 1 of 4)

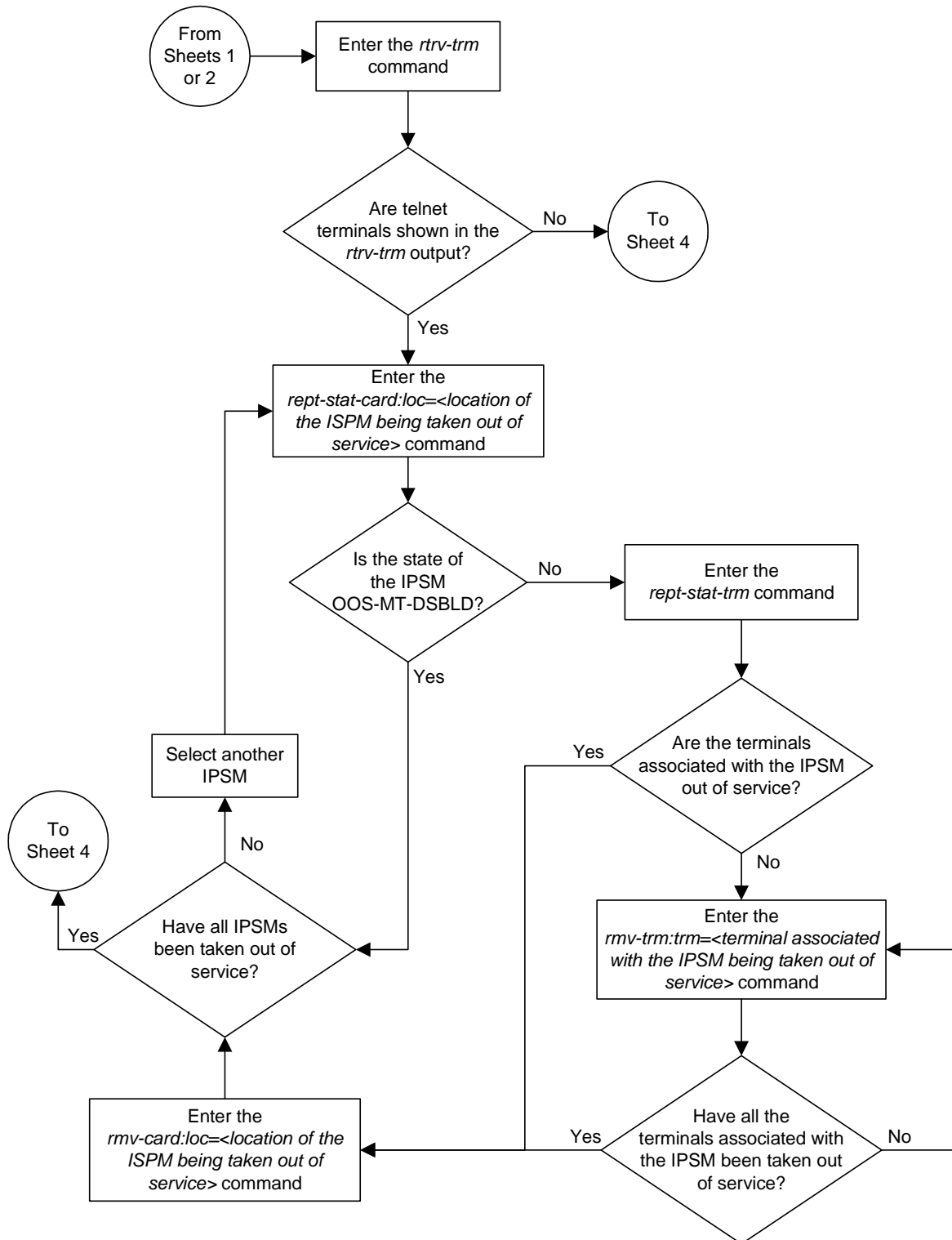


Controlled Feature Activation Procedures

Flowchart B-2. Activating the Eagle OAM IP Security Enhancement Controlled Feature (Sheet 2 of 4)

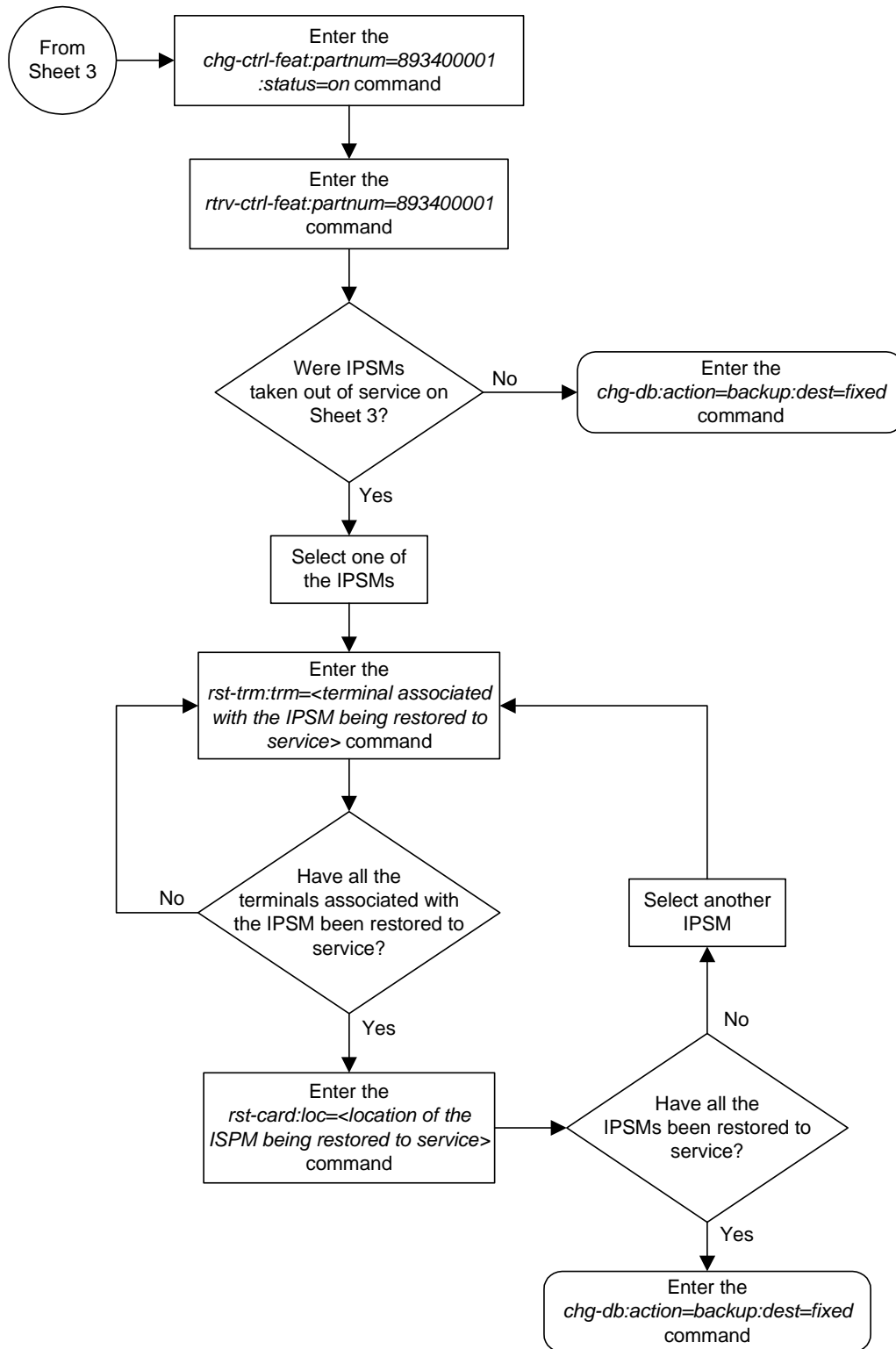


Flowchart B-2. Activating the Eagle OAM IP Security Enhancement Controlled Feature (Sheet 3 of 4)



Controlled Feature Activation Procedures

Flowchart B-2. Activating the Eagle OAM IP Security Enhancement Controlled Feature (Sheet 4 of 4)



Activating the 15 Minute Measurements Controlled Feature

This procedure is used to enable and activate the 15 Minute Measurements controlled feature, using the feature's part number and a feature access key. This feature allows Eagle measurements to be collected every 15 minutes.

To enable and activate the 15 Minute Measurements controlled feature, the following requirements must be met:

- The Measurements Platform feature must be on.
- The Eagle must be configured to use the Measurements Platform.
- MCPMs must be provisioned in the database, and the state of all these MCPMs must be IS-NR.
- No DCMs running the EMDC application (DCM-EMDC cards) can be present in the Eagle.

After the 15 Minute Measurements controlled feature is enabled and activated, the 15 minute measurement collection option in the measurement options table must be turned on.

To enable and activate this feature, the `enable-ctrl-feat`, `ent-serial-num`, and `chg-ctrl-feat` commands are used. For more information on these commands, go to the "Activating Controlled Features" procedure on page B-3, or the *Commands Manual*.

NOTE: This feature can only be permanently enabled with the `enable-ctrl-feat` command. Once this feature is activated with the `chg-ctrl-feat` command, it cannot be deactivated with the `chg-ctrl-feat:status=off` command.

Procedure

1. Display the status of the 15 Minute Measurements controlled features by entering the `rtrv-ctrl-feat` command. The following is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
```

Feature Name	Partnum	Status	Quantity
IPGWx Signaling TPS	893012814	on	20000
ISUP Normalization	893000201	on	----
Command Class Management	893005801	off	----
LNP Short Message Service	893006601	on	----
Intermed GTT Load Sharing	893006901	off	----
XGTT Table Expansion	893006101	off	----
XMAP Table Expansion	893007710	on	3000
Large System # Links	893005910	on	2000
Routesets	893006401	on	6000
15 Minute Measurements	893012101	off	----

Controlled Feature Activation Procedures

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 15 Minute Measurements controlled feature is permanently enabled, and its status is `on`, no further action is necessary.

If the 15 Minute Measurements controlled feature is permanently enabled, and its status is `off`, skip steps 2 through 6, and go to step 7.

NOTE: If the `rtrv-ctrl-feat` output in step 1 shows any controlled features, skip steps 2 through 5, and go to step 6.

2. Display the serial number in the database with the `rtrv-serial-num` command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
System serial number = ntxxxxxxxxxxxxxxxx
System serial number is not locked.
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
Command Completed
```

NOTE: If the serial number is correct and locked, skip steps 3, 4, and 5, and go to step 6. If the serial number is correct but not locked, skip steps 3 and 4, and go to step 5. If the serial number is not correct, but is locked, this feature cannot be enabled and the remainder of this procedure cannot be performed. Contact Tekelec Technical Services to get an incorrect and locked serial number changed. See "Tekelec Technical Services" on page 1-7. The serial number can be found on a label affixed to the control shelf (shelf 1100).

3. Enter the correct serial number into the database using the `ent-serial-num` command with the `serial` parameter.

For this example, enter this command.

```
ent-serial-num:serial=<system's correct serial number>
```

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

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
ENT-SERIAL-NUM: MASP A - COMPLTD
```

4. Verify that the serial number entered into step 3 was entered correctly using the **rtrv-serial-num** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
System serial number = nt00001231
```

System serial number is not locked.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
Command Completed
```

If the serial number was not entered correctly, repeat steps 3 and 4 and re-enter the correct serial number.

5. Lock the serial number in the database by entering the **ent-serial-num** command with the serial number shown in step 2, if the serial number shown in step 2 is correct, or with the serial number shown in step 4, if the serial number was changed in step 3, and with the **lock=yes** parameter.

For this example, enter this command.

```
ent-serial-num:serial=<system's serial number>:lock=yes
```

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

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0
ENT-SERIAL-NUM: MASP A - COMPLTD
```

6. Enable the 15 Minute Measurements controlled feature by entering the **enable-ctrl-feat** command. For this example, enter this command.

```
enable-ctrl-feat:partnum=893012101:fak=<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 04-06-01 21:15:37 GMT EAGLE5 31.6.0
ENABLE-CTRL-FEAT: MASP B - COMPLTD
```

7. Verify whether or not the Measurements Platform feature is on by entering the `rtrv-feat` command. If the Measurements Platform feature is on, the entry `MEASPLAT = on` is shown in the `rtrv-feat` command output:

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

If the Measurements Platform feature is not on, perform the “Adding an MCPM” procedure on page 4-141 to add the required MCPMs and to turn the Measurements Platform feature on. After the Measurements Platform is turned on, perform the “Configuring the Measurements Platform Feature” procedure on page 4-150 to configure the Measurements Platform Feature. Skip steps 8 and 9, and go to step 10.

If the Measurements Platform is on, go to step 8.

-
8. Verify whether or not the Measurements Platform option is enabled (`PLATFORMENABLE = on`) using the `rtrv-measopts` command. The following is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
EAGLE MEASUREMENT OPTIONS LIST

PLATFORMENABLE = on
COLLECT15MIN   = off
CLLIBASEDNAME  = on
-----
SYSTOTSTP     =on
```

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 option is not enabled, perform the “Configuring the Measurements Platform Feature” procedure on page 4-150 to verify, and correct if necessary, the configuration of the Measurements Platform feature and to enable the Measurements Platform option. Skip step 9 and go to step 10.

If the Measurements Platform option is enabled, go to step 9.

9. Display the status of the MCPMs in the database with the **rept-stat-meas** command. This is an example of the possible output.

```
rlghncxa03w 04-06-01 16:43:42 GMT EAGLE5 31.6.0

MEAS SS                PST           SST           AST
                       IS-NR         Active        -----
ALARM STATUS =        No Alarms

CARD  VERSION          TYPE  PST           SST           AST
2107 P 101-9-000      MCPM  IS-NR         Active        -----
      IP Link A                IS-NR         Active        Available
2108 101-9-000      MCPM  IS-NR         Active        -----
      IP Link A                IS-NR         Active        Available
2111 101-9-000      MCPM  IS-NR         Active        -----
      IP Link A                IS-NR         Active        Available

CARD 2107 ALARM STATUS = No Alarms
CARD 2108 ALARM STATUS = No Alarms
CARD 2111 ALARM STATUS = No Alarms
```

If the state of all the MCPMs is IS-NR, shown in the PST column, go to step 10.

If the state of any of the MCPMs is not IS-NR, perform the “Configuring the Measurements Platform Feature” procedure on page 4-150 to verify, and correct if necessary, the configuration of the Measurements Platform feature and to bring the MCPMs back into service. Go to step 10.

10. Enter the **rept-stat-ndc** command to verify whether or not any DCMs running the EMDC application (DCM-EMDC cards) are present in the system. This is an example of the possible output.

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0

CARD  VERSION          TYPE  APPL  PST           SST           AST
2205 114-2-0          DCM   EMDC  IS-NR         Active        -----
      DCM A IP CONNECTION        IS-NR         Avail         -----
      OAP A IP CONNECTION        IS-NR         Avail         -----
      OAP A NDC AGENT           IS-NR         Active        -----

CARD  VERSION          TYPE  APPL  PST           SST           AST
2207 114-2-0          DCM   EMDC  IS-NR         Idle          -----
      DCM B IP CONNECTION        IS-NR         Avail         -----
      OAP B IP CONNECTION        IS-NR         Avail         -----
      OAP B NDC AGENT           IS-NR         Idle          -----

      NDC Q.3 ASSOCIATION [OAP A]  IS-NR         Avail         -----
      DCM-DCM IP CONNECTION        IS-NR         Avail         -----
      OAP-OAP SERIAL CONNECTION    IS-NR         Avail         -----
```

ALARM STATUS:

Command Completed.

If the output of the **rept-stat-ndc** command shows that DCM-EMDC cards are present in the system, go to step 11.

If the output of the **rept-stat-ndc** command shows that DCM-EMDC cards are not present in the system, skip steps 11 and 12, and go to step 13.

11. Remove the DCM-EMDC cards shown in the `rept-stat-ndc` output in step 10 by entering the `dlt-card` command with the card location of the DCM-EMDC cards shown in step 10. For this example, enter these commands.

```
dlt-card:loc=2205
```

```
dlt-card:loc=2207
```

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

```
rlghncxa03w 04-06-01 09:12:36 GMT EAGLE5 31.6.0  
DLT-CARD: MASP A - COMPLTD
```

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

```
rtrv-card:loc=2205
```

```
rtrv-card:loc=2207
```

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

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

NOTE: The 15 Minute Measurements feature cannot be activated while the 30-minute measurement collection is in progress. If the 30-minute measurement collection is in progress, wait until 30-minute measurement collection has finished before performing this step.

13. Activate the 15 Minute Measurements controlled feature using the `chg-ctrl-feat` command, specifying the 15 Minute Measurements controlled feature part number and the `status=on` parameter. For this example, enter this command.

```
chg-ctrl-feat:partnum=893012101:status=on
```

NOTE: Once the 15 Minute Measurements feature is activated in this step, it cannot be deactivated with the `chg-ctrl-feat:status=off` command.

When the `chg-ctrl-feat` command has successfully completed, the following message should appear.

```
rlghncxa03w 04-06-01 21:15:37 GMT EAGLE5 31.6.0  
CHG-CTRL-FEAT: MASP B - COMPLTD
```

14. Verify the changes by entering the `rtrv-ctrl-feat` command with the part number specified in step 13.

```
rtrv-ctrl-feat:partnum=893012101
```

The following is an example of the possible output.

```
rlghncxa03w 04-06-01 21:16:37 GMT EAGLE5 31.6.0  
The following features have been permanently enabled:  
Feature Name          Partnum    Status    Quantity  
15 Minute Measurements 893012101 on        ----
```

15. Turn the 15 Minute Measurement collection option on by entering this command.

```
chg-measopts:collect15min=on
```

When the **chg-measopts** command has successfully completed, the following message should appear.

```
rlghncxa03w 04-06-01 21:16:37 GMT EAGLE5 31.6.0
CHG-MEAS-OPTS: MASP A - COMPLTD
```

16. Verify that the 15 Minute Measurement collection option is on by entering the **rtrv-measopts** command. The following is an example of the possible output.

```
rlghncxa03w 04-06-01 16:02:05 GMT EAGLE5 31.6.0
EAGLE MEASUREMENT OPTIONS LIST

PLATFORMENABLE = on
COLLECT15MIN = on
CLLIBASEDNAME = on
-----
SYSTOTSTP =on
```

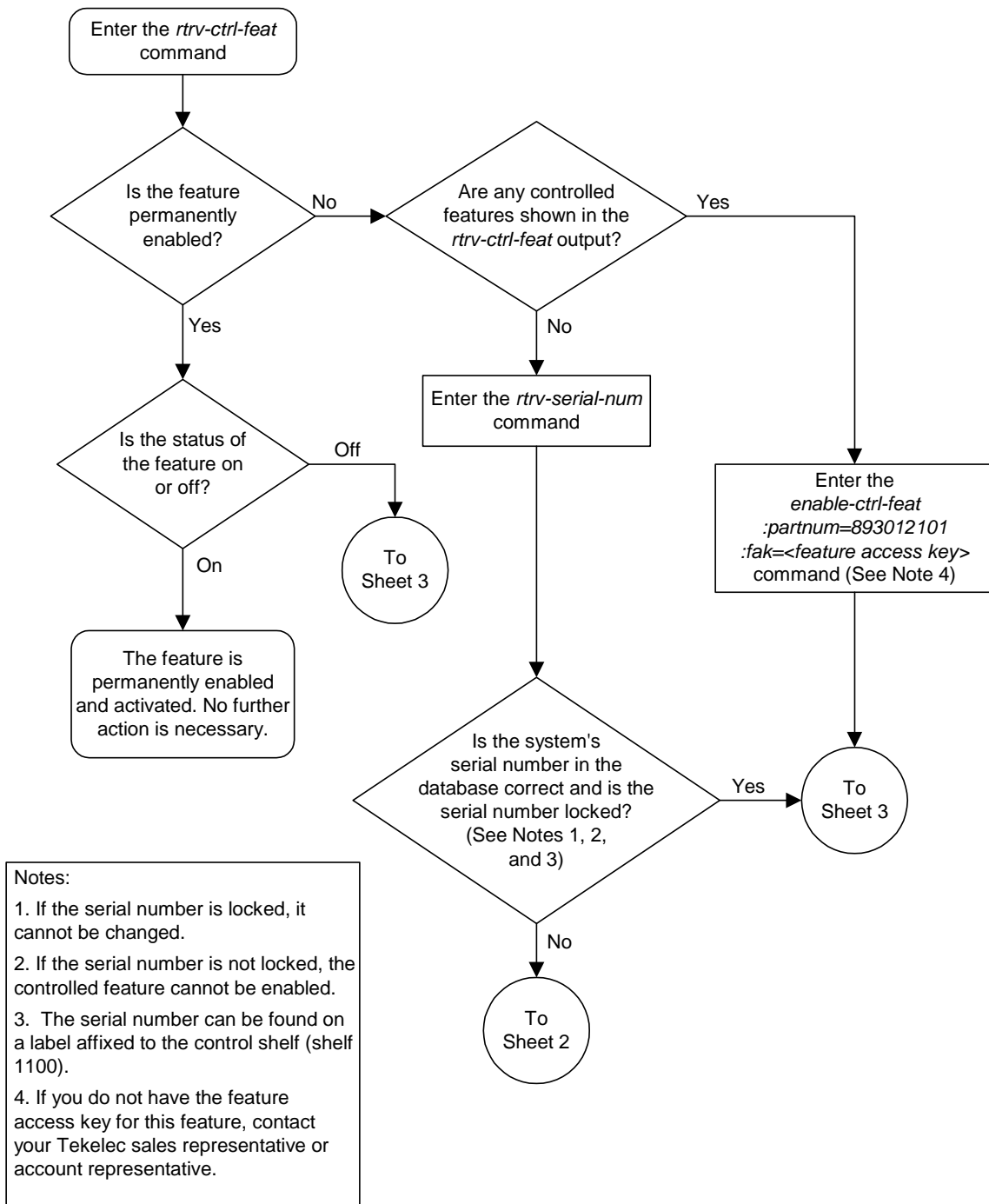
NOTE: The **rtrv-measopts** command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the **rtrv-measopts** command, see the **rtrv-measopts** command description in the *Commands Manual*.

17. 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.

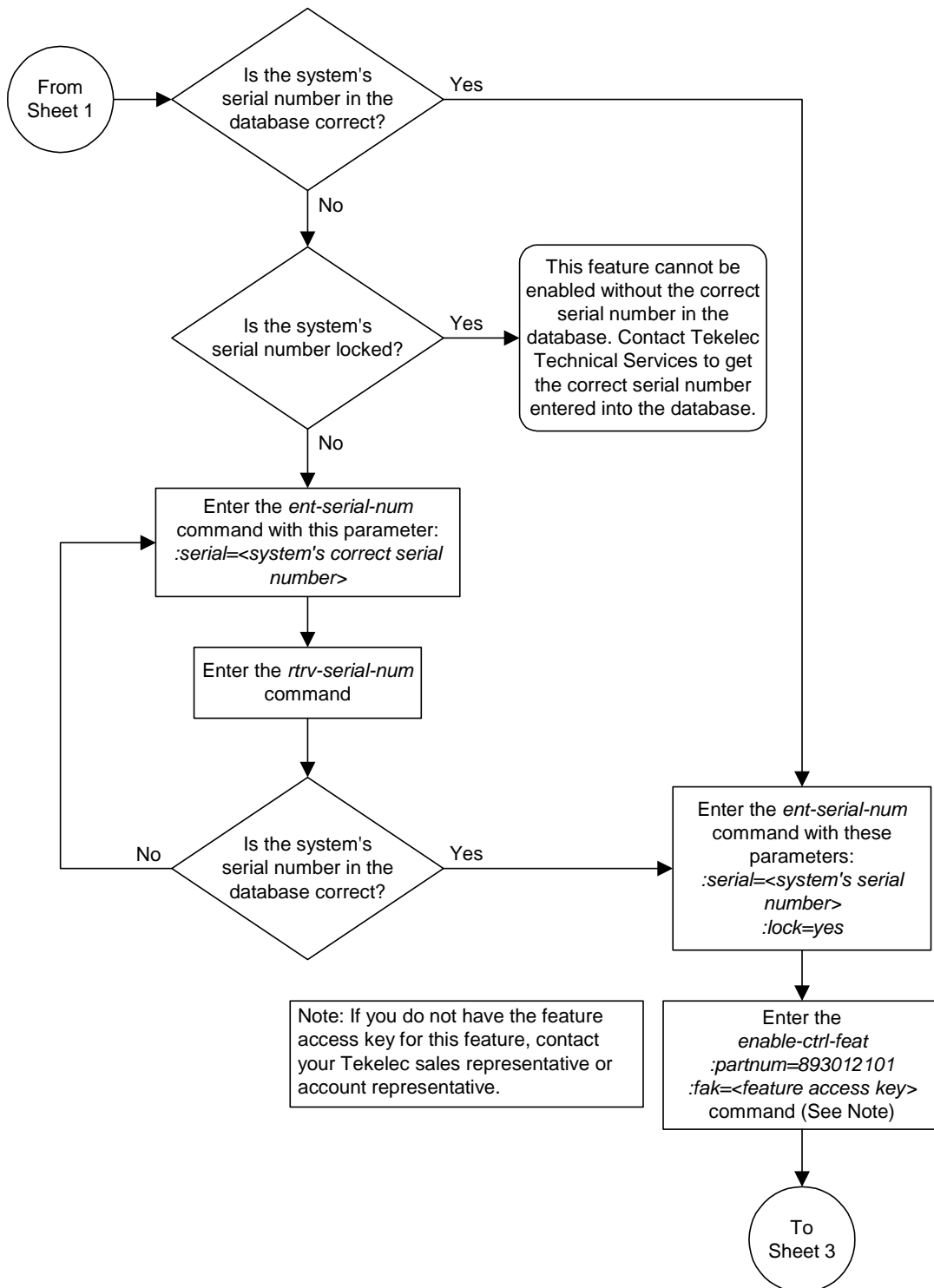
```
BACKUP (FIXED) : MASP A - Backup starts on active MASP.
BACKUP (FIXED) : MASP A - Backup on active MASP to fixed disk complete.
BACKUP (FIXED) : MASP A - Backup starts on standby MASP.
BACKUP (FIXED) : MASP A - Backup on standby MASP to fixed disk complete.
```

Controlled Feature Activation Procedures

Flowchart B-3. Activating the 15 Minute Measurements Controlled Feature (Sheet 1 of 4)

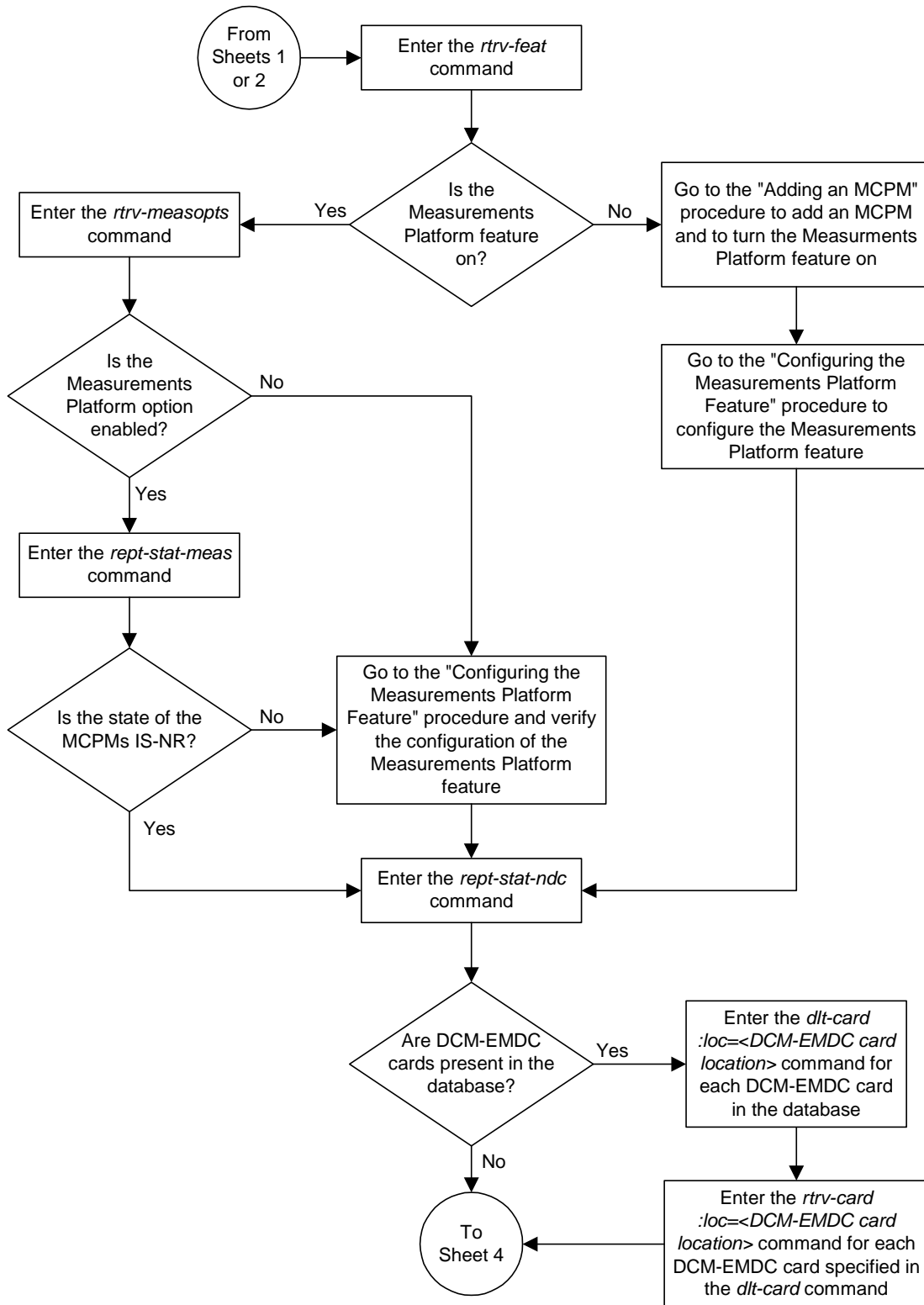


Flowchart B-3. Activating the 15 Minute Measurements Controlled Feature (Sheet 2 of 4)

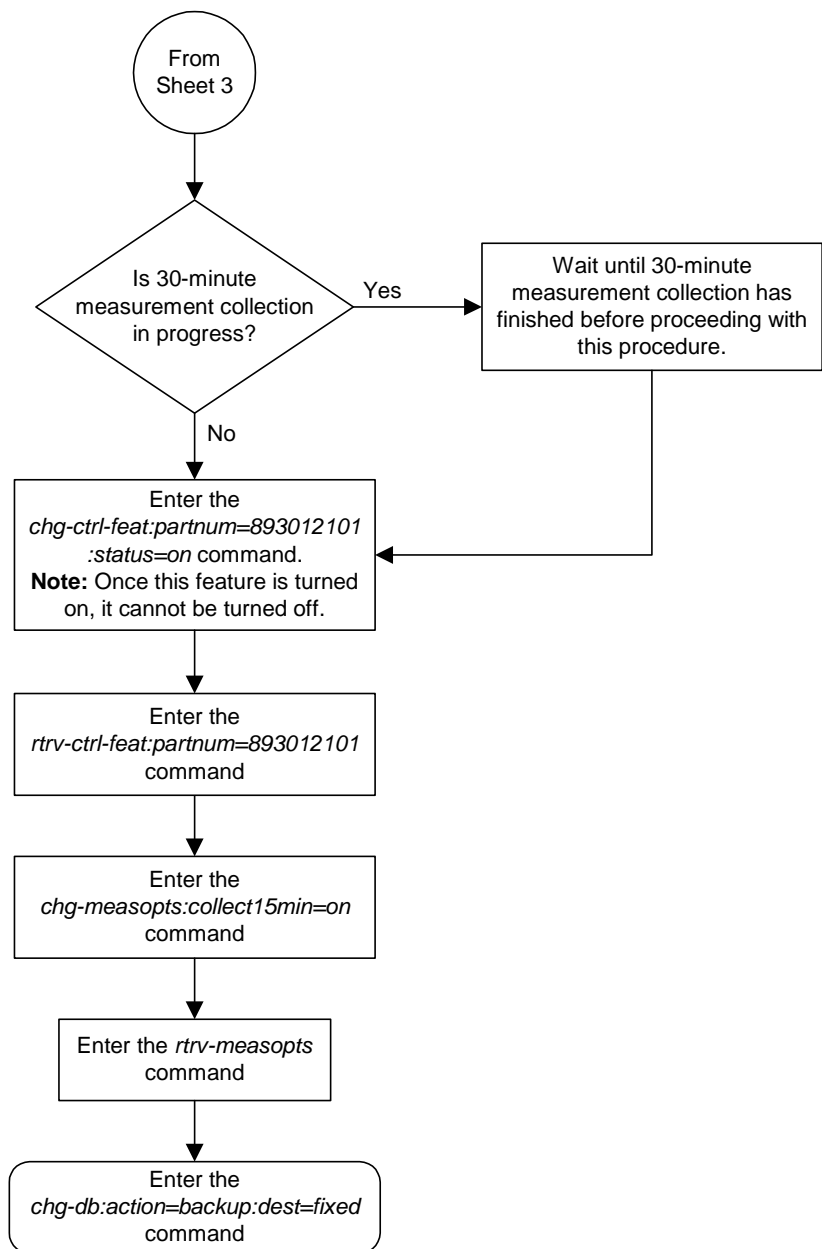


Controlled Feature Activation Procedures

Flowchart B-3. Activating the 15 Minute Measurements Controlled Feature (Sheet 3 of 4)



Flowchart B-3. Activating the 15 Minute Measurements
Controlled Feature (Sheet 4 of 4)



Clearing a Temporary FAK Alarm

This procedure is used to clear the critical alarm, UAM 0368, generated when a temporary feature access key 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 04-06-01 21:17:37 GMT EAGLE5 31.6.0
The following features have expired temporary keys:
Feature Name                Part Num
Command Class Management    893005801
```

2. Clear the system alarm in the database by entering the **chg-ctrl-feat** command. For example, enter this command.

```
chg-ctrl-feat:partnum=893005801:alarm=clear
```

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

```
rlghncxa03w 04-06-01 21:16:37 GMT EAGLE5 31.6.0
CHG-CTRL-FEAT: MASP A - COMPLTD
```

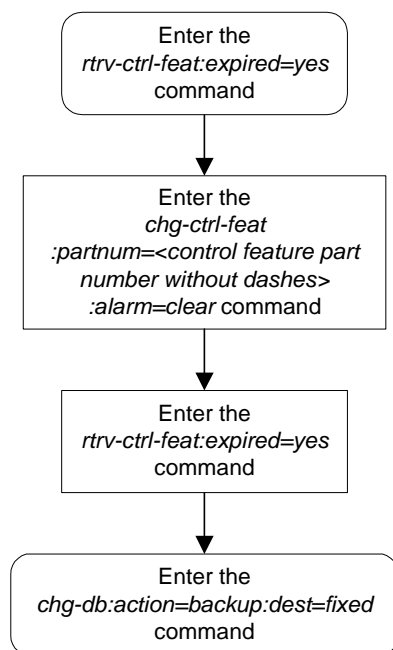
3. Verify that the alarm has cleared in the database by using the **rtrv-ctrl-feat:expired=yes** command. The following is an example of the possible output.

```
rlghncxa03w 04-06-01 21:16:37 GMT EAGLE5 31.6.0
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.
```

Flowchart B-4. Clearing a Temporary FAK Alarm



Deactivating Controlled Features

This procedure is used to deactivate these controlled features, Command Class Management, IP User Interface, and Network Security Enhancements using the `chg-ctrl-feat` command.

The `chg-ctrl-feat` command uses the following parameters:

- `:partnum` - The part number of the controlled feature being deactivated.
 - Command Class Management – 893005801
 - Telnet (IP User Interface) – 893005701
 - Network Security Enhancements – 893009101
- `:status=off` – used to deactivate the controlled feature.

The status of the controlled feature being deactivated must be `on` and is shown with the `rtrv-ctrl-feat` command.



CAUTION: If the Command Class Management controlled feature is deactivated, no new user-defined command classes can be created, and the user-defined command classes cannot be assigned to user IDs or terminals.



CAUTION: If the IP User Interface controlled feature is deactivated, all Telnet sessions supported by this feature will be disabled. No changes can be made to the configuration of the Telnet terminals (terminals 17 through 40). Deactivating this feature will also deactivate FTP Retrieve and Replace feature.

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 04-06-01 21:17:37 GMT EAGLE5 31.6.0
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	on	----
LNP Short Message Service	893006601	on	----
Intermed GTT Load Sharing	893006901	on	----
XMAP Table Expansion	893007710	on	3000
Large System # Links	893005910	on	2000
Routesets	893006401	on	6000
Telnet	893005701	on	----
Network Security Enhance	893009101	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 controlled feature by entering the **chg-ctrl-feat** command with the **status=off** parameter. For example, enter this command.

```
chg-ctrl-feat:partnum=893005801:status=off
```

```
chg-ctrl-feat:partnum=893005701:status=off
```

```
chg-ctrl-feat:partnum=893009101:status=off
```

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

```
rlghncxa03w 04-06-01 21:16:37 GMT EAGLE5 31.6.0
CHG-CTRL-FEAT: MASP A - COMPLTD
```

3. Verify that the controlled feature has been deactivated by using the **rtrv-ctrl-feat:partnum=<controlled feature part number>** command. For this example, enter these commands.

```
rtrv-ctrl-feat:partnum=893005801
```

The following is an example of the possible output.

```
rlghncxa03w 04-06-01 21:16:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
Feature Name          Partnum    Status  Quantity
Command Class Management  893005801  off    ----
```

```
rtrv-ctrl-feat:partnum=893005701
```

The following is an example of the possible output.

```
rlghncxa03w 04-06-01 21:16:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
Feature Name          Partnum    Status  Quantity
Telnet                893005701  off    ----
```

```
rtrv-ctrl-feat:partnum=893009101
```

The following is an example of the possible output.

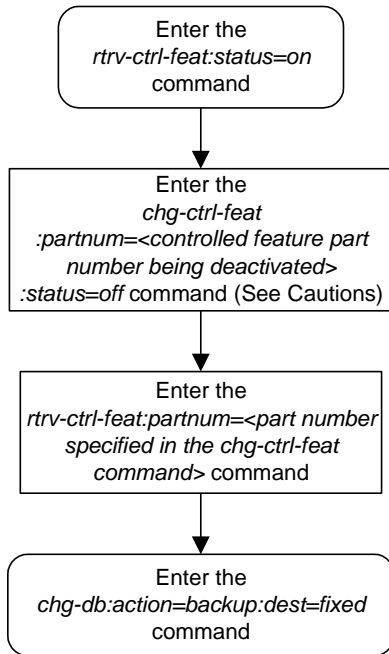
```
rlghncxa03w 04-06-01 21:16:37 GMT EAGLE5 31.6.0
The following features have been permanently enabled:
Feature Name          Partnum    Status  Quantity
Network Security Enhance  893009101  off    ----
```

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.
```

Controlled Feature Activation Procedures

Flowchart B-5. Deactivating Controlled Features



Caution: If the Command Class Management controlled feature is deactivated, no new user-defined command classes can be created, and the user-defined command classes cannot be assigned to user IDs or terminals.

Caution: If the IP User Interface controlled feature is deactivated, all Telnet sessions supported by this feature will be disabled. No changes can be made to the configuration of the Telnet terminals (terminals 17 through 40). Deactivating this feature will also deactivate FTP Retrieve and Replace feature.

Caution: If the Network Security Enhancements controlled feature is deactivated, the network Security Enhancement options will be disabled.

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