Oracle® Communications

EAGLE SLIC Card Configuration User's Guide

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Oracle Communications EAGLE SLIC Card Configuration User's Guide, Release 47.1

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Contents

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Acronyms

The following table provides information about the acronyms and the terminology used in the document.

Table Acronyms

Acronym	Definition
DTA	Database Transport Access
EGTT	Enhanced Global Title Translation
EIR	Equipment Identity Register
GTT	Global Title Translation
GWS	Gateway Screening
MASP	Maintenance and Administration Subsystem Processor
MSU	Message Signaling Unit
SCCP	Signaling Connection Control Part
SLIC	Service and Link Interface Card

What's New in This Guide

This section introduces the documentation updates for Release 47.1 in Oracle Communications EAGLE SLIC Card Configuration User's Guide.

Release 47.1 -F88478-02, June 2024

- Updated the Supported Features section with the descriptions of the following features:
  - SFAPP
  - EROUTE
  - MCP
  - IPSM
- Added the following feature configurations in the Configuration of Supported Features section:
  - Adding an IPSM Card
  - Adding an IPSM Card as SFLOG
  - Configuring a MCP Module
  - Configuring EROUTE/STC Card
  - Configuring the Stateful Applications (SFAPP)
  - Adding IPSM as EEDB

Release 47.1 -F88478-01, November 2023

There are no updates in the document for this release.

1
Introduction

This chapter provides a brief description of the SLIC Card features of Oracle Communications EAGLE. The chapter also includes the scope, audience, and organization of the manual, how to find related publications, and how to contact Oracle for assistance.

1.1 Overview

The Oracle Communications EAGLE Service and Link Interface Card (SLIC) is a single-slot, multi-use card that runs multiple applications.

See *EAGLE Card Overview* in EAGLE *Release Notice* for current GPL and Application compatibility. When provisioning the SLIC card, the card type will be SLIC when plugged in.

This document describes the features supported by SLIC Card with the corresponding configurations. For more information on SLIC Card, refer to the *Oracle Communications Eagle Hardware Reference Guide*.

1.2 References

Refer to the following documents for information on configuration of features that run on SLIC card(s):

- *Database Administration - Features User's Guide*
- *Database Administration - GTT User's Guide*
- *Database Administration - IP7 Secure Gateway User's Guide*
- *Database Administration - SS7 User's Guide*
- *EIR User's Guide*
- *ENUM User's Guide*
- *Hardware Reference*

2 Hardware Configuration

The following table lists the hardware configuration specifications for the SLIC card:

Table 2-1 SLIC Hardware Configuration Specifications

Application	Adapter	Quantity	Cable	Cable Quantity	Remark
DEIR	830-1102-03	4	830-1174-XX CAT6A 830-1404-xx	2	
SCCP with EPAP	830-1102-03	2	830-1174-XX CAT6A 830-1404-xx	2	SCCP with EPAP
	830-1102-03	3	830-1174-XX CAT6A 830-1404-xx	2	SCCP with EPAP and Visulization
SIP	830-1102-03	4	830-1174-XX CAT6A 830-1404-xx	2	
ENUM	830-1102-03	4	830-1174-XX CAT6A 830-1404-xx	2	
SFAPP	830-1102-03	1	830-1174-XX CAT6A 830-1404-xx	2	
SCCP without EPAP (GTT Only Cards)	830-1102-03	0	830-1174-XX CAT6A 830-1404-xx	2	
IPSG	830-1102-03	2	830-1174-XX CAT6A 830-1404-xx	4	
IPS	830-1102-03	1	830-1174-XX	1	
MCP	830-1102-03	1	830-1174-XX	1	
STC	830-1102-03	1	830-1174-XX	1	
E1	No adapters required		7112462 830-1197-XX or non-ROHS 830-0949-XX	1	
T1	No adapters required		7112462 830-1197-XX or non-ROHS 830-0949-XX	1	

3
Supported Features

This section describes the features that run on SLIC card(s):

- DEIR
  The EIR feature can be used to reduce the number of GSM mobile handset thefts by providing a mechanism that allows network operators to prevent stolen or disallowed handsets from accessing the network.
- E1/T1
  The E1 interface terminates or distributes E1 facility signals for the purpose of processing the SS7 signaling links carried by the E1 carrier. The T1 interface terminates or distributes T1 facility signals for the purpose of processing the SS7 signaling links carried by the T1 carrier.
- ENUM
  The ENUM Mobile Number Portability and Tier One Address Resolution (ENUM) feature enhances the ability of EAGLE to access the Number Portability database (RxDB) using ENUM protocol. Using the ENUM interface supported on UDP, EAGLE is able to process a destination number lookup in an IP-based addressing scheme in the Number Portability database and provide a routing solution to the originating carrier.
- GTT
  The Global Title Translation (GTT) feature is designed for the signaling connection control part (SCCP) of the SS7 protocol. The EAGLE uses this feature to determine to which service database to send the query message when a Message Signaling Unit (MSU) enters the EAGLE and more information is needed to route the MSU.
- IPSG
  The IP7 Secure Gateway functionality in the EAGLE provides connectivity between SS7 and IP networks, enabling messages to pass between the SS7 network domain and the IP network domain
- SCCP (ExAP Interface)
  The features using SCCP protocol such as, Database Transport Access (DTA), GSM MAP Screening, and more uses SLIC card. For details related to feature configurations, refer to the feature guides.
- SIP
  The SIP NP feature provides SIP-based Number Portability using EAGLE's RxDB (RTDB/RIDB). This feature adds a SIP interface to allow SIP NP requests to be received by an EAGLE card, processed by the EAGLE's RxDB, and a response transmitted back to the requestor.
- IPSM
  A card that provides an IP connection for the IPUI (Telnet) and FTP-based Table Retrieve features. The IPSM is a GPSM-II card with a one Gigabyte (UD1G) expansion memory board in a single-slot assembly running the IPS application.
- SFAPP
  Stateful Applications allow the Signaling Transfer Point (STP) to validate the messages coming in for a subscriber roaming out by validating them against the Visitor Location Register (VLR) the subscriber was last seen by the Home Location Register (HLR). Once the HLR provides a validity of the new VLR, the EAGLE then lets the message into the

network. If the message is not validated, it is handled per configuration (silent discard, fallback, or respond with error).[SS1] [SS1]Description to be reviewed

- EROUTE
  Ethernet Routing transfers link information messaging from the EAGLE LIM cards to the Integrated Sentinel using TCP/IP and EAGLE Monitor Protocol (EMP). Implemented in Signaling Transport Cards (STC).[SS1] [SS2] [SS1]Description to be reviewed [SS2]Also, please share the configuration details for this feature.
- MCP
  The MCPM is an E5-MCPM-B card running MCPHC GPL. Measurement Collection and Polling Module (MCPM), is 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.[SS1] [SS2] [SS1]Description to be reviewed [SS2]Also, please share the configuration details for this feature.

4
Configuration of Supported Features

This chapter describes the procedures for configuring the features supported on SLIC card(s).

4.1 Adding a LIM-E1 Card

The **LIM**-El card is provisioned as either an **E1** card or a channel card in the database using the `ent-card` command.

The `ent-card` command uses these parameters.

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

> **Note:**
>
> The **HC-MIM** can be inserted only in a odd-numbered card location. The **HC-MIM** will not power up if it is inserted in an even-numbered card location. All the **E1** backplane cabling should be removed from the B connector for the slot that the **HC-MIM** will occupy.
> The **HC-MIM** occupies two card locations, so the even numbered card location adjacent to the odd numbered slot where the **HC-MIM** has been inserted must be empty, as shown in the following table. The **HC-MIM** is connected to the network through the odd numbered card slot connector.

Table 4-1 HC-MIM Card Locations

Location of the HC-MIM	Empty Card Location	Location of the HC-MIM	Empty Card Location
Slot 01	Slot 02	Slot 11	Slot 12
Slot 03	Slot 04	Slot 13	Slot 14
Slot 05	Slot 06	Slot 15	Slot 16
Slot 07	Slot 08	Slot 17	Slot 18

The **E1**, **E1/T1 MIM** and **E5-E1T1** cards occupy one card location. These cards can be placed in any card location except for even numbered card locations whose adjacent odd numbered card location is occupied by a card that occupies two card locations.

`:type` – The type of card being added to the database. For this procedure, the value of this parameter is `lime1` (**E1** card) or `limch` (channel card).

> **Note:**
>
> The **HC-MIM** and **E5-E1T1** card cannot be provisioned as a channel card.

`:appl` – The application software that is assigned to the card. For this procedure, the value of this parameter is either `ccs7itu` or `ss7ansi`.

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

The examples in this procedure are used to add the **LIM-E1** cards in card locations 1201, 1202, 1203, 1204, 1211, and 1212 to the database.

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

```
rlghncxa03w 09-05-28 09:12:36 GMT EAGLE5 41.0.0
CARD   TYPE      APPL     LSET NAME    LINK SLC LSET NAME    LINK SLC
1102   TSM       GLS
1113   GSPM      OAM
1114   TDM-A
1115   GSPM      OAM
1116   TDM-B
1117   MDAL
```

   The cards should be distributed throughout the **EAGLE** for proper power distribution. Refer to *Installation Guide* for the shelf power distribution.

2. Verify that the correct hardware has been installed on the **EAGLE** to support the **E1** card as shown in *Installation Guide*.

3. Physically verify that the **E1** card has been installed into the card location that will be specified in step 6.

   If the **E1** card is an **HC-MIM**, make sure the **HC-MIM** is installed according to the card location requirements. If a card is installed and provisioned in the even numbered card location adjacent to the desired odd numbered card, either choose another card location to install and provision the **HC-MIM**, or remove the card in the even-numbered card location by performing the appropriate procedure shown in the following table.

> **Note:**
>
> **Channel** cards must be installed in the same shelf as the **E1** card that is servicing the timeslots on those channel cards.

Table 4-2 Card Removal Procedures

Card Application	Procedure
SS7ANSI, **ATMANSI**, **CCS7ITU**, **ATMITU**	"Removing an **SS7** " in Chapter 4, "System Configuration Procedures" in *Database Administration - System Management User's Guide* "Removing a LIM-E1 Card" "Removing a LIM-T1 Card"
VSCCP	Removing a Service Module in Chapter 2 in *Database Administration - GTT User's Guide*

Table 4-2 (Cont.) Card Removal Procedures

Card Application	Procedure
GLS	Removing a GLS Card in Chapter 2, Gateway Screening (GWS) Overview, in *Database Administration - GWS User's Guide*
IPLIM, **IPLIMI**, **SS7IPGW**, **IPGWI**	"Removing an IPLIMx Card" or Removing an IPGWx Card" in *Database Administration - IP7 User's Guide*
IPSG	"Removing an IPSG Card" in *Database Administration - IP7 User's Guide*
EROUTE	“Removing an **STC** Card” in *Database Administration - Features User's Guide*
MCP	“Removing an **MCPM**” in Chapter 4, “System Configuration Procedures” in *Database Administration - System Management User's Guide*
IPS	“Removing an **IPSM**” in Chapter 4, “System Configuration Procedures” in *Database Administration - System Management User's Guide*

Note:

If the **E1** card being added in this procedure is not an **HC-MIM** or **E5-E1T1** card, continue the procedure with step 7.

4. If the card is an EPM-B based card (E5-E1T1-B), enter the `rtrv-stpopts` command to verify whether or not the MFC option is on. If the card is not an EPM-B based card, continue the procedure with step 5.

   This is an example of the possible output.

```
rlghncxa03w 11-10-17 16:02:05 GMT EAGLE5 44.0.0
STP OPTIONS
---------------------------
MFC                       off
```

   The `rtrv-stpopts` command output contains other fields that are not used by this procedure. To see all fields displayed by the `rtrv-stpopts` command, see the `rtrv-stpopts` command description in *Commands User's Guide*.

   If the **MFC** option is off, perform the Configuring the MFC Option procedure in *Database Administration - System Management User's Guide* to turn on the MFC option.

   If the MFC option is on or the MFC Option procedure in *Database Administration - System Management User's Guide* was performed in this step, continue the procedure with step 5.

5. The Fan feature must be turned on. Enter the `rtrv-feat` command to verify that the Fan feature is on.

If the Fan feature is on, shown in the `rtrv-feat` output in this step, the `FAN` field should be set to `on`.

The `rtrv-feat` command output contains other fields that are not used by this procedure. To see all fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in *Commands User's Guide*.

If the Fan feature is on, continue the procedure with step 7.

If the Fan feature is off, continue the procedure with step 6.

6. Turn the Fan feature on by entering this command.

```
chg-feat:fan=on
```

> **Note:**
>
> Once the Fan feature is turned on with the`chg-feat` command, it cannot be turned off.

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

```
rlghncxa03w 11-10-28 11:43:04 GMT EAGLE5 44.0.0
CHG-FEAT: MASP A - COMPLTD
```

7. Add the card using the `ent-card` command. If the **LIM-E1** card is an **HC-MIM**, the **HC-MIM** can be only in a odd-numbered card location, and cannot be provisioned as a channel card. The **E5-E1T1** card cannot be provisioned as a channel card. The **E1/T1MIM** and **E5-E1T1** cards occupy only one card location. These cards can be placed in any card location except for even numbered card locations whose adjacent odd numbered card location is occupied by a card that occupies two card locations.

   For this example, enter these commands.

```
ent-card:loc=1201:type=lime1:appl=ccs7itu
ent-card:loc=1202:type=limch:appl=ccs7itu
ent-card:loc=1203:type=lime1:appl=ccs7itu
ent-card:loc=1204:type=limch:appl=ccs7itu
ent-card:loc=1211:type=lime1:appl=ccs7itu
ent-card:loc=1212:type=limch:appl=ccs7itu
```

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

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

8. Verify the changes using the `rtrv-card` command with the card location specified in HC-MIM Card Locations.

   For this example, enter these commands.

```
rtrv-card:loc=1201


rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL     LSET NAME   LINK SLC LSET NAME   LINK SLC
1201   LIME1     CCS7ITU

rtrv-card:loc=1202


rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL     LSET NAME   LINK SLC LSET NAME   LINK SLC
1202   LIMCH     CCS7ITU

rtrv-card:loc=1203


rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL     LSET NAME   LINK SLC LSET NAME   LINK SLC
1203   LIME1     CCS7ITU

rtrv-card:loc=1204


rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL     LSET NAME   LINK SLC LSET NAME   LINK SLC
1204   LIMCH     CCS7ITU

rtrv-card:loc=1211


rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL     LSET NAME   LINK SLC LSET NAME   LINK SLC
1211   LIME1     CCS7ITU

rtrv-card:loc=1212


rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL     LSET NAME   LINK SLC LSET NAME   LINK SLC
1212   LIMCH     CCS7ITU
```

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.
```

4.2 Adding a LIM-T1 Card

The **LIM-T1** card is provisioned as either a **T1** card or a channel card in the database using the `ent-card` command.

The `ent-card` command uses these parameters.

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

> **Note:**
>
> The **HC-MIM** can be inserted in an odd-numbered card location only. The **HC-MIM** will not power up if it is inserted in an even-numbered card location. All **T1** backplane cabling should be removed from the B connector for the slot that the **HC-MIM** will occupy.
> The **HC-MIM** occupies two card locations, so the even numbered card location adjacent to the odd numbered slot where the **HC-MIM** has been inserted must be empty, as shown in the following table. The **HC-MIM** is connected to the network through the odd numbered card slot connector.

Table 4-3 HC-MIM Card Locations

Location of the HC-MIM	Empty Card Location	Location of the HC-MIM	Empty Card Location
Slot 01	Slot 02	Slot 11	Slot 12
Slot 03	Slot 04	Slot 13	Slot 14
Slot 05	Slot 06	Slot 15	Slot 16
Slot 07	Slot 08	Slot 17	Slot 18

The **E1/T1 MIM** and **E5-E1T1** card occupies one card location. These cards can be placed in any card location except for even numbered card locations whose adjacent odd numbered card location is occupied by a card that occupies two card locations.

`:type` – The type of card being added to the database. For this procedure, the value of this parameter is `limt1` (**T1** card) or `limch` (channel card).

> **Note:**
>
> The **E5-E1T1** card cannot be provisioned as a channel card.

`:appl` – The application software that is assigned to the card. For this procedure, the value of this parameter is either `ccs7itu` or `ss7ansi`.

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

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

The examples in this procedure are used to add the **LIM-T1** cards in card locations 1215 and 1216 to the database.

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

```
rlghncxa03w 09-05-28 09:12:36 GMT EAGLE5 41.0.0
CARD   TYPE      APPL     LSET NAME    LINK SLC LSET NAME    LINK SLC
1102   TSM       GLS
1113   GSPM      OAM
1114   TDM-A
1115   GSPM      OAM
1116   TDM-B
1117   MDAL
1201   LIMDS0    SS7ANSI  lsne12       A    0
1202   LIMDS0    SS7ANSI  lsne12       A    1
1203   LIMDS0    SS7ANSI  lsne13       A    0
1204   LIMDS0    SS7ANSI  lsne13       A    1
1207   LIMT1     SS7ANSI  lsnt265      A    0
1208   LIMCH     SS7ANSI  lsnt265      A    1   lsnt265      A2   2
1211   LIMT1     CCS7ITU  lsne145      A    0
1212   LIMCH     CCS7ITU  lsne145      A    1   lsne145      A2   2
```

   The cards should be distributed throughout the **EAGLE** for proper power distribution. Refer to *Installation Guide* for the shelf power distribution.

2. Verify that the correct hardware has been installed on the **EAGLE** to support the **LIM-T1** card as shown in *Installation User's Guide*.

3. Physically verify that the T1 card has been installed into the card location.

   If the T1 card is an HC-MIM, make sure the HC-MIM is installed according to the card location requirements. If a card is installed and provisioned in the even-numbered card location adjacent to the desired odd numbered card, choose another card location to install and provision the HC-MIM, or remove the card in the even-numbered card location by performing the appropriate procedure shown in the following table.

> **Note:**
>
> Channel cards must be installed in the same shelf as the T1 card that is servicing the timeslots on those channel cards.

Table 4-4 Card Removal Procedures

Card Application	Procedure
SS7ANSI, **ATMANSI**, **CCS7ITU**, **ATMITU**	“Removing an **SS7 LIM**” in Chapter 4, “System Configuration Procedures” in *Database Administration - System Management User's Guide* “Removing a LIM-E1 Card” “Removing a LIM-T1 Card”
VSCCP	Removing a Service Module in Chapter 2 in *Database Administration - GTT User's Guide*
GLS	Removing a GLS Card in Chapter 2, Gateway Screening (GWS) Overview, in *Database Administration - GWS User's Guide*
IPLIM, **IPLIMI**, **SS7IPGW**, **IPGWI**	"Removing an IPLIMx Card" or Removing an IPGWx Card" in *Database Administration - IP7 User's Guide*
IPSG	"Removing an IPSG Card" in *Database Administration - IP7 User's Guide*
EROUTE	“Removing an **STC** Card” in *Database Administration - Features User's Guide*
MCP	“Removing an **MCPM**” in Chapter 4, “System Configuration Procedures” in *Database Administration - System Management User's Guide*
IPS	“Removing an **IPSM**” in Chapter 4, “System Configuration Procedures” in *Database Administration - System Management User's Guide*

4. If the card is an EPM-B based card (E5-E1T1-B), enter the `rtrv-stpopts` command to verify whether or not the MFC option is on. If the card is not an EPM-B based card, continue the procedure with step 5.

   This is an example of the possible output.

```
rlghncxa03w 11-10-17 16:02:05 GMT EAGLE5 44.0.0
STP OPTIONS
---------------------------
MFC                       off
```

   The `rtrv-stpopts` command output contains other fields that are not used by this procedure. To see all fields displayed by the `rtrv-stpopts` command, see the `rtrv-stpopts` command description in *Commands User's Guide*.

   If the **MFC** option is off, perform the Configuring the MFC Option procedure in *Database Administration - System Management User's Guide* to turn on the MFC option.

   If the MFC option is on or the MFC Option procedure in *Database Administration - System Management User's Guide* was performed in this step, continue the procedure with step 5.

5. The Fan feature must be turned on. Enter the `rtrv-feat` command to verify that the Fan feature is on.

If the Fan feature is on, shown in the `rtrv-feat` output in this step, the `FAN` field should be set to `on`.

The `rtrv-feat` command output contains other fields that are not used by this procedure. To see all fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in *Commands User's Guide*.

If the Fan feature is on, continue the procedure with step 7.

If the Fan feature is off, continue the procedure with step 6.

6. Turn the Fan feature on by entering this command.

```
chg-feat:fan=on
```

> **Note:**
>
> Once the Fan feature is turned on with the`chg-feat` command, it cannot be turned off.

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

```
rlghncxa03w 11-10-28 11:43:04 GMT EAGLE5 44.0.0
CHG-FEAT: MASP A - COMPLTD
```

7. Add the card using the `ent-card` command. If the **LIM-T1** card is an **HC-MIM**, the **HC-MIM** can be only in a odd-numbered card location, and cannot be provisioned as a channel card.

   For this example, enter these commands.

```
ent-card:loc=1215:type=limt1:appl=ss7ansi
```

```
ent-card:loc=1216:type=limch:appl=ss7ansi
```

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

   For this example, enter these commands.

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

```
rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL     LSET NAME    LINK SLC LSET NAME    LINK SLC
1215   LIMT1     SS7ANSI
```

```
rtrv-card:loc=1216
```

```
rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
CARD   TYPE      APPL     LSET NAME    LINK SLC LSET NAME    LINK SLC
1216   LIMCH     SS7ANSI
```

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.
```

4.3 Adding a Service Module

This procedure is used to add a service module to support the Global Title Translation or Enhanced Global Title Translation feature to the database using the `ent-card` command.

A service module can be one of these cards.

- E5-SM8G-B
- SLIC

The card that is used as a service module depends on the GTT related features that are being used and the features that will enabled after this procedure is performed. The features or feature Table 4-5 combinations shown in show the type of card that must be installed in the EAGLE to meet the minimum EAGLE performance requirements. The features that are currently being used by the EAGLE are shown in the `rtrv-feat` or `rtrv-ctrl-feat` command outputs.

Table 4-5 Service Module and Feature Combinations

Card	Features
E5-SM8G SLIC	Any of these features: • Throughput Capacity - SMs can be used if this feature is enabled, but to achieve the maximum transactions per second for the EAGLE, shown in Table 4-9, all service modules must be E5-SM8G cards. • Support for 16 GTT Lengths in VGTT • Flexible Linkset Optional Based Routing • ELAP configuration feature and a LNP Telephone Number Quantity of 240 million numbers to 384 million numbers • GTT Action - DUPLICATE • Pre-LNP Query Service GTT Processing • Fall-Back to GTT after LNP Message Relay Service • ANSI-41 Analyzed Information Query (ANSI41 AIQ) • GTT Action - DISCARD • GTT Action - FORWARD • Info Analyzed Relay Base • Service Portability • Enhanced GSM MAP Screening • G-FLEX • V-FLEX • G-Port • INP • Prepaid SMS Intercept Phase 1 (PPSMS) • ELAP Configuration feature and an LNP Telephone Number Quantity that is less than 240 million numbers. Refer to *Administration and LNP Feature Activation Guide* for ELAP for the minimum requirements for service modules used with the LNP feature. • XGTT Table Expansion for 1,000,000 GTT entries • Equipment Identity Register(EIR) • Flexible GTT Load Sharing • IDP Screening for Prepaid • Prepaid IDP Query Relay • Origin-Based SCCP Routing • Hex Digit Support for GTT • A-Port) • IS41 GSM Migration • Weighted GTT Load Sharing • Transaction-Based GTT Load Sharing • ANSI-41 INP Query • MO SMS B-Party Routing • MO-based GSM SMS NP • MO-based IS41 SMS NP • MO SMS IS41-to-GSM Migration • MO SMS ASD • MO SMS GRN • Portability Check for MO SMS • TIF Number Portability • TIF SCS Forwarding • TIF Simple Number Substitution • TIF ASD • TIF GRN • ATI Number Portability Query (ATINP)

Table 4-5 (Cont.) Service Module and Feature Combinations

Card	Features
	• GSM MAP Screening or GTT and EGTT (if the Enhanced Global Title Translation feature is on) in combination with at least 2 of these features: • Variable-Length Global Title Translation (VGTT) • Advanced GT Modification (with or without the ANSI/ITU SCCP Conversion feature) • IGTTLS • XGTT Table Expansion enabled for 400,000GTT entries • XMAP Table Expansion enabled for either 3000 or 2000MAP table entries

The E5-SM8G-B can be inserted only in the odd numbered card slots of the control or the extension shelf. Slots 09 and 10 of each shelf contains the HIPR2 card, thus the E5-SM8G-B cannot be inserted in slot 09 and 10. The E5-SM8G-B can be inserted in the control shelf, but only in slots 01, 03, 05, 07 and 11. The E5-SM8G-B occupies two card slots, so the even numbered card slot adjacent to the odd numbered slot where the E5-SM8G-B has been inserted must be empty, as shown in Table 4-6. The E5-SM8G-B is connected to the network through the odd numbered card slot connector. The E5-SM8G-B requires two HIPR2 cards in the shelf where it is installed.

The SLIC can be inserted only in the odd numbered card slots if it is provisioned with the `type=dsm` parameter of the `ent-card` command. The SLIC can be inserted in odd or even numbered card slots if it is provisioned with the `type=slic` parameter of the `ent-card` command.

Table 4-6 Card Locations

Location of the E5-SM8G-B	Empty Card Location
Slot 11	Slot 12
Slot 13	Slot 14
Slot 15	Slot 16
Slot 17	Slot 18

The `ent-card` command uses these parameters:

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

`:type` – The type of card being added to the database. The value of this parameter is `dsm` or `slic`.

`:appl` – The application software that is assigned to the card. The value of this parameter is `vsccp`.

`:data` – The data type of the card when running the EPAP Data Split feature and the Dual ExAP Configuration feature. The value of this parameter is `dn` or `imsi` for the EPAP Data Split feature and `ELAP`, `EPAP` or `GTT` for the Dual ExAP Configuration feature.

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, perform the "Adding a Shelf" procedure in *Database Administration – System Management User's Guide*.

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

> **Note:**
>
> If you want to add an E5-SM8G-B or SLIC card as the service module, verify the temperature threshold settings for the appropriate card by performing the "Changing the High-Capacity Card Temperature Alarm Thresholds" procedure in *Database Administration - SS7 User's Guide*. The E5-SM8G-B card also requires a fan tray.

1. Display the cards in the EAGLE using the `rtrv-card` command to verify that the card location for the new service module is not provisioned. This is an example of the possible output.

   > **Note:**
   >
   > Cards should be distributed throughout the EAGLE for proper power distribution. Refer to *Installation Guide* for the shelf power distribution.

   This is an example of the possible output:

```
tklc1110501 15-06-24 16:59:18 EST  EAGLE5 46.2.0-65.53.1
CARD   TYPE      APPL     LSET NAME   LINK SLC LSET NAME   LINK SLC  DATA
1101   DCM       IPLIM    stpb058a    A    0   stpb058a    B    6
                          stpb058a    A1   1   stpb058a    B1   7
                          stpd078a    A2   0   stpd078a    B2   6
                          stpd078a    A3   1   stpd078a    B3   7
1102   TSM       GLS
1103   DCM       IPLIM    stpb058a    A    8   stpd078a    B    8
                          stpb058a    A1   9   stpd078a    B1   9
                          stpb058a    A2   10  stpd078a    B2   10
                          stpb058a    A3   11  stpd078a    B3   11
1104   TSM       GLS
1105   DCM       SS7IPGW  sc1b059a    A    0
1106   DCM       SS7IPGW  sc1b059a    A    1
1107   DSM       VSCCP                                          ELAP
1111   MCPM      MCP
1112   MCPM      MCP
1113   E5-MCAP   OAM
1114   TDM-A
1115   E5-MCAP   OAM
1116   TDM-B
1117   MDAL
1201   LIMATM    ATMANSI  ls1201a00   A    0   ls1201a04   B    0
1204   LIMT1     SS7ANSI  ls1204a00   A    0   ls1204a01   A1   0
                          ls1204a02   A2   0   ls1204a00   A4   1
                          ls1204a01   A5   1   ls1204a02   A6   1
1205   LIME1     CCS7ITU  ls1205i00   A    0   ls1205i04   B    0
                          ls1205i01   A1   0   ls1205i05   B1   0
                          ls1205i02   A2   0   ls1205i06   B2   0
                          ls1205i03   A3   0   ls1205i07   B3   0
                          ls1205i08   A4   0   ls1205i12   B4   0
```

```
                                ls1205i09   A5   0   ls1205i13   B5   0
                                ls1205i10   A6   0   ls1205i14   B6   0
                                ls1205i11   A7   0   ls1205i15   B7   0
                                ls1205i04   A8   1   ls1205i00   B8   1
                                ls1205i05   A9   1   ls1205i01   B9   1
                                ls1205i06   A10  1   ls1205i02   B10  1
                                ls1205i07   A11  1   ls1205i03   B11  1
                                ls1205i12   A12  1   ls1205i08   B12  1
                                ls1205i13   A13  1   ls1205i09   B13  1
                                ls1205i10   B14  1   ls1205i11   B15  1
1206   LIME1     CCS7ITU        ls1206n00   A    0   ls1206n04   B    0
                                ls1206n01   A1   0   ls1206n05   B1   0
                                ls1206n02   A2   0   ls1206n06   B2   0
                                ls1206n03   A3   0   ls1206n07   B3   0
                                ls1206n08   A4   0   ls1206n12   B4   0
                                ls1206n09   A5   0   ls1206n13   B5   0
                                ls1206n10   A6   0   ls1206n14   B6   0
                                ls1206n11   A7   0   ls1206n15   B7   0
                                ls1206n12   A8   1   ls1206n00   B8   1
                                ls1206n13   A9   1   ls1206n01   B9   1
                                ls1206n14   A10  1   ls1206n02   B10  1
                                ls1206n15   A11  1   ls1206n03   B11  1
                                ls1206n04   A12  1   ls1206n08   B12  1
                                ls1206n05   A13  1   ls1206n09   B13  1
                                ls1206n10   B14  1   ls1206n11   B15  1
1207   LIME1     CCS7ITU        ls1207i00   A    0   ls1207i04   B    0
                                ls1207i00   A1   1   ls1207i04   B1   1
                                ls1207i02   A2   0   ls1207i06   B2   0
                                ls1207i02   A3   1   ls1207i06   B3   1
                                ls1207i08   A4   0   ls1207i12   B4   0
                                ls1207i08   A5   1   ls1207i12   B5   1
                                ls1207i10   A6   0   ls1207i14   B6   0
                                ls1207i10   A7   1   ls1207i14   B7   1
                                ls1207i00   A8   2   ls1207i04   B8   2
                                ls1207i00   A9   3   ls1207i04   B9   3
                                ls1207i02   A10  2   ls1207i06   B10  2
                                ls1207i02   A11  3   ls1207i06   B11  3
                                ls1207i08   A12  2   ls1207i12   B12  2
                                ls1207i08   A13  3   ls1207i12   B13  3
                                ls1207i10   A14  2   ls1207i14   B14  2
                                ls1207i10   A15  3   ls1207i14   B15  3
1208   LIMT1     SS7ANSI        ls1208a00   A    0   ls1208a04   B    0
                                ls1208a01   A1   0   ls1208a05   B1   0
                                ls1208a02   A2   0   ls1208a06   B2   0
                                ls1208a03   A3   0   ls1208a07   B3   0
                                ls1208a08   A4   0   ls1208a09   A5   0
                                ls1208a10   A6   0   ls1208a11   A7   0
                                ls1208a04   A8   1   ls1208a00   B8   1
                                ls1208a05   A9   1   ls1208a01   B9   1
                                ls1208a06   A10  1   ls1208a02   B10  1
                                ls1208a07   A11  1   ls1208a03   B11  1
                                ls1208a08   B12  1   ls1208a09   B13  1
                                ls1208a10   B14  1   ls1208a11   B15  1
1212   LIME1     CCS7ITU        lsstpb100i  A    0   lsstpb101i  B    0
                                lsstpb100i  A1   1   lsstpb101i  B1   1
                                lsstpb100i  A2   2   lsstpb101i  B2   2
```

```
                                lsstpb100i  A3   3   lsstpb101i  B3   3
                                lsstpb100i  A4   4   lsstpb101i  B4   4
                                lsstpb100i  A5   5   lsstpb101i  B5   5
                                lsstpb100i  A6   6   lsstpb101i  B6   6
                                lsstpb100i  A7   7   lsstpb101i  B7   7
                                lsstpb102i  A8   0   lsstpb103i  B8   0
                                lsstpb102i  A9   1   lsstpb103i  B9   1
                                lsstpb102i  A10  2   lsstpb103i  B10  2
                                lsstpb102i  A11  3   lsstpb103i  B11  3
                                lsstpb102i  A12  4   lsstpb103i  B12  4
                                lsstpb102i  A13  5   lsstpb103i  B13  5
                                lsstpb102i  A14  6   lsstpb103i  B14  6
                                lsstpb102i  A15  7   lsstpb103i  B15  7
                                lsstpb104i  A16  0   lsstpb106i  B16  0
                                lsstpb104i  A17  1   lsstpb106i  B17  1
                                lsstpb104i  A18  2   lsstpb106i  B18  2
                                lsstpb104i  A19  3   lsstpb106i  B19  3
                                lsstpb104i  A20  4   lsstpb106i  B20  4
                                lsstpb104i  A21  5   lsstpb106i  B21  5
                                lsstpb104i  A22  6   lsstpb106i  B22  6
                                lsstpb104i  A23  7   lsstpb106i  B23  7
                                lsstpb105i  A24  0   lsstpb107i  B24  0
                                lsstpb105i  A25  1   lsstpb107i  B25  1
                                lsstpb105i  A26  2   lsstpb107i  B26  2
                                lsstpb105i  A27  3   lsstpb107i  B27  3
                                lsstpb105i  A28  4   lsstpb107i  B28  4
                                lsstpb105i  A29  5   lsstpb107i  B29  5
                                lsstpb105i  A30  6   lsstpb107i  B30  6
                                lsstpb105i  A31  7   lsstpb107i  B31  7
1214   LIMT1     SS7ANSI        lsstpb108a  A    1   lsstpb108a  B    2
1215   LIME1     CCS7ITU        ls1215c00   A    0   ls1215c04   B    0
                                ls1215c01   A1   0   ls1215c05   B1   0
                                ls1215c02   A2   0   ls1215c06   B2   0
                                ls1215c03   A3   0   ls1215c07   B3   0
                                ls1215c08   A4   0   ls1215c09   A5   0
                                ls1215c10   A6   0   ls1215c11   A7   0
                                ls1215c04   A8   1   ls1215c00   B8   1
                                ls1215c05   A9   1   ls1215c01   B9   1
                                ls1215c06   A10  1   ls1215c02   B10  1
                                ls1215c07   A11  1   ls1215c03   B11  1
                                ls1215c08   B12  1   ls1215c09   B13  1
                                ls1215c10   B14  1   ls1215c11   B15  1
1216   LIME1     CCS7ITU        ls1216i00   A    0   ls1216i04   B    0
                                ls1216i00   A1   1   ls1216i04   B1   1
                                ls1216i00   A2   2   ls1216i04   B2   2
                                ls1216i00   A3   3   ls1216i04   B3   3
                                ls1216i00   A4   4   ls1216i04   B4   4
                                ls1216i00   A5   5   ls1216i04   B5   5
                                ls1216i00   A6   6   ls1216i04   B6   6
                                ls1216i00   A7   7   ls1216i04   B7   7
                                ls1216i00   A8   8   ls1216i04   B8   8
                                ls1216i00   A9   9   ls1216i04   B9   9
                                ls1216i00   A10  10  ls1216i04   B10  10
                                ls1216i00   A11  11  ls1216i04   B11  11
                                ls1216i00   A12  12  ls1216i04   B12  12
                                ls1216i00   A13  13  ls1216i04   B13  13
```

			ls1216i00	A14	14	ls1216i04	B14	14
			ls1216i00	A15	15	ls1216i04	B15	15
1217	IPSM	IPS						
1218	LIME1	CCS7ITU	ls1218c00	A	0	ls1218c01	A1	0
			ls1218c02	A2	0	ls1218c03	A3	0
			ls1218c00	A4	1	ls1218c01	A5	1
			ls1218c02	A6	1	ls1218c03	A7	1
1301	LIMT1	SS7ANSI	ls1301a01	A	0	ls1301a01	B	1
			ls1301a02	A1	0	ls1301a02	B1	1
			ls1301a03	A2	0	ls1301a03	B2	1
			ls1301a04	A3	0	ls1301a04	B3	1
			ls1301a05	A4	0	ls1301a05	B4	1
			ls1301a06	A5	0	ls1301a06	B5	1
			ls1301a07	A6	0	ls1301a07	B6	1
			ls1302a01	A7	0	ls1302a01	B7	1
			ls1302a02	A8	0	ls1302a02	B8	1
			ls1302a03	A9	0	ls1302a03	B9	1
			ls1302a04	A10	0	ls1302a04	B10	1
			ls1302a05	A11	0	ls1302a05	B11	1
			ls1302a06	A12	0	ls1302a06	B12	1
			ls1303a01	A13	0	ls1303a01	B13	1
			ls1303a02	A14	0	ls1303a02	B14	1
			ls1301a27	A15	0	ls1301a27	B15	1
1302	LIMT1	SS7ANSI	ls1301a00	A	0	ls1303a00	B	0
			ls1301a00	A1	1	ls1303a00	B1	1
			ls1301a00	A2	2	ls1303a00	B2	2
			ls1301a00	A3	3	ls1303a00	B3	3
			ls1301a00	A4	4	ls1303a00	B4	4
			ls1301a00	A5	5	ls1303a00	B5	5
			ls1301a00	A6	6	ls1303a00	B6	6
			ls1301a00	A7	7	ls1303a00	B7	7
			ls1301a00	A8	8	ls1303a00	B8	8
			ls1301a00	A9	9	ls1303a00	B9	9
			ls1301a00	A10	10	ls1303a00	B10	10
			ls1301a00	A11	11	ls1303a00	B11	11
			ls1301a00	A12	12	ls1303a00	B12	12
			ls1301a00	A13	13	ls1303a00	B13	13
			ls1301a00	A14	14	ls1303a00	B14	14
			ls1301a00	A15	15	ls1303a00	B15	15
1313	LIME1ATM	ATMITU	ls1313i00	A	0	ls1313i04	B	0
			ls1313i01	A1	0			
1314	LIMT1	SS7ANSI	ls1314a02	A	0	ls2214a02	B	0
			ls1314a02	A1	1	ls2214a02	B1	1
			ls1314a03	A2	0	ls2214a03	B2	0
			ls1314a03	A3	1	ls2214a03	B3	1
			ls1314a04	A4	0	ls2214a04	B4	0
			ls1314a04	A5	1	ls2214a04	B5	1
			ls1314a05	A6	0	ls2214a05	B6	0
			ls1314a05	A7	1	ls2214a05	B7	1
			ls1314a06	A8	0	ls2214a06	B8	0
			ls1314a06	A9	1	ls2214a06	B9	1
			ls1314a07	A10	0	ls5213a07	B10	0
			ls1314a07	A11	1	ls5213a07	B11	1
			ls2114a00	A12	0	ls5313a00	B12	0
			ls2114a00	A13	1	ls5313a00	B13	1
			ls2114a01	A14	0	ls5313a01	B14	0

```
                          ls2114a01   A15  1   ls5313a01   B15  1
1315   DCM        SS7IPGW  ls1315a00   A    0
1316   DCM        SS7IPGW  ls1315a00   A    1
1317   DSM        VSCCP                                            ELAP
2112   LIMT1      SS7ANSI  ls2112a00   A    0   ls2112a04   B    0
                          ls2112a00   A1   1   ls2112a04   B1   1
                          ls2112a00   A2   2   ls2112a04   B2   2
                          ls2112a00   A3   3   ls2112a04   B3   3
                          ls2112a00   A4   4   ls2112a04   B4   4
                          ls2112a00   A5   5   ls2112a04   B5   5
                          ls2112a00   A6   6   ls2112a04   B6   6
                          ls2112a00   A7   7   ls2112a04   B7   7
                          ls2112a00   A8   8   ls2112a04   B8   8
                          ls2112a00   A9   9   ls2112a04   B9   9
                          ls2112a00   A10  10  ls2112a04   B10  10
                          ls2112a00   A11  11  ls2112a04   B11  11
                          ls2112a00   A12  12  ls2112a04   B12  12
                          ls2112a00   A13  13  ls2112a04   B13  13
                          ls2112a00   A14  14  ls2112a04   B14  14
                          ls2112a00   A15  15  ls2112a04   B15  15
2113   LIME1ATM   ATMITU   ls1313i00   A    1   ls1313i04   B    1
                          ls1313i01   A1   1
2114   LIMT1      SS7ANSI
2115   DCM        SS7IPGW  ls1315a00   A    2
2116   DCM        SS7IPGW  ls1315a00   A    3
2117   DCM        SS7IPGW  ls1315a00   A    4
2118   DCM        SS7IPGW  ls1315a00   A    5
2201   LIMATM     ATMANSI  ls2201a00   A    0   ls2201a04   B    0
                          ls2201a01   A1   0
2202   LIMATM     ATMANSI  ls2202a00   A    0   ls2202a04   B    0
                          ls2202a01   A1   0
2208   LIME1ATM   ATMITU   ls2208i00   A    0   ls2208n04   B    0
2211   DSM        VSCCP                                            GTT
2213   LIME1ATM   ATMITU   ls2213i00   A    0   ls2213i04   B    0
                          ls2213i01   A1   0
2216   LIMT1      SS7ANSI  ls2216a00   A    0   ls2216a04   B    0
                          ls2216a00   A1   1   ls2216a04   B1   1
                          ls2216a00   A2   2   ls2216a04   B2   2
                          ls2216a00   A3   3   ls2216a04   B3   3
                          ls2216a00   A4   4   ls2216a04   B4   4
                          ls2216a00   A5   5   ls2216a04   B5   5
                          ls2216a00   A6   6   ls2216a04   B6   6
                          ls2216a00   A7   7   ls2216a04   B7   7
                          ls2216a00   A8   8   ls2216a04   B8   8
                          ls2216a00   A9   9   ls2216a04   B9   9
                          ls2216a00   A10  10  ls2216a04   B10  10
                          ls2216a00   A11  11  ls2216a04   B11  11
                          ls2216a00   A12  12  ls2216a04   B12  12
                          ls2216a00   A13  13  ls2216a04   B13  13
                          ls2216a00   A14  14  ls2216a04   B14  14
                          ls2216a00   A15  15  ls2216a04   B15  15
2217   DSM        VSCCP                                            ELAP
2301   LIMATM     ATMANSI  ls2201a00   A    1   ls2201a04   B    1
                          ls2201a01   A1   1
2302   LIMATM     ATMANSI  ls2202a00   A    1   ls2202a04   B    1
                          ls2202a01   A1   1
```

```
2305   DSM       VSCCP                                                    IMSI
2308   LIMATM    ATMANSI  ls1201a00   A    1   ls1201a04   B    1
2311   DSM       VSCCP                                                    IMSI
2313   LIME1ATM  ATMITU   ls2213i00   A    1   ls2213i04   B    1
                          ls2213i01   A1   1
2317   DSM       VSCCP                                                    ELAP
3101   DCM       SS7IPGW  sc1d079a    A    0
3102   IPSM      IPS
3103   DSM       VSCCP                                                    ELAP
3108   LIME1ATM  ATMITU   ls3108i00   A    0   ls2208i00   B    1
                          ls3108n01   A1   0
3111   DSM       VSCCP                                                    DN
3113   LIME1ATM  ATMITU   ls3108i00   A    1   ls3113n04   B    0
                          ls3113n01   A1   0
3114   STC       EROUTE
3116   STC       EROUTE
3117   DCM       SS7IPGW  ls1315a00   A    6
3118   DCM       SS7IPGW  ls1315a00   A    7
3201   DSM       VSCCP                                                    ELAP
3203   DSM       VSCCP                                                    ELAP
3205   DSM       VSCCP                                                    ELAP
3207   DSM       VSCCP                                                    ELAP
3211   ENET      IPSG     ls3211a00   A    0
3212   ENET      IPSG     ls3211a00   A    1
3213   ENET      IPSG     ls3211a00   A    2
3214   ENET      IPSG     ls3211a00   A    3
3215   ENET      IPSG     ls3211a00   A    4
3216   ENET      IPSG     ls3211a00   A    5
3217   DSM       VSCCP                                                    ELAP
3301   DCM       SS7IPGW  ls3301a00   A    0
3302   DCM       SS7IPGW  ls3301a00   A    1
3303   DCM       SS7IPGW  ls3301a00   A    2
3304   DCM       SS7IPGW  ls3301a00   A    3
3305   DCM       SS7IPGW  ls3301a00   A    4
3306   DCM       SS7IPGW  ls3301a00   A    5
3307   DCM       SS7IPGW  ls3301a00   A    6
3308   DCM       SS7IPGW  ls3301a00   A    7
3311   DCM       SS7IPGW  ls3311a00   A    0
3312   DCM       SS7IPGW  ls3311a00   A    1
3313   DCM       SS7IPGW  ls3311a00   A    2
3314   DCM       SS7IPGW  ls3311a00   A    3
3315   DCM       SS7IPGW  ls3311a00   A    4
3316   DCM       SS7IPGW  ls3311a00   A    5
3317   DCM       SS7IPGW  ls3311a00   A    6
3318   DCM       SS7IPGW  ls3311a00   A    7
4107   DSM       VSCCP                                                    IMSI
4111   DSM       VSCCP                                                    GTT
4113   LIMT1     SS7ANSI  ls4113a00   A    0   ls4113a04   B    0
                          ls4113a00   A1   1   ls4113a04   B1   1
                          ls4113a00   A2   2   ls4113a04   B2   2
                          ls4113a00   A3   3   ls4113a04   B3   3
                          ls4113a00   A4   4   ls4113a04   B4   4
                          ls4113a00   A5   5   ls4113a04   B5   5
                          ls4113a00   A6   6   ls4113a04   B6   6
                          ls4113a00   A7   7   ls4113a04   B7   7
                          ls4113a00   A8   8   ls4113a04   B8   8
```

```
                                ls4113a00   A9    9   ls4113a04   B9   9
                                ls4113a00   A10   10  ls4113a04   B10  10
                                ls4113a00   A11   11  ls4113a04   B11  11
                                ls4113a00   A12   12  ls4113a04   B12  12
                                ls4113a00   A13   13  ls4113a04   B13  13
                                ls4113a00   A14   14  ls4113a04   B14  14
                                ls4113a00   A15   15  ls4113a04   B15  15
4115   DCM        SS7IPGW       ls4115a00   A     0
4116   DCM        SS7IPGW       ls4115a00   A     1
4117   DCM        SS7IPGW       ls4115a00   A     2
4118   DCM        SS7IPGW       ls4115a00   A     3
4207   DSM        VSCCP                                                  DN
4212   LIME1      CCS7ITU       ls4212n00   A     0   ls4212n04   B    0
                                ls4212n00   A1    1   ls4212n04   B1   1
                                ls4212n02   A2    0   ls4212n06   B2   0
                                ls4212n02   A3    1   ls4212n06   B3   1
                                ls4212n08   A4    0   ls4212n12   B4   0
                                ls4212n08   A5    1   ls4212n12   B5   1
                                ls4212n10   A6    0   ls4212n14   B6   0
                                ls4212n10   A7    1   ls4212n14   B7   1
                                ls4212n00   A8    2   ls4212n04   B8   2
                                ls4212n00   A9    3   ls4212n04   B9   3
                                ls4212n02   A10   2   ls4212n06   B10  2
                                ls4212n02   A11   3   ls4212n06   B11  3
                                ls4212n08   A12   2   ls4212n12   B12  2
                                ls4212n08   A13   3   ls4212n12   B13  3
                                ls4212n10   A14   2   ls4212n14   B14  2
                                ls4212n10   A15   3   ls4212n14   B15  3
4213   LIMT1      SS7ANSI       ls4213a00   A     0   ls4213a04   B    0
                                ls4213a00   A1    1   ls4213a04   B1   1
                                ls4213a02   A2    0   ls4213a06   B2   0
                                ls4213a02   A3    1   ls4213a06   B3   1
                                ls4213a08   A4    0   ls4213a12   B4   0
                                ls4213a08   A5    1   ls4213a12   B5   1
                                ls4213a10   A6    0   ls4213a14   B6   0
                                ls4213a10   A7    1   ls4213a14   B7   1
                                ls4213a00   A8    2   ls4213a04   B8   2
                                ls4213a00   A9    3   ls4213a04   B9   3
                                ls4213a02   A10   2   ls4213a06   B10  2
                                ls4213a02   A11   3   ls4213a06   B11  3
                                ls4213a08   A12   2   ls4213a12   B12  2
                                ls4213a08   A13   3   ls4213a12   B13  3
                                ls4213a10   A14   2   ls4213a14   B14  2
                                ls4213a10   A15   3   ls4213a14   B15  3
4217   DCM        SS7IPGW       ls4115a00   A     4
4218   DCM        SS7IPGW       ls4115a00   A     5
4311   DSM        VSCCP                                                  DN
4313   LIMT1      SS7ANSI       ls4313a00   A     0   ls4313a04   B    0
                                ls4313a00   A1    1   ls4313a04   B1   1
                                ls4313a02   A2    0   ls4313a06   B2   0
                                ls4313a02   A3    1   ls4313a06   B3   1
                                ls4313a08   A4    0   ls4313a12   B4   0
                                ls4313a08   A5    1   ls4313a12   B5   1
                                ls4313a10   A6    0   ls4313a14   B6   0
                                ls4313a10   A7    1   ls4313a14   B7   1
                                ls4313a00   A8    2   ls4313a04   B8   2
```

			ls4313a00	A9	3	ls4313a04	B9	3
			ls4313a02	A10	2	ls4313a06	B10	2
			ls4313a02	A11	3	ls4313a06	B11	3
			ls4313a08	A12	2	ls4313a12	B12	2
			ls4313a08	A13	3	ls4313a12	B13	3
			ls4313a10	A14	2	ls4313a14	B14	2
			ls4313a10	A15	3	ls4313a14	B15	3
4317	DCM	SS7IPGW	ls4115a00	A	6			
4318	DCM	SS7IPGW	ls4115a00	A	7			
5101	LIME1	CCS7ITU	ls5101i00	A	0	ls5101i04	B	0
			ls5101i00	A1	1	ls5101i04	B1	1
			ls5101i00	A2	2	ls5101i04	B2	2
			ls5101i00	A3	3	ls5101i04	B3	3
			ls5101i00	A4	4	ls5101i04	B4	4
			ls5101i00	A5	5	ls5101i04	B5	5
			ls5101i00	A6	6	ls5101i04	B6	6
			ls5101i00	A7	7	ls5101i04	B7	7
			ls5101i00	A8	8	ls5101i04	B8	8
			ls5101i00	A9	9	ls5101i04	B9	9
			ls5101i00	A10	10	ls5101i04	B10	10
			ls5101i00	A11	11	ls5101i04	B11	11
			ls5101i00	A12	12	ls5101i04	B12	12
			ls5101i00	A13	13	ls5101i04	B13	13
			ls5101i00	A14	14	ls5101i04	B14	14
			ls5101i00	A15	15	ls5101i04	B15	15
5102	LIME1	CCS7ITU	ls5102i00	A	0	ls5102i04	B	0
			ls5102i00	A1	1	ls5102i04	B1	1
			ls5102i02	A2	0	ls5102i06	B2	0
			ls5102i02	A3	1	ls5102i06	B3	1
			ls5102i08	A4	0	ls5102i12	B4	0
			ls5102i08	A5	1	ls5102i12	B5	1
			ls5102i10	A6	0	ls5102i14	B6	0
			ls5102i10	A7	1	ls5102i14	B7	1
			ls5102i00	A8	2	ls5102i04	B8	2
			ls5102i00	A9	3	ls5102i04	B9	3
			ls5102i02	A10	2	ls5102i06	B10	2
			ls5102i02	A11	3	ls5102i06	B11	3
			ls5102i08	A12	2	ls5102i12	B12	2
			ls5102i08	A13	3	ls5102i12	B13	3
			ls5102i10	A14	2	ls5102i14	B14	2
			ls5102i10	A15	3	ls5102i14	B15	3
5103	LIME1	CCS7ITU	ls5103i00	A	0	ls5103i04	B	0
			ls5103i00	A1	1	ls5103i04	B1	1
			ls5103i02	A2	0	ls5103i06	B2	0
			ls5103i02	A3	1	ls5103i06	B3	1
			ls5103i08	A4	0	ls5103i12	B4	0
			ls5103i08	A5	1	ls5103i12	B5	1
			ls5103i10	A6	0	ls5103i14	B6	0
			ls5103i10	A7	1	ls5103i14	B7	1
			ls5103i00	A8	2	ls5103i04	B8	2
			ls5103i00	A9	3	ls5103i04	B9	3
			ls5103i02	A10	2	ls5103i06	B10	2
			ls5103i02	A11	3	ls5103i06	B11	3
			ls5103i08	A12	2	ls5103i12	B12	2
			ls5103i08	A13	3	ls5103i12	B13	3
			ls5103i10	A14	2	ls5103i14	B14	2

```
                                ls5103i10   A15  3   ls5103i14   B15  3
5104   LIMATM    ATMANSI        stpd078a    A    3
5105   LIMATM    ATMANSI        stpb058a    A    4
5106   LIMATM    ATMANSI        stpd078a    A    4
5107   LIMATM    ATMANSI        stpb058a    A    5
5108   LIMATM    ATMANSI        stpd078a    A    5
5112   LIME1     CCS7ITU        ls5112n00   A    0   ls5112n04   B    0
                                ls5112n00   A1   1   ls5112n04   B1   1
                                ls5112n02   A2   0   ls5112n06   B2   0
                                ls5112n02   A3   1   ls5112n06   B3   1
                                ls5112n08   A4   0   ls5112n12   B4   0
                                ls5112n08   A5   1   ls5112n12   B5   1
                                ls5112n10   A6   0   ls5112n14   B6   0
                                ls5112n10   A7   1   ls5112n14   B7   1
                                ls5112n00   A8   2   ls5112n04   B8   2
                                ls5112n00   A9   3   ls5112n04   B9   3
                                ls5112n02   A10  2   ls5112n06   B10  2
                                ls5112n02   A11  3   ls5112n06   B11  3
                                ls5112n08   A12  2   ls5112n12   B12  2
                                ls5112n08   A13  3   ls5112n12   B13  3
                                ls5112n10   A14  2   ls5112n14   B14  2
                                ls5112n10   A15  3   ls5112n14   B15  3
5113   LIMT1     SS7ANSI        ls5113a00   A    0   ls5113a04   B    0
                                ls5113a00   A1   1   ls5113a04   B1   1
                                ls5113a02   A2   0   ls5113a06   B2   0
                                ls5113a02   A3   1   ls5113a06   B3   1
                                ls5113a08   A4   0   ls5113a12   B4   0
                                ls5113a08   A5   1   ls5113a12   B5   1
                                ls5113a10   A6   0   ls5113a14   B6   0
                                ls5113a10   A7   1   ls5113a14   B7   1
                                ls5113a00   A8   2   ls5113a04   B8   2
                                ls5113a00   A9   3   ls5113a04   B9   3
                                ls5113a02   A10  2   ls5113a06   B10  2
                                ls5113a02   A11  3   ls5113a06   B11  3
                                ls5113a08   A12  2   ls5113a12   B12  2
                                ls5113a08   A13  3   ls5113a12   B13  3
                                ls5113a10   A14  2   ls5113a14   B14  2
                                ls5113a10   A15  3   ls5113a14   B15  3
5117   DCM       SS7IPGW        ls5117a00   A    0
5118   DCM       SS7IPGW        ls5117a00   A    1
5208   LIME1     CCS7ITU        ls5208i00   A    0   ls5208i04   B    0
                                ls5208i00   A1   1   ls5208i04   B1   1
                                ls5208i00   A2   2   ls5208i04   B2   2
                                ls5208i00   A3   3   ls5208i04   B3   3
                                ls5208i00   A4   4   ls5208i04   B4   4
                                ls5208i00   A5   5   ls5208i04   B5   5
                                ls5208i00   A6   6   ls5208i04   B6   6
                                ls5208i00   A7   7   ls5208i04   B7   7
                                ls5208i00   A8   8   ls5208i04   B8   8
                                ls5208i00   A9   9   ls5208i04   B9   9
                                ls5208i00   A10  10  ls5208i04   B10  10
                                ls5208i00   A11  11  ls5208i04   B11  11
                                ls5208i00   A12  12  ls5208i04   B12  12
                                ls5208i00   A13  13  ls5208i04   B13  13
                                ls5208i00   A14  14  ls5208i04   B14  14
                                ls5208i00   A15  15  ls5208i04   B15  15
```

```
5211   DSM       VSCCP                                                    IMSI
5215   DCM       SS7IPGW  ls5117a00   A    2
5216   DCM       SS7IPGW  ls5117a00   A    3
5217   DCM       SS7IPGW  ls5117a00   A    4
5218   DCM       SS7IPGW  ls5117a00   A    5
5301   DCM       SS7IPGW  sc1d079a    A    1
5302   IPSM      IPS
5303   DCM       SS7IPGW  ls5117a00   A    6
5304   DCM       SS7IPGW  ls5117a00   A    7
5306   LIME1     CCS7ITU  ls5306i00   A    0   ls5306i04   B    0
                          ls5306i00   A1   1   ls5306i04   B1   1
                          ls5306i00   A2   2   ls5306i04   B2   2
                          ls5306i00   A3   3   ls5306i04   B3   3
                          ls5306i00   A4   4   ls5306i04   B4   4
                          ls5306i00   A5   5   ls5306i04   B5   5
                          ls5306i00   A6   6   ls5306i04   B6   6
                          ls5306i00   A7   7   ls5306i04   B7   7
                          ls5306i00   A8   8   ls5306i04   B8   8
                          ls5306i00   A9   9   ls5306i04   B9   9
                          ls5306i00   A10  10  ls5306i04   B10  10
                          ls5306i00   A11  11  ls5306i04   B11  11
                          ls5306i00   A12  12  ls5306i04   B12  12
                          ls5306i00   A13  13  ls5306i04   B13  13
                          ls5306i00   A14  14  ls5306i04   B14  14
                          ls5306i00   A15  15  ls5306i04   B15  15
5307   DSM       VSCCP                                                    GTT
5312   LIME1     CCS7ITU  ls5312i00   A    0   ls5312i04   B    0
                          ls5312i00   A1   1   ls5312i04   B1   1
                          ls5312i02   A2   0   ls5312i06   B2   0
                          ls5312i02   A3   1   ls5312i06   B3   1
                          ls5312i08   A4   0   ls5312i12   B4   0
                          ls5312i08   A5   1   ls5312i12   B5   1
                          ls5312i10   A6   0   ls5312i14   B6   0
                          ls5312i10   A7   1   ls5312i14   B7   1
                          ls5312i00   A8   2   ls5312i04   B8   2
                          ls5312i00   A9   3   ls5312i04   B9   3
                          ls5312i02   A10  2   ls5312i06   B10  2
                          ls5312i02   A11  3   ls5312i06   B11  3
                          ls5312i08   A12  2   ls5312i12   B12  2
                          ls5312i08   A13  3   ls5312i12   B13  3
                          ls5312i10   A14  2   ls5312i14   B14  2
                          ls5312i10   A15  3   ls5312i14   B15  3
5315   LIMT1     SS7ANSI  ls5315a00   A    0   ls5315a04   B    0
                          ls5315a00   A1   1   ls5315a04   B1   1
                          ls5315a02   A2   0   ls5315a06   B2   0
                          ls5315a02   A3   1   ls5315a06   B3   1
                          ls5315a08   A4   0   ls5315a12   B4   0
                          ls5315a08   A5   1   ls5315a12   B5   1
                          ls5315a10   A6   0   ls5315a14   B6   0
                          ls5315a10   A7   1   ls5315a14   B7   1
                          ls5315a00   A8   2   ls5315a04   B8   2
                          ls5315a00   A9   3   ls5315a04   B9   3
                          ls5315a02   A10  2   ls5315a06   B10  2
                          ls5315a02   A11  3   ls5315a06   B11  3
                          ls5315a08   A12  2   ls5315a12   B12  2
                          ls5315a08   A13  3   ls5315a12   B13  3
```

```
                                 ls5315a10   A14  2   ls5315a14   B14  2
                                 ls5315a10   A15  3   ls5315a14   B15  3
5316   LIMT1     SS7ANSI         ls5316a00   A    0   ls5316a04   B    0
                                 ls5316a00   A1   1   ls5316a04   B1   1
                                 ls5316a00   A2   2   ls5316a04   B2   2
                                 ls5316a00   A3   3   ls5316a04   B3   3
                                 ls5316a00   A4   4   ls5316a04   B4   4
                                 ls5316a00   A5   5   ls5316a04   B5   5
                                 ls5316a00   A6   6   ls5316a04   B6   6
                                 ls5316a00   A7   7   ls5316a04   B7   7
                                 ls5316a00   A8   8   ls5316a04   B8   8
                                 ls5316a00   A9   9   ls5316a04   B9   9
                                 ls5316a00   A10  10  ls5316a04   B10  10
                                 ls5316a00   A11  11  ls5316a04   B11  11
                                 ls5316a00   A12  12  ls5316a04   B12  12
                                 ls5316a00   A13  13  ls5316a04   B13  13
                                 ls5316a00   A14  14  ls5316a04   B14  14
                                 ls5316a00   A15  15  ls5316a04   B15  15
5317   DSM       VSCCP                                                    ELAP
6101   DSM       VSCCP                                                    ELAP
6103   ENET      IPSG        ls3211a00   A    6
6104   ENET      IPSG        ls3211a00   A    7
6105   DSM       VSCCP                                                    ELAP
6107   DSM       VSCCP                                                    ELAP
6111   DSM       VSCCP                                                    ELAP
6113   DSM       VSCCP                                                    ELAP
6115   DSM       VSCCP                                                    ELAP
6117   DSM       VSCCP                                                    ELAP
```

If service modules are shown in the `rtrv-card` output, shown by the entry `VSCCP` in the `APPL` column, continue the procedure with step 4.

If service modules are not shown in the `rtrv-card` output, continue the procedure with step 2.

2. Verify that the GTT feature is on by entering the `rtrv-feat` command. If the GTT feature is on, the `GTT` field should be set to `on`. For this example, the GTT feature is off.

> **Note:**
>
> The `rtrv-feat` command output contains other fields that are not used by this procedure. To see all the fields displayed by the `rtrv-feat` command, refer to the `rtrv-feat` command description in *Commands User's Guide*.

If the GTT feature is on, continue the procedure with step 4.

If the GTT feature is off, continue the procedure with step 3.

3. Turn the global title translation feature on by entering this command.

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

> **Note:**
>
> Once the Global Title Translation (GTT) feature is turned on with the `chg-feat`command, it cannot be turned off.
> The GTT feature must be purchased before turning it on. If you are not sure whether you have purchased the GTT feature, contact your Sales Representative or Account Representative.

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

```
rlghncxa03w 09-07-25 09:57:41 GMT EAGLE5 41.1.0
CHG-FEAT: MASP A - COMPLTD
```

Continue the procedure by performing one of these steps.

- If a card is being added, continue the procedure with step 7.
- If an E5-SM8G-B card is being added, continue the procedure with step 6.

4. Display the status of the features in the database by entering the `rtrv-ctrl-feat` command. The following is an example of the possible output.

```
tklc1110501 15-06-24 16:53:12 EST  EAGLE5 46.2.0-65.53.1
The following features have been permanently enabled:

Feature Name                 Partnum   Status Quantity
Large System # Links         893005910 on     2000
XGTT Table Expansion         893006110 on     1000000
Routesets                    893006403 on     8000
LNP Short Message Serv.      893006601 on     ----
Intermed GTT Load Sharing    893006901 on     ----
Command Class Management     893005801 on     ----
Telnet                       893005701 on     ----
EAGLE5 Product               893007101 on     ----
XMAP Table Expansion         893007710 on     3000
LNP ported NPANXXs           893009403 on     350000
LNP ported LRNs              893010506 on     200000
LNP ELAP Configuration       893010901 on     ----
LNP ported TNs               893011036 on     384000000
SCCP Conversion              893012001 on     ----
HC-MIM SLK Capacity          893012707 on     64
EAGLE OA&M IP Security       893400001 off    ----
Flexible GTT Load Sharing    893015401 on     ----
Origin-Based MTP Routing     893014201 on     ----
Origin Based SCCP Routing    893014301 on     ----
GPORT                        893017201 on     ----
INP                          893017901 on     ----
Throughput Cap               893019101 on     5000
Multiple Linkset to APC      893019701 on     ----
6-Way LS on Routesets        893019801 on     ----
Proxy Point Code             893018710 on     100
AMGTT                        893021801 on     ----
VGTT with 16 GTT lengths     893024801 on     ----
ITU TCAP LRN QUERY(LRNQT)    893026301 on     ----
```

```
ISLSBR                        893026501 on     ----
GTT Action - DISCARD          893027501 on     ----
GTT Action - DUPLICATE        893027601 on     ----
GTT Action - FORWARD          893037501 on     ----
Flex Lset Optnl Based Rtg     893027701 on     ----
TCAP Opcode Based Routing     893027801 on     ----
TOBR Opcode Quantity          893027907 on     1000000
ST-HSL-A SLK Capacity         893027301 on     4
3 Links per E5-ATM card       893039104 on     20
Integrated GLS                893038901 on     ----
EPAP Data Split               893039801 on     ----
Dual ExAP Config              893040501 on     ----

The following features have been temporarily enabled:

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

The following features have expired temporary keys:

Feature Name                  Partnum
Zero entries found.
```

The following table shows the ELAP-Based and EPAP-Based features that can be enabled. These features can affect how many service modules can be provisioned in the EAGLE.

Table 4-7 ELAP-Based and EPAP-Based Features

ELAP-Based Features		
LNP		
EPAP-Based Features		
EIR	G-Port	INP
ANSI-41 INP Query	A-Port	IS41 GSM Migration
G-Flex	TINP	V-Flex
ATINP	TIF Number Portability	TIF SCS Forwarding
TIF Simple Number Substitution	TIF ASD	TIF GRN
Prepaid IDP Query Relay	IDP Screening for Prepaid	MO-based GSM SMS NP
MO-based IS41 SMS NP	MO SMS IS41-to-GSM Migration	MO SMS ASD
MO SMS GRN	Portability Check for MO SMS	Prepaid SMS Intercept Phase 1
Service Portability	Info Analyzed Relay Base	TIF Selective Screening

Continue the procedure by performing one of these steps.

- If any of the features shown in Table 4-7 isenabled, or if any the shown in Table 4-7 will be enabled, continue the procedure with step 5.
- If none of the features shown in Table 4-7 is enabled and none of these features will be enabled, continue the procedure with step 5.

5. Verify the number of service modules in the EAGLE by entering the `rept-stat-sccp` command. The number of service modules is shown in the `SCCP Cards Configured` field of the `rept-stat-sccp` output. This is an example of the possible output.

```
tklc1110501 15-06-24 17:00:40 EST  EAGLE5 46.2.0-65.53.1
SCCP SUBSYSTEM REPORT   IS-NR          Active     -----
     SCCP ALARM STATUS   = No Alarms
MNP SERVICE REPORT      IS-ANR         Active     -----
     MNP ALARM STATUS    = **  0547 Service degraded
LNP SUBSYSTEM REPORT    IS-NR          Active     -----
     LNP:    SSN STATUS  = Allowed     MATE SSN STATUS = ----------
     LNP ALARM STATUS    = **  0283 LNP Ported LRNs approaching Feat. Cap.
INPQ SUBSYSTEM REPORT   IS-ANR         Active     -----
     INPQ:   SSN STATUS  = Allowed     MATE SSN STATUS = ----------
     INP ALARM STATUS    = **  0428 INP Subsystem degraded, cards abnormal

SCCP Cards Configured=28      Cards IS-NR=27
System Daily Peak SCCP Load       4134   TPS 15-06-24 07:13:24
System Overall Peak SCCP Load     4134   TPS 15-06-24 07:13:24
System Total SCCP Capacity        135000 TPS (135000 max SCCP Capacity)
System SCCP Capacity Calc. Method (N)
System TPS Alarm Threshold        108000 TPS ( 80% System   N SCCP
Capacity)

CARD   VERSION      PST     SST        AST    MSU    CPU   DATA
                                              USAGE  USAGE  TYPE
------------------------------------------------------------------
1317   135-052-000  IS-NR   Active     -----    2%     5%   ELAP
2211   135-052-000  IS-NR   Active     -----    1%     9%   GTT
2217   135-052-000  IS-NR   Active     -----   20%    10%   ELAP
2305   135-052-000  IS-NR   Active     -----    1%     3%   IMSI
2311   135-052-000  IS-NR   Active     -----    0%     1%   IMSI
2317   135-052-000  IS-NR   Active     -----    2%     2%   ELAP
3103   135-052-000  IS-NR   Active     -----    2%     5%   ELAP
3111   135-052-000  IS-NR   Active     -----    0%     5%   DN
3201 P 135-052-000  IS-NR   Active     -----    2%     5%   ELAP
3203   135-052-000  IS-NR   Active     -----    2%     2%   ELAP
3205   135-052-000  IS-NR   Active     -----    2%     2%   ELAP
3207   135-052-000  IS-NR   Active     -----    2%     5%   ELAP
3217   135-052-000  IS-NR   Active     -----    2%     5%   ELAP
4107   135-052-000  IS-NR   Active     -----    0%     4%   IMSI
4111   135-052-000  IS-NR   Active     -----    0%     9%   GTT
4207 P 135-052-000  IS-NR   Active     -----    1%     5%   DN
4311   -----------  OOS-MT  Isolated   -----    0%     0%   DN
5211   135-052-000  IS-NR   Active     -----    1%     5%   IMSI
5307   135-052-000  IS-NR   Active     -----    1%     9%   GTT
5317   135-052-000  IS-NR   Active     -----   20%     4%   ELAP
6101   135-052-000  IS-NR   Active     -----    2%     2%   ELAP
6105   135-052-000  IS-NR   Active     -----    2%     2%   ELAP
6107   135-052-000  IS-NR   Active     -----    2%     2%   ELAP
6111   135-052-000  IS-NR   Active     -----    2%     2%   ELAP
6113   135-052-000  IS-NR   Active     -----    2%     3%   ELAP
6115   135-052-000  IS-NR   Active     -----    2%     5%   ELAP
6117   135-052-000  IS-NR   Active     -----    2%     5%   ELAP
1107   135-052-000  IS-NR   Active     -----    2%     2%   ELAP
------------------------------------------------------------------
```

```
SCCP Service Average MSU Capacity =   2%   Average CPU Capacity =   4%

AVERAGE CPU USAGE PER SERVICE:
GTT    =   1%  MNP    =   0%
LNPMR  =   1%  LNPQS  =   1%  WNPQS  =   1%  TLNP   =   1%  PLNPQS =   1%
LRNQT  =   0%  INPMR  =   0%

TOTAL SERVICE STATISTICS:
                                    FAIL     REROUTE\       FORWARD
SERVICE    SUCCESS    ERRORS    RATIO     WARNINGS        TO GTT     TOTAL
GTT:           111         0       0%            -             -       111
MNP:             0         0       0%            0             0         0
LNPMR:        1602         0       0%            -             -      1602
LNPQS:      109065        32       0%            -             -    109097
WNPQS:        1266         0       0%            -             -      1266
TLNP:          725         0       0%            -             -       725
PLNPQS:       8817         0       0%            -             -      8817
LRNQT:           0         0       0%            -             -         0
INPMR:           0         0       0%            0             0         0
INPQ:            0         0       0%            0             -         0
```

Note:

The `rept-stat-sccp` command output contains other fields that are not used by this procedure. If you wish to see all the fields displayed by the `rept-stat-sccp` command, refer to the `rept-stat-sccp` command description in *Commands User's Guide*.

The following table shows the maximum number of service modules that can be provisioned based on the type of SCCP traffic the EAGLE is handling and whether or not the Throughput Capacity or the EAGLE SCCP Capacity Increase features are enabled and turned on.

Table 4-8 SCCP Transactions Per Second

Type of Traffic	Maximum Transactions per Second for the EAGLE	Transactions per Second for each Service Module	Maximum Number of Service Modules
Throughput Capacity Feature for either 5000 or 6800 SCCP Transactions per Second is not Enabled or Turned On			
GTT Traffic or ANSI41 AIQ only - No EPAP-Based Traffic or ELAP-Based (LNP) Traffic	52,700	1700	32
ELAP-Based (LNP) Traffic	40,800	1700	25
EPAP-Based Traffic	40,800	1700 - for a SLIC card	25
	20,400	850 - for a DSM	25
Throughput Capacity Feature for 5000 SCCP Transactions per Second is Enabled and Turned On (See Notes 1 and 2)			

Table 4-8 (Cont.) SCCP Transactions Per Second

Type of Traffic	Maximum Transactions per Second for the EAGLE	Transactions per Second for each Service Module	Maximum Number of Service Modules
GTT Traffic or ANSI41 AIQ only - No EPAP-Based Traffic or ELAP-Based (LNP) Traffic	150,000	5000	32
ANSI G-Flex EPAP-Based Traffic Only	150000	5000	32
EPAP-Based Traffic (except ANSI G-Flex Traffic)	96,875	3125	32
ELAP-Based (LNP) Traffic	85,000	5000	18 (See Note 3)
Throughput Capacity Feature for 6800 SCCP Transactions per Second is Enabled and Turned On (See Notes 1 and 2)			
GTT Traffic or ANSI41 AIQ only - No EPAP-Based Traffic or ELAP-Based (LNP) Traffic	210,800	6800	32
EPAP-Based Traffic (including ANSI G-Flex Traffic)	210,800	6800	32
ELAP-Based (LNP) Traffic	115,600	6800	18 (See Note 3)
Throughput Capacity Feature for 10000 SCCP Transactions per Second is Enabled and Turned On (See Note 4)			
GTT Traffic or ANSI41 AIQ	310,000	10000	32

Notes:

a. To achieve the maximum transactions per second shown in this portion of the table, all the service modules must be SLIC cards.

b. The value shown in the Transactions per Second for each Service Module column in this portion of the table applies only to SLIC cards.

c. The number of service modules can be a maximum of 18 only if the ELAP version is 9.0. If the ELAP version is less than 9.0, only nine service modules can be used for ELAP-based traffic.

d. Throughput Capacity feature for 10000 TPS requires E5-SM8G-B cards, and 13.6k TPS requires SLIC cards.

The following table shows the maximum SCCP throughput capacity based on the combinations of features and GPL/card.

Table 4-9 SCCP Throughput Capacity

SCCP Throughput Capacity Feature Activated	E5-SM8G-B TPS	SLIC TPS
13.6K TPS (P/N: 893019104)	13600	13600 TPS if all below conditions are true: a. EGMS feature is not activated b. EPAP240M option in STPOPTS is OFF or SM card is provisioned as data=DN/IMSI/ELAP/GTT c. No UAM 548 or 549 present in the system 10000 TPS if all below conditions are true: a. EGMS feature is not activated b. EPAP240M option in STPOPTS is ON and SM card is provisioned as data=DN/IMSI/ELAP/GTT c. No UAM 548 or 549 present in the system
10K TPS (P/N: 893019103)	10000	10000
6.8K TPS (P/N: 893019102)	6800	6800
5K TPS (P/N: 893019101)	5000	5000

The EAGLE's total SCCP throughput capacity can be calculated as the number of SCCP cards in the system (N) times the SCCP throughput capacity per card (keeping in mind the SCCP configuration of the system: N or N+1). The number of SCCP cards in the system depends on whether the system is a pure GTT or EPAP or ELAP system and the specific EAGLE/EPAP/ELAP release.

Table 4-10 Number of Service Module Cards in the System

MPS Release	SM4G Cards (up to 5K/6.8K/10KTPS)	
ELAP 10.0	18	Up to 384 mil TNs
Up to EAGLE 41.1+ EPAP 16	25	
From EAGLE 42.0 + EPAP 16 on AS T1000	25 (in N+1 config)	
From EAGLE 42.0 +EPAP 16 on AS T1200	32 (in N+1 config)	

If the `rept-stat-sccp` output shows that the EAGLE has the maximum number of service modules, as shown in Table 4-10, the remaining procedure cannot be performed.

If the `rept-stat-sccp` output shows that the EAGLE does not have the maximum number of service modules, as shown in Table 4-10, continue the procedure by performing one of these steps.

- If a card is being added, continue the procedure with step 7.

- If an E5-SM8G-B card is being added, continue the procedure with step 6.

6. Verify that HIPR2 cards are installed at card locations 9 and 10 in the shelf where the E5-SM8G-B card will be installed. Enter this command.

   ```
   rept-stat-gpl:gpl=hipr2
   ```

   This is an example of the possible output.

   ```
   rlghncxa03w 09-07-01 11:40:26 GMT  EAGLE5 41.1.0
   GPL        CARD      RUNNING           APPROVED       TRIAL
   HIPR2      1109      126-002-000       126-002-000    126-003-000
   HIPR2      1110      126-002-000       126-002-000    126-003-000
   HIPR2      1209      126-002-000       126-002-000    126-003-000
   HIPR2      1210      126-002-000       126-002-000    126-003-000
   HIPR2      1309      126-002-000       126-002-000    126-003-000
   HIPR2      1310      126-002-000       126-002-000    126-003-000
   HIPR2      2109      126-002-000       126-002-000    126-003-000
   HIPR2      2110      126-002-000       126-002-000    126-003-000
   Command Completed
   ```

   If HIPR2 cards are installed at card locations 9 and 10 in the shelf where the E5-SM8G-B card will be installed, continue the procedure with step 7.

   If HIPR2 cards are not installed in the shelf where the E5-SM8G-B card will be installed, refer to *Installation Guide* to install the HIPR2 cards. Once the HIPR2 cards have been installed, continue the procedure with step 7.

7. Verify the service module has been physically installed into the proper location according to the feature requirements. Table 4-5 shows the type of service module that is required based on the GTT-related features that are currently being used (also shown in the `rtrv-feat` output in step 2 as being `on`, and in the `rtrv-ctrl-feat` output in step 4 as being enabled) and any features that will be enabled after this procedure is performed.

   > **Caution:**
   >
   > If the versions of the flash GPLs on the service module do not match the flash GPL versions in the database when the service module is inserted into the card slot, UAM 0002 is generated to indicate that these GPL versions do not match. If UAM 0002 has been generated, perform the alarm clearing procedure for UAM 0002 in *Unsolicited Alarm and Information Messages Reference* before proceeding with this procedure.

8. Verify the EAGLE has a fan unit and the fan unit is on. If the fan unit is not on, use the `enable-ctrl-feat:fan=on` command to turn on the fan.

9. Verify the MFC STP option is turned on. If the MFC STP option is not turned on, use the `enable-ctrl-feat:MFC=on` to turn it on.

10. Add the service module to the database using the `ent-card` command. For this example, enter this command.

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

> **Note:**
>
> If any EPAP-based feature is enabled and turned on, and the service module quantity will exceed 25, the `ent-card` command must be entered twice within 30 seconds on the same terminal for the service module to be added to the database.

When this command has completed, one of these messages should appear.

- If any of these conditions will be present after the new service module is added to the database:
  - the total number of service modules will not be increased beyond 25
  - the total number of service modules will be greater than 25 and no EPAP-based features are enabled and turned on (see Table 4-7)
  - the total number of service modules will be from 27 to 32 and any EPAP-based features are enabled and turned on (see Table 4-7)

  this message should appear.

```
rlghncxa03w 10-07-25 09:57:51 GMT  EAGLE5 42.0.0
ENT-CARD: MASP A - COMPLTD
```

- If the addition of the new service module will increase the total number of service modules to 26 and any EPAP-based features are enabled and turned on (see Table 4-7), this message should appear.

```
rlghncxa03w 10-07-25 09:57:51 GMT  EAGLE5 42.0.0

CAUTION: Please ensure EPAP Application Server is running on
hardware supporting 32 SCCP cards e.g.:
T1200.
Re-enter command within 30 seconds to confirm change.

rlghncxa03w 10-07-25 09:57:51 GMT  EAGLE5 42.0.0
ENT-CARD: MASP A - Command Aborted
```

  After this message appears, re-enter the `ent-card` command within 30 seconds. This message should appear.

```
rlghncxa03w 10-07-25 09:57:51 GMT  EAGLE5 42.0.0
ENT-CARD: MASP A - COMPLTD
```

  If the `ent-card` command is not re-entered within 30 seconds, this message should appear and the new service module will not be added to the database.

```
ENT-CARD command (Type=DSM) confirmation timer expired
```

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

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

This is an example of the possible output.

```
rlghncxa03w 09-07-25 09:58:31 GMT EAGLE5 41.1.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1301   DSM       VSCCP
```

12. Display the current IP link parameters associated with the Service Module card in the database by entering the `rtrv-ip-lnk` command:

```
RLGHNCXA03W 05-14-24 21:14:37 GMT EAGLE 46.0.0
LOC PORT IPADDR SUBMASK DUPLEX SPEED MACTYPE AUTO MCAST
1107 A ------- -------- HALF 10 DIX NO NO
1107 B ------- -------- HALF 10 DIX NO NO
```

13. Enter the IP address and other parameter values associated with the Service Module card in the database using the `chg-ip-lnk` command:

    For example, enter:

    ```
    chg-ip-
    lnk:loc=1107:port=a:ipaddrr=192.168.122.1:mactype=dix:auto=yes:
    mcast=yes:submask=255.255.255.0
    ```

    ```
    chg-ip-
    lnk:loc=1107:port=b:ipaddrr=192.168.123.1:mactype=dix:auto=yes:
    mcast=yes:submask=255.255.255.0
    ```

    Where:

    :loc

    Card location or slot number of the SM card in the EAGLE

    :port

    Ethernet interface Port ID-the physical interface of the SM card

    :ipaddr

    IP address for the specified port. This is a TCP/IP address expressed in standard dot notation. IP addresses consist of the network number of the system and the unique host number.

    :submask

    Subnet mask of the IP interface in the form of an IP address with a restricted range of values

    :mactype

    Media Access Control Type of the interface. When a Service Module card is entered into the database, these values are automatically configured.

    :mcast

    Multicast Control to enable or disable multicast support for the interface. This parameter value must be yes to establish the connection from the SM card to the MPS system.

    :auto

    Tells hardware whether to automatically determine duplex and speed.

> **Note:**
>
> Corresponding ports on ExAP LAN switches should be configured accordingly to achieve the required operational speed and duplex of 1Gbps and Full Duplex. Refer to ExAP *Administration Guide* for more information. Once the SM (SMxG/SLIC) card is in service, the pass command `pass:cmd="netstat -i":loc=<:SM card loc>` can be used to verify the operational speed and duplex of ExAP ports on SM cards.

14. Verify the IP address and other parameter values associated with the Service Module card in the database by entering the `rtrv-ip-lnk` command:

```
RLGHNCXA03W 05-14-24 21:14:37 GMT EAGLE 46.0.0
LOC PORT IPADDR SUBMASK DUPLEX SPEED MACTYPE AUTO MCAST
1107 A 192.168.122.1 255.255.255.0 HALF 100 DIX NO YES
1107 B 192.168.123.1 255.255.255.0 HALF 10 DIX NO YES
```

15. Display the current IP host information in the database by entering the `rtrv-ip-host` command:

```
RLGHNCXA03W 05-14-24 21:17:37 GMT EAGLE 46.0.0
IPADDR HOST
192.1.1.32 KC_HLR2
192.1.1.50 DN_MSC1
192.1.1.52 DN_MSC2
```

16. Add the host name and IP address for each VSCCP link, using the ent-ip-host command.

    Command examples:

    ```
    ent-ip-host:host=vsccp_1107_a:ipaddr=192.168.122.1
    ```

    ```
    ent-ip-host:host=vsccp_1107_b:ipaddr=192.168.123.1
    ```

    Where:

    :host

    Host name. Each VSCCP link must be specified separately.

    :ipaddr

    IP network address for each EPAP. The first three octets of the IP address must be the same as MPS A and B ports, respectively. The fourth octet identifies the SM card and must have a unique octet identifier for the card IP address

17. Verify the new IP host information in the database by entering the `rtrv-ip-host` command:

```
RLGHNCXA03W 05-14-24 21:19:37 GMT EAGLE 46.0.0
IPADDR HOST
192.1.1.32 KC_HLR2
192.1.1.50 DN_MSC1
192.1.1.52 DN_MSC2
192.168.122.1 VSCCP_1107_A
192.168.123.1 VSCCP_1107_B
```

18. Enter local domain and IP router address for the SM card using the `chg-ip-card` command:

> **Note:**
>
> Most customer private networks do not require setting up a default router for the SM card. If your network configuration requires a default router to connect the Service Module card communication to the EPAP, then only one default router is assignable to each Service Module card. Assign the default router address to each Service Module card as shown in this step.

For example:

```
chg-ip-
card:defrouter=192.168.122.250:domain=nc.tekelec.com:loc=<card
location>
```

Where:

:defrouter

Default router IP address. This is a TCP/IP address expressed in standard dot notation. IP addresses consist of the network number of the system and the unique host number.

:domain

Domain name of domain server

:loc

Card location or slot number of the SM card in the EAGLE

19. Verify the new TCP/IP parameters associated with the SM card in the database by entering the `rtrv-ip-card` commands:

```
RLGHNCXA03W 05-14-24 21:21:37 GMT EAGLE 45.0.0
LOC 1107
SRCHORDR LOCAL
DNSA -----------
DNSB -----------
DEFROUTER 192.168.122.250
DOMAIN NC.TEKELEC.COM
```

20. Allow the SM card that was added to operate in the system, using the `alw-card` command:

```
alw-card:loc=<card location>
```

21. Verify the In-Service-Normal (IS-NR) status of the SM card, using the `rept-stat-card` command.

22. Test the presence of the EPAP hosts on the network using the `pass` command with the `ping` parameter. This command is invoked with a destination that is either a hostname or IP address.

    Command examples:

```
pass:loc=1107:cmd="ping 192.168.122.100"
```

pass:loc=1107:cmd="ping 192.168.122.200"

```
pass:loc=1107:cmd="ping 192.168.123.100"
pass:loc=1107:cmd="ping 192.168.123.200"
```

Where:

:loc

Card location or slot number in the EAGLE

`:cmd`

Command string passed to Service Module card for processing.

After successful completion of each command, the system response is similar to the following output:

```
rlghncxa03w 05-14-24 08:30:44 GMT EAGLE 46.0.0
pass: loc=1107: cmd="ping 192.168.122.100"
Command entered at terminal #1.
;
rlghncxa03w 05-14-24 08:30:44 GMT EAGLE 46.0.0
PASS: Command sent to card
;
rlghncxa03w 05-14-24 08:30:44 GMT EAGLE 46.0.0
PING command in progress
;
rlghncxa03w 05-14-24 08:30:46 GMT EAGLE 46.0.0
PING 192.168.122.100: 56 data bytes
64 bytes from tekral.nc.tekelec.com (192.168.122.100):icmp_seq=0.time=5. ms
64 bytes from tekral.nc.tekelec.com (192.168.122.100):icmp_seq=1.time=0. ms
64 bytes from tekral.nc.tekelec.com (192.168.122.100):icmp_seq=2.time=0. ms
----192.168.100.3 PING Statistics----
3 packets transmitted, 3 packets received, 0% packet loss
round-trip (ms) min/avg/max = 0/1/5
PING command complete
```

If the `pass` commands with the `ping` parameter are not successful, verify the correct connection of the hardware cabling and repeat this step. If the command fails again, contact the My Oracle Support (MOS).

23. Put the card in service using the `rst-card` command with the card location specified in step 10. For this example, enter this command.

    `rst-card:loc=1301`

> **Note:**
>
> The primary state of the service module will remain `IS-ANR` and the secondary state of the service module will remain `MPS_UNAVAIL` after the `rst-card` command is performed when these conditions are present.
>
> - An EPAP-based feature is enabled and turned on.
> - Adding the new service module increased the service module quantity beyond 25.

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

```
rlghncxa03w 09-07-28 08:21:07 GMT  EAGLE5 41.1.0
Card has been allowed.
```

Continue the procedure by performing one of these steps.

- If the EGTT feature is on, shown by the entry `EGTT = on` in the `rtrv-feat` command output in step 2 , or if the EGTT feature is off and will not be turned on in this procedure, continue the procedure with step 25.
- If the EGTT feature is off and will be turned on in this procedure, continue the procedure with step 24.

24. Turn the enhanced global title translation feature on by entering this command.

> **Note:**
>
> Once the Enhanced Global Title Translation (EGTT) feature is turned on with the `chg-feat` command, it cannot be turned off.
> The EGTT feature must be purchased before turning it on. If you are not sure whether you have purchased the EGTT feature, contact your Sales Representative or Account Representative.

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

```
rlghncxa03w 09-07-25 09:57:41 GMT EAGLE5 41.1.0
CHG-FEAT: MASP A - COMPLTD
```

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

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

Figure 4-1 Add a Service Module - Sheet 1 of 4

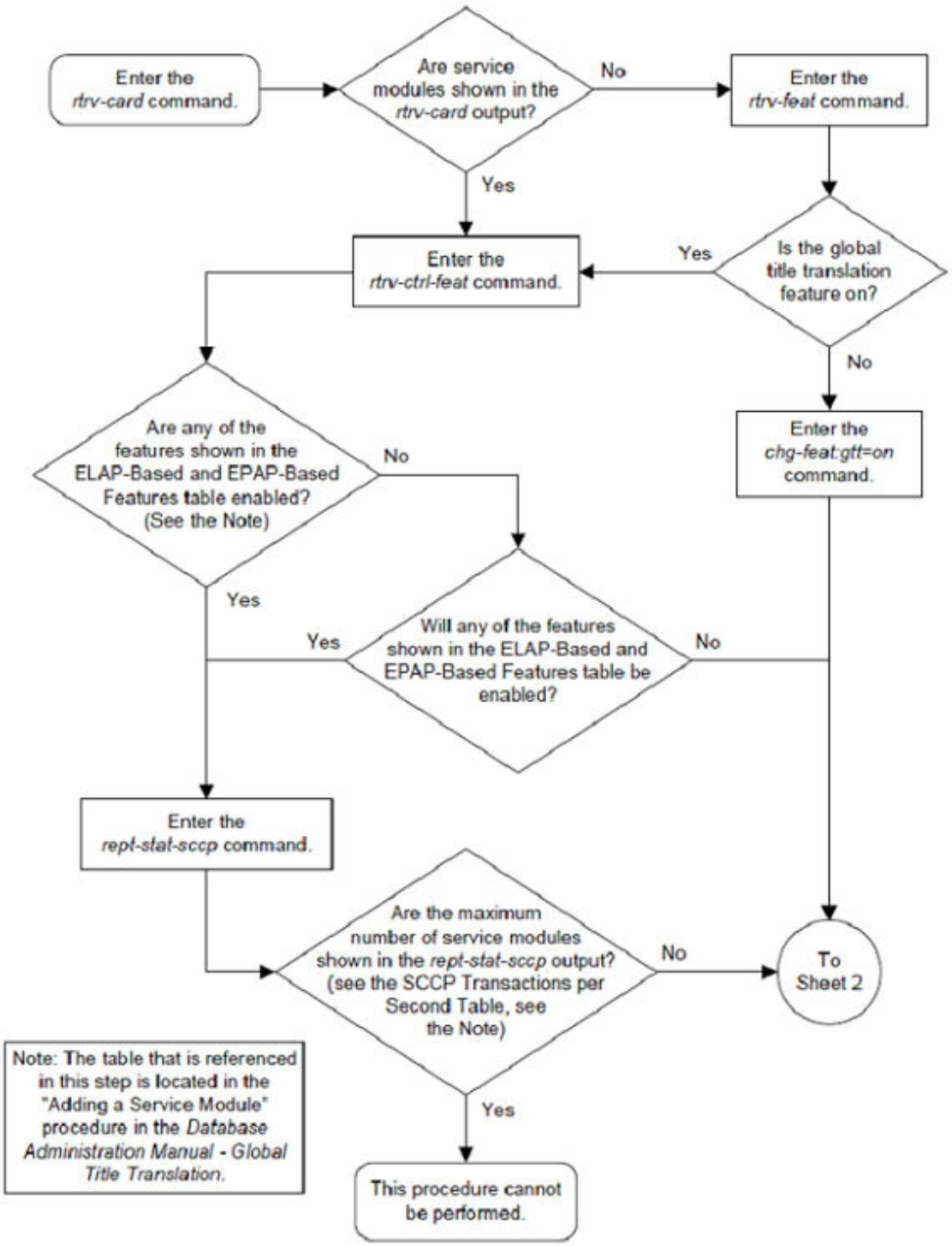


Figure 4-2 Add a Service Module - Sheet 2 of 4

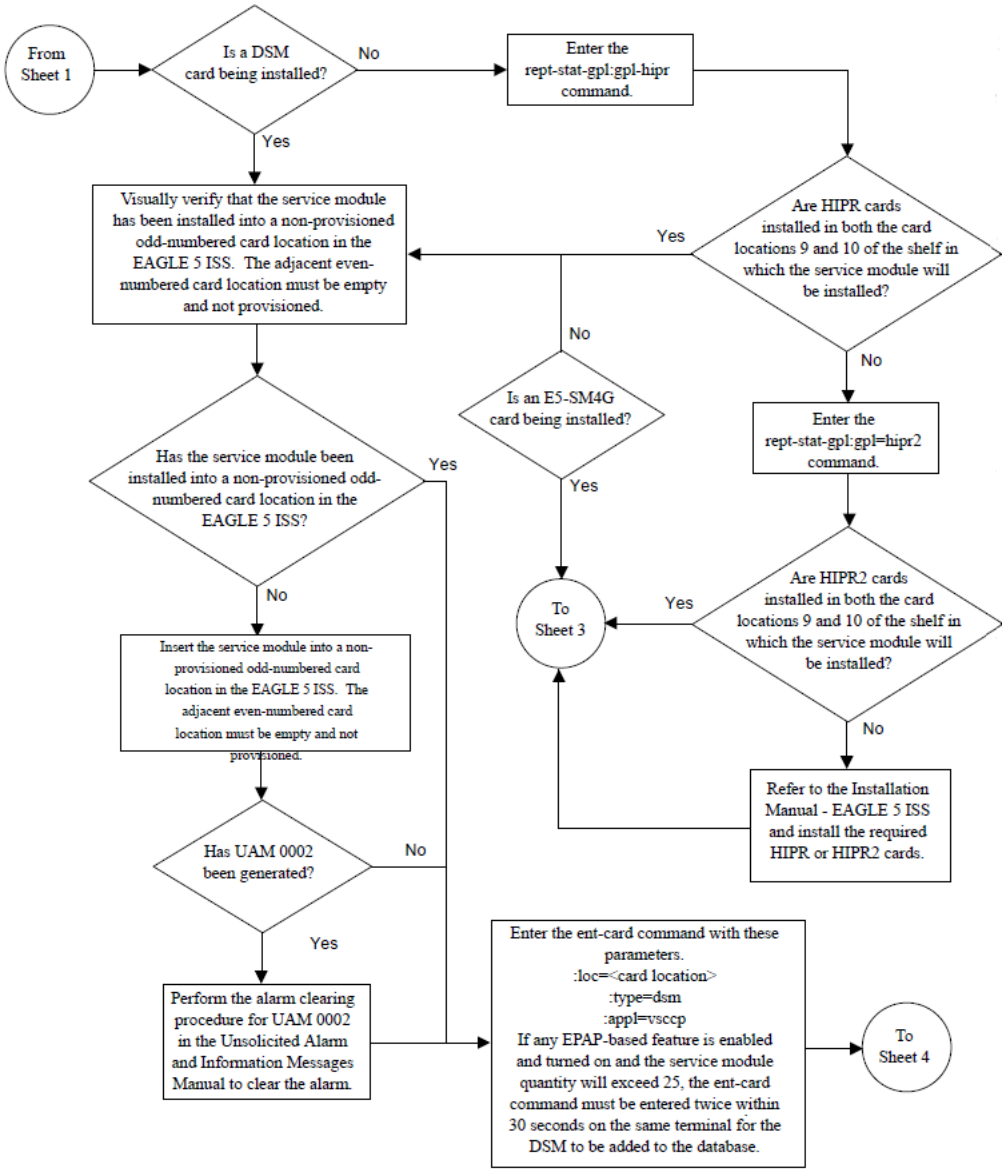


Figure 4-3 Add a Service Module - Sheet 3 of 4

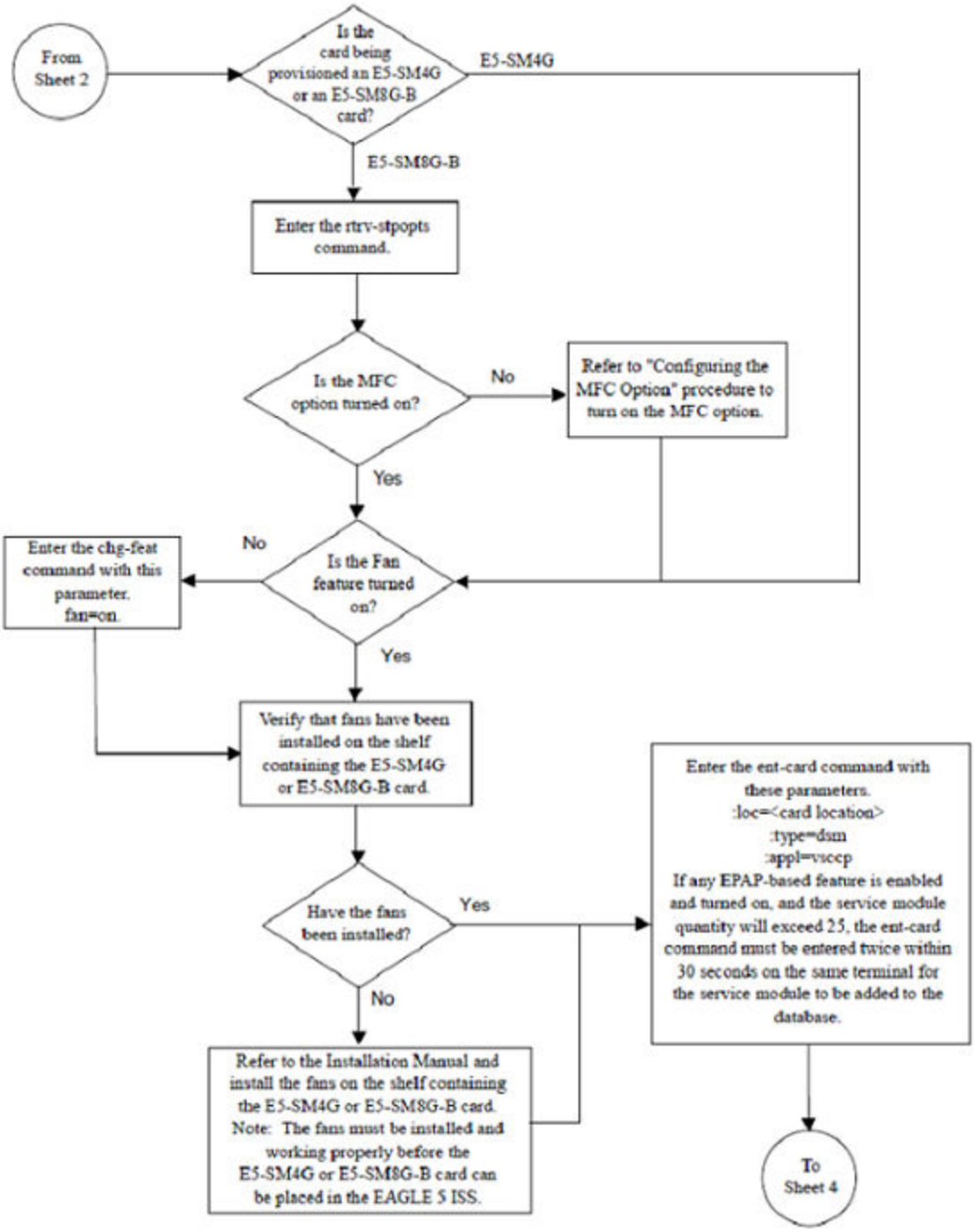
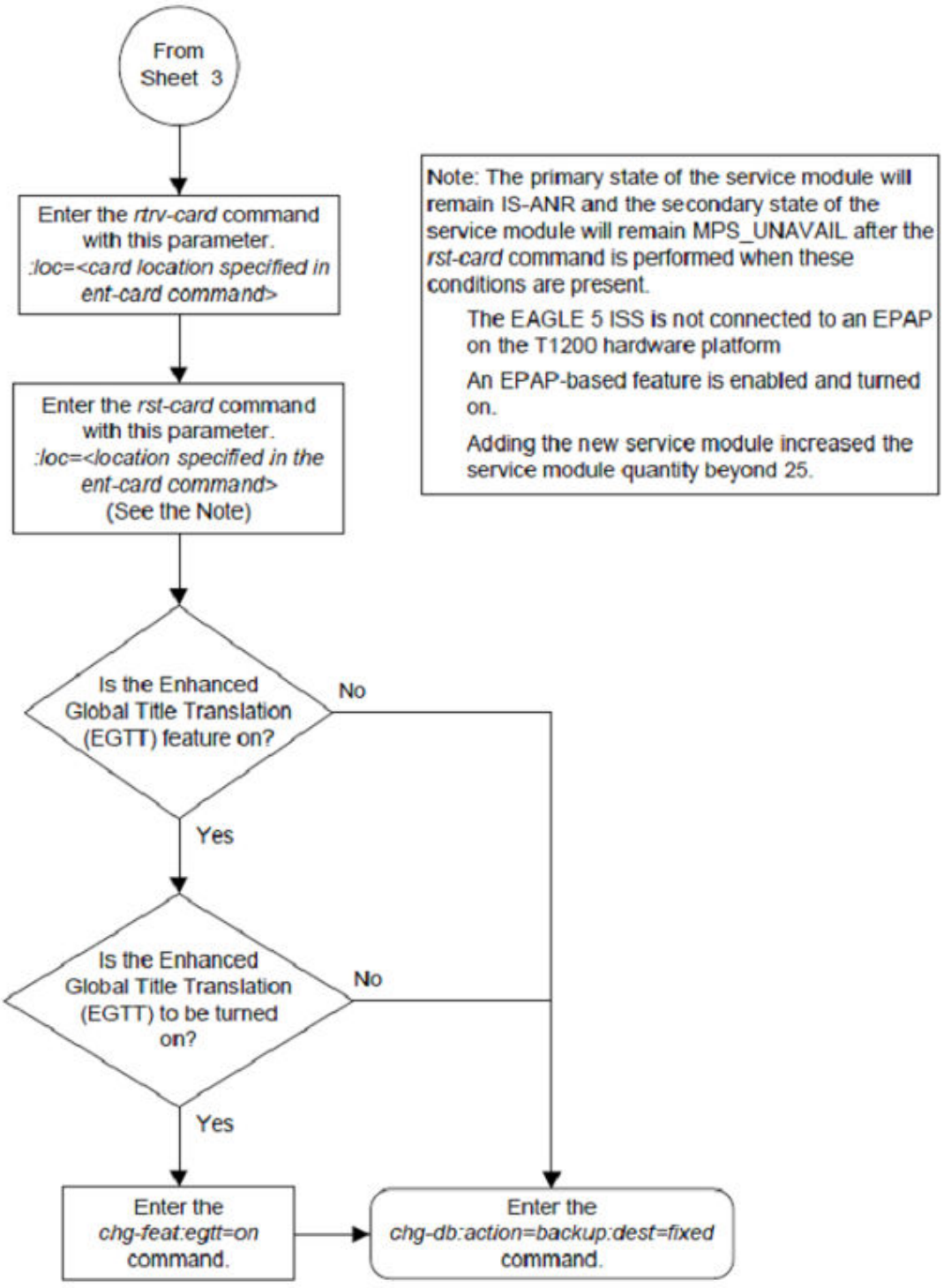


Figure 4-4 Add a Service Module - Sheet 4 of 4



4.4 Adding an IPSG Card

This procedure is used to add an **IPSG** card to the database using the `ent-card` command. An IPSG card is an E5-ENET-B or SLIC card that is running the IPSG application.

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 `enet` for an E5-ENET card and `enetb` for E5-ENET-B. When provisioning the SLIC, the card type is `slic`.

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

`:force` – If the global title translation feature is on, the `force=yes` parameter allows the **IPSG** card to be added to the database even if the current **SCCP** transactions-per-second threshold is unable to support the additional **SCCP** transaction-per-second capacity created by adding the **IP** card. This parameter is obsolete and is no longer used.

Card Slot Selection

The **E5-ENET** card can be inserted into any card slot, except for card slots that must remain empty to accommodate dual-slot cards, slots 09 and 10 in each shelf, and slots 1113 through 1118.

To provision a E5-ENET card, the shelf containing the E5-ENET card must have HIPR2 cards installed in slots 9 and 10 in that shelf. If HIPR2 cards are not installed in the shelf that the E5-ENET card will occupy, the E5-ENET card will be auto-inhibited when the E5-ENET card is inserted into the shelf. Enter the `rept-stat-gpl:gpl=hipr2` command to verify whether or not **HIPR2** cards are installed in the same shelf as the E5-ENET card being provisioned in this procedure.

1. Display the total provisioned system TPS by entering the `rtrv-tps` command.

   This is an example of the possible output.

```
rlghncxa03w 10-07-30 16:20:46 GMT EAGLE 42.0.0

Total provisioned IPGW   TPS =  30000
Total provisioned IPSG   TPS = 400000
Total provisioned IPLIM  TPS =  20000
Total provisioned ATM    TPS =   3668

Total provisioned System TPS (453668 of 500000) 91%

Command Completed.
```

   For for MaxTPS values, see *"Maximum Xard Capacity for Different Card Types"* in Database Administration - IP7 User's Guide. If adding the new IPSG card will not exceed the maximum total provisioned system TPS, continue the procedure with step 2.

   If adding the new IPSG card will exceed the maximum total provisioned system TPS, and the maximum total provisioned system TPS is 500,000, perform the "Activating the HIPR2 High Rate Mode" feature in *Database Administration - System Management User's Guide* to enable and turn on the HIPR2 High Rate Mode feature. When the HIPR2 High Rate Mode feature is enabled and turned on, the maximum total provisioned system TPS is increased to 1,000,000 (1M). After the HIPR2 High Rate Mode feature has been enabled and turned on, continue the procedure with step 2.

If adding the new IPSG card will exceed the maximum total provisioned system TPS, and the maximum total provisioned system TPS is 1M, This procedure cannot be performed. The maximum total provisioned system TPS the EAGLE can have is 1M,

2. Display the cards in the database using the `rtrv-card` command.

   This is an example of the possible output. Cards should be distributed throughout the EAGLE for proper power distribution. Refer to *Installation Guide* for the shelf power distribution.

```
rlghncxa03w 13-06-05 08:12:53 GMT  45.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1101   DSM       VSCCP
1102   TSM       GLS
1113   E5MCAP    EOAM
1114   E5TDM-A
1115   E5MCAP    EOAM
1116   E5TDM-B
1117   E5MDAL
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
1301   LIMDS0    SS7ANSI   sp6           A    1   sp7           B    0
1302   LIMDS0    SS7ANSI   sp7           A    1   sp5           B    1
1303   DCM       IPLIM     ipnode1       A    0   ipnode3       B    1
1305   DCM       IPLIM     ipnode4       A    0
2101   ENET      IPSG
2103   ENET      IPSG
2105   ENET      IPSG
2107   ENET      IPSG
2201   DCM       IPLIM
2203   DCM       IPLIM
2207   DCM       IPLIM
2211   DCM       SS7IPGW
2213   DCM       SS7IPGW
2215   DCM       IPGWI
2217   DCM       IPGWI
2301   DCM       SS7IPGW
2303   DCM       SS7IPGW
2305   DCM       IPGWI
2307   DCM       IPGWI
2311   DCM       IPLIMI
2313   DCM       ILIMI
```

Continue the procedure by performing one of these actions.

- If the required unprovisioned card slots (see the Card Slot Selection section) are shown in the `rtrv-card` output, continue the procedure with step 5.
- If the required unprovisioned card slots are not shown in the `rtrv-card` output, step 3 must be performed.

3. Display the shelves in the database by entering the `rtrv-shlf` command. This is an example of the possible output.

```
rlghncxa03w 08-03-05 08:12:53 GMT  38.0.0
SHELF DISPLAY
FRAME SHELF        TYPE
  1     1       CONTROL
  1     2       EXTENSION
  1     3       EXTENSION
  2     1       EXTENSION
  2     2       EXTENSION
  2     3       EXTENSION
```

   If all the shelves are provisioned in the database, then the remainder of this procedure cannot be performed. There are no available card slots for the new **IPSG** card.

   If all the shelves have not been provisioned in the database, continue the procedure with step 4.

4. Add the required shelf using the `ent-shlf` command with the location of the shelf and the `type=ext` parameter. The shelf location values are 1200, 1300, 2100, 2200, 2300, 3100, 3200, 3300, 4100, 4200, 4300, 5100, 5200, 5300, and 6100. For this example, enter this command.

   ```
   ent-shlf:loc=3100:type=ext
   ```

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

```
rlghncxa03w 07-05-01 09:12:36 GMT  EAGLE5 37.0.0
ENT-SHLF: MASP A - COMPLTD
```

5. Verify that the card to be entered has been physically installed into the proper location (see the in Card Slot Selection section). If the card has not been installed, insert the card into the desired card location following the rules described in Card Slot Selection section.

   > **Caution:**
   >
   > If the versions of the flash GPLs on the IPSG card do not match the flash GPL versions in the database when the IPSG card is inserted into the card slot, **UAM** 0002 is generated indicating that these **GPL** versions do not match. If UAM 0002 has been generated, perform the alarm clearing procedure for UAM 0002 in *Unsolicited Alarm and Information Messages Reference* before proceeding with this procedure.

6. Verify that **HIPR2** cards are installed in card locations 9 and 10 in the shelf containing the E5-ENET card being added in this procedure. Enter this command.

   ```
   rept-stat-gpl:gpl=hipr2
   ```

   This is an example of the possible output.

```
rlghncxa03w 09-07-05 08:12:53 GMT  41.1.0
GPL        CARD      RUNNING           APPROVED      TRIAL
HIPR2      1109      132-002-000       132-002-000   132-003-000
HIPR2      1110      132-002-000       132-002-000   132-003-000
```

```
HIPR2      1209      132-002-000        132-002-000   132-003-000
HIPR2      1210      132-002-000        132-002-000   132-003-000
HIPR2      1309      132-002-000        132-002-000   132-003-000
HIPR2      1310      132-002-000        132-002-000   132-003-000
HIPR2      2109      132-002-000        132-002-000   132-003-000
HIPR2      2110      132-002-000        132-002-000   132-003-000
HIPR2      2209      132-002-000        132-002-000   132-003-000
HIPR2      2210      132-002-000        132-002-000   132-003-000
HIPR2      2309      132-002-000        132-002-000   132-003-000
HIPR2      2310      132-002-000        132-002-000   132-003-000
Command Completed
```

If **HIPR2** cards are installed in the shelf containing the **E5-ENET** card, continue the procedure with step 11.

If HIPR or HIPR2 cards are not installed on the shelf containing the E5-ENET card, go to *Installation Guide* and install the HIPR or HIPR2 cards. Once the HIPR or HIPR2 cards have been installed, continue the procedure with step 11.

7. Enter the `rtrv-stpopts` command to verify whether or not the MFC option is on.

   This is an example of the possible output.

```
rlghncxa03w 11-10-17 16:02:05 GMT EAGLE5 44.0.0
STP OPTIONS
---------------------------
MFC                       off
```

   The `rtrv-stpopts` command output contains other fields that are not used by this procedure. To see all fields displayed by the `rtrv-stpopts` command, see the `rtrv-stpopts` command description in *Commands User's Guide*.

   If the **MFC** option is off, perform the Configuring the MFC Option procedure in *Database Administration - System Management User's Guide* to turn on the MFC option.

   If the MFC option is on or the Configuring the MFC Option procedure in *Database Administration - System Management User's Guide* was performed in this step, continue the procedure with step 8.

> **Note:**
>
> The Fan feature must be purchased before you turn this feature on with the `chg-feat` command. If you are not sure if you have purchased the Fan feature, contact your Sales Representative or Account Representative.

8. Enter the `rtrv-feat` command to verify that the Fan feature is on.

   If the Fan feature is on, shown in the `rtrv-feat` output, the `FAN` field should be set to `on`.

   The `rtrv-feat` command output contains other fields that are not used by this procedure. To see all fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in *Commands User's Guide*.

   If the Fan feature is on, continue the procedure with step 10.

If the Fan feature is off, continue the procedure with step 8.

9. Turn the Fan feature on by entering this command.

```
chg-feat:fan=on
```

> **Note:**
>
> Once the Fan feature is turned on with the`chg-feat` command, it cannot be turned off.

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

```
rlghncxa03w 11-10-28 11:43:04 GMT EAGLE5 44.0.0
CHG-FEAT: MASP A - COMPLTD
```

10. The shelf containing the E5-ENET-B card that is being added in this procedure must have fans installed. Verify whether or not fans are installed on the shelf.

    If the fans are installed, continue the procedure with step 11.

    If the fans are not installed on the shelf containing the E5-ENET-B card, go to *Installation Guide* and install the fans. After the fans have been installed and tested, continue the procedure with step 11.

11. Add the card using the `ent-card` command. For this example, enter these commands.

    ```
    ent-card:loc=1311:type=enetb:appl=ipsg
    ```

    ```
    ent-card:loc=1313:type=slic:appl=ipsg
    ```

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

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

12. Verify the changes using the `rtrv-card` command with the card location specified in step 11. For this example, enter these commands.

    ```
    rtrv-card:loc=1311
    ```

    This is an example of the possible output.

    ```
    rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
    CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
    1311   ENETB     IPSG
    ```

    ```
    rtrv-card:loc=1313
    ```

    This is an example of the possible output.

    ```
    rlghncxa03w 06-10-28 09:12:36 GMT EAGLE5 36.0.0
    ```

```
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1313   SLIC      IPSG
```

13. 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.
```

4.5 Configuring DEIR on SLIC

This procedure configures the EIR S13/S13' Interface Support (DEIR) feature on the SLIC card to provide network redundancy. Perform step 5 to step 8 to configure the DEIR connection.

> **Note:**
>
> From release 47.1, existing customers will have Port A and/or D configured, which was earlier used for RTDB connectivity. Now, these ports will not be used as no RTDB data is downloaded on DEIR card. No manual changes are required to delete this entry as it will now be treated as dummy entry.

1. Enable the DEIR feature with the `enable-ctrl-feat` command.

   ```
   enable-ctrl-feat:partnum=893042401
   ```

2. Turn on the DEIR feature with the `chg-ctrl-feat` command.

   ```
   chg-ctrl-feat:partnum=893042401:status=on
   ```

3. Provision the SLIC S13 card (DEIR64).

   ```
   ent-card:loc=1101:type=dsm:appl=deir64
   ```

4. Configure ports B and C of the SLIC S13 card.

   ```
   chg-ip-
   lnk:port=a:submask=255.255.255.0:mcast=yes:ipaddr=192.168.120.11:lo
   c=1101:duplex=full:speed=100
   ```

   ```
   chg-ip-
   lnk:port=b:submask=255.255.255.0:mcast=no:ipaddr=10.248.13.11:loc=1
   101:duplex=full:speed=100
   ```

   ```
   chg-ip-
   lnk:port=c:submask=255.255.255.0:mcast=no:ipaddr=10.248.14.12:loc=1
   101:duplex=full:speed=100
   ```

   ```
   chg-ip-
   lnk:port=d:submask=255.255.255.0:mcast=yes:ipaddr=192.168.121.20:lo
   c=1101:duplex=full:speed=100
   ```

5. Enter the HOST information.

```
ent-ip-
host:host=hss:ipaddr=10.248.13.11:type=local:realm=abcdefg.com

ent-ip-
host:host=hss2:ipaddr=10.248.14.12:type=local:realm=abcdefg.com

ent-ip-
host:host=lmno:ipaddr=10.248.13.9:type=remote:realm=lmnopq.com

ent-ip-
host:host=lmno3:ipaddr=10.248.13.3:type=remote:realm=lmnopq.com

ent-ip-
host:host=lmno4:ipaddr=10.248.14.5:type=remote:realm=lmnopq.com

ent-ip-
host:host=lmno5:ipaddr=10.248.14.7:type=remote:realm=lmnopq.com
```

6. Enter the SCTP Association.

```
ent-
assoc:aname=assoc1:lhost=hss:alhost=hss2:lport=5555:rhost=lmno:rpor
t=5556

ent-
assoc:aname=assoc2:lhost=hss:alhost=hss2:lport=5557:rhost=lmno3:rpo
rt=5558
```

7. Enter the Diameter Connection.

```
ent-dconn: dcname=dcon1:aname=assoc1

ent-dconn: dcname=dcon2:aname=assoc2
```

8. Open the Diameter Connection.

```
chg-assoc:aname=assoc1:open=yes:rhost=lmno4:rhosttype=alternate

chg-assoc:aname=assoc2:open=yes:rhost=lmno5:rhosttype=alternate
```

4.6 ENUM Configuration

Perform the following steps for configuring the ENUM feature:

1. Enter the serial number.

```
ent-serial-num:serial=nt00001659

ent-serial-num:serial=nt00001659:lock=yes
```

2. Provision an ENUM card.

```
ent-card:loc=1105:type=dsm:appl=enum64:data=epap
```

3. Configure Ports A, B, C and D of an ENUM card.

```
chg-ip-
lnk:port=a:submask=255.255.255.0:mcast=yes:ipaddr=192.168.120.11:lo
c=1101:duplex=full:speed=100

chg-ip-
lnk:port=b:submask=255.255.255.0:mcast=yes:ipaddr=10.248.13.11:loc=
1101:duplex=full:speed=100
```

4. Set up the ENUM connections.

```
ent-ip-host:host=tekelec.com:ipaddr=192.168.120.133:type=local
```

```
ent-ip-host:host=abc.com:ipaddr=250.001.001.001:type=remote

chg-ip-card:loc=1105:domain=tekelec.com:defrouter=10.248.13.9

ent-ip-
conn:lport=1025:lhost=tekelec.com:lport=1026:prot=udp:cname=c1

chg-ip-conn:open=yes:cname=c1

alw-card:loc=1105
```

5. Enter profile entries in the ENUM Profile table (ENUMPROF).

```
ent-enum-
prof:prn=prof1:rtype=naptr:sparm=pstnsip:rrdomain=gw1.example.com

ent-enum-prof:prn=prof2:rtype=ns:rpdomain=gw2.example.com
```

6. Enter an Entity ID entry in the ENUM Profile Selection table (ENUMPRID).

```
ent-enum-profsel:entityid=1234:prn1=prof2,prn3=prof1
```

7. Enter a DN Block entry in the ENUM DN Block Profile table (ENUMDNBK).

```
ent-enum-profsel:sdn=9194841000:edn=914841999:prn1=prof2,prn3=prof1
```

8. Enter the IP address of a trusted ENUM client in the ENUM ACL table(ENUMACL).

```
ent-enum-acl:ipaddr=10.250.8.120
```

9. Allow the card to come into service.

```
alw-card:loc=1105
```

Example 4-1 Additional Configuration Commands

The ENUM Options commands (`chg-enumopts`, `rtrv-enumopts`) are used to change and display ENUM-specific data in the ENUM Options table (ENUMOPTS).

The `rept-stat-enum` command is used to display the overall status of the ENUM feature on the EAGLE.

4.7 Provisioning SIP Cards

Perform the following steps to provision the SIP-EPAP and SIP-ELAP cards:

1. Enter `ent-card:loc=<SM card location>:type=dsm:appl=siphc:data=epap` command to provision the SIP card for EPAP.
2. Enter `ent-card:loc=<SM card location>:type=dsm:appl=siphc:data=elap` command to provision the SIP card for ELAP.

4.8 Adding an IPSM Card

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 EAGLE's user interface through a telnet client. As of Release 46.5, the IPSM card and its functionality is replaced by the E5-ENET-B (p/n 870-2971-01) or SLIC (p/n 7094646) card. Any references to IPSM and the 870-2877-01 part number should be replaced by the 46.5 and greater card and part number.

The `ent-card` command uses the following 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`.

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

The IP User Interface (Telnet) feature is not required to be enabled and activated 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, see to the "Activating Controlled Features procedure" in EAGLE Database Administration System Management User's Guide.

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 "Adding a Shelf procedure" in EAGLE Database Administration System Management User's Guide.

If an IPSM is being provisioned in this procedure, HIPR2 cards must be installed in the card locations 9 and 10 in the shelf that the IPSM will occupy. If HIPR2 cards are not installed in the shelf that the IPSM will occupy, the IPSM will not function when the IPSM is inserted into the shelf. Enter the `rept-stat-gpl:gpl=hipr2` command to verify whether or not HIPR2 cards are installed in the same shelf as the IPSM being provisioned in this procedure.

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 in 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 a 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 is made. For more information about editing the hosts.xml file on the FTRA, see FTP Table Base Retrieval (FTRA) User's Guide. 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 `chg-ip-lnk` command.

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 "Changing Terminal Characteristics procedure" in EAGLE Database Administration System Management User's Guide.

If a Class B IP address is specified for the `ipaddr` parameter of the `chg-ip-lnk` command, the subnet address that results from the `ipaddr` and `submask` parameter values cannot be the same as the subnet address that results from the `pvn` and `pvnmask`, `fcna` and `fcnamask`, or `fcnb` and `fcnbmask` parameter values of the `chg-netopts` command. The `pvn` and `pvnmask`, `fcna` and `fcnamask`, or `fcnb` and `fcnbmask` parameter values can be verified by entering the `rtrv-netopts` command. Choose `ipaddr` and `submask` parameter values for the IP link to the IPSM whose resulting subnet address is not to be the same as the subnet address resulting from the `pvn` and `pvnmask`, `fcna` and `fcnamask`, or `fcnb` and `fcnbmask` parameter values of the `chg-netopts` command.

The IP address of the IPSM cannot be shown as the `ipaddr` value in the `rtrv-ip-lnk`, `rtrv-ftp-serv`, or `rtrv-seas-config` outputs, or the `bpipaddr` value in the `rtrv-ip-card` output.

The examples in this procedure are used to add an IPSM in card location 2107.

1. Display the cards in the database using the `rtrv-card` command.

This is an example of the possible output.

```
rlghncxa03w 07-13-13 09:12:36 GMT EAGLE5 45.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1101   DSM       VSCCP
1102   TSM       GLS
1114   E5TDM-A
1116   E5TDM-B
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   LIMDS0    SS7ANSI   itu1          A    0
1206   LIMDS0    SS7ANSI   nsp3          A    1   nsp4          B    0
1212   DSM       VSCCP
1214   TSM       GLS
1301   LIMATM    ATMANSI   lsnatm1       A    0
1303   STC       EROUTE
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 EAGLE for proper power distribution. Refer to Installation Guide for the shelf power distribution.

> **Note:**
>
> - The EAGLE can contain a maximum of 3 IPSMs. If the rtrv-card output shows that there are three IPSMs in the EAGLE, this procedure cannot be performed.
> - If the card being added in this procedure is not an IPSM card, continue the procedure with step 3.

2. Verify that HIPR2 cards are installed in card locations 9 and 10 in the shelf that will contain the IPSM card being added in this procedure. Enter the command `rept-stat-gpl:gpl=hipr2`.

   This is an example of the possible output.

```
rlghncxa03w 09-07-01 11:40:26 GMT  EAGLE5 41.1.0
GPL        CARD      RUNNING            APPROVED       TRIAL
HIPR2      1109      126-002-000        126-002-000    126-003-000
HIPR2      1110      126-002-000        126-002-000    126-003-000
HIPR2      1209      126-002-000        126-002-000    126-003-000
HIPR2      1210      126-002-000        126-002-000    126-003-000
HIPR2      1309      126-002-000        126-002-000    126-003-000
HIPR2      1310      126-002-000        126-002-000    126-003-000
```

```
HIPR2      2109      126-002-000        126-002-000   126-003-000
HIPR2      2110      126-002-000        126-002-000   126-003-000
Command Completed
```

If HIPR2 cards are installed in the shelf that will contain the IPSM card, continue the procedure with step 3. If HIPR2 cards are not installed on the shelf that will contain the IPSM card, refer to Installation Guide to install the HIPR2 cards. Once the HIPR2 cards have been installed, continue the procedure with step 3.

3. 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 FTRA, see *FTP Table Base Retrieval (FTRA) User's Guide*.

4. Verify that the EAGLE has a fan unit and the fan unit is on. If the fan unit is not on, use the `chg-feat:fan=on` command to turn on the fan.

5. Add the IPSM using the `ent-card` command.

   For this example, enter this command.
   `ent-card:loc=2107:type=e5ipsm:appl=ips`

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

```
rlghncxa03w 06-10-01 09:12:36 GMT  EAGLE5 36.0.0
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
```

6. Verify the changes using the `rtrv-card` command with the card location specified in step 5.

   For this example, enter this command.

   `rtrv-card:loc=2107`

   This is an example of the possible output.

   `rlghncxa03w 06-10-01 09:12:36 GMT EAGLE5 36.0.0 CARD TYPE APPL LSET NAME LINK SLC LSET NAME LINK SLC 2107 IPSM IPS`

7. Verify that the terminals shown as added in step 5 have been added by entering the `rtrv-trm` command.

This is an example of the possible output.

```
rlghncxa03w 06-10-01 16:02:08 GMT EAGLE5 39.0.0
TRM  TYPE     COMM         FC    TMOUT MXINV DURAL
1    VT320    9600-7-E-1   SW    30    5     99:59:59
2    KSR      9600-7-E-1   HW    30    5     INDEF
3    PRINTER  4800-7-E-1   HW    30    0     00:00:00
4    VT320    2400-7-E-1   BOTH  30    5     00:30:00
5    VT320    9600-7-O-1   NONE  30    5     00:00:30
6    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  LOGINTMR LOGOUTTMR PNGTIMEINT PNGFAILCNT
     (sec)    (sec)     (msec)
17   none     none      none       1
18   none     none      none       1
19   none     none      none       1
20   none     none      none       1
21   none     none      none       1
22   none     none      none       1
23   none     none      none       1
24   none     none      none       1

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
1    YES  YES YES  YES YES YES YES YES  YES YES NO
2    YES  YES YES  YES YES YES YES YES  YES YES NO
3    YES  YES YES  YES YES YES YES YES  YES YES NO
4    YES  YES YES  YES YES NO  YES YES  YES YES NO
5    YES  YES YES  YES YES YES YES YES  YES YES NO
6    YES  YES YES  YES YES YES YES YES  YES YES NO
7    NO   YES YES  YES YES YES YES YES  YES YES NO
8    YES  YES YES  YES YES YES YES YES  YES YES YES
9    YES  YES YES  YES YES YES YES YES  YES YES YES
10   YES  YES YES  YES YES YES YES YES  YES YES YES
11   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
12   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
13   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
14   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
15   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
16   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
17   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
18   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
19   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
20   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
21   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
22   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
23   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
24   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
```

To change the output parameter values or the `logintmr`, `logouttmr`, `pngfailcnt`, or the `pngtimeint` parameter values for the telnet terminals added in this procedure, perform the #unique_33 procedure.

After this step has been performed, continue the procedure by performing one of these steps.

- If a Class A or C **IP address** will be specified for the `ipaddr` parameter in step 10, continue the procedure with step 9.
- If a Class B **IP address** will be specified for the `ipaddr` parameter in step 10, continue the procedure with step 8.

8. The subnet address that results from the `ipaddr` and `submask` parameter values of the `chg-ip-lnk` command cannot be the same as the subnet address that results from the `pvn` and `pvnmask`, `fcna` and `fcnamask`, or `fcnb` and `fcnbmask` parameter values of the `chg-netopts` command. Display the `pvn`, `pvnmask`, `fcna`, `fcnamask`, `fcnb`, and `fcnbmask` parameter values of the `chg-netopts` command by entering the `rtrv-netopts` command. If error message `E3967 Cmd Rej: E5IS must be on` is displayed after the

rtrv-netopts command is run, the pvn, pvnmask, fcna, fcnamask, fcnb, and fcnbmaskpvn and pvnmask parameters are not configured.

This is an example of the possible output if the E5IS feature is on.

```
rlghncxa03w 09-02-28 21:17:37 GMT EAGLE5 40.1.0NETWORK
OPTIONS-----------------PVN        =
      128.20.30.40PVNMASK    = 255.255.192.0FCNA       =
      170.120.50.0FCNAMASK   = 255.255.240.0FCNB       =
      170.121.50.0FCNBMASK   = 255.255.254.0
```

Choose ipaddr and submask parameter values for the IP link to the IPSM whose resulting subnet address is not to be the same as the subnet address resulting from the pvn and pvnmask, fcna and fcnamask, or fcnb and fcnbmask parameter values of the chg-netopts command. Continue the procedure with step 9.

9. 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 06-10-01 21:20:37 GMT EAGLE5 36.0.0LOC   PORT IPADDR
   SUBMASK
             DUPLEX  SPEED MACTYPE AUTO
           MCAST2107  A
           -------------- --------------- HALF
             10    DIX     NO   NO
   ```

10. Assign an IP link to the IPSM using the chg-ip-lnk command with these parameters: loc, port=a, ipaddr, submask, speed=100, duplex=full.

    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:duplex
    =full
    ```

> **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 06-10-01 21:20:37 GMT EAGLE5 36.0.0CHG-IP-LNK:   MASP A -
      COMPLTD
```

11. Verify the changes made in 10 using the rtrv-ip-lnk command and specifying the card location and port values used in 10.

    For this example, enter this command.

    ```
    rtrv-ip-lnk:loc=2107:port=a
    ```

    The following is an example of the possible output.

    ```
    rlghncxa03w 06-10-01 21:20:37 GMT EAGLE5 36.0.0LOC   PORT IPADDR
    SUBMASK
            DUPLEX SPEED MACTYPE AUTO MCAST2107  A
              150.1.1.1        255.255.255.0  FULL   100   DIX
              NO   NO
    ```

12. Display the current IP host information in the database by entering the rtrv-ip-host command with the IP address of the IP link shown in 11.

    For this example, enter this command.

    ```
    rtrv-ip-host:ipaddr=150.1.1.1
    ```

    No IP address and IP host entry is displayed, as shown in the following example.

    ```
    rlghncxa03w 07-13-13 09:12:36 GMT EAGLE5 45.0.0

    No matching entries found

    IP Host table is (2 of 4096) <1% full
    ```

13. 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 06-10-01 21:18:37 GMT EAGLE5 36.0.0
    ENT-IP-HOST: MASP A - COMPLTD
    ```

14. 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 08-06-01 21:20:37 GMT EAGLE5 39.0.0
    LOC 2107
      SRCHORDR  SRVR
      DNSA      ---------------
      DNSB      ---------------
      DEFROUTER ---------------
      DOMAIN    ---------------
      SCTPCSUM  crc32c
    ```

```
  BPIPADDR  ---------------
  BPSUBMASK ---------------
```

15. 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 `chg-ip-lnk` (step 7) and `ent-ip-host` (step 11) commands. The value of the last octet of the default router's **IP** address must be from 1 to 254.

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

    ```
    rlghncxa03w 06-10-01 21:20:37 GMT EAGLE5 36.0.0
    CHG-IP-CARD:   MASP A - COMPLTD
    ```

16. Verify the changes made in step 15 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 08-06-01 21:20:37 GMT EAGLE5 39.0.0
    LOC 2107
      SRCHORDR  LOCAL
      DNSA      ---------------
      DNSB      ---------------
      DEFROUTER 150.1.1.250
      DOMAIN    ip.nc.tekelec.com
      SCTPCSUM  crc32c
      BPIPADDR  ---------------
      BPSUBMASK ---------------
    ```

17. Verify that the **IP** User Interface (Telnet) feature is enabled and turned on, 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 06-10-01 21:15:37 GMT EAGLE5 36.0.0
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 *Commands User's Guide*.

If the **IP** User Interface (Telnet) feature is enabled and turned on (`status = on`), continue the procedure with step 18.

If the **IP** User Interface (Telnet) feature is not enabled or turned on, perform the #unique_34 procedure to enable and turn on the **IP** User Interface (Telnet) feature.

If **UIM** 1493 was displayed when the IPSM was installed in step 3, the OA&M **IP** Security Enhancements feature is enabled and turned on. If the OA&M **IP** Security Enhancements feature is enabled and turned on (shown by the entry `EAGLE OA&M IP Security` in the `rtrv-ctrl-feat` output with the `status = on`), continue the procedure with step 18.

If the **OA**&M **IP** Security Enhancements feature is not enabled or turned on, and secure connections are to the **EAGLE** are to be used, perform the #unique_35 procedure to enable and turn on the OA&M **IP** Security Enhancements feature.

18. 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 06-10-01 21:20:37 GMT EAGLE5 36.0.0
    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 3, 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 **FTP** *Table Base Retrieval (***FTRA***) User's Guide*.

19. Put the terminals that were created when the IPSM was added in step 5 into service with 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 07-05-01 15:08:45 GMT EAGLE5 37.0.0
Allow message sent to terminal

rlghncxa03w 07-05-01 15:08:45 GMT EAGLE5 37.0.0
Command Completed.
```

20. 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.
```

4.9 Adding an IPSM Card as SFLOG

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 EAGLE's user interface through a telnet client. As of Release 46.5, the IPSM card and its functionality is replaced by the E5-ENET-B (p/n 870-2971-01) or SLIC (p/n 7094646) card. Any references to IPSM and the 870-2877-01 part number should be replaced by the 46.5 and greater card and part number.

The `ent-card` command uses the following 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`.

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

`:sflog`

The IP User Interface (Telnet) feature is not required to be enabled and activated 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, see to the "Activating Controlled Features procedure" in EAGLE Database Administration System Management User's Guide.

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 "Adding a Shelf procedure" in EAGLE Database Administration System Management User's Guide.

If an IPSM is being provisioned in this procedure, HIPR2 cards must be installed in the card locations 9 and 10 in the shelf that the IPSM will occupy. If HIPR2 cards are not installed in the shelf that the IPSM will occupy, the IPSM will not function when the IPSM is inserted into the shelf. Enter the `rept-stat-gpl:gpl=hipr2` command to verify whether or not HIPR2 cards are installed in the same shelf as the IPSM being provisioned in this procedure.

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 in 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 a 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 is made. For more information about editing the hosts.xml file on the FTRA, see FTP Table Base Retrieval (FTRA) User's Guide. 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 `chg-ip-lnk` command.

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 "Changing Terminal Characteristics procedure" in EAGLE Database Administration System Management User's Guide.

If a Class B IP address is specified for the `ipaddr` parameter of the `chg-ip-lnk` command, the subnet address that results from the `ipaddr` and `submask` parameter values cannot be the same as the subnet address that results from the `pvn` and `pvnmask`, `fcna` and `fcnamask`, or `fcnb` and `fcnbmask` parameter values of the `chg-netopts` command. The `pvn` and `pvnmask`, `fcna` and `fcnamask`, or `fcnb` and `fcnbmask` parameter values can be verified by entering the `rtrv-netopts` command. Choose `ipaddr` and `submask` parameter values for the IP link to the IPSM whose resulting subnet address is not to be the same as the subnet address resulting from the `pvn` and `pvnmask`, `fcna` and `fcnamask`, or `fcnb` and `fcnbmask` parameter values of the `chg-netopts` command.

The IP address of the IPSM cannot be shown as the `ipaddr` value in the `rtrv-ip-lnk`, `rtrv-ftp-serv`, or `rtrv-seas-config` outputs, or the `bpipaddr` value in the `rtrv-ip-card` output.

The examples in this procedure are used to add an IPSM in card location 2107.

1. Display the cards in the database using the `rtrv-card` command.

   This is an example of the possible output.

```
rlghncxa03w 07-13-13 09:12:36 GMT EAGLE5 45.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1101   DSM       VSCCP
1102   TSM       GLS
1114   E5TDM-A
1116   E5TDM-B
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   LIMDS0    SS7ANSI   itu1          A    0
1206   LIMDS0    SS7ANSI   nsp3          A    1   nsp4          B    0
1212   DSM       VSCCP
1214   TSM       GLS
1301   LIMATM    ATMANSI   lsnatm1       A    0
1303   STC       EROUTE
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 EAGLE for proper power distribution. Refer to Installation Guide for the shelf power distribution.

> **Note:**
>
> - The EAGLE can contain a maximum of 3 IPSMs. If the rtrv-card output shows that there are three IPSMs in the EAGLE, this procedure cannot be performed.
> - If the card being added in this procedure is not an IPSM card, continue the procedure with step 3.

2. Verify that HIPR2 cards are installed in card locations 9 and 10 in the shelf that will contain the IPSM card being added in this procedure. Enter the command `rept-stat-gpl:gpl=hipr2`.

   This is an example of the possible output.

```
rlghncxa03w 09-07-01 11:40:26 GMT  EAGLE5 41.1.0
GPL        CARD      RUNNING            APPROVED      TRIAL
HIPR2      1109      126-002-000        126-002-000   126-003-000
HIPR2      1110      126-002-000        126-002-000   126-003-000
HIPR2      1209      126-002-000        126-002-000   126-003-000
HIPR2      1210      126-002-000        126-002-000   126-003-000
HIPR2      1309      126-002-000        126-002-000   126-003-000
HIPR2      1310      126-002-000        126-002-000   126-003-000
HIPR2      2109      126-002-000        126-002-000   126-003-000
HIPR2      2110      126-002-000        126-002-000   126-003-000
Command Completed
```

   If HIPR2 cards are installed in the shelf that will contain the IPSM card, continue the procedure with step 3. If HIPR2 cards are not installed on the shelf that will contain the IPSM card, refer to Installation Guide to install the HIPR2 cards. Once the HIPR2 cards have been installed, continue the procedure with step 3.

3. 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 FTRA, see *FTP Table Base Retrieval (FTRA) User's Guide*.

4. Verify that the EAGLE has a fan unit and the fan unit is on. If the fan unit is not on, use the `chg-feat:fan=on` command to turn on the fan.

5. Add the IPSM using the `ent-card` command.

   For this example, enter this command.
   `ent-card:loc=2107:type=e5ipsm:appl=ips:sflog=yes`

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

```
rlghncxa03w 06-10-01 09:12:36 GMT  EAGLE5 36.0.0
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
```

6. Verify the changes using the `rtrv-card` command with the card location specified in step 5.

   For this example, enter this command.

   `rtrv-card:loc=2107`

   This is an example of the possible output.

```
rlghncxa03w 06-10-01 09:12:36 GMT EAGLE5 36.0.0 CARD TYPE APPL LSET
NAME LINK SLC LSET NAME LINK SLC 2107 IPSM IPS
```

7. Verify that the terminals shown as added in step 5 have been added by entering the `rtrv-trm` command.

   This is an example of the possible output.

```
rlghncxa03w 06-10-01 16:02:08 GMT EAGLE5 39.0.0
TRM  TYPE     COMM        FC    TMOUT MXINV DURAL
1    VT320    9600-7-E-1  SW    30    5     99:59:59
2    KSR      9600-7-E-1  HW    30    5     INDEF
3    PRINTER  4800-7-E-1  HW    30    0     00:00:00
4    VT320    2400-7-E-1  BOTH  30    5     00:30:00
5    VT320    9600-7-O-1  NONE  30    5     00:00:30
6    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  LOGINTMR LOGOUTTMR PNGTIMEINT PNGFAILCNT
     (sec)    (sec)     (msec)
17   none     none      none       1
18   none     none      none       1
19   none     none      none       1
20   none     none      none       1
21   none     none      none       1
22   none     none      none       1
23   none     none      none       1
24   none     none      none       1

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
1    YES  YES YES  YES YES YES YES YES  YES YES NO
```

```
2    YES  YES YES  YES YES YES YES YES  YES YES NO
3    YES  YES YES  YES YES YES YES YES  YES YES NO
4    YES  YES YES  YES YES NO  YES YES  YES YES NO
5    YES  YES YES  YES YES YES YES YES  YES YES NO
6    YES  YES YES  YES YES YES YES YES  YES YES NO
7    NO   YES YES  YES YES YES YES YES  YES YES NO
8    YES  YES YES  YES YES YES YES YES  YES YES YES
9    YES  YES YES  YES YES YES YES YES  YES YES YES
10   YES  YES YES  YES YES YES YES YES  YES YES YES
11   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
12   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
13   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
14   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
15   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
16   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
17   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
18   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
19   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
20   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
21   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
22   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
23   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
24   NO   NO  NO   NO  NO  NO  NO  NO   NO  NO  NO
```

To change the output parameter values or the `logintmr`, `logouttmr`, `pngfailcnt`, or the `pngtimeint` parameter values for the telnet terminals added in this procedure, perform the #unique_33 procedure.

After this step has been performed, continue the procedure by performing one of these steps.

- If a Class A or C **IP address** will be specified for the `ipaddr` parameter in step 10, continue the procedure with step 9.
- If a Class B **IP address** will be specified for the `ipaddr` parameter in step 10, continue the procedure with step 8.

8. The subnet address that results from the `ipaddr` and `submask` parameter values of the `chg-ip-lnk` command cannot be the same as the subnet address that results from the `pvn` and `pvnmask`, `fcna` and `fcnamask`, or `fcnb` and `fcnbmask` parameter values of the `chg-netopts` command. Display the `pvn`, `pvnmask`, `fcna`, `fcnamask`, `fcnb`, and `fcnbmask` parameter values of the `chg-netopts` command by entering the `rtrv-netopts` command. If error message `E3967 Cmd Rej: E5IS must be on` is displayed after the `rtrv-netopts` command is run, the `pvn`, `pvnmask`, `fcna`, `fcnamask`, `fcnb`, and `fcnbmaskpvn` and `pvnmask` parameters are not configured.

   This is an example of the possible output if the E5IS feature is on.

```
rlghncxa03w 09-02-28 21:17:37 GMT EAGLE5 40.1.0NETWORK
OPTIONS-----------------PVN        =
      128.20.30.40PVNMASK    = 255.255.192.0FCNA       =
      170.120.50.0FCNAMASK   = 255.255.240.0FCNB       =
      170.121.50.0FCNBMASK   = 255.255.254.0
```

   Choose `ipaddr` and `submask` parameter values for the IP link to the IPSM whose resulting subnet address is not to be the same as the subnet address resulting from the `pvn` and

pvnmask, fcna and fcnamask, or fcnb and fcnbmask parameter values of the chg-netopts command. Continue the procedure with step 9.

9. 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 06-10-01 21:20:37 GMT EAGLE5 36.0.0LOC   PORT IPADDR
   SUBMASK
             DUPLEX  SPEED MACTYPE AUTO
           MCAST2107  A
           -------------- --------------- HALF
             10    DIX     NO   NO
   ```

10. Assign an IP link to the IPSM using the chg-ip-lnk command with these parameters: loc, port=a, ipaddr, submask, speed=100, duplex=full.

    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:duplex
    =full
    ```

    > **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 06-10-01 21:20:37 GMT EAGLE5 36.0.0CHG-IP-LNK:   MASP A -
          COMPLTD
    ```

11. Verify the changes made in 10 using the rtrv-ip-lnk command and specifying the card location and port values used in 10.

    For this example, enter this command.

    ```
    rtrv-ip-lnk:loc=2107:port=a
    ```

    The following is an example of the possible output.

    ```
    rlghncxa03w 06-10-01 21:20:37 GMT EAGLE5 36.0.0LOC   PORT IPADDR
    SUBMASK
            DUPLEX SPEED MACTYPE AUTO MCAST2107  A
    ```

```
150.1.1.1         255.255.255.0  FULL   100   DIX
NO   NO
```

12. Display the current IP host information in the database by entering the rtrv-ip-host command with the IP address of the IP link shown in 11.

    For this example, enter this command.

    ```
    rtrv-ip-host:ipaddr=150.1.1.1
    ```

    No IP address and IP host entry is displayed, as shown in the following example.

    ```
    rlghncxa03w 07-13-13 09:12:36 GMT EAGLE5 45.0.0

    No matching entries found

    IP Host table is (2 of 4096) <1% full
    ```

13. 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 06-10-01 21:18:37 GMT EAGLE5 36.0.0
    ENT-IP-HOST: MASP A - COMPLTD
    ```

14. 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 08-06-01 21:20:37 GMT EAGLE5 39.0.0
    LOC 2107
      SRCHORDR  SRVR
      DNSA      ---------------
      DNSB      ---------------
      DEFROUTER ---------------
      DOMAIN    ---------------
      SCTPCSUM  crc32c
      BPIPADDR  ---------------
      BPSUBMASK ---------------
    ```

15. 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 `chg-ip-lnk` (step 10) and `ent-ip-host` (step 11) commands. The value of the last octet of the default router's **IP** address must be from 1 to 254.

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

```
rlghncxa03w 06-10-01 21:20:37 GMT EAGLE5 36.0.0
CHG-IP-CARD:   MASP A - COMPLTD
```

16. Verify the changes made in step 15 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 08-06-01 21:20:37 GMT EAGLE5 39.0.0
LOC 2107
  SRCHORDR  LOCAL
  DNSA      ---------------
  DNSB      ---------------
  DEFROUTER 150.1.1.250
  DOMAIN    ip.nc.tekelec.com
  SCTPCSUM  crc32c
  BPIPADDR  ---------------
  BPSUBMASK ---------------
```

17. Verify that the **IP** User Interface (Telnet) feature is enabled and turned on, 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 06-10-01 21:15:37 GMT EAGLE5 36.0.0
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 *Commands User's Guide*.

If the **IP** User Interface (Telnet) feature is enabled and turned on (`status = on`), continue the procedure with #unique_36/unique_36_Connect_42_V673063.

If the **IP** User Interface (Telnet) feature is not enabled or turned on, perform the #unique_34 procedure to enable and turn on the **IP** User Interface (Telnet) feature.

If **UIM** 1493 was displayed when the IPSM was installed in #unique_36/unique_36_Connect_42_V672882 , the OA&M **IP** Security Enhancements feature is enabled and turned on. If the OA&M **IP** Security Enhancements feature is enabled and turned on (shown by the entry `EAGLE OA&M IP Security` in the `rtrv-ctrl-feat` output with the `status = on`), continue the procedure with step 18.

If the **OA**&M **IP** Security Enhancements feature is not enabled or turned on, and secure connections are to the **EAGLE** are to be used, perform the #unique_35 procedure to enable and turn on the OA&M **IP** Security Enhancements feature.

18. 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 06-10-01 21:20:37 GMT EAGLE5 36.0.0
    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 3, 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 **FTP** *Table Base Retrieval (***FTRA***) User's Guide*.

19. Put the terminals that were created when the IPSM was added in step 5 into service with 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 07-05-01 15:08:45 GMT EAGLE5 37.0.0
    Allow message sent to terminal

    rlghncxa03w 07-05-01 15:08:45 GMT EAGLE5 37.0.0
    Command Completed.
    ```

20. 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.
```

4.10 Configuring a MCP Module

This procedure is used to add an Measurement Collection and Polling Module (MCPM), 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`.

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

The Measurements Platform feature requires a minimum of two **MCPM** cards (part number 870-2372-03 or later) with at least 2 **GB** of memory per card or two SLIC cards with at least 4 GB of memory per card. The MCPM and SLIC cards can also be used in mixed mode.

The Measurements Platform feature must be on in order to add a **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 Oracle 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 #unique_37 procedure.

After all the required **MCPMs** have been configured in the database, go to the #unique_38 procedure 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.

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 09-05-01 09:12:36 GMT EAGL SLIC  41.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1101   DSM       VSCCP
1102   TSM       GLS
1113   GSPM      OAM
1114   TDM-A
1115   GSPM      OAM
1116   TDM-B
1117   MDAL
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   LIMDS0    SS7ANSI   itu1          A    0
1206   LIMDS0    SS7ANSI   nsp3          A    1   nsp4          B    0
1212   DSM       VSCCP
1214   TSM       GLS
1301   LIMATM    ATMANSI   lsnatm1       A    0
1303   STC       EROUTE
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 **EAGLE** for proper power distribution. Refer to *Installation Guide* 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 *Commands User's Guide*.

> **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 Oracle Sales Representative or Account Representative.

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

   ```
   rlghncxa03w 06-10-01 21:18:37 GMT EAGL SLIC  36.0.0
   CHG-FEAT: MASP A - COMPLTD
   ```

6. Verify that the EAGLE has a fan unit and the fan unit is on. If the fan unit is not on, use the `chg-feat:fan=on` command to turn on the fan.
7. Add the **MCPM** using the `ent-card` command.

   For this example, enter this command.

   `ent-card:loc=2107:type=mcpm:appl=mcp`

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

   ```
   rlghncxa03w 06-10-01 09:12:36 GMT  EAGL SLIC  36.0.0
   ENT-CARD: MASP A - COMPLTD
   ```

8. 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 06-10-01 09:12:36 GMT EAGL SLIC  36.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
2107   MCPM      MCP
```

9. Back up the new changes using the `chg-db:action=backup:dest=fixed`command.

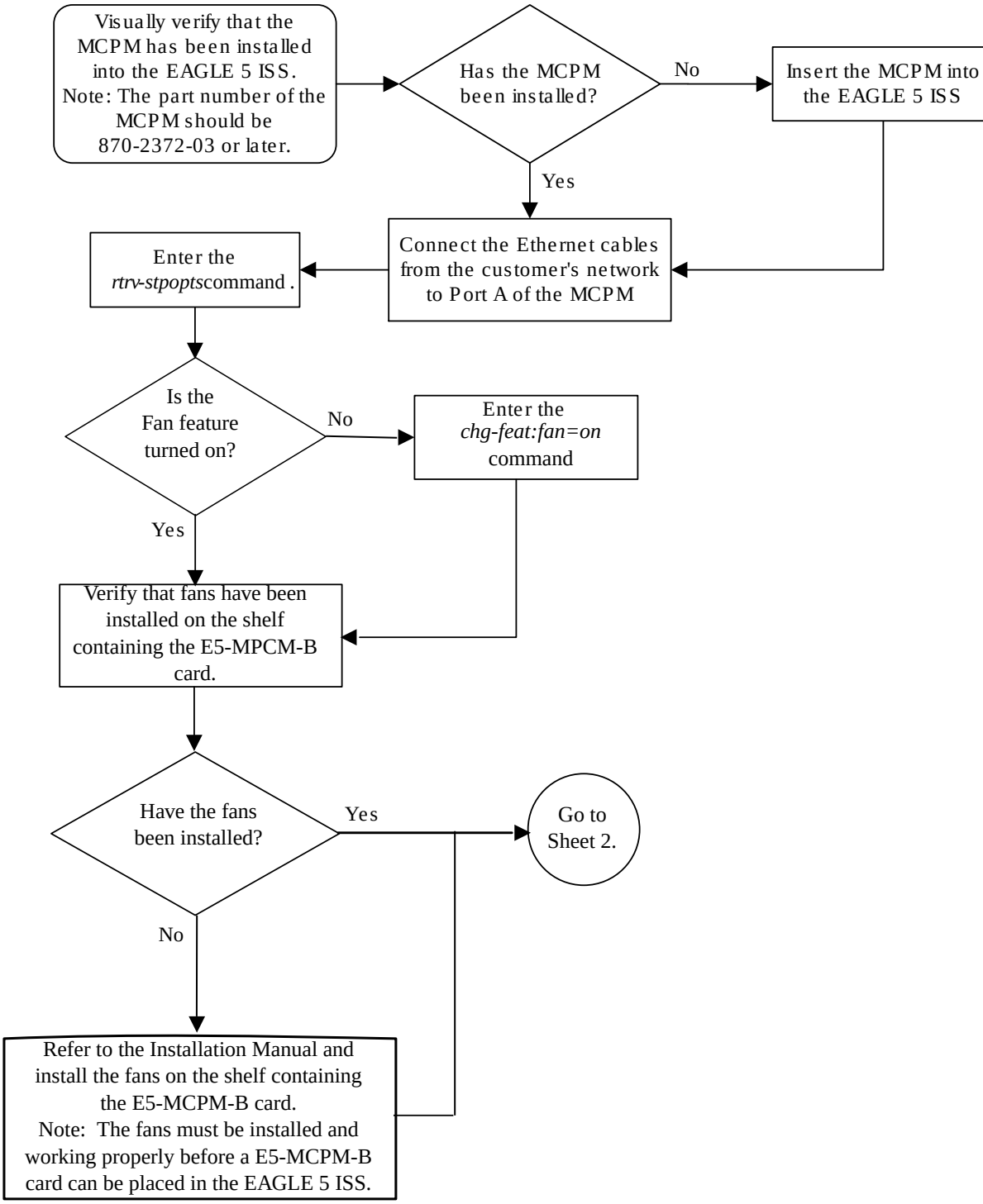
   These messages should appear, the active **Maintenance and Administration Subsystem** Processor (**MASP**) appears first.

```
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.
```

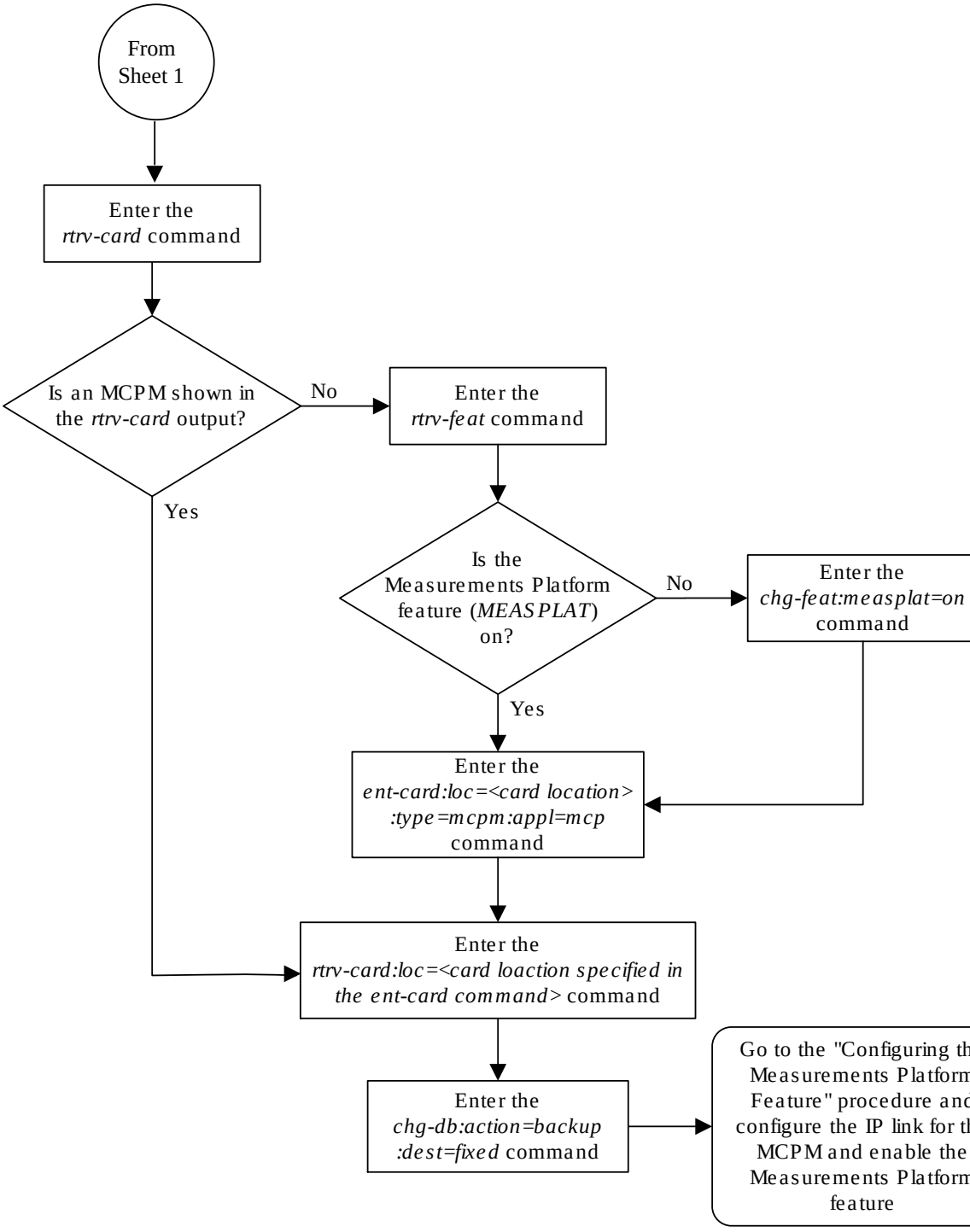
10. Go to the #unique_38 procedure and configure the **IP** links for these **MCPMs** and enable the **Measurement Platform** feature, if necessary.

> **Note:**
>
> Before performing 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 Oracle Sales Representative or Account Representative.

Figure 4-5 Adding a Measurement Collection and Polling Module (MCPM)



Sheet 1 of 2


From Sheet 1
Enter the rtrv-card command
Is an MCPM shown in the rtrv-card output?
No
Yes
Enter the rtrv-feat command
Is the Measurements Platform feature (MEASPLAT) on?
No
Yes
Enter the chg-feat:measplat=on command
Enter the ent-card:loc=<card location> :type=mcpm:appl=mcp command
Enter the rtrv-card:loc=<card loaction specified in the ent-card command> command
Enter the chg-db:action=backup :dest=fixed command
Go to the "Configuring th Measurements Platform Feature" procedure and configure the IP link for th MCPM and enable the Measurements Platform feature

Sheet 2 of 2

4.11 Configuring EROUTE/STC Card

This procedure is used to add an **STC** (Signaling Transport **Card**) to the database using the `ent-card` command. The **STC** provides an interface between the **EAGLE** and the **ESP** (**EAGLE** Integrated Monitoring Support feature). The **STC** allows the **ESP** subsystem to monitor the **EAGLE**'s signaling links without additional intrusive cabling.

The `ent-card` command uses these parameters.

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

`:type` – The type of card being added to the database. For this procedure, the value of this parameter is `stc`.

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

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

The **STC** can be either a single-slot **STC**, a dual-slot **STC**, or an **SLIC -STC** card as shown in #unique_39/unique_39_Connect_42_V2193109.

Table 4-11 STC Part Numbers

Card Type	Card Name (as shown on the card Label)	Part Number
SLIC -STC	SLIC -ENET	870-2212-02
	SLIC -ENET-B	870-2971-XX

The dual-slot **STC** can be inserted only in card slots 01, 03, 05, 07, 11, 13, 15, and 17 of the extension shelf. The dual-slot **STC** can be inserted in the control shelf, but only in slots 01, 03, 05, 07, and 11. The dual-slot **STC** occupies two card slots, so the even numbered card slot must be empty and not provisioned in the database, as shown in the following table. The dual-slot **STC** is connected to the network through the odd numbered card slot connector.

Table 4-12 Dual-Slot STC Locations

Location of the STC	Empty Card Location	Location of the STC	Empty Card Location
Slot 01	Slot 02	Slot 11	Slot 12
Slot 03	Slot 04	Slot 13	Slot 14
Slot 05	Slot 06	Slot 15	Slot 16
Slot 07	Slot 08	Slot 17	Slot 18

The single-slot **STC** can be inserted into any card slot, except an even numbered card slot adjacent to a dual-slot card, shown in the above table, slots 9 and 10 in each shelf, and slots 1113 through 1118.

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

In order to enable the **EISCOPY** option, with the `chg-eisopts` command, and to comply with the *n+1* **STC** configuration requirement, a minimum of two **STCs** must be provisioned in the database. A minimum of two **STCs** must be provisioned.

The number of **SS7** signaling links that can be monitored by an **STC** varies depending the following criteria:

- Whether the **STC** is a dual-slot **STC** or single-slot **STC**
- The type of signaling link (defined by the application running on the card the signaling link is assigned to)
- The amount of traffic and the size of the **MSU**s being handled by the **EAGLE**

> **Note:**
>
> Perform the “Changing the High-Capacity Card Temperature Alarm Thresholds” procedure in *Database Administration -SS7 User's Guide* to verify the temperature threshold settings for the **SLIC -STC** card.

STC Provisioning

The following rules apply to provisioning STCs.

- A minimum of two STCs must be provisioned in the EAGLE.
- The maximum number of STCs that can be provisioned in the EAGLE is 32.
- Only single-slot STCs can be installed and provisioned in the EAGLE if IP signaling links are being monitored. Dual-slot STCs cannot be installed or provisioned.
- HIPR2 cards must be installed in the shelf that contains SLIC -STCs.
- For shelves containing HIPR2 cards in card slots 9 and 10, these rules apply to provisioning STCs.
  - STCs should be provisioned in the same shelf that contains the cards being monitored.
  - More than three STCs can be provisioned in the shelf depending on the number of empty cards slots the shelf has.
- To monitor signaling links on these cards, HIPR2 cards must be installed in slots 9 and 10 of the shelf that contains these cards.
  - SLIC -ENET cards that contain IP signaling links.
  - SLIC -E1T1 cards that contain E1 or T1 signaling links.
- If the SLIC -STC card is an SLIC -ENET-B card, the FAN feature must be turned on and fans must be installed on the shelf that contains the SLIC -ENET-B card. Enter the `rtrv-feat` command to verify whether or not the FAN feature is turned on. Perform the procedures in *Installation Guide* to install fans on the shelf that contains the SLIC -ENET-B card if fans must be installed. The MFC (message flow control) option must be on. Enter the `rtrv-stpopts` command to verify whether or not the MFC option is on. Perform the #unique_40 procedure to turn the MFC option on, if required.

> **Note:**
>
> Contact your Sales Representative or Account Representative to determine the number of **STC**s that must be provisioned in your **EAGLE**, and to determine where in the **EAGLE** these STC cards must provisioned before performing this procedure.

The examples in this procedure are used to add an **STC** card in these card locations: 1303, 2101, and 2102.

1. Display the cards in the database using the `rtrv-card` command.

```
rlghncxa03w 09-05-28 09:12:36 GMT EAGL SLIC  46.0.0
CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
1102   TSM       GLS
1113    SLIC -MCAP   OAMHC
1114    SLIC -TDM-A
1115    SLIC -MCAP   OAMHC
1116    SLIC -TDM-B
1117    SLIC -MDAL
1201   LIMDS0    SS7ANSI   sp2           A    0   sp1           B    0
1203   LIMDS0    SS7ANSI   sp3           A    0
1204   LIMDS0    SS7ANSI   sp3           A    1
1206   LIMDS0    SS7ANSI   nsp3          A    1   nsp4          B    1
1301    SLIC -SM4G   SCCPHC
1308   LIMDS0    SS7ANSI   sp6           A    1   sp7           B    0
1314   LIMDS0    SS7ANSI   sp7           A    1   sp5           B    1
```

   The cards should be distributed throughout the **EAGLE** for proper power distribution. Refer to *Installation Guide* for the shelf power distribution.

2. Verify that the EAGLE Integrated Monitoring Support feature is on, by entering the `rtrv-feat` command. If the EAGLE 5 Integrated Monitoring Support feature is on, the `SLIC IS` field should be set to `on`.

   > **Note:**
   >
   > The `rtrv-feat` command output contains other fields that are not used by this procedure. To see all fields displayed by the `rtrv-feat` command, see the `rtrv-feat` command description in *Commands User's Guide*.

   > **Note:**
   >
   > If the EAGLE Integrated Monitoring Support feature is not on, go to the #unique_41 procedure and enable the **EAGLE** Integrated Monitoring Support feature.

   If **HIPR2** cards are not required for provisioning **STC** cards, refer to STC Provisioning to determine if HIPR2 cards are required, continue the procedure with #unique_39/unique_39_Connect_42_V2193266.

If **HIPR2** cards are required for provisioning **STC** cards, continue the procedure with the next step.

3. Verify that the **HIPR** cards are installed in card locations 9 and 10 in the shelf before adding the **STC** cards in this procedure. Enter this command.

```
rept-stat-gpl:gpl=hipr

rlghncxa03w 07-02-01 11:40:26 GMT  EAGL SLIC  37.0.0
GPL        CARD      RUNNING            APPROVED      TRIAL
HIPR       1109      126-002-000        126-002-000   126-003-000
HIPR       1110      126-002-000        126-002-000   126-003-000
HIPR       1209      126-002-000        126-002-000   126-003-000
HIPR       1210      126-002-000        126-002-000   126-003-000
HIPR       1309      126-002-000        126-002-000   126-003-000
HIPR       1310      126-002-000        126-002-000   126-003-000
HIPR       2109      126-002-000        126-002-000   126-003-000
HIPR       2110      126-002-000        126-002-000   126-003-000
Command Completed
```

If **HIPR2** cards are installed in the shelf containing the **STC** cards, continue the procedure with #unique_39/unique_39_Connect_42_V2193266, continue the procedure by performing one of these steps.

- If the card that is being added is an SLIC -ENET card, continue the procedure with #unique_39/unique_39_Connect_42_V2193266.
- If the card that is being added is an SLIC -ENET-B card, continue the procedure with #unique_39/unique_39_Connect_42_STEP_7A9BB6D621B742D5A95B6526A54ADF0C.

If HIPR cards are not installed in the shelf containing the STC cards, continue the procedure with #unique_39/unique_39_Connect_42_V3129266.

4. Verify that the **HIPR2** cards are installed in card locations 9 and 10 in the shelf before adding the **STC** cards in this procedure. Enter this command.

```
rept-stat-gpl:gpl=hipr2
```

This is an example of the possible output.

```
rlghncxa03w 09-07-01 11:40:26 GMT  EAGL SLIC  41.1.0
GPL        CARD      RUNNING            APPROVED      TRIAL
HIPR2      1109      126-002-000        126-002-000   126-003-000
HIPR2      1110      126-002-000        126-002-000   126-003-000
HIPR2      1209      126-002-000        126-002-000   126-003-000
HIPR2      1210      126-002-000        126-002-000   126-003-000
HIPR2      1309      126-002-000        126-002-000   126-003-000
HIPR2      1310      126-002-000        126-002-000   126-003-000
HIPR2      2109      126-002-000        126-002-000   126-003-000
HIPR2      2110      126-002-000        126-002-000   126-003-000
Command Completed
```

If HIPR2 cards are installed at card locations 9 and 10 in the shelf containing the STC cards, continue the procedure with #unique_39/unique_39_Connect_42_V2193266.

If HIPR2 cards are not installed in the shelf containing the STC cards, refer to *Installation Guide* to install the HIPR2 cards. Once the HIPR2 cards have been installed, continue the procedure with #unique_39/unique_39_Connect_42_V2193266.

After the procedures in *Installation Guide* have been performed, or if HIPR2 cards are installed at the card locations 9 and 10 on the shelf where the SLIC -STC card is to be installed, continue the procedure by performing one of these steps.

- If the card that is being added is an SLIC -ENET card, continue the procedure with #unique_39/unique_39_Connect_42_V2193266.
- If the card that is being added is an SLIC -ENET-B card, continue the procedure with #unique_39/unique_39_Connect_42_STEP_7A9BB6D621B742D5A95B6526A54ADF0C.

5. Verify whether or not the MFC option is on by entering the `rtrv-stpopts` command.

   This is an example of the possible output.

```
rlghncxa03w 11-10-17 16:02:05 GMT EAGL SLIC  44.0.0
STP OPTIONS
---------------------------
MFC                       off
```

   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 *Commands User's Guide*.

   If the **MFC** option is off, perform the #unique_40 procedure to turn on the MFC option.

   If the MFC option is on, or the #unique_40 procedure was performed in this step, continue the procedure with #unique_39/unique_39_Connect_42_STEP_BC23C27763164A92B7E467BCBEC62046.

6. Fans must be installed on the shelves that contain the SLIC -ENET-B cards. The Fan feature must be turned on. If the Fan feature is on, shown in the `rtrv-feat` output in #unique_39/unique_39_Connect_42_V2193237, the `FAN` field should be set to `on`.

   If the Fan feature is on, continue the procedure with #unique_39/unique_39_Connect_42_STEP_A7969AD575694FF297E48C53F36582A9.

   If the Fan feature is off, continue the procedure with #unique_39/unique_39_Connect_42_STEP_8751C925C4AF468BBB1824E33B0BB26E.

7. Turn the Fan feature on by entering this command.

```
chg-feat:fan=on
```

> **Note:**
>
> Once the Fan feature is turned on with the `chg-feat` command, it cannot be turned off.
> The Fan feature must be purchased before you turn this feature on with the `chg-feat` command. If you are not sure if you have purchased the Fan feature, contact your Sales Representative or Account Representative.

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

```
rlghncxa03w 11-10-28 11:43:04 GMT EAGL SLIC  44.0.0
CHG-FEAT: MASP A - COMPLTD
```

8. The shelf containing the SLIC -ENET-B card that is being added in this procedure must have fans installed. Verify whether or not fans are installed on the shelf.

   If the fans are installed, continue the procedure with #unique_39/unique_39_Connect_42_V2193266.

   If the fans are not installed on the shelf containing the SLIC -ENET-B card, go to Installation Guide and install the fans. After the fans have been installed and tested, continue the procedure with #unique_39 #unique_39/unique_39_Connect_42_V2193266.

9. Add the STC card using the `ent-card` command. Refer to STC Provisioning for the rules for provisioning STC cards. A dual-slot STC card can be inserted only in an odd numbered slot and the adjacent even card slot must be empty, as shown in #unique_39/unique_39_Connect_42_V2193124. A single-slot STC card can be inserted into any card slot except an even numbered card slot adjacent to a dual-slot card, slots 09 and 10 in each shelf, and slots 1113 through 1118. For this example, enter these commands.

   ```
   ent-card:loc=1303:type=stc:appl=eroute
   ```

   ```
   ent-card:loc=2101:type=stc:appl=eroute
   ```

   ```
   ent-card:loc=2102:type=stc:appl=eroute
   ```

10. Verify the changes using the `rtrv-card` command with the card location specified in #unique_39/unique_39_Connect_42_V2193125. For this example, enter these commands.

    ```
    rtrv-card:loc=1303
    ```

    ```
    rlghncxa03w 06-10-28 09:12:36 GMT EAGL SLIC  36.0.0
    CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
    1303   STC       EROUTE
    ```

    ```
    rtrv-card:loc=2101
    ```

    ```
    rlghncxa03w 06-10-28 09:12:36 GMT EAGL SLIC  36.0.0
    CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
    2101   STC       EROUTE
    ```

    ```
    rtrv-card:loc=2102
    ```

    ```
    rlghncxa03w 06-10-28 09:12:36 GMT EAGL SLIC  36.0.0
    CARD   TYPE      APPL      LSET NAME     LINK SLC LSET NAME     LINK SLC
    2102   STC       EROUTE
    ```

11. Verify that the card to be entered has been physically installed into the card location specified in #unique_39/unique_39_Connect_42_V2193124.

> **Caution:**
>
> If the version of the flash GPLs on the STC does not match the flash GPL versions in the database when the STC is inserted into the card slot, **UAM** 0002 is generated indicating that these GPL versions do not match. If UAM 0002 has been generated, perform the alarm clearing procedure for UAM 0002 in *Unsolicited Alarm and Information Messages Reference* manual before proceeding with this procedure.

12. Put the STC card added in #unique_39 into service using the `alw-card` command specifying the card location specified in #unique_39/unique_39_Connect_42_V2193125. For this example, enter these commands.

    ```
    alw-card:loc=1303
    ```

    ```
    alw-card:loc=2101
    ```

    ```
    alw-card:loc=2102
    ```

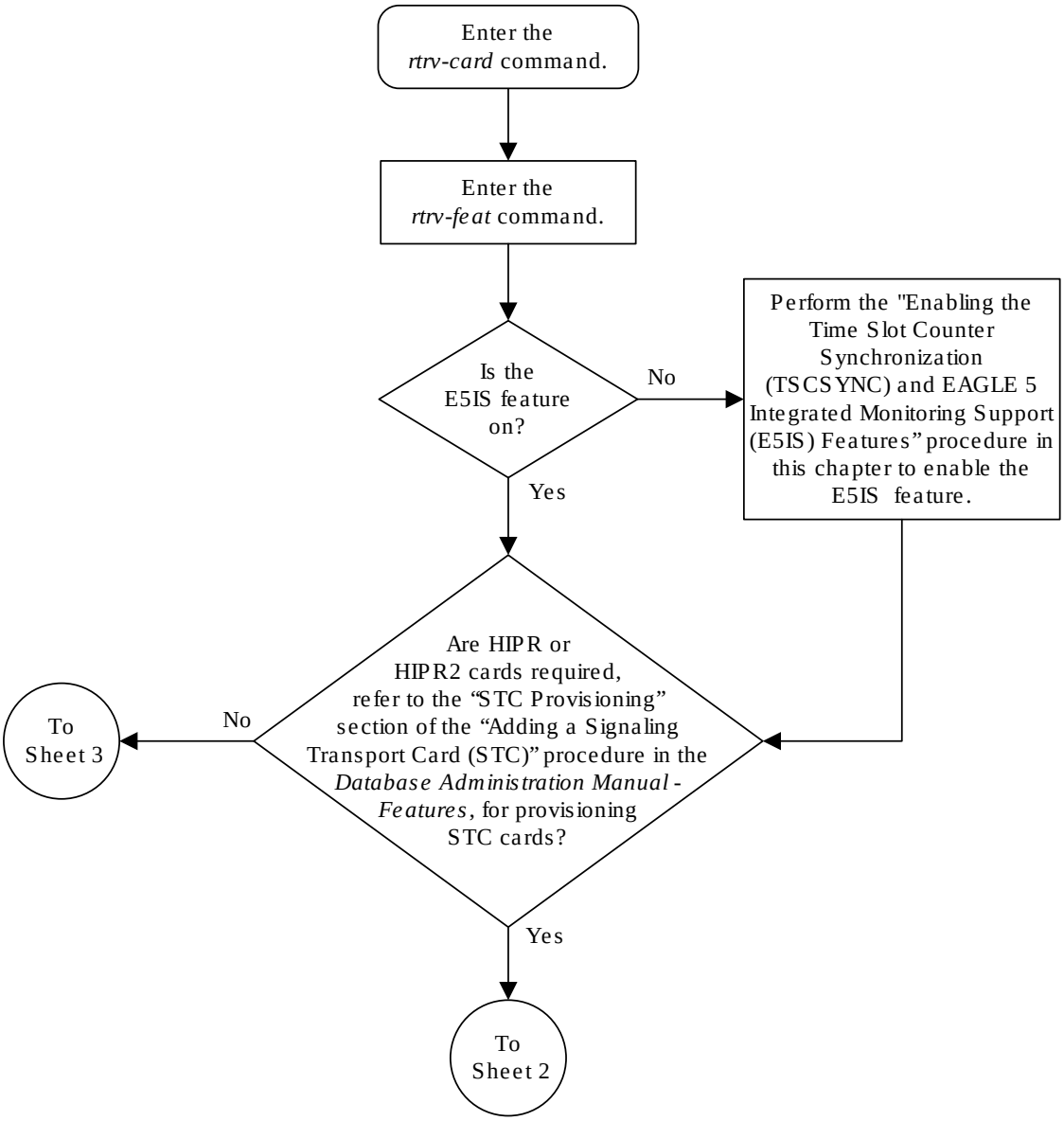
    When the `alw-card` command has successfully completed, this message should appear.

    ```
    rlghncxa03w 06-10-28 09:12:36 GMT EAGL SLIC  36.0.0
    Card has been allowed.
    ```

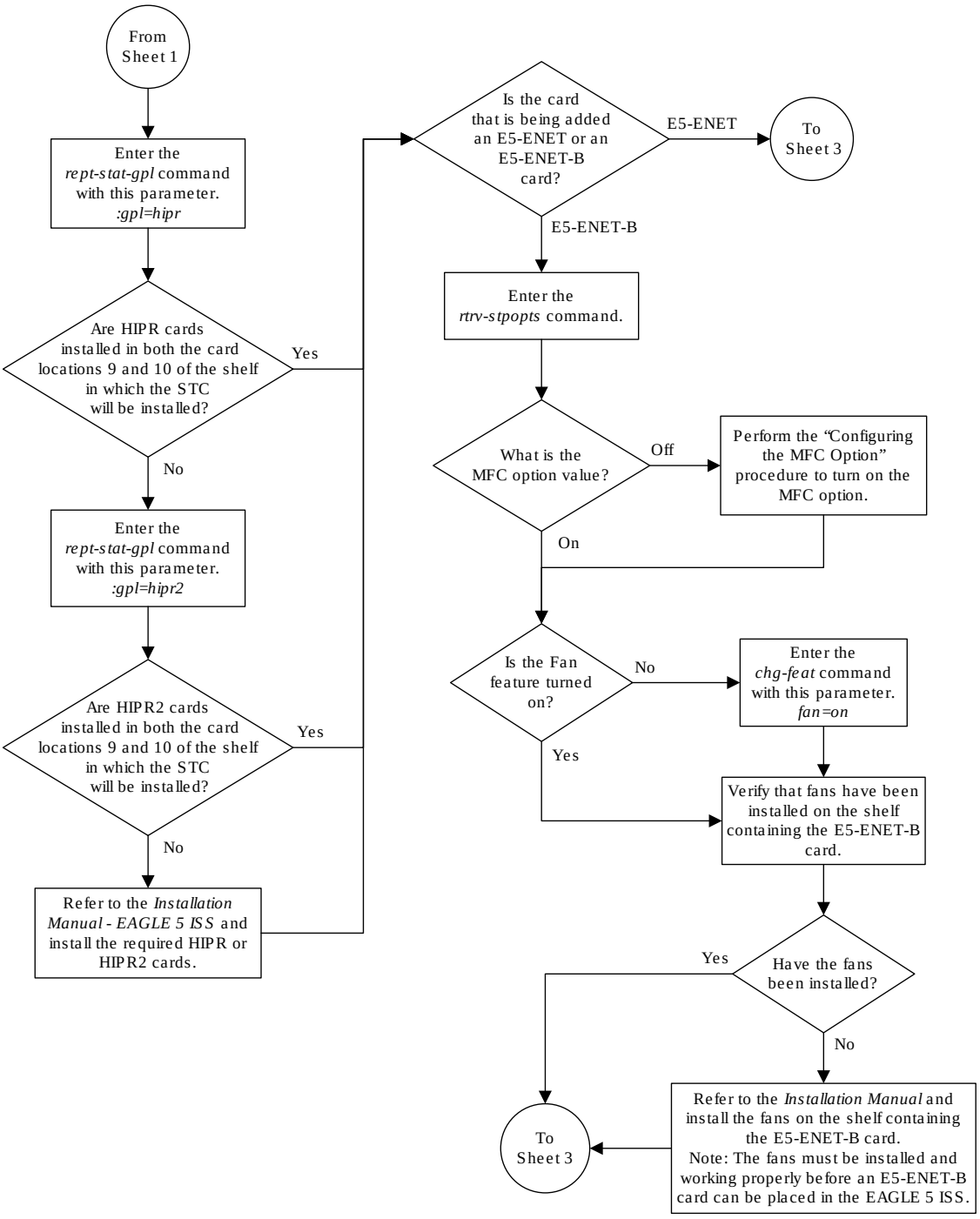
13. Back up the new changes using the `chg-db:action=backup:dest=fixed` command. These messages should appear, the active **Maintenance and Administration Subsystem** Processor (**MASP**) appears first.

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

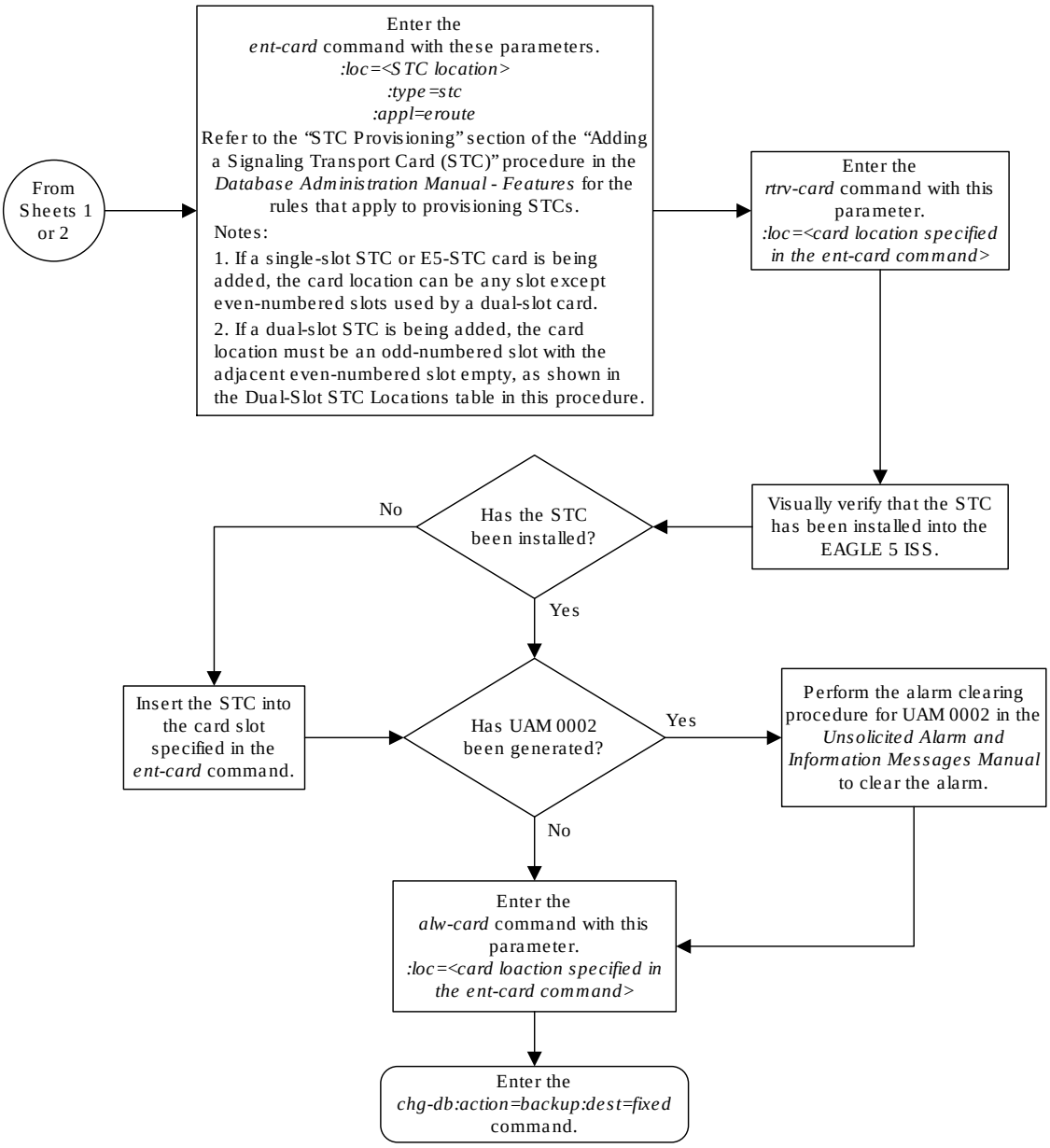
Figure 4-6 Adding a Signaling Transport Card (STC)



Sheet 1 of 3


From Sheet 1
Enter the rept-stat-gpl command with this parameter. :gpl=hipr
Are HIPR cards installed in both the card locations 9 and 10 of the shelf in which the STC will be installed?
Yes
No
Enter the rept-stat-gpl command with this parameter. :gpl=hipr2
Are HIPR2 cards installed in both the card locations 9 and 10 of the shelf in which the STC will be installed?
Yes
No
Refer to the Installation Manual - EAGLE 5 ISS and install the required HIPR or HIPR2 cards.
Is the card that is being added an E5-ENET or an E5-ENET-B card?
E5-ENET
To Sheet 3
E5-ENET-B
Enter the rtrv-stpopts command.
What is the MFC option value?
Off
Perform the "Configuring the MFC Option" procedure to turn on the MFC option.
On
Is the Fan feature turned on?
No
Enter the chg-feat command with this parameter. fan=on
Yes
Verify that fans have been installed on the shelf containing the E5-ENET-B card.
Have the fans been installed?
Yes
No
To Sheet 3
Refer to the Installation Manual and install the fans on the shelf containing the E5-ENET-B card.
Note: The fans must be installed and working properly before an E5-ENET-B card can be placed in the EAGLE 5 ISS.

Sheet 2 of 3



Sheet 3 of 3

4.12 Configuring the Stateful Applications (SFAPP)

Run the following commands to configure the SFAPP feature:

1. Configure the SFAPP card.
2. Configure the SFAPP local subsystem.

```
ent-ss-appl:appl=SFAPP:ssn=12:stat=online
```

3. Configure SFAPP GTT actions.

```
ent-gttact:actid=disc:act=disc
```

```
ent-
gttact:actid=uc3:act=sfapp:on=uimreqd:failactid=disc:defactid=fallback:scfa
ddr=1111111111
```

```
ent-
gttact:actid=sfaptparm:act=sfapp:hlraddr=tcapparm:scfaddr=1911111111:defact
id=disc:failactid=disc:tt=29
```

```
chg-gttact:actid=uc3:ATIRESCGMODID=sfappati:PSIRESCGMODID=sfapppsi
```

(step 5 needs to be performed before this command)

4. Configure GTMOD for CgPA portion for ATI and PSI messages (to be assigned to ATIRESCGMODID and PSIRESCGMODID of the SFAPP GTTACTION).

```
ent-
gtmod:GTMODID=sfapppsi:NTT=23:NGTI=4:NNP=1:NNAI=4:PRECD=pfx:CGPASSN=10:NPDS
=22222222223
```

```
ent-
gtmod:GTMODID=sfappati:NTT=23:NGTI=4:NNP=1:NNAI=4:PRECD=pfx:CGPASSN=10:NPDS
=22222222221
```

5. Configure GTT for translating the incoming UL message to the SFAPP GTT action.

   GTT action set table:

```
ent-gttaset:actsn=sfappuc3:actid1=uc3
```

   GTT SET table:

```
ent-gttset:gttsn=sfapp:netdom=itu:settype=cdgta
```

   GTT SEL table:

```
ent-gttsel:gtii=4:cdgttsn=sfapp:tt=20:np=e164:nai=intl
```

   and

```
ent-gttsel:gtii=4:cdgttsn=sfapp:tt=23:np=e164:nai=intl
```

6. Configure GTT for translating the ATI/PSI message to the SFAPP GTT Action or SFAPP subsystem (based on the HANDLRESP parameter configured under SFAPP GTT action).

HLR:

```
ent-
gta:gttsn=sfapp:gta=2222222210:egta=2222222260:xlat=dpc:ri=gt:pci=3-003-3:A
CTSN=sfappuc3:mrnset=none
```

VLR:

```
ent-
gta:gttsn=sfapp:gta=95604:egta=95604:xlat=dpc:ri=gt:pci=2-002-2:mrnset=none
```

7. Configure Mate-stp table with TPC and mate STP PCs.

```
ent-mate-stp:pci=4-185-3
```

(Eagle 11 TPC)

```
ent-mate-stp:pci=xxxx
```

(for mate)

8. Configure SFLOG card for connecting EEDB.

```
ent-card:loc=1103:type=ipsm:appl=ips:sflog
```

```
chg-ip-
lnk:loc=1103:port=a:ipaddr=10.75.52.61:SUBMASK=255.255.255.0:MACTYPE=DIX:au
to=yes:mcast=no
```

```
chg-ip-card:loc=1103:SRCHORDR=SRVR:DEFROUTER=10.75.52.1
```

9. Configure IP connection (ENT-IP-CONN) for connecting EEDB.

```
ent-ip-host:host=eedb:ipaddr=10.75.50.106:type=remote
```

```
ent-ip-host:host=sflog:ipaddr=10.75.52.61:type=local
```

```
ent-ip-
conn:cname=conn1:prot=tcp:lhost=sflog:lport=2100:rport=17529:rhost=eedb
```

```
chg-ip-conn:cname=conn1:open=yes
```

10. Configure VLR profile entries (ENT-VLR-PROF) that are configured with filter graylist.

```
ent-vlr-prof:vlr=95604:filter=graylist:ageofloc=no:IMEIRTRV=yes
```

```
ent-vlr-prof:vlr=ab123:filter=graylist:ageofloc=no:IMEIRTRV=yes
```

11. Configure VLR roaming table (ENT-VLR-ROAMING).

```
ent-vlr-roaming:oldvlr=ab123:newvlr=95604:time=10
```

(This entry goes in the static table)

12. Turn on the global UC3 option.

```
SFAPPOPTS:VLRIMEICHALLENGE=YES


chg-sfappopts:VLRIMEICHALLENGE=yes
```

13. Use AGEOFLOC and IMEIRTRV parameter under VLR profile entry (RTRV-VLR-PROF), selectively turn off or on UC2 and UC3 for the VLR.

```
chg-vlr-prof:vlr=95604:ageofloc=no:IMEIRTRV=yes
```

14. Use DEFACTID and FAILACTID and under the SFAPP GTT action, selectively configure the default and failure actions for the SFAPP GTT action.

```
chg-gttact:actid=uc3:on=HANDLRESP
```

4.13 Adding IPSM as EEDB

Run the following commands to add IPSM as EEDB.

1. Configure SFLOG card for connecting EEDB.

```
ent-card:loc=1103:type=ipsm:appl=ips:sflog


chg-ip-
lnk:loc=1103:port=a:ipaddr=10.75.52.61:SUBMASK=255.255.255.0:MACTYPE=DIX:au
to=yes:mcast=no


chg-ip-card:loc=1103:SRCHORDR=SRVR:DEFROUTER=10.75.52.1
```

2. Configure IP connection (ENT-IP-CONN) for connecting EEDB.

```
ent-ip-host:host=eedb:ipaddr=10.75.50.106:type=remote


ent-ip-host:host=sflog:ipaddr=10.75.52.61:type=local


ent-ip-
conn:cname=conn1:prot=tcp:lhost=sflog:lport=2100:rport=17529:rhost=eedb


chg-ip-conn:cname=conn1:open=yes
```