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EAGLE SLIC Card Configuration User's Guide

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Contents

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What's New in This Guide

Release 46.9.1 - March 2021

This section introduces the documentation updates for Release 46.9.1 in Oracle Communications EAGLE.

- Removed slan and stplan instances from the guide due to the discontinued support of the stplan application in EAGLE.

1
Introduction

This chapter provides a brief description of the SLIC Card features of the 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.

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 manual describes the features supported by SLIC Card with the corresponding configurations. For more information on SLIC Card, refer to *Hardware Reference*.

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.

4
Configuration of Supported Features

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

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 card being provisioned in the database can be one of these cards shown in #unique_17/unique_17_Connect_42_V2199083.

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 #unique_17/unique_17_Connect_42_V2199086. 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 shown in #unique_17/unique_17_Connect_42_V2199086. 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 #unique_17/unique_17_Connect_42_V2199089_1 .

   > **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 LIM**" in Chapter 4, "System Configuration Procedures" in *Database Administration - System Management User's Guide* "Removing a **LIM-E1Card**" "Removing a **LIM-T1Card**"
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*

> **Note:**
>
> If the **E1** card being added in this procedure is not an **HC-MIM** or **E5-E1T1** card, continue the procedure with #unique_17/unique_17_Connect_42_V693421.

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 #unique_20/unique_20_Connect_42_STEP_BFFD69F13BF14AB0A987B0D9566233CF

   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 #unique_20/unique_20_Connect_42_STEP_BFFD69F13BF14AB0A987B0D9566233CF.

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 #unique_20/unique_20_Connect_42_V693657.

   If the Fan feature is off, continue the procedure with #unique_20/unique_20_Connect_42_STEP_1E6F0D937E7D49D69A62BE0ED2DBE423.

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 #unique_17/unique_17_Connect_42_V693421 .

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.
```

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 card being provisioned in the database can be one of these cards shown in #unique_20/unique_20_Connect_42_V2199101.

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 #unique_20/unique_20_Connect_42_V2199104. 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

Table 4-3   (Cont.) HC-MIM Card Locations

Location of the HC-MIM	Empty Card Location	Location of the HC-MIM	Empty Card Location
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 that will be specified in #unique_20/unique_20_Connect_42_V693657.

    If the T1 card is an HC-MIM, make sure the HC-MIM is installed according to the card location requirements shown in #unique_20/unique_20_Connect_42_V2199104. 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 #unique_20/unique_20_Connect_42_V2199109.

> **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-E1Card**" "Removing a **LIM-T1Card**"
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 #unique_20/ unique_20_Connect_42_STEP_BFFD69F13BF14AB0A987B0D9566233CF

   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 #unique_20/ unique_20_Connect_42_STEP_BFFD69F13BF14AB0A987B0D9566233CF.

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 #unique_20/ unique_20_Connect_42_V693657.

   If the Fan feature is off, continue the procedure with #unique_20/ unique_20_Connect_42_STEP_1E6F0D937E7D49D69A62BE0ED2DBE423.

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 specified in .

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.
```

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 combinations shown in #unique_23/ unique_23_Connect_42_TABLE_EAC244D08ECF4771BC5A1BBA6A443FA4 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 #unique_23/unique_23_Connect_42_TABLE_B8B24EC16D184011A1FF717C6E679C9C, 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

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

Card	Features
	• TIF GRN • ATI Number Portability Query (ATINP) • 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 #unique_23/unique_23_Connect_42_TABLE_4820C98F23E84C919125FF4BA67B21BC. 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 #unique_23/unique_23_Connect_42_STEP_BD0272E65D3746D6A5AE90158EF63388.

If service modules are not shown in the `rtrv-card` output, continue the procedure with #unique_23/unique_23_Connect_42_STEP_ECE3B7C7CA164B97A6D1D4A81A77520D.

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 #unique_23/unique_23_Connect_42_STEP_BD0272E65D3746D6A5AE90158EF63388.

If the GTT feature is off, continue the procedure with #unique_23/unique_23_Connect_42_STEP_77F62693E7EC4F7E9A0F5F726B11D281.

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 #unique_23/unique_23_Connect_42_STEP_7FEF9F894B8845A39D64D5EF42F03147.

- If an E5-SM8G-B card is being added, continue the procedure with #unique_23/unique_23_Connect_42_STEP_C9BCA9A744944A0A9D127795583B8073.

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.
```

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 #unique_23/
  unique_23_Connect_42_TABLE_77AB69CB4202481FA30C9C068E17D81A
  are enabled, or if any the shown in #unique_23/
  unique_23_Connect_42_TABLE_77AB69CB4202481FA30C9C068E17D81A
  will be enabled, continue the procedure with #unique_24.

- If none of the features shown in #unique_23/
  unique_23_Connect_42_TABLE_77AB69CB4202481FA30C9C068E17D81A
  are enabled and none of these features will
  be enabled, continue the procedure with #unique_23/
  unique_23_Connect_42_STEP_C9BCA9A744944A0A9D127795583B8073.

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*.

#unique_23/
unique_23_Connect_42_TABLE_C14401135806418A9359B00BBD0D8634
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)			
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

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
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.

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

Table 4-9   (Cont.) SCCP Throughput Capacity

SCCP Throughput Capacity Feature Activated	E5-SM8G-B TPS	SLIC TPS
		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 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 #unique_23/unique_23_Connect_42_TABLE_B530197040374312BA0F08959831F818, the remainder of this 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 #unique_23/unique_23_Connect_42_TABLE_B530197040374312BA0F08959831F818, continue the procedure by performing one of these steps.

- If a card is being added, continue the procedure with #unique_23/unique_23_Connect_42_STEP_7FEF9F894B8845A39D64D5EF42F03147.

- If an E5-SM8G-B card is being added, continue the procedure with #unique_23/unique_23_Connect_42_STEP_C9BCA9A744944A0A9D127795583B8073.

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 #unique_23/unique_23_Connect_42_STEP_7FEF9F894B8845A39D64D5EF42F03147.

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 #unique_23/unique_23_Connect_42_STEP_7FEF9F894B8845A39D64D5EF42F03147.

7. Verify the service module has been physically installed into the proper location according to the feature requirements. #unique_23/unique_23_Connect_42_TABLE_EAC244D08ECF4771BC5A1BBA6A443FA4 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 #unique_23/unique_23_Connect_42_STEP_ECE3B7C7CA164B97A6D1D4A81A77520D as being on, and in the rtrv-ctrl-feat output in #unique_23/unique_23_Connect_42_STEP_BD0272E65D3746D6A5AE90158EF63388 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 #unique_23/unique_23_Connect_42_TABLE_77AB69CB4202481FA30C9C068E17D81A)
  - the total number of service modules will be from 27 to 32 and any EPAP-based features are enabled and turned on (see #unique_23/unique_23_Connect_42_TABLE_77AB69CB4202481FA30C9C068E17D81A)

  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 #unique_23/unique_23_Connect_42_TABLE_77AB69CB4202481FA30C9C068E17D81A), 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=ye
s: mcast=yes:submask=255.255.255.0
```

```
chg-ip-
lnk:loc=1107:port=b:ipaddrr=192.168.123.1:mactype=dix:auto=ye
s: 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=<car
d 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 #unique_25.

23. Put the card in service using the `rst-card` command with the card location specified in #unique_26. 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 #unique_23/ unique_23_Connect_42_STEP_ECE3B7C7CA164B97A6D1D4A81A77520D , or if the EGTT feature is off and will not be turned on in this procedure, continue the procedure with #unique_27.

• If the EGTT feature is off and will be turned on in this procedure, continue the procedure with #unique_28.

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
```

ORACLE

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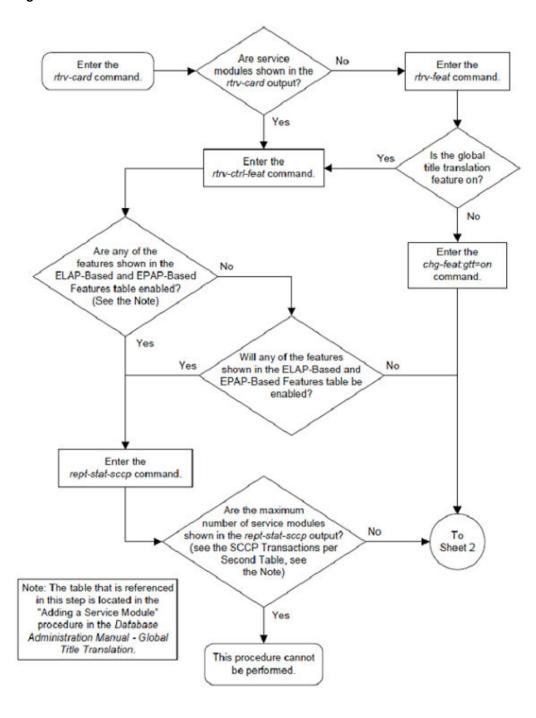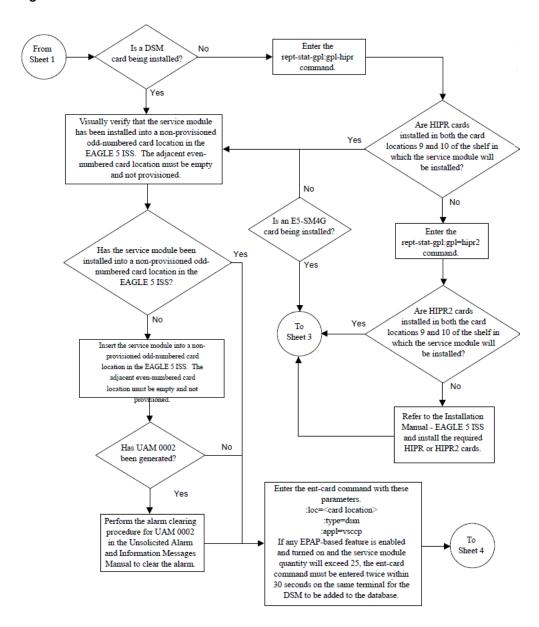
Figure 4-1   Add a Service Module - Sheet 1 of 4

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

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.
```

   See #unique_30 for MaxTPS values. If adding the new IPSG card will not exceed the maximum total provisioned system TPS, continue the procedure with #unique_31/unique_31_Connect_42_V2450068.

   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 #unique_31/unique_31_Connect_42_V2450068.

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 #unique_31/unique_31_Connect_42_V2450104.

- If the required unprovisioned card slots are not shown in the `rtrv-card` output, #unique_31/unique_31_Connect_42_V2450086 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 #unique_31/unique_31_Connect_42_V2450095.

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 Card Slot Selection section). If the card has not been installed, insert the card into the desired card location following the rules described in the 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.

is not a field

```
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 #unique_31/unique_31_Connect_42_V2450131.

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 #unique_31/unique_31_Connect_42_V2450131.

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 #unique_31/unique_31_Connect_42_STEP_BFFD69F13BF14AB0A987B0D9566233CF.

> **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 #unique_31/unique_31_Connect_42_STEP_39DF90841BFF49ABB9BE23F0362D80CC.

   If the Fan feature is off, continue the procedure with #unique_31/unique_31_Connect_42_STEP_BFFD69F13BF14AB0A987B0D9566233CF.

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 #unique_31/unique_31_Connect_42_V2450131.

    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 #unique_31/unique_31_Connect_42_V2450131.

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 #unique_31/unique_31_Connect_42_V2450131. 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.
```

Configuring DEIR on SLIC

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

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 A, B, C, and D of the SLIC S13 card.

```
chg-ip-
lnk:port=a:submask=255.255.255.0:mcast=yes:ipaddr=192.168.120
.11:loc=1101:duplex=full:speed=100
```

```
chg-ip-
lnk:port=b:submask=255.255.255.0:mcast=no:ipaddr=10.248.13.11
:loc=1101:duplex=full:speed=100
```

```
chg-ip-
lnk:port=c:submask=255.255.255.0:mcast=no:ipaddr=10.248.14.12
:loc=1101:duplex=full:speed=100
```

```
chg-ip-
lnk:port=d:submask=255.255.255.0:mcast=yes:ipaddr=192.168.121
.20:loc=1101:duplex=full:speed=100
```

5. Enter the HOST information.

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

```
ent-ip-
host:host=hss2:ipaddr=10.248.14.12:type=local:realm=abcdefg.c
om
```

```
ent-ip-
host:host=lmno:ipaddr=10.248.13.9:type=remote:realm=lmnopq.co
m
```

```
ent-ip-
host:host=lmno3:ipaddr=10.248.13.3:type=remote:realm=lmnopq.c
om
```

```
ent-ip-
host:host=lmno4:ipaddr=10.248.14.5:type=remote:realm=lmnopq.c
om
```

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

6. Enter the SCTP Association.

```
ent-
assoc:aname=assoc1:lhost=hss:alhost=hss2:lport=5555:rhost=lmn
o:rport=5556
```

```
ent-
assoc:aname=assoc2:lhost=hss:alhost=hss2:lport=5557:rhost=lmn
o3:rport=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
```

ENUM Configuration

Example commands for configuring the ENUM feature are as follows:

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:loc=1101:duplex=full:speed=100
```

```
chg-ip-
lnk:port=b:submask=255.255.255.0:mcast=yes:ipaddr=10.248.13.1
1: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=c
1
```

```
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.

Provisioning SIP Cards

Provision the SIP-EPAP and SIP-ELAP cards. For example:

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.