LSMS
Database Administrator's Guide

Release 13.4
F23726-01 Revision 1
January 2020

ORACLE

LSMS Database Administrator's Guide, Release 13.4

F23726-01 Revision 1

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1 Introduction

This chapter contains general information, such as an overview of the manual, how the manual is organized, and how to get technical assistance.

Overview

This manual provides information about using the Oracle Communications **LSMS** graphical user interface (**GUI**), using the LSMS command line, managing **NPAC** relations, managing locally provisioned data, report generation, and logs and measurements.

Scope and Audience

This manual is intended for **LSMS** operators and database administrators.

Documentation Admonishments

Admonishments are icons and text throughout this manual that alert the reader to assure personal safety, to minimize possible service interruptions, and to warn of the potential for equipment damage.

Table 1-1 Admonishments

Icon	Description
	Danger: (This icon and text indicate the possibility of *personal injury*.)
	Warning: (This icon and text indicate the possibility of *equipment damage*.)
	Caution: (This icon and text indicate the possibility of *service interruption*.)
	Topple: (This icon and text indicate the possibility of *personal injury* and *equipment damage*.)

Manual Organization

The *Database Administrator's Guide* includes:

- Introduction contains general information, such as an overview of the manual, how the manual is organized, how to get technical assistance, and a list of related documentation.
- Database Administration Overview contains **LSMS** overview information, an overview of database functions, describes the use of the LSMS command line, and how to start, use, and exit the **LSMS** GUI.
- Managing NPAC Relations discusses the data that the **LSMS** and Number Portability Administration Center (**NPAC**) have in common.
- Managing Locally Provisioned Data contains information about Element Management System (EMS) routing, custom **TN** filters, **GTT** groups, default and override global title translation (**GTT**), Numbering Plan Area (**NPA**) Splits, and input data by file.
- LSMS Reports contains procedures for generating, viewing, and printing **LSMS** reports in a predefined format. It also contains information about the Report Generator, which enables you to create customized **LSMS** reports.
- LSMS Logs and Measurements describes the logs maintained by **LSMS** and how to access, navigate, and print them.
- #unique_18 describes 24-hour clock conversion, explains how to calculate local time, and shows the breakdown of the world time zones expressed in hours (plus or minus) from Greenwich Mean Time (**GMT**).

My Oracle Support (MOS)

MOS (https://support.oracle.com) is your initial point of contact for all product support and training needs. A representative at Customer Access Support (CAS) can assist you with MOS registration.

Call the CAS main number at 1-800-223-1711 (toll-free in the US), or call the Oracle Support hotline for your local country from the list at http://www.oracle.com/us/support/contact/index.html. When calling, make the selections in the sequence shown below on the Support telephone menu:

1. Select `2` for New Service Request
2. Select `3` for Hardware, Networking and Solaris Operating System Support
3. Select one of the following options:
   - For Technical issues such as creating a new Service Request (SR), Select `1`
   - For Non-technical issues such as registration or assistance with MOS, Select `2`

You will be connected to a live agent who can assist you with MOS registration and opening a support ticket.

MOS is available 24 hours a day, 7 days a week, 365 days a year.

Emergency Response

In the event of a critical service situation, emergency response is offered by the Customer Access Support (CAS) main number at 1-800-223-1711 (toll-free in the US), or by calling the Oracle Support hotline for your local country from the list at http://www.oracle.com/us/support/contact/index.html. The emergency response provides immediate coverage, automatic escalation, and other features to ensure that the critical situation is resolved as rapidly as possible.

A critical situation is defined as a problem with the installed equipment that severely affects service, traffic, or maintenance capabilities, and requires immediate corrective action. Critical situations affect service and/or system operation resulting in one or several of these situations:

- A total system failure that results in loss of all transaction processing capability
- Significant reduction in system capacity or traffic handling capability
- Loss of the system's ability to perform automatic system reconfiguration
- Inability to restart a processor or the system
- Corruption of system databases that requires service affecting corrective actions
- Loss of access for maintenance or recovery operations
- Loss of the system ability to provide any required critical or major trouble notification

Any other problem severely affecting service, capacity/traffic, billing, and maintenance capabilities may be defined as critical by prior discussion and agreement with Oracle.

Related Publications

For information about additional publications related to this document, refer to the Oracle Help Center site. See Locate Product Documentation on the Oracle Help Center Site for more information on related product publications.

Customer Training

Oracle University offers training for service providers and enterprises. Visit our web site to view, and register for, Oracle Communications training:

http://education.oracle.com/communication

To obtain contact phone numbers for countries or regions, visit the Oracle University Education web site:

www.oracle.com/education/contacts

Locate Product Documentation on the Oracle Help Center Site

Oracle Communications customer documentation is available on the web at the Oracle Help Center (OHC) site, http://docs.oracle.com. You do not have to register to access these documents. Viewing these files requires Adobe Acrobat Reader, which can be downloaded at http://www.adobe.com.

1. Access the Oracle Help Center site at http://docs.oracle.com.
2. Click `Industries`.
3. Under the Oracle Communications subheading, click the `Oracle Communications documentation` link.

   The Communications Documentation page appears. Most products covered by these documentation sets will appear under the headings "Network Session Delivery and Control Infrastructure" or "Platforms."
4. Click on your Product and then the Release Number.

A list of the entire documentation set for the selected product and release appears.

5. To download a file to your location, right-click the `PDF` link, select `Save target as` (or similar command based on your browser), and save to a local folder.

2
Database Administration Overview

This chapter contains LSMS overview information, an overview of database functions, describes the use of the LSMS command line, and how to start, use, and exit the **LSMS** GUI.

Introduction

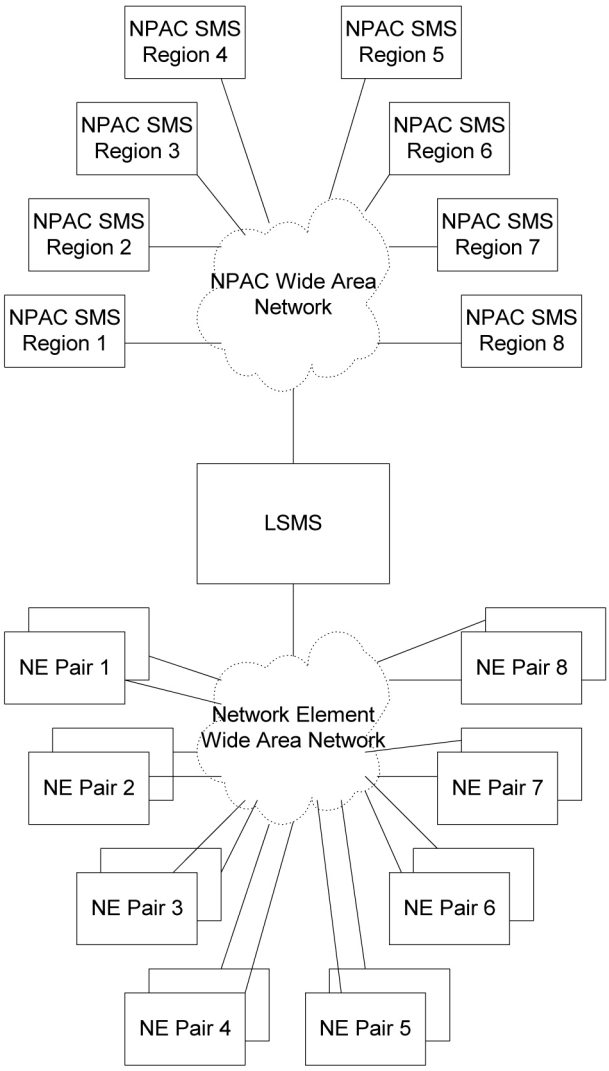
Local Number Portability (**LNP**) allows a subscriber to change location, service provider, or service while keeping the same directory number. Number portability ensures that subscribers receive the same freedom of choice for local service as they have with long-distance service providers.

These changes in telephone service enable **LNP**:

- When a subscriber is granted **LNP** service, the subscriber's telephone number is "ported" into various **LNP** databases that contain routing information. The official repository for **LNP** database information is contained in government-controlled Number Portability Administration Centers (**NPACs**). Currently, eight regional **NPACs** serve the United States and Canada.
- Central office and tandem switches no longer will use only a telephone number's **NPA-NXX** code (area code and local exchange code) to determine where a call should be delivered. Routing information is stored in **LNP** databases, which must be queried when any call is made to an **NPA-NXX** that contains one or more ported numbers.

Figure 2-1 shows an overview of how an **LSMS** serves as an interface between **NPAC** Service Management Systems (**SMSs**) and network elements (central office or tandem switches). The **LSMS** maintains a service provider's **LNP** data so that it is not necessary for each network element (**NE**) to have a direct connection with each **NPAC**. This figure shows the maximum number of **NPACs** and network elements supported by Oracle's **LSMS**.

Figure 2-1 LNP Configuration



The **LSMS** application receives **LNP** data from the **NPAC**, stores the data, and transfers the data to the correct **NE**. **LSMS** supports the following **NPACs**:

- Midwest
- MidAtlantic
- Northeast
- Southeast
- Southwest
- Western
- WestCoast
- Canada

When connected to multiple **NPACs**, **LSMS** keeps the data for each **NPAC** separate. Each **NPAC** can access data only in its corresponding regional database.

The **LSMS** is composed of hardware and software components that interact to create a secure and reliable **LNP** system. These components and their functions are discussed in this chapter.

Overview of Database Functions

The main function of the **LSMS** is to provision **LNP** data to the **EAGLE** system. To perform this task, the **LSMS** maintains active connections with one or more **NPAC** region servers and one or more **EAGLE** nodes. While it is the goal of the **LSMS** to maintain active connections to each **NPAC** server and **EAGLE** node as nearly full-time as possible, the more important goal is to reliably forward the data from the **NPAC** to the **EAGLE** as quickly as possible. To that end, a number of protective problem detection and recovery mechanisms are built into the **LSMS** design. Several of these protections actually allow for the termination of application connectivity in order to gracefully restore full connectivity and guarantee total recovery of data.

In these situations, the **LSMS** proactively terminates and automatically re-establishes application connectivity with the **NPAC** and **EAGLE** nodes:

- If the **LSMS** detects network level connectivity failures with either the **NPAC** or **EAGLE**, the respective **LSMS** processes terminate the socket level connection and then reconnect. This disconnect and reconnect occurs in a matter of seconds. Built in resynchronization mechanisms ensure data recovery. The data transmission is delayed by the time required to disconnect and reconnect, but the automatic execution of the recovery procedures prevents data loss.
- If the **LSMS** detects critical internal errors that would cause system outages, the **LSMS** processes are designed to terminate and allow the **LSMS** sentry process to restart them. This is done only for significant internal errors that jeopardize internal **LSMS** communications. Once the sentry process restarts the **LSMS** processes, resynchronization provides full data recovery. The restart time for processes by sentry consists of the detection time plus the restart time. Processes typically are restarted within 30 seconds.

The following sections describe the functions provided by Oracle's **LSMS**.

Receiving LNP Data from an NPAC

LNP data are the physical records with telephone number (**TN**) information about the subscriber. (LNP data is also referred to as subscription version information.)

LNP data includes:

- *Subscription data* – The subscriber's telephone number information.
- *Network data* – Routing information for the service provider's network.
- *Service provider data* – The service provider's **LSMSID**. **LSMS** identifies itself to the **NPAC** using a service provider **ID**. The service provider **ID** is that of the **LSMS** owner, such as Telephone Company A.

Typically, a third party not affiliated with any of the telecommunication service providers administers an **NPAC**. When a customer has a number ported to the new service provider, the current service provider sends the customer **LNP** data from a local service order administration (**LSOA**) to the **NPAC**. From there, the **NPAC** sends the **LNP** data to each service provider's **LSMS**. Each **LSMS** stores all subscription version information received from an **NPAC** in a database.

The **LSMS** software maintains the internal data on the service provider's network. The data includes:

- Intermediate or final **Global Title Translation** (**GTT**) information for database services

- Six-digit default **GTT** (**GTT** for nonported numbers in a ported **NPA-NXX**)
- List of ported **NPA-NXX** requiring message relay service at each node
- Services (translation types) requiring message relay

Administering LNP Data

After receiving the **LNP** data from the **NPAC**, **LSMS**:

- Stores the data on the **LSMS** database
- Translates the data for Custom Local Area Signaling Services (**CLASS**), Line Information **Database** (**LIDB**), Calling Name Delivery Service (**CNAM**), Inter-Switch Voice Mail (**ISVM**), and optionally, Wireless Short Message Service Center (**WSMSC**).
- Administers the translation type and its alias for the services
- Determines which **NE** should receive the **LNP** data

Transferring LNP Data to Service Providers

Service providers use network elements to manage **LNP** data. Each network element has its own element management system (**EMS**) or operating system. Oracle's **EAGLE LNP** solution, for example, relies upon a proprietary high-speed multi-processor **EMS**. **LSMS** distributes subscription records to a network element based on its area of portable service (**AOPS**).

Service providers store the **LNP** data on the **LNP-STP** database for their subscribers. When a subscription version has to be created or updated on the **LNP-STP**, **LSMS** compares the **NPA-NXX** of the telephone number with the **LNP-STP AOPS**. When a match is found, the subscription version is downloaded to that **LNP-STP**.

Supporting Additional Service Providers

LSMS is configured to support as many as 32 supported-service providers (entities who buy access to the **LNP** service from the **LSMS** owner and use this functionality to support **LNP** in their own networks). Customers have the option to configure additional **SPIDs** in blocks of 16 to a maximum of 512 **SPIDs**.

NPAC administrators assign a unique **ID** for each supported-service provider. The name, address, and location of the service provider in **LSMS**, along with the network provider’s address, are manually configured in the **LSMS**.

For each supported-service provider, **LSMS** assigns a service provider **ID** and translates and interprets its data before sending it.

For each supported-service provider, **LSMS** administers a default six-digit **GTT**. The default **GTT** is specific to each service provider for the six supported services per **NPA-NXX**. The default **GTT** can be a final **GTT** or a nonfinal **GTT**. **LSMS** downloads this data to all **LNPs** defined in the supported-service provider network.

NPA-NXX Support

The **LSMS** supports a maximum of 300,000 **NPA-NXXs** across all regions.

Handling NPA Splits

LSMS administers information regarding **NPA-NXX** splits. An **LSMS** user creates a split in the appropriate region ahead of time by entering the Permissive Dialing Period (**PDP**) start and end dates. When the split is automatically activated as the start date is reached, **LSMS** checks

for the old **NPA-NXX** to be split in each **TN** Filter. If the old **NPA-NXX** or the **NPA** containing the old **NPA-NXX** is present in the **TN** Filter, the new **NPA-NXX** is added to the **TN** Filter.

The **NPAC** updates its own records and does not automatically send the updated split information to **LSMS**. The automatic activation on the **LSMS** keeps the **LSMS** and **NPAC** records synchronized and prevents incorrect results during an **NPAC** audit.

Logs and Reports

LSMS logs all request/response transactions between the **NPAC** and **LSMS**, maintaining a separate transactions log for each **NPAC**. The **NPAC** transactions log contains key data elements. All transactions logs related to the subscription version store the telephone number, subscription **ID**, and **LRN**.

LSMS logs all alarms, such as link failures, association failures, database failures, and data provisioning failures.

Exception logs help to identify the following situations where data provisioning is incorrect:

- Transaction commands sent to the **EAGLE** but rejected

The **LSMS** maintains logs from the past seven days as well as the current day. These logs are deleted after seven days. If needed, you can back up any or all transactions logs using standard backup procedures. These logs can be retrieved for reporting based on a key or time range.

Synchronizing LSMS and Network Element Data

The **LSMS**/**EAGLE LNP** system provides a variety of methods to keep the **LNP** databases at the **LSMS** and at the network elements synchronized. For more information, refer to the *LNP Database Synchronization User's Guide*.

Security Issues

LSMS offers security by controlling which users can access various functions through login management. Security between the **NPAC** and **LSMS** is provided by keys, as described in the *Configuration Guide*.

Permission Groups

The **LSMS** system administrator is responsible for creating user accounts by assigning users to permission groups.

For more information about non-configurable permission groups:

- See GUI Function Access
- Refer to the *Alarms and Maintenance Guide*

For information about configurable permission groups, refer to the following manuals:

- *Alarms and Maintenance Guide*
- *Configuration Guide*

Managing LSMS Functions

The LSMS **GUI** can be used for all functions described in this book. For more information, see Starting an LSMS GUI Session and Navigating the GUI.

Number Pooling EDR

The Number Pooling Efficient Data Representation (**EDR**) feature allows ported telephone numbers (**TNs**) to be assigned to different service providers in a more efficient manner. Before the availability of this feature, **TNs** were assigned to service providers (also known as *block holders*) in 10,000 number increments (*blocks*) on an **NPA-NXX** basis.

Not all service providers required 10,000 **TNs**, resulting in many unused telephone numbers being held in reserved status. Number pooling, which refers to the assignment of a block of 1000 **TNs** (**NPA-NXX**-X) of an **NPA-NXX** to another service provider, eliminates this inefficiency by allocating telephone numbers on a smaller block basis. These smaller blocks, each of which corresponds to 1000 **TNs**, are called number pool blocks (**NPBs**).

In addition, the number pooling data for a particular block of **TNs** is stored as a single object rather than as multiple subscription versions. This method increases interface and database efficiencies.

The **LSMS** continues to support the existing required transaction rates over the **NPAC**-**LSMS** interface, where a **NPA-NXX**-X pool block object is equivalent to one transaction and one **TN**.

All functions that the **LSMS** performs to manage **TNs** are also performed similarly for **NPBs**.

SPID Security for Locally Provisioned Data

This optional feature is activated by Oracle customer service using secure activation procedures.

In **LSMS** releases previous to **LSMS** 5.0, any user was able to log in using any Service Provider Identifier (**SPID**) that was defined on the **LSMS**. The user was able to view any data for any **SPID**, and depending on which user privileges were assigned to that username, might even be able to change data associated with any **SPID**.

Beginning with **LSMS** Release 5.0, **LSMS** offered an optional feature that allowed the **LSMS** administrator to assign only certain usernames to be allowed to log on with a specified **SPID**. In addition, the **LSMS** administrator can assign a username to be given access to all **SPIDs**; such a user is called a “golden user.”

This feature is especially useful for **LSMS** customers that act as service bureaus, offering **LSMS** services to other service providers. The service bureau may administer locally provisioned data for a client and may choose to allow the client to administer or view its own data without allowing that client to view or change data belonging to other clients.

Types of Data Protected by SPID Security

Association of a username with a **SPID** allows the **LSMS** system administrator to restrict access to the following types of locally provisioned data:

- Default global title translation (**GTT**)
- Override **GTT**
- **GTT** Groups
- Telephone number (**TN**) filters
- Assignment of **GTT** groups and **TN** filters to an **EMS** (element management system). For more information about **GTT** groups, see Enhanced LSMS Filters.

Accessibility to these types of data are protected by **SPID** security for any access method (for example, through the **GUI**, through input data by file, audit, and reconcile).

For information about activating the **SPID** security feature and assigning usernames to **SPIDs**, refer to the *Alarms and Maintenance Guide*.

Wireless Short Message Service Center (WSMSC) Support

This feature is activated by Oracle customer service using secure activation procedures.

NPAC Support

NPAC supports the ability to send Subscription Versions (**SVs**) or Number Pool Blocks (**NPBs**) to the **LSMS** in different formats. The original format includes four services (**CLASS**, **CNAM**, **ISVM** and **LIDB**). With the wireless option enabled, the **SVs** and **NPBs** format will also include Wireless Short Message Service Center for a total of five services (**CLASS**, **CNAM**, **ISVM**, **LIDB**, **WSMSC**). The format selected will apply to all records being sent from the **NPAC**, whether all the services are populated or not.

Activating the WSMSC Feature

The **LSMS** supports the ability to receive **WSMSC** data from some **NPACs** and not from others; therefore, this feature is activated on a regional basis. Also, full activation of this feature requires coordination with the activation of the related feature on the **EAGLE**.

To activate the feature the **LSMS** customer should contact Oracle customer service. After Oracle customer service has activated the feature, using secure activation procedures, the **LSMS** customer should contact the **NPAC** to update their regional profiles.

> **Note:**
>
> When the **WSMSC** feature is activated, an import of NPAC subscription version data is required in order to update the **LSMS** database. Additionally, if the feature to send **WSMSC** data to the **ELAP** is activated, then a bulkload to the **ELAP** is also required.

Processing WSMSC Data

When the **WSMSC** feature has been activated at the **LSMS**, the **LSMS** performs the following functions:

- When the **NPAC** region has been notified that it may send **WSMSC** data, the **LSMS** determines whether **WSMSC** data is present in an **SV** or **NPB** update from the **NPAC**, and, when **WSMSC** data is present, decodes the data (**DPC** and **SSN**) and stores it in the **LSMS** database
- Makes **WSMSC** data available to be viewed through the **GUI** and recorded in reports
- Allows the user to provision **WSMSC** data in **Global Title Translation** (**GTT**) data:
  - For Default **GTT**, the user can specify **TT**, **DPC**, **SSN**, **XLAT**, **RI**, and **NGT** **WSMSC** data
  - For Override **GTT**, the user can specify **TT**, **DPC**, **SSN**, **XLAT**, **RI**, **NGT**, and **RGTA WSMSC** data

Custom TN Filters

The Custom TN Filters feature is included as a standard feature and provides improved usability and performance. The user can specify one or more Custom TN filters and then associate the Custom TN filter with one or more EMS.

Enhanced LSMS Filters

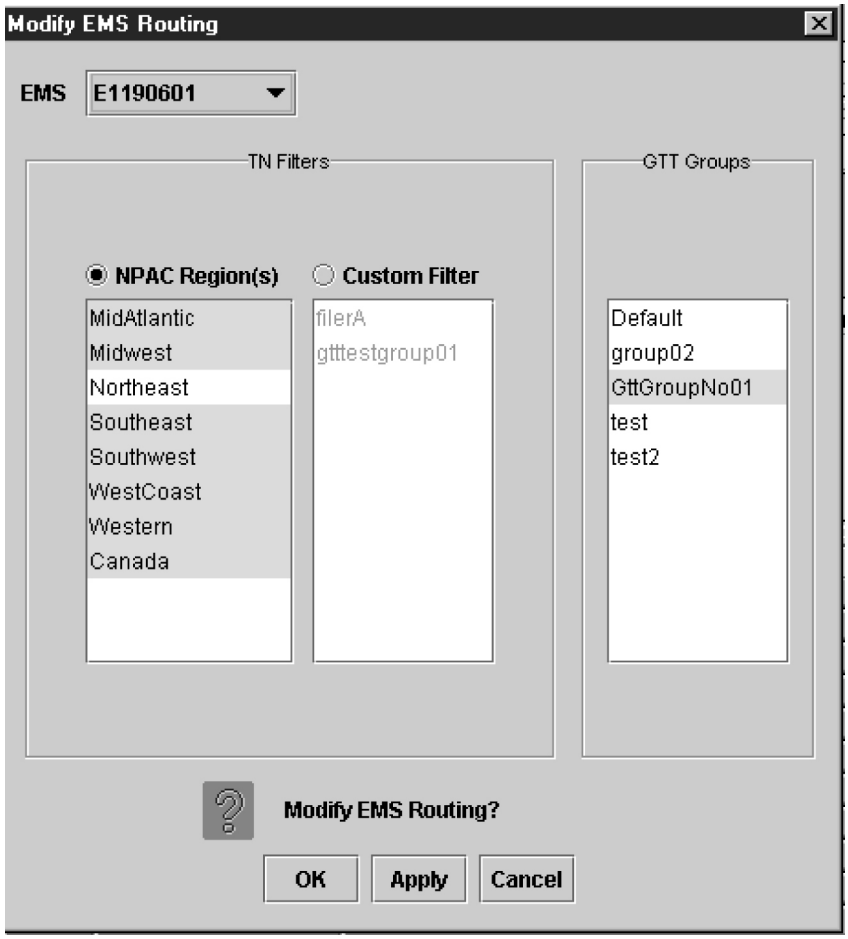
This optional feature is activated by Oracle Customer Service using secure activation procedures.

LSMS provides, as a standard feature, an efficient filtering mechanism as described in Custom TN Filters. In addition, beginning with **LSMS** Release 5.0, **LSMS** offered this optional feature, Enhanced **LSMS** Filters, which provides the following enhancements to the Custom **TN** Filters:

- Regional **TN** filters
- **GTT** groups

To apply any filter (including a standard Custom **TN** filter) to an **EMS**, select **LSMS**, and then **EMS Routing**, and then **Modify**.

Figure 2-2 Modify EMS Routing



Regional TN Filters

Once the Enhanced **LSMS** Filters optional feature has been activated, **TNs** can be filtered by either of the following, but not by both:

- Custom **TN** filter —When a custom **TN** filter is assigned to an **EMS**, the **LSMS** forwards to the **EMS** only transactions that contain the **NPA** or **NPA-NXX** specified in the custom **TN** filter (for more information, see Custom TN Filters)
- Regional **TN** filters—When regional **TN** filters are assigned to an **EMS**, the **LSMS** forwards to the **EMS** only **NPAC** transactions received from the specified regions
Once the Enhanced **LSMS** Filters optional feature has been activated, the **NPAC** Region(s) field will be selectable in the Modify **EMS** Routing window. To select one or more **NPAC** regions to apply to this **EMS**:

1. Click the **NPAC Region(s)** radio button so that it is filled in.
2. Select an **NPAC** region whose **TNs** and **NPBs** you wish to have forwarded to this **EMS** by clicking the **NPAC** name so that it is highlighted.
3. To select multiple **NPAC** regions, do one of the following:
    - To select additional **NPAC** regions listed consecutively, hold down the **Shift** key while you click another **NPAC** region. All **NPAC** regions listed between the first region clicked and the last region clicked will be highlighted.
    - To select additional **NPAC** regions not listed consecutively, hold down the **Ctrl** key while you click additional **NPAC** regions.
4. When all the **NPAC** regions desired are highlighted, click either:
    - **Apply** (which allows you to repeat this procedure for another **EMS**)
    - **OK** (which closes the window)

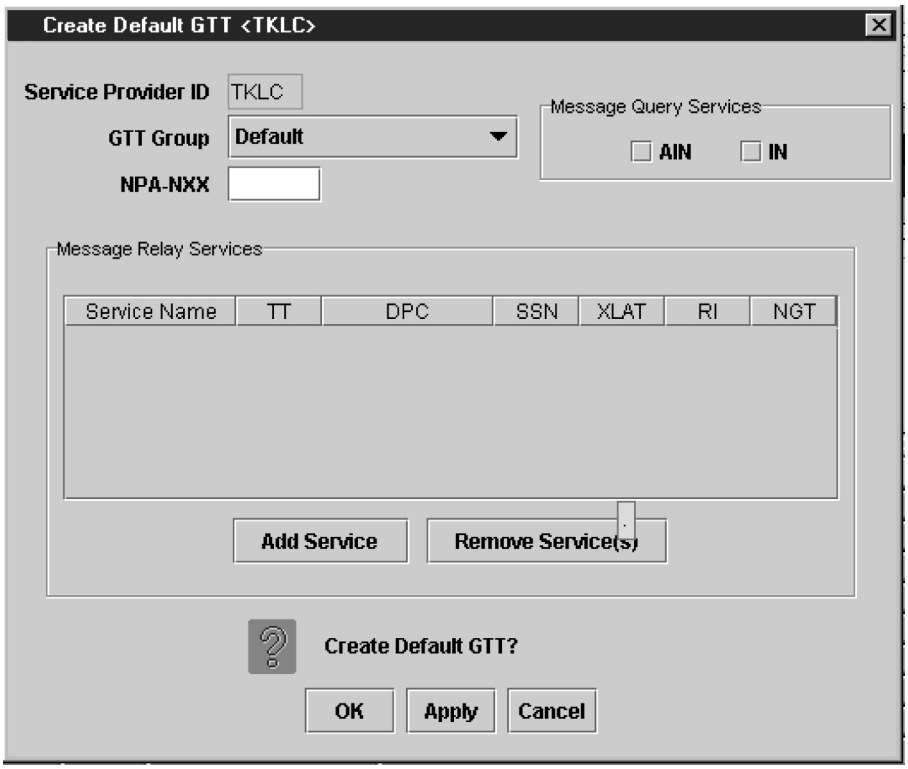
GTT Groups

GTT groups allow locally provisioned data to be filtered to **EMSs** similar to how a Custom **TN** filter or Regional **TN** filters allow **NPAC** data to be filtered to **EMSs**. After the Enhanced **LSMS** Filters optional feature has been activated, filtering can be applied to the following locally provisioned data:

- Default **GTT** (**DGTT**)
- Override **GTT** (**OGTT**)

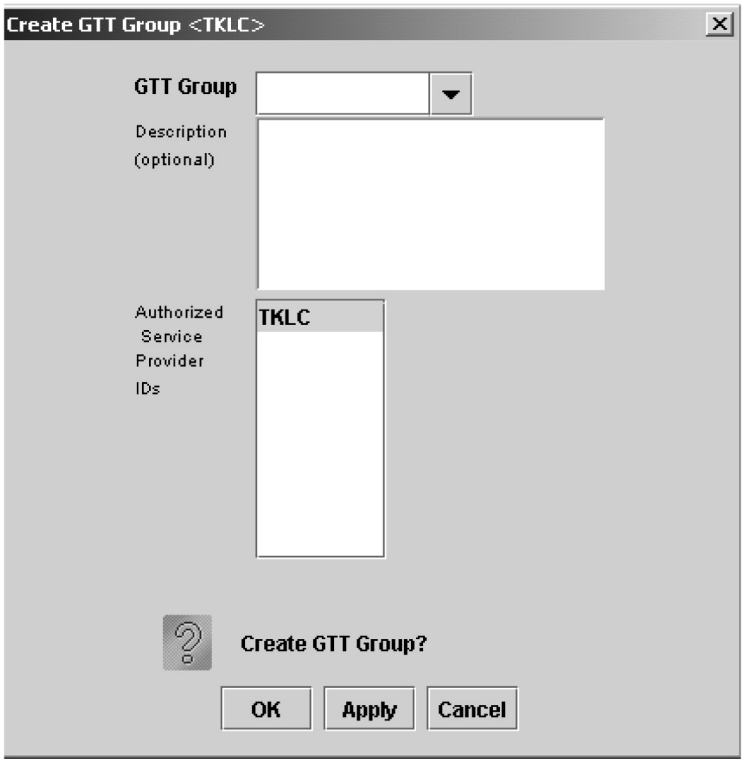
All Default **GTT** data or Override **GTT** data must be defined as belonging to a group, as indicated in Figure 2-3.

Figure 2-3 Create Default GTT Window



- For customers who do not have the Enhanced **LSMS** Filters feature activated, only one group can be defined:
  - For customers who upgrade from a previous release of **LSMS**, all existing **DGTT** and **OGTT** entries in the database are assigned to a group whose name is `default`, that group name appears by default in every **GTT** Group field, and every new **DGTT** or **OGTT** entry is assigned to that group.
  - Customers who install **LSMS** for the first time must define one group, using the window shown in Figure 2-4 and a name of their choice; that group name appears by default in **GTT** Group fields used for other functions, and every Default **GTT** and Override **GTT** entry created must be assigned to that group.

Figure 2-4 Create GTT Group Window



- Customers who have the Enhanced **LSMS** Filters feature activated can define additional groups:
  - For customers who upgrade from a release previous to **LSMS** 5.0, all existing **DGTT** and **OGTT** entries in the database are assigned to a group whose name is `default`, additional groups may be defined, and every new **DGTT** or **OGTT** entry must be assigned to one of the defined groups.
  - If Release 6.5 or later is your first installation of **LSMS**, you must use the window shown in Figure 2-4 to define at least one group, using name(s) of your choice. Also, every Default **GTT** and Override **GTT** entry created must be assigned to one of the defined groups.

After **GTT** groups have been created, the user must assign one (and only one) **GTT** group for each **EMS**, using the **EMS** Routing window Figure 2-2. The **LSMS** then forwards only **DGTT** and **OGTT** entries that belong to the specified group to that **EMS**.

LSMS to TekPath Audit

Data contained in the TekPath Route Director (TekPath) should be the same as the data provisioned from the LSMS. If the LSMS and TekPath LNP databases become unsynchronized, the LSMS LNP database is used as the master database to synchronize the TekPath LNP database. The LSMS to TekPath audit can be used as a general maintenance tool to help customers maintain the integrity of their databases.

The LSMS to TekPath audit supports range audits and complete data audits, and it functions similarly to the LSMS to ELAP audit. However, the LSMS to TekPath audit does not support default GTT or override GTT audits, because those audits are not applicable to TekPath. The LSMS to TekPath audit compares data in the LSMS LNP database to the TekPath LNP

database. When the audit is complete, the LSMS customer has the option to reconcile database discrepancies.

The LSMS Console window displays the type of network element, either ELAP or TekPath, that has been configured in the EMS Status pane.

Figure 2-5 EMS Status Pane with Network Element Type Displayed

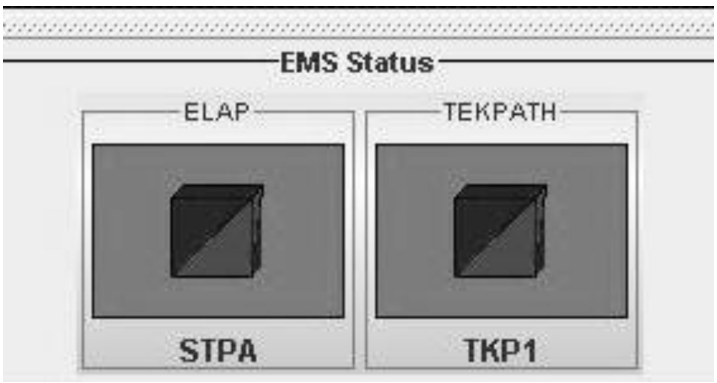
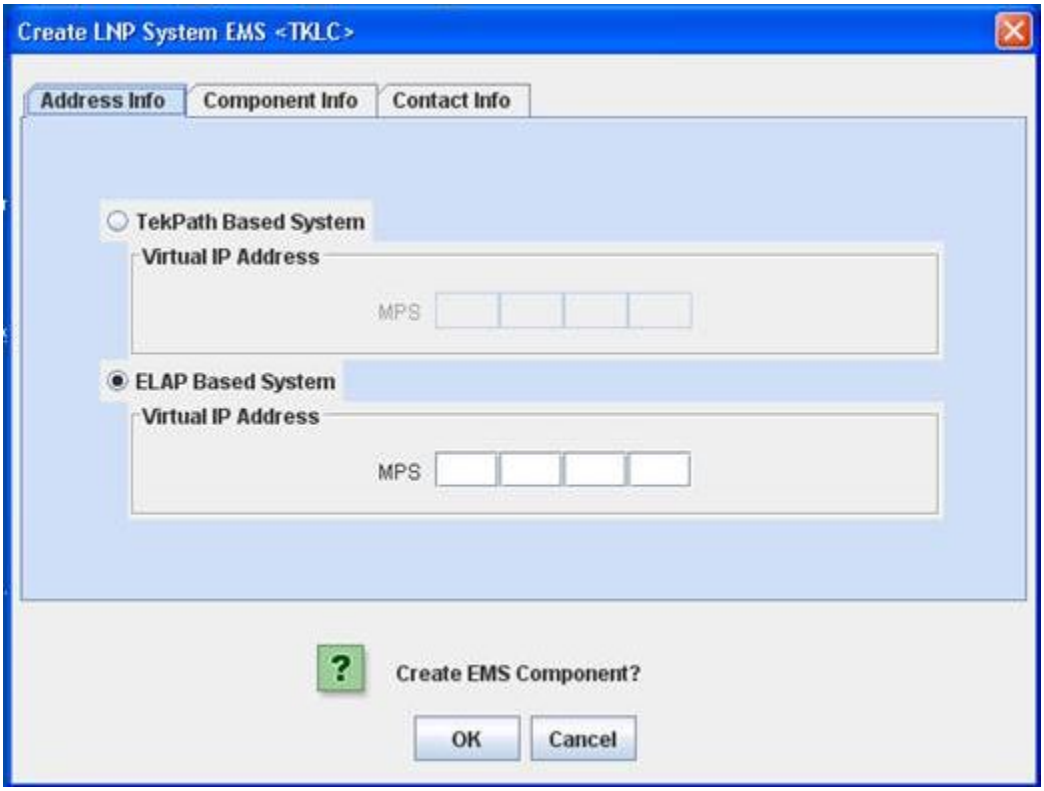


Figure 2-6 Create LNP System EMS Window with TekPath Configuration Option



Using Login Sessions

Login sessions are used for the following user functions:

- To use the command line:
  - To access the `lsmsmgr` text interface, which is used for configuring and maintaining the **LSMS** system
  - To enter **LSMS** commands (generally used for managing **LSMS** applications); for more information, refer to the *Alarms and Maintenance Guide*.
- To use the graphical user interface (**GUI**), which is generally used for:
  - Configuration (for more information, refer to the *Configuration Guide*)
  - **Database** administration
  - Synchronization of the **LSMS LNP** database with the **LNP** databases at network elements (for more information, refer to the *LNP Database Synchronization User's Guide*)

Support of Multiple Users

The **LSMS** allows, as a standard feature, a maximum of eight simultaneous users. The Support for Additional Users optional feature enables you to have a maximum of 25 simultaneous users. A user is defined as:

- `lsmsmgr` user (a user who logs in as the `lsmsmgr` user to start the `lsmsmgr` text interface)
- **GUI** user (a user who has logged into the active server **GUI** over the web)

Establishing Login Sessions

From any network-connected terminal, you can establish a variety of sessions with the active server or with a specific server by:

- Displaying the `lsmsmgr` text interface of either the active server or of a specific server
- Displaying the command line of either the active server or a specific server for entering commands; see "Logging In to LSMS Server Command Line".
- Displaying the **GUI** by using a web browser; see "Starting a Web-Based LSMS GUI Session"

Logging In to LSMS Server Command Line

You can log into the **LSMS** active server or into a specific server from any terminal that has a **Secure Shell** (`ssh`) client installed.

> **Note:**
>
> If your terminal does not already have ssh installed, PuTTY (Oracle does not make any representations or warranties about this product) is an open source `ssh` utility for Windows that you can download from the web.

You must have a user **ID** and password before you can log in to **LSMS**.

1. From a command line prompt on a Windows-based or Linux-based terminal, enter the following command to start a secure shell session with the **LSMS** server:

   ```
   ssh -X <username>@<server_IP_address>
   ```

For `<username>` and `<server_IP_address>`, specify values shown in Table 2-1 that are appropriate to the procedure you are performing:

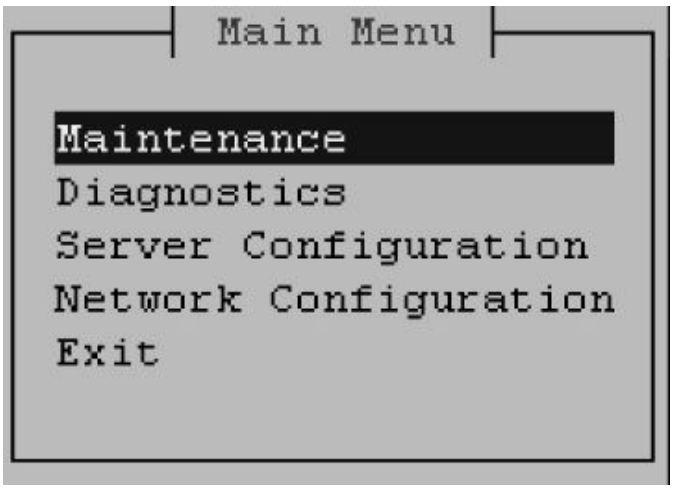
Table 2-1 Parameters Used in Accessing Server Command Line

Parameter	Value
`<username>`	Use one of the following: • `lsmsmgr` to access the lsmsmgr text interface for configuration, diagnostics, and other maintenance functions • `syscheck` to run the `syscheck` command with no options, which returns overall health checks and then exits the login session (for more information about the `syscheck` command, refer to the *Alarms and Maintenance Guide*) • Other user names, as directed by a procedure
<server_**IP**_address>	Use one of the following: • Virtual **IP** (**VIP**) address to access the **LSMS** Web **GUI** • **IP** address of the specific server, when directed by a procedure to access a particular server

2. When prompted, enter the password associated with the user name.
3. You can now continue with any of the following functions:
   - If you entered `lsmsmgr` as the username, the `lsmsmgr` text interface displays.

     You can use any of the `lsmsmgr` functions, which are described in the *Alarms and Maintenance Guide*.

Figure 2-7 lsmsmgr Text Interface Main Menu



> **Note:**
>
> Selections in the `lsmsmgr` text interface are made by either using the Up and Down Arrow keys on your keyboard or typing the first letter of any menu item to change which menu item is highlighted. When the desired menu item is highlighted, press the Enter key.
> In this manual, menu selections are indicated as a series; for example, select Maintenance>Start Node indicates that you should highlight the Maintenance item on the main menu, press Enter, then highlight the Start Node item on the next menu, and press Enter.

- If you entered `syscheck` as the username, the command line window displays the System Health Check output.
  For more information about `syscheck`, refer to the *Alarms and Maintenance Guide*.
- If you entered any other username the command line prompt displays a prompt that shows the username and host name, similar to the following example (in this example, the user logged in as the `lsmsadm` user to the server whose host name is `lsmspri)`:

```
[lsmsadm@lsmspri lsmsadm]$
```

> **Note:**
>
> In this manual, the prompt will be indicated simply by $.

LSMS commands can be entered at this prompt. If you need to start the LSMS GUI, see "Starting a Web-Based LSMS GUI Session".

Logging in from One Server to the Mate's Command Line

Sometimes it may be necessary to have access to the command line interfaces for both servers. You can log into each server separately using `ssh`, or you can use `ssh` to go back and forth between servers.

To log in from one server's command line to the mate server's command line:

1. Log in as any user except `lsmsmgr` or `syscheck`, using the procedure described in "Logging In to LSMS Server Command Line" to log into a server command line.
2. Enter the following command to access the command line on the mate server:

   ```
   $ ssh mate
   ```

   If you have not previously logged into the mate, the following information displays:

   ```
   The authenticity of host 'mate (192.168.1.1)' can't be established.
   RSA key fingerprint is 1c:14:0e:ea:13:c8:68:07:3d:7c:4d:71:b1:0c:33:04.
   Are you sure you want to continue connecting (yes/no)?
   ```

   Type `yes`, and press Enter.
3. When prompted, enter the password for the same user name.

4. The prompt on your terminal now displays the host name of the mate server, and you can enter commands for the mate server.

   Following is an example of the sequence of commands and prompts that display during this procedure:

```
[lsmsadm@lsmspri lsmsadm]$ ssh mate
lsmsadm@mate's password:
[lsmsadm@lsmssec lsmsadm]$
```

Starting an LSMS GUI Session

The **LSMS** offers a web-based graphical user interface (**GUI**). The **GUI** can be run:

- On a **PC** with Microsoft® Windows installed, using Microsoft Internet Explorer (version 8.0, 9.0, 10.0, or 11.0)
  A 32-bit installation of Windows uses 32-bit Internet Explorer and 32-bit Java. A 64-bit installation of Windows includes both the 32-bit and 64-bit Internet Explorer. If you are using the 32-bit Internet Explorer, 32-bit Java is required, and if you are using the 64-bit Internet Explorer, 64-bit Java is required. You can check the Internet Explorer version by clicking on **Tools**, and then **About Internet Explorer**. If `64-bit Edition` is displayed as shown in the following example, you are using the 64-bit edition. If `64-bit Edition` is not displayed, you are using the 32-bit edition.

Figure 2-8 About Internet Explorer

- On a Linux workstation, using Mozilla Firefox

The **GUI** is accessible from any machine that can access the network on which the **LSMS** resides.

> **Note:**
>
> When you have completed logging into the LSMS **GUI**, the session has these operating characteristics:
>
> - Pressing the Back button from the browser from which the **GUI** was launched terminates that **GUI** session. To reopen the **GUI**, you must click the Refresh button and begin the login process again.
> - Pressing the Refresh button from the browser from which the **GUI** was launched terminates that **GUI** session. To reopen the **GUI**, you must begin the login process again.
> - You cannot use a browser window that was started by selecting File > New > Window from the browser window to launch another **LSMS GUI** session.
> - If the GUI is idle for an extended period, you may receive `Server not responding` or `Invalid Session ID` errors; close the existing GUI session and start a new GUI session.

The HTTPS support on LSMS feature allows you to configure the protocol(s) used for the GUI:

- Secure Hypertext Transfer Protocol (HTTPS)
- Hypertext Transfer Protocol (HTTP)
- Both HTTPS and HTTP

Both HTTPS and HTTP are enabled by default. HTTPS supports encryption of data exchanged between the web server and the browser, thus facilitating data privacy. HTTP is not encrypted/secure, allowing data to be captured by any network analyzer and viewed.

A script (`/usr/TKLC/lsms/bin/httpConfig.pl`) is provided to toggle between protocols or to check what is currently enabled. The script can be run by the lsmsadm user with one of the following parameters:

https
Results in HTTPS being enabled and HTTP being disabled.

http
Results in HTTP being enabled and HTTPS being disabled.

both
Results in both HTTPS and HTTP being enabled. This is the default.

status
Displays whether HTTPS and HTTP are enabled or disabled.

> **Note:**
>
> After changing the protocol, the GUI must be refreshed to reflect the changes. A GUI notification will be displayed.

To start the **GUI**:

1. Start your web browser (Mozilla Firefox or Internet Explorer).

2. Specify https or http followed by the **LSMS VIP** address in the Address: field, or the application VIP in a segmented network. For http, add :8200.

   - https://<VIP_address>
   - http://<VIP_address>:8200

   The `<VIP_address>` is the Virtual **IP** address used by your **LSMS** system. (The **VIP** address is always associated with the active server; when switchover occurs, the **VIP** address association is switched over from previously active server to the newly active server.)

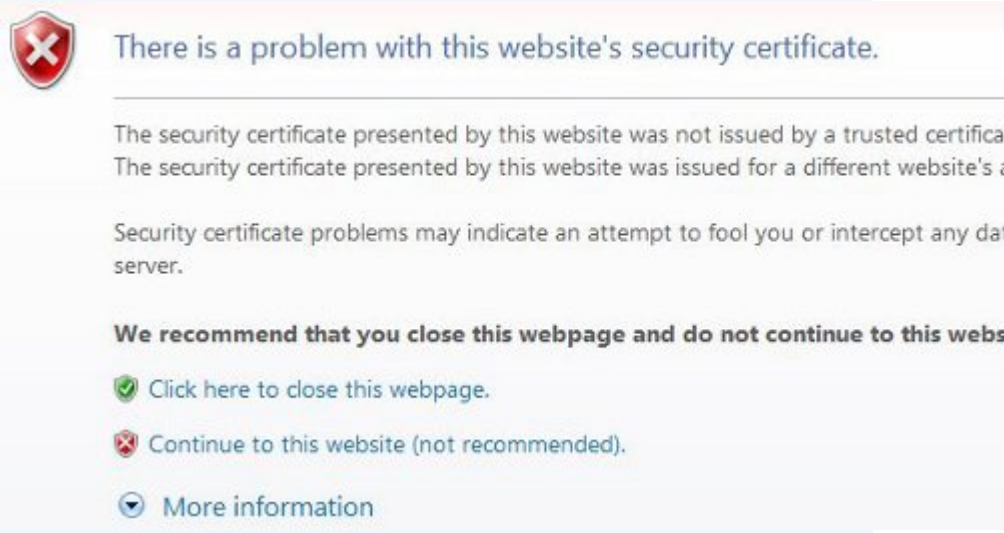
3. Press **Return** and the Oracle Communications **LSMS** start page is displayed.

Note:

If using HTTPS, you must click through some security warnings that are displayed, which differ depending on the browser in use:

- For Internet Explorer, click on `Continue to this website (not recommended)` on the following screen:

Figure 2-9 Problem with Security Certificate

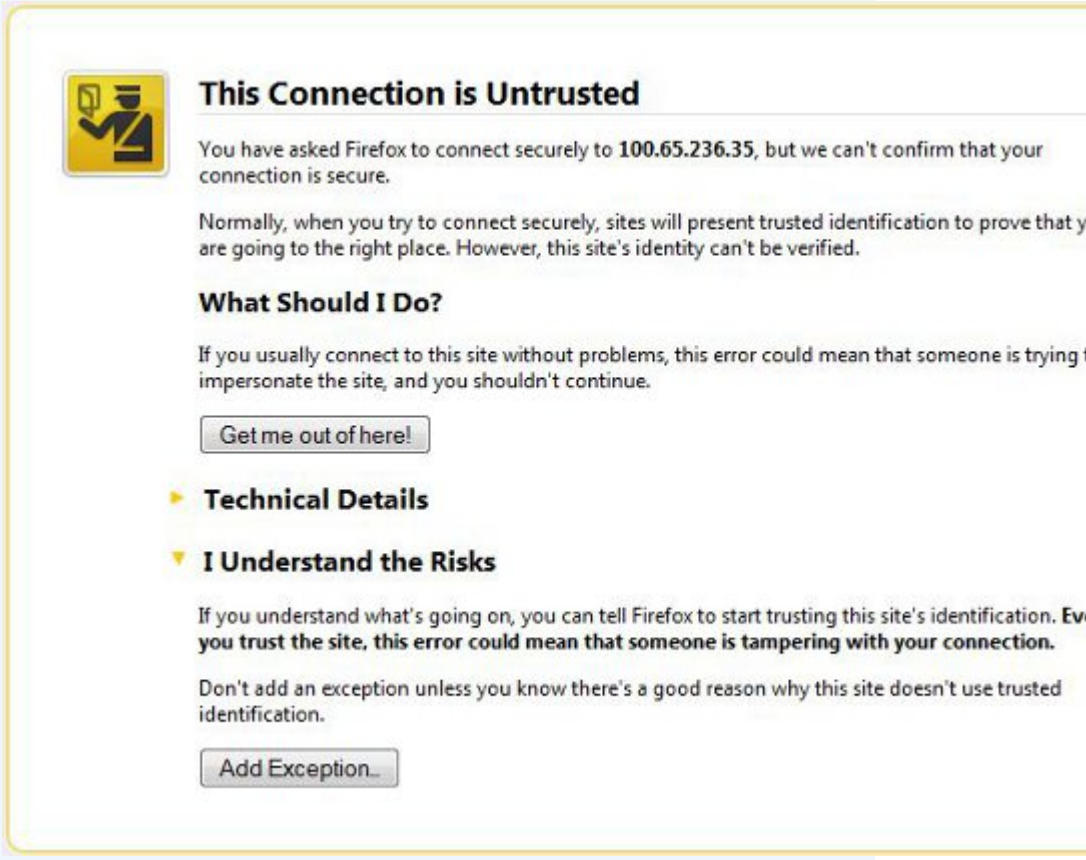


- For Mozilla Firefox, click on `I Understand the Risks` on the following screen:

Figure 2-10 Connection is Untrusted

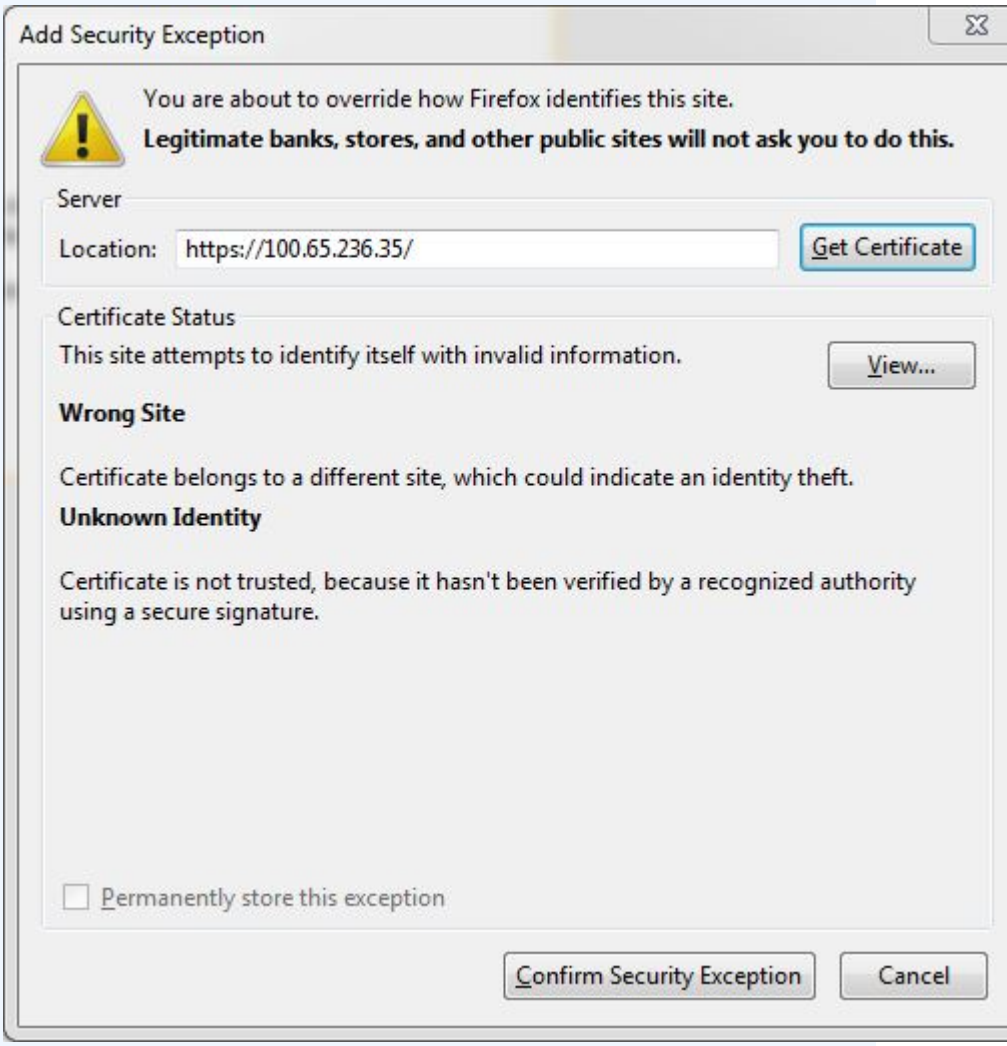
Then click on `Add Exception` on the following screen:

Figure 2-11 Connection is Untrusted (continued)



Then enter the site in the Location field and click on `Confirm Security Exception`:

Figure 2-12 Add Exception for Untrusted Connection



The Oracle Communications LSMS Start Page displays:

Figure 2-13 Oracle Communications LSMS Start Page

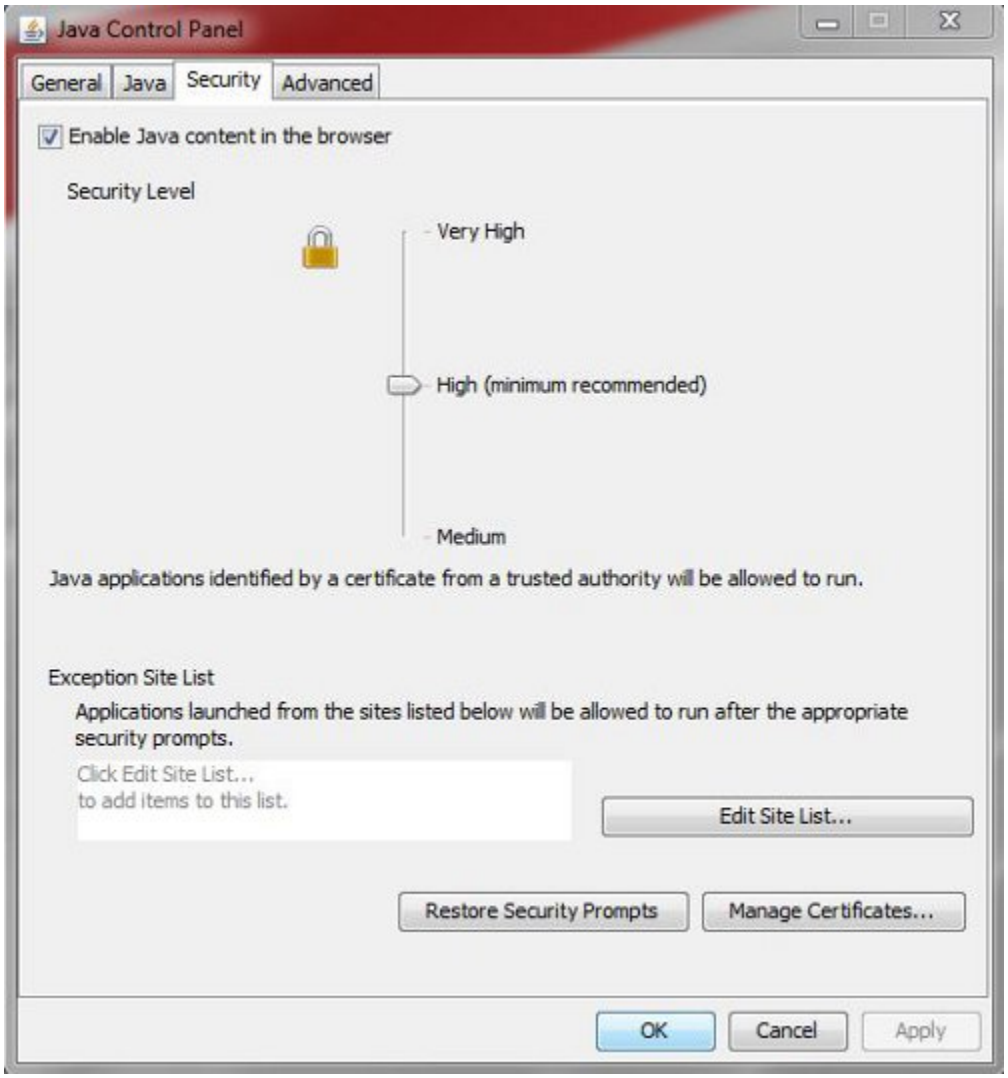
4. If you are logging in for the first time from this terminal, click the **Java Setup** button and follow the instructions on the displayed page to install a Java plug-in and set up a security policy.

   Otherwise, go to 5.

5. Open the Java Control Panel for your terminal, go to the **Security** tab as shown in Figure 2-14, and click on **Edit Site List**.

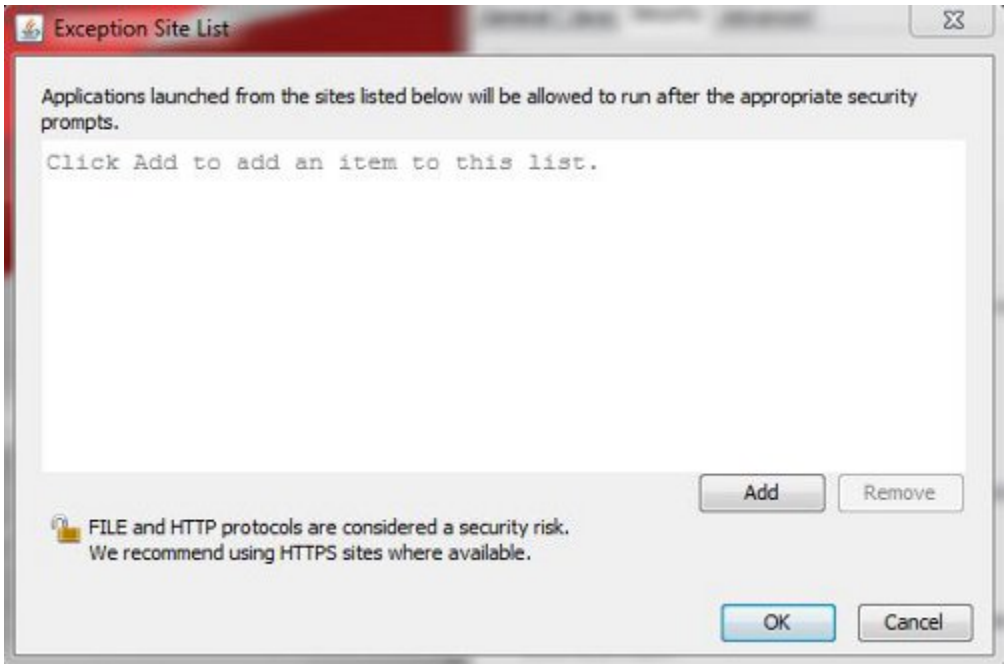
> **Note:**
>
> - The actual screens displayed might differ from these examples depending upon the specific Java version in use.
> - If using both https and http, both must be added to the exception site list (https://<VIP_address> and http://<VIP_address>:8200).

Figure 2-14 Security Tab of Java Control Panel



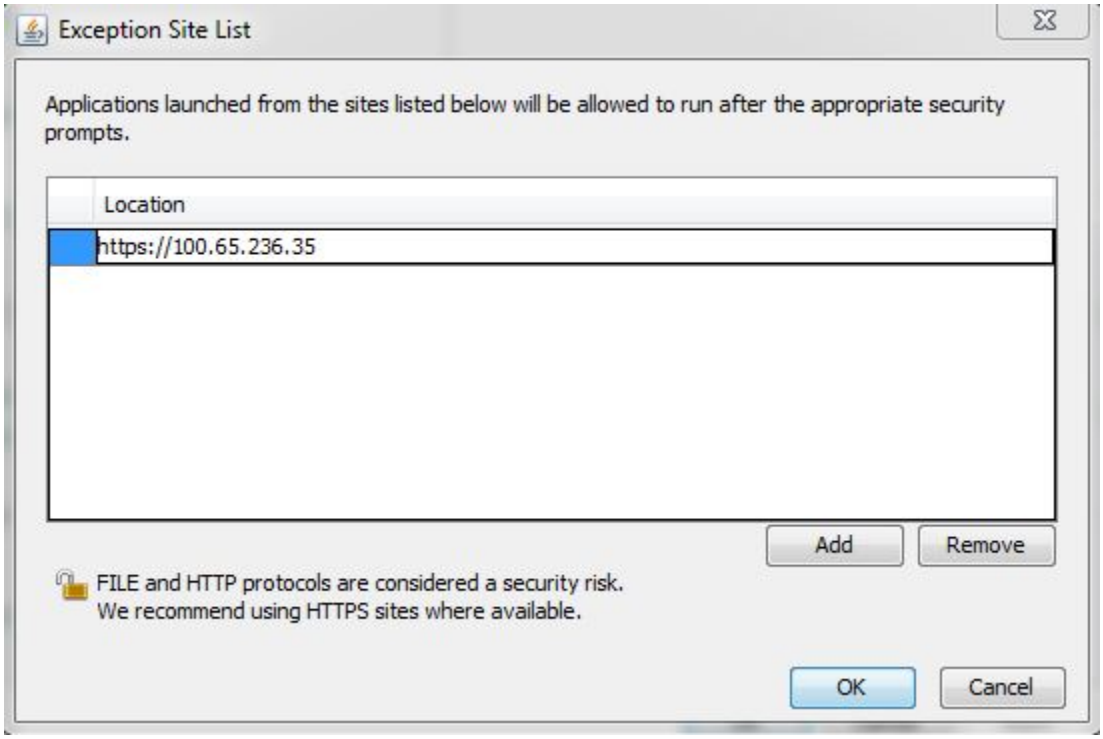
6. After clicking on **Edit Site List**, click on **Add**:

Figure 2-15 Adding to the Exception Site List



7. Type in the location of your LSMS server (`https://`*`IP_address`* or `http://`*`IP_address`*`:8200`):

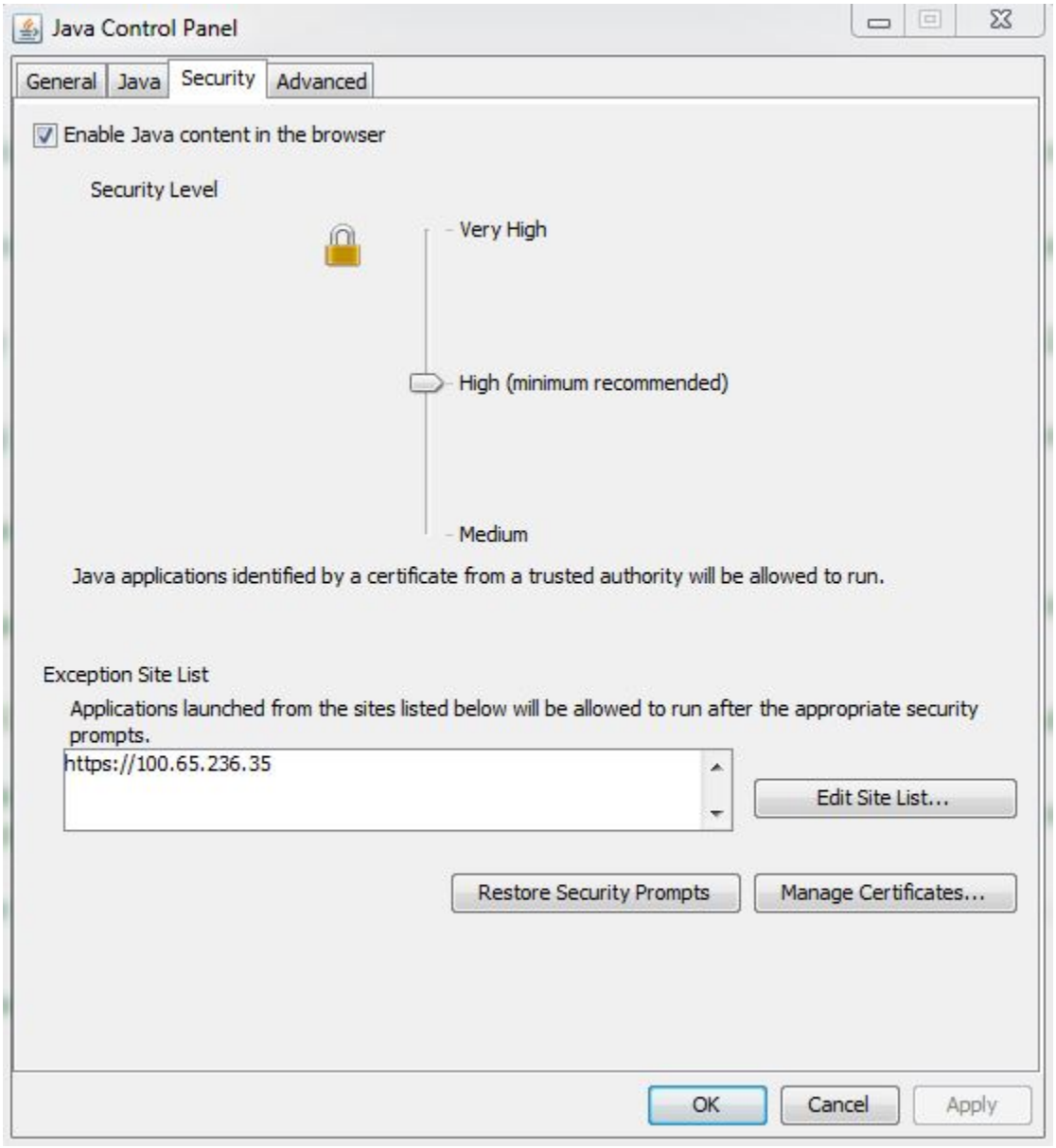
Figure 2-16 Adding the LSMS Server to the Exception Site List



8. Click **OK**.

The **Security** tab will now show the server in the Exception Site List, as shown in the following example:

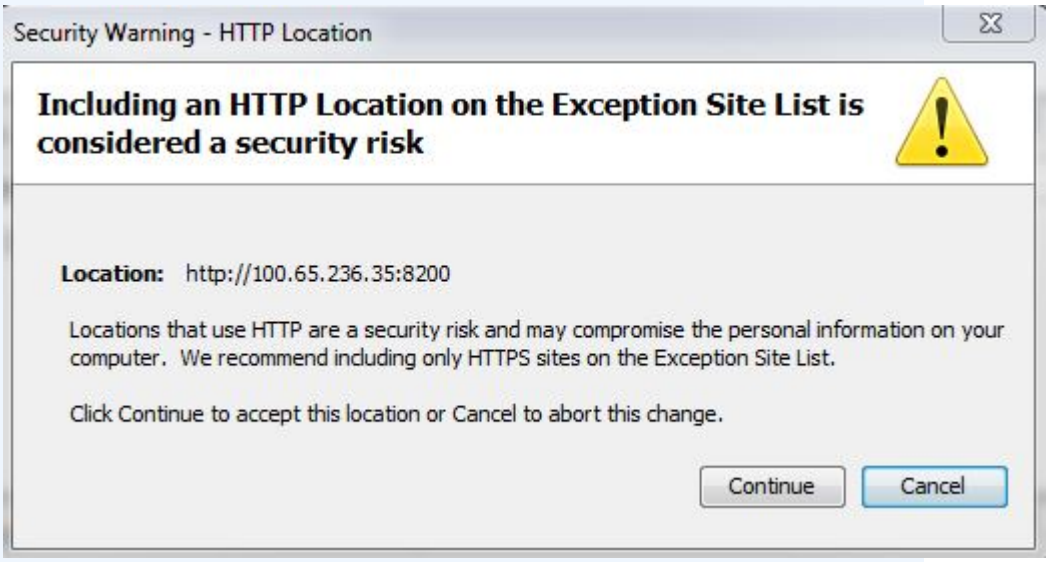
Figure 2-17 Exception Site List Including the LSMS Server



Note:

If you are adding an http site, a warning similar to the following warning is displayed:

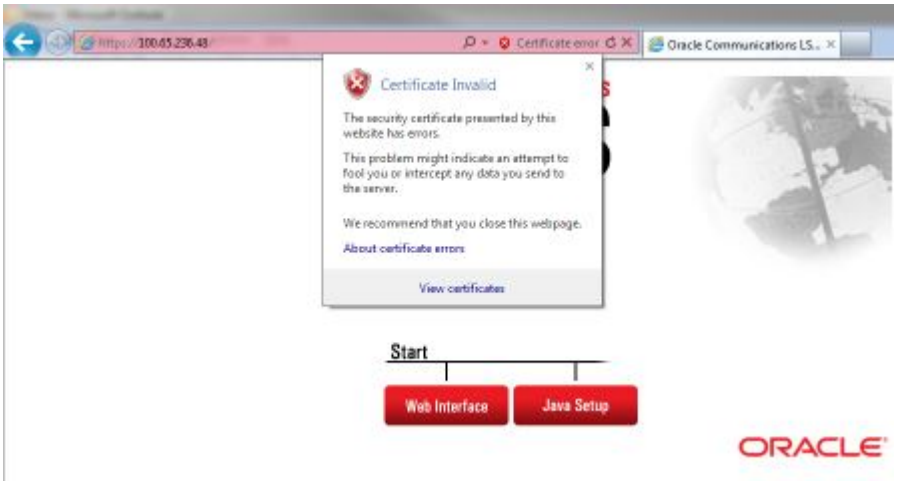
Figure 2-18 Security Warning for HTTP Location



Click **Continue** to add the server to the Exception Site List.

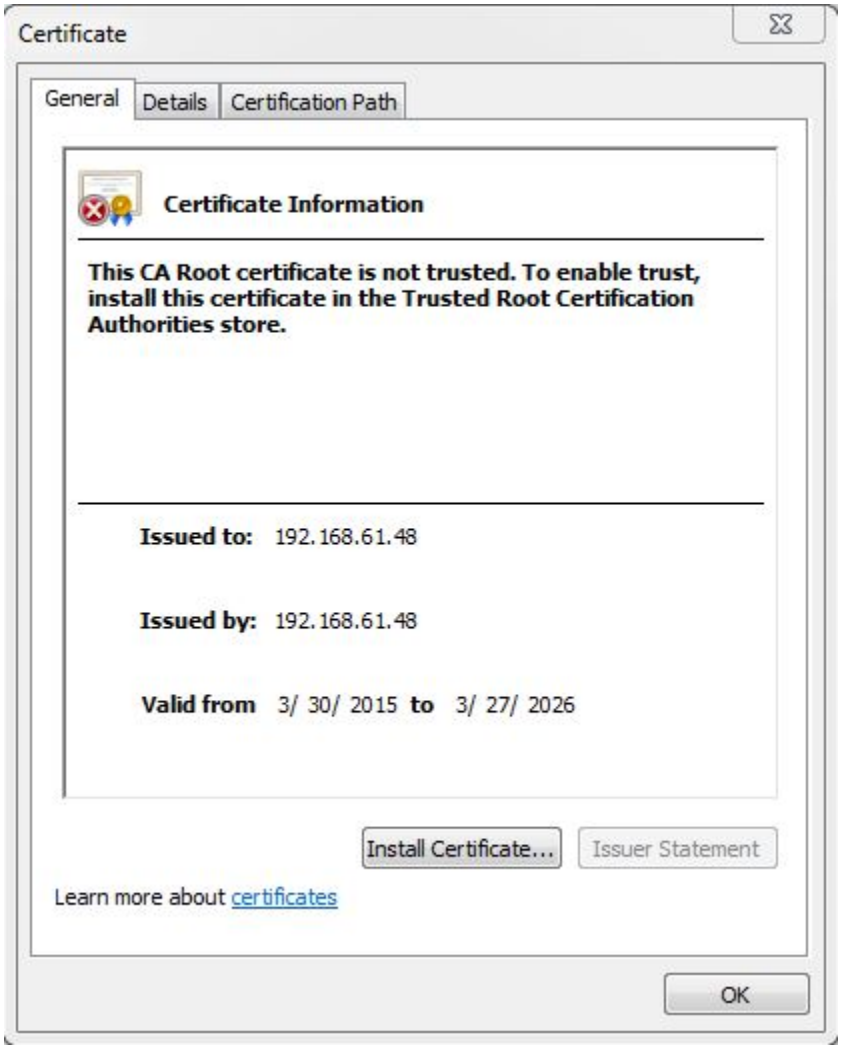
9. Click **OK** to exit the Java Control Panel and return to the GUI.
10. If using HTTPS and Internet Explorer, install the security certificate as follows. Otherwise, go to step 11.
    a. Back at the Oracle Communications LSMS Start Page, click on `Certificate error` at the right of the address bar, and then click on `View certificates` in the popup window titled `Certificate Invalid`.

Figure 2-19 Certificate Error



The `Certificate` screen is displayed:

Figure 2-20 Certificate Screen



b. Click on **Install Certificate**.

The Certificate Import Wizard opens:

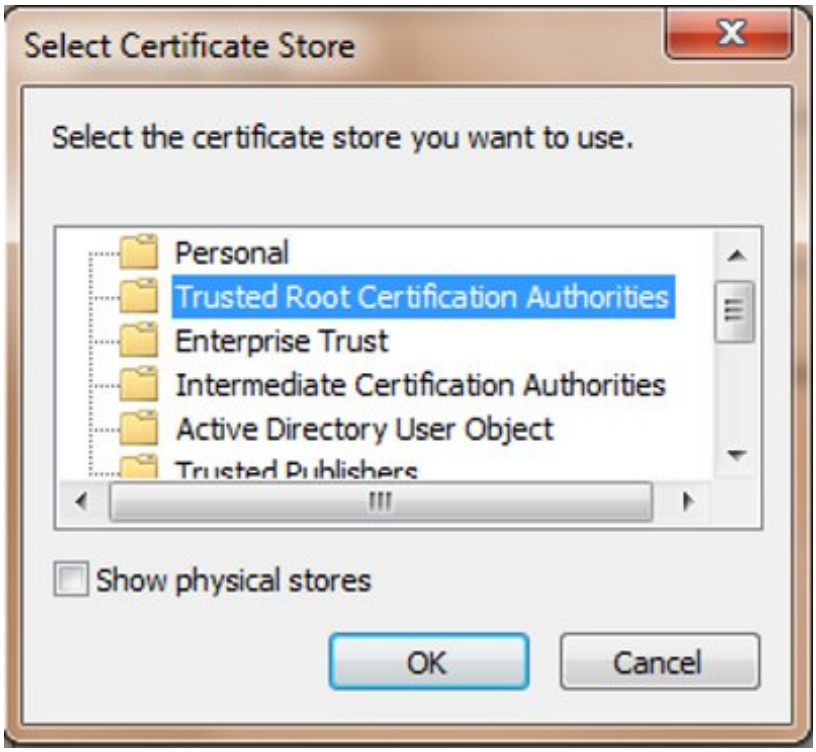
Figure 2-21 Certificate Import Wizard

c. Click on **Next >**, and then select the radio button to **Place all certificates in the following store**:

Figure 2-22 Certificate Import Wizard (continued)

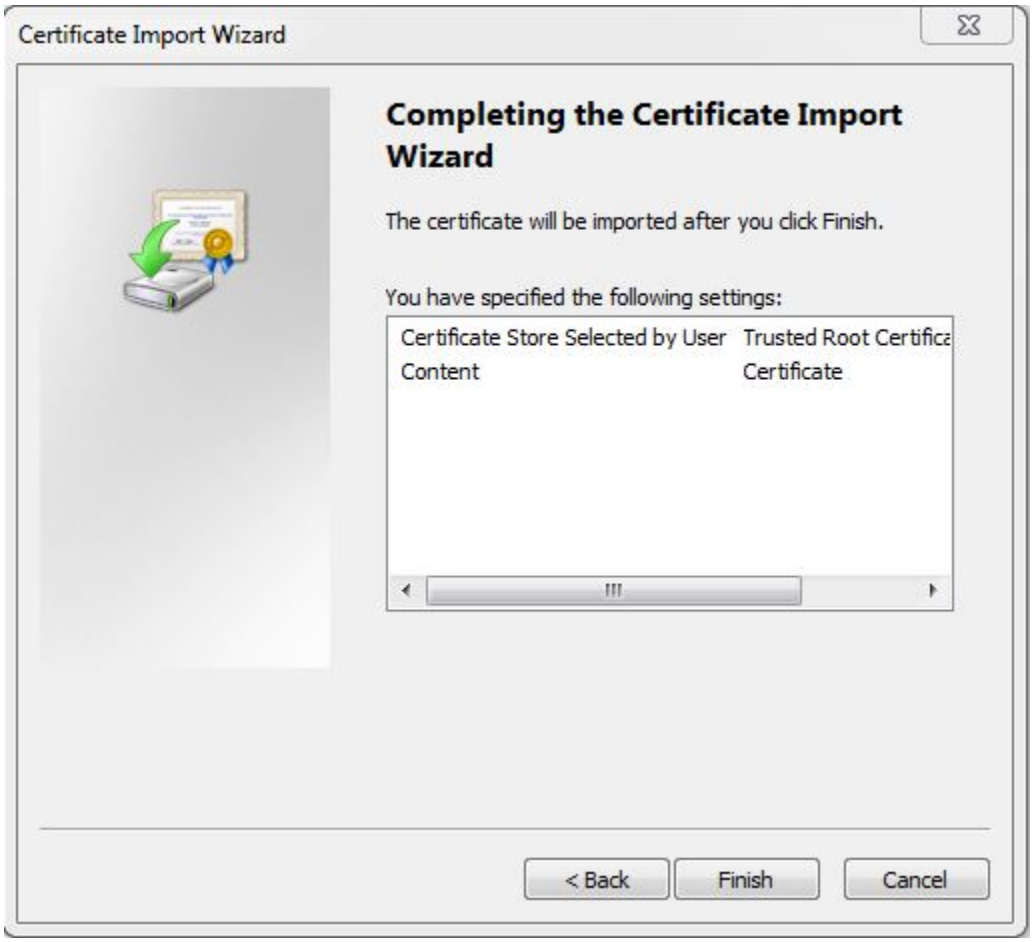
d. Click on **Browse** to go to the Select Certificate Store window, and select **Trusted Root Certification Authorities**:

Figure 2-23 Select Certificate Store



e. Click **OK** and **NEXT**, to verify the settings:

Figure 2-24 Completing the Certificate Import Wizard

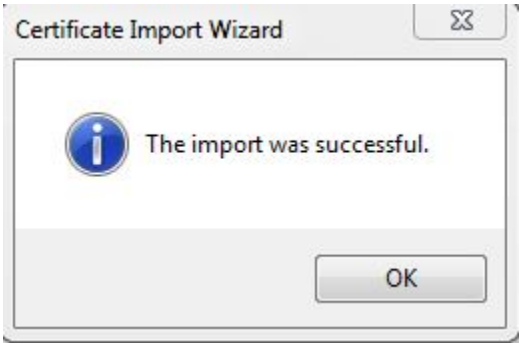


f. Click **Finish**, and then verify that you want to install the certificate:

Figure 2-25 Certificate Installation Security Warning

g. Click **Yes** to import the certificate:

Figure 2-26 Certificate Import Successful



h. Click **OK**, and then **OK** again to exit the Certificate window.

i. Restart Internet Explorer.

11. Back at the Oracle Communications LSMS Start Page, click on the **Web Interface** button.

Note:

If using HTTPS, click **Yes** and then **Continue** for the following security warnings:

Figure 2-27 Insecure Content Warning

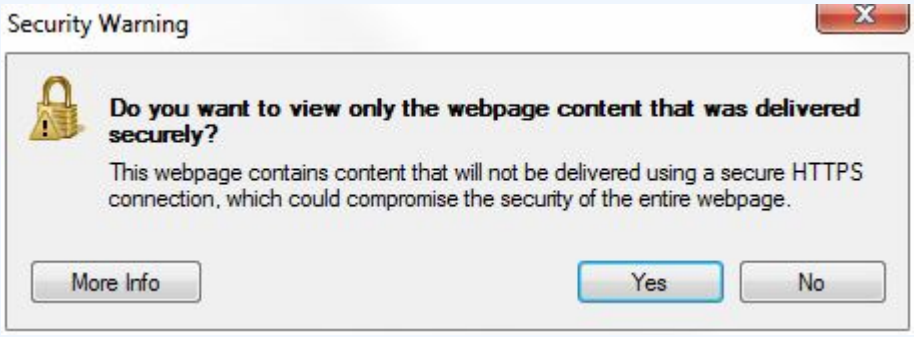
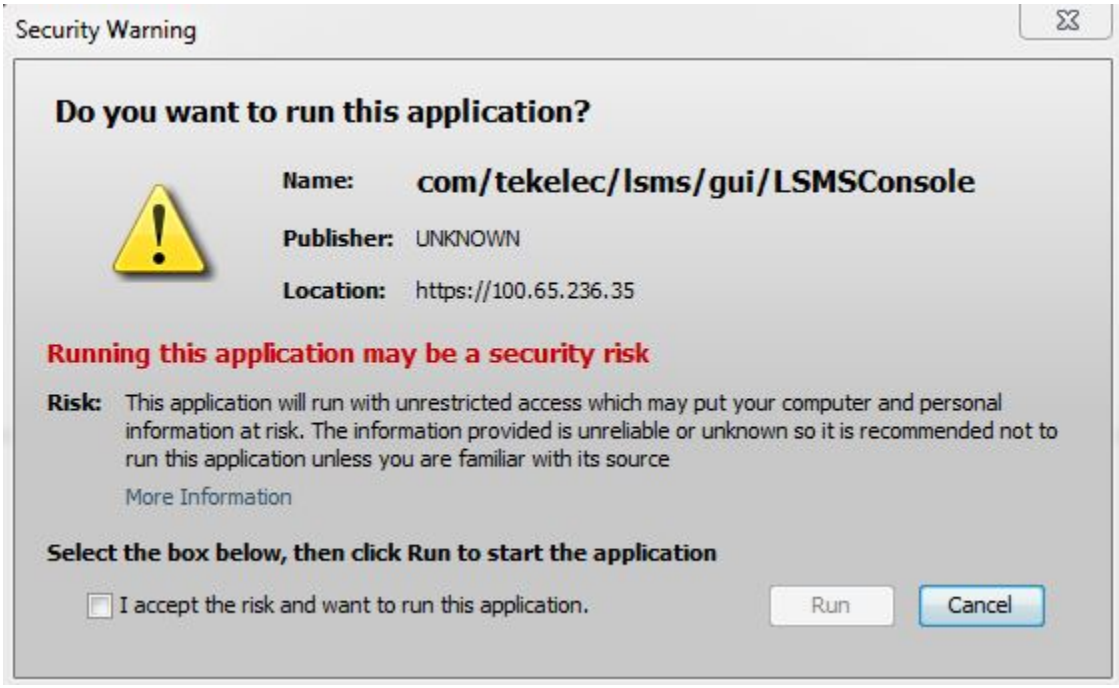


Figure 2-28 Untrusted Website Warning

12. Check the box to accept the risk to run the application, and click **Run**:

Figure 2-29 Application Security Warning



The LSMS Web GUI Start Page displays:

Figure 2-30 LSMS Web GUI Start Page with Login Button

13. Click the **Login** button.

    The **LSMS** Login screen appears. Next, perform the procedure described in "Logging Into the LSMS Console Window".

> **Note:**
>
> If you log out of this **LSMS GUI** session, you must start a new browser to log back in. If you only want to change user, select User/Session>Change User from the main **LSMS** menu.

Inactivity Timeout

The Automatic Inactivity Logout (inactivity timeout) feature, when activated, logs out **LSMS GUI** and command line users after a preset period of inactivity occurs. For more information, refer to the *Configuration Guide*.

Logging in to the LSMS Console Window

After one or more **SPIDs** have been defined, use the following procedure to log in to the **LSMS** console.

1. After you have completed the procedure described in Starting an LSMS GUI Session, the LSMS Welcome/Login Window displays.

2. Enter the Service Provider **ID** (**SPID**), username, and password, which must be as follows:

   a. The username and password must have been defined as described in the *Alarms and Maintenance Guide* (the group definition determines to which **GUI** menu items the username will have access).

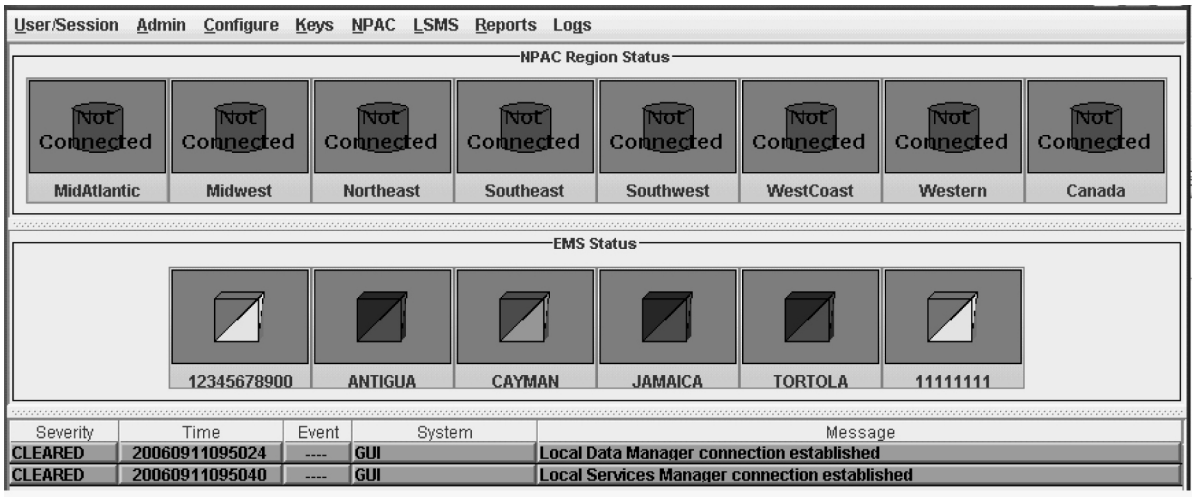
   b. The **SPID** must be one that has been defined on this **LSMS**, as described in "Service Provider Contact Information" in the *Configuration Guide*.

      In addition, if the **SPID** Security feature has been enabled, you must enter a username that has been authorized to access the **SPID** you enter. For information about authorizing usernames to **SPIDs**, refer to the *Configuration Guide*.

3. Click **Login**.

   - If the Customizable Login Message feature is not enabled (or it is enabled, but no message text has been created), the LSMS Console Window displays.

Figure 2-31 LSMS Console Window



   - If the Customizable Login Message feature is enabled and there is user-defined login message text configured, the Login Message dialog displays a login message before the LSMS Console Window is displayed.
     System administrators are responsible for creating the customizable login message text (for information about how to create this message text, refer to the *Configuration Guide*). Oracle Customer Service is responsible for enabling the feature.

     The Login Message dialog displays a 10 line by 80 character viewing area, with a scrollable text area up to a maximum of 5000 characters. Users must acknowledge this message by clicking the **OK** button.

Modifying Title Bar in LSMS Console Window

After you successfully log in to **LSMS**, the console window displays. If the `/usr/TKLC/lsms/config/LSMSname` file exists and contains a (0–30 character) unique **LSMS** name, the name is displayed in the title bar along with the **SPID** and user name. If the file does not exist or is empty (null), no name will be displayed and the title bar will look as before—displaying only the **SPID** and user name.

Navigating the GUI

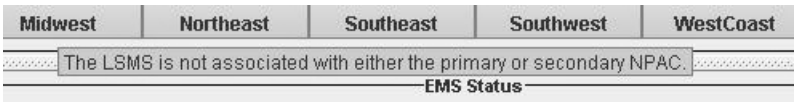
To navigate through the **GUI**, select your menu choices by using the mouse pointer.

The main user interface of the **GUI** is the LSMS Console Window. The principle components of this window are described in the following paragraphs.

> **Note:**
>
> The release versions of the **LSMS** software that appear in some of the **GUI** window illustrations of this manual are representational only and may not correspond to this manual's actual release. The release version identified at the top of an *actual* **GUI** session window indicates the **LSMS** software version currently in operation.

> **Note:**
>
> When you pause or stop the mouse over a data entry field or a status icon, the **LSMS GUI** displays a tool tip that explains how to use the field. Figure 2-32 shows an example of an **LSMS** tool tip.

Figure 2-32 Example Tool Tip



- *Main Menu Bar* – This component contains the main **GUI** menu items. Refer to Figure 2-35 to see which items are accessible from the main menu bar.
- *Pull-Down Menus* – These menus appear when a main menu item is selected.
- **NPAC** *Status Area* (*General Description)* – This area displays the state of the association between each of the **NPAC** regions and the **LSMS** (see Figure 2-31).

  > **Note:**
  >
  > The active **NPAC** regions only are shown when you initially display the **LSMSGUI**.

  Each of the eight **NPAC** regions that can be supported by the **LSMS** is represented by a status icon in the **NPAC** status area. If support for a given region has not been purchased, the icon for that region either displays with white color and the text **Inactive** or is hidden (see Displaying Icons for Inactive NPACs.

  Each icon contains:

  – Regional name

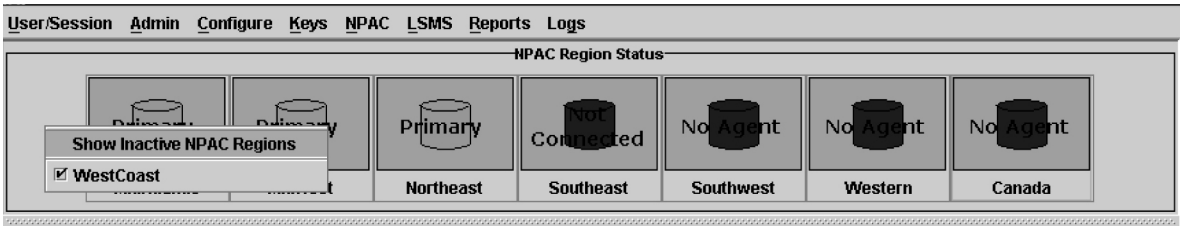
- A database symbol displaying one of the following colors to indicate the status of the association with the **NPAC**:
  - Green—The **NPAC** agent is associated with either the primary or secondary **NPAC**
  - Red—The **NPAC** agent is not associated with either the primary or secondary **NPAC**
  - White—The **NPAC** region has not been activated
- One of the following text strings to clarify further the status of the association:
  - Primary—The **LSMS** is connected to the primary **NPAC** (icon is green)
  - Secondary—The **LSMS** is connected to the secondary **NPAC** (icon is green)
  - Not Connected—The **LSMS** is not connected to the **NPAC** (icon is red)
  - No Agent—The **NPAC** agent for this region is not running (icon is red)
  - Inactive—The region is not activated (icon is white)

Displaying Icons for Inactive NPACs

When the **LSMS GUI** is first opened, only icons for active **NPAC** regions display. Icons for inactive regions can be displayed or hidden by right-clicking anywhere in the **NPAC** status area where there is no **NPAC** region icon.

The pop-up menu shown in Figure 2-33 displays, listing all the inactive regions. If the checkbox next to the region name is checked, the corresponding inactive **NPAC** region icon is currently displayed in the **NPAC** status area; if it is not checked, the corresponding **NPAC** region icon is hidden.

Figure 2-33 Inactive NPAC Regions Pop-up Menu



NPAC Status Icon Pop-up Menus

NPAC status pop-up menu items can be accessed by clicking on any **NPAC** region icon (except inactive ones) to highlight it and then right-clicking on the icon. Depending on the state of the association with the **NPAC**, some menu items may be nonselectable (grayed-out), as described in Table 2-2.

Figure 2-34 NPAC Pop-up Menu

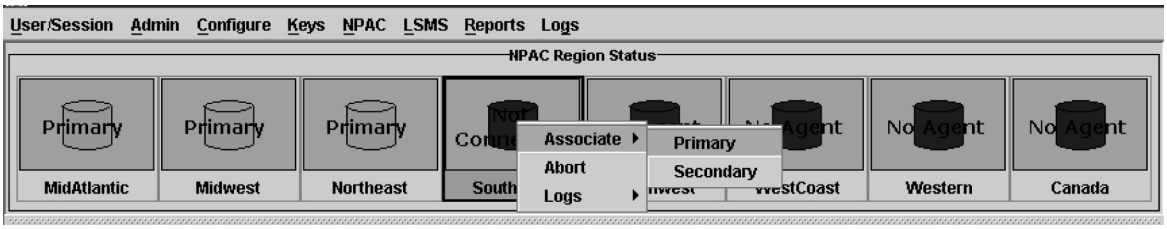


Table 2-2 NPAC Icon Pop-up Menu Selectability

Menu Item	Selectable:
Logs	Always
Associate	Only when the **NPAC** icon text shows Not Connected
Abort	Only when the **NPAC** icon text shows Primary or Secondary

EMS Status Area (General Description)

The **EMS** status area displays the state of the connection between the **LSMS** and each Element Management System (**EMS**) that is configured on the **LSMS**. If more than eight **EMSs** are configured, the **EMS** status area contains two rows for icons.

- Each **EMS** status icon displays the following:
  - Text to indicate the **COMMON LANGUAGE®** Location Identifier (**CLLI™**) code of the **EMS**
  - **Signal Transfer Point** (**STP**) element symbol displaying one of the following colors to indicate the status of the association with the **EMS**:
    - Green—The **LSMS** is connected to both **EMSs** that have this **CLLI** code
    - Yellow—The **LSMS** is connected to a single **EMS** that has this **CLLI** code
    - Red—The **LSMS** is not connected to either **EMS** that has this **CLLI** code
  - Text to indicate the **CLLI** code of the **EMS**

EMS Status Icon Pop-up Menus

Menu items can be accessed by clicking on any **EMS** status icon to highlight it and then right-clicking on the icon.

> **Note:**
>
> All actions you perform using the popup menu are applied to the **EMS** you select.

Notification Area

The notification area is similar to the notification area available in previous releases, except for the following:

The notification area is now displayed in table form, with headings marking the following fields of the notification:

- Severity of the event, which can be one of the following (the severity is also indicated by use of color as indicated):
  - **CLEARED** (Green)
  - **CRITICAL** (Red)
  - **MAJOR** (Yellow)
  - **EVENT** (White)
- Time stamp for the time that the event was generated
- Event number (some notifications do not contain an entry for this field)
- System that generated the error, as follows:
  - For **EMS** notifications, the **CLLI** code
  - For **NPAC** notifications, the affected region
  - For all other types of notifications, "**LSMS**"
- Message text description of the error

> **Note:**
>
> Notification Area messages cannot be deleted from a **GUI** session.

Field Syntax for the LSMS GUI

The **LSMSGUI** includes several different types of data fields. Table 2-3 lists the characters allowed in each type of **LSMS GUI** field.

Table 2-3 Characters Allowed by LSMS GUI Field Types

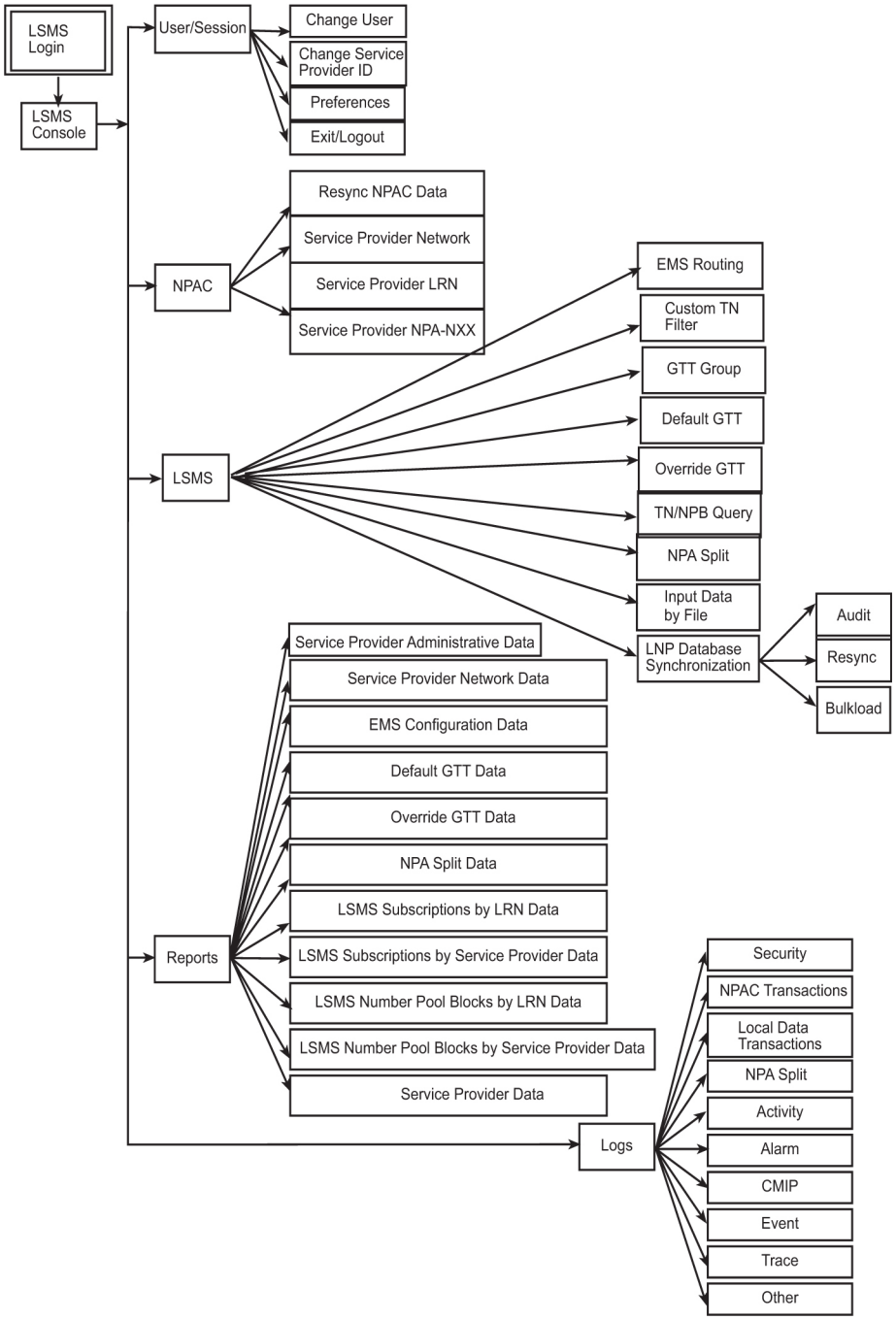
Type of Field	Valid Characters
numeric	0 through 9
lowercase	a through z
uppercase	A through Z
punctuation	~!@#$%^&*()_+{}|[]\-=';''':",./<>?
file characters	-,.
letter characters	lowercase and uppercase
alphanumeric	letter and numeric
character	letter, numeric, and punctuation
filename	alphanumeric and file characters

GUI Structure

The **GUI** windows are structured as shown in Figure 2-35. To follow the flow, start at **LSMS Login**.

> **Note:**
>
> The Admin, Configure, and Keys menu items are not shown in Figure 2-35; for information about access to those menus, refer to the *Configuration Guide*.

Figure 2-35 LSMS GUI Structure



GUI Function Access

Access to the various **LSMS GUI** functions is determined by the permission group assigned by the system administrator. For more information, refer to *Configuration Guide* and *Alarms and Maintenance Guide*.

The following tables show the functions each permission group can access. Inaccessible functions are deselected (grayed-out) on the actual menus.

> **Note:**
>
> For information about the Admin, Configure, and Keys **LSMS** menu items, refer to *Configuration Guide*.

Table 2-4 User/Session GUI Access by Permission Group

User/Session GUI Functions	User/Session GUI Access by Permission Group X = This GUI function is accessible to the indicated permission group.				
	Default Permission Groups				
	lsmsadm	lsmsuser	lsmsview	lsmsall	lsmsuext
Web GUI Welcome	X	X	X	X	X
LSMS Login	X	X	X	X	X
LSMS Console Main Menu	X	X	X	X	X
User/Session	X	X	X	X	X
Change User	X	X	X	X	X
Change Service Provider **ID**	X	X	X	X	X
View Active User Sessions	X			X	
Terminate User Session	X			X	
Preferences	X	X	X	X	X
Show Tool Tips	X	X	X	X	X
Exit/Logout	X	X	X	X	X

Table 2-5 NPAC GUI Access by Permission Group

NPAC GUI Functions	NPAC GUI Access by Permission Group X = This GUI function is accessible to the indicated permission group.				
	Default Permission Groups				
	lsmsadm	lsmsuser	lsmsview	lsmsall	lsmsuext
NPAC	X	X	X	X	
Resync **NPAC** Data	X			X	
Service Provider Network	X	X	X	X	
View	X	X	X	X	
Service Provider **LRN**	X	X	X	X	
Create		X		X	

Table 2-5 (Cont.) NPAC GUI Access by Permission Group

NPAC GUI Functions	NPAC GUI Access by Permission Group X = This GUI function is accessible to the indicated permission group.				
	Default Permission Groups				
	lsmsadm	**lsmsuser**	**lsmsview**	**lsmsall**	**lsmsuext**
View	X	X	X	X	
Delete		X		X	
Service Provider **NPA-NXX**	X	X	X	X	
Create		X		X	
View	X	X	X	X	
Delete		X		X	

Table 2-6 LSMS GUI Access by Permission Group

LSMS GUI Functions	LSMS GUI Access by Permission Group X = This GUI function is accessible to the indicated permission group.				
	Default Permission Groups				
	lsmsadm	**lsmsuser**	**lsmsview**	**lsmsall**	**lsmsuext**
LSMS	X	X	X	X	X
EMS Routing	X	X	X	X	X
Modify		X		X	X
View	X	X	X	X	X
TN Filter	X	X	X	X	X
Create		X		X	X
Modify		X		X	X
View	X	X	X	X	X
Delete		X		X	X
GTT Group [1]	X	X	X	X	X
Create	X			X	
Modify	X			X	
View	X	X	X	X	X
Delete	X			X	
Default **GTT**		X	X	X	X
Create		X		X	X
Modify		X		X	X
View		X	X	X	X
Delete		X		X	X
Override **GTT**		X	X	X	X

Table 2-6 (Cont.) LSMS GUI Access by Permission Group

LSMS GUI Functions	LSMS GUI Access by Permission Group X = This GUI function is accessible to the indicated permission group.				
	Default Permission Groups				
	lsmsadm	**lsmsuser**	**lsmsview**	**lsmsall**	**lsmsuext**
Create		X		X	X
Modify		X		X	X
View		X	X	X	X
Delete		X		X	X
TN/NPB Query	X	X	X	X	X
NPA Split [2]	X	X	X	X	X
Input Data By File		X		X	X [3]
LNP Database Synchronization [4]	X	X	X	X	X
Audit	X	X	X	X	X
Resync		X		X	X
Bulkload		X		X	X

[1] Users belonging to the "lsmsuext" permission group are only authorized to access Default **TT/SSN** values for **GTT** groups assigned to the login **SPID**.

[2] Users belonging to the "lsmsuser" or "lsmsall" permission groups are authorized to create, modify, view, and delete **NPA** Splits. Users belonging to the "lsmsadm", "lsmsview", and "lsmsuext" permission groups are authorized only to view **NPA** Split information.

[3] Users belonging to the "lsmsuext" group are authorized to use the Input by File operation for downloading all data types except for **NPA** Splits.

[4] **LNP** database synchronization can be performed only for **EMSs** in which the login user and **SPID** are authorized.

Table 2-7 Reports GUI Access by Permission Group

Reports GUI Functions	Reports GUI Access by Permission Group X = This GUI function is accessible to the indicated permission group.				
	Default Permission Groups				
	lsmsadm	**lsmsuser**	**lsmsview**	**lsmsall**	**lsmsuext**
Reports [1]	X	X	X	X	X
Service Provider Administrative Data	X	X	X	X	X
Service Provider Network Data	X	X	X	X	X

Table 2-7 (Cont.) Reports GUI Access by Permission Group

Reports GUI Functions	Reports GUI Access by Permission Group X = This GUI function is accessible to the indicated permission group.				
	Default Permission Groups				
	lsmsadm	lsmsuser	lsmsview	lsmsall	lsmsuext
EMS Configuration Data	X	X	X	X	X
Default **GTT** Data	X	X	X	X	X
Override **GTT** Data	X	X	X	X	X
NPA Split Data	X	X	X	X	X
LSMS Subscriptions by **LRN** Data	X	X	X	X	X
LSMS Subscriptions by Service Provider Data	X	X	X	X	X
LSMS Number Pool Blocks by **LRN** Data	X	X	X	X	X
LSMS Number Pool Blocks by Service Provider Data	X	X	X	X	X
Service Provider Data	X	X	X	X	X
Permission Group Data	X	X	X	X	X

[1] Generated reports and logs only contain data that the login **SPID** has authorization to access. The permissions associated with Reports also apply to the Reports command of the **LSMS** Report Generation Feature.

Note:

Only the permission group that created a report has the ability to view that report from the Reports menu. This is the permission group that has logged onto the command line, not the permission group logged into the **GUI**.

Table 2-8 Logs GUI Access by Permission Group

LOGS GUI Functions	Logs GUI Access by Permission Group X = This GUI function is accessible to the indicated permission group.				
	Default Permission Groups				
	lsmsadm	**lsmsuser**	**lsmsview**	**lsmsall**	**lsmsuext**
Logs[1]	X	X	X	X	X
Security	X			X	
NPAC Transactions	X	X	X	X	X
Local Data Transactions	X	X	X	X	X
NPA Split	X	X	X	X	X
Activity	X	X	X	X	X
Alarm	X	X	X	X	X
CMIP	X	X	X	X	X
Event	X	X	X	X	X
Trace	X	X	X	X	X
Other	X	X	X	X	X

[1] Generated reports and logs only contain data that the login **SPID** has authorization to access. The permissions associated with Reports also apply to the Reports command of the **LSMS** Report Generation Feature.

Table 2-9 Popup Menus GUI Access by Permission Group

Popup Menus GUI Functions	Popup Menus GUI Access by Permission Group X = This GUI function is accessible to the indicated permission group.				
	Default Permission Groups				
	lsmsadm	**lsmsuser**	**lsmsview**	**lsmsall**	**lsmsuext**
NPAC Status Popup Menu	X	X	X	X	X
Associate	X			X	
Abort	X			X	
Logs[1]	X	X	X	X	X
Activity	X	X	X	X	X
CMIP	X	X	X	X	X
Event	X	X	X	X	X
Transactions	X	X	X	X	X
Measurement Logs	X	X	X	X	X
Show **NPAC** Regions Menu	X	X	X	X	X
EMS Status Popup Menu	X	X	X	X	X

Table 2-9 (Cont.) Popup Menus GUI Access by Permission Group

Popup Menus GUI Functions	Popup Menus GUI Access by Permission Group X = This GUI function is accessible to the indicated permission group.				
	Default Permission Groups				
	lsmsadm	**lsmsuser**	**lsmsview**	**lsmsall**	**lsmsuext**
EMS Routing	X	X	X	X	X
Modify		X		X	X
View	X	X	X	X	X
LNP Database Synchronization [2]	X	X	X	X	X
Audit[3]	X	X	X	X	X
Resync		X		X	X
Bulkload		X		X	X
Logs	X	X	X	X	X
Transactions	X	X	X	X	X
Rejected Transactions	X	X	X	X	X
LNP Database Synchronization	X	X	X	X	X
Measurement Logs	X	X	X	X	X
LSMS Query Language (**LQL**)	X	X	X	X	X

[1] Generated reports and logs only contain data that the login **SPID** has authorization to access. The permissions associated with Reports also apply to the Reports command of the **LSMS** Report Generation Feature.

[2] **LNP** database synchronization can only be performed for **EMSs** in which the login user and **SPID** is authorized.

[3] Users belonging to the "lsmsuser", "lsmsall", and "lsmsuext" permission groups are authorized to audit and reconcile discrepancies found by the audit. Users belonging to the "lsmsadm" and "lsmsview" permission groups are authorized only to perform an audit.

GUI Button Functionality

The **OK**, **Apply** and **Cancel** buttons have specific GUI functions that are as follows:

- When there is a change in the data and **OK** is clicked:
  - GUI updates the value in the database
  - GUI displays a message that the update is successful
  - GUI closes the Menu/Window
- When there is no change in the existing data and **OK** is clicked:
  - GUI returns an error that there is nothing to update

  - GUI does not close the Menu/Window
- When there is no data entered and **OK** is clicked the GUI returns an error.
- When there is a change in the data and **Apply** is clicked:
  - GUI updates the value in the database
  - GUI displays a message that the update is successful
  - GUI does not close the Menu/Window
- When there is no change in the existing data and **Apply** is clicked:
  - GUI returns an error that there is nothing to update
  - GUI does not close the Menu/Window
- If **Cancel** is clicked the open Menu/Window is closed.

Data Entry Dialogs

The following action buttons are included at the bottom of most data entry screens:

- **OK** - Enables you to perform the indicated operation and automatically close the dialog. If a data entry error is encountered, the dialog remains open.
- **Apply** - Enables you to perform the indicated operation but the dialog remains open, allowing you to perform additional operations.
- **Cancel** - Enables you to cancel this operation. Any changes made to the data fields since the last "Apply" action (or since the screen was created, if no "Apply" action was performed) are discarded.

User/Session Menu

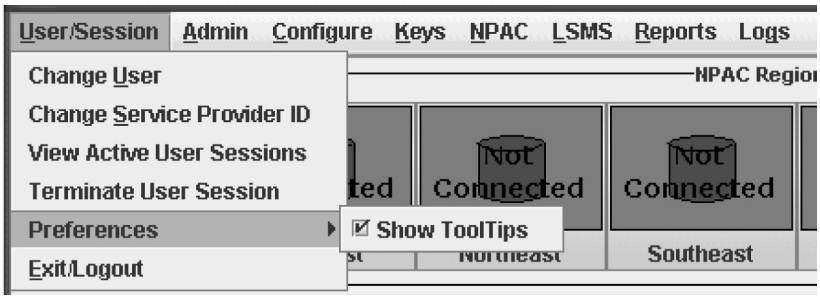
The User/Session menu item contains:

Figure 2-36 LSMS User/Session Menu

- **Change User** - Selecting this option enables you to exit the **LSMS GUI**, and displays the login screen again.
  A confirmation dialog displays before you exit, enabling you to return to the **GUI** without exiting.
- **Change Service Provider ID** - Selecting this option prompts you for a new service provider **ID**.

  An authorization check is automatically performed before switching you to the newly requested service provider **ID**.
- **Preferences** - Selecting this option enables you to enable or disable the tool tips, which provide interactive help, by checking or unchecking the Show ToolTips checkbox. Preferences are not maintained between login sessions.

Figure 2-37 Preferences Menu Item



- **Exit/Logout** - Selecting this option enables you to exit the **LSMS GUI**. A confirmation dialog displays before you exit, enabling you to return to the **GUI** without exiting.

Logging Out of the LSMS GUI

To log out of the **LSMS GUI**:

1. Select **Exit/Logout** from the **User/Session** pull-down menu on the LSMS Console window.

   The Console Logout window displays.

2. Click **OK** to log out or **Cancel** to return to the LSMS Console window.

3

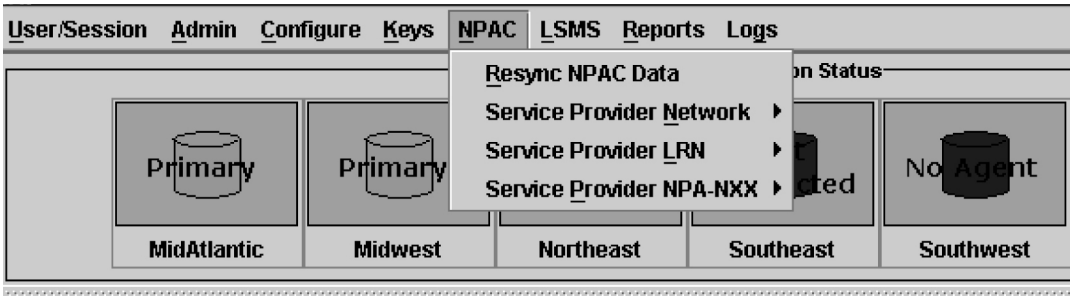
Managing NPAC Relations

This chapter discusses the data that the LSMS and Number Portability Administration Center (NPAC) have in common.

Resynchronizing LSMS and NPAC Data

This chapter discusses data that the **LSMS** and **NPAC** have in common.

Figure 3-1 LSMS NPAC Menu



The **LSMS** database continually receives realtime updates from the regional **NPAC** databases. If the network connection between the **LSMS** and the associated **NPAC** is broken for a brief period of time, the **LSMS** initiates an automatic reconciliation procedure to make sure that its subscription and network information are current. For more information, refer to the *Alarms and Maintenance Guide*.

Perform these tasks by using the procedures described in the following sections to verify that the **LSMS** and the **NPAC** are using the same data:

- Resynchronize an individual **TN**
- Resynchronize a range of **TNs**
- Resynchronize for a defined period of time

> **Note:**
>
> Resynchronization for a defined period of time will not resynchronize data for TNs that were modified after the defined period of time. A resynchronization for a time period that ends with the present time, or an import of a full bulk data download, may be necessary to acquire all data.

- Resynchronize an individual **NPB**
- Resynchronize a range of **NPBs**

You can complete each task using the **LSMS GUI** as described in the following sections.

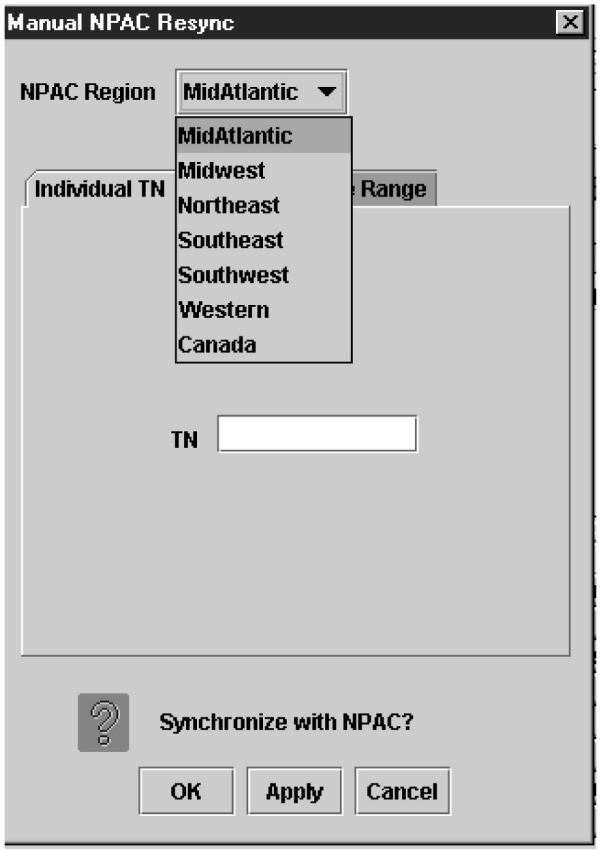
Resynchronizing an Individual TN Using the GUI

To download subscription information from the **NPAC** relating to an individual **TN** using the **GUI**:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **NPAC**, and then **Resync NPAC Data**.

   The Manual NPAC Resync – Individual TN window displays.
3. Select the desired **NPAC** region from the pull-down menu.

Figure 3-2 NPAC Region Pull-Down Menu



4. Enter the **TN** (ten numeric characters only required; no spaces, hyphens, or underscores).
5. When the above information is complete, click **OK** or **Apply** to start the resynchronization.

Resynchronizing a Range of TNs Using the GUI

To download subscription information from the **NPAC** relating to a range of **TNs** using the **GUI**:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.

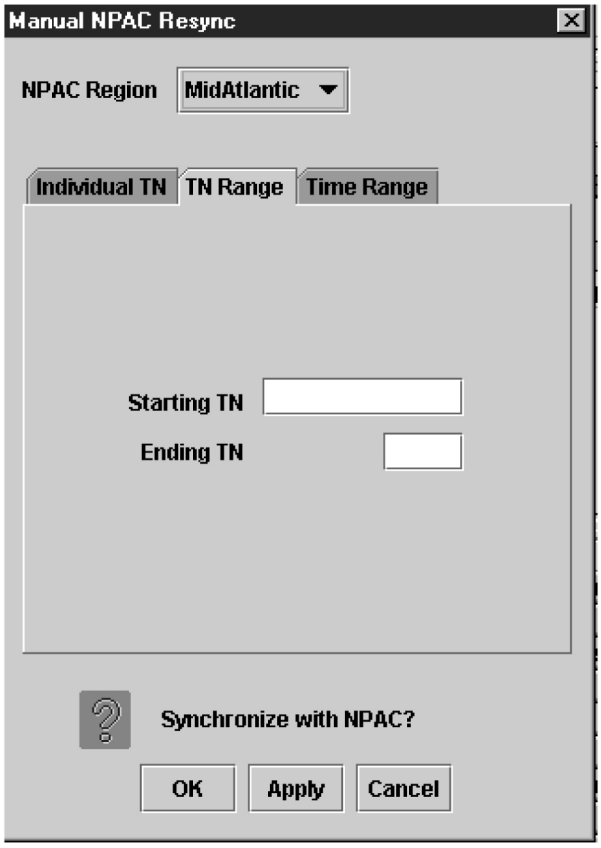
2. From the LSMS Console window, select **NPAC**, and then **Resync NPAC Data**.

   The Manual NPAC Resync – Individual TN window displays.

3. Select the **TN Range** tab at the top of the window.

   The Manual NPAC Resync – Range TN window displays.

Figure 3-3 Manual NPAC Resync – Range of TNs Window



4. Select the desired **NPAC** region from the pull-down menu.

5. Enter the starting **TN** (lowest numeric value, ten numeric characters only required; no spaces, hyphens, or underscores).

   This includes the **NPA** (area code), **NXX** (exchange code), and the remaining four digits of the **TN**.

6. Enter the last four digits of the ending **TN** (highest numeric value).

   The **NPA** and **NXX** of this **TN** are the same as those of the starting **TN**.

7. When the above information is complete, click **OK** or **Apply** to start the resynchronization.

Resynchronizing for a Defined Period of Time Using the GUI

To download subscription information and network data from the **NPAC** for a defined period of time using the **GUI**:

> **Note:**
>
> Time Stamp values are entered in local time. **LSMS** automatically converts local time to Z (Zulu), which is also called **GMT** (Greenwich Mean Time). For more information, see Appendix A, "Local Time Calculation and World Time Zone Data."

> **Note:**
>
> Resynchronization for a defined period of time will not resynchronize data for TNs that were modified after the defined period of time. A resynchronization for a time period that ends with the present time, or an import of a full bulk data download, may be necessary to acquire all data.

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **NPAC**, and then **Resync NPAC Data**.

   The Manual NPAC Resync – Individual TN window displays.
3. Select the **Time Range** tab at the top of the window.

   The Manual NPAC Resync – Time Range window displays.
4. Select the desired **NPAC** region from the pull-down menu.
5. Specify the **Beginning Date and Time** by placing the cursor on the desired field and then clicking the up or down scroll buttons until the desired value displays in the listbox.

   Field entries have the following parameters:

   - *Month* – Maximum two numeric characters (1–12 only)
   - *Day* – Maximum two numeric characters (1–31 only)
   - *Year* – Exactly two numeric characters
   - *Hour* – Maximum two numeric characters (1-12 only)
   - *Minute* – Exactly two numeric characters (0–59 only)
   - *Second* – Exactly two numeric characters (0–59 only)
   - **AM** or **PM** – Exactly two alphabetic characters
6. Specify the **Ending Date and Time** by placing the cursor on the desired field and then clicking the up or down scroll buttons until the desired value displays in the listbox.

   The field entries have the same parameters as those listed in
7. Select one or both of the following fields:

   - *Download Subscription Data* – Select this field to resynchronize the **TN** records with the **NPAC**.
   - *Download Network Data* – Select this field to resynchronize the **LRN** and **NPA-NXX** records with the **NPAC**.
8. When the preceding information is complete, click **OK** or **Apply** to start the resynchronization.

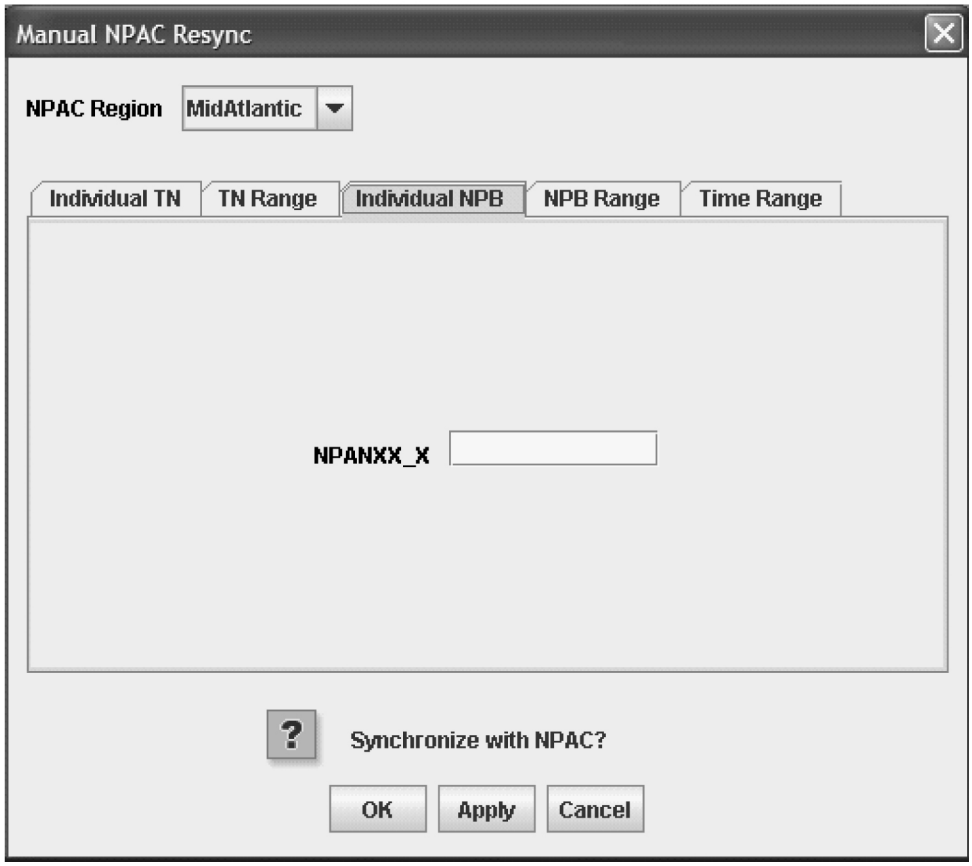
Resynchronizing an Individual NPB Using the GUI

To download subscription information from the **NPAC** relating to an individual **NPB** using the **GUI**:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **NPAC**, and then **Resync NPAC Data**.

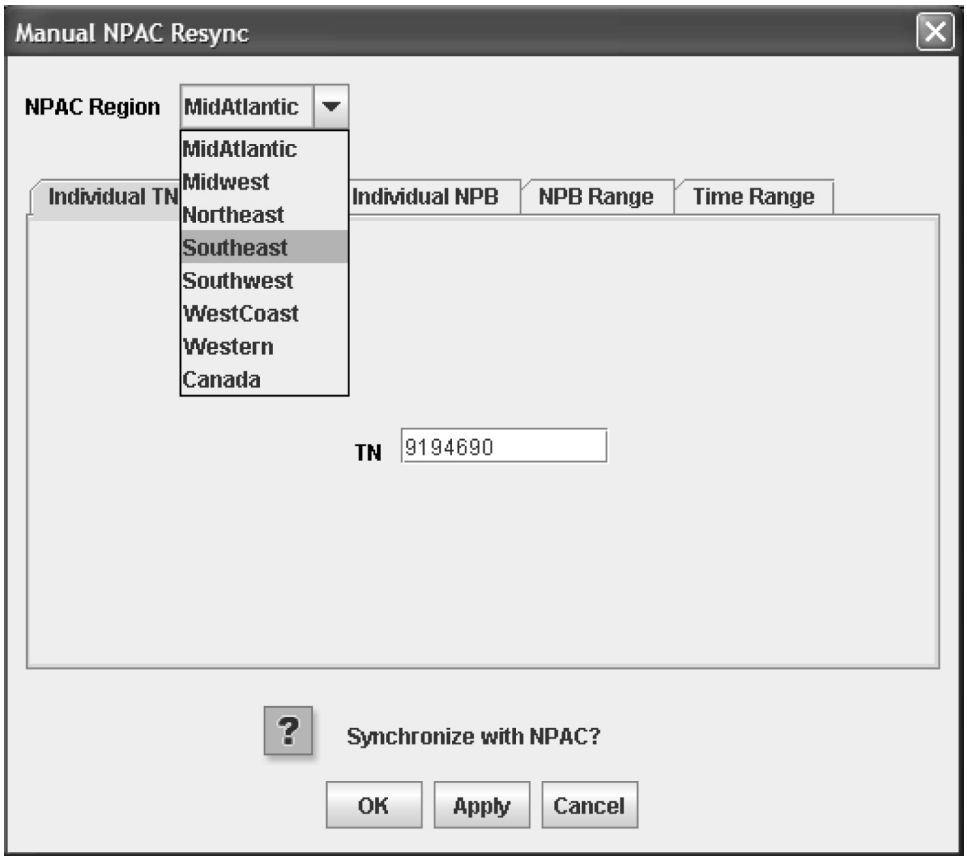
   The Manual NPAC Resync window displays.

Figure 3-4 Manual NPAC Resync Window



3. Select the Individual **NPB** tab from the top of the Manual NPAC Resync window.
4. Select the desired **NPAC** region from the pull-down menu.

Figure 3-5 NPAC Region Pull-Down Menu



5. Enter the **NPB** (exactly seven numeric characters required; no spaces, hyphens, or underscores).
6. When the above information is complete, click **OK** or **Apply** to start the resynchronization.

Resynchronizing a Range of NPBs Using the GUI

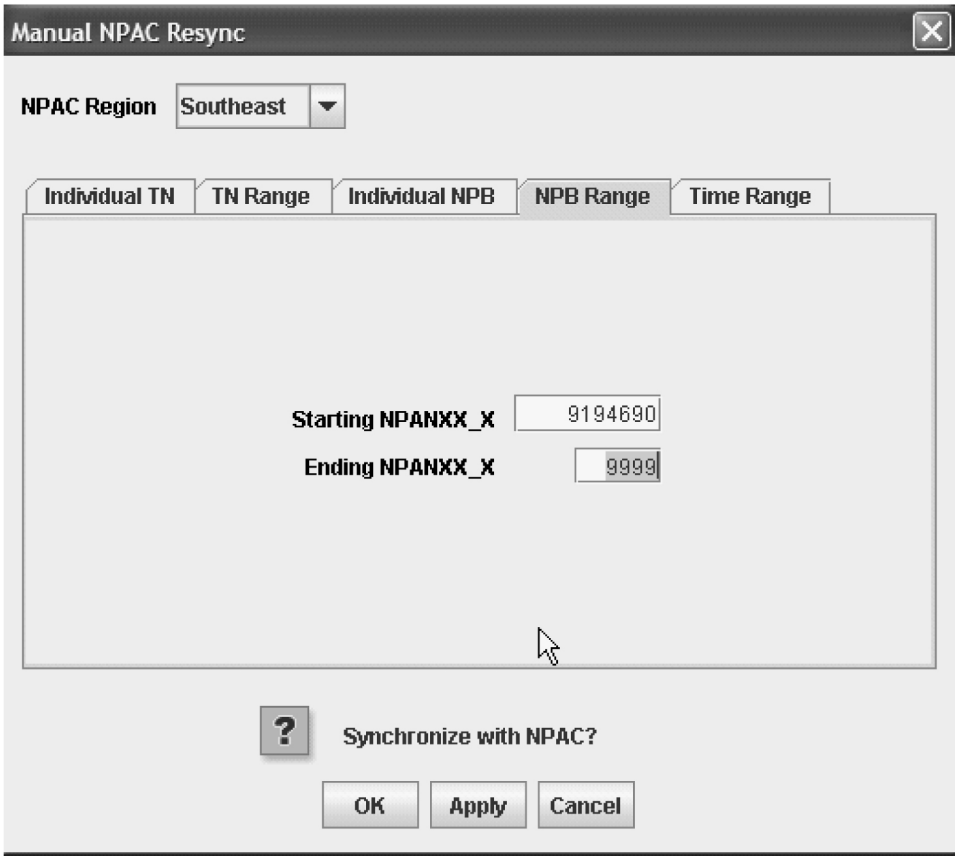
To download subscription information from the **NPAC** relating to a range of **NPBs** using the **GUI**:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **NPAC**, and then **Resync NPAC Data**.

   The Manual NPAC Resync window displays.
3. Select the **NPB Range** tab at the top of the window.

   The Manual NPAC Resync – NPB Range window displays.

Figure 3-6 Manual NPAC Resync – Range of NPBs Window



4. Select the desired **NPAC** region from the pull-down menu.
5. Enter the starting **NPB** (lowest numeric value, exactly seven numeric characters required; no spaces, hyphens, or underscores).

   This includes the **NPA** (area code), **NXX** (exchange code), and X (the first digit of the **TN**).
6. Enter the ending **NPB** (highest numeric value, exactly four numeric characters required; no spaces, hyphens, or underscores).

   This includes the **NXX** (exchange code) and X (the first digit of the **TN**). The **NPA** of the ending **NPB** is the same as the starting **NPB**.
7. When the above information is complete, click **OK** or **Apply** to start the resynchronization.

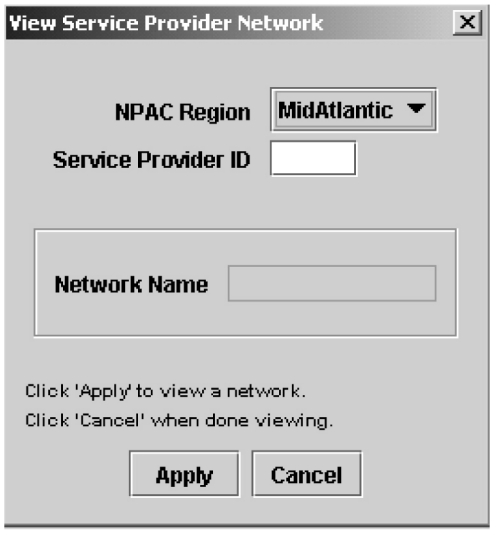
Viewing an NPAC Service Provider Network

To view information about the service provider network:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **NPAC**, and then **Service Provider Network**, and then **View**.

   The View Service Provider Network window displays.

Figure 3-7 View Service Provider Network Window



3. Select the desired **NPAC** region from the pull-down menu.
4. Enter the **Service Provider ID** (maximum four alphanumeric characters).
5. Click **Apply**.

   The **Network Name** information is returned in the Network Name field.

Managing NPAC Service Provider Local Routing Number (LRN)

The following procedures explain how to add, view, and delete an **NPAC** Service Provider **LRN**.

Adding an NPAC Service Provider LRN

To send a request to the **NPAC** to add an **NPAC** service provider **LRN**:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **NPAC**, and then **Service Provider LRN**, and then **Create**.

   The Create Service Provider LRN window displays.

Figure 3-8 Create Service Provider LRN Window

3. Select the desired **NPAC** region from the pull-down menu.
4. Enter the **Service Provider ID** (maximum four alphanumeric characters).
5. Enter the **LRN** value (ten numeric characters required).
6. Click **OK** or **Apply**.

   This sends a Create request to the **NPAC**. The **NPAC** sends the Create later if it determines it is valid. The Creation of ServiceProvLRN Successful message displays.
7. Click **OK** at the bottom of the message window.

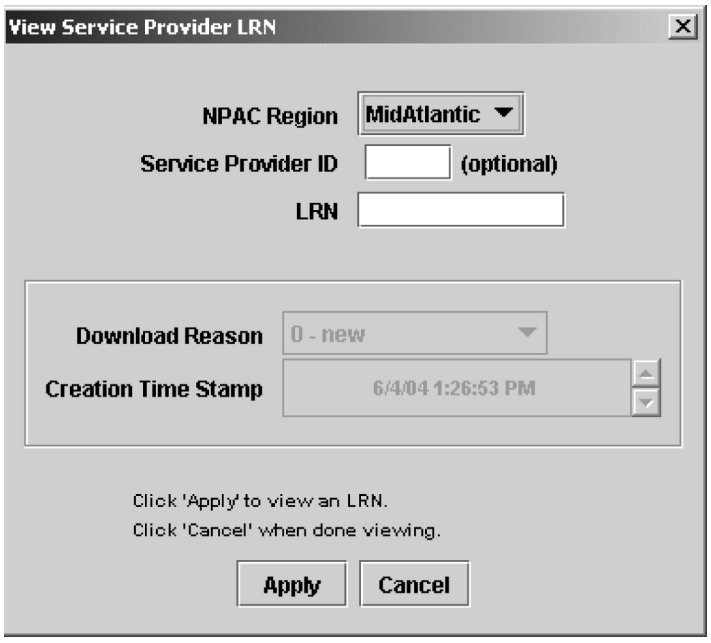
Viewing an NPAC Service Provider LRN

To view an **NPAC** service provider **LRN**:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **NPAC**, and then **Service Provider LRN**, and then **View**.

   The **View Service Provider LRN** window appears.

Figure 3-9 View Service Provider LRN Window



3. Select the desired **NPAC** region from the pull-down menu.
4. Optionally, enter the **Service Provider ID** (maximum four alphanumeric characters).
5. Enter the **LRN** value (ten numeric characters required).
6. Click **Apply**. The Download Reason and Creation Time Stamp information appears.

> **Note:**
>
> Time Stamp values are entered in local time. **LSMS** automatically converts local time to Z (Zulu), which is also called **GMT** (Greenwich Mean Time). For more information, see Appendix A, "Local Time Calculation and World Time Zone Data."

- The Download Reason describes the reason that the **LRN** was last modified. The reason codes are:

  0 = new
  1 = delete
  2 = modify
  3 = audit discrepancy

- The Creation Time Stamp is the date and time that the **LRN** was created.

Deleting an NPAC Service Provider LRN

To send a request to the **NPAC** to delete an **NPAC** service provider **LRN**:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.

2. From the LSMS Console window, select **NPAC**, and then **Service Provider LRN**, and then **Delete**.

   The Delete Service Provider LRN window appears.

3. Select the desired **NPAC** region from the pull-down menu.
4. Enter the **Service Provider ID** (maximum four alphanumeric characters).
5. Enter the **LRN** value (ten numeric characters required).
6. Click **OK** or**Apply** to delete.

   The Deletion of ServiceProvLRN Successful window appears.

7. Click **OK** at the bottom of the message window.

Managing NPAC Service Provider NPA-NXX

The following procedures explain how to add, view, and delete an NPAC Service Provider NPA-NXX.

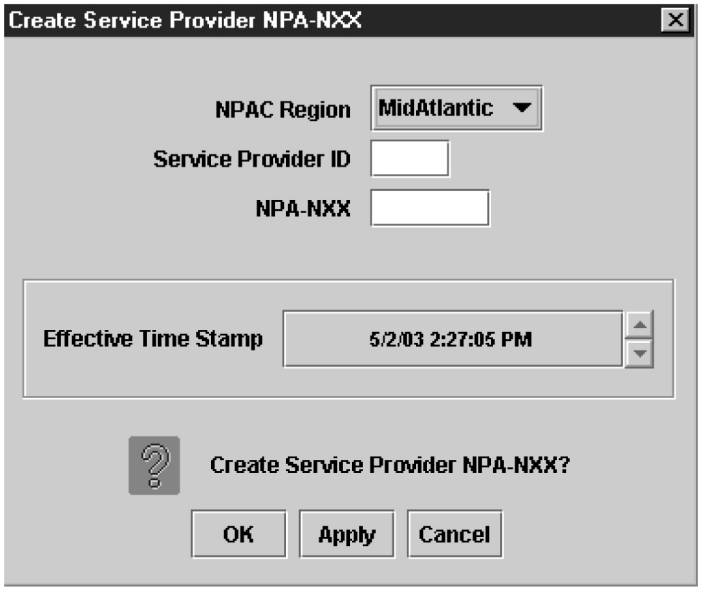
Adding an NPAC Service Provider NPA-NXX

To send a request to the **NPAC** to add a service provider **NPA-NXX**:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **NPAC**, and then **Service Provider NPA-NXX**, and then **Create**.

   The Create Service Provider NPA-NXX window appears.

Figure 3-10 Create Service Provider NPA-NXX Window



3. Select the desired **NPAC** region from the pull-down menu.
4. Enter the **Service Provider ID** (maximum four alphanumeric characters).

5. Enter the **NPA-NXX** value (six numeric characters required; no spaces, hyphens, or underscores).
6. Specify the **Effective Time Stamp** by placing the cursor on the desired field and then clicking the up or down scroll buttons until the desired value displays in the listbox.

   Field entries have the following parameters:

   - *Month* – Maximum two numeric characters (1–12 only)
   - *Day* – Maximum two numeric characters (1–31 only)\
   - *Year* – Exactly two numeric characters
   - *Hour* – Maximum two numeric characters (1-12 only)
   - *Minute* – Exactly two numeric characters (0–59 only)
   - *Second* – Exactly two numeric characters (0–59 only)
   - **AM** or **PM** – Exactly two alphabetic characters

   > **Note:**
   >
   > Time Stamp values are entered in local time. **LSMS** automatically converts local time to Z (Zulu), which is also called **GMT** (Greenwich Mean Time). For more information, see Appendix A, "Local Time Calculation and World Time Zone Data."

7. Click **OK** or **Apply**.

   The Creation of ServiceProvNPA-**NXX** Successful window appears.
8. Click **OK** at the bottom of the message window.

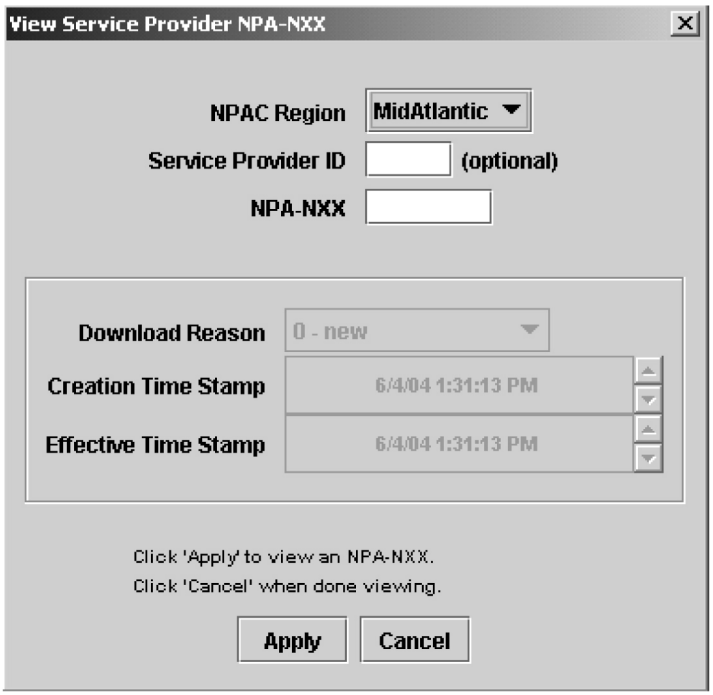
Viewing an NPAC Service Provider NPA-NXX

To view a service provider **NPA-NXX**:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **NPAC**, and then **Service Provider NPA-NXX**, and then **View**.

   The View Service Provider NPA-NXX window appears.

Figure 3-11 View Service Provider NPA-NXX Window



3. Select the desired **NPAC** region from the pull-down menu.
4. Optionally, enter the **Service Provider ID** (maximum four alphanumeric characters).
5. Enter the **NPA-NXX** value (six numeric characters required; no spaces, hyphens, or underscores).
6. Click **Apply** when the information is complete.

   The Download Reason, Creation Time Stamp, and Effective time Stamp information is returned to the window.

   - The Download Reason box describes the reason that the **NPA-NXX** was last modified. The reason codes are:

     0 = new
     1 = delete
     2 = modify
     3 = audit discrepancy

   - The **Creation Time Stamp** is the date and time that the **NPA-NXX** was created.
   - The **Effective Time Stamp** is the date and time that the last modification took effect.
7. After viewing the information, click **Cancel**.

Deleting an NPAC Service Provider NPA-NXX

To send a request to the **NPAC** to delete a service provider **NPA-NXX:**

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **NPAC**, and then **Service Provider NPA-NXX**, and then **Delete**.

The Delete ServiceProvider NPA-NXX window appears.

3. Select the desired **NPAC Region** from the pull-down menu.
4. Enter the **Service Provider ID** (maximum four alphanumeric characters).
5. Enter the **NPA-NXX** value (six numeric characters required; no spaces, hyphens, or underscores).
6. Click **OK** or **Apply** to delete.

   The Deletion of ServiceProvNPANXX Successful message window displays.
7. Click **OK**.

4

Managing Locally Provisioned Data

This chapter contains information about Element Management System (EMS) routing, custom TN filters, GTT groups, default and override global title translation (GTT), Numbering Plan Area (NPA) Splits, and input data by file.

Introduction

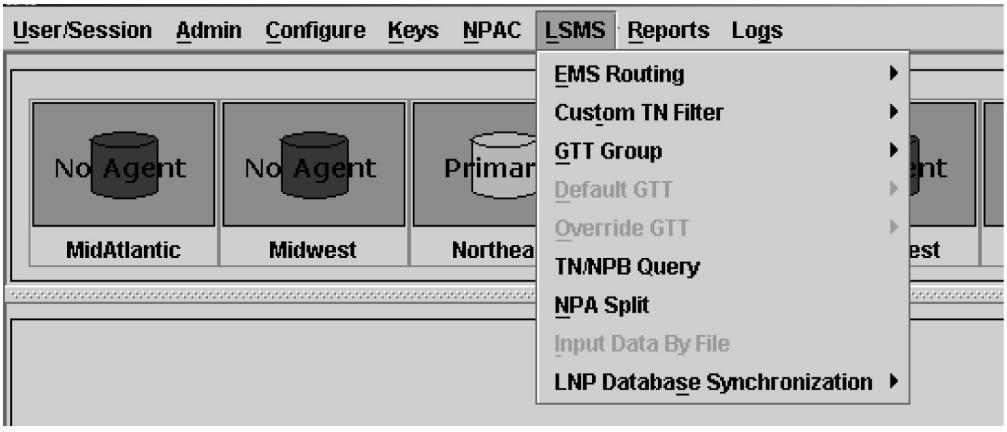
This chapter provides detailed information about **EMS** routing, **TN** filters, **GTT** groups, default and override **GTTs**, **NPA** splits, input data by file, and error codes. (For information about **LSMS** database synchronization, refer to the *LNP Database Synchronization User's Guide*.)

Entering Locally Provisioned Data on a Shadow LSMS

When you log in to manually enter any locally provisioned data, always use the same service provider **ID** (**SPID**) at both the main **LSMS** and shadow **LSMS**.

> **Note:**
>
> Locally provisioned data is correlated with an **SPID**. For the data to be the same at the main **LSMS** and shadow **LSMS**, it must be entered with the same **SPID** at both.

Figure 4-1 LSMS Menu



EMS Routing

EMS routing information enables the LSMS to send subscription information to the proper network elements. The EMS routing function allows you to modify or view the routing info

that you defined using the TN Filters and GTT Groups (see Managing Locally Provisioned Data).

Modify EMS Routing

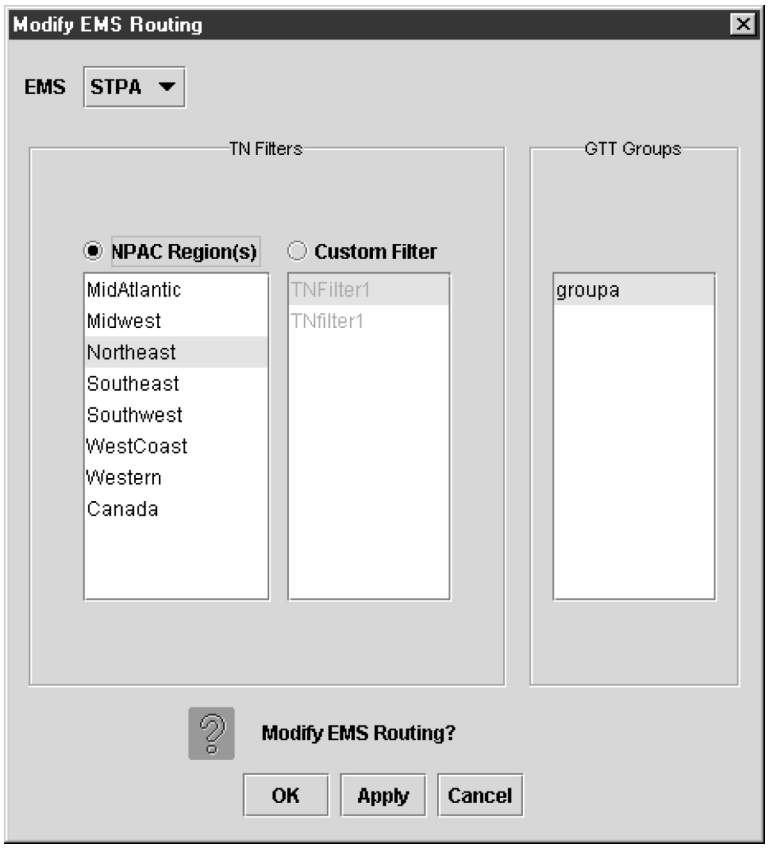
To modify the TN filters and GTT group assignments for the selected EMS (you can change the EMS being modified by selecting a new value from the EMS combo box):

> **Note:**
>
> After you update the TN filter, run an audit for the EMSs utilizing that TN filter. Use the NE Audit with Reconcile procedure (refer to the *LNP Database Synchronization User's Guide*) for each NPA-NXX added or changed and on each affected EMS to update the databases.
> However, depending on the number of NPA-NXXs, the number of EMSs affected, and the physical distance between the LSMS and the network element, a bulk download to each affected EMS/network element may be more efficient. For more information, refer to the *LNP Database Synchronization User's Guide*.

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

   The Modify EMS Routing window appears.

Figure 4-2 Modify EMS Routing



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

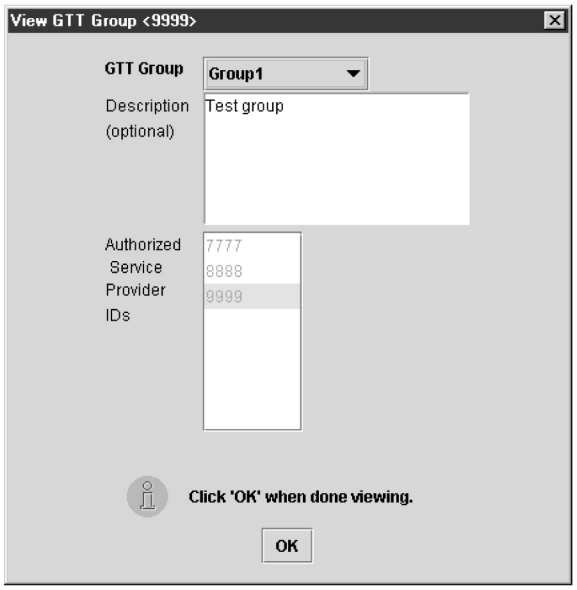
3. Apply TN Filters - Choose one, but not both, of the following:
   - Regional Filters - When you select the **NPAC Region(s)** radio button, the EMS accepts only the TNs from the selected region(s).
   - Custom Filter - When you select the **Custom Filter** radio button, EMS accepts only the TNs as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

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

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

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

Figure 4-3 View GTT Group



5. Click **OK** .

View EMS Routing

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

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

   The View EMS Routing dialog appears.
3. Click **OK**.

Custom TN Filters

You can specify one or more Custom **TN** filters and then associate the Custom **TN** filter with one or more **EMSs**.

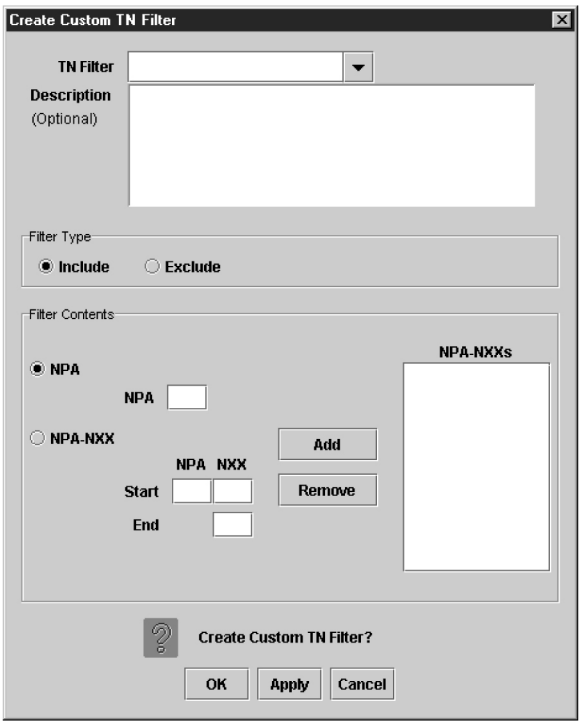
> **Note:**
>
> After you update the TN filter, run an audit for the EMSs that utilize the TN filter. To update the databases, use the NE Audit with Reconcile procedure for each NPA-NXX added or changed, as well as on each affected EMS. However, depending on the number of NPA-NXXs, the number of EMSs affected, and the physical distance between the LSMS and the network element, a bulk download to each affected EMS/network element may be more efficient. For more information, refer to the *LNP Database Synchronization User's Guide*.

Custom TN Filter Attributes

Each Custom **TN** filter:

- Has a unique name.
- Contains one or more **NPAs** and/or one or more ranges of non-overlapping **NPA-NXXs**.
- Is one of the following types:
  - Inclusion filter—all **NPA-NXXs** that belong to the **NPAs** or to the **NPA-NXX** ranges specified in the filter are sent to the **EMSs** with which this filter is associated.
  - Exclusion filter—all **NPA-NXXs** except those belonging to the **NPAs** or to the **NPA-NXX** ranges specified in the filter are sent to the **EMSs** with which this filter is associated.

Figure 4-4 Create Custom Custom TN Filter



Create Custom TN Filters Dialog Overview

The Creat Custom TN Filter dialog is used to manage custom filters.

To include the **NPA**(s) and **NPA-NXX**(s) in the list of **TNs** processed by the selected **EMS**, click the **Include** radio button. To exclude the **NPA**(s) and **NPA-NXX**(s) from the list of **TNs** processed by the selected **EMS**, click the **Exclude** radio button. A **TN** filter can only include or exclude (not both) the **NPA**(s) and **NPA-NXX**(s) from the list of **TNs** processed by the selected **EMS**.

You may specify a single **NPA** or **NPA-NXX** or a range of **NPA-NXXs** within a single **NPA** to add to the filter. To add an **NPA** to the filter, click the **NPA** radio button, enter an **NPA** in the text field, and click the **Add** button. To add an **NPA-NXX** to the filter, click the **NPA-NXX** radio button, enter an **NPA** and **NXX** in the text fields, and click the **Add** button.

Optionally, you may specify an ending **NXX** value; all **NPA-NXXs** between the start **NXX** and end **NXX** are added to the filter. To remove a filter, click on an item in the list (to select it) and click the **Remove** button.

Create a Custom TN Filter

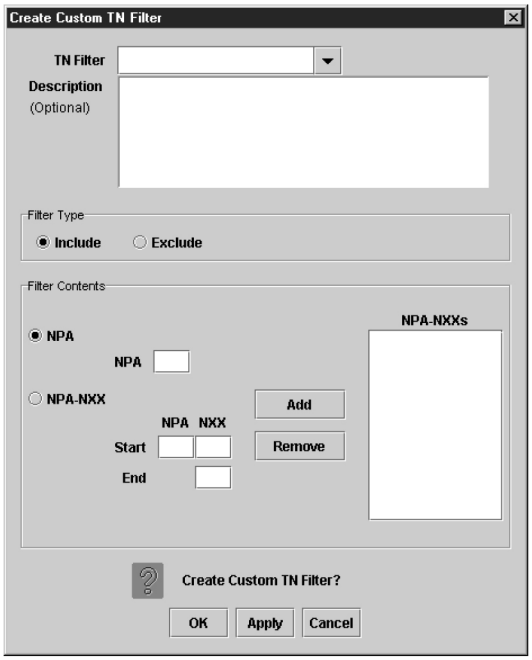
This dialog allows you to create a new custom **TN** filter.

To create a custom **TN** filter:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **Custom TN Filter**, and then **Create**.

   The Create Custom TN Filter dialog appears.

Figure 4-5 Create Custom TN Filter Dialog



3. Type in a unique filter name (maximum of 40 characters) in the **TN Filter** combo box.

   Optionally, type a description of the **TN** filter in the **Description** text area. See Table 4-1 for a list of the remaining Custom **TN** Filter fields and the corresponding field descriptions.

Table 4-1 Create Custom TN Filter Dialog Field Descriptions

Custom TN Filter Field	Description
Include	The **LSMS** should only send **TNs** from the indicated **NPA-NXXs** to an **EMS** that has this custom **TN** filter assigned.
Exclude	The **EMS** should only send **TNs** not from the indicated **NPA-NXXs** to an **EMS** that has this custom **TN** filter assigned.
NPA (radio button)	Add an entire **NPA** to the filter.
NPA-NXX (radio button)	Add selected **NPA-NXXs** to the filter.
NPA	Add all **NPA-NXXs** from this **NPA** to the filter.
Start **NPA-NXX**	Add this **NPA-NXX** to the filter.
End **NXX**	Add all **NPA-NXXs** from "Start **NPA**"-"Start **NXX**" to "Start **NPA**"-"End **NXX**" (inclusive) to the filter.
NPA-NXX List	Contains the **NPA-NXXs** that make up this filter. By default, only the **NPAs** are shown. To see the **NXXs** for an **NPA**, double-click on the **NPA**. To hide the **NXXs**, double-click on the **NPA** again.

4. When you are done, click **OK** or **Apply**.

Modify a Custom TN Filter

This dialog allows you to modify an existing custom **TN** filter.

To modify a custom **TN** filter:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **Custom TN Filter**, and then **Modify**.

   The Modify Custom TN Filter dialog appears.
3. Select the filter name from the **TN Filter** combo box.

   See Create a Custom TN Filter for a list of the Custom **TN** Filter fields and the corresponding field descriptions.
4. When you are done, click **OK** or **Apply**.

> **Note:**
>
> After making any changes to the custom **TN** filter, you must restart the EAGLE agent for the changes to take effect.

View a Custom TN Filter

This dialog allows you to view an existing custom **TN** filter. All data entry fields, except for the **TN Filter** combo box, are disabled.

To view a custom **TN** filter:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **Custom TN Filter**, and then **View**.

   The View Custom TN Filter dialog appears.
3. Select the filter name from the **TN Filter** combo box.
4. When you are done, click **OK**.

Delete a Custom TN Filter

Use this dialog to delete an existing **TN** filter. All data entry fields, except for the **TN Filter** combo box, are disabled. The user may delete another filter by selecting it from the **TN Filter** combo box, and clicking **OK** or **Apply**. If the filter being deleted is currently to an **EMS** via **EMS** Routing, an error dialog will be displayed, and the operation will fail.

To view a custom **TN** filter:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **Custom TN Filter**, and then **Delete**.

   The Delete Custom TN Filter dialog appears.
3. Select the filter name you want to delete from the **TN Filter** combo box.

   You may delete a specific filter by selecting it from the **TN Filter** combo box, and clicking **OK** or **Apply**.

   > **Note:**
   >
   > If the filter being deleted is currently to an **EMS** via **EMS** Routing, an error dialog will be displayed, and the operation will fail.

4. When you are done, click **OK** or **Apply**.

   > **Note:**
   >
   > After making any changes to the custom **TN** filter, you must restart the EAGLE agent for the changes to take effect.

GTT Groups

The Create GTT Group dialog is used to manage **GTT** groups. **GTT** groups are used to group multiple default and override **GTT** (see Default GTT and Override GTT) records which are then assigned to one or more **EMSs**.

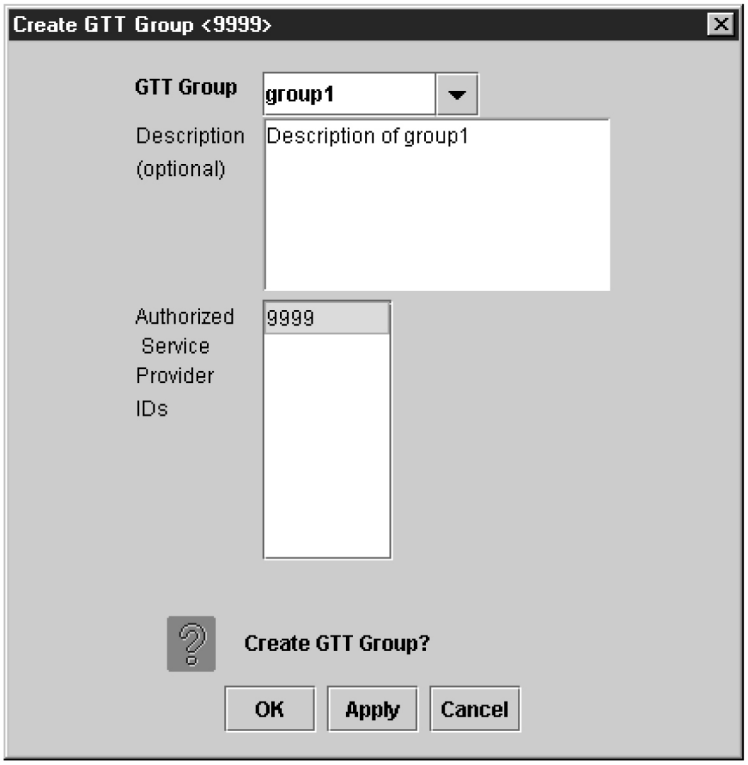
Create GTT Group

The Create GTT Group dialog allows you to create a new **GTT** group. To create a new **GTT** group:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **GTT Group**, and then **Create**.

   The Create GTT Group dialog appears.

Figure 4-6 Create GTT Group Dialog



3. Enter a unique **GTT** group name in the **GTT Group** field, and optionally add a description of the group in the **Description** field.
4. In the **Authorized Service Provider IDs** field, select the service providers that are allowed to use the specified **GTT** group.

   Authorized service providers may modify or delete this **GTT** group, and may assign default or override **GTT** records to this **GTT** group. To select multiple service providers, or deselect a previously selected service provider, hold down the Ctrl key and click on the

service provider. To select a range of service providers, hold down the Ctrl key and click on the service provider.

5. When you are done, click **OK** or **Apply**.

Modify GTT Group

The Modify GTT Group dialog allows you to modify an existing **GTT** group. To modify a **GTT** group:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **GTT Group**, and then **Modify**.

   The Modify GTT Group dialog appears.
3. Select a **GTT** group from the **GTT Group** combo box.
4. Type in desired changes, if any, to the description of the group in the **Description** field.
5. Make any desired changes to the **Authorized Service Provider IDs** field.

   Authorized service providers may modify or delete this **GTT** group, and may assign default or override **GTT** records to this **GTT** group. To select multiple service providers, or deselect a previously selected service provider, hold down the Ctrl key and click on the service provider. To select a range of service providers, hold down the Ctrl key and click on the service provider.
6. When you are done, click **OK** or **Apply**.

View GTT Group

The View GTT Group dialog allows you to view an existing **GTT** group. To view a **GTT** group:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **GTT Group>View**.

   The View GTT Group dialog appears.
3. Select a **GTT** group from the **GTT Group** combo box to view the information associated with that **GTT** group.
4. When you are done, click **OK**.

Delete GTT Group

The Delete GTT Group dialog allows you to delete an existing **GTT** group. To delete a **GTT** group:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **GTT Group**, and then **Delete**.
3. Select the **GTT** group that you want to delete from the **GTT Group** combo box.
4. When you are done, click **OK** or **Apply**.

> **Note:**
>
> If the **GTT** group you selected to delete is currently assigned to an **EMS** via **EMS** routing, an error dialog is displayed, and the request to delete is denied.

Default GTT

The Create Default GTT dialog is used to manage default **GTT** records.

The **Add Service** button adds an empty row to the table. The **Remove Service(s)** button removes the selected row(s) from the table.

You may change the **GTT** group that a default **GTT** record belongs to by selecting a new value from the **GTT Group** combo box. When creating or modifying default **GTTs**, select a cell in the **Message Relay Services** table (by clicking on it or navigating to it using the keyboard), and modify the entry. The entry is entered into the cell when you select another cell or press **Return**. When you change the value in the **Service Name** field, only the **TT** value of that row is populated with the default value for that service, overwriting any existing values.

When you click **OK** or **Apply** to create a default **GTT**, the **GTT** data is checked to ensure that the **NPA-NXX** is not yet defined for this group. If the **NPA-NXX** is already defined, the operation will fail, and an error dialog will be displayed.

After clicking **Apply**, you may retrieve default **GTT** values for another **NPA-NXX**. If you try to retrieve **GTT** values for a new **NPA-NXX** without first saving the changes to the **GTT** values for the current **NPA-NXX**, a confirmation dialog is displayed asking you to save the changes.

Create Default GTT

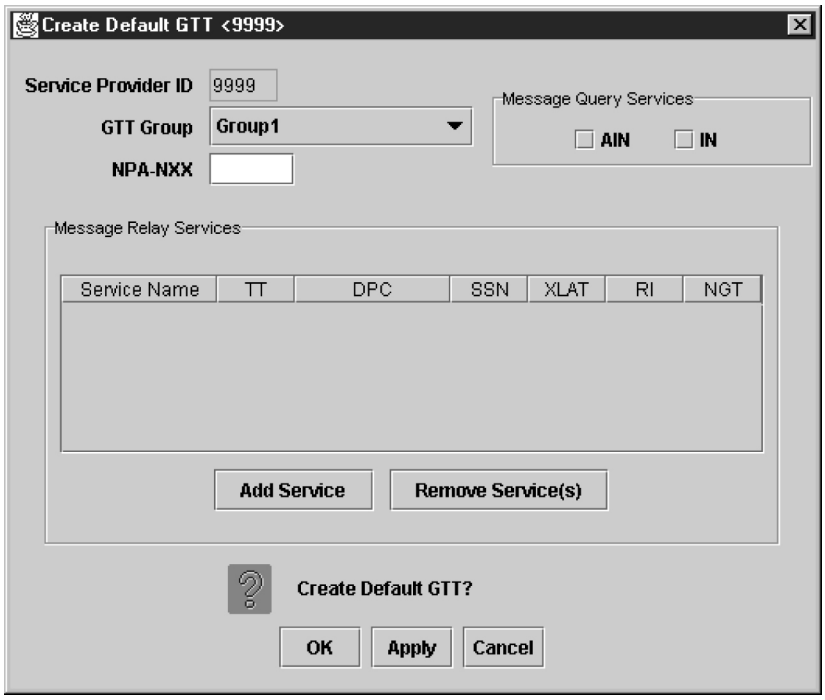
The Create Default GTT dialog is used to create new default **GTT** records.

To create a new default **GTT** record:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **Default GTT**, and then **Create**.

   The Create Default GTT dialog appears.

Figure 4-7 Create Default GTT Dialog



3. Type in the Service Provider **ID** in the **Service Provider ID** field.
4. Select a **GTT** group from the **GTT Group** combo box from which to choose default **GTT** records.
5. In the **NPA-NXX** box, enter an NPA-NXX and press **Return** to retrieve the default **GTT** settings for this **NPA-NXX** and **GTT** group.

   See Table 4-2 for a list of the remaining Default **GTT** fields and the corresponding field descriptions.

Table 4-2 Create Default GTT Dialog Field Descriptions

Default GTT Field	Description
AIN Check Box	Indicates whether **AIN** query message format is supported. A checked box indicates that **AIN** is enabled.
IN Check Box	Indicates whether **IN** query message format is supported. A checked box indicates that **IN** is enabled.
Service Name	Global title translation occurs when an **SS7** message contains the translation type corresponding to this service. Used by **MPS** only. (The **MPS** contains the actual **TTs** corresponding to the service names.)
DPC	Substitute this **DPC** for the **DPC** in the **SS7** message being translated.
SSN	Substitute this **SSN** for the **SSN** in the **SS7** message being translated.
XLAT	The type of translation being performed.

Table 4-2 (Cont.) Create Default GTT Dialog Field Descriptions

Default GTT Field	Description
RI	The routing indicator.
NGT	Substitute this Global Title value for the Global Title value in the **SS7** message being translated.

6. When you are done, click **OK** or **Apply**.

Modify a Default GTT

The Modify Default GTT dialog allows you to modify existing default **GTT** records.

To modify a default **GTT**:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **Default GTT**, and then **Modify**.

   The Modify Default GTT dialog appears.
3. Select a **GTT** group from the **GTT Group** combo box from which to choose default **GTT** records.
4. In the **NPA-NXX** box, enter an `NPA-NXX` and click the **View Data** button to retrieve the default **GTT** settings for this **NPA-NXX** and **GTT** group.

   See Create Default GTT for a list of the remaining Default **GTT** fields and the corresponding field descriptions.
5. When you are done, click **OK** or **Apply**.

View a Default GTT

The View Default GTT dialog allows you to view existing default **GTT** records. The **Add Service** and **Remove Service(s)** buttons are disabled, and table cell editing is disabled.

To view a default **GTT**:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **Default GTT**, and then **View**.

   The View Default GTT dialog appears.
3. Select the **GTT** group from the **GTT Group** combo box.
4. In the **NPA-NXX** box, enter an `NPA-NXX` and click the **View Data** button to retrieve the default **GTT** settings for this **NPA-NXX** and **GTT** group.
5. When you are done, click **OK**.

Delete a Default GTT

Use the Delete Default GTT dialog to delete existing default **GTT** records. The **Add Service** and **Remove Service(s)** buttons are disabled, and table cell editing is disabled.

To delete a default **GTT** record:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **Default GTT**, and then **Delete**.

   The Delete Default GTTdialog appears.
3. Select the **GTT** group from the **GTT Group** combo box.
4. In the **NPA-NXX** box, enter an `NPA-NXX` and click the **View Data** button to retrieve the default **GTT** settings for this **NPA-NXX** and **GTT** group.
5. When you are done, click **OK** or **Apply**.

Override GTT

The Create Override GTT dialog is used to manage override **GTT** records.

You may change the **GTT** group that an override **GTT** record belongs to by selecting a new value from the **GTT Group** combo box. When creating or modifying override **GTTs**, select a cell in the table (by clicking on it or navigating to it using the keyboard), and modify the entry. The entry is entered into the cell when you select another cell or press **Return**. When you change the value in the **Service Name** field, only the **TT** value of that row will be populated with the default value for that service, overwriting any existing values.

When you click **OK** or **Apply** to create or modify an override **GTT**, the **GTT** data is checked to ensure that the **LRN** is not yet defined for this group. If the **LRN** is already defined, the operation will fail, and an error dialog will be displayed.

After clicking **Apply**, you may create override **GTT** values for another **LRN**. If you attempt to create **GTT** values for a new **LRN** while there are unsaved changes to the **GTT** values for the current **LRN**, a confirmation dialog is displayed asking you to save the changes.

Create an Override GTT

The Create Override GTT dialog is used to create new Override **GTT** records.

To create a new override **GTT** record:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the **LSMS Console** window, select **LSMS**, and then **Override GTT**, and then **Create**.

   The Create Override GTT dialog appears.
3. Type in the Service Provider ID in the **Service Provider ID** field.
4. Select an existing **GTT** group name from the **GTT Group** combo box from which to choose override **GTT** records.
5. In the **LRN** box, enter the **LRN** (enter a ten-digit number; no spaces, hyphens, or underscores are permitted).

   See Table 4-3 for a list of the remaining Override **GTT** fields and the corresponding field descriptions.

Table 4-3 Create Override GTT Dialog Field Descriptions

Override GTT Field	Description
Service Name	Service name to which the **GTT** data is mapped. Used by **MPS** only. No duplicates are allowed. Value entered must be one of the following: **CLASS**, **CNAM**, **ISVM**, **LIDB**, or **WSMSC**.
DPC	Substitute this **DPC** for the **DPC** in the **SS7** message being translated. Value must contain 3 3-digit octets (1 octet per text field). First octet must be between 1 and 255. Last 2 octets must be between 0 and 255. Second octet must not be 001 if first octet between 001 and 005.
SSN	Substitute this **SSN** for the **SSN** in the **SS7** message being translated. Range is 0–255, excluding 1.
XLAT	The type of translation being performed. Value must be one of the following: dpc, dpcssn, or dpcngt.
RI	The routing indicator. Value must be one of the following: gt or ssn.
NGT	Substitute this global title address for the Global Title address in the **SS7** message being translated. Range 0–255. 0 indicates no **RGT**, while 1–255 are valid values.
RGTA	Indicates whether to replace the global title address of the **SS7** message with the **LRN** of this **EMS**.

6. When you are done, click **OK** or **Apply**.

Modify an Override GTT

The Modify Override GTT dialog allows you to modify existing override **GTT** records.

To modify an override **GTT**:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **Override GTT**, and then **Modify**.

   The Modify Override GTT dialog appears.
3. Select a **GTT** group from the **GTT Group** combo box from which to choose default **GTT** records.
4. In the **LRN** box, enter the **LRN** (enter a ten-digit number; no spaces, hyphens, or underscores are permitted).

   Select the **View Data** button to retrieve the override **GTT** settings for this **NPA-NXX** and Override **GTT** group. See Create an Override GTT for a list of the remaining Override **GTT** fields and the corresponding field descriptions.
5. When you are done, click **OK** or **Apply**.

View an Override GTT

The View Override GTT dialog allows you to view existing override **GTT** records. The **Add Service** and **Remove Service(s)** buttons are disabled, and table cell editing is disabled.

To view an override **GTT**:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **Override GTT**, and then **View**.

   The View Override GTT dialog appears.
3. Select the **GTT** group from the **GTT Group** combo box.
4. In the **LRN** box, enter the **LRN** (enter a ten-digit number; no spaces, hyphens, or underscores are permitted).

   Select the **View Data** button to retrieve the override **GTT** settings for this **NPA-NXX** and Override **GTT** group.
5. When you are done, click **OK**.

Delete an Override GTT

Use the Delete Override GTT dialog to delete existing override **GTT** records. The **Add Service** and **Remove Service(s)** buttons are disabled, and table cell editing is disabled.

To delete an override **GTT** record:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **Override GTT**, and then **Delete**.

   The Delete Override GTT dialog appears.
3. Select the **GTT** group from the **GTT Group** combo box.
4. In the **LRN** box, enter the **LRN** (enter a ten-digit number; no spaces, hyphens, or underscores are permitted).

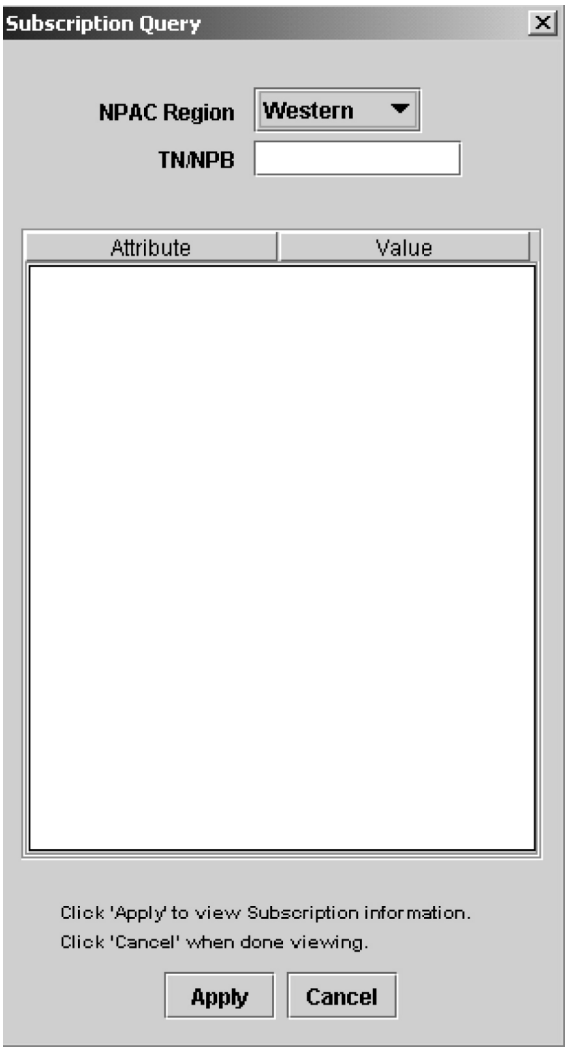
   Select the **View Data** button to retrieve the override **GTT** settings for this **NPA-NXX** and Override **GTT** group.
5. When you are done, click **OK** or **Apply**.

TN/NPB Query

The Subscription Query dialog enables you to query the local database for telephone number and number pool block subscription version records.

By default, users belonging to any of the five default permission groups have access to this view function.

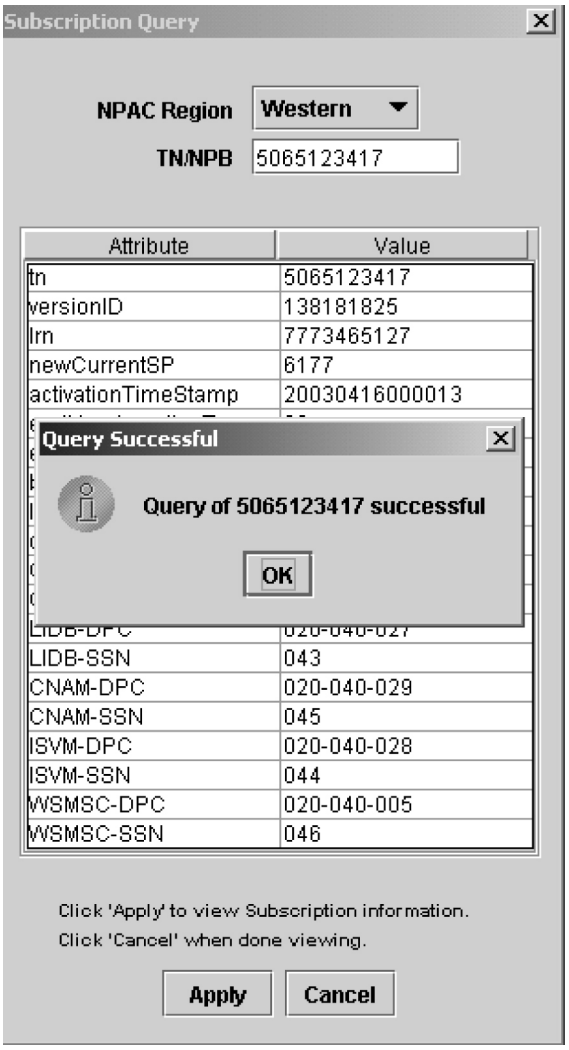
Figure 4-8 Subscription Query Dialog



TN Query

To query the local database for a **TN**, type in the 10 digits, select the region, and click **Apply**.

Figure 4-9 Query Successful Dialog.



If the **TN** is not found in the region, it will be checked—automatically—to see if it is part of an **NPB**. If it is then found as part of an **NPB** in the region, then the subscription version data table for the **NPB** will be populated and a Query Successful dialog is displayed with the message than the **TN** is part of an **NPB**.

> **Note:**
>
> See Table 4-4 for a description of the **TN** fields that display in the Subscription Query window when the query is successful.

If neither object can be found in the database, then an error dialog appears stating that the **TN** was not found in the specified regional database.

TN Field Descriptions

Table 4-4 describes the fields that display when a **TN** query is successful.

Table 4-4 TN Subscription Query Data - Field Descriptions

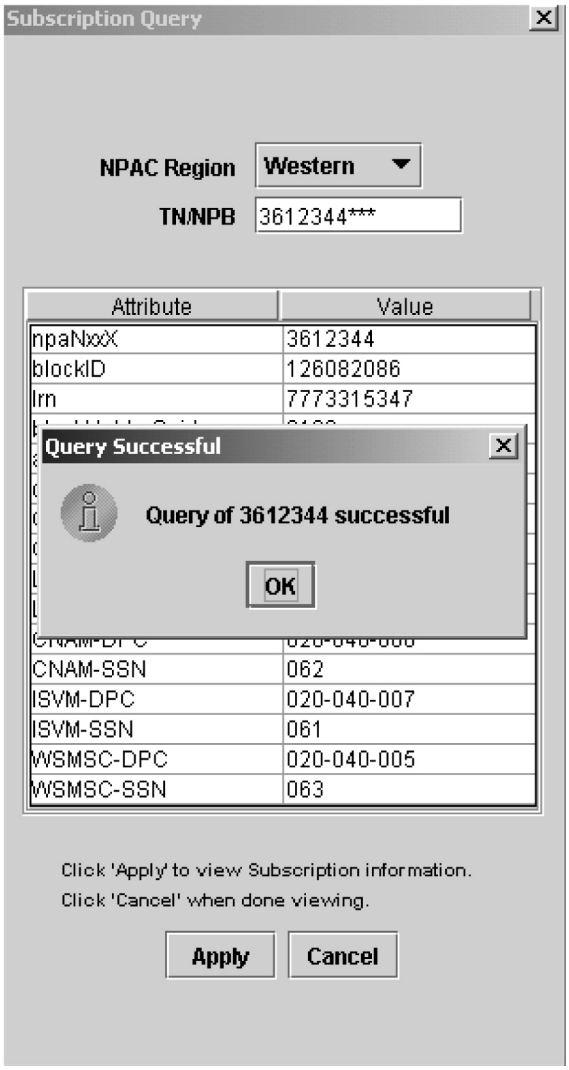
Field	Description
tn	The 10 digit telephone number
versionID	The version **ID**
lrn	The associated **LRN**
newCurrentSP	The new current service provider **ID**
activationTimeStamp	The time stamp of activation
endUserLocationType	The end user location type
endUserLocationValue	The end user location value
billingId	The billing **ID**
lnpType	The **LNP** Type
downLoadReason	The down load reason
CLASS-DPC	The **CLASS** destination point code
CLASS-SSN	The **CLASS** sub system number
CNAM-DPC	The **CNAM** destination point code
CNAM-SSN	The **CNAM** sub system number
ISVM-DPC	The **ISVM** destination point code
ISVM-SSN	The **ISVM** sub system number
LIDB-DPC	The **LIDB** destination point code
LIDB-SSN	The **LIDB** sub system number
WSMSC-DPC	The **WSMSC** destination point code
WSMSC-SSN	The **WSMSC** sub system number

NPB Query

To query a number pool block (**NPB**) , type in the first seven digits followed by ***, select the region, and click **Apply** . If the query is successful, the subscription version data table for the **NPB** will be populated and a Query Successful dialog is displayed.

> **Note:**
>
> See Table 4-5 for a description of the **NPB** fields that display in the Subscription Query window when the query is successful.

Figure 4-10 Query Successful Dialog



If the **NPB** object cannot be found in the database, then an Error dialog will appear stating that the **NPB** was not found in the specified regional database.

Figure 4-11 Error Dialog

When you are finished querying the local database, click **Cancel** to close the dialog.

NPB Field Descriptions

This table describes the fields that display when an **NPB** query is successful.

Table 4-5 NPB Subscription Query Data - Field Descriptions

Field	Description
npaNxxX	The 7 digit number pool block
blockID	The block **ID**
lrn	The associated **LRN**
blockHolderSpid	The block holder service provider **ID**
activationTimeStamp	The time stamp of activation
downLoadReason	The down load reason
CLASS-DPC	The **CLASS** destination point code
CLASS-SSN	The **CLASS** sub system number
CNAM-DPC	The **CNAM** destination point code
CNAM-SSN	The **CNAM** sub system number
ISVM-DPC	The **ISVM** destination point code
ISVM-SSN	The **ISVM** sub system number
LIDB-DPC	The **LIDB** destination point code
LIDB-SSN	The **LIDB** sub system number
WSMSC-DPC	The **WSMSC** destination point code
WSMSC-SSN	The **WSMSC** sub system number

NPA Splits

Users belonging to the lsmsuser or lsmsall permission group are authorized to create and delete **NPA** Splits. Users belonging to the lsmsadm, lsmsview, and lsmsuext permission groups are only authorized to view **NPA** Split information.

NPA Splits are managed from the **NPA** Splits dialog. You may view splits based on the old **NPA**, new **NPA**, both, or neither (view the entire list). To retrieve the first 500 records and display them in the table, click the **View NPA Splits** button. To view more than 500 splits, create an **NPA** Split report.

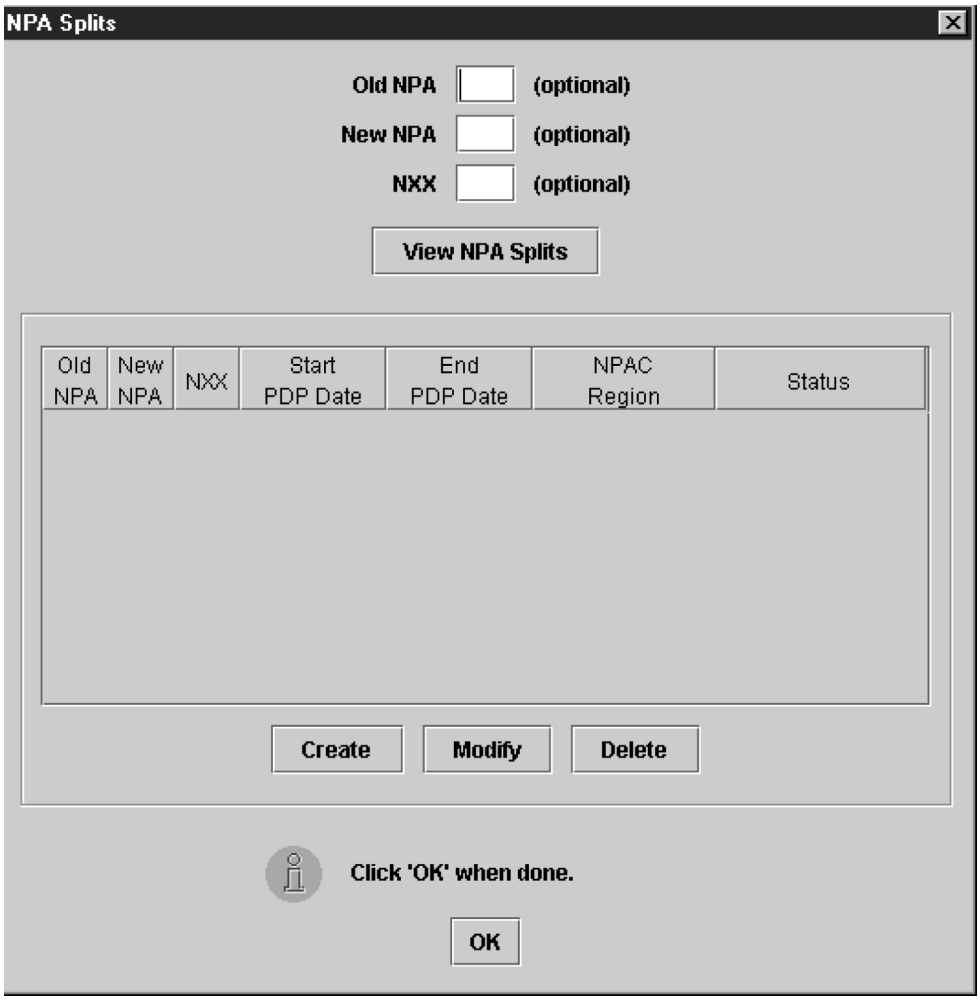
Create NPA Split

To create an **NPA** split:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **NPA Split**.

   The NPA Splits dialog appears.

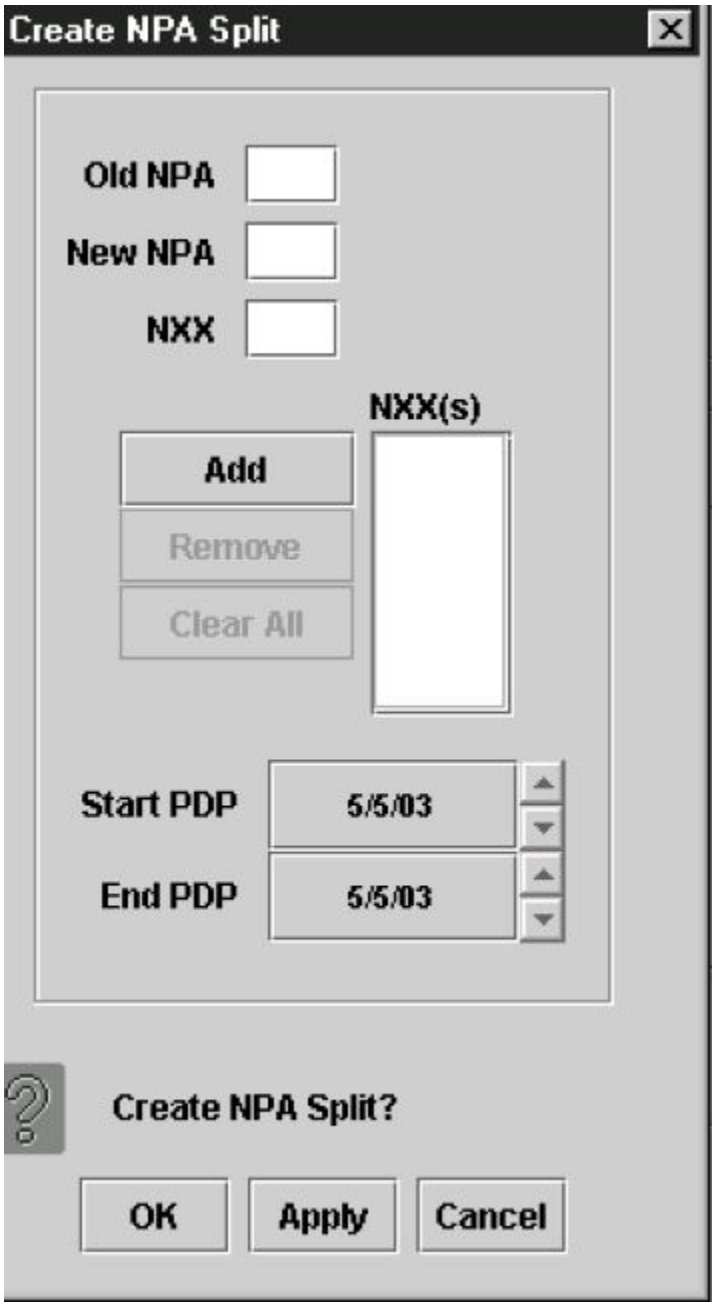
Figure 4-12 NPA Splits Dialog



3. Select `Create`.

   The Create NPA Split dialog appears.

Figure 4-13 Create NPA Split Dialog



4. In the **Old NPA** text field, type in the **NPA** that is being split.

   This is a 3-digit field.

5. In the **New NPA** text field, type in the **NPA** that the **NXXs** are being moved to.

   This is a 3-digit field and must be different than the old **NPA** value.

6. In the **NXX** text field, type in the first **NXX** that is being moved, then click the **Add** button.

   The **NXX** specified displays in the **NXX(s)** box and the entry in the **NXX** field disappears. Continue to add additional **NXXs**, one at a time, in the same manner. This is a 3-digit field.

7. In the **Start PDP** (date the permissive dialing period begins) field, highlight the month, and select the desired value using the up or down arrows.

   Modify the day and year values in the same manner. This date must be greater than the current date.

8. In the **End PDP** (date the permissive dialing period ends) field, highlight the month, and select the desired value using the up or down arrows.

   Modify the day and year values in the same manner. This date must be greater than the **Start PDP** date.

9. When you are done, click **OK** or **Apply**.

   You return to the NPA Splits dialog.

10. When you are done, click **OK.**

Modify NPA Split

This dialog allows the user to modify the start and/or end Permissive Dialing Period (**PDP**) dates of an existing **NPA** split. Both the start and ending **PDP** dates can be modified for pending splits. Only the ending **PDP** date can be modified for active splits. The **Old NPA**, **New NPA**, and **NXX** fields can only be viewed.

To modify an **NPA** split:

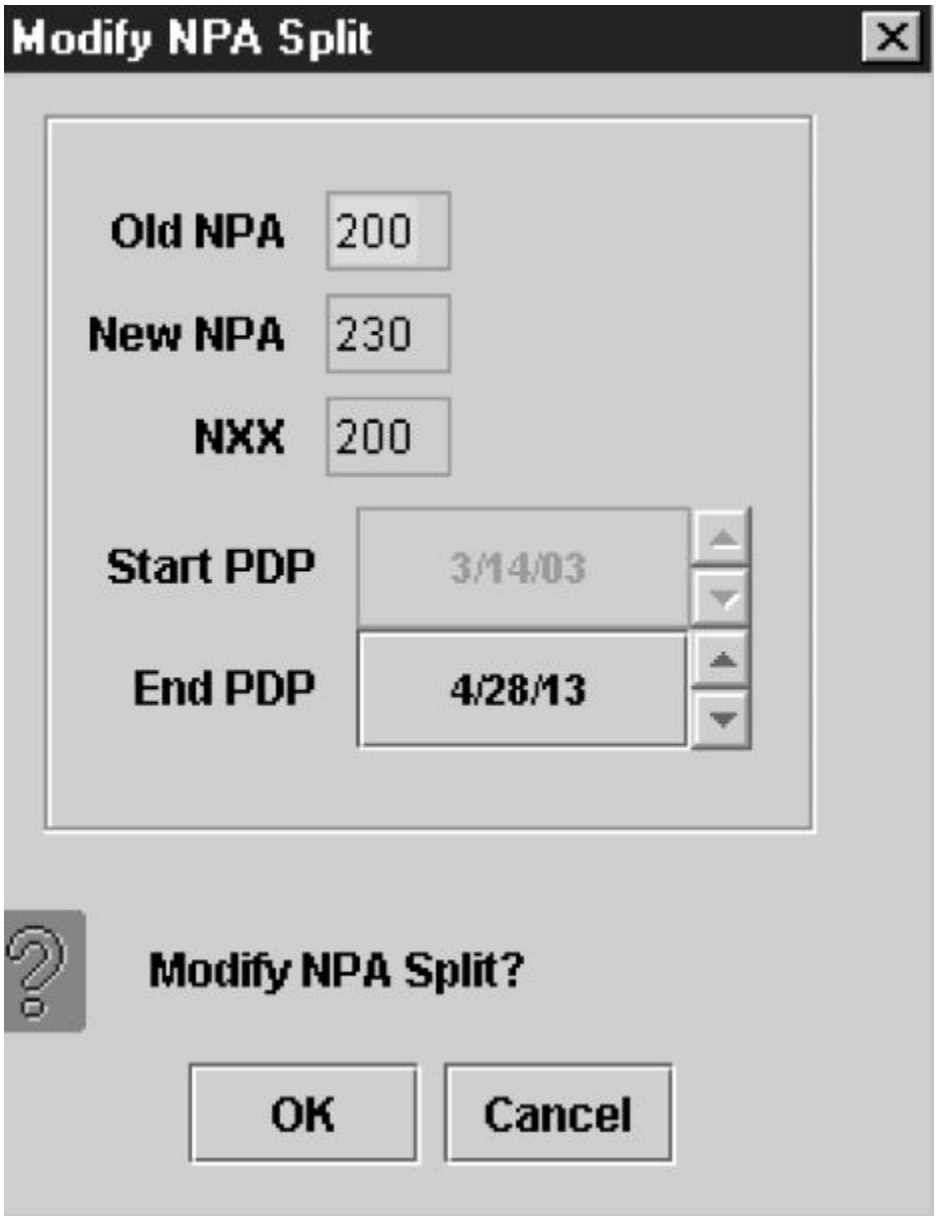
1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **NPA Split**.

   The **NPA** Splits dialog appears.

3. Select the row in the table you want to modify, and then click the **Modify** button.

   The **Modify NPA Split** dialog appears.

Figure 4-14 Modify NPA Split Dialog



4. You can modify the Start **PDP** field only if the **NPA** split status is Pending.

   To modify the date, highlight the month, and select the desired value using the up or down arrows. Modify the day and year values in the same manner. This date must be greater than the current **PDP** date.

5. Modify the End **PDP** date, if desired.

   To modify the date, highlight the month, and select the desired value using the up or down arrows. Modify the day and year values in the same manner. This date must be greater than the Start **PDP** date.

6. In the End **PDP** (date the permissive dialing period ends) field, highlight the month, and select the desired value using the up or down arrows.

   Modify the month and year values in the same manner. This date must be greater than the start date.

7. When you are done, click **OK** or **Apply**.

   You return to the NPA Splits dialog.

8. When you are done, click **OK.**

Delete NPA Split

To delete an **NPA** split:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **LSMS**, and then **NPA Split**.

   The **NPA** Splits dialog appears.
3. Select the row in the table you want to delete, and then click the **Delete** button.
4. When you are done, click **OK.**

Reversing (Correcting) an NPA Split Entry Made in Error

> **Note:**
>
> Before you start this procedure, it is recommended that you contact the My Oracle Support (MOS).

To correct an **NPA** split entry made in error, the steps you perform depend upon whether the split is in Active status.

Use the following procedure to correct an **NPA** split. This procedure uses an example in which an **NPA-NXX** split moves all **SVs** and **NPBs** from 909-860 to 123-860 instead of 124-860.

1. Note whether the split is in Active status:
   a. Select **LSMS** from the menu bar.
   b. Select **NPASplit** from the drop-down list.
   c. Select the **View** tab on the NPA Split window.
   d. Select **View Entire Table**.
   e. Select **Apply**.
2. Delete the split (see Delete NPA Split), then do one of the following:
   - If the split is in Pending or Activation Failed status, no further action is required. Proceed to 4
   - If the split is in Active or Invalid status, or if the split has already been deleted after being Active, use the procedure described in “Downloading Files from the **NPAC** to the **LSMS**” in the *Alarms and Maintenance Guide*, requesting the following data files be copied to the **FTP** site: one file for the old **NPA-NXX**, one file for the correct new **NPA-NXX**, and one file for the erroneous new **NPA-NXX**.
     Using the example cited earlier in this section, the file names would have the following format:

     909860-909860.<*DD-MM-YYYYHHMMSS*>

124860-124860.<*DD-MM-YYYYHHMMSS*>
123860-123860.<*DD-MM-YYYYHHMMSS*>

- If the **NPAC** supports **EDR**, three more data files for the **NPBs** are also needed. Again, using the example cited earlier in this section, the file names would have the following format (note the use of **NPA-NXX**-X values instead of **NPA-NXX** in the file names):

  9098600-9098609.<*DD-MM-YYYYHHMMSS*>
  1248600-1248609.<*DD-MM-YYYYHHMMSS*>
  1238600-1238609.<*DD-MM-YYYYHHMMSS*>

  Be sure to perform an **LSMS**-to-**EAGLE** audit and reconcile of all **SVs** and **NPBs** in the old, correct new, and erroneous new **NPA-NXX** on each **EMS** that received the incorrect split. Refer to the *LNP Database Synchronization User's Guide* for the procedure to perform audit and reconcile.

3. If the split being reversed was already activated on the **EAGLE**, delete the split from the **EAGLE** and audit and reconcile the default **GTT** entries from the **LSMS** to the **EAGLE**.

   Refer to the *LNP Database Synchronization User's Guide* for the procedure to perform audit and reconcile.

4. If the **PDP** is over, do not create the correct split because new and reused **TNs** may already exist in the old **NPA-NXX**.

   However, if the **PDP** End Date is still in the future, then create the split with the correct values (see Create NPA Split).

Input Data By File

Introduction

Input data by file provides an alternate method of provisioning default **GTT**, override **GTT**, **NPA-NXX** split entries, and custom **TN** filters. The data entries are input from a properly formatted file to the **LSMS**. If a particular data entry already exists in the **LSMS**, the data in the file is used to modify the entire existing entry.

The new default **GTT** and override **GTT** entries are automatically validated and forwarded to the network elements without user intervention. The **NPA-NXX** split and custom **TN** filter entries are automatically validated and added to the **LSMS NPA-NXX** split table or custom **TN** Filter table without user intervention (they are not forwarded to the network element).

A **GUI** is provided that allows users to specify the input file name and receive feedback on the processing of each of the file entries.

File processing is divided into the following phases:

- File Validation Phase
- Input Processing Phase

File Validation Phase

In this phase, the input data file is obtained from the client machine running the **GUI**. The input data file is parsed and the file format and data items are validated. As the file is being processed, the Input Data by File dialog displays the following information:

- The number of items validated (this is an incremental count starting at zero).

- The number of errors (this is an incremental count starting at zero).
- The first 100 erroneous data items are displayed in the dialog's scrolled list.

The entire input data file is validated and both successful and erroneous data items are written to a result file. If errors are encountered the next phase is never started, and a warning dialog is displayed to the user. The warning dialog tells the user that the input data file has errors and to check the result file for specific error messages. The result file is stored at the client machine running the **GUI**.

Input Processing Phase

This phase is only performed when the input data file has no File Validation phase errors. In this phase a check is made to determine if a previous File Validation phase result file exists. If so, it is deleted.

During this phase, the input data file entries are merged with the data in the **LSMS** database. As the file is being processed, the Input Data by File dialog displays the following information:

- The number of items processed (this is an incremental count starting at zero).
- The number of errors (this is an incremental count starting at zero).
- The first 100 erroneous data items display in the dialog's scrolled list.

As each entry is processed and merged with the existing data, the operation results (**OK** or **FAILED**) are written to a result file. A failed operation indicates that an error has occurred on the specific entry.

When both of these phases are completed, a message dialog displays indicating that the entire processing of the file has completed.

Default GTT Input File

The default **GTT** input file enables you to create, modify, or delete a default **GTT**.

Each data entry in the default **GTT** input file is checked to ensure that the format corresponds to the input file specification. The data values are validated using the same rules that are presently used when entering a single default **GTT** via the **LSMS GUI**. The entire input data file is validated, successful entries and errors encountered are written to the result file, and the processing of the next data entry continues.

Only if no errors are encountered is further processing allowed by this feature, at which time the data entries are added to the **LSMS** database default **GTT**

The user-specified filename must have an extension of **.DGT** to be a valid input data filename for default **GTT**.

The default **GTT** input file should be located at the client machine that is running the **LSMS GUI**. You can use a file selection dialog box to select the input file.

The **NPANXX** value of each default **GTT** data entry in the file is used to check if the default **GTT** object instance exists in the supported database. If the default **GTT** object instance *is not* present a new instance is created. However, if the default **GTT** instance *is* present in the supported database, then the entire default **GTT** object instance data is overwritten with the input file data for that instance. For deletions, if the default **GTT** object exists, it is deleted. If the default **GTT** object does not exist, however, the delete request is logged as a success, not a failure, in the default **GTT** result file.

The default **GTT** input block contains one record for each database entry. Individual fields are pipe delimited, with a new line (0x0A) after each **GTT** recorded. Each entry should begin at the beginning of the line.

Table 4-6 Default GTT Input Block Contents

Field Number	Field Name
1	**SPID**
2	**GTT** Group Name
3	**NPANXX** Value
4	**AIN**
5	**IN**
6–12	Service # 1
13–19	Service # 2
20–26	Service # 3
27–33	Service # 4
34–40	Service # 5

Note:

It is necessary to have at least 4 Services (Service # 1–Service # 4) filled with data. If **WSMSC** feature is enabled, it is necessary to fill Service # 5. Any unused Services must be represented by unpopulated fields, because the data is positional.

Default GTT Input File

Figure 4-15 is an example of a default **GTT** input file with one entry. See Table 4-7 for an explanation of the fields.

Figure 4-15 Example Default GTT Input File

```
TKLC|GTTGroup|919420|AIN|IN|CLASS|016|001001001|003|DPCSSN|SSN|0|CNAM|100|
002002002|005|DPCSSN|SSN|0|ISVM|134|003003003|006|DPCSSN|SSN|0|LIDB|125|
004004004|007|DPCSSN|SSN|0|WSMSC|127|004004004|007|DPCSSN|SSN|0
```

Table 4-7 Explanation of the Fields in the Default Input File

Field Number	Field Name	Value in Example	Range of Values
1	**SPID**	**TKLC**	[A-Z, a-z, 0-9] {4 alphanumeric}
2	**GTT** Group Name	GTTGroup	[A-Z, a-z, 0-9] {64 alphanumeric}
3	**NPANXX** Value	919420	[0-9]{6 digits}
4	**AIN**	**AIN**	**AIN** or empty pipe to indicate no **AIN**

Table 4-7 (Cont.) Explanation of the Fields in the Default Input File

Field Number	Field Name	Value in Example	Range of Values
5	**IN**	**IN**	**IN** or empty pipe to indicate no **IN**
6	S1-Service Name	**CLASS**	Character {up to 8 characters}
7	S1-Translation Type	016	[000…255]
8	S1-**DPC**	001001001	[001…255][000…255] [000…255] {9 characters}
9	S1-**SSN**	003	[000…255]
10	S1-**XLAT**	**DPCSSN**	[**DPC**, **DPCSSN**, **DPCNGT**]
11	S1-**RI**	**SSN**	[**GT**, **SSN**]
12	S1-**NGT**	0	[0…255]
13	S2-Service Name	**CNAM**	Character {up to 8 characters}
14	S2-Translation Type	100	[000…255]
15	S2-**DPC**	002002002	[001…255][000…255] [000…255] {9 characters}
16	S2-**SSN**	005	[000…255]
17	S2-**XLAT**	**DPCSSN**	[**DPC**, **DPCSSN**, **DPCNGT**]
18	S2-**RI**	**SSN**	[**GT**, **SSN**]
19	S2-**NGT**	0	[0…255]
20	S3-Service Name	**ISVM**	Character {up to 8 characters}
21	S3-Translation Type	124	[000…255]
22	S3-**DPC**	003003003	[001…255][000…255] [000…255] {9 characters}
23	S3-**SSN**	006	[000…255]
24	S3-**XLAT**	**DPCSSN**	[**DPC**, **DPCSSN**, **DPCNGT**]
25	S3-**RI**	**SSN**	[**GT**, **SSN**]
26	S3-**NGT**	0	[0…255]
27	S4-Service Name	**LIDB**	Character {up to 8 characters}
28	S4-Translation Type	125	[000…255]
29	S4-**DPC**	004004004	[001…255][000…255] [000…255] {9 characters}
30	S4-**SSN**	007	[000…255]

Table 4-7 (Cont.) Explanation of the Fields in the Default Input File

Field Number	Field Name	Value in Example	Range of Values
31	S4-**XLAT**	**DPCSSN**	[**DPC**, **DPCSSN**, **DPCNGT**]
32	S4-**RI**	**SSN**	[**GT**, **SSN**]
33	S4-**NGT**	0	[0…255]
34	S5-Service Name	**LIDB**	Character {up to 8 characters}
35	S5-Translation Type	125	[000…255]
36	S5-**DPC**	004004004	[001…255][000…255] [000…255] {9 characters}
37	S5-**SSN**	007	[000…255]
38	S5-**XLAT**	**DPCSSN**	[**DPC**, **DPCSSN**, **DPCNGT**]
39	S5-**RI**	**SSN**	[**GT**, **SSN**]
40	S5-**NGT**	0	[0…255]
41	Block Termination	See [1]	

[1]The block termination field value is a new line character, which is generated by pressing the **Enter** key on the keyboard.

Default GTT Input File - Delete Record

The default **GTT** delete record contains one record for each database entry. Individual fields are pipe delimited with a new line (0x0A) after each **GTT** recorded. Each entry should begin at the beginning of the line.

Example Default GTT Delete Record File

```
DELETE|GTTGroup|919469
```

Table 4-8 Explanation of the Fields in the Default GTT Delete Record

Field Number	Field Name	Range of Values	Values in Example
1	Delete record recognition string	Characters {6 characters}	DELETE[1]
2	Group name	[A-Z, a-z, 0-9] {64 alphanumeric}	GTTGroup
3	**NPANXX**	[0-9]{6 digits}	919469

[1]This is the fixed string to be used for all delete records. An entry that does not begin with DELETE, or one in which DELETE is misspelled, will be treated like a create or modify entry.

Creating or Modifying the File

To create or modify a default **GTT** input file:

1. Prepare the default GTT input file.

See Figure 4-15 for more information about the format of a default GTT input file. See Table 4-7 for more information about the fields in a default GTT input file. The default GTT input file extension must be .DGT.

> **Note:**
>
> It is not necessary to have all 4 Services (S1-S4) filled with data. Any unused Service must have its unused data fields unpopulated, but with the pipe delimiters as placeholders, because the data is positional.

2. Transfer the default GTT input file to the LSMS.

   Transfer the file to the My Documents folder on the Windows desktop of your computer.

Importing the File

To import the default **GTT** input file:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.

   If you are logging into a shadow **LSMS**, see "Entering Locally Provisioned Data on a Shadow **LSMS**".

2. From the **LSMS Console** window, select **LSMS>Input Data by File**.

   The **Input Data by File** window is displayed.

3. If the name of the input file does not appear in the **Input File** field, you can type it in (specifying the complete path), or use the **Browse** button to find it.

4. Click the **Start** button.

   This initiates the *file validation* phase.

Default GTT Result File

The Default **GTT** result file (which is located in the same directory as the input data file) stores useful information about the processing of each of the Default **GTT** data items read from the input data file while executing the file validation phase. A result file with the format shown below is produced during file validation or input processing phase.

For each correct data item read from the input file, a single line appears in the result file:

SPID|GROUP|NPA-NXX Operation_Status

For each erroneous data item read from the input file, a single line appears in the result file:

SPID|GROUP|NPA-NXX Operation_Status [Error_Number] [Error_Message]

where:

SPID = **SPID** value read from input data file

GROUP = **GTT** Group

NPA-NXX = The six digits value input from file for each data item.

Operation_Status = **OK** to indicate a successful operation; **FAILED** to indicate an error in processing.

Error_Number = An "E" followed by up to 3 numeric digits (this is an optional field, it appears only if operation status is **FAILED**).

Error_Message = Text indicating the first processing error found in the data entry (this is an optional field, it appears only if operation status is **FAILED**).

Example Default GTT Result File

Figure 4-16 shows a picture of a Default **GTT** result file.

Figure 4-16 Example Default GTT Result File.

```
Input Filename: J:\inputByFile\defaultGttError.dgt.results

Validation started on Wed Jul 11 23:48:51 EDT 2001


 Failed  E53  Invalid blank line for an entry.

TKLC|GTTGroup2|919420|||CLASS|016|010023024|003|DPCSSN|SSN|0|CNAM|100|002002002|005|DPCSSN|SSN|
0|ISVM|134|003003003|006|DPCSSN|SSN|0|LIDB|125|004004004|007|DPCSSN|SSN|0
 TKLC GTTGroup2 919420 OK

TKLC|GTTGroup2|919420|AIN|IN|CLASS|016|010023024|003|DPCSSN|
 TKLC GTTGroup2 919420 Failed  E52  Wrong number of values for Create/Modify DGT.

TKLC|GTTGroup2|199420|||CLASS|016|010023024|003|DPCSSN|SSN|0|CNAM|100|002002002|005|DPCSSN|SSN|
0|ISVM|134|003003003|006|DPCSSN|SSN|0|WSMSC|125|004004004|007|DPCSSN|SSN|0
TKLC GTTGroup2 199420  Failed  E182  Invalid NPA-NXX value – 199420

TKLC|GTTGroup2|919420|AIN|AIN|CLASS|016|010023024|003|DPCSSN|SSN|0|CNAM|100|002002002|005|DPC
SSN|SSN|0|ISVM|134|003003003|006|DPCSSN|SSN|0|LIDB|125|004004004|007|DPCSSN|SSN|0
 TKLC GTTGroup2 919420 Failed  E121  Translation Type Service name is not unique – AIN

TKLC|GTTGroup2|919420|||CLASS|016|010023024|003|DPCSSN|SSN|0|CNAM|100|002002002|005|DPCSSN|SSN|
0|ISVM|134|003003003|006|DPCSSN|SSN|0|LIDB|125|004004004|007|DPCSSN|SSN|256
TKLC GTTGroup2 919420  Failed  E162  Invalid NGT value - 256
Validation completed on Wed Jul 11 23:48:52 EDT 2001
```

Default GTT Error Codes

See Error Codes.

Override GTT Input File

The override **GTT** input file enables you to create, modify, or delete an override **GTT**.

Each data entry in the override **GTT** input file is checked to ensure that the format corresponds to the input file specification. The data values are validated using the same rules that are presently used when entering a single override **GTT** via the **LSMS GUI**. The entire input data file is validated, successful entries and errors encountered are written to the result file, and the processing of the next data entry continues.

Only if no errors are encountered is further processing allowed by this feature, at which time the data entries are added to the **LSMS** database override **GTT** table.

The user-specified filename must have an extension of **.OGT** to be a valid input data filename for override **GTT**.

The override **GTT** input file should be located at the client machine that is running the **LSMS GUI**. You can use a file selection dialog box to select the input file.

The **LRN** value of each override **GTT** data entry in the file is used to check if the override **GTT** object instance exists in the supported database. If the override **GTT** object instance *is not* present a new instance is created. However, if the override **GTT** instance *is* present in the supported database, then the entire override **GTT** object instance data is overwritten with the input file data for that instance. For deletions, if the override **GTT** object exists, it is deleted. If the override **GTT** object does not exist, however, the delete request is logged as a success, not a failure, in the override **GTT** result file.

The override **GTT** input block contains one record for each database entry. Individual fields are pipe delimited, with a new line (0x0A) after each **GTT** recorded. Each entry should begin at the beginning of the line.

Table 4-9 Override GTT Input Block Contents

Field Number	Field Name
1	**SPID**
2	**GTT** Group Name
3	**LRN**
4–11	Service # 1
12–19	Service # 2
20–27	Service # 3
28–35	Service # 4
36–43	Service # 5

> **Note:**
>
> It is necessary to have at least 4 Services (Service # 1–Service # 4) filled with data. If **WSMSC** feature is enabled, it is necessary to fill Service # 5. Any unused Services must be represented by unpopulated fields, because the data is positional.

Override GTT Input File

Figure 4-17 is an example of an override **GTT** input file with one entry. See Table 4-10 for an explanation of the fields.

Figure 4-17 Example Override GTT Input File

```
TKLC|GTTGroup|9194200000|CLASS|016|001001001|003|DPCSSN|SSN|0|YES|CNAM|100|
002002002|005|DPCSSN|
SSN|0|NO|ISVM|134|003003003|006|DPCSSN|SSN|0|YES|LIDB|125|004004004|007|DPCSSN|
SSN|0|NO|WSMSC|126|
004004004|007|DPCSSN|SSN|0|NO
```

Table 4-10 Explanation of the Fields in the Override GTT Input File

Field Number	Field Name	Value in Example	Range of Values
1	**SPID**	**TKLC**	[A-Z, a-z, 0-9] {4 alphanumeric}
2	**GTT** Group Name	GTTGroup	[A-Z, a-z, 0-9] {64 alphanumeric}
3	**LRN**	3002000000	[0-9]{10 digits}
4	S1-Service Name	**CNAM**	Character {up to 8 characters}
5	S1-Translation Type	078	[000…255]
6	S1-**DPC**	233233233	[001…255][000…255] [000…255] {9 characters}
7	S1-**SSN**	000	[000…255]
8	S1-**XLAT**	**DPC**	[**DPC**, **DPCSSN**, **DPCNGT**]
9	S1-**RI**	**GT**	[**GT**, **SSN**]
10	S1-**NGT**	0	[0…255]
11	S1-**RGTA**	**NO**	[**YES**, **NO**]
12	S2-Service Name	**CLASS**	Character {up to 8 characters}
13	S2-Translation Type	079	[000…255]
14	S2-**DPC**	122122122	[001…255][000…255] [000…255] {9 characters}
15	S2-**SSN**	000	[000…255]
16	S2-**XLAT**	**DPC**	[**DPC**, **DPCSSN**, **DPCNGT**]
17	S2-**RI**	**GT**	[**GT**, **SSN**]
18	S2-**NGT**	0	[0…255]
19	S2-**RGTA**	**NO**	[**YES**, **NO**]
20	S3-Service Name	**ISVM**	Character {up to 8 characters}
21	S3-Translation Type	080	[000…255]
22	S3-**DPC**	011011011	[001…255][000…255] [000…255] {9 characters}
23	S3-**SSN**	000	[000…255]
24	S3-**XLAT**	**DPC**	[**DPC**, **DPCSSN**, **DPCNGT**]
25	S3-**RI**	**GT**	[**GT**, **SSN**]
26	S3-**NGT**	0	[0…255]
27	S3-**RGTA**	**NO**	[**YES**, **NO**]
28	S4-ServiceName	**LIBD**	Character {up to 8 characters}

Table 4-10 (Cont.) Explanation of the Fields in the Override GTT Input File

Field Number	Field Name	Value in Example	Range of Values
29	S4-Translation Type	081	[000…255]
30	S4-**DPC**	100100100	[001…255][000…255][000…255] {9 characters}
31	S4-**SSN**	000	[000…255]
32	S4-**XLAT**	**DPC**	[**DPC**, **DPCSSN**, **DPCNGT**]
33	S4-**RI**	**GT**	[**GT**, **SSN**]
34	S4-**NGT**	0	[0…255]
35	S4-**RGTA**	**NO**	[**YES**, **NO**]
36	S5-ServiceName	**LIBD**	Character {up to 8 characters}
37	S5-Translation Type	081	[000…255]
38	S5-**DPC**	100100100	[001…255][000…255][000…255] {9 characters}
39	S5-**SSN**	000	[000…255]
40	S5-**XLAT**	**DPC**	[**DPC**, **DPCSSN**, **DPCNGT**]
41	S5-**RI**	**GT**	[**GT**, **SSN**]
42	S5-**NGT**	0	[0…255]
43	S5-**RGTA**	**NO**	[**YES**, **NO**]
44	Block Termination	See[1]	

[1]The block termination field value is a new line character, which is generated by pressing the **Enter** key on the keyboard.

Override GTT Input File - Delete Record

The override **GTT** delete record contains one record for each database entry. Individual fields are pipe delimited with a new line (0x0A) after each **GTT** recorded. Each entry should begin at the beginning of the line.

Example Override GTT Delete Record File

```
DELETE|GTTGroup|9194690000
```

Table 4-11 Explanation of the Fields in the Override GTT Delete Record

Field Number	Field Name	Range of Values	Values in Example
1	Delete record recognition string	Characters {6 characters}	DELETE[1]
2	Group name	[A-Z, a-z, 0-9] {64 alphanumeric}	GTTGroup
3	**LRN**	[0-9]{10 digits}	9194690000

Table 4-11 (Cont.) Explanation of the Fields in the Override GTT Delete Record

Field Number	Field Name	Range of Values	Values in Example
[1]This is the fixed string to be used for all delete records. An entry that does not begin with DELETE, or one in which DELETE is misspelled, will be treated like a create or modify entry.			

Creating or Modifying the File

To create or modify an override **GTT** input file:

1. Prepare the override GTT input file.

   See Figure 4-17 for more information about the format of an override GTT input file. See Table 4-10 for more information about the fields in an override GTT input file. The override GTT input file extension must be .OGT.

   > **Note:**
   >
   > It is not necessary to have all 4 Services (S1-S4) filled with data. Any unused Service must have its unused data fields unpopulated, but with the pipe delimiters as placeholders, because the data is positional.

2. Transfer the override GTT input file to the LSMS.

   Transfer the file to the My Documents folder on the Windows desktop of your computer.

Importing the File

To import the override **GTT** input file:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.

   If you are logging into a shadow **LSMS**, see "Entering Locally Provisioned Data on a Shadow **LSMS**".

2. From the LSMS Console window, select **LSMS**, and then **Input Data by File**.

   The Input Data by File window is displayed.

3. If the name of the input file does not appear in the **Input File** field, you can type it in (specifying the complete path), or use the **Browse** button to find it.

4. Click the **Start** button.

   This initiates the file validation phase.

Override GTT Result File

The Override **GTT** result file (which is located in the same directory as the input data file) stores useful information about the processing of each of the Override **GTT** data items read from the input data file while executing the file validation phase. A result file with the format shown below is produced during file validation or input processing phase.

For each correct data item read from the input file, a single line appears in the result file:

SPID|GROUP|LRN Operation_Status

For each erroneous data item read from the input file, a single line appears in the result file:

SPID|GROUP|LRN Operation_Status [Error_Number] [Error_Message]

where:

SPID = **SPID** value read from input data file

GROUP = **GTT** Group

LRN = The ten digits value input from file for each data item.

Operation_Status = **OK** to indicate a successful operation; **FAILED** to indicate an error in processing.

Error_Number = An "E" followed by up to 3 numeric digits (this is an optional field, it appears only if operation status is **FAILED**).

Error_Message = Text indicating the first processing error found in the data entry (this is an optional field, it appears only if operation status is **FAILED**).

Example Override GTT Result File

Figure 4-18 shows a picture of an override **GTT** result file.

Figure 4-18 Example Override GTT Result File.

```
Input Filename: J:\inputByFile\overrideGttError.ogt.results

Validation started on Wed Jul 11 23:56:27 EDT 2001

TKLC|GTTGroup2|9194200000|CLASS|016|011001001|003|DPCSSN|SSN|0|YES|CNAM|100|022002002|005|DPC
SSN|SSN|0|NO|ISVM|134|013003003|006|DPCSSN|SSN|0|YES|LIDB|125|004004004|007|DPCSSN|SSN|0|NO
 TKLC GTTGroup2 9194200000 OK

TKLC1|GTTGroup2|9194200000|CLASS|016|011001001|003|DPCSSN|SSN|0|YES|CNAM|100|022002002|005|DP
CSSN|SSN|0|NO|ISVM|134|013003003|006|DPCSSN|SSN|0|YES|LIDB|125|004004004|007|DPCSSN|SSN|0|NO
 TKLC1 GTTGroup2 9194200000 Failed E252 Invalid Service Provider ID value length - TKLC1

TKLC|Group1|9194200000|CLASS|016|011001001|003|DPCSSN|SSN|0|YES|CNAM|100|022002002|005|DPCSSN|
SSN|0|NO|ISVM|134|013003003|006|DPCSSN|SSN|0|YES|LIDB|125|004004004|007|DPCSSN|SSN|0|NO
 TKLC Group1 9194200000 Failed E142 Invalid GTT Group name - Group 1

TKLC|GTTGroup2|919423100|CLASS|016|011001001|003|DPCSSN|SSN|0|YES|CNAM|100|022002002|005|DPCS
SN|SSN|0|NO|ISVM|134|013003003|006|DPCSSN|SSN|0|YES|LIDB|125|004004004|007|DPCSSN|SSN|0|NO
 TKLC GTTGroup2 919423100 Failed E152 Invalid LRN value length - 919423100

TKLC|GTTGroup2|9194231000000|CLASS|016|011001001|003|DPCSSN|SSN|0|YES|CNAM|100|022002002|005|D
PCSSN|SSN|0|NO|ISVM|134|013003003|006|DPCSSN|SSN|0|YES|LIDB|125|004004004|007|DPCSSN|SSN|0|NO
 TKLC GTTGroup2 9194231000000 Failed E152 Invalid LRN value length - 9194231000000

TKLC|GTTGroup2|9194200000|CLASS|016|011001001|003|DPCSSN|SSN|0|YES|ISVM|100|022002002|005|DPCS
SN|SSN|0|NO|ISVM|134|013003003|006|DPCSSN|SSN|0|YES|LIDB|125|004004004|007|DPCSSN|SSN|0|NO
 TKLC GTTGroup2 9194200000 Failed E121 Translation Type Service name is not unique - ISVM

TKLC|GTTGroup2|9194200000|CLASS|016|011001001|003|DPCSSN|SSN|0|YES|CNAM|100|022002002|005|DPC
SSN|SSN|0|NO|ISVM|1|013003003|006|DPCSSN|SSN|0|YES|LIDB|1|004004004|007|DPCSSN|SSN|0|NO
 TKLC GTTGroup2 9194200000 Failed E122 Translation Type value is not unique - 1

TKLC|GTTGroup2|9194200000|CLASS|016|011001001|003|DPCSSN|SSN|0|YES|CNAM|100|022002002|005|DPC
SSN|SSN|0|NO|ISVM|134|013003003|006|DPCSSN|SSN|0|YES|LIDB|125|004004004|007|DPCSSN|SSN|0|N0|WS
MSC|126|004004004|007|DPCSSN|SSN|0|NO
 TKLC GTTGroup2 9194200000 Failed E231 Invalid RGTA value - N0

Validation completed on Wed Jul 11 23:56:28 EDT 2001
```

Override GTT Error Codes

See Error Codes.

NPA-NXX Split Input File

The **NPA-NXX** split input file enables you to create or delete an **NPA-NXX** split.

Each data entry in the input file is checked to ensure that its format corresponds to the input file specification. The data values will be validated using the same rules that are presently used when entering a single **NPA-NXX** split via the **LSMS GUI**. Each entry in the input data file is validate, successful entries and errors encountered are written to the result file, and the validation of the next data entry continues. For deletions, if the **NPA-NXX** split exists, it is deleted. If the **NPA-NXX** split object does not exist, however, the delete request is logged as a success, not a failure, in the **NPA-NXX** split result file.

Only if no errors are found in the entire input file will further processing continue. If no errors are found, the data entries are added to the NpaSplit table of the **LSMS** supplemental database.

The user-specified filename must have an extension of **.NPA** to be a valid input data filename for **NPA-NXX** splits.

The **NPA** Split input file should be located at the client machine that is running **LSMS GUI**. You can use a file selection dialog box to select the input file.

The file contains the data used to create new **NPA-NXX** instances.

The **NPA-NXX** Split input block contains one record for each database entry; individual fields are pipe delimited, with a new line (0x0A) after each split record. Each entry should begin at the beginning of the line.

> **Note:**
>
> To create a successful **NPA-NXX** split, all the data fields must be filled in.

NPA-NXX Split Input File Example

Figure 4-19 is an example of an **NPA-NXX** Split input file with one entry. See Table 4-12 for an explanation of the fields.

Figure 4-19 Example NPA-NXX Split Input File

```
312|910|666|1|12|2007|5|17|2007
```

Table 4-12 NPA-NXX Split Input File Fields and Their Values

Field Number	Field Name	Range of Values	Value in Example
1	Old **NPA**	[2-9][0-9][0-9] {3 digits}	312
2	New **NPA**	[2-9][0-9][0-9] {3 digits}	910
3	**NXX** Value	[0-9][0-9][0-9] {3 digits}	666
4	Start Date Month	[1-12] {2 digits maximum}	1
5	Start Date Day	[1-31] {2 digits maximum}	12
6	Start Date Year	[0-9] {4 digits}	2007
7	End Date Month	[1-12] {2 digits maximum}	5
8	End Date Day	[1-31] {2 digits maximum}	17
9	End Date Year	[0-9] {4 digits}	2007
10	Block Termination	New Line (press Enter key)	0x0A

> **Note:**
>
> The New **NPA** value cannot begin with a “0” or “1”, and cannot end in “11”.

NPA-NXX Split Input File - Delete Record

The **NPA-NXX** split delete record contains one record for each database entry. Individual fields are pipe delimited with a new line (0x0A) after each **NPA-NXX** split recorded. Each entry should begin at the beginning of the line.

Example NPA-NXX Split Delete Record File

```
DELETE|312|919|666
```

Table 4-13 Explanation of the Fields in the NPA-NXX Split Delete Record

Field Number	Field Name	Range of Values	Values in Example
1	Delete record recognition string	Characters {6 characters}	DELETE[1]
2	Old **NPA**	[2-9][0-9][0-9] {3 digits}	312
3	New **NPA**	[2-9][0-9][0-9] {3 digits}	919
4	**NXX** Value	[0-9][0-9][0-9] {3 digits}	666

[1]This is the fixed string to be used for all delete records. An entry that does not begin with DELETE, or one in which DELETE is misspelled, will be treated like a create or modify entry.

Creating or Modifying the File

To create an **NPA-NXX** split input file:

1. Prepare the NPA-NXX split input file.

   See Figure 4-19 for more information about the format of an NPA-NXX split input file. See Table 4-12 for more information about the fields in an NPA-NXX split input file. The NPA-NXX split input file extension must be .NPA.

2. Transfer the NPA-NXX split input file to the LSMS.

   Transfer the file to the My Documents folder on the Windows desktop of your computer.

Importing the File

To import the **NPA-NXX** split input file:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.

   If you are logging into a shadow **LSMS**, see “Entering Locally Provisioned Data on a Shadow **LSMS**”.

2. From the LSMS Console window, select **LSMS**, and then **Input Data by File**.

   The Input Data by File window appears.

3. If the name of the input file does not appear in the **Input File** field, you can type it in (specifying the complete path), or use the **Browse** button to find it.
4. Click the **Start** button.

   This initiates the file validation phase.

NPA-NXX Split Result File

The **NPA-NXX** split result file (which is located in the same directory as the input data file) stores useful information about the processing of each of the **NPA-NXX** split data items read from the input data file while in the file validation or input phase. A result file with the format shown below is produced during file validation or input processing phase.

For each correct data item read from the input file, a single line appears in the result file:

Old_NPA|New_NPA|NXX Start_Date|End_Date Operation_Status

For each erroneous data item read from the input file, a single line appears in the result file:

Old_NPA|New_NPA|NXX Start_Date|End_Date Operation_Status Error_Number Error_Message

where:

Old_**NPA** = The three-digit value input from file for each data item.

New_**NPA** = The three-digit value input from file for each data item.

NXX = The three-digit value input from file for each data item.

Start_Date = The 10-digit Start Date of the Permissive Dialing Period.

End_Date = The 10-digit End Date of the Permissive Dialing Period.

Operation_Status = OK to indicate a successful operation; FAILED to indicate an error in processing.

Error_Number = "E" followed by up to 3 numeric digits (this is an optional field, it appears only if operation status is **FAILED**).

Error_Message = Text indicating the first processing error found in the data entry (this is an optional field, it appears only if operation status is **FAILED**).

Example NPA-NXX Split Result File

Figure 4-20 shows a picture of an NPA-NXX split result file.

Figure 4-20 Example NPA-NXX Split Result File

```
Input Filename: J:\inputByFile\defaultGttError.dgt.results

Validation started on Wed Jul 11 23:48:51 EDT 2001


 Failed  E53  Invalid blank line for an entry.

TKLC|GTTGroup2|919420|||CLASS|016|010023024|003|DPCSSN|SSN|0|CNAM|100|002002002|005|DPCSSN|SSN|
0|ISVM|134|003003003|006|DPCSSN|SSN|0|LIDB|125|004004004|007|DPCSSN|SSN|0
 TKLC GTTGroup2 919420 OK

TKLC|GTTGroup2|919420|AIN|IN|CLASS|016|010023024|003|DPCSSN|
 TKLC GTTGroup2 919420 Failed  E52  Wrong number of values for Create/Modify DGT.

TKLC|GTTGroup2|199420|||CLASS|016|010023024|003|DPCSSN|SSN|0|CNAM|100|002002002|005|DPCSSN|SSN|
0|ISVM|134|003003003|006|DPCSSN|SSN|0|WSMSC|125|004004004|007|DPCSSN|SSN|0
TKLC GTTGroup2 199420  Failed  E182  Invalid NPA-NXX value – 199420

TKLC|GTTGroup2|919420|AIN|AIN|CLASS|016|010023024|003|DPCSSN|SSN|0|CNAM|100|002002002|005|DPC
SSN|SSN|0|ISVM|134|003003003|006|DPCSSN|SSN|0|LIDB|125|004004004|007|DPCSSN|SSN|0
 TKLC GTTGroup2 919420 Failed  E121  Translation Type Service name is not unique – AIN

TKLC|GTTGroup2|919420|||CLASS|016|010023024|003|DPCSSN|SSN|0|CNAM|100|002002002|005|DPCSSN|SSN|
0|ISVM|134|003003003|006|DPCSSN|SSN|0|LIDB|125|004004004|007|DPCSSN|SSN|256
TKLC GTTGroup2 919420  Failed  E162  Invalid NGT value - 256
Validation completed on Wed Jul 11 23:48:52 EDT 2001
```

NPA-NXX Split Error Codes

See Error Codes.

Custom TN Filter Input File

The Custom **TN** Filter input file enables you to create, modify, or delete a Custom **TN** Filter.

Each data entry in the input file is checked to ensure that the format corresponds to the input file specification. The data values are validated using the same rules that are presently used when entering a single Custom **TN** Filter via the **LSMS GUI**. The entire input data file is validated, successful entries and errors encountered are written to the result file, and the processing of the next data entry continues.

Only if no errors are encountered is further processing allowed by this feature, at which time the data entries are added to the **LSMS** database Custom **TN** Filter table.

The user specified filename must have an extension of **.TNF** to be a valid Custom **TN** Filter.

The **NPA** and/or the **NPANXX** value of each Custom **TN** Filter data entry in the file is used to check if the Custom **TN** Filter object instance exists in the supported database. If the Custom **TN** Filter object instance *is not* present, a new instance is created. If the Custom **TN** Filter instance *is* present in the supported database, then the entire Custom **TN** Filter object instance data is overwritten with the input file data for that instance. For deletions, if the Custom **TN** Filter object exists, it is deleted. If the Custom **TN** Filter object does not exist, however, the delete request is logged as a success, not a failure, in the Custom **TN** Filter result file.

The Custom **TN** Filter input block contains one record for each database entry; individual fields are pipe delimited, with a new line (0x0A) after each custom **TN** filter record. Each entry should begin at the beginning of the line.

Table 4-14 Custom TN Filter Input Block Contents

Field Number	Field Name
1	Custom **TN** Filter name
2	Filter description
3	Filter type
4 onward	**NPA** and/or **NPANXX** values (optional values)

Custom TN Filter Input File Example

Figure 4-21 is an example of a Custom **TN** Filter input file with two entries. See Table 4-15 for an explanation of the fields.

Figure 4-21 Sample Custom TN Filter Input File

```
TNFilterName1|Filter 1 description|include|910|867|999
TNFilterName2|Filter 2 description|exclude|919|000|999
```

Table 4-15 Explanation of the Fields in the Custom TN Filter Input File

Field Number	Field Name	Value in Example	Range of Values
1	Custom **TN** Filter name	**TNFilterName1**	Max 64 alphanumeric characters
2	Filter description	Filter 1 description	Any **ASCII** text string
3	Filter type	include	[exclude | include]
4 onward	**NPA** and/or **NPANXX** values	910 867 999	[0-9]{3 or 6 digits} Optional field
last	Block Termination	The block termination field value is a new line character; it is generated by pressing the **Enter** key on the keyboard.	

Custom TN Filter Input File - Delete Record

The Custom **TN** Filter delete record contains one record for each database entry. Individual fields are pipe delimited with a new line (0x0A) after each Custom **TN** Filter recorded. Each entry should begin at the beginning of the line.

Example Custom TN Filter Delete Record File

```
DELETE|TNFilterName1
```

Table 4-16 Explanation of the Fields in the Override GTT Delete Record

Field Number	Field Name	Range of Values	Values in Example
1	Delete record recognition string	Characters {6 characters}	DELETE[1]

Table 4-16 (Cont.) Explanation of the Fields in the Override GTT Delete Record

Field Number	Field Name	Range of Values	Values in Example
2	Custom TN Filter name	[A-Z, a-z, 0-9] {64 alphanumeric}	TNFilterName1

[1]This is the fixed string to be used for all delete records. An entry that does not begin with DELETE, or one in which DELETE is misspelled, will be treated like a create or modify entry.

Creating or Modifying the Input File

To create a custom TN filter input file:

> **Note:**
>
> After you update the **TN** filter, run an audit for the **EMSs** utilizing that **TN** filter. Use the **NE** Audit with Reconcile procedure (refer to the *LNP Database Synchronization User's Guide*) for each **NPA-NXX** added or changed and on each affected **EMS** to update the databases. However, depending on the number of **NPA-NXXs**, the number of **EMSs** affected, and the physical distance between the **LSMS** and the network element, a bulk download to each affected **EMS**/network element may be more efficient. For more information, refer to the *LNP Database Synchronization User's Guide*.

> **Note:**
>
> After making any changes to the custom **TN** filter, you must restart the EAGLE agent for the changes to take effect.

1. Prepare the custom TN filter input file.

   See Figure 4-21 for more information about the format of a custom TN filter input file. See Table 4-15 for more information about the fields in a custom TN filter input file. The custom TN filter input file extension must be .TNF.

2. Transfer the custom TN filter input file to the LSMS.

   Transfer the file to the My Documents folder on the Windows desktop of your computer.

Importing the File

To import the custom **TN** filter input file:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.

   If you are logging into a shadow **LSMS**, see "Entering Locally Provisioned Data on a Shadow **LSMS**".

2. From the LSMS Console window, select **LSMS**, and then **Input Data by File**.

   The Input Data by File window appears.

3. If the name of the input file does not appear in the **Input File** field, you can type it in (specifying the complete path), or use the **Browse** button to find it.
4. Click the **Start** button.

   This initiates the file validation phase.

Custom TN Filter Result File

The Custom **TN** Filter result file (which is located in the same directory as the input data file) stores useful information about the processing of each of the Custom **TN** Filter data items read from the input data file while executing the file validation or input phase. A result file with the format shown below is produced during file validation or input processing phase.

For each correct data item read from the input file, a single line appears in the result file:

Name|Operation_Status

For each erroneous data item read from the input file, a single line appears in the result file:

Name|Operation_Status|Error_Number|Error_Message

where:

Name = Custom TN Filter Name.

Operation_Status = OK to indicate a successful operation; FAILED to indicate an error in processing.

Error_Number = "E" followed by up to 3 numeric digits (this is an optional field, it appears only if operation status is FAILED).

Error_Message = Text indicating the first processing error found in the data entry (this is an optional field, it appears only if operation status is FAILED).

Example Custom TN Filter Result File

Figure 4-22 shows a picture of a custom **TN** filter result file.

Figure 4-22 Example Custom TN Filter Result from File Validation Phase

```
Input Filename: J:\inputByFile\tnFilterError.tnf.results

Validation started on Thu Jul 12 00:25:10 EDT 200
 Failed E53 Invalid blank line for an entry

Filter 1|Filter 1 description|include|910|867|999
 Filter 1 Failed E282 Invalid TN filter name - Filter 1

TNFilterName1|Filter 1 description|include|910|867|999|
TNFilterName1 Failed E52 Wrong number of values for Create/Modify TN Filter.

TNFilterName1|Filter 1 description|include|910|867|999
 TNFilterName1 OK

Validation completed on Thu Jul 12 00:25:11 EDT 2001
```

Custom TN Filter Error Codes

See Error Codes.

Error Codes

Table 4-17 lists the error codes, messages, and causes that apply to the Input Data by File processes for Default **GTT**, Override **GTT**, **NPA-NXX** Split, and Custom **TN** Filters.

Table 4-17 Input Data by File Error Codes

Error Number	Error Text	Cause
0		Internal processing error **Note:** Errors generated by the `supman` process will be logged with Error Number 0. Some examples include: • Cannot determine the

Table 4-17 (Cont.) Input Data by File Error Codes

Error Number	Error Text	Cause
		region for this split. • Database Server Timeout.
52	Wrong number of values for OPERATION|DATA TYPE where OPERATION = create/ modify or delete and DATA TYPE = DGT or OGT or NPA Split or TN Filter	The specific data entry has either too many or not enough pipe delimited data fields for a valid entry.

Table 4-17 (Cont.) Input Data by File Error Codes

Error Number	Error Text	Cause
53	Invalid blank line for an entry	A blank line was be inserted into the file. Check the input file for any blank lines. Check the last entry in the input file to make sure was **NOT** a blank line.
100	Non-numeric date field value	The date field value in the input data entry is not numeric. Check for illegal characters.
101	Year value is required	Year field value is empty.
102	Non-numeric year value	The year field value in the input data entry is not numeric. Check for illegal characters.
103	Invalid year value	Year date field value must be between 1979 and 9999.
104	Month value is required	Month field value is empty.
105	Non-numeric month value	The month field value in the input data entry is not numeric. Check for illegal characters.
106	Invalid month value	Month field value must be between 1 and 12.
107	Day value is required	Day field value is empty.
108	Non-numeric day value	The day field value in the input data entry is not numeric. Check for illegal characters.
109	Invalid day value	Day field value must be between 1979 and 9999.
120	Invalid **GTT** type	**GTT** type field must be *include* or *exclude*.
121	**Translation Type** Service name is not unique	Translation type service names must be unique among all services.
122	**Translation Type** value is not unique	Translation type values must be unique among all services.
130	Service #: **XLAT**, **RI**, **SSN** and **NGT** mismatch	The entry has a parameter inconsistency in service number (1-4). **Note:** The block termination field value is a new line character, which is generated by pressing the **Enter** key on the keyboard.
140	**GTT** Group name is required	**GTT** Group field value is empty.
141	Invalid **GTT** Group name length	The **GTT** Group name is greater than 40 characters.
142	Invalid **GTT** Group name	The **GTT** Group name must be composed of alphanumeric characters.
150	**LRN** value is required	The **LRN** field value is empty.

Table 4-17 (Cont.) Input Data by File Error Codes

Error Number	Error Text	Cause
151	Non-numeric **LRN** value	The **LRN** field value in the input data entry is not numeric. Check for illegal characters.
152	Invalid **LRN** value length	The **LRN** value in the input data file is not the required 10 digits length.
160	Service #: **NGT** value is required	The **NGT** field value is empty.
161	Service #: Non-numeric **NGT** value	The **NGT** field value in the input data entry is not numeric. Check for illegal characters.
162	Service #: Invalid **NGT** value	The **NGT** field values are illegal for service number (1-4).
170	**NPA** value is required	The **NPA** field value is empty.
171	Non-numeric **NPA** value	The **NPA** field value in the input data entry is not numeric. Check for illegal characters.
172	Invalid **NPA** value	The **NPA** field value is not between 200 and 999.
180	**NPA-NXX** value is required	The **NPA-NXX** field value is empty.
181	Non-numeric **NPA-NXX** value	The **NPA-NXX** field value in the input data entry is not numeric. Check for illegal characters.
182	Invalid **NPA-NXX** value	The **NPA-NXX** field value is not between 200000 and 999999.
190	**NPA-NXX**-X value is required	The **NPA-NXX**-X field value is empty.
191	Non-numeric **NPA-NXX**-X value	The **NPA-NXX**-X field value in the input data entry is not numeric. Check for illegal characters.
192	Invalid **NPA-NXX**-X value	The **NPA-NXX**-X field value is not between 200000 and 999999.
200	Old and New **NPA** values cannot be identical	The **NPA-NXX** split input data entry contains an Old **NPA** value that equals the New **NPA** Value (this is not allowed).
201	Start date must be equal to or after current date	The start date precedes the current date.
202	End date must be after start date	The end date precedes or equals the start date.
203	End date must be after the current date	The end date precedes or equals the current date.
210	**NXX** value is required	The **NXX** field value is empty.

Table 4-17 (Cont.) Input Data by File Error Codes

Error Number	Error Text	Cause
211	Non-numeric **NXX** value	The **NXX** field value in the input data entry is not numeric. Check for illegal characters.
212	Invalid **NXX** value	The **NXX** field value is not between 0 and 999.
221	Service #: Non-**ANSI** conforming point code value	The entry read from the input file **DPC** value has one of the following errors: 1-**DPC** value of 000-**XXX**-**XXX** which is invalid. 2- **DPC** value of 001-000-**XXX** through 005-000-**XXX** 3- **DPC** field must be composed of only the digits 0-9 with a maximum value of 255-255-255. For service number (1-4).
222	Service #: Point code: <component> component is invalid.	The point code component field value is not between 0 and 255.
230	Service #: **RGTA** value is required	**RGTA** field value is empty.
231	Service #: Invalid **RGTA** value	The **RGTA** field value is not **YES** or **NO** .
240	Service #: **RI** value is required	**RI** field value is empty.
241	Service #: Invalid **RI** value	The **RI** field value is not **GT** or **SSN** .
250	Service provider **ID** is required	**SPID** field value is empty.
251	Invalid Service Provider **ID** value length	**SPID** must be 4 alphanumerical characters.
252	Invalid Service Provider ID value length	SPID field value is not the required 4 alphanumerical length.
260	Service #: **SSN** value is required	The **SSN** field value is empty.
261	Service #: Non-numeric **SSN** value	The **SSN** field value in the input data entry is not numeric. Check for illegal characters.
262	Service #: Invalid **SSN** value	The **SSN** field value is not 0 or between 2 and 255.
270	**TN** value is required	The **TN** field value is empty.
271	Non-numeric **TN** value	The **TN** field value in the input data entry is not numeric. Check for illegal characters.
272	Invalid **TN** value length	The **TN** value in the input data file is not the required 10 digits length.
280	**TN** filter name is required	**TN** Filter Name field value is empty.

Table 4-17 (Cont.) Input Data by File Error Codes

Error Number	Error Text	Cause
281	Invalid **TN** filter name length	**TN** Filter Name field value must be 40 or less alphanumeric characters.
282	Invalid **TN** filter name	**TN** Filter Name field value must be 40 or less alphanumeric characters.
283	Invalid **TN** filter description length	**TN** Filter Description field value must be 255 or less alphanumeric characters.
284	Invalid **TN** filter type	**TN** Filter Type field value must be *include* or *exclude*.
286	Overlapping **TN** filter data	**TN** filter **NPA** and **NPA-NXX** ranges cannot overlap.
287	Duplicate **TN** filter data	**TN** Filter **NPANXX** field values already exist.
300	Service #: **TT** value is required	The **TT** field value is empty.
301	Service #: Non-numeric **TT** value	The **TT** field value in the input data entry is not numeric. Check for illegal characters.
302	Service #: Invalid **TT** value	The **TT** field value is not between 1 and 255.
310	Service #: **TT** Service Name is required	**TT** Service Name field value is empty.
311	Service #: Invalid **TT** services name value	The **TT** Service Name field value is not **CLASS** , **CNAM** , **LIDB** , **ISVM** , or **WSMSC** .
312	Invalid Message Relay **TT** service Name - **WSMSC**, **WSMSC** feature is not activated	**WSMSC** Message Relay **TT** service is only valid when the **WSMSC** feature is activated.
313	Either **AIN** or **IN** or at least one service must be populated	A valid default **GTT** entry must have either one of the services fully populated or **AIN** or **IN** field entry.
314	At least one service must be populated	A valid override **GTT** entry must have at least one of the services fully populated.
320	Service #: **Translation Type** name is not unique	The data entry contains two or more of the translation types that are not unique. **Note:** The block termination field value is a new line character, which is generated by pressing the **Enter** key on the keyboard.
321	Service #: **Translation Type** value not unique	The data entry contains two or more of the translation type values that are not unique.
330	Service #: **XLAT** value is required	**XLAT** field value is empty.

Table 4-17 (Cont.) Input Data by File Error Codes

Error Number	Error Text	Cause
331	Service #: Invalid **XLAT** value	The **XLAT** field value is not **DPC** , **DPCSSN** , or **DPCNGT** .

5

LSMS Reports

This chapter contains procedures for generating, viewing, and printing LSMS reports in a predefined format. It also contains information about the Report Generator, which enables you to create customized LSMS reports.

Introduction

This chapter provides general information about viewing reports in a browser window. It also provides specific, step-by-step procedures for creating, viewing, and deleting the following types of pre-formatted **LSMS** reports.

> **Note:**
>
> You can generate up to ten reports at a time using the Reports menu item.

- Service Provider Administrative Data
- Service Provider Network Data
- **EMS** Configuration Data
- Default **GTT** Data
- Override **GTT** Data
- **NPA** Split Data
- **LSMS** Subscriptions by **LRN** Data
- **LSMS** Subscriptions by Service Provider Data
- **LSMS** Number Pool Blocks by **LRN** Data
- **LSMS** Number Pool Blocks by Service Provider Data
- Service Provider Data
- Permission Group Data

Procedures to help you create, view, and delete each type of report follow this introductory section, beginning with “Service Provider Administrative Data Reports”.

This chapter also provides information about the **Report Generator**, which enables you to customize your own reports.

Viewing Reports

The browser from which you launched the **GUI** is used to display the reports.

A new browser window opens for the first report that you view, and is reused for viewing all subsequent reports.

Use the browser file functions to perform desired tasks, such as printing, searching, and exiting.

Service Provider Administrative Data Reports

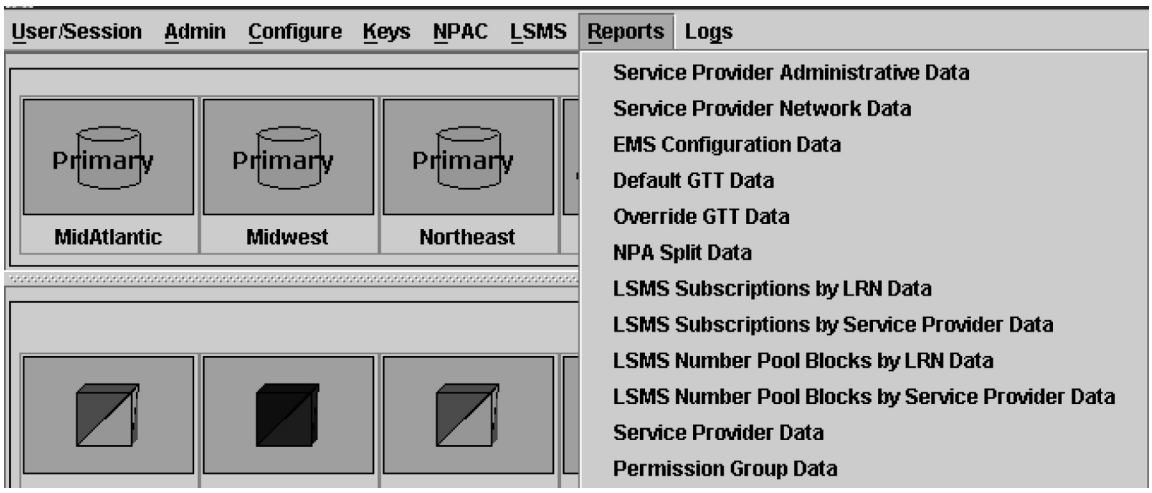
The following procedures explain how to create, view, and delete Service Provider Administrative Data reports.

Creating a Service Provider Administrative Data Report

To create a Service Provider Administrative Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Service Provider Administrative Data** .

Figure 5-1 Reports Pull-Down List



The **Service Provider Administrative Data Report Create** window appears.

3. In the **File** field, enter a file name for the report to be generated.

   Click **OK** or **Apply**. The report automatically runs in background mode and does not interfere with **LSMS** processing tasks such as **NPAC** traffic processing.
4. An Update Successful message window appears.
5. Click **OK** to view the report.

Viewing a Service Provider Administrative Data Report

To view a Service Provider Administrative Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Service Provider Administrative Data** .

The Service Provider Administrative Data Report Create window appears.

3. Select the **View** tab.

   The Service Provider Administrative Data Report View window appears.

4. In the **File** field, enter the name of the report to be viewed or click the **Browse** button to select a report.

   Click **OK** or **Apply**.

5. The report output window displays.

Deleting a Service Provider Administrative Data Report

To delete a Service Provider Administrative Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Service Provider Administrative Data**).

   The Service Provider Administrative Data Report Create window appears.

3. Select the **Delete** tab.

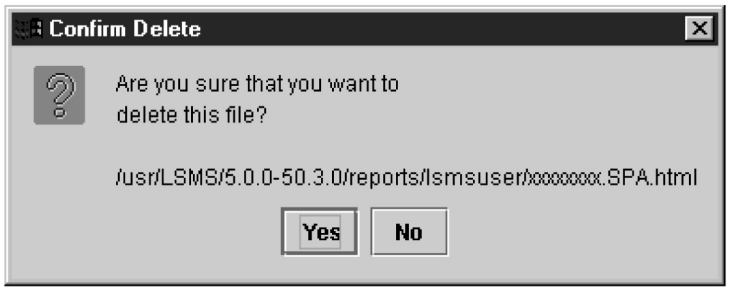
   The Service Provider Administrative Data Report Delete window appears.

4. In the **File** field, enter the name of the report to be deleted or click the **Browse** button to select a report.

   Click **OK** or **Apply**.

5. A Confirm Delete message window appears.

Figure 5-2 Confirm Delete Message Window



6. Click **Yes** or **No**.

   If you click **Yes**, an Update Successful message window appears. Click **OK** to return to the Service Provider Administrative Data Report Delete window.

Figure 5-3 Update Successful Message Window

7. If you click **No**, you return to the Service Provider Administrative Data Report Delete window.

Service Provider Network Data Reports

The following procedures explain how to create, view, and delete Service Provider Network Data reports.

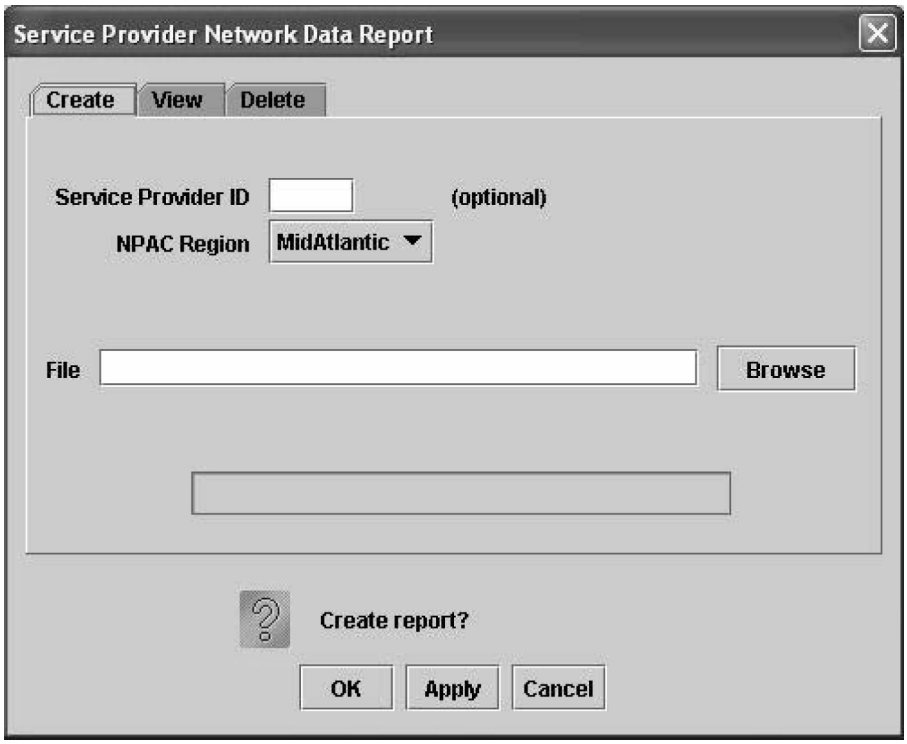
Creating a Service Provider Network Data Report

To create a Service Provider Network Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Service Provider Network Data** .

   The Service Provider Network Data Report Create window appears.

Figure 5-4 Service Provider Network Data Report Create Window



3. In the **Service Provider ID** field, enter the Service Provider **ID** (**SPID**), if desired (this field is optional).

> **Note:**
>
> See Creating a Permission Group Data Report for the report contents that are selected and displayed depending upon whether you specify a value for the optional **SPID** parameter.

Table 5-1 Using the Optional SPID Parameter (Service Provider Network Data Report)

SPID Value Specified?	Report Contents Displayed
N	All **LRN**, **NPA-NXX**, and **NPA-NXX**-X records
Y	**LRN**, **NPA-NXX**, and **NPA-NXX**-X records containing specified **SPID** value only

4. In the **File** field, enter a file name for the report to be generated.

   Click **OK** or **Apply**. The report automatically runs in background mode and does not interfere with **LSMS** processing tasks such as **NPAC** traffic processing.

5. An Update Successful message window appears.

6. Click **OK** to view an example of the report.

> **Note:**
>
> A Service Provider **ID** value of **UNKN** indicates that the Service Provider information for the particular object could not be found because of an object relationship mismatch. If this occurs, call the My Oracle Support (MOS).

Figure 5-5 Service Provider Network Data Report Example

SPID	LRN ID	LRN	Download Reason	Creation Time Stamp
1234	2	1112223000	0	19980605110000.0Z

SPID	NPA-NXX ID	NPA-NXX	Download Reason	Creation Time Stamp	Effective Time Stamp
1234	700473	706599	0	20000704131045.0Z	20000704131045.0Z

Viewing a Service Provider Network Data Report

To view a Service Provider Network Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.

2. From the LSMS Console window, select **Reports**, and then **Service Provider Network Data** .

   The Service Provider Network Data Report Create window appears.

3. Select the **View** tab.

   The Service Provider Network Data Report View window appears.

4. In the **File** field, enter the name of the report to be viewed or click the **Browse** button to select a report.

   Click **OK** or **Apply**.

5. The report output window displays.

Deleting a Service Provider Network Data Report

To delete a Service Provider Network Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Service Provider Network Data** .

   The Service Provider Network Data Report Create window appears.
3. Select the **Delete** tab.

   The Service Provider Network Data Report Delete window appears.
4. In the **File** field, enter the name of the report to be deleted or click the **Browse** button to select a report.

   Click **OK** or **Apply**.
5. A **Confirm Delete** message window appears.
6. Click **Yes** or **No**.

   If you click **Yes**, an Update Successful message window appears. Click **OK** to return to the Service Provider Network Data Report Delete window.
7. If you click **No**, you return to the Service Provider Network Data Report Delete window.

EMS Configuration Data Reports

The following procedures explain how to create, view, and delete **EMS** Configuration Data reports.

Creating an EMS Configuration Data Report

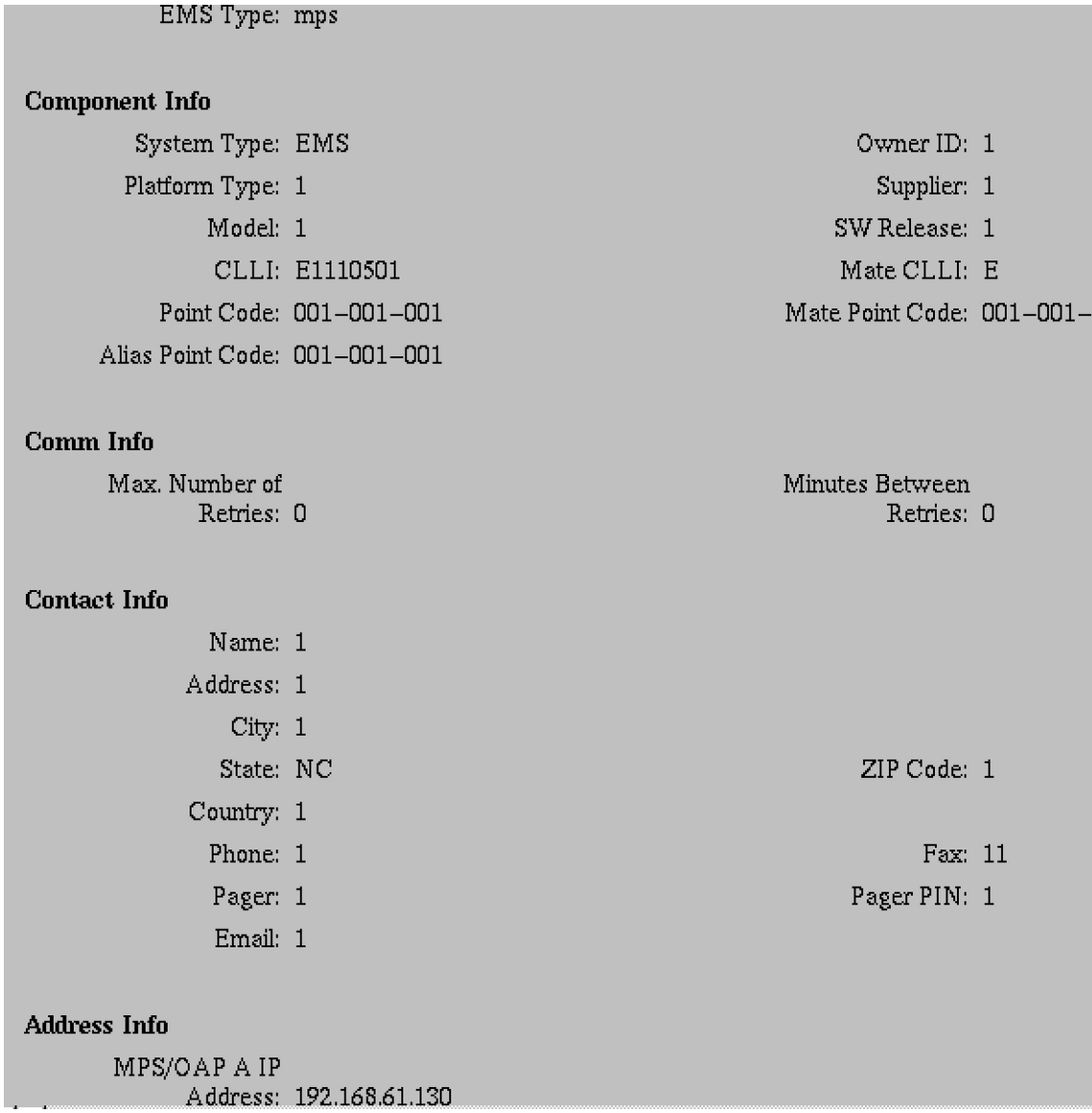
To create an Element Management System Configuration Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **EMS Configuration Data**.

   The EMS Configuration Data Report Create window appears.
3. In the **File** field, enter a file name for the report to be generated.

   Click **OK**or **Apply**. The report automatically runs in background mode and does not interfere with **LSMS** processing tasks such as **NPAC** traffic processing.
4. An Update Successful message window appears.
5. Click **OK** to view an example of the report.

Figure 5-6 EMS Configuration Data Report Example



EMS Type: mps

Component Info

System Type:	EMS	Owner ID:	1
Platform Type:	1	Supplier:	1
Model:	1	SW Release:	1
CLLI:	E1110501	Mate CLLI:	E
Point Code:	001–001–001	Mate Point Code:	001–001–
Alias Point Code:	001–001–001		

Comm Info

Max. Number of Retries:	0	Minutes Between Retries:	0

Contact Info

Name:	1		
Address:	1		
City:	1		
State:	NC	ZIP Code:	1
Country:	1		
Phone:	1	Fax:	11
Pager:	1	Pager PIN:	1
Email:	1		

Address Info

MPS/OAP A IP Address: 192.168.61.130

Viewing an EMS Configuration Data Report

To view an **EMS** Configuration Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **EMS Configuration Data** .

   The EMS Configuration Data Report Create window appears.
3. Select the **View** tab.

   The EMS Configuration Data Report View window appears.
4. In the **File** field, enter the name of the report to be viewed or click the **Browse** button to select a report.

   Click **OK**or **Apply**.

5. The report output window displays.

Deleting an EMS Configuration Data Report

To delete an **EMS** Configuration Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **EMS Configuration Data**.

   The EMS Configuration Data Report Create window appears.
3. Select the **Delete** tab.

   The EMS Configuration Data Report Delete window appears.
4. In the **File** field, enter the name of the report to be deleted or click the **Browse** button to select a report.

   Click **OK**or **Apply**.
5. A Confirm Delete message window appears.
6. Click **Yes** or **No**.

   If you click **Yes**, an Update Successful message window appears. Click **OK** to return to the EMS Configuration Data Report Delete window.
7. If you click **No**, you return to the EMS Configuration Data Report Delete window.

Default GTT Data Reports

This section contains information about Query **GTT** by **DPC**, which enables you to retrieve certain global title translation (**GTT**) information for a specific destination point code (**DPC**). This section also includes procedures that explain how to create, view, and delete Default **GTT** Data reports.

Query GTT by DPC

Query **GTT** by **DPC** enables you to retrieve the following global title translation (**GTT**) information for a specific destination point code (**DPC**).

- Numbering Plan Area-Number Exchange (**NPA-NXX**) default data
- **Location Routing Number** (**LRN**) override data

The report contains all the fields included in reports generated by prior releases of **LSMS**, but includes only those entries for **NPA-NXX** translations associated with the specified **DPC**.

You can use this information to verify the accuracy of locally provisioned global title data and to determine impacted translations for various network changes.

Creating a Default GTT Data Report

To create a Default **GTT** Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Default GTT**.

The Default GTT Data Report Create window appears.

3. Make a selection from the **Service Provider ID** listbox.

   In the **DPC** (Destination **Point Code**) field, enter a specific destination point code, if desired (this field is optional). See Table 5-2 for the report contents that are selected and displayed depending upon whether you specify a value for the optional **DPC** parameter.

Table 5-2 Using the Optional DPC Parameter (Default GTT Report)

DPC Value Specified?	Report Contents Displayed
N	Default Translation records containing specified **SPID** value only
Y	Default Translation records containing specified **SPID** and **DPC** values only

4. In the **File** field, enter a file name for the report to be generated.

   Click **OK**or **Apply**. The report automatically runs in background mode and does not interfere with **LSMS** processing tasks such as **NPAC** traffic processing.

5. An Update Successful message window appears.

6. Click **OK** to view an example of the report.

> **Note:**
>
> A value of **UNKN** in the **SPID** column indicates that information for the particular object could not be found because of an object relationship mismatch. If this occurs, call the My Oracle Support (MOS).

Figure 5-7 Default GTT Report Example

Default Global Title Translation Report

GTT Group	NPA-NXX	SPID	Service	TT	DPC	SSN	XLAT	RI	NGT
Group1	919460	9999							
			AIN	0	000-000-000	0	dpc	gt	0
			IN	0	000-000-000	0	dpc	gt	0
			CLASS	1	101-101-101	0	dpc	gt	0
			LIDB	4	000-000-000	0	dpc	gt	0
			ISVM	3	102-102-102	0	dpcngt	gt	51
			CNAM	2	000-000-000	12	dpcssn	ssn	0
			WSMSC	0	000-000-000	0	dpc	gt	0
Group1	919461	9999							
			AIN	0	000-000-000	0	dpc	gt	0
			IN	0	000-000-000	0	dpc	gt	0
			CLASS	1	111-111-111	0	dpc	gt	0

Viewing a Default GTT Data Report

To view a Default **GTT** Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Default GTT**.

   The Default GTT Data Report Create window appears.
3. Select the **View** tab.

   The Default GTT Data Report View window appears.
4. In the **File** field, enter the name of the report to be viewed or click the **Browse** button to select a report.

   Click **OK** or **Apply**.
5. The report output window appears.

Deleting a Default GTT Data Report

To delete a Default **GTT** Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Default GTT**.

   The Default GTT Data Report Create window appears.
3. Select the **Delete** tab.

   The Default GTT Data Report Delete window appears.
4. In the **File** field, enter the name of the report to be deleted or click the **Browse** button to select a report.

   Click **OK** or **Apply**.
5. A Confirm Delete message window appears.
6. Click **Yes** or **No**.

   If you click **Yes**, an Update Successful message window appears. Click **OK** to return to the Default GTT Data Report Delete window.
7. If you click **No**, you return to the Default GTT Data Report Delete window.

Override GTT Data Reports

This section contains information about Query **GTT** by **DPC**, which enables you to retrieve certain global title translation (**GTT**) information for a specific destination point code (**DPC**). This section also includes procedures that explain how to create, view, and delete Override **GTT** Data reports.

Query GTT by DPC

Query **GTT** by **DPC** enables you to retrieve the following global title translation (**GTT**) information for a specific destination point code (**DPC**).

- Numbering Plan Area-Number Exchange (**NPA-NXX**) default data
- **Location Routing Number** (**LRN**) override data

The report contains all the fields included in reports generated by prior releases of **LSMS**, but includes only those entries for **NPA-NXX** translations associated with the specified **DPC**.

You can use this information to verify the accuracy of locally provisioned global title data and to determine impacted translations for various network changes.

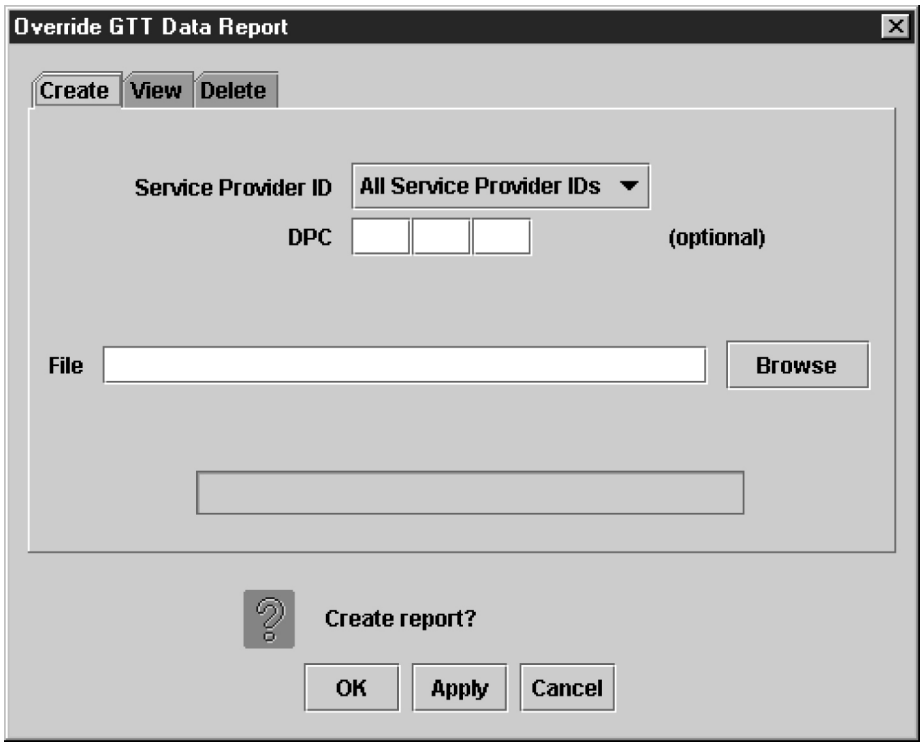
Creating an Override GTT Data Report

To create an Override **GTT** Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Override GTT**.

   The Override GTT Data Report Create window appears.

Figure 5-8 Override GTT Data Report Create Window



3. Make a selection from the **Service Provider ID** listbox.

   In the **DPC** (Destination **Point Code**) field, enter a specific destination point code, if desired (this field is optional). See Table 5-3 for the report contents that are selected and displayed depending upon whether you specify a value for the optional **DPC** parameter.

Table 5-3 Using the Optional DPC Parameter (Override GTT Report)

DPC Value Specified?	Report Contents Displayed
N	Override Translation records containing specified **SPID** value only
Y	Override Translation records containing specified **SPID** and **DPC** values only

4. In the **File** field, enter a file name for the report to be generated.

   Click **OK** or **Apply**. The report automatically runs in background mode and does not interfere with **LSMS** processing tasks such as **NPAC** traffic processing.

5. An Update Successful message window appears.

6. Click **OK** to view an example of the report.

Figure 5-9 Override GTT Report Example

Override Global Title Translation Report

GTT Group	LRN	SPID	Service	TT	DPC	SSN	XLAT	RI	NGT	RGTA
Group1	9194600000	9999								
			CLASS	1	000-000-000	0	dpc	gt	0	TRUE
			LIDB	4	110-110-110	0	dpc	gt	0	FALSE
			ISVM	3	000-000-000	5	dpcssn	ssn	0	FALSE
			CNAM	2	100-100-100	0	dpcngt	gt	50	FALSE
			WSMSC	0	000-000-000	0	dpc	gt	0	FALSE
Group1	9194610000	9999								
			CLASS	0	000-000-000	0	dpc	gt	0	FALSE
			LIDB	1	000-000-000	0	dpc	gt	0	TRUE
			ISVM	4	111-111-111	0	dpc	gt	0	FALSE
			CNAM	3	000-000-000	5	dpcssn	ssn	0	FALSE
			WSMSC	2	101-101-101	0	dpcngt	gt	50	FALSE
Group1	9194620000	9999								

Viewing an Override GTT Data Report

To view an Override **GTT** Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.

2. From the LSMS Console window, select **Reports**, and then **Override GTT**

   The Override GTT Data Report Create window appears.

3. Select the **View** tab.

   The Override GTT Data Report View window appears.

4. In the **File** field, enter the name of the report to be viewed or click the **Browse** button to select a report.

   Click **OK** or **Apply**.

5. The report output window displays.

Deleting an Override GTT Data Report

To delete an Override **GTT** Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Override GTT**

   The Override GTT Data Report Create window appears.

3. Select the **Delete** tab.

   The Override GTT Data Report Delete window appears.

4. In the **File** field, enter the name of the report to be deleted or click the **Browse** button to select a report.

   Click **OK** or **Apply**.

5. A Confirm Delete message window appears.
6. Click **Yes** or **No**.

   If you click **Yes**, an Update Successful message window appears. Click **OK** to return to the Override GTT Data Report Delete window.

7. If you click **No**, you return to the Override GTT Data Report Delete window.

NPA Split Data Reports

The following procedures explain how to create, view, and delete **NPA** Split Data reports.

Creating NPA Split Data Reports

To create an **NPA** Split Data report:

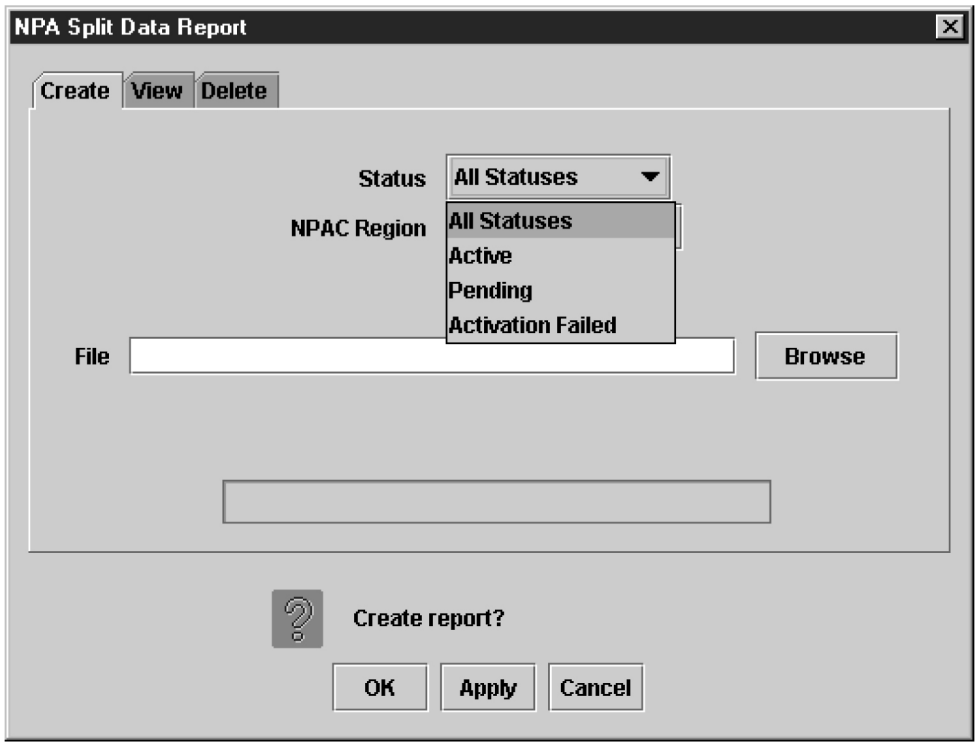
1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **NPA Split Data**, and then select **Create**.

   The NPA Split Data Report Create window appears.

3. In the **Status** field, select the appropriate status.

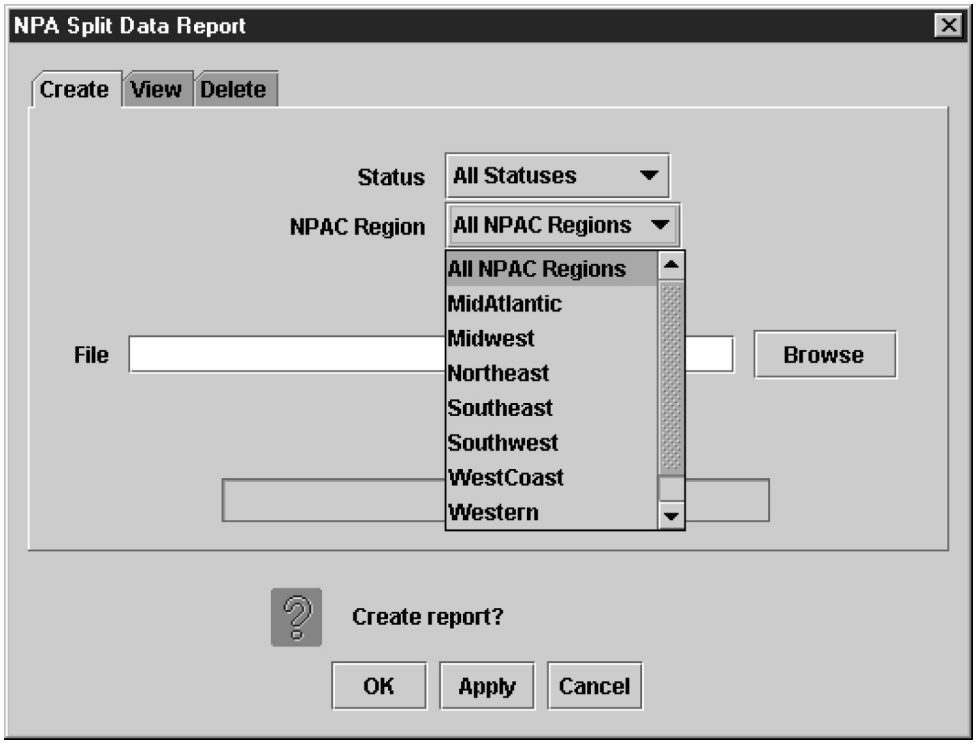
   The options available are All Statuses, Active, Pending, and Activation Failed.

Figure 5-10 NPA Split Data Report Statuses



4. In the **NPAC Region** field, select the desired region (or All **NPAC** Regions) for which you require information.

Figure 5-11 NPA Split Data NPAC Regions



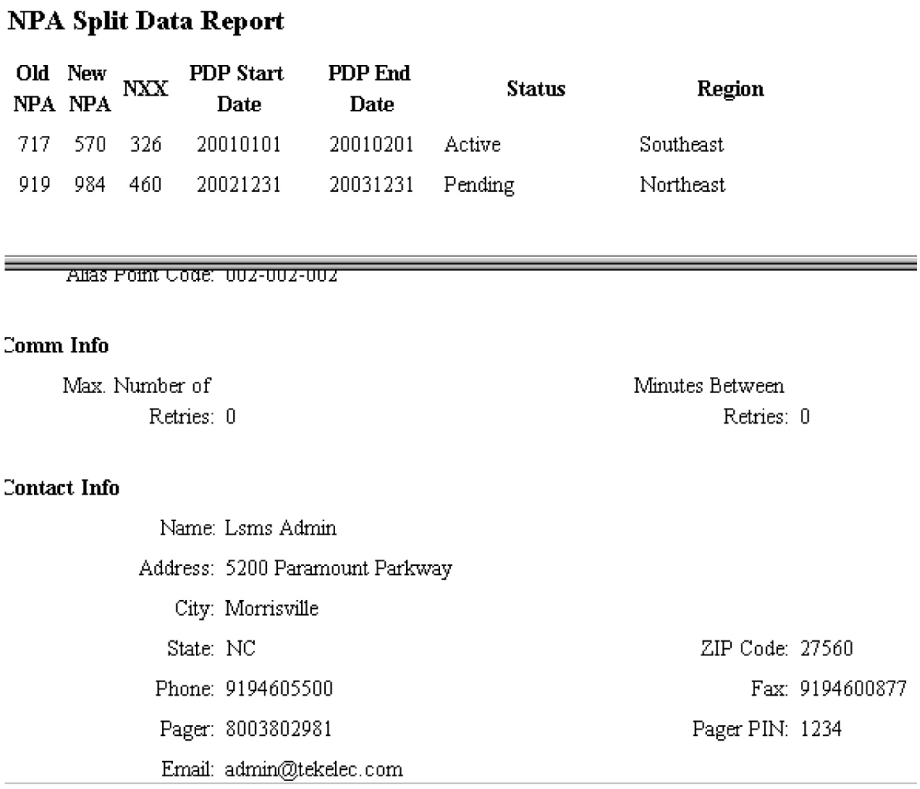
5. In the **File** field, enter a file name for the report to be generated.

   Click **OK** or **Apply**. The report automatically runs in background mode and does not interfere with **LSMS** processing tasks such as **NPAC** traffic processing.

6. An Update Successful message window appears.

7. Click **OK** to view an example of the report.

Figure 5-12 NPA Split Data Report Example



NPA Split Data Report

Old NPA	New NPA	NXX	PDP Start Date	PDP End Date	Status	Region
717	570	326	20010101	20010201	Active	Southeast
919	984	460	20021231	20031231	Pending	Northeast

Alias Point Code: 002-002-002

Comm Info

Max. Number of Retries: 0

Minutes Between Retries: 0

Contact Info

Name: Lsms Admin
Address: 5200 Paramount Parkway
City: Morrisville
State: NC
ZIP Code: 27560
Phone: 9194605500
Fax: 9194600877
Pager: 8003802981
Pager PIN: 1234
Email: admin@tekelec.com

Viewing NPA Split Data Reports

To view an **NPA** Split Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.

2. From the LSMS Console window, select **Reports**, and then **NPA Split Data**, and then select **View**.

   The NPA Split Data Report View window appears.

3. In the **File** field, enter the name of the report to be viewed or click the **Browse** button to select a report.

   Click **OK** or **Apply**.

4. The report output window displays.

Deleting NPA Split Data Reports

To delete an **NPA** Split Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **NPA Split Data**, and then select **Delete**.

   The NPA Split Data Report Delete window appears.
3. In the **File** field, enter the name of the report to be deleted or click the **Browse** button to select a report.

   Click **OK** or **Apply**.
4. A Confirm Delete message window appears.
5. Click **Yes** or **No**.

   If you click **Yes**, an Update Successful message window appears. Click **OK** to return to the NPA Split Data Report Delete window.
6. If you click **No**, you return to the **NPA Split Data Report Delete** window.

NPAC Audit Report

The iconectiv NPAC configuration options/features for each region include:

```
$ lsmsdb -c features | grep ICONECTIV
              N  CANADA_ICONECTIV
              N  MIDATLANTIC_ICONECTIV
              N  MIDWEST_ICONECTIV
              N  NORTHEAST_ICONECTIV
              N  SOUTHEAST_ICONECTIV
              N  SOUTHWEST_ICONECTIV
              N  WESTCOAST_ICONECTIV
              N  WESTERN_ICONECTIV
```

The value of these features can be changed using the `dbcfginternal` utility.

The audit script identifies the enabled NPAC regions and the corresponding NPAC and logs them:

```
$ auditnpac
Audit is started
Audit complete. Check /var/TKLC/lsms/logs/trace/npacAudit.log.1001 for results

$ cat /var/TKLC/lsms/logs/trace/npacAudit.log.1001
********** NPAC Audit Started **********

Total number of NPAC regions connected : 7

Npacagent MidAtlantic is running
Npacagent MidAtlantic is connected to Neustar

Npacagent Northeast is running
Npacagent Northeast is connected to iconectiv

Npacagent Southeast is running
Npacagent Southeast is connected to Neustar

Npacagent Southwest is running
Npacagent Southwest is connected to Neustar
```

```
Npacagent Western is running
Npacagent Western is connected to Neustar

Npacagent WestCoast is running
Npacagent WestCoast is connected to Neustar

Npacagent Midwest is running
Npacagent Midwest is connected to iconectiv

Total 2 regions are connected to iconectiv and 5 are connected to Neustar.

********** NPAC Audit Is Complete **********
```

LSMS Subscriptions by LRN Reports

The following procedures explain how to create, view, and delete **LSMS** Subscriptions by **LRN** reports.

Creating an LSMS Subscription by LRN Report

To create an **LSMS** Subscription by **LRN** report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **LSMS Subscriptions by LRN Data**.

   The LSMS Subscriptions by LRN Report Create window appears.
3. In the **Local Routing Number** field, if desired, enter the **LRN** of the subscriptions to be reported.

   This is an optional field.
4. In the **TN Range** field, if desired, enter the **TN** range.

   This is an optional field.

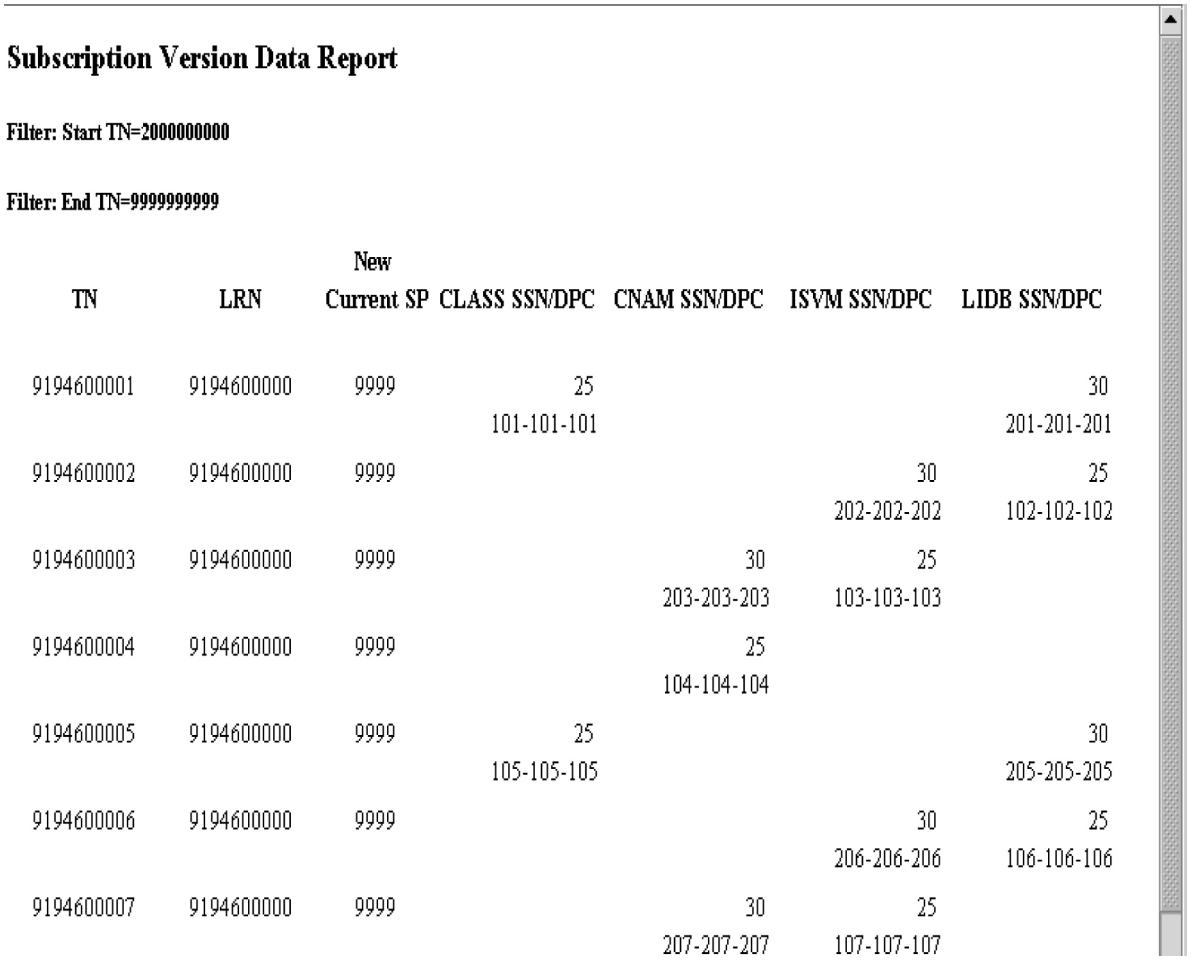
   a. If no **TN** range is specified, then all Subscription Version records that satisfy the **LRN** filter are displayed, regardless of its **TN**.

   b. If only the Start **TN** is specified, then all Subscription Version records with a **TN** equal to the Start **TN**, and that satisfy the **LRN** filter (if any), are displayed.

   c. If both the Start **TN** and End **TN** are specified, then all Subscription Version records with a **TN** between the Start **TN** and the End **TN**, and that satisfy the **LRN** filter (if any), are displayed.
5. In the **File** field, enter a file name for the report to be generated.

   Click **OK** or **Apply**. The report automatically runs in background mode and does not interfere with **LSMS** processing tasks such as **NPAC** traffic processing.
6. An Update Successful message window appears.
7. Click **OK** to view an example of the report.

Figure 5-13 LSMS Subscriptions by LRN Report Example



Subscription Version Data Report

Filter: Start TN=2000000000

Filter: End TN=9999999999

TN	LRN	New Current SP	CLASS SSN/DPC	CNAM SSN/DPC	ISVM SSN/DPC	LIDB SSN/DPC
9194600001	9194600000	9999	25 101-101-101			30 201-201-201
9194600002	9194600000	9999			30 202-202-202	25 102-102-102
9194600003	9194600000	9999		30 203-203-203	25 103-103-103	
9194600004	9194600000	9999		25 104-104-104		
9194600005	9194600000	9999	25 105-105-105			30 205-205-205
9194600006	9194600000	9999			30 206-206-206	25 106-106-106
9194600007	9194600000	9999		30 207-207-207	25 107-107-107	

Viewing an LSMS Subscription by LRN Report

To view an **LSMS** Subscription by **LRN** report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **LSMS Subscriptions by LRN Data**.

   The LSMS Subscriptions by LRN Report Create window appears.
3. Select the **View** tab.

   The LSMS Subscriptions by LRN Report View window appears.
4. In the **File** field, enter the name of the report to be viewed or click the **Browse** button to select a report.

   Click **OK** or **Apply**.
5. The report output window displays.

Deleting an LSMS Subscription by LRN Report

To delete an **LSMS** Subscription by **LRN** report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **LSMS Subscriptions by LRN Data**.

   The LSMS Subscriptions by LRN Report Create window appears.
3. Select the **Delete** tab.

   The LSMS Subscriptions by LRN Report Delete window appears.
4. In the **File** field, enter the name of the report to be deleted or click the **Browse** button to select a report.

   Click **OK** or **Apply**.
5. A Confirm Delete message window appears.
6. Click **Yes** or **No**.

   If you click **Yes**, an Update Successful message window appears. Click **OK** to return to the LSMS Subscriptions by LRN Report Delete window.
7. If you click **No**, you return to the LSMS Subscriptions by LRN Report Delete window.

LSMS Subscriptions by Service Provider Data Reports

The following procedures explain how to create, view, and delete **LSMS** Subscriptions by Service Provider Data reports.

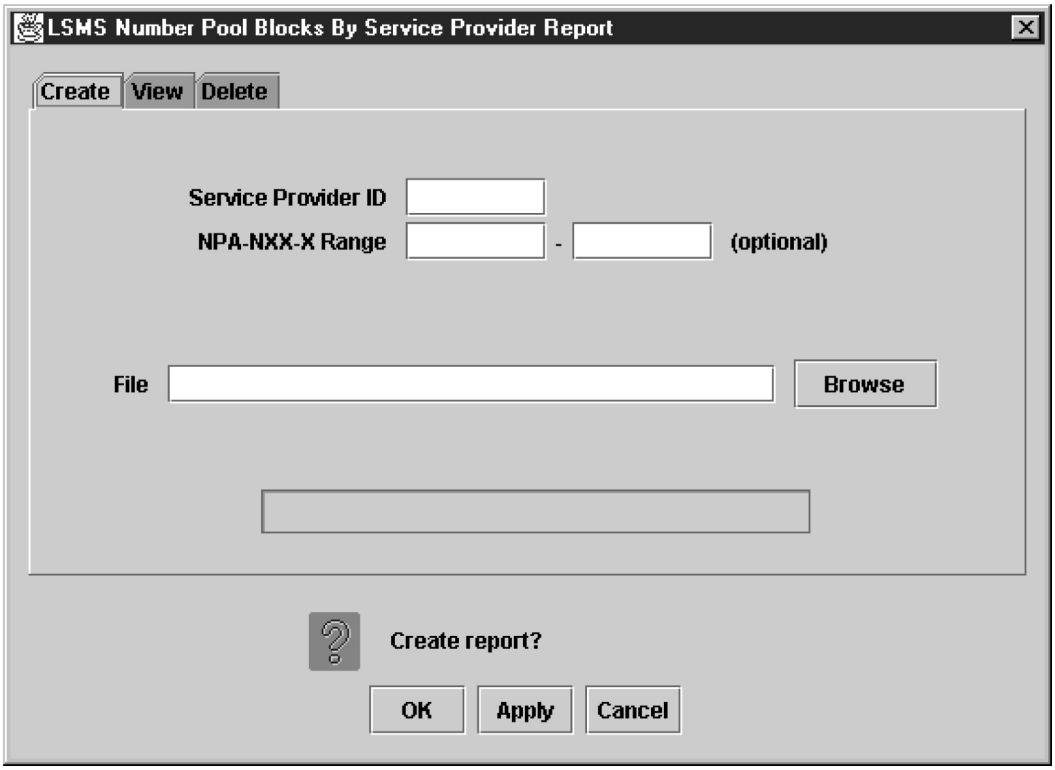
Creating an LSMS Subscription by Service Provider Data Report

To create an **LSMS** Subscription by Service Provider Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **LSMS Subscriptions by Service Provider Data**.

   The LSMS Subscriptions by Service Provider Report Create window appears.

Figure 5-14 LSMS Subscriptions by Service Provider Report Create Window



3. In the **Service Provider ID** field, enter the desired **SPID**.
4. In the **TN Range** field, enter the desired **TN** range.

   This is an optional field.

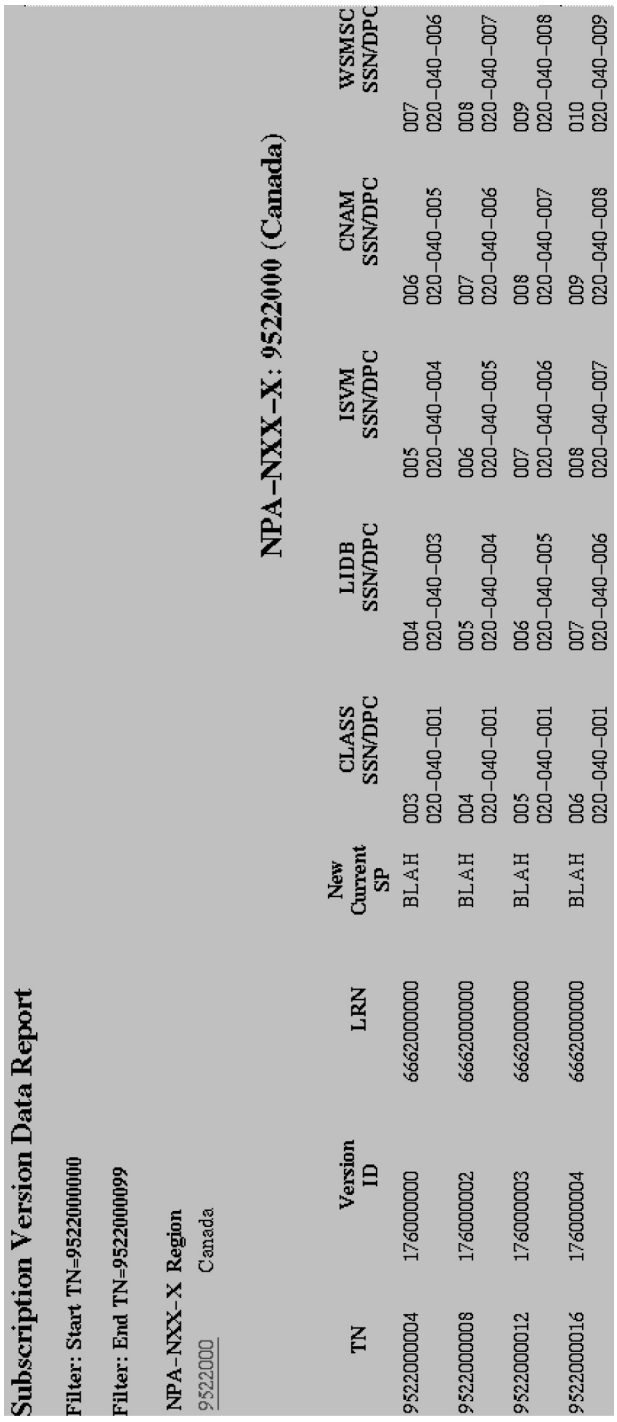
   a. If no **TN** range is specified, then all Subscription Version records that satisfy the Service Provider filter are displayed, regardless of its **TN**.

   b. If only the Start **TN** is specified, then all Subscription Version records with a **TN** equal to the Start **TN**, and that satisfy the Service Provider filter (if any), are displayed.

   c. If both the Start **TN** and End **TN** are specified, then all Subscription Version records with a **TN** between the Start **TN** and the End **TN**, and that satisfy the Service Provider filter (if any), are displayed.
5. In the **File** field, enter a file name for the report to be generated.

   Click **OK** or **Apply**. The report automatically runs in background mode and does not interfere with **LSMS** processing tasks such as **NPAC** traffic processing.
6. An Update Successful message window appears.
7. Click **OK** to view an example of the report.

Figure 5-15 LSMS Subscriptions by Service Provider Data Report Example



Subscription Version Data Report

Filter: Start TN=9522000000

Filter: End TN=9522000099

NPA-NXX-X Region

9522000 Canada

NPA-NXX-X: 9522000 (Canada)

TN	Version ID	LRN	New Current SP	CLASS SSN/DPC	LIDB SSN/DPC	ISVM SSN/DPC	CNAM SSN/DPC	WSMSC SSN/DPC
9522000004	176000000	6662000000	BLAH	003 020-040-001	004 020-040-003	005 020-040-004	006 020-040-005	007 020-040-006
9522000008	176000002	6662000000	BLAH	004 020-040-001	005 020-040-004	006 020-040-005	007 020-040-006	008 020-040-007
9522000012	176000003	6662000000	BLAH	005 020-040-001	006 020-040-005	007 020-040-006	008 020-040-007	009 020-040-008
9522000016	176000004	6662000000	BLAH	006 020-040-001	007 020-040-006	008 020-040-007	009 020-040-008	010 020-040-009

Viewing an LSMS Subscription by Service Provider Data Report

To view an **LSMS** Subscription by Service Provider Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.

2. From the LSMS Console window, select **Reports**, and then **LSMS Subscriptions by Service Provider Data**.

   The LSMS Subscriptions by Service Provider Report Create window appears.

3. Select the **View** tab.

   The LSMS Subscriptions by Service Provider Report View window appears.

4. In the **File** field, enter the name of the report to be viewed or click the **Browse** button to select a report.

   Click **OK** or **Apply**.

5. The report output window displays.

Deleting an LSMS Subscription by Service Provider Data Report

To delete an **LSMS** Subscription by Service Provider Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **LSMS Subscriptions by Service Provider Data**.

   The LSMS Subscriptions by Service Provider Report Create window appears.

3. Select the **Delete** tab.

   The LSMS Subscriptions by Service Provider Report Delete window appears.

4. In the **File** field, enter the name of the report to be deleted or click the **Browse** button to select a report.

   Click **OK** or **Apply**.

5. A Confirm Delete message window appears.
6. Click **Yes** or **No**.

   If you click **Yes**, an Update Successful message window appears. Click **OK** to return to the LSMS Subscriptions by Service Provider Report Delete window.

7. If you click **No**, you return to the LSMS Subscriptions by Service Provider Report Delete window.

LSMS Number Pool Blocks by LRN Data Reports

The following procedures explain how to create, view, and delete **LSMS** Number Pool Blocks by **LRN** Data reports.

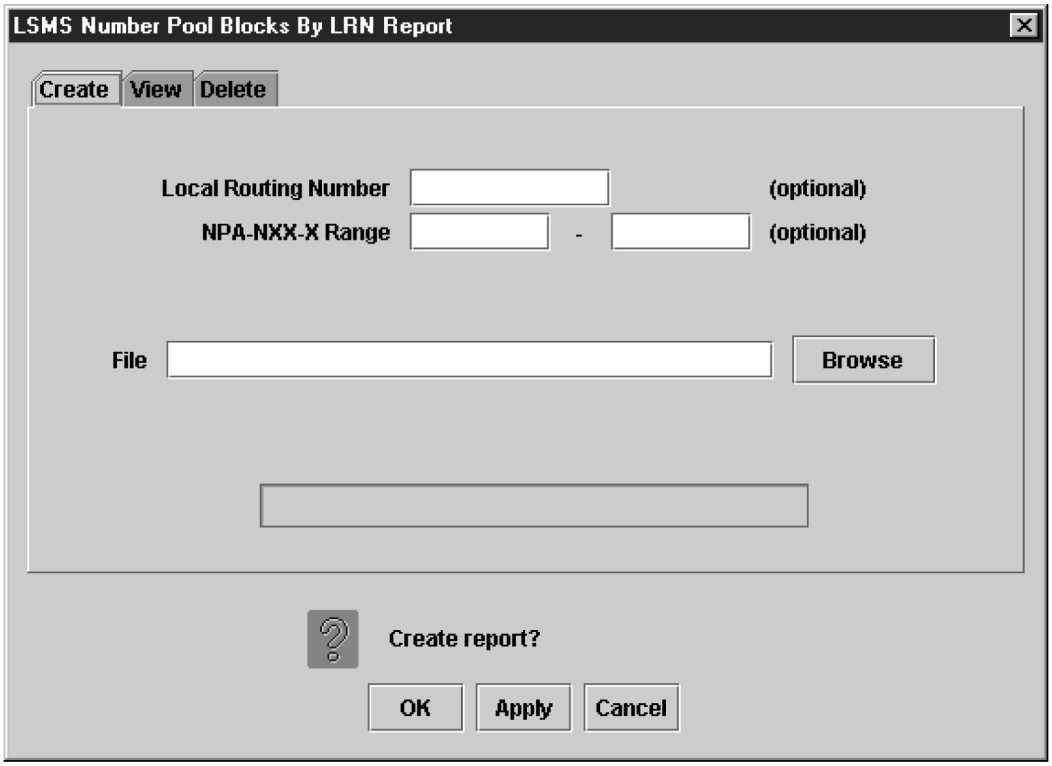
Creating an LSMS Number Pool Block by LRN Data Report

To create an **LSMS** Number Pool Block by **LRN** Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **LSMS Number Pool Blocks by LRN Data**.

The LSMS Number Pool Blocks by LRN Report Create window appears.

Figure 5-16 LSMS Number Pool Blocks by LRN Report Create Window



3. In the **Local Routing Number** field, if desired, enter the **LRN** of the subscriptions to be reported.

   This is an optional field.

4. In the **NPA-NXX-X Range** field, enter the appropriate information.

   The **NPA-NXX**-X Range field is optional.

   a. If no **NPA-NXX**-X range is specified, then all Number Pool Block records that satisfy the **LRN** filter are displayed, regardless of its **NPA-NXX**-X.

   b. If only the Start **NPA-NXX**-X is specified, then all Number Pool Block records with a **NPA-NXX**-X equal to the Start **NPA-NXX**-X, and that satisfy the **LRN** filter (if any), are displayed.

   c. If both the Start **NPA-NXX**-X and End **NPA-NXX**-X are specified, then all Number Pool Block records with a **NPA-NXX**-X between the Start **NPA-NXX**-X and the End **NPA-NXX**-X, and that satisfy the **LRN** filter (if any), are displayed.

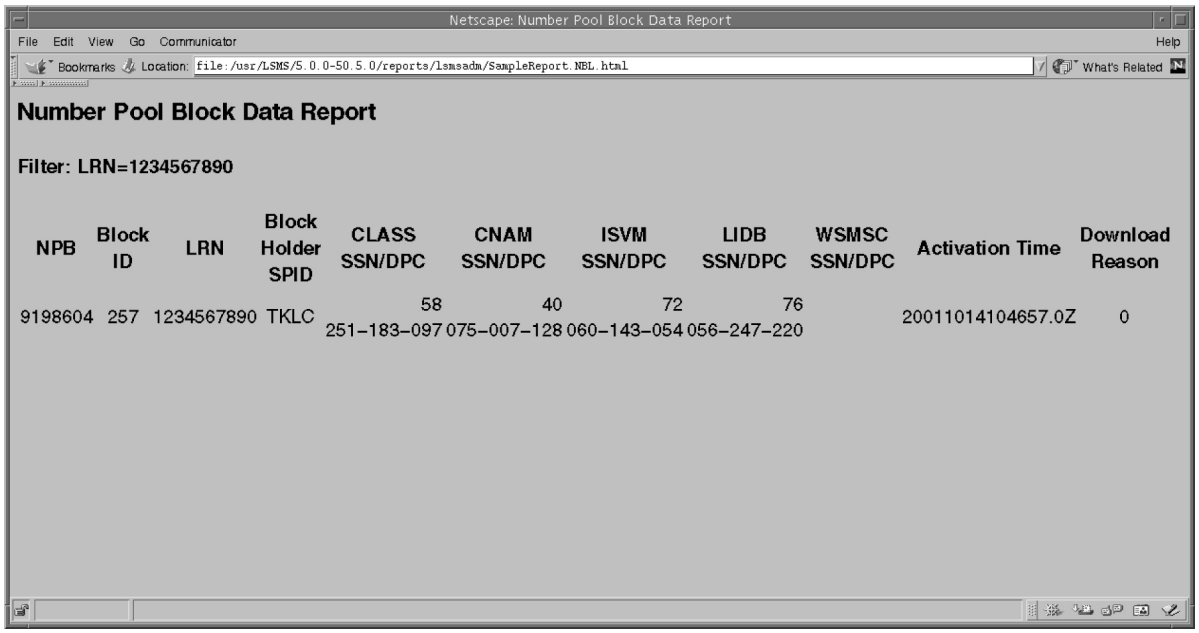
5. In the **File** field, enter a file name for the report to be generated.

   Click **OK** or **Apply**. The report automatically runs in background mode and does not interfere with **LSMS** processing tasks such as **NPAC** traffic processing.

6. An Update Successful message window appears.

7. Click **OK** to view an example of the report.

Figure 5-17 LSMS Number Pool Blocks by LRN Report Window



Viewing an LSMS Number Pool Block by LRN Data Report

To view an **LSMS** Number Pool Block by **LRN** Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **LSMS Number Pool Blocks by LRN Data**.

   The LSMS Number Pool Blocks by LRN Report Create window appears.
3. Select the **View** tab.

   The LSMS Number Pool Blocks by LRN Report View window appears.
4. In the **File** field, enter the name of the report to be viewed or click the **Browse** button to select a report.

   Click **OK** or **Apply**.
5. The report output window displays.

Deleting an LSMS Number Pool Block by LRN Data Report

To delete an **LSMS** Number Pool Block by **LRN** Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **LSMS Number Pool Blocks by LRN Data**.

   The LSMS Number Pool Blocks by LRN Report Create window appears.
3. Select the **Delete** tab.

   The LSMS Number Pool Blocks by LRN Report Delete window appears.

4. In the **File** field, enter the name of the report to be deleted or click the **Browse** button to select a report.

   Click **OK** or **Apply**.

5. A Confirm Delete message window appears.

6. Click **Yes** or **No**.

   If you click **Yes**, an Update Successful message window appears. Click **OK** to return to the LSMS Number Pool Blocks by LRN Report Delete window.

7. If you click **No**, you return to the LSMS Number Pool Blocks by LRN Report Delete window.

LSMS Number Pool Blocks by Service Provider Data Reports

The following procedures explain how to create, view, and delete **LSMS** Number Pool Blocks by Service Provider Data reports.

Creating an LSMS Number Pool Block by Service Provider Data Report

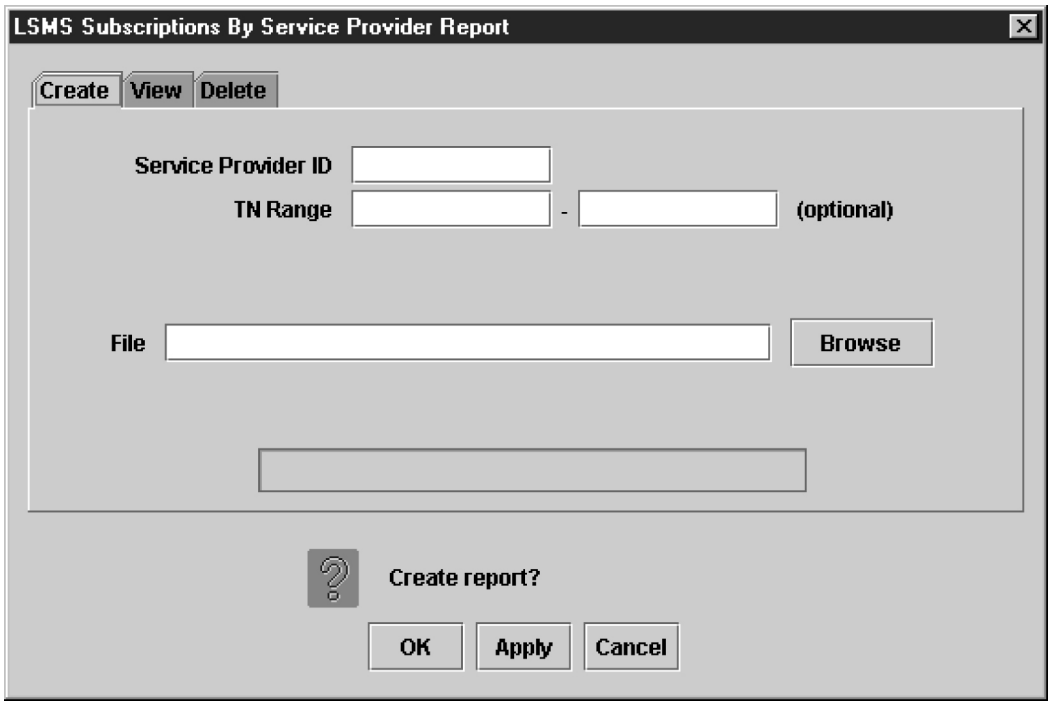
To create an **LSMS** Number Pool Block by Service Provider Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.

2. From the LSMS Console window, select **Reports**, and then **LSMS Number Pool Blocks by Service Provider Data**.

   The LSMS Number Pool Blocks by Service Provider Report Create window appears.

Figure 5-18 LSMS Number Pool Blocks by Service Provider Report Create Window



3. In the **Service Provider ID** field, enter the desired **SPID**.
4. In the **NPA-NXX-X Range** field, enter the appropriate information.

   The **NPA-NXX**-X Range field is optional.

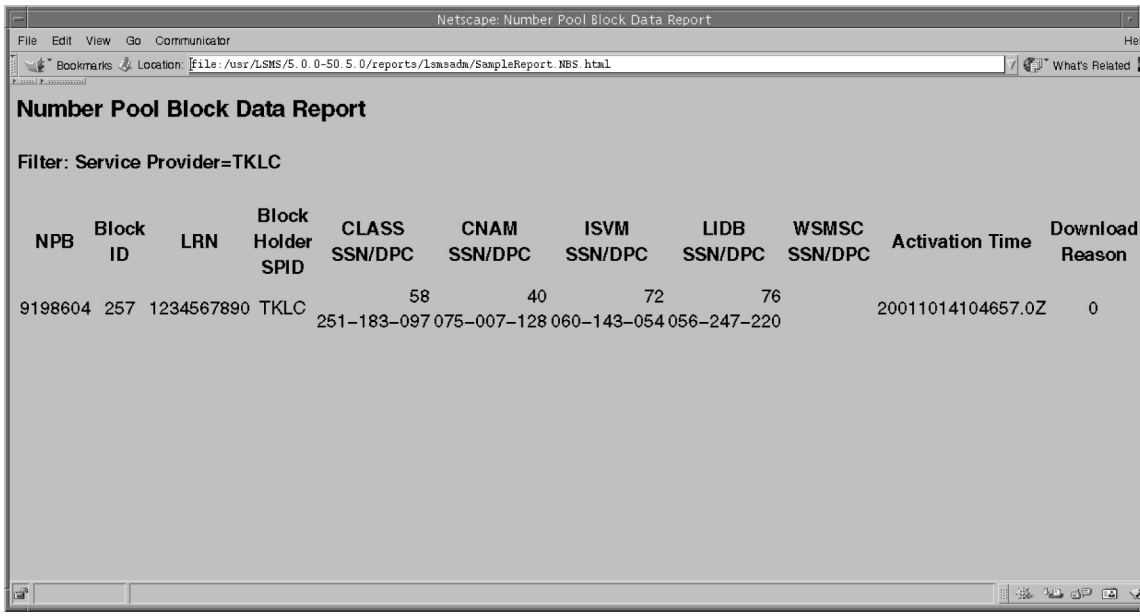
   a. If no **NPA-NXX**-X range is specified, then all Number Pool Block records that satisfy the Service Provider filter are displayed, regardless of its **NPA-NXX**-X.

   b. If only the Start **NPA-NXX**-X is specified, then all Number Pool Block records with a **NPA-NXX**-X equal to the Start **NPA-NXX**-X, and that satisfy the Service Provider filter (if any), are displayed.

   c. If both the Start **NPA-NXX**-X and End **NPA-NXX**-X are specified, then all Number Pool Block records with a **NPA-NXX**-X between the Start **NPA-NXX**-X and the End **NPA-NXX**-X, and that satisfy the Service Provider filter (if any), are displayed.
5. In the **File** field, enter a file name for the report to be generated.

   Click **OK** or **Apply**. The report automatically runs in background mode and does not interfere with **LSMS** processing tasks such as **NPAC** traffic processing.
6. An Update Successful message window appears.
7. Click **OK** to view an example of the report.

Figure 5-19 LSMS Number Pool Blocks by Service Provider Data Window



Viewing an LSMS Number Pool Block by Service Provider Data Report

To view an **LSMS** Number Pool Block by Service Provider Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **LSMS Number Pool Blocks by Service Provider Data**.

   The LSMS Number Pool Blocks by Service Provider Report Create window appears.
3. Select the **View** tab.

   The LSMS Number Pool Blocks by Service Provider Report View window appears.
4. In the **File** field, enter the name of the report to be viewed or click the **Browse** button to select a report.

   Click **OK** or **Apply**.
5. The report output window displays.

Deleting an LSMS Number Pool Block by Service Provider Data Report

To delete an **LSMS** Number Pool Block by Service Provider Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **LSMS Number Pool Blocks by Service Provider Data**.

The LSMS Number Pool Blocks by Service Provider Report Create window appears.

3. Select the **Delete** tab.

   The LSMS Number Pool Blocks by Service Provider Report Delete window appears.

4. In the **File** field, enter the name of the report to be deleted or click the **Browse** button to select a report.

   Click **OK** or **Apply**.

5. A Confirm Delete message window appears.

6. Click **Yes** or **No**.

   If you click **Yes**, an Update Successful message window appears. Click **OK** to return to the LSMS Number Pool Blocks by Service Provider Report Delete window.

7. If you click **No**, you return to the LSMS Number Pool Blocks by Service Provider Report Delete window.

Service Provider Data Reports

The following procedures explain how to create, view, and delete Service Provider Data reports.

Creating a Service Provider Data Report

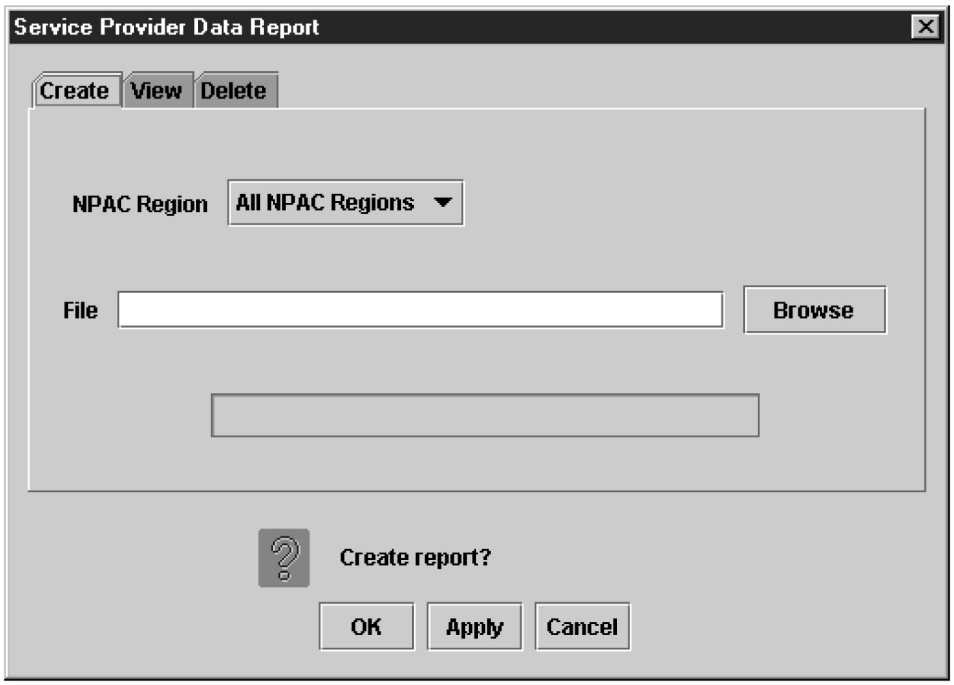
To create a Service Provider Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.

2. From the LSMS Console window, select **Reports**, and then **Service Provider Data**.

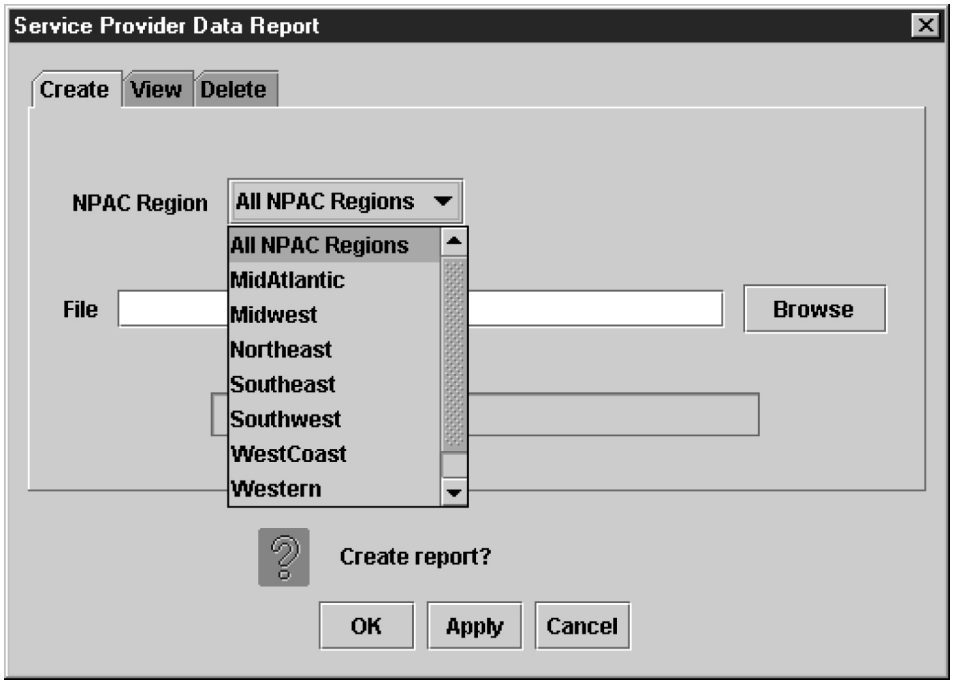
   The Service Provider Data Report Create window appears.

Figure 5-20 Service Provider Data Report Create Window



3. In the **NPAC Region** field, select the desired region (or All **NPAC** Regions) for which you require information.

Figure 5-21 Service Provider Data Report NPAC Regions



4. In the **File** field, enter a file name for the report to be generated.

   Click **OK** or **Apply**. The report automatically runs in background mode and does not interfere with **LSMS** processing tasks such as **NPAC** traffic processing.

5. An Update Successful message window appears.
6. Click **OK** to view an example of the report.

Figure 5-22 Service Provider Data Report Window

Service Provider Data Report

Region

Canada
MidAtlantic
Midwest
Southeast
Southwest
WestCoast
Western

Region: Canada

SPID	Region	Name
8070	Canada	SERVICE_PROVIDER-8070
8071	Canada	SERVICE_PROVIDER-8071
8072	Canada	SERVICE_PROVIDER-8072
8073	Canada	SERVICE_PROVIDER-8073
8074	Canada	SERVICE_PROVIDER-8074
8075	Canada	SERVICE_PROVIDER-8075
8076	Canada	SERVICE_PROVIDER-8076
8077	Canada	SERVICE_PROVIDER-8077
8078	Canada	SERVICE_PROVIDER-8078
8079	Canada	SERVICE_PROVIDER-8079
8080	Canada	SERVICE_PROVIDER-8080

Viewing a Service Provider Data Report

To view a Service Provider Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Service Provider Data** .

   The Service Provider Data Report Create window appears.
3. Select the **View** tab.

   The Service Provider Data Report View window appears.
4. In the **File** field, enter the name of the report to be viewed or click the **Browse** button to select a report.

Click **OK** or **Apply**.

5. The report output window displays.

Deleting Service Provider Data Report

To delete a Service Provider Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Service Provider Data** .

   The Service Provider Data Report Create window appears.
3. Select the **Delete** tab.

   The Service Provider Data Report Delete window appears.
4. In the **File** field, enter the name of the report to be deleted or click the **Browse** button to select a report.

   Click **OK** or **Apply**.
5. A Confirm Delete message window appears.
6. Click **Yes** or **No**.

   If you click **Yes**, an Update Successful message window appears. Click **OK** to return to the Service Provider Data Report Delete window.
7. If you click **No**, you return to the Service Provider Data Report Delete window.

Permission Group Data Report

The "Permission Group Data" report provides a listing of all permission groups, commands authorized for each permission group, and users assigned to each permission group.

Creating a Permission Group Data Report

To create a Permission Group Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Permission Group Data**.

   The Permission Group Data Report window appears.
3. From the **Permission Group** selection box, select **All Permission Groups** or a group from the list provided.
4. See Table 5-4 and Table 5-5 for information about field constraints and field descriptions.

Table 5-4 Permission Group Data Report Dialog - Field Constraints

Field	Type	Modifiable?	Constraints
Permission Group	Combo Box	Yes	Value restricted to be one of the default permission groups, configurable permission groups, or "All Permission Groups."
File	Text	Yes	Must be a valid filename.
Report Progress	Progress Bar	No	Range 0-100%.

Table 5-5 Permission Group Data Report Dialog - Field Descriptions

Field	Description
Permission Group	Restrict the report to only include data for this permission group.
File	Save the report results under this file name. The file will be created on the **LSMS**.
Report Progress	The percentage of the report already created.

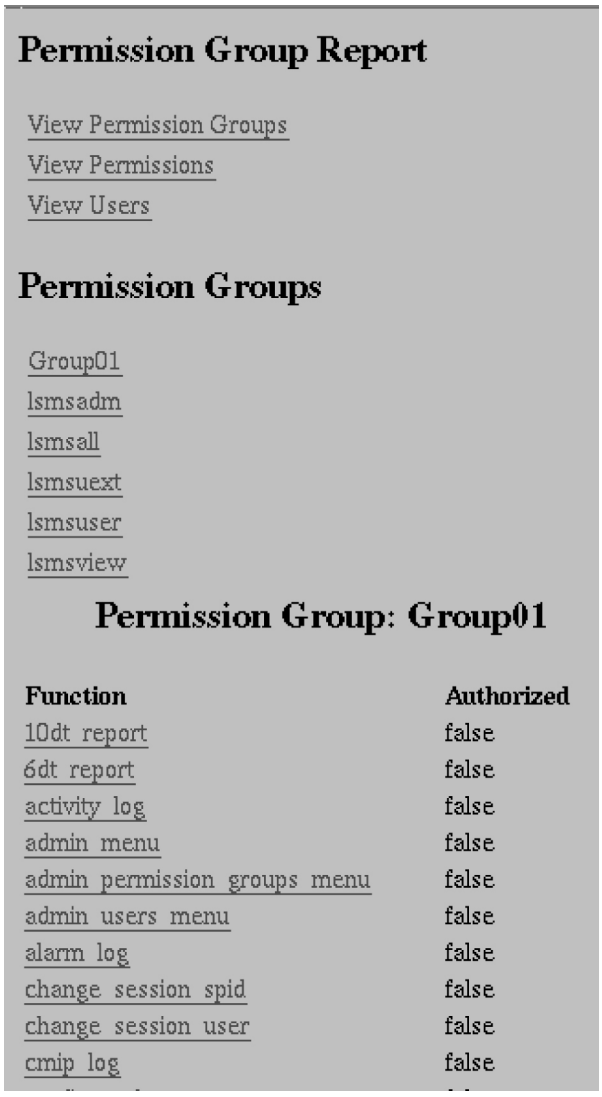
5. In the **File** field, enter a file name for the report to be generated, or hit the Browse button to select a file.

   Click **OK** or **Apply**. The report automatically runs in background mode and does not interfere with **LSMS** processing tasks such as **NPAC** traffic processing.

6. An Update Successful message window appears.

7. Click **OK** to view an example of the report.

Figure 5-23 Permission Group Data Report Window



Viewing a Permission Group Data Report

To view a Permission Group Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Permission Group Data**.

   The Permission Group Report window appears.
3. Select the **View** tab.
4. In the **File** field, enter a file name for the report to be generated, or hit the Browse button to select a file.

   Click **OK** or **Apply**.

Deleting a Permission Group Data Report

To delete a Permission Group Data report:

1. Log in to **LSMS** as a member of the permission group that is authorized to perform this operation.
2. From the LSMS Console window, select **Reports**, and then **Permission Group Data**.

   The Permission Group Report window appears.
3. Select the **Delete** tab.
4. In the **File** field, enter a file name for the report to be generated, or hit the Browse button to select a file.

   Click **OK** or **Apply**.

Report Generator

This optional feature is activated by Oracle customer service using secure activation procedures.

Beginning with **LSMS** Release 5.0, LSMS offered as an optional feature a report generator that uses a new **LSMS** Query Language (**LQL**) to enable the user to create reports that are not already available through the **Reports** menu item on the LSMS GUI. This feature supports queries against the following data types:

- Subscription versions (**SVs**)
- Number pool blocks (**NPBs**)
- Default **Global Title Translation** (**GTT**)
- Override **GTT**
- Numbering Plan Area (**NPA**) splits

LQL can be run only on the command line on the active server.

> **Note:**
>
> This feature is intended for specific queries on indexed fields that return small result sets (less than 10,000 records). Queries of non-indexed fields or overly general queries use extensive memory resources, result in extremely long response times, and may impact **LSMS** system performance. For information about indexed fields, see SV Table, NPB Table, DGTT Table, OGTT Table, and SPLIT Table. For more information about avoiding poor performance, see Avoiding Overly General Queries.

Invoking LQL

After the feature has been activated, the user can invoke **LQL** in either of the following ways:

- Interactively by entering the command `lql` without a filename. The command-line prompt changes to **LQL>** and the user can enter any of the supported commands (see LQL Commands).

- In batch mode by entering the command `lql` with a file name. **LQL** processes each line in the file as an **LQL** command (see LQL Commands). Batch processing is terminated when any invalid command or an **EXIT** command is encountered in the file The batch file can contain comment lines, which must begin with the # character.

Multiple **LQL** processes can be active, but only one **LQL** process at a time can perform a query (issue the **SELECT** command). For more information, see SELECT <column> FROM <table> WHERE <expression>;.

LQL Commands

The **LQL** command set is a restricted subset of the **American National Standards Institute** (**ANSI**) Structured Query Language-92 (**SQL**-92) and uses the **SQL** syntax, except where noted. For more information about **SQL**, refer to:

```
http://www.w3schools.com/sql/default.asp
```

Each **LQL** command is terminated with a semicolon. Therefore, in interactive mode, a command can span multiple lines. However, in batch mode, each command must appear all on one line of the file.

The following commands are included in the **LQL** command set (although **LQL** commands are shown in uppercase in this document, the commands are not case-sensitive):

- USINGREGION <database>;
- SELECT <column> FROM <table> WHERE <expression>;
- DISPLAY <RECORDS|COUNTS>;
- **SAVE** <**COMMANDS**|**RESULTS**> <**IN** <filename>|**OFF**>;
- **STATUS**;
- **HELP**;
- **EXIT**;

USING REGION <database>;

Use this command for **SV** or **NPB** queries to specify the regional database that is to be queried. The following values can be specified for <database>:

- **ALL_REGIONS**
- **CANADA**
- **MIDATLANTIC**
- **MIDWEST**
- **NORTHEAST**
- **SOUTHEAST**
- **WOUTHWEST**
- **WESTCOAST**
- **WESTERN**

The regional database specified is the one queried for all subsequent queries for **SVs** and **NPBs** until this command is issued again with another value for <database>. For examples of this command, see LQL Examples.

This command is not used for queries of locally provisioned data (for example, queries of default **GTTs** or **NPA** splits).

> **Note:**
>
> This command is not part of the **SQL** standard.

SELECT <column> FROM <table> WHERE <expression>;

Use this command to select rows from a table (using the **WHERE** keyword) and to display columns from the matched rows, where:

- <table> has one of the values shown in LQL Table Names .
- <column> is a comma-separated list of column names (as shown in NPB Table, SV Table, DGTT Table, OGTT Table, and SPLIT Table) within the relevant table; in addition, service names can be used to select multiple column names, as described above each table
- **WHERE** <expression> is described in WHERE Expressions.

In order to minimize the performance impact that **LQL** has on the **LSMS** system, only one **LQL** process at a time can issue a **SELECT** command. If an **LQL** process issues a **SELECT** command when another **SELECT** command is already in progress:

- In interactive mode, an error message is displayed and the command fails
- In batch mode, the entire batch file is aborted

For examples of this command, see LQL Examples.

LQL Table Names

Specify one of the values shown in the first column of this table for the <table> parameter in the **SELECT** command.

Table 5-6 LQL Table Names

LQL Table Name (<table>)	Data Type	For Column Names, See:
SV	Subscription version	SV Table
NPB	Number pool block	NPB Table
DGTT	Default **GTT**	DGTT Table
OGTT	Override **GTT**	Override GTT
SPLIT	**NPA** split	SPLIT Table

WHERE Expressions

Specify the **WHERE** expression as <column> <operator> <value>, where:

- <column> is a column name within the relevant table as shown in SV Table, NPB Table, DGTT Table, OGTT Table, and SPLIT Table.
- <operator> is one of the following:

WHERE Operator (<operator>)	Means
+	Plus
-	Minus
>	Greater than
<	Less than
>=	Greater than or equal to
<=	Less than or equal to
=	Equal to
!=	Not equal to
LIKE	Pattern match (Note)
NOT LIKE	Inverse pattern match (Note)

Note:

For possible performance impact of using this operator, see "Avoiding Overly General Queries".

- <value> is a valid value for the field that appears in the type of column specified by <column name>; for more information about the fields and syntax rules that apply to them, refer to the *Alarms and Maintenance Guide*

In addition, you can use the following logical operators to negate an expression or to combine two or more expressions:

- **NOT** negates the expression
- **AND** requires that both of two expressions must be true for the statement to be true
- **OR** requires that only one of two expressions must be true for the statement to be true

SQL Data Types

This table describes the **SQL** data types that appear in the following **LQL** tables:

- **SV** (Subscription Version)
- **NPB** (Number Pool Block)
- **DGTT** (Default **GTT**)
- **OGTT** (Override **GTT**)
- Split (**NPA** Split)

Table 5-7 SQL Data Types and Descriptions

SQL Data Type	Description
CHAR[n]	A fixed length character array. A column of type **CHAR** will always have a value n characters long. As part of a **WHERE** clause, a **CHAR** field must be compared against a character string (e.g. **TN** = '9194600000', not **TN**=9194600000).

Table 5-7 (Cont.) SQL Data Types and Descriptions

SQL Data Type	Description
VARCHAR[n]	A variable length character array. A column of type **VARCHAR** will have a value between 0 and n characters long. As part of a **WHERE** clause, a **VARCHAR** field must be compared against a character string (e.g. **TN** = '9194600000', not **TN**=9194600000).
BYTE	An 8-bit integer field. As part of a **WHERE** clause, a **BYTE** field must be compared against a number (e.g. **CLASS_SSN** > 0, not **CLASS_SSN** > '0').
SHORT	A 32-bit integer field. As part of a **WHERE** clause, a **BYTE** field must be compared against a number (e.g. **VERSION_ID** > 0, not **VERSION_ID** > '0').

SV Table

The following values can be used for the first <column> parameter in a **SELECT** command to select both the **DPC** and **SSN** values for the respective service, or for all services:

- **CLASS**
- **CNAM**
- **LIDB**
- **ISVM**
- **WSMSC**
- **ALL_SERVICES**

> **Note:**
>
> These values cannot be used in a **WHERE** expression. For more information about these values, refer to the *Alarms and Maintenance Guide*.

This table describes the values that can be specified for any <column> parameter (including in a **WHERE** expression) in a **SELECT** command where the value of <table> is **SV**. This table also describes which columns are indexed, as well as the width of each output column. For descriptions of the data types, see SQL Data Types .

Table 5-8 SV Table Column Names

Column Name	Indexed?	Output Width	Data Type
VERSION_ID	**YES**	10	**SHORT**
TN	**YES**	10	**CHAR**[10]
LRN	**NO**	10	**CHAR**[10]
NEW_CURRENT_SP	**NO**	10	**CHAR**[4]

Table 5-8 (Cont.) SV Table Column Names

Column Name	Indexed?	Output Width	Data Type
ACTIVATION_TIME	**NO**	14	**CHAR**[24]
EUL_VALUE	**NO**	5	**CHAR**[4]
EUL_TYPE	**NO**	4	**CHAR**[4]
BILLING_ID	**NO**	7	**CHAR**[4]
LNP_TYPE	**NO**	4	**CHAR**[1]
DOWNLOAD_REASON	**NO**	8	**CHAR**[1]
CLASS_SSN	**NO**	5	**BYTE**
CLASS_DPC	**NO**	5	**CHAR**[11]
CNAM_SSN	**NO**	4	**BYTE**
CNAM_DPC	**NO**	4	**CHAR**[11]
LIDB_SSN	**NO**	4	**BYTE**
LIDB_DPC	**NO**	4	**CHAR**[11]
ISVM_SSN	**NO**	4	**BYTE**
ISVM_DPC	**NO**	4	**CHAR**[11]
WSMSC_SSN	**NO**	5	**BYTE**
WSMSC_DPC	**NO**	5	**CHAR**[11]
Maximum possible output width		126	

NPB Table

The following values can be used for the first <column> parameter in a **SELECT** command to select both the **DPC** and **SSN** values for the respective service or for all services; these values cannot used in a **WHERE** expression:

- **CLASS**
- **CNAM**
- **LIDB**
- **ISVM**
- **WSMSC**
- **ALL_SERVICES**

This table displays the values that can be specified for any <column> parameter (including in a **WHERE** expression) in a **SELECT** command where the value of <table> is **NPB**. It also displays which columns are indexed and shows the width of each output column. For descriptions of the data types, see SQL Data Types.

Table 5-9 NPB Table Column Names Used in WHERE Expressions

Column Name	Indexed?	Output Width	Data Type
BLOCK_ID	**YES**	10	**SHORT**

Table 5-9 (Cont.) NPB Table Column Names Used in WHERE Expressions

Column Name	Indexed?	Output Width	Data Type
NPA_NXX_X	**YES**	6	**CHAR**[7]
LRN	**NO**	10	**CHAR**[10]
BLOCK_HOLDER_SPID	**NO**	11	**CHAR**[4]
ACTIVATION_TIME	**NO**	14	**CHAR**[24]
DOWNLOAD_REASON	**NO**	8	**CHAR**[1]
CLASS_SSN	**NO**	5	**BYTE**
CLASS_DPC	**NO**	5	**CHAR**[11]
CNAM_SSN	**NO**	4	**BYTE**
CNAM_DPC	**NO**	4	**CHAR**[11]
LIDB_SSN	**NO**	4	**BYTE**
LIDB_DPC	**NO**	4	**CHAR**[11]
ISVM_SSN	**NO**	4	**BYTE**
ISVM_DPC	**NO**	4	**CHAR**[11]
WSMSC_SSN	**NO**	5	**BYTE**
WSMSC_DPC	**NO**	5	**CHAR**[11]
Maximum possible output width		103	

DGTT Table

The following values can be used for the first <column> parameter in a **SELECT** command to select the **TT**, **DPC**, **SSN**, **XLAT**, **RI**, and **NGT** values for the respective service or for all services; these values cannot used in a **WHERE** expression:

- **CLASS**
- **CNAM**
- **LIDB**
- **ISVM**
- **WSMSC**
- **ALL_SERVICES**

This table displays the values that can be specified for any <column> parameter (including in a **WHERE** expression) in a **SELECT** command where the value of <table> is **DGTT**. It also displays which columns are indexed and shows the width of each output column. For descriptions of the data types, see SQL Data Types.

Table 5-10 DGTT Table Column Names Used in WHERE Expressions

Column Name	Indexed?	Output Width	Data Type
GTT_GROUP	**NO**	40	**VARCHAR**[40]

Table 5-10 (Cont.) DGTT Table Column Names Used in WHERE Expressions

Column Name	Indexed?	Output Width	Data Type
NPA_NXX	**NO**	6	**CHAR**[6]
SPID	**NO**	4	**CHAR**[4]
AIN_ENABLED	**NO**	7	**BYTE**
IN_ENABLED	**NO**	7	**BYTE**
CLASS_TT	**NO**	5	**BYTE**
CLASS_DPC	**NO**	11	**CHAR**[11]
CLASS_SSN	**NO**	5	**BYTE**
CLASS_XLAT	**NO**	5	**BYTE**
CLASS_RI	**NO**	5	**BYTE**
CLASS_NGT	**NO**	5	**BYTE**
CNAM_TT	**NO**	4	**BYTE**
CNAM_DPC	**NO**	11	**CHAR**[11]
CNAM_SSN	**NO**	4	**BYTE**
CNAM_XLAT	**NO**	4	**BYTE**
CNAM_RI	**NO**	4	**BYTE**
CNAM_NGT	**NO**	4	**BYTE**
LIDB_TT	**NO**	4	**BYTE**
LIDB_DPC	**NO**	11	**CHAR**[11]
LIDB_SSN	**NO**	4	**BYTE**
LIDB_XLAT	**NO**	4	**BYTE**
LIDB_RI	**NO**	4	**BYTE**
LIDB_NGT	**NO**	4	**BYTE**
ISVM_TT	**NO**	4	**BYTE**
ISVM_DPC	**NO**	11	**CHAR**[11]
ISVM_SSN	**NO**	4	**BYTE**
ISVM_XLAT	**NO**	4	**BYTE**
ISVM_RI	**NO**	4	**BYTE**
ISVM_NGT	**NO**	4	**BYTE**
WSMSC_TT	**NO**	5	**BYTE**
WSMSC_DPC	**NO**	11	**CHAR**[11]
WSMSC_SSN	**NO**	5	**BYTE**
WSMSC_XLAT	**NO**	5	**BYTE**
WSMSC_RI	**NO**	5	**BYTE**
WSMSC_NGT	**NO**	5	**BYTE**
Maximum possible output width		223	

OGTT Table

The following values can be used for the first <column> parameter in a **SELECT** command to select the **TT**, **DPC**, **SSN**, **XLAT**, **RI**, **NGT**, and **RGTA** values for the respective service or for all services; these values cannot used in a **WHERE** expression:

- **CLASS**
- **CNAM**
- **LIDB**
- **ISVM**
- **WSMSC**
- **ALL_SERVICES**

This table displays the values that can be specified for any <column> parameter (including in a **WHERE** expression) in a **SELECT** command where the value of <table> is **OGTT**. It also displays which columns are indexed and shows the width of each output column. For descriptions of the data types, see SQL Data Types.

Table 5-11 OGTT Table Column Names Used in WHERE Expressions

Column Name	Indexed?	Output Width	Data Type
GTT_GROUP	**NO**	40	**VARCHAR**[40]
LRN	**NO**	10	**CHAR**[10]
SPID	**NO**	4	**CHAR**[4]
CLASS_TT	**NO**	5	**BYTE**
CLASS_DPC	**NO**	11	**CHAR**[11]
CLASS_SSN	**NO**	5	**BYTE**
CLASS_XLAT	**NO**	5	**BYTE**
CLASS_RI	**NO**	5	**BYTE**
CLASS_NGT	**NO**	5	**BYTE**
CLASS_RGTA	**NO**	5	**BYTE**
CNAM_TT	**NO**	4	**BYTE**
CNAM_DPC	**NO**	11	**CHAR**[11]
CNAM_SSN	**NO**	4	**BYTE**
CNAM_XLAT	**NO**	4	**BYTE**
CNAM_RI	**NO**	4	**BYTE**
CNAM_NGT	**NO**	4	**BYTE**
CNAM_RGTA	**NO**	4	**BYTE**
LIDB_TT	**NO**	4	**BYTE**
LIDB_DPC	**NO**	11	**CHAR**[11]
LIDB_SSN	**NO**	4	**BYTE**
LIDB_XLAT	**NO**	4	**BYTE**
LIDB_RI	**NO**	4	**BYTE**
LIDB_NGT	**NO**	4	**BYTE**

Table 5-11 (Cont.) OGTT Table Column Names Used in WHERE Expressions

Column Name	Indexed?	Output Width	Data Type
LIDB_RGTA	**NO**	4	**BYTE**
ISVM_TT	**NO**	4	**BYTE**
ISVM_DPC	**NO**	11	**CHAR**[11]
ISVM_SSN	**NO**	4	**BYTE**
ISVM_XLAT	**NO**	4	**BYTE**
ISVM_RI	**NO**	4	**BYTE**
ISVM_NGT	**NO**	4	**BYTE**
ISVM_RGTA	**NO**	4	**BYTE**
WSMSC_TT	**NO**	5	**BYTE**
WSMSC_DPC	**NO**	11	**CHAR**[11]
WSMSC_SSN	**NO**	5	**BYTE**
WSMSC_XLAT	**NO**	5	**BYTE**
WSMSC_RI	**NO**	5	**BYTE**
WSMSC_NGT	**NO**	5	**BYTE**
WSMSC_RGTA	**NO**	5	**BYTE**
Maximum possible output width		249	

SPLIT Table

This table displays the values that can be specified for any <column> parameter (including in a **WHERE** expression) in a **SELECT** command where the value of <table> is **SPLIT**. It also displays which columns are indexed and shows the width of each output column. For descriptions of the data types, see SQL Data Types.

Table 5-12 SPLIT Table Column Names Used in WHERE Expressions

Column Name	Indexed?	Output Width	Data Type
OLD_NPA	**YES**	3	**CHAR**[3]
NEW_NPA	**YES**	3	**CHAR**[3]
NXX	**YES**	3	**CHAR**[3]
REGION	**YES**	8	**BYTE**
PDP_START	**YES**	8	**SHORT**
PDP_END	**YES**	6	**SHORT**
STATUS	**YES**	6	**BYTE**
Maximum possible output width		37	

Avoiding Overly General Queries

Queries should not be made against columns that are not indexed (as indicated in SV Table, NPB Table, DGTT Table, OGTT Table, and SPLIT Table). In addition, avoid overly general queries which can result from using:

- The * wildcard character with the **LIKE** operator anywhere except at the end of the search value For example:
  - **SELECT * FROM SV WHERE TN LIKE** ‘919*’ uses the **TN** index and completes quickly
  - **SELECT * FROM SV WHERE TN LIKE** ‘*919’ does not use the **TN** index and exhibits the same poor performance as a query on a non-indexed column
- The **NOT_LIKE** operator for indexed columns. For example:
  - **SELECT * FROM SV WHERE TN NOT_LIKE** ‘919*’ does not use the **TN** index and exhibits the same poor performance as a query on a non-indexed column

Table 5-13 provides some example performance times, assuming an **SV** table that contains 1,000,005 records.

Table 5-13 Query Performance Examples

Query	Search Using Index?	Number of Records Searched	Number of Records Matched	Time to Complete Query
SELECT TN FROM SV;	**YES**	1,000,005	1,000,005	75 seconds
SELECT TN FROM SV WHERE TN >= '2191209000' **AND TN** < '2191210000';	**YES**	1,000,005	1,000	< 1 second
SELECT TN FROM SV WHERE TN >= '2191200000' **AND TN** < '2191210000';	**YES**	1,000,005	10,000	1 second
SELECT TN FROM SV WHERE TN >= '2191200000' **AND TN** < '2191300000';	**YES**	1,000,005	100,000	8 seconds
SELECT TN FROM SV WHERE TN >= '2190000000' **AND TN** < '2200000000';	**YES**	1,000,005	1,000,005	75 seconds
SELECT TN FROM SV WHERE TN >= '9190000000' **AND TN** < '9200000000';	**YES**	1,000,005	0	< 1 second
SELECT TN FROM SV WHERE TN LIKE '219*';	**YES**	1,000,005	1,000,005	90 seconds

Table 5-13 (Cont.) Query Performance Examples

Query	Search Using Index?	Number of Records Searched	Number of Records Matched	Time to Complete Query
SELECT TN FROM SV WHERE TN LIKE '919*';	**YES**	1,000,005	0	< 1 second
SELECT TN FROM SV WHERE TN NOT_LIKE '919*';	**YES**	1,000,005	0	< 1 second
SELECT TN FROM SV WHERE TN NOT_LIKE '219*';	**NO**	1,000,005	1,000,005	75 seconds
SELECT TN FROM SV WHERE CLASS_SSN = 30;	**NO**	1,000,005	0	25 seconds
SELECT TN FROM SV WHERE CLASS_SSN = 1;	**NO**	1,000,005	1,000,005	75 seconds
SELECT TN FROM SV WHERE TN >= '2191209000' **AND TN** < '2191210000'	**NO**	1,000,005	0	25 seconds

Relationship to SQL

The following keywords, which are part of the **SQL** standard, are not supported by **LQL**:

- **BETWEEN** operator
- **ORDER BY**
- **DISTINCT**
- All **SQL** Functions
- **GROUP BY**
- **HAVING**
- **ALIAS**
- All multiple-table **SELECTs**
- All **JOINs**
- **AGGREGATE**
- **UNION**

- **INTERSECTION**

DISPLAY <RECORDS|COUNTS>;

Use this command to specify how output is to be displayed:

- To display the full query results, use **DISPLAY RECORDS**
- To display only the number of records resulting from the query, use **DISPLAY COUNTS**

The setting remains in effect until another **DISPLAY** command is entered. For examples of this command, see LQL Examples.

Relationship to SQL

This command is not part of the **SQL** standard.

SAVE <COMMANDS|RESULTS> <IN <filename>|OFF>;

Use this command to specify that either all commands issued or all results of a query are to be stored in the indicated file, or to stop saving commands or results. If a filename is provided, the filename is given an extension of *.lql* and is saved in the user's reports directory.

To save both commands and results, enter the command twice. If the same filename is used for both **SAVE** commands, the commands and results are interleaved in the output file. For examples of this command, see Using the SAVE Command.

Relationship to SQL

This command is not part of the **SQL** standard.

STATUS;

Use this command to display the current settings as set by the following commands:

- **USING REGION**
- **DISPLAY**
- **SAVE**

For examples of this command, see Using the STATUS Command.

Relationship to SQL

This command is part of the **SQL** standard.

HELP;

Use this command to display the list of supported commands.

Relationship to SQL

This command is not part of the **SQL** standard.

EXIT;

Use this command to exit the **LQL** executable. For examples of this command, see "**LQL** Examples".

Relationship to SQL

This command is not part of the **SQL** standard.

LQL Output

LQL displays its results as a set of space-padded values. Before writing the first record, **LQL** writes a header line that contains the name of each column; if the column name contains an underscore, the name **LQL** writes the column name on two lines.

LQL writes each row returned from the query as one line of output. An empty or missing column appears as only spaces.

LQL Errors

All **LQL** errors are written to **stderr**. **LQL** generates the following types of errors:

- Errors generated by the **LQL** software—Most errors will be of this type. These errors are plain text messages that indicate the user's error and often indicate a corrective course of action.
- Errors generated by the underlying database—This type of error generally occurs for an incorrect **SELECT** statement, which cannot be detected until the command is submitted to the database for execution. These errors usually generate a database error message, such as:

```
E4343:OM_PSR_SYNTAX_ERROR: VQL PARSE ERR: parse error: on/near token...
```

LQL Examples

Simple SELECT

Here is an example of a simple **SELECT** operation:

```
# lql
LQL> USING REGION SOUTHEAST;
LQL> DISPLAY RECORDS;
LQL> SELECT LRN FROM SV WHERE TN = '9194605500';
LRN
9194600000
LQL> EXIT;
```

Using AND in a WHERE Expression

Here is an example of using **AND** in a **WHERE** expression:

```
# lql
LQL> DISPLAY RECORDS;
LQL> SELECT CLASS,CNAM FROM OGTT WHERE GTT_GROUP = 'Group1' AND AIN_ENABLED != 0;
```

```
CLASS CLASS               CLASS CLASS CLASS CLASS CLASS CNAM CNAM
CNAM CNAM CNAM CNAM CNAM
TT    DPC                 SSN   XLAT  RI    NGT   RGTA  TT    DPC
SSN  XLAT RI   NGT  RGTA
1     100-200-100         0     0     0     0     0

LQL> EXIT;
```

In this example, only the **CLASS** service is defined for the **GTT** in this example; therefore, no entries display for the **CNAM** columns.

Using OR in a WHERE Expression

Here is an example of using **OR** in a **WHERE** expression:

```
# lql
LQL> DISPLAY RECORDS;
LQL> SELECT SPID, NPA_NXX FROM DGTT WHERE CLASS_SSN = 121 OR CNAM_SSN = 121;


SPID NPA
         NXX
1234 717323
1234 717326

LQL> EXIT
```

Using NOT in a WHERE Expression

Here is an example of using **NOT** in a **WHERE** expression:

```
# lql
LQL> DISPLAY RECORDS;
LQL> SELECT * FROM SPLIT WHERE NOT (REGION = 3);


OLD NEW NXX START    END      REGION STATUS
NPA NPA     PDP      PDP
919 864 227 20010801 20020301 4      2

LQL> EXIT
```

Using LIKE in a WHERE Expression

Here is an example of using **LIKE** in a **WHERE** expression (the first query in this example does not follow the guidelines recommended in “Avoiding Overly General Queries”):

```
# lql
LQL> USING REGION SOUTHEAST;
LQL>DISPLAY COUNTS;
LQL>SELECT TN FROM SV WHERE TN LIKE ‘*0000’;


Query returned 0 rows.

LQL> DISPLAY COUNTS;LQL>SELECT TN FROM SV WHERE TN LIKE
‘919460*’;
```

```
Query returned 936 rows.

LQL> EXIT
```

Using NOT_LIKE in a WHERE Expression

Here is an example of using **NOT_LIKE** in a **WHERE** expression (this example does not follow the guidelines recommended in "Avoiding Overly General Queries"):

```
# lql
LQL> USING REGION CANADA;
LQL>DISPLAY COUNTS;
LQL>SELECT TN FROM SV WHERE TN NOT_LIKE '1*';


Query returned 945 rows.

LQL> EXIT
```

Using the SAVE Command

Here is an example of using the **SAVE** command to save results to a file:

```
# lql
LQL> USING REGION CANADA;
LQL> DISPLAY COUNTS;
LQL> SELECT * FROM SV WHERE LRN = '9194600000' OR LRN = '9194610000';


Query returned 215 rows.

LQL> DISPLAY RECORDS; LQL>SAVE RESULTS IN NpaNxx919460; LQL>
SELECT * FROM SV WHERE LRN = '9194600000' OR LRN = '9194610000';
LQL> SELECT * FROM SV WHERE TN LIKE '919460*' ;LQL> SAVE RESULTS
OFF; LQL> EXIT
```

The results will be stored in the file `/var/TKLC/lsms/free/data/reports/lsmsadm/`.

Using the STATUS Command

Here is an example of using the **STATUS** command:

```
# lql
LQL> USING REGION CANADA;
LQL>DISPLAY COUNTS;
LQL STATUS;


Queries will use region: SOUTHEAST
Query results will show the number of rows found.
Commands will not be saved.
Query results will not be saved.

LQL> EXIT
```

6

LSMS Logs and Measurements

This chapter describes the logs maintained by LSMS and how to access, navigate, and print them.

Introduction

This chapter provides general information about viewing logs in a browser window (except for measurement logs, which are viewed in an **HTML** viewer as described in Measurement Logs), as well as removing accumulated logs. It also provides examples and formats of the different types of logs.

> **Note:**
>
> - For information about the permission groups that are authorized to view the various logs, see Table 2-8 and Table 2-9.
> - Logs are maintained up to 20 MB for rejected logs and up to 500 MB for transaction logs. The old rotated logs get deleted automatically in a day and new logs start getting pegged in the newly created files.

How Logs are Displayed

The browser from which you launched the **GUI** is used to display the logs.

A new browser window opens for the first log that you view, and is reused for viewing all subsequent logs.

Use the browser file functions to perform desired tasks, such as printing, searching, and exiting.

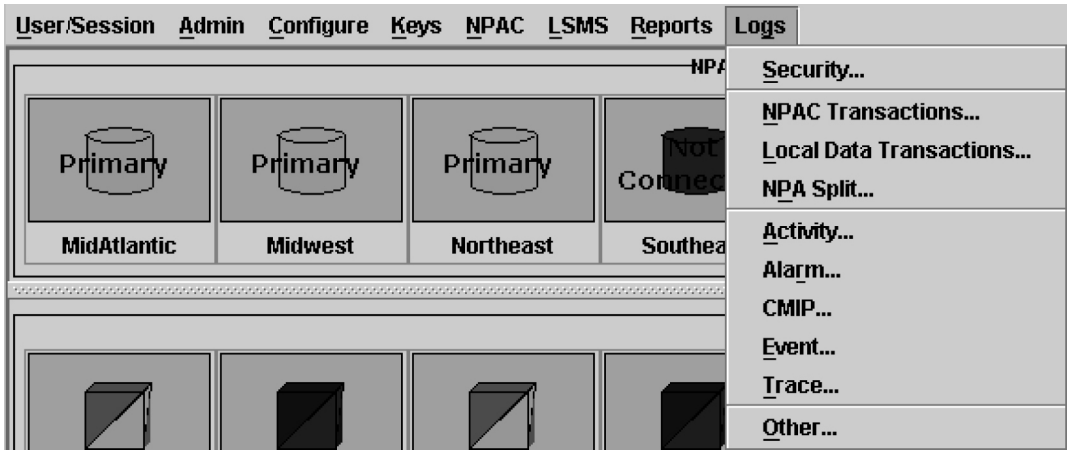
> **Note:**
>
> Measurement logs are displayed in the **HTML** viewer. See Measurement Logs for more information.

Viewing a Log File

To view a log file:

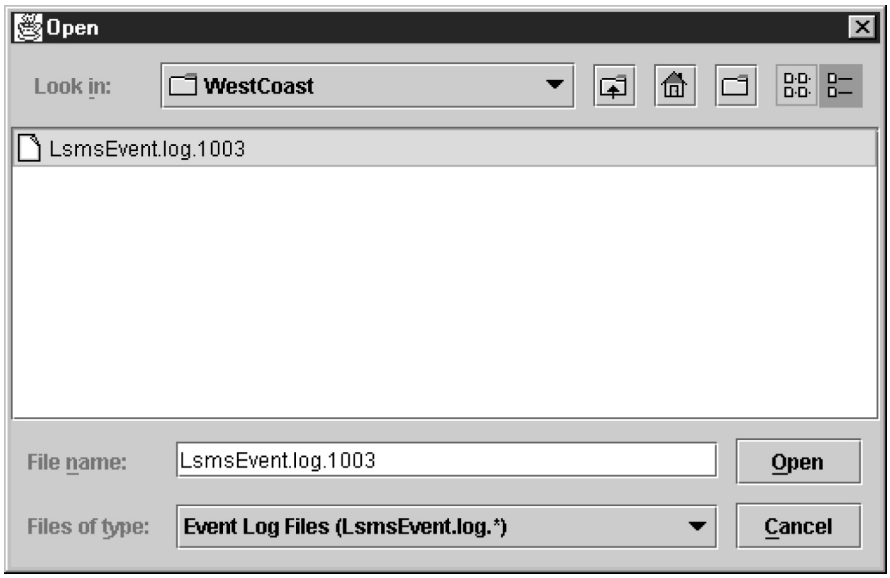
1. Select the type of log file you want to view from the **Logs** menu.

Figure 6-1 Logs Pull-down Menu



2. When the **Open** window appears, select the file you want to view and then click **Open** to view the log file.

Figure 6-2 Open Window



Log File Names and Locations

This section describes how log files are named and where they are located.

Log Naming Conventions

Table 6-1 lists information about log files, whether they can be viewed from the **LSMS GUI**, and the page reference where you can find examples. (**<MMDD>** refers to the month and day, respectively, on which the log or file was created. Because these logs and files are deleted after seven days, it is not necessary to include the year.)

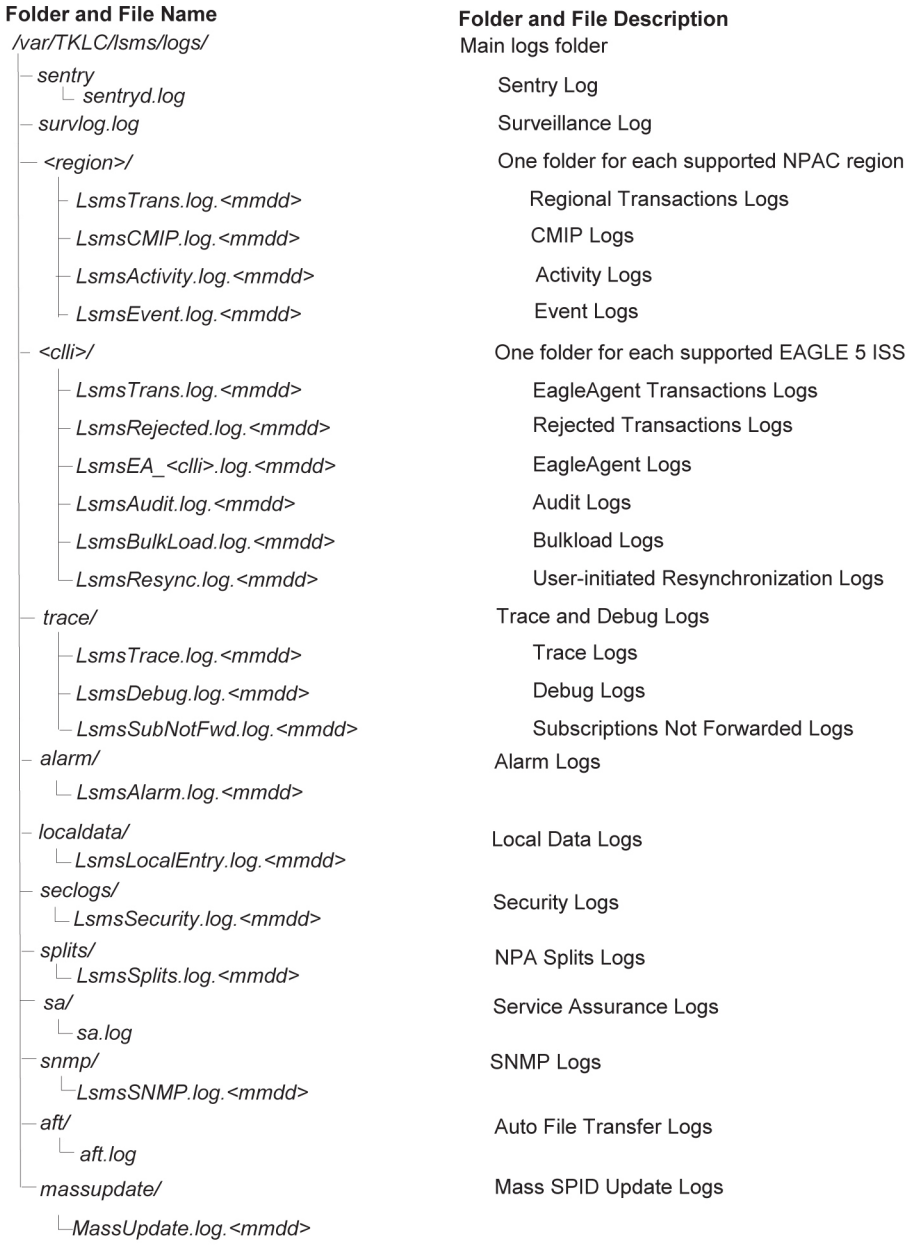
Table 6-1 Log File Information

Log Type	File Name	Accessible From the GUI?
Security Logs	*LsmsSecurity.log.*<**MMDD**>	Yes
NPAC Transactions Logs	*LsmsTrans.log.*<**MMDD**>	Yes
Local Data Transactions Logs	*LsmsLocalEntry.log.*<**MMDD**>	Yes
NPA Split Logs	*LsmsSplit.log.*<**MMDD**>	Yes
Activity Logs	*LsmsActivity.log.*<**MMDD**>	Yes
Alarm Logs	*LsmsAlarm.log.*<**MMDD**>	Yes
CMIP Logs	*LsmsCMIP.log.*<**MMDD**>	Yes
Event Logs	*LsmsEvent.log.*<**MMDD**>	Yes
Trace Logs	*LsmsTrace.log.*<**MMDD**>	Yes
EAGLE Agent Logs	*Lsmseagleagent.log.*<**MMDD**>	
Rejected Transactions Logs	*LsmsRejected.log.*<**MMDD**>	Yes
LNP Database Synchronization Logs (Audit, Bulk Load, Re-sync)	Refer to the *LNP Database Synchronization User's Guide*	Yes
Measurement Logs	<**CLLI**>*.meas.*<**MMDD**>	Yes
Surveillance Logs	*survlog.log.*<**MMDD**>	No
Sentry Logs	*sentryd.log.*<**MMDD**>	No

LSMS Log File Names and Locations

This figure shows the directory structure under */var/TKLC/lsms/logs* where **LSMS** application log files are located.

Figure 6-3 LSMS Application Log File Locations



Removing Accumulated Logs

To remove accumulated activity, trace, and application logs:

> **Note:**
>
> Logs are automatically removed after seven days.

1. Log in as `root` on the active server.

2. Change to the *logs* directory by typing the following command:

   ```
   cd /var/TKLC/lsms/logs
   ```

3. Determine the existing log files by typing the following command:

   ```
   ls -R
   ```

   Each subdirectory under the /var/**TKLC**/lsms/logs directory is represented in the following output by the name of the directory followed by a colon (for example, **Northeast:**). For each directory that contains log files, the complete listing of all log files is shown below the name of the directory. The naming convention of the log files is:

   ```
   Lsms<i>Type</i>.log.<MMDD>
   ```

   where Type is the kind of log (such as Activity, Trace, Application), **MM** is month; and **DD** is day. The following example output lists all the subdirectories for an **LSMS** that supports eight regions and shows two log files:

   ```
   ./MidAtlantic:
   ./Midwest:
   ./Northeast:
   LsmsActivity.log.0918 LsmsTrace.log.0918
   ./Southeast:
   ./Southwest:
   ./WestCoast:
   ./Western:
   ./Canada:
   ems:
   supported:
   ```

4. To delete the logs, do the following steps:

   a. Change to the subdirectory for the desired region by typing the following command:

      ```
      cd <subdirectory>
      ```

      where <subdirectory> is the subdirectory of the region, such as Western.

   b. Determine which days you want deleted and type the following command:

      ```
      rm *.log.<MMDD>
      ```

      where **MM** is the month and **DD** is the day of the log files you want to delete. For example, if you wanted to delete all logs in the Western region for September 18, you would type the following commands:

      ```
      cd Western
      rm *.log.0918
      ```

Measurement Logs

Measurement logs are viewed in the **HTML** viewer. The following sections describe how to navigate, print (from Linux and Windows computers), and exit measurement logs.

Navigating Measurement Log Windows

If there is more information in a log than can be viewed in the window, use the vertical and horizontal scroll bars to scroll in either direction.

Printing Measurement Logs from Linux and Windows Computers

To print an **LSMS**-generated measurement log from a Linux computer, see Printing Measurement Logs from a Linux Computer.

To print an **LSMS**-generated log from a Windows computer, see Printing Measurement Logs from a Windows Computer.

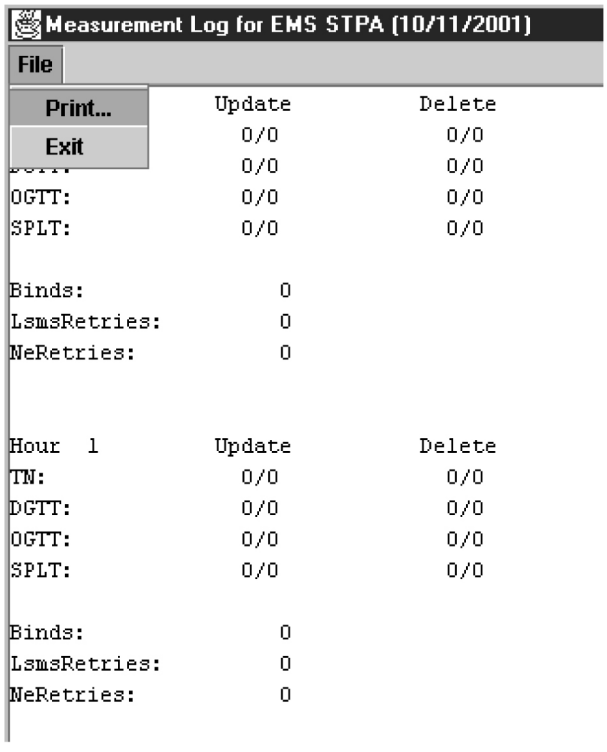
> **Note:**
>
> - Measurement logs are automatically scaled to fit the width of the page.
> - The orientation of all measurement logs is portrait and cannot be modified.

Printing Measurement Logs from a Linux Computer

To print an **LSMS**-generated measurement log from a Linux computer:

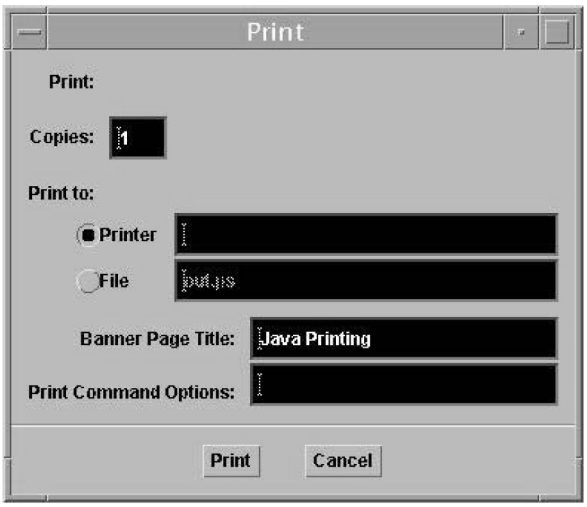
1. From a window displaying the log (after selecting **Open**), select **File**, and then **Print**.

Figure 6-4 Printing Measurement Logs Using the File Pull-down Menu



The Print window appears.

Figure 6-5 Linux Print Window Example



2. In the **Print Command Options** field, enter the Linux print command to print the log.

   Example: `lpr -P printer1`

3. Click the `Print` button.

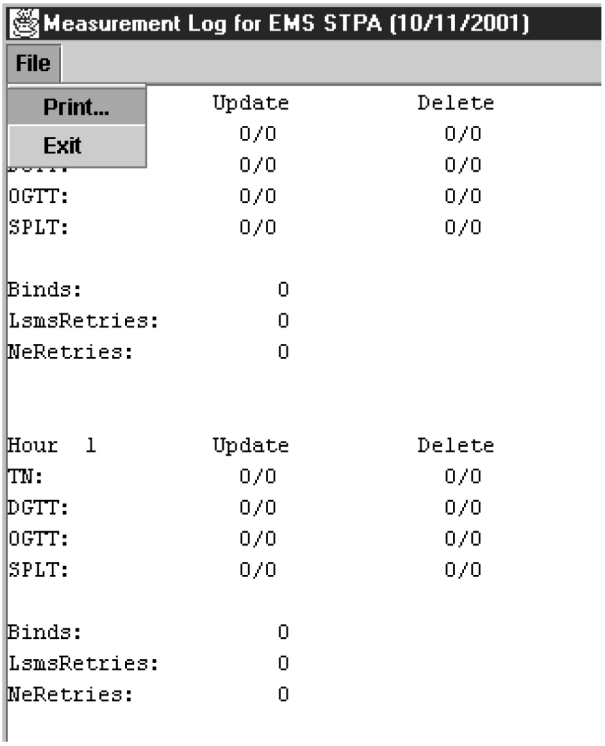
Printing Measurement Logs from a Windows Computer

To print an **LSMS**-generated measurement log from a Windows computer:

> **Note:**
>
> When printing from a Windows computer, a list of available printers is automatically generated and displayed.

1. From a window displaying the measurement log (after selecting **Open**), **File**, and then **Print**.

Figure 6-6 Printing Measurement Logs Using the File Pull-down Menu



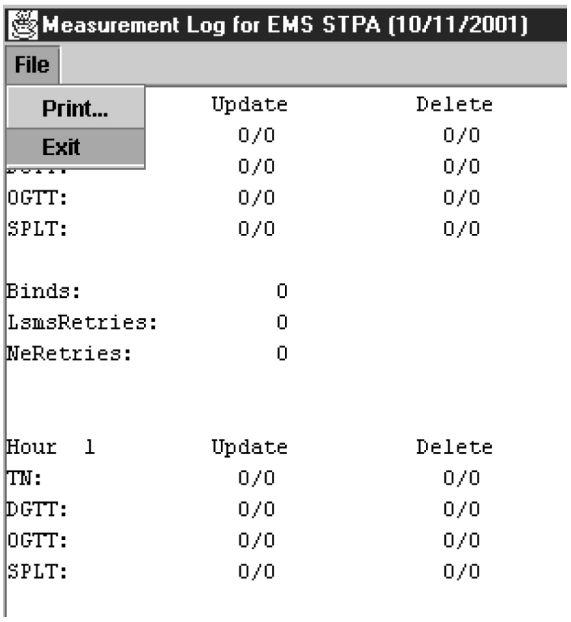
The **Print** window displays.

2. Select the printer you want to use and print the measurement log.

Exiting Measurement Log Windows

1. To exit the Measurement Log output window, select **File**, and then **Exit**

Figure 6-7 Exiting Measurement Logs Using the File Pull-down Menu



Security Logs

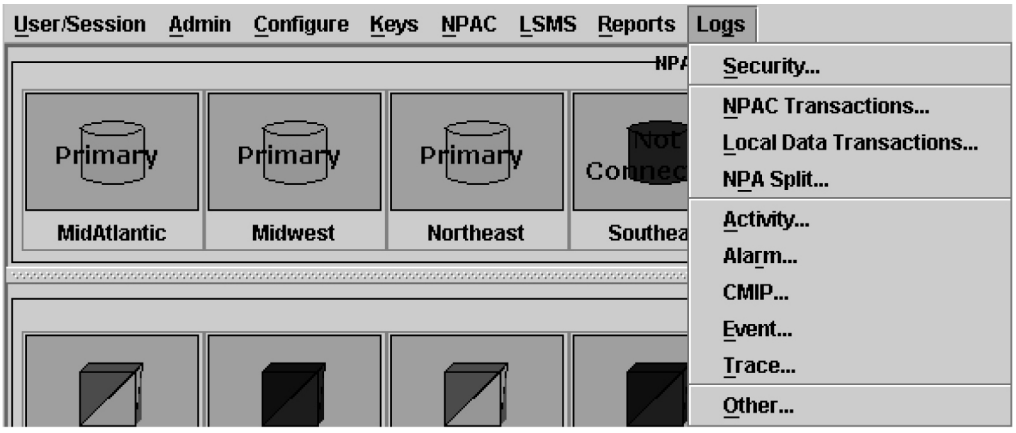
Security logs contain login, logout, locally provisioned commands, and all **GUI** activity information, which you can save, view, and print. These logs are stored in text format and are created on a daily basis. **LSMS** allows you to access the current day's log and the logs created over the preceding seven days.

Viewing Security Logs

To view an **LSMS** security log:

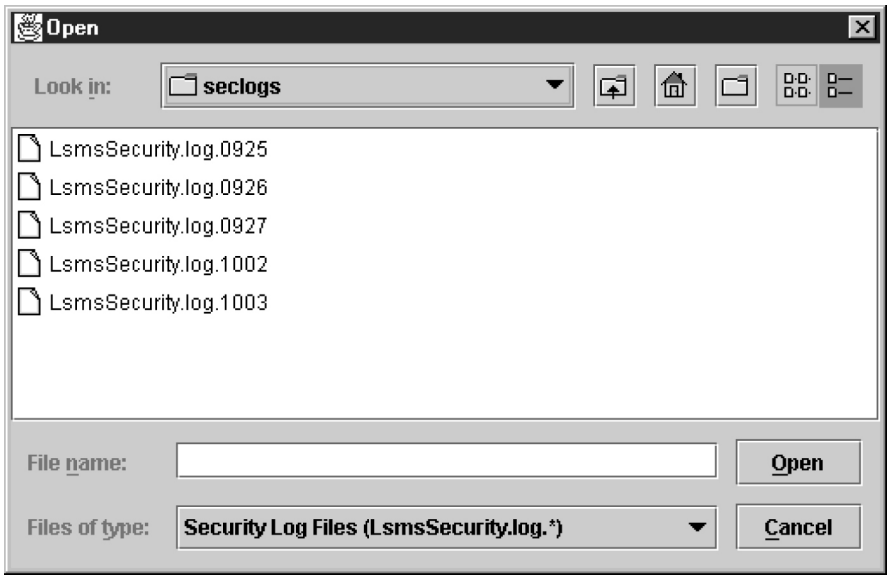
1. From the LSMS Console window, select **Logs**, and then **Security**.

Figure 6-8 Logs Pull-down Menu



The security log Open window appears.

Figure 6-9 Security Log Open Window



2. Select the log you want to view and click **Open**.

   The security log appears.

Figure 6-10 Example Security Log

```
20011003103729|lsmsadm|Login|Success|9999|1072
20011003110408|lsmsadm|Logout|Success|9999|1072|04:02:39
20011003110651|lsmsadm|Login|Success|9999|1073
20011003111411|lsmsadm|Logout|Success|9999|1073|01:01:20
20011003111554|lsmsadm|Login|Success|9999|1074
20011003113546|lsmsadm|Logout|Success|9999|1074|03:01:52
20011003113735|lsmsadm|Login|Success|9999|1075
20011003114651|lsmsadm|Logout|Success|9999|1075|01:03:16
20011003114918|lsmsadm|Login|Success|9999|1076
```

3. When you are done viewing the log, close the file.

NPAC Transactions Logs

The transactions logs provide information associated with M-Create, M-Delete, and M-Set **CMIP** operations initiated from the **NPAC**. The maximum size of the log file is 60 **MB**.

Table 6-2 explains each field used in the **NPAC** transactions log for **SVs**, and also provides the possible values for each variable. Table 6-3 explains each field used in the **NPAC** transactions log for **NPBs**, and also provides the possible values for each variable. Following each table are examples of the M-Create, M-Delete, and M-Set transactions log formats.

Table 6-2 NPAC Transactions Log Format Symbols (for SVs)

Field	Content	Description
1	**NPAC** Region	2 characters: **CA** = Canada **NE** = Northeast **SW** = Southwest **SE** = Southeast **MW** = Midwest **WC** = West Coast **WE** = Western **MA** = Mid Atlantic
2	Received timestamp Format: **YYYYMMDDhhmmss**	14 characters: **YYYY** = Year (1997 - 9999) **MM** = Month (01 - 12) **DD** = Day (01 - 31) **hh** = Hour (00 - 23) **mm** = Minute (00 - 59) **ss** = Second (00 - 59) Example: 19990315182028
3	Label	subVersn
4	**CMIP** operation	1 character: **C** = M-Create **D** = M-Delete **S** = M-Set
5	**NPAC** version **ID**	10 characters: Example: 2000000001
6	Subscription version **TN**	10 characters: Example: 9195551234
7	Subscription version **LRN**	10 characters: Example: 2222223333
8	Service Provider **ID**	4 characters: Example: **TKLC**
9	Billing **ID**	4 characters: Example: Bill
10	Activation timestamp Format: **YYYYMMDDhhmmss**	14 characters: **YYYY** = Year (1997 - 9999) **MM** = Month (01 - 12) **DD** = Day (01 - 31) **hh** = Hour (00 - 23) **mm** = Minute (00 - 59) **ss** = Second (00 - 59) Example: 19990315182028

Table 6-2 (Cont.) NPAC Transactions Log Format Symbols (for SVs)

Field	Content	Description
11	Subscription **LRN** Type	1 character: **0** = lspp (interservice provider port) **1** = lisp (intraservice provider port) **2** = **POOL** (Pooled numbers) Example: 0
12	Subscription download reason	1 character: **0** = New **1** = Delete **2** = Modify **3**= Audit discrepancy Example: 2
13	SVType	1 character: **0**= Wireline **1**= Wireless **2**= VoIP **3**= VoWiFi **4**= SVType4 **5**= SVType5 **6**= SVType6 Example: 1
14	AlternativeSPID	4 characters: [0-9, A-Z], or NULL Example: 1234

> **Note:**
> SVType and AlternativeSPID fields are not present in delete transactions.

Following are examples of M-Create, M-Delete, and M-Set transactions log formats for **SVs**:

M-Create Transactions Format

```
MW|19980123172028|subVersn|C|2000000001|9195555555|2222223333|TKLC|BILL|
19970202020202|0|0
```

M-Delete Transactions Format

```
MW|19980123172031|subVersn|D|2000000001|9195555555|
```

M-Set Transactions Format

```
MW|19980123172028|subVersn|S|2000000001|9195555555|2222223333|     |
TILL|              |0|2
MW|19980123172029|subVersn|S|2000000001|          |4444444444|TKLC|JILL|
19970202020202| |2
```

Figure 6-11 shows a portion of an example Transactions Log for **SVs**.

Figure 6-11 Example NPAC Transactions Log (SVs)

NE|20030707001026|subVersn|D|16041597|2032741060|2035540011|6214||20021120211442|1|0

Table 6-3 NPAC Transactions Log Format Symbols (for NPBs)

Field	Content	Description
1	**NPAC** Region	2 characters: **CA** = Canada **NE** = Northeast **SW** = Southwest **SE** = Southeast **MW** = Midwest **WC** = West Coast **WE** = Western **MA** = Mid Atlantic
2	Received timestamp Format: **YYYYMMDDhhmmss**	14 characters: **YYYY** = Year (1997 - 9999) **MM** = Month (01 - 12) **DD** = Day (01 - 31) **hh** = Hour (00 - 23) **mm** = Minute (00 - 59) **ss** = Second (00 - 59) Example: 19990315182028
3	Label	nmPoolBlk
4	**CMIP** operation	1 character: **C** = M-Create **D** = M-Delete **S** = M-Set
5	**NPAC** version **ID**	10 characters: Example: 2000000001
6	Subscription version **TN**	10 characters: Example: 9195551***
7	Subscription version **LRN**	10 characters: Example: 2222223333

Table 6-3 (Cont.) NPAC Transactions Log Format Symbols (for NPBs)

Field	Content	Description
8	Block Holder	4 characters: Example: **TKLC**
9	Activation timestamp Format: **YYYYMMDDhhmmss**	14 characters: **YYYY** = Year (1997 - 9999) **MM** = Month (01 - 12) **DD** = Day (01 - 31) **hh** = Hour (00 - 23) **mm** = Minute (00 - 59) **ss** = Second (00 - 59) Example: 19990315182028
10	Placeholder	1 character: T **Note:** This field is present for historical purposes and the value is always T.
11	Subscription download reason	1 character: **0** = New **1** = Delete **2** = Modify **3**= Audit discrepancy Example: 2
12	SVType	1 character: **0** = Wireline **1** = Wireless **2** = VoIP **3** = VoWiFi **4** = SVType4 **5** = SVType5 **6** = SVType6 Example: 1
13	AlternativeSPID	4 characters: [0-9, A-Z], or NULL Example: 1234

> **Note:**
> SVType and AlternativeSPID fields are not present in delete transactions.

Following are examples of M-Create, M-Delete, and M-Set transactions log formats for **NPBs**:

M-Create Transactions Format

```
MW|19980123172028|nmPoolBlk|C|2000000001|9195551***|2222223333|TKLC|
19970202020202|T|0
```

M-Delete Transactions Format

```
MW|19980123172031|nmPoolBlk|D|2000000001|9195551***|
```

M-Set Transactions Format

```
MW|19980123172028|nmPoolBlk|S|2000000001|9195551***|2222223333|     | |T|2
```

Figure 6-12 shows a portion of an example Transactions Log for **NPBs**.

Figure 6-12 Example NPAC Transactions Log (NPBs)

```
NE|20030707000007|nmPoolBlk|C|6496|5085585***|5083609729|6664|20030707040100|T|0
```

Local Data Transactions Logs

Local data transactions logs provide information about locally provisioned data. Figure 6-13 shows an example of a local data transactions log.

Figure 6-13 Example Local Data Transactions Log

/usr/local/LSMS/logs/localdata/LsmsLocalEntry.log.0618

```
DLT-GTT-DFLT|9999|Group1|919460
DLT-GTT-OVER|9999|Group1|9194600000
UPD-GTT-DFLT|9999|Group1|919460|NLA|NLI|1|000-000-000|123|G|1|2|002-003-004|234|D|0
UPD-GTT-OVER|9999|Group1|9194600000|9999|1|000-000-000|100|G|0|T|2|002-003-004|234|D|1|T
UPD-SPLIT-NPA|919460|336460|20010618|20010620
DLT-SPLIT-NPA|919460
```

Audit Logs

Audit log files are generated for Range Audits. One log file is created for each day that a Range audit is performed. The log file is named *LsmsAudit.log.<MMDD>*, where *<MMDD>* is the timestamp that contains month and day. This log file is located in the directory */var/TKLC/lsms/logs/<CLLI>*, where *<CLLI>* is the Common Language Location Identifier of the network element being audited. Log files are maintained for seven days after they are created; then they are automatically removed from the LSMS.

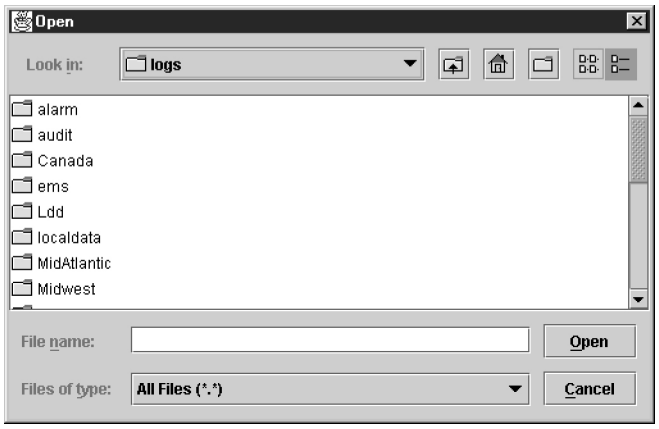
> **Note:**
>
> No log file is generated for a Single SV/NPB Audit.

Viewing Audit Log Files

You can view audit log files in either of the following ways

- From the GUI, any time after a Range audit has begun, you can view the audit log file by clicking the **View Log** button. If the browser window used for displaying reports and logs is not already open, it is opened automatically and displays the log file.
- You can also use one of the following methods to open the window used to browse for audit logs:

Figure 6-14 Browsing for Audit Log Files



  - Select **Logs**, and then **Other**... from the main menu of the LSMS Console window.
  - Click on the LSMS Console window's EMS Status Icon that corresponds to the network element being audited so that the icon is highlighted. Right-click and select **Logs**, and then **LNP Database Synchronization**, and then **Audit**.

    Scroll down to find the folder that has the <CLLI> name for the NE that is being audited. Double-click the folder name, and then double click the file name *LsmsAudit.log.<MMDD>* that corresponds to the month and day you desire.

Audit Log File Contents

Whenever a Range audit is started, the audit log file for that day is appended (if this is the first audit of the day, the file is created). For each audit performed on that day, the audit log file contains information similar to the information displayed on the **Audit Range**, **Audit Results**, and **Download Results** tabs, such as start and end times for each stage, and numbers of missing, extra, and different objects in various LNP categories. The log and window also record whether database entries are present at the LSMS but missing at the NE, present at the NE but missing at the LSMS, or present at both the LSMS and NE but containing different values.

The audit log file contains the following sections:

- Header Section
- Audit Section
- Reconcile Section
- Summary Section

> **Note:**
>
> Starting with LSMS Release 8.X, summary sections for Object Range Audits indicate whether object types were completely audited, partially audited, or not audited, and shows results for both completely and partially audited object types.

Audit Log File Example for a Completed Audit

Figure 6-15 shows an example of an audit log file that contains two separate audits and reconciles performed on the same day.

Figure 6-15 Example of an Audit Log File for a Completed Audit

```
Thu Nov 1 13:36:16 EST 2001

Username: lsmsuser
NE CLLI:  LARCH

Thu Nov 1 13:36:15 EST 2001
Connection established with network element (192.168.61.202:1030)

Audit of Override GTTs started on Thu Nov 1 13:36:20 EST 2001

2000000000 MISSING

Audit of Override GTTs completed on Thu Nov 1 13:36:20 EST 2001

   0000000000 LRN Start
   9999999999 LRN End
            5 Total audited on LSMS
            4 Total audited on NE
            4 Same on Both
            0 Different on NE
            1 Missing on NE
            0 Extra on NE
            1 Total Discrepancies

Reconcile started on Thu Nov 1 13:37:40 EST 2001

Reconcile completed on Thu Nov 1 13:37:44 EST 2001

           NPA Splits   0 Downloaded     0 errors
   Number Pool Blocks   0 Downloaded     0 errors
Subscription Versions   0 Downloaded     0 errors
         Default GTTs   0 Downloaded     0 errors
        Override GTTs   1 Downloaded     0 errors
                Total   1 Downloaded     0 errors
```

Audit Log File Example for a Partially Completed Audit

Figure 6-16 shows an example of an audit log file for an Object Range Audit that was interrupted.

Figure 6-16 Example of Audit Log File for Partially Completed Audit

```
Mon Jun 6 14:40:20 EDT 2005

Username: lsmsall
NE CLLI:  PALM

Mon Jun 6 14:40:20 EDT 2005
Connection established with network element (192.168.61.100:1030).

Audit of NPA Splits started on Mon Jun 6 14:40:20 EDT 2005

Audit of NPA Splits completed on Mon Jun 6 14:40:27 EDT 2005

         200 Old NPA Start
         999 Old NPA End
           5 Total audited on LSMS
           5 Total audited on NE
           5 Same on Both
           0 Different on NE
           0 Missing on NE
           0 Extra on NE
           0 Total Discrepancies

Audit of Subscription Versions started on Mon Jun 6 14:40:27 EDT 2005

9195551212 EXTRA
9195551213 EXTRA
9195551214 MISSING

Audit of Subscription Versions interrupted on Mon Jun 6 14:40:27 EDT 2005

Partial Subscription Version Summary
 919550 NPA-NXX Start
 919559 NPA-NXX End
 919554 NPA-NXX Last Completed Successfully
   4999 Total audited on LSMS
   5000 Total audited on NE
   4997 Same on Both
      0 Different on NE
      1 Missing on NE
      2 Extra on NE
      3 Total Discrepancies

Objects Completely Audited: NPA Split
Objects Partially Audited:  Subscription Version
Objects Not Audited:        Default GTT, Override GTT
Partial Reconcile File:     /var/TKLC/lsms/free/ebda/<CLLI>.reconcile
                            File.0606144036.tar.gz
```

Continuing an Interrupted Object Range Audit

Starting with LSMS Release 8.X, if an Object Range Audit is interrupted, you can interpret the contents of the audit log file to determine how many objects were completely audited. After the interruption has been resolved, you can complete your original audit goal by performing the following actions in any order (the file shown in Figure 6-16 is used as an example):

- Perform a Post-Audit Reconcile (refer to the *LNP Database Synchronization User's Guide*), selecting the Partial Reconcile File listed in the Audit log (`<CLLI>.reconcileFile. 0606144036.tar.gz` in the example file). This Post-Audit Reconcile will reconcile the three discrepancies found in the Subscription Version range from 919550 to 919554 (there were no discrepancies found in the NPA Splits).
- Perform another Range audit and reconcile of just SVs in the range 910555 to 910559.

Audit Log File Example for Data Discrepancies

An audit can detect three types of data discrepancies (different, missing, and extra) that may exist on a network element. Each discrepancy that is detected is counted and recorded in the audit log file. Duplicate LNP data is not considered to be a discrepancy. Figure 6-17 shows an example of an audit section of an log file that contains data discrepancies.

Figure 6-17 Audit Log File Example for Data Discrepancies

```
Audit of Subscription Versions interrupted on Mon Jun 6 14:40:36 EDT 2005

Partial Subscription Version Summary

        919550 NPA-NXX Start
        919559 NPA-NXX End
        919554 NPA-NXX Last Completedly Successfully
          4999 Total audited on LSMS
          5000 Total audited on NE
          4997 Same on Both
             0 Different on NE
             1 Missing on NE
             2 Extra on NE
             3 Total Discrepancies

Objects Completely Audited: NPA Split
Objects Partially Audited:  Subscription Version
Objects Not Audited:        Default GTT, Override GTT
Partial Reconcile File:     /var/TKLC/lsms/free/ebda/<CLLI>.reconcile
                            File.0606144036.tar.gz
```

NPA Split Logs

The **LSMS** records all changes to **LSMS NPA** split objects in split log files. Log information for all eight regions is included in one log file.

Figure 6-18 Example LSMS Split Log

```
20051213000417|PDP End|Success|618|628|574|20051021|20051022
20051213000417|PDP End|Success|999|952|201|20051026|20051126
20051213000417|PDP End|Success|999|952|204|20051026|20051109
20051213000417|PDP End|Success|999|952|206|20051026|20051126
20051213001917|PDP End|Success|618|628|574|20051021|20051022
20051213001917|PDP End|Success|999|952|201|20051026|20051126
20051213001917|PDP End|Success|999|952|204|20051026|20051109
20051213001917|PDP End|Success|999|952|206|20051026|20051126
20051213003417|PDP End|Success|618|628|574|20051021|20051022
20051213003417|PDP End|Success|999|952|201|20051026|20051126
```

As with other log files, the split log files use the current date in the filename so they are automatically deleted after seven days. The split log file name has the following format, where **MM** is the creation month and **DD** is the creation day:

```
LsmsSplit.log.MMDD
```

The daily limit for this log file is 75 megabytes. (Each **TN** uses 5 bytes in the Split log file entry. If 500 **NXX**—half of the 1000 maximum— in the old **NPA** change to the new **NPA** and each **NXX** contains the maximum 9999 **SVs**, that is 25 megabytes in the log file on the Start Date of that **NPA** Split. Because up to three **NPA** splits have occurred on the same day, the maximum size limit for a Split log file is set at 75 megabytes.)

The following figures show examples of create, activation, and delete entries, respectively, in a split log file.

Figure 6-19 Sample Create Entry in a NPA Split Log File

```
CREATE|OK|2000-01-15 12:34:56
910|919|555|20000115000000|20000715000100
```

Figure 6-20 Sample Activation Entry in a NPA Split Log File

```
START ACTIVATE|2000-01-15 12:34:56
910|919|555|20000115000000|20000715000000
NPB:
0***|1***|2***
SV:
0001|0145|0298|0387|0458|0598|0694|0794|0848|0999
1234|1235|1236|1366|1680|1734|1839|1948|2000|2001
2389|2487|2965|3000|3001|3189|3234|3365|3410|3422
3456|3595|3656|3767|3788|3789|3790|3791|3792|3793
3799|3800|3853|3877|3888|3899|3900|3930|3950|3990
4000|4278|4367|4497|4584|4623|4793|5000|5395|5700
5808|5926|6000|6123|6124|6125|6249|6250|6359|6378
6398|6426|6545|6639|6712|6809|6969|7012|7137|7206
7387|7409|7509|7684|7794|7839|7859|7869|7945|7977
8011|8194|9598|9978
END ACTIVATE|OK|2000-01-15 12:35:30
910|919|555|20000115000000|20000715000000
```

Figure 6-21 Sample Delete Entry in a NPA Split Log File

```
DELETE|OK|2000-01-15 12:34:56
910|919|555|20000115000000|20000715000000
```

Formats Common to All Entries

The following formats apply to all split log entries:

- Time fields for all time stamps are in the 19-character `YYYY-MM-DD HH:MM:SS` format, representing year, month, day, hour, minute, and second, respectively.
- Time fields for **PDP** start and end times are in the 14-character `YYYYMMDDHHMMSS` format, representing year, month, day, hour, minute, and second, respectively. The values for hour, minute, and second are always zero.
- Each entry specifies **OK** or **FAIL** to indicate whether the action was completed successfully.

Create Entry

A create entry, with the following format, is recorded in the log file each time an **NPA** Split is created using the **GUI** or an input file.

```
CREATE|<OK or FAIL>|<creation time>|<optional failure reason text>
<old NPA>|<new NPA>|<NXX>|<start PDP time>|<end PDP time>
```

Activation Entry

An activation entry, with the following format, is recorded in the log file each time an **NPA** Split is activated.

```
START ACTIVATE|<activation time>
<old NPA>|<new NPA>|<NXX>|<start PDP time>|<end PDP time>
NPB:
<X>***|<X>***|…|<X>***
SV:
<XXXX>|<XXXX>|…|<XXXX>
…
<XXXX>|<XXXX>|…|<XXXX>
END ACTIVATE|<OK or FAIL>|<activation time>|<optional failure reason text>
<old NPA>|<new NPA>|<NXX>|<start PDP time>|<end PDP time>
```

The list of **NPBs** modified contains up to ten numeric entries. Each entry contains the last digit in the **NPA-NXX**-X string that identifies an **NPB** followed by three asterisks (***).

Because each line in the list of **SVs** modified contains up to ten 4-digit numeric entries for the last four digits of a ten-digit **TN** identifying an **SV**, there may be up to one thousand lines in each list of **SVs** modified for a given **NPA-NXX** split.

Delete Entry

A delete entry, with the following format, is recorded in the log file each time an **NPA** Split is manually deleted using the **GUI**.

```
DELETE|<OK or FAIL>|<deletion time>|<optional failure reason text>
```

For more information about Split logs and **LSMS NPA** Splits, see Managing Locally Provisioned Data.

Activity Logs

The **LSMS** activity log contains all **CMIP** operations initiated from the **NPAC** agent to a local database or to the **NPAC**. It contains the decoded **CMIP** operations including M_GET, M_SET, M_DELETE, M_ACTION and **EVENTREPORT**. The maximum size of the log file is 2 **MB**. See Figure 6-22 for an example of a partial activity log.

Figure 6-22 Example (Partial) Activity Log

```
ACTIVITY LOG << 20011003084844 >>
ActionArgument SEQ
  baseManagedObjectClass CHOICE
    globalForm OID 1.3.6.1.4.1.103.7.0.0.3.11
  baseManagedObjectInstance CHOICE
    distinguishedName SEQ OF len=2
      [0] SET OF len=1
        [0] SEQ
          attributeType OID 1.3.6.1.4.1.103.7.0.0.2.19
          attributeValue ANY
            GraphicString40 GraphicString len=27  "WestCoast Regional NPAC SMS"
      [1] SET OF len=1
        [0] SEQ
          attributeType OID 1.3.6.1.4.1.103.7.0.0.2.18
          attributeValue ANY
            DSET-ASN1-GraphicString GraphicString len=10  "lnpNetwork"
  accessControl EXTERNAL
    direct-reference OID 1.3.6.1.4.1.103.7.0.0.2.1
    indirect-reference INT absent
    data-value-descriptor ObjectDescriptor absent
    encoding CHOICE
      single-ASN1-type ANY
        LnpAccessControl SEQ
          systemId CHOICE
```

Alarm Logs

Alarm logs contain the following elements:

- *Prefix line* – Single line with title and timestamp for each alarm.
- *Event Report Argument* – Variable-length decoded **CMIP**.
- *Origin* – Single line that ends with a **1** to indicate that the message came from the **NPAC** agent.
- *Severity* – Single line that ends with one of the following numbers:

  - **1** – Indicates that the problem is Critical
  - **2** – Indicates that the problem is Major
  - **5** – Indicates that the problem is Cleared
- *Message* – Text message printed on **GUI** as notification.

Figure 6-23 Example Alarm Log

```
 ALARM LOG << 20011002130207 >>
[8091:LSMS] Active Splits are past their End Dates.


 ALARM LOG << 20011002131707 >>
[8091:LSMS] Active Splits are past their End Dates.


 ALARM LOG << 20011002133207 >>
[8091:LSMS] Active Splits are past their End Dates.
```

CMIP Logs

The **CMIP** log collects for later analysis all **CMIP** protocol data units (**PDUs**) received from the **NPAC**. If a problem arises during an **NPAC** transaction, support personnel can print the relevant **CMIP** log and attach it to the problem report. The maximum size of the log file is 2 **MB**. See Figure 6-24 for an example of a **CMIP** Log.

Figure 6-24 Example CMIP Log

```
 CMIP LOG << 20011003084845 >>
ActionResult SEQ
  managedObjectClass CHOICE
    globalForm OID 1.3.6.1.4.1.103.7.0.0.3.11
  managedObjectInstance CHOICE
    distinguishedName SEQ OF len=2
      [0] SET OF len=1
        [0] SEQ
          attributeType OID 1.3.6.1.4.1.103.7.0.0.2.19
          attributeValue ANY codingType 0x900, sz 0x1e, buf@ a8e0f0
000000: 19 1c 57 65 73 74 20 43  6f 61 73 74 20 52 65 67   ..West C oast Reg
000010: 69 6f 6e 61 6c 20 4e 50  41 43 20 53 4d 53         ional NP AC SMS
      [1] SET OF len=1
        [0] SEQ
          attributeType OID 1.3.6.1.4.1.103.7.0.0.2.18
          attributeValue ANY codingType 0x900, sz 0xc, buf@ a7fbf0
000000: 19 0a 6c 6e 70 4e 65 74  77 6f 72 6b              ..lnpNet work
  currentTime GeneralizedTime absent
  actionReply SEQ
    actionType CHOICE
      globalForm OID 1.3.6.1.4.1.103.7.0.0.6.1
    actionReplyInfo ANY codingType 0x900, sz 0x5, buf@ a90458
000000: 30 03 0a 01 02                                0....
```

Event Logs

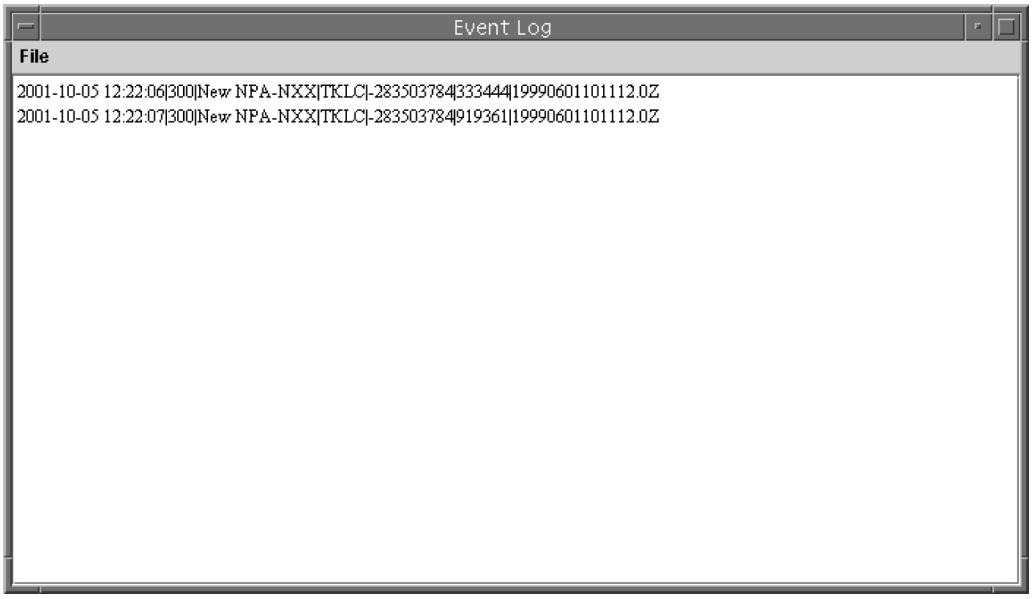
The event log provides **GUI** notification information about events not related to problems. The maximum size of the log file is 2 **MB** and is kept for seven days.

The event log holds the following types of records, each of which contains varying numbers of information fields (see Table 6-4 for descriptions of each field).

- New **NPA-NXX** Event, which contains 10 information fields
- First Use of **NPA-NXX** Event, which contains eight information fields

Note: Optional fields for which no information is generated appear in the event log as two consecutive pipes (||).

Figure 6-25 Example Event Log



New NPA-NXX Event Log Record

Following is the format of the event message logged when a new serviceProvNPA-**NXX** object is created:

```
<Timestamp> | <EventTime> | <EventId> | <EventType> | <SPID> | <NPANXX-ID>
| <NPANXX> | <EffectiveTimestamp> | <DownloadReason> |
<CreationTimestamp>
```

See fields 1 through 10 in Table 6-4 for descriptions of each field included in the New **NPA-NXX** Event Log Record.

Following is an example of a New **NPA-NXX** Event Log Record when a new serviceProvNPA-**NXX** object is created:

Example:

```
1998-08-18 12:00:00| 19980818120000 | 300 | New NPA-NXX| 0001 | 25 |
919361 | 19980801120000.0Z | 0 | 19980701120000.0Z
```

In this example, 19980801120000.0 in field 8 and 19980701120000.0 in field 10 represent the time stamp values (**YYYYMMDDhhmmss**.0Z format, where the**.0** that immediately precedes the **Z** indicates tenths of a second) and **Z** indicates Zulu time.

> **Note:**
>
> Time Stamp values are entered in local time. **LSMS** automatically converts local time to Z (Zulu), which is also called **GMT** (Greenwich Mean Time). For more information, see Appendix A, "Local Time Calculation and World Time Zone Data.".
> First Use of **NPA-NXX** Event Log Record

Following is the format of the event message logged when a subscriptionVersionNewNPA-**NXX** notification is received:

```
<Timestamp> | <EventTime> | <EventId> | <EventType> | <SPID> | <NPANXX-ID>
| <NPANXX> | <EffectiveTimestamp>
```

See fields 1 through 8 in for descriptions of each field included in the First Use of **NPA-NXX** Event Log Record.

Following is an example of an **NPA-NXX** event log record when a subscriptionVersionNewNPA-**NXX** notification is received:

Example:

```
1998-08-18 12:00:00| 19980818115500 | 301 | First use of NPA-NXX | 0001 |
25 | 919361 | 19980801120001.0Z
```

In this example, 19980801120001.0 in field 8 represents the time stamp value (**YYYYMMDDhhmmss**.0Z format, where the**.0** that immediately precedes the **Z** indicates tenths of a second) and **Z** indicates Zulu time.

> **Note:**
>
> Time Stamp values are entered in local time. **LSMS** automatically converts local time to Z (Zulu), which is also called **GMT** (Greenwich Mean Time). For more information, see #unique_18.

NPAC Event Log Fields and Field Descriptions

provides a summary of the **NPAC** event log fields and field descriptions.

Fields 1 through 10 are included in the New **NPA-NXX** Event Log Record, and fields 1 through 8 are included in the First Use of **NPA-NXX** Event Log Record.

Table 6-4 NPAC Event Log Fields and Field Descriptions

Field	Field Name	Field Description
1	<Timestamp>	The date and time that the notification appeared on the **GUI**. It is in the same format as the **GUI** notification: **YYYY-MM-DD *hh:mm:ss*** **YYYY** -Year (1997–9999) **MM** - Month of the year (01–12) **DD** - Day of the month (01–31) ***hh*** - Hour (00–23) ***mm*** - Minute (00–59) ***ss*** - Second (00–59) Example: 1998-08-18 12:00:00
2	<EventTime> Format: **YYYYMMDDhhmmss**	The time that the event actually occurred (it is also an optional field in a **CMIP** event). If present, it is in the Abstract Syntax Notation (**ASN**.1) Generalized time format. Example: 19980818120000
3	<EventId>	The event messages are assigned a unique integer identifier. One of the following identifiers appears in the <EventId> field, depending upon the type of record: • **300** (New **NPA-NXX**) • **301** (First Use of **NPA-NXX**)
4	<EventType>	One of the following entries appears in the <EventType> field, depending upon the type of record: • **New NPA-NXX** is the descriptive text associated with an <EventId> of 300. • **First Use of NPA-NXX** is the descriptive text associated with an <EventId> of 301.
5	<**SPID**>	Alphanumeric 4-character Service Provider **ID**.
6	<**NPANXX-ID**>	Integer identifier that provides a unique key for the object.
7	<**NPANXX**>	The **NPA-NXX** value of the portable **NPA-NXX**.

Table 6-4 (Cont.) NPAC Event Log Fields and Field Descriptions

Field	Field Name	Field Description
8	<EffectiveTimestamp> Format: **YYYYMMDDhhmmss**.0Z (The**.0** that immediately precedes the **Z** indicates tenths of a second. The **Z** indicates Zulu time.)	Timestamp that specifies when the **NPA-NXX** is available for **LNP** in the service provider networks. Example: 19980801120000.0Z (The**.0** that immediately precedes the **Z** indicates tenths of a second. The **Z** indicates Zulu time.)
9	<DownloadReason>	Integer that specifies the reason that the **NPA-NXX** was downloaded to the **LSMS**. The valid reasons are: **0** - New **1** - Delete **2** - Modified **3** - Audit discrepancy
10	<CreationTimestamp> Format: **YYYYMMDDhhmmss**.0Z (The**.0** that immediately precedes the **Z** indicates tenths of a second. The **Z** indicates Zulu time.)	Timestamp that specifies when the **NPA-NXX** object was created at the **NPAC** by the service provider that owns the **NPA-NXX**. Example: 19980801120000.0Z (The**.0** that immediately precedes the **Z** indicates tenths of a second. The **Z** indicates Zulu time.)

Trace Logs

The trace log is used by Oracle applications developers. Each entry, as shown in Figure 6-26, contains a timestamp and debug information.

Figure 6-26 Example Trace Log

```
TRACE LOG << 20010924104737 >>
[/usr/local/LSMS/5.0.0-50.2.0/eagleagent, 5544:5] Error in file: EagleThread.C Line number: 1013
svc: Error thrown: E3004: NET_EREAD: Network layer read error ("vsl/vslsock.c", line 481) [ oserr=`131 (Connection reset by peer)' ]
Error code : 131


TRACE LOG << 20010924104741 >>
[/usr/local/LSMS/5.0.0-50.2.0/eagleagent, 5544:4] Error in file: ConnectionThread.C Line number: 584
svc: Re-start: Error thrown: E3004: NET_EREAD: Network layer read error ("vsl/vslsock.c", line 481) [ oserr=`131 (Connection reset by
Error code : 131


TRACE LOG << 20010924104746 >>
[/usr/local/LSMS/5.0.0-50.2.0/reportman, 5470:1] Error in file: SentryHandler.C Line number: 75
Sentry timestamp update failed: E4354: OM_PSR_CLASS_NOT_FOUND: VQL PARSE ERR: Class SentryEntry not found. ("LFOID'
Error code : 0


TRACE LOG << 20010924104747 >>
[/usr/local/LSMS/5.0.0-50.2.0/supman, 5535:1] Error in file: SentryHandler.C Line number: 75
Sentry timestamp update failed: E4354: OM_PSR_CLASS_NOT_FOUND: VQL PARSE ERR: Class SentryEntry not found. ("LFOID'
Error code : 131
```

eagleagent Logs

The **LSMS** maintains a set of logs for the **LSMS**'s interface to the network elements. These logs are viewable from all running **GUI** sessions, and have a maximum file size of 200 **MB** each. The following eagleagent logs are described in this section:

- "eagleagent Transactions Log"
- "Rejected Transactions Log"
- "Measurement Logs"

In addition to these logs, **LNP Database** Synchronization logs are also eagleagent logs. A log file is created to record the results of each audit, bulk load, and user-initiated resynchronization. These logs files are described in the *LNP Database Synchronization User's Guide*.

eagleagent Transactions Log

The Transactions log records all request/response transactions between the **LSMS** and the network element. The eagleagent Transactions log shows every message sent to the **EAGLE** and (optionally) responses from the **EAGLE**. The log includes **EBDA** reconcile messages and resynchronization messages. The log format identifies which filter was used and whether the message came from **EBDA**, local data, or which Region.

Example Transactions Log Entry

Figure 6-27 shows an example of an entry in the eagleagent Transactions log.

Figure 6-27 Example `eagleagent` Transactions Log

```
Tue Oct 30 17:48:35 EST 2001 (FilterType=G, GttGroupName=Group1, CMIP=N,
SRC=9, Cmd=(funcId=41=HSOP_UPD_GTT_DEFAULT_TS, len=49,
timestamp=20011030222659\0, data=818119|LA|NLI||||||||||||||||||||\n))
```

Transactions Log Fields

Table 6-5 shows describes the fields in entries in the eagleagent Transactions log.

Table 6-5 `eagleagent` Transactions Log Fields, Field Descriptions, and Sample/ Restriction Data

Field Number	Field	Description	Sample/Restriction Data
1	Timestamp	Local timestamp of event	27 characters `Tue Oct 30 17:48:35 EST 2001`
2	Space #1	Space character	1 space
3	Parenthesis #1	Open Parenthesis	1 character (

Table 6-5 (Cont.) `eagleagent` Transactions Log Fields, Field Descriptions, and Sample/Restriction Data

Field Number	Field	Description	Sample/Restriction Data
4	Filter Type	Identifies type of filtering used by **LSMS**	13 characters G indicates **GTT** Group Filter T indicatesTN Filter Example: `FilterType=G,`
5	Space #2	Space character	1 space
6	Filter Data	Based on Filter Type in Field #4, contains information specific to filter	Variable number of characters See 6a or 6b
6a	**TN** Filter Data	Identifies Region Name and **NPA-NXX** for this transaction, when FilterType=T for #4	For Region, possible values are Canada, MidAtlantic, Midwest, Northeast, Southeast, Southwest, Western, WestCoast NpaNxx is 6 digits Example: `Region=Southeast, NpaNxx=706595,`
6b	**GTT** Group Name	**GTT** Group Name when FilterType=G in #4.	Example: `GttGroupName=Group1,`
7	Space #3	Space character	1 space
8	**CMIP** Operation Type	Identifies **CMIP** operation	7 characters C indicates Create S indicates Set (modify) D indicates Delete N indicates Not Set Example: `CMIP=N,`
9	Space #4	Space character	1 space
10	Source	Integer identifying source of update within the **LSMS**	6 characters Integer (1-9) Example: `SRC=4,`
11	Space #5		1 space
12	Start of **LSMS** Command	Identifies the start of the **LSMS** Command information	5 characters `Cmd=(`

Table 6-5 (Cont.) `eagleagent` Transactions Log Fields, Field Descriptions, and Sample/Restriction Data

Field Number	Field	Description	Sample/Restriction Data

13	Function **ID**	Identified **HSOP** Function **ID**	Variable number of characters
			Format is funcId=<id>=<name>,
			Possible values for <id>=<name> are:
			`39=HSOP_UPD_SUB_TS`
			`40=HSOP_UPD_GTT_OVERRIDE_TS`
			`41=HSOP_UPD_GTT_DEFAULT_TS`
			`42=HSOP_UPD_NPA_SPLIT_TS`
			`43=HSOP_DLT_SUB_TS`
			`44=HSOP_DEL_GTT_OVERRIDE_TS`
			`45=HSOP_DEL_GTT_DEFAULT_TS`
			`46=HSOP_DLT_NPA_SPLIT_TS`
			`47=HSOP_RTRV_SUB 53=HSOP_MAX_FUNC_ID`
			`(Invalid)`

14	Space #6		1 space
15	Command Length	Denotes length of command excluding header	5-7 characters Format is len=xxx where xxx can be 1 to 3 digits. Example: `len=49,`
16	Space #7		1 space
17	Timestamp	Timestamp at which command is sent by **LSMS** to **EAGLE**	26 characters. Format is timestamp=yyyymmddHHMMSS\0, Example: `timestamp=20050131120000\0,`
18	Record data	One or more pipe-delimited record forwarded to **EAGLE** from **LSMS**	Variable length character string Each record type (**SV**, **NPB**, Override **GTT**, Default **GTT**, **NPA** Split) has its own format. See Table 6-6 and Table 6-7 for formats of Pipe Delimited Records.
19	End of record data		`\n`
20	End of **LSMS** Cmd	Ending parenthesis	1 character)
21	End of **RMTP** Cmd	Ending parenthesis	1 character)

Transactions Log Record Data Formats

As described in field 18 in Table 6-5, the format of the pipe-delimited record data in a Transactions log entry differs according to the record type and the type of command. Table 6-6

shows the format for each record type and command type and Table 6-7 describes each of the fields used in these formats.

Table 6-6 Format of Pipe-Delimited Record Data in Transactions Log Entry

Record Type	Format for Update Command	Format for Delete Command
SV	**TN**|**LRN**|**SPID**|PoolType|Class **DPC**|Class **SSN**|**LIDB DPC**| **LIDB SSN**|**ISVM DPC**|**ISVM SSN**|**CNAM DPC**|**CNAM SSN**| **WSMSC DPC**|**WSMSC SSN**\0	**TN** \0
NPB	**NPANXXX*****|**LRN**|**SPID**|3| Class **DPC**|Class **SSN**|**LIDB DPC**|**LIDB SSN**|**ISVM DPC**| **ISVM SSN**|**CNAM DPC**|**CNAM SSN**|**WSMSC DPC**|**WSMSC SSN**\0	**NPANXXX*****\0
Override **GTT**	**LRN**|**SPID**| Service 1|Service 2| Service 3|Service 4|Service 5\0	**LRN**\0
Default **GTT**	**NPA-NXX**|**AIN**|**IN**|Service 1| Service 2|Service 3|Service 4| Service 5\0	**NPA-NXX**\0
NPA Split	New **NPA-NXX**|Old **NPA-NXX** \0	Old **NPA-NXX**\0
Table 6-7 describes each of the fields shown in this table.		

Table 6-7 Definitions of Fields for Pipe Delimited Records

Name	Description	Restrictions/Comments
TN	Telephone Number	10 digits
LRN	**Location Routing Number**	10 digits
SPID	Service Provider **ID**	4 alphanumeric characters
PoolType	Pool Type	1 digit: • 1 indicates Local Service Provider Portability (**LSPP**) • 2 indicates Local Intra-Service Provider Portability (**LISP**) • 3 indicates Pooled Block Number (**POOL**)
Class **DPC** **LIDB DPC** **ISVM DPC** **CNAM DPC** **WSMSC DPC**	**Destination Point Code**	Absent or 9 digits consisting of 3 octets each between 0 and 255
Class **SSN** **LIDB SSN** **ISVM SSN** **CNAM SSN** **WSMSC SSN**	**Subsystem Number**	Absent or Up to 3 digits (0-255)

Table 6-7 (Cont.) Definitions of Fields for Pipe Delimited Records

Name	Description	Restrictions/Comments
Service 1 Service 2 Service 3 Service 4 Service 5	Default **GTT** and Override **GTT** commands can contain from one to five services (Class, **LIDB**, **ISVM**, **CNAM**, or **WSMSC**) depending on which of those services have been defined for the Default **GTT** or Override **GTT**. Each Service field consists of additional pipe-delimited fields: • Default **GTT** entry, 5 fields: **TT**|**DPC**|**SSN**|**RI**|**NGT** • OverrideGTT entry, 6 fields: **TT**|**DPC**|**SSN**|**RI**|**NGT**|**RGA**	**TT** is 0 to 255 or absent **DPC** is 0 to 255 or absent **SSN** is 0 to 255 or absent **RI** is `G`, `D`, or absent **NGT** is 0 to 255 or absent **RGTA** is `L`, `T`, or absent
NPA-NXX New **NPA-NXX** Old **NPA-NXX**	Number Porting Area - Exchange	6 digits
AIN	**Advanced Intelligent Network** indicator	2 or 3 characters Either `LA` or `NLA`
IN	Intelligent Network indicator	2 or 3 characters Either `LI` or `NLI`

Rejected Transactions Log

Rejected transactions logs record exception conditions for **LSMS** transactions. You can use these logs to help identify when, where, and why **LSMS** data is not correctly provisioned. The rejected transactions log records rejected revision commands that the **LSMS** sends to network elements.

The **LSMS** checks to make sure that accurate data is successfully forwarded to a network element. When the **LSMS** receives a subscription version of any kind (create, delete, or modify) from the **NPAC** or when an **LSMS** user creates or modifies a Default or Override **GTT** entry, the **LSMS** sends appropriate commands to the network elements.

If, after the configured number of retries, the command used to forward the new information is rejected by a network element, an entry is logged in the rejected transactions log file.

Rejected Transactions Log Location

One log file is created for each day (if there are rejected transactions on that day), up to a maximum of seven daily log files. After a log file is seven days old, **LSMS** automatically deletes it.

The rejected transactions log files are located in

```
/var/TKLC/lsms/logs/<clli>/LsmsRejected.log.<MMDD>
```

where **<MMDD>** represents the month and day the file was created. For example, a log file created April 7th would have the file name:

`LsmsRejected.log.0407`

Rejected Transactions Log Description

Each record in the log file is a single line of data. The maximum number of entries in each daily log file is 30,000; the maximum size of each daily log file is 2,340,000 bytes. Figure 6-28 shows an example of one entry in a Rejected Transactions Log.

Figure 6-28 Example `eagleagent` Rejected Transactions Log Entry

```
Tue Oct 30 20:19:54 EST 2001 (FilterType=G, GttGroupName=Group1, CMIP=N,
SRC=9, Cmd=(funcId=41=HSOP_UPD_GTT_DEFAULT_TS, len=155,
timestamp=20011030222734\0, data=818120|NLA|LI||||||||||||||||||||\n, errorTxt=
Command ERROR!  \0))
```

The Rejected Transactions log shows every message rejected by the **EAGLE**. Since a message must be sent to be rejected, that means every message in the Rejected Transactions log is also in the Transactions log. However, the entry in the Rejected Transactions log has error text attached to explain why it failed.

The format of the Rejected Transactions Log is the same as for the Transactions Log for a Transmission for fields 1 through 18, as described in Table 6-5, Table 6-6 , and Table 6-7. Table 6-8 shows the format of fields 19 through 22 in the Rejected Transactions Log.

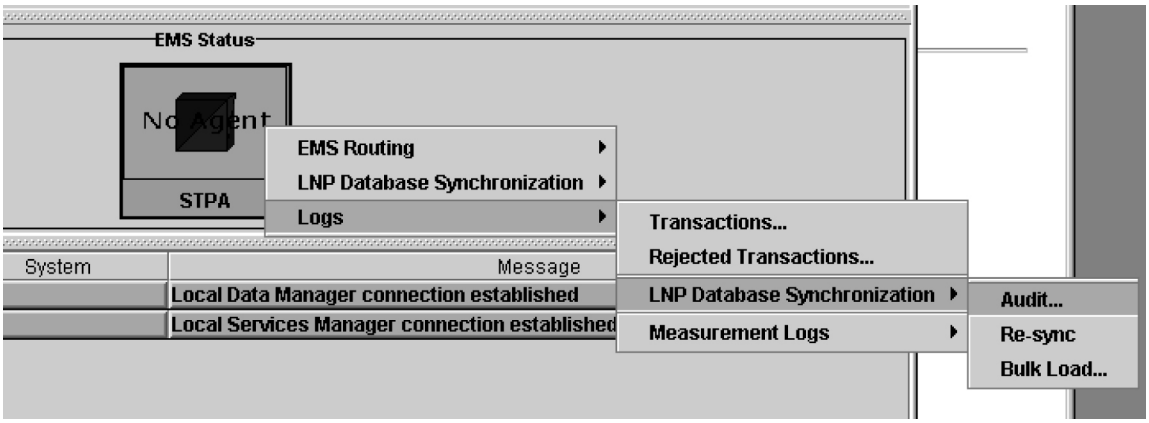
Table 6-8 Rejected Transactions Log

Field Number	Field	Description	Sample/Restriction Data
19	End of record data		3 characters `\n,`
20	Space #8		1 space
21	Error Text	Description of error leading to Rejection.	Variable length text Example: `errorTxt=Command Error! \0`
22	End of **LSMS** Cmd	Ending parenthesis	1 character `)`
22	End of **RMTP** Cmd	Ending parenthesis	1 character `)`

Measurement Logs

Measurement logs are not created by default. You can view measurements from the **GUI** as shown in Figure 6-29.

Figure 6-29 EMS Status Icon Popup Menu



In addition, you can use the `measdump` command to view measurement logs. This command is located in the following directory:

`$ LSMS _DIR/../tools/`

(For backward compatibility, you can use the `measdump` command to create the measurement files.) For more information about this command, refer to the *Alarms and Maintenance Guide*.

The measurement log file provides the following information:

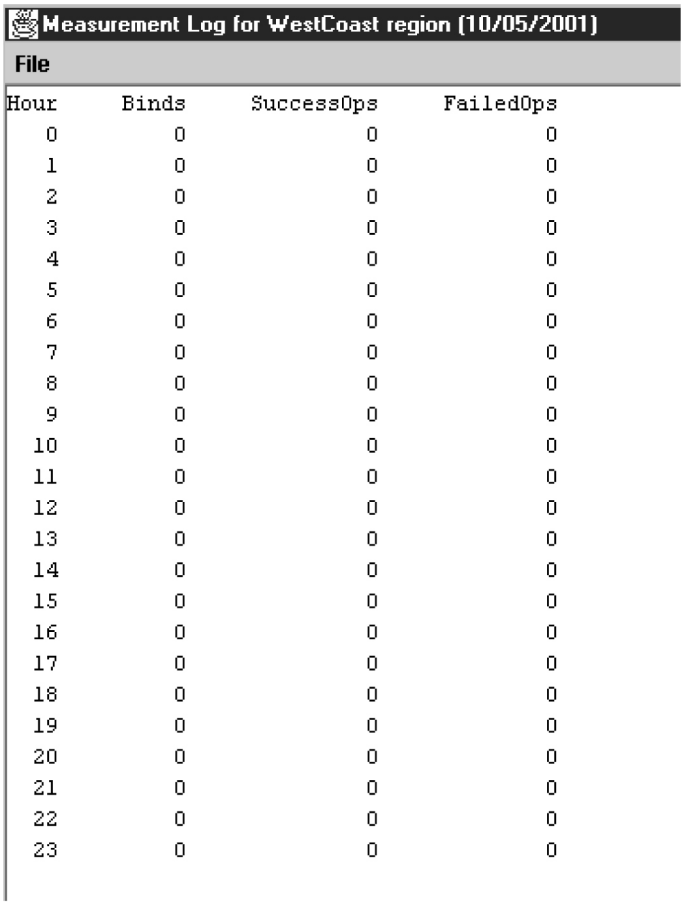
- *Region* – The name of the **NPAC** region.
- *Last Updated* – When this information was last updated in the following format:
  - *ddd* – Day of the week (Sun, Mon, Tue, Wed, Thu, Fri, Sat)
  - **MMM** – Month (Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec)
  - **DD** – Day of the month (01–31)
  - *hh* – Hour (00–23)
  - *mm* – Minute (00–59)
  - *ss* – Second (00–59)
  - **YYYY** – Year (1997–9999)
- *Binds* – Cumulative number of **NPAC-LSMS** association binds during the hour.
- *SuccessOps* – Cumulative number of M-Create, M-Delete, and M-Set commands that went into the **LSMS** database and also successfully passed to the supported manager.
- *FailedOps* – Cumulative number of M-Create, M-Delete, and M-Set commands that failed to go into the **LSMS** database.

The following operations are not measured or contained in this file:

- M-Get operations
- Unsuccessful bind operations
- Unbind operations
- Event responses
- Operations that are rejected because of a duplicate entry or invalid attribute

An example of a measurements log is shown in Figure 6-30.

Figure 6-30 Example Measurements Log File



Measurement Log for WestCoast region (10/05/2001)

File

Hour	Binds	SuccessOps	FailedOps
0	0	0	0
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	0	0	0
10	0	0	0
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	0	0	0
16	0	0	0
17	0	0	0
18	0	0	0
19	0	0	0
20	0	0	0
21	0	0	0
22	0	0	0
23	0	0	0

LSMS Evaluation Log Files

Several **LSMS** log files keep track of system functionality. These log files cannot be accessed directly from the **GUI**, but can be found by using the **browse** feature to look into the appropriate directory. These include the following types of log files:

- Surveillance
- Sentry

Surveillance Log Files

The **LSMS** surveillance application monitors various hardware parameters. This feature creates two log files that are stored in the `/var/TKLC/lsms/logs` directory.

The *survlog.log* file contains debug information from the surveillance application. It can be used by the surveillance application to monitor itself for improper functioning. Each line in this log file begins with a timestamp. A text message following the timestamp indicates the state of the surveillance application. For example:

```
12/31/1997 08:45 => Unable to open second serial port configuration file

12/31/1997 08:45 => Second serial port not to be used

12/31/1997 08:45 => Console window successfully opened!
```

The *survlog.log file* is a persistent log of all console notifications. The format of this log file is same as the format of console notifications. For example:

```
LSMS0009|11:55 Feb 04, 1998|lnp13|Keep Alive

LSMS0500|11:56 Feb 04, 1998|lnp13|Notify:Sys Admin

LSMS0501|11:57 Feb 04, 1998|lnp13|Notify:Sys Admin - SAM1

LSMS0502|11:57 Feb 04, 1998|lnp13|Notify:Sys Admin - SAM1
```

Sentry Log Files

The **LSMS** sentry application monitors other software processes and attempts to restart them automatically in certain failure conditions (refer to the *Alarms and Maintenance Guide* for more information about the Sentry application). This feature creates one log file, *sentryd.log* file,which is stored in the `/var/TKLC/lsms/logs/sentry` directory.

The *sentryd.log* file contains general information from the **LSMS** sentry application. It can be used for tracking what the **LSMS** sentry process is doing regarding the state of the **LSMS** applications it is monitoring. Each line in this log file begins with a timestamp. A text message following the timestamp indicates the state of the **LSMS** sentry application. For example:

```
12/31/1997 08:45 => fatal: environment variable LSMS-DIR not set

09/10/1998 08:45 => sentryd starting

09/10/1998 08:45 => restarting rmtpagent

09/10/1998 08:45 => sentryd stopped
```

Bulk Data Downloads for Notifications (Optional)

When the optional **NANC** 3.3 Feature Set is activated, support of Bulk Data Downloads (**BDD**) for notifications is enabled. The bulk download file is supplied by the **NPAC** like other bulk download files, and notifications are processed by the **LSMS**.

A notifications file is generated for a particular **SPID** and time range. All attempted notifications for the **SPID** in the time range are included in the file, and they are sorted in order by ascending notification attempt timestamp. The notification **BDD** filename is in the following format:

Notifications.<start download>.<start time range>.<end time range>

> **Note:**
>
> Each timestamp has the format `<DD-MM-YYYYHHMMSS>`

For example, this file:

`Notifications.18-09-2006081122.15-09-2006080000.16-09-2006133022`

was created starting at 08:11:22 on September 18, 2006 and covered the time ranged from 08:00:00 on September 15, 2006 through 13:30:22 on September 16, 2006.

Although there are more than 20 possible notification **IDs**, the **LSMS** only receives notification types 1 and 8. Notification **ID** 1 is "Operational Information" from **NPAC**, and Notification **ID** 8 is the "Subscription Version New **NPA-NXX**" notification.

The field values for Notification **ID** 1 are described in Table 6-9.

Table 6-9 Notification ID 1 Field Values

Field Number	Field	Range of Values
1	Creation Timestamp	**YYYYMMDDHHMMSS**
2	**LSMS** Customer **SPID**	[0-9 A-Z] four alphanumeric characters
3	System Type	`0=SOA, 1=LSMS`
4	Notification **ID**	`1`
5	Object **ID**	`[0-9]`
6	Maintenance Start Time	**YYYYMMDDHHMMSS**
7	Maintenance End Time	**YYYYMMDDHHMMSS**
8	**NPAC** Contact Number	Telephone number
9	Additional Download Time Information	Graphic string of up to 255 characters (not used by **LSMS**)

The field values for Notification **ID** 8 are described in Table 6-10.

Table 6-10 Notification ID 8 Field Values

Field Number	Field	Range of Values
1	Creation Timestamp	**YYYYMMDDHHMMSS**
2	**LSMS** Customer **SPID**	[0-9 A-Z] four alphanumeric characters
3	System Type	`0=SOA, 1=LSMS`
4	Notification **ID**	`8`
5	Object **ID**	`21, when generated by SV` 12, when generated by **NPB**

Table 6-10 (Cont.) Notification ID 8 Field Values

Field Number	Field	Range of Values
6	**NPA-NXX ID**	[0-9]
7	**NPA-NXX**	[0-9] six digits
8	**NPA-NXX** Effective Timestamp	**YYMMDDHHMMSS**
9	Subscription Version New **NPA-NXX SPID**	[0-9 A-Z] four alphanumeric characters

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