Oracle® Communications LSMS

Database Administrator's Guide

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Chapter 1

Introduction

Topics:

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- *Documentation Admonishments.....19*
- *Manual Organization.....19*
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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: 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.
- *Local Time Calculation and World Time Zone Data* 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 that are related to this document, refer to the *Related Publications Reference* document, which is published as a separate document on the Oracle Technology Network (OTN) site. See *Locate Product Documentation on the Oracle Technology Network Site* for more information.

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 Technology Network Site

Oracle customer documentation is available on the web at the Oracle Technology Network (OTN) 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 Technology Network site at *http://docs.oracle.com*.
2. Click **Industries**.
3. Under the Oracle Communications subheading, click the **Oracle Communications documentation** link.
   The Oracle Communications Documentation page appears with Tekelec shown near the top.
4. Click the **Oracle Communications Documentation for Tekelec Products** link.
5. Navigate to your Product and then the Release Number, and click the **View** link (the Download link will retrieve the entire documentation set).
   A list of the entire documentation set for the selected product and release appears.
6. To download a file to your location, right-click the **PDF** link, select **Save target as**, and save to a local folder.

Chapter 2

Database Administration Overview

Topics:

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- *Overview of Database Functions.....26*
- *Using Login Sessions.....35*
- *Navigating the GUI.....59*
- *GUI Structure.....62*
- *GUI Function Access.....64*
- *Data Entry Dialogs.....72*
- *User/Session Menu.....72*

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 1: LNP Configuration 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.

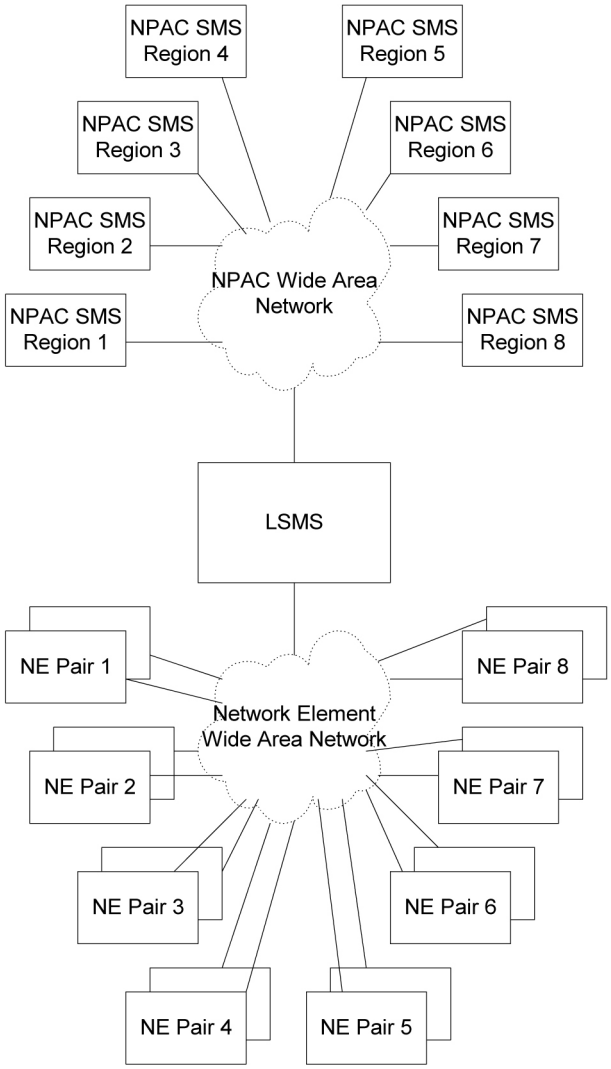


Figure 1: LNP Configuration

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 can 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 purchase 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** > **EMS Routing** > **Modify**.

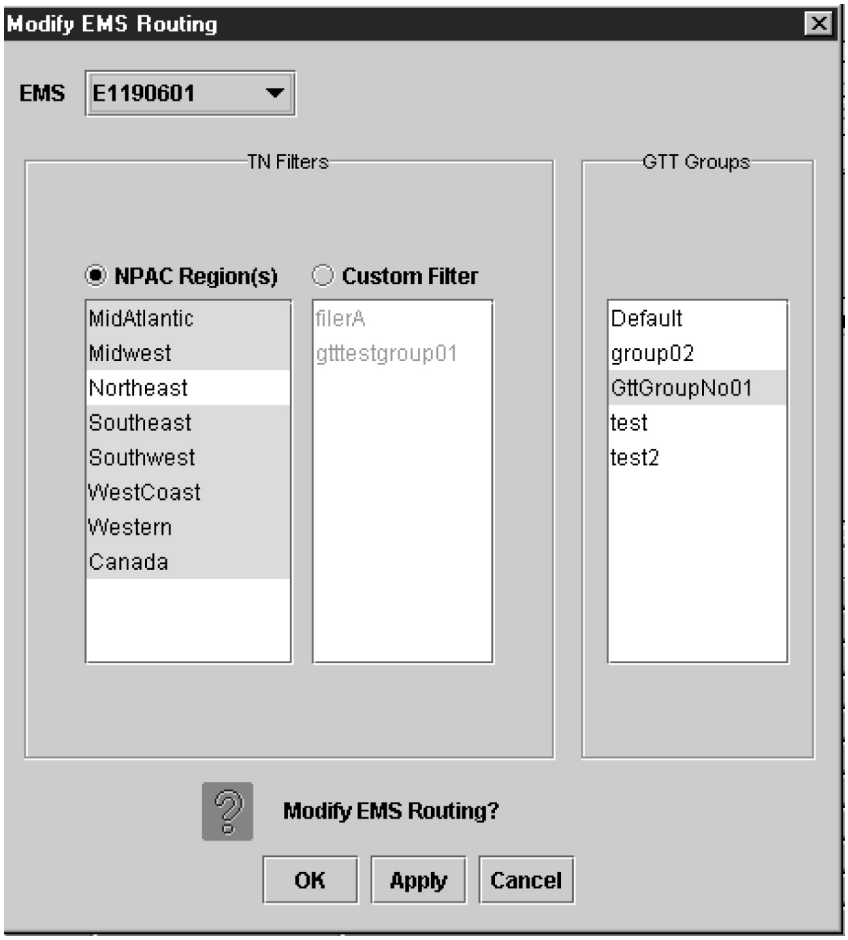


Figure 2: Modify EMS Routing

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 3: Create Default GTT Window*.

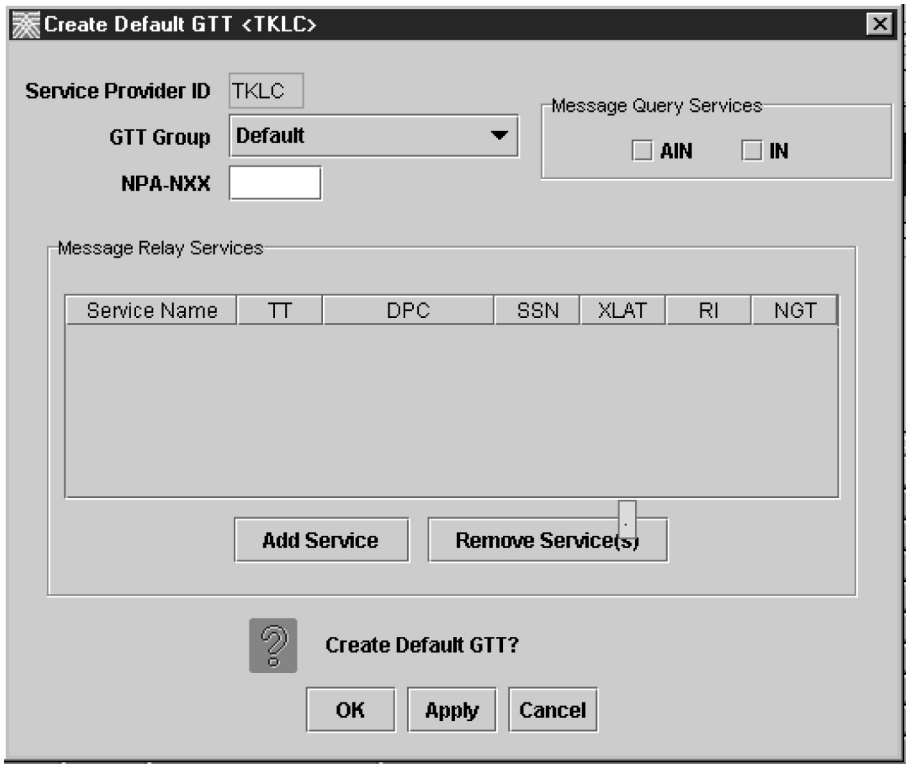


Figure 3: Create Default GTT Window

- 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 4: Create GTT Group Window* 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.

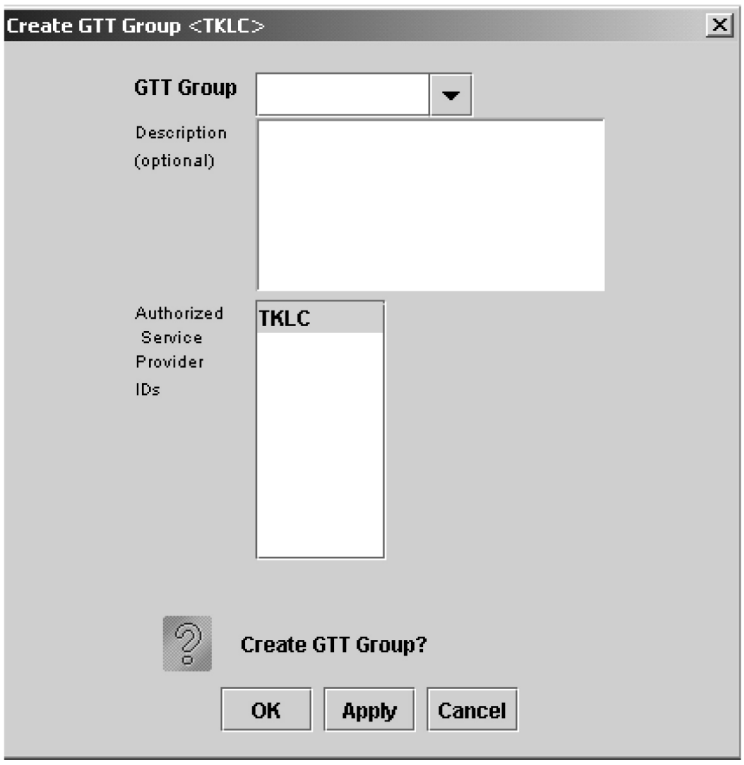


Figure 4: Create GTT Group Window

- 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 4: Create GTT Group Window* 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: Modify EMS Routing*. 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.

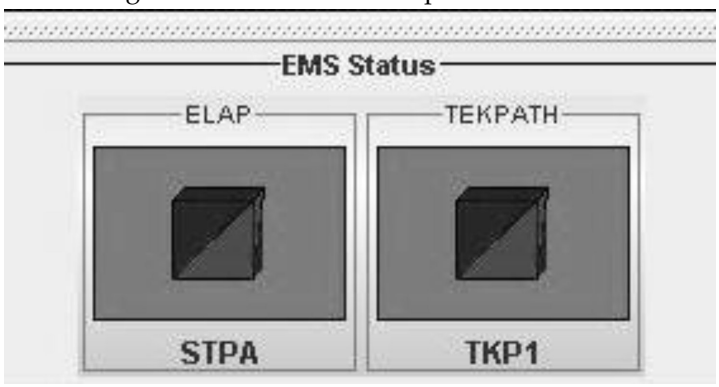


Figure 5: EMS Status Pane with Network Element Type Displayed

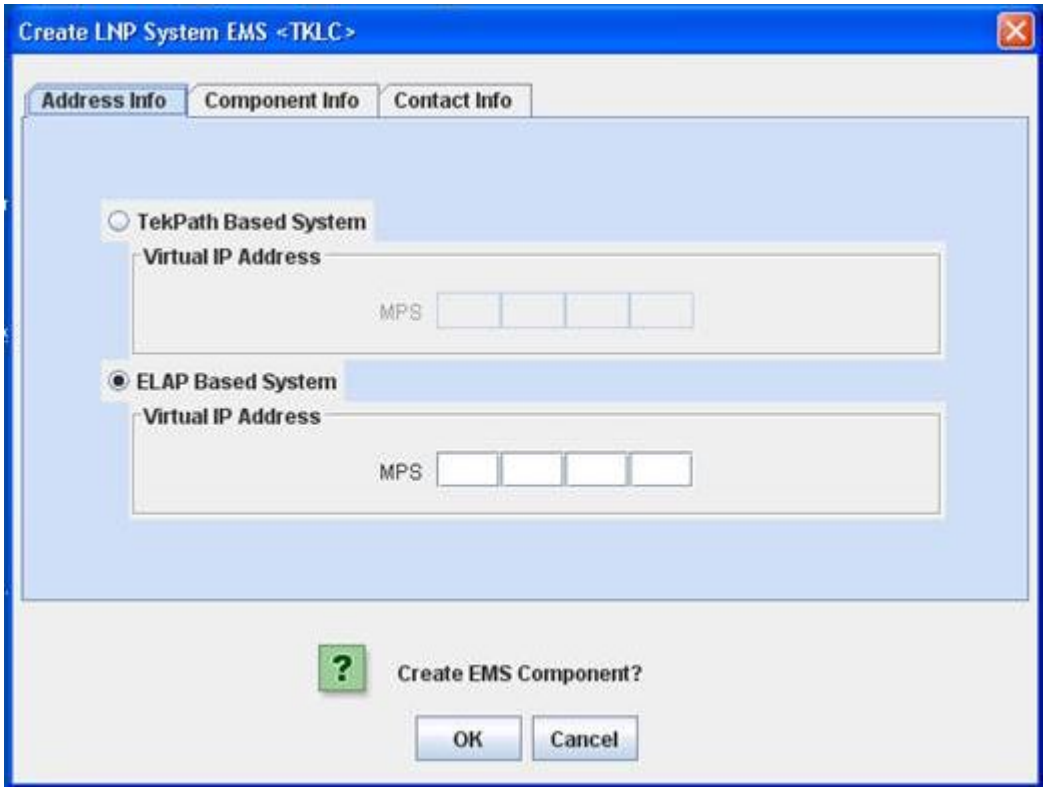


Figure 6: Create LNP System EMS Window with TekPath Configuration Option

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 an 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: Parameters Used in Accessing Server Command Line* that are appropriate to the procedure you are performing:

Table 2: 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*.

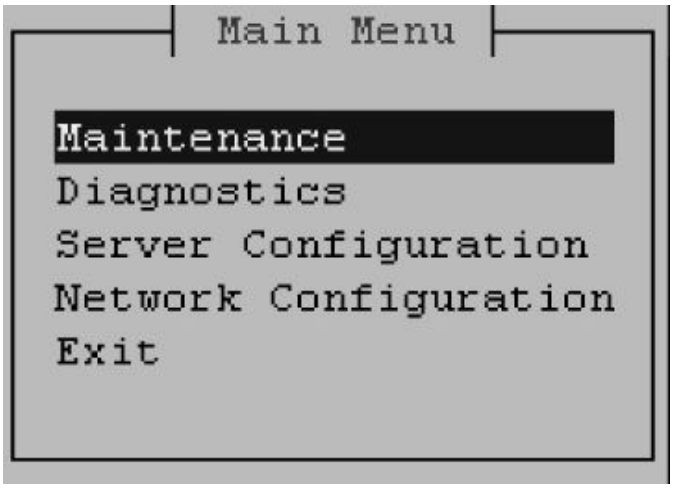


Figure 7: lsmsmgr Text Interface Main Menu

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 an 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** > **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 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:

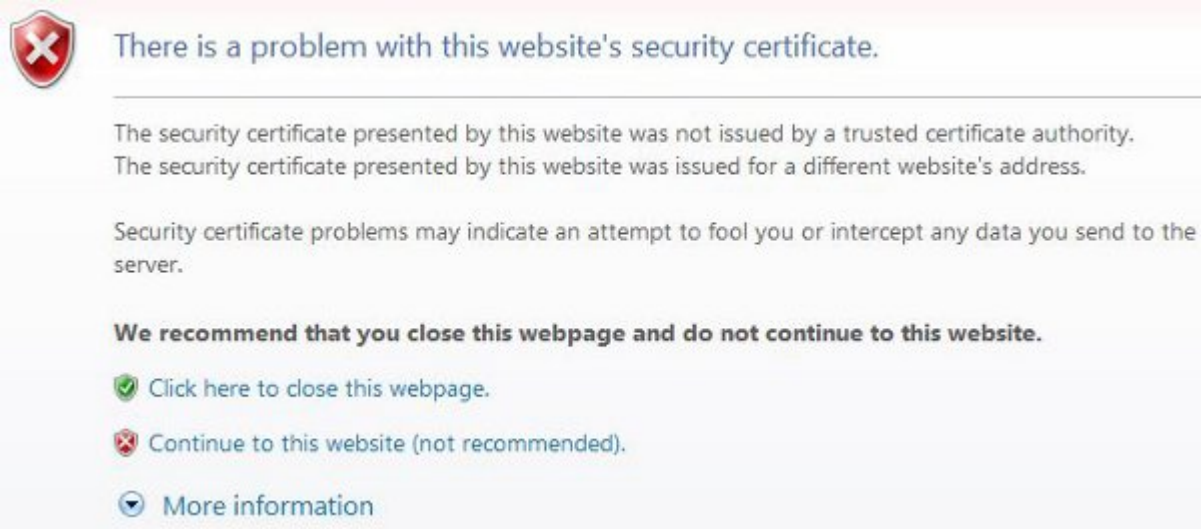


Figure 9: Problem with Security Certificate

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

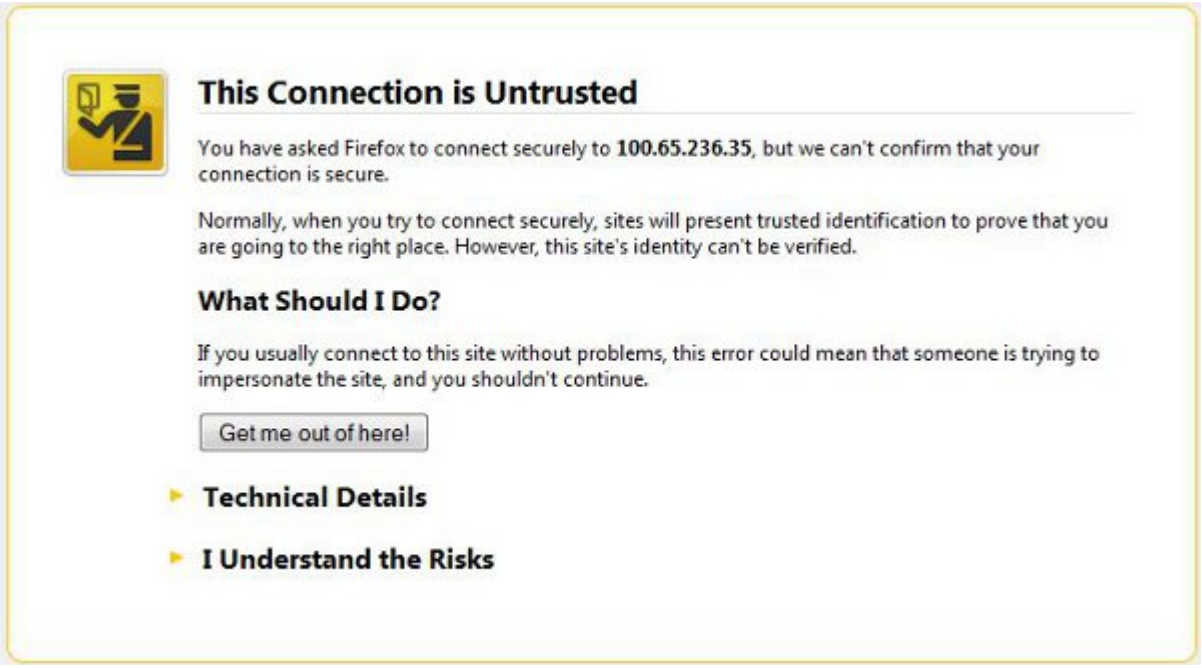


Figure 10: Connection is Untrusted

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

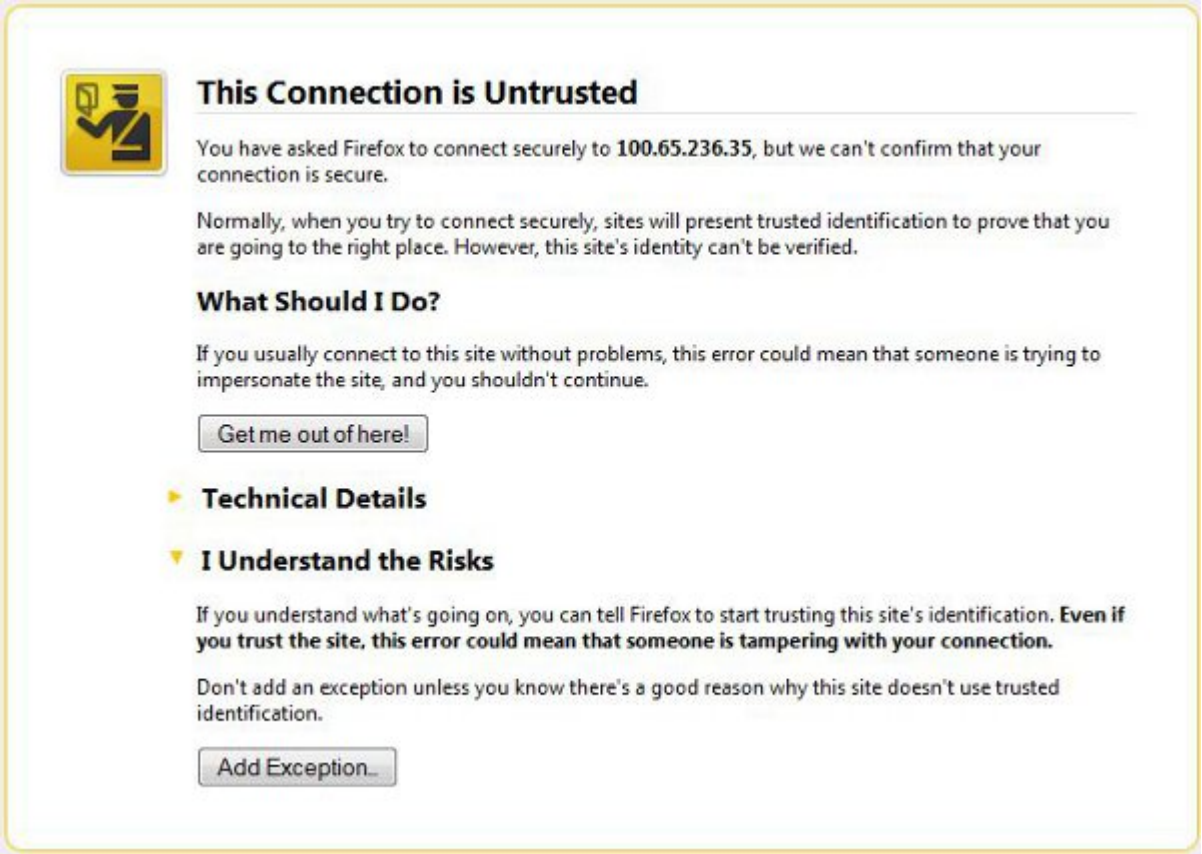


Figure 11: Connection is Untrusted (continued)

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

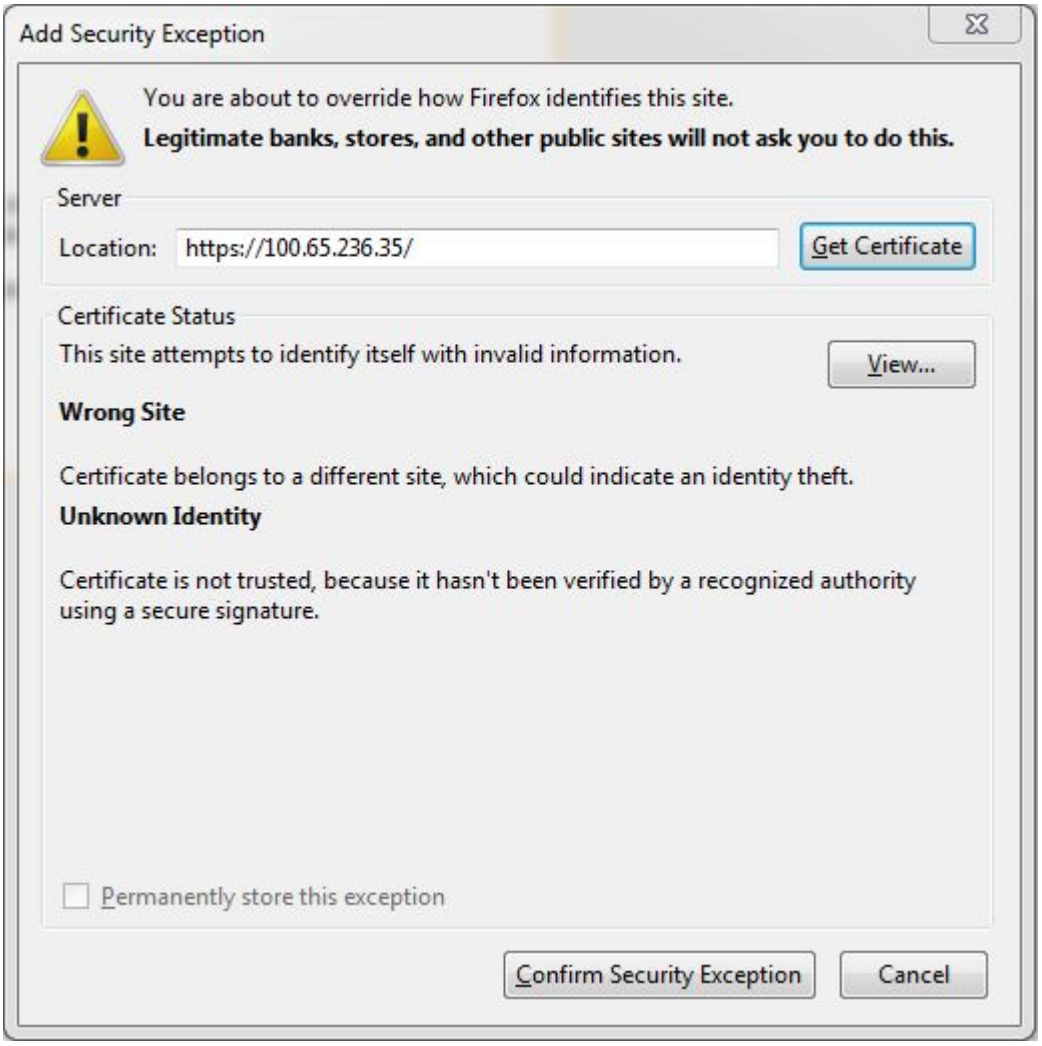


Figure 12: Add Exception for Untrusted Connection

The **Oracle Communications LSMS Start Page** displays:

Figure 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 *Step 5*.

5. Open the **Java Control Panel** for your terminal, go to the **Security** tab as shown in *Figure 14: Security Tab of Java Control Panel*, 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).

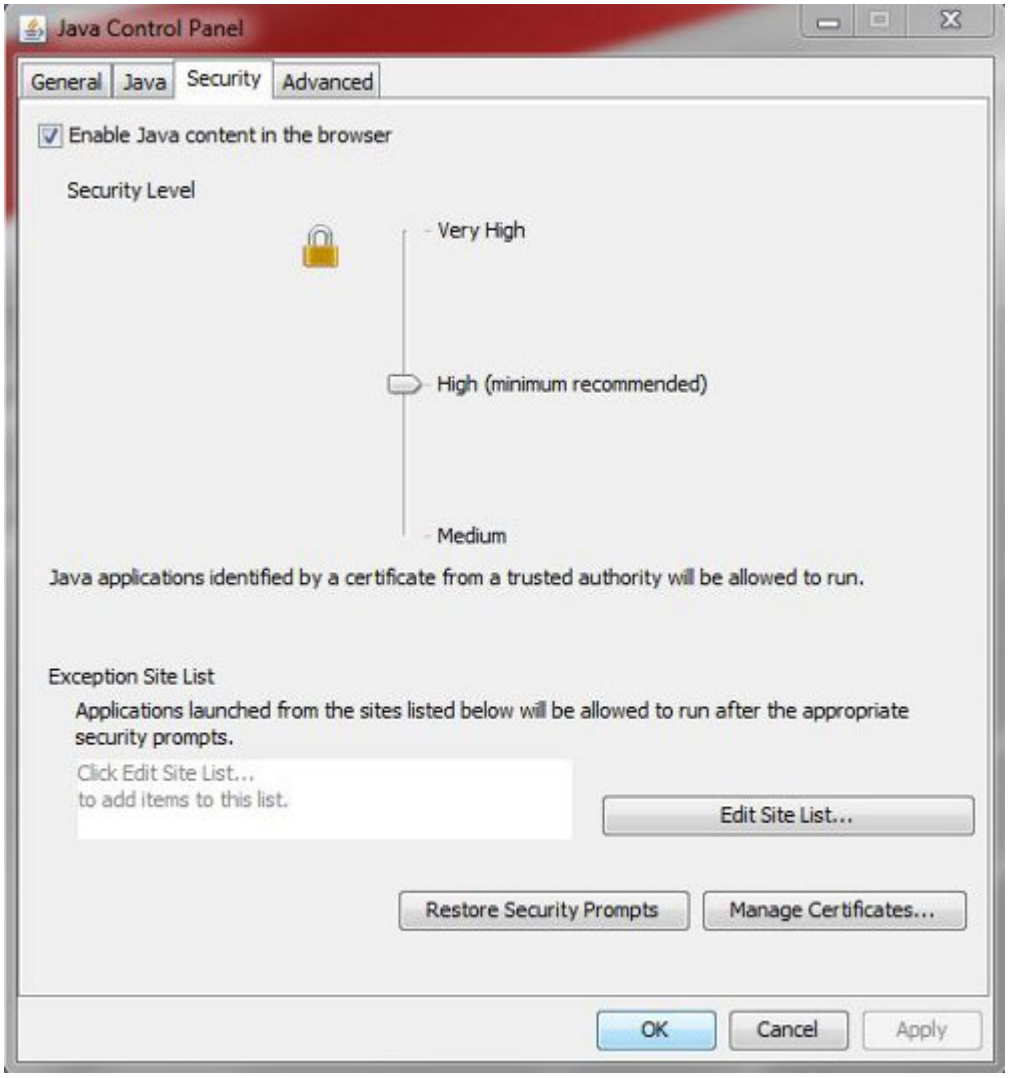


Figure 14: Security Tab of Java Control Panel

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

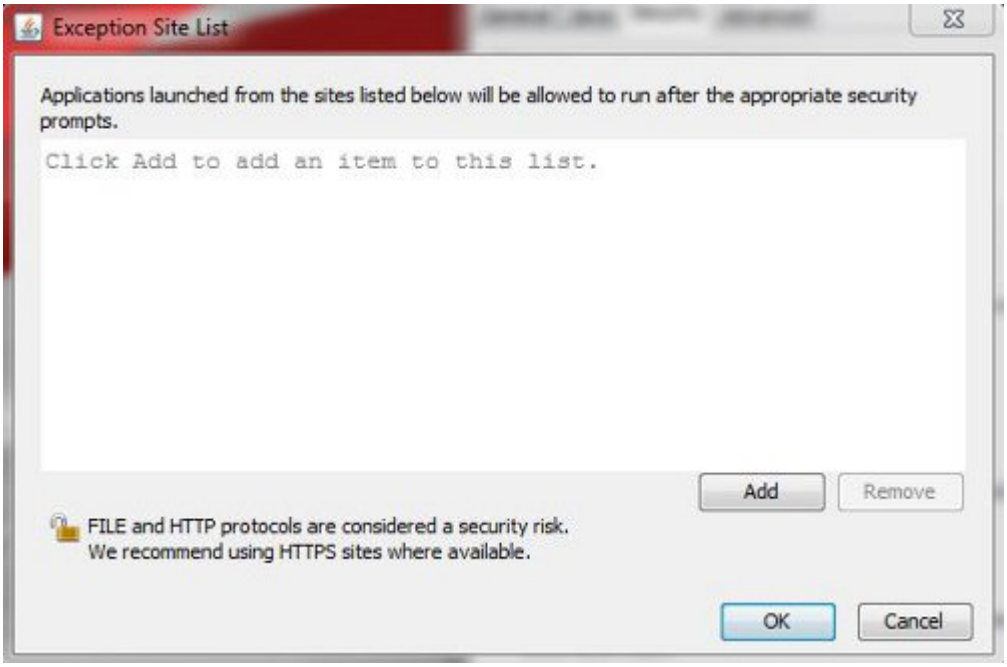


Figure 15: Adding to the Exception Site List

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

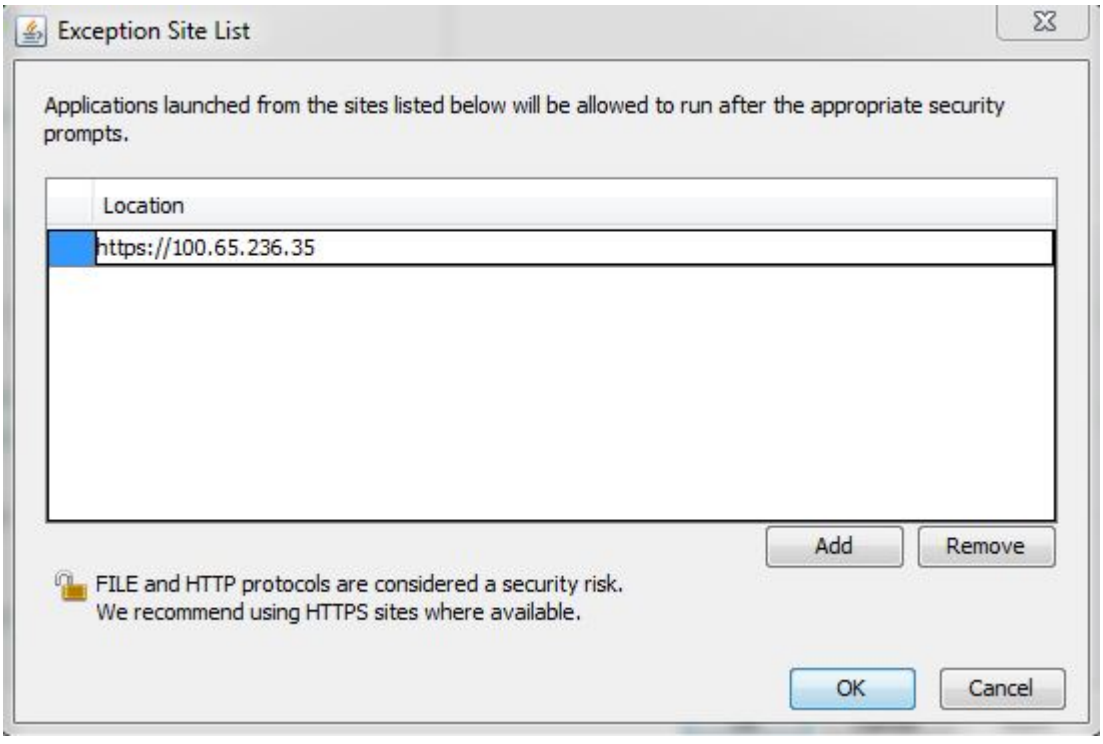


Figure 16: Adding the LSMS Server to the Exception Site List

8. Click **OK**.

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

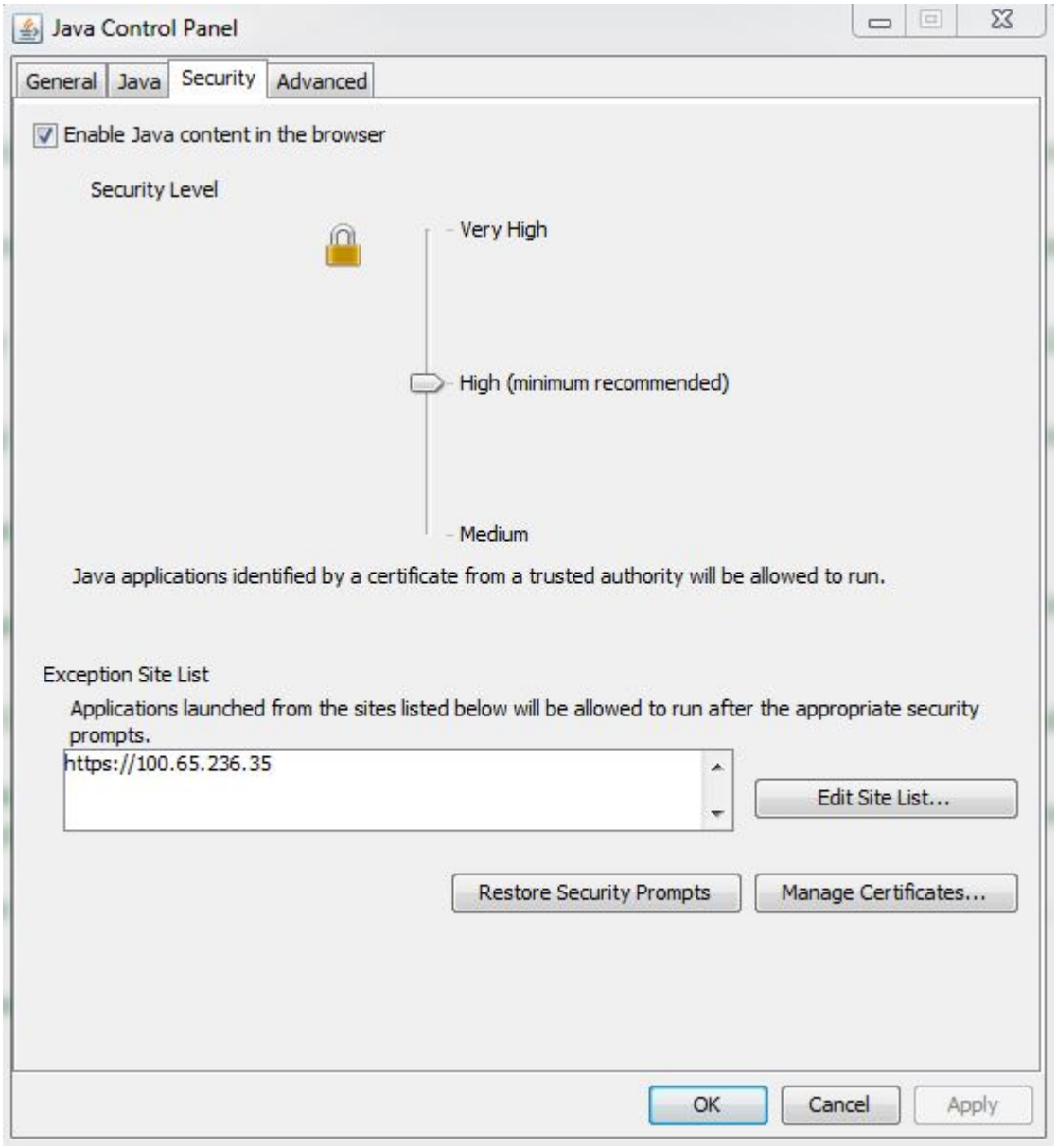


Figure 17: Exception Site List Including the LSMS Server

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

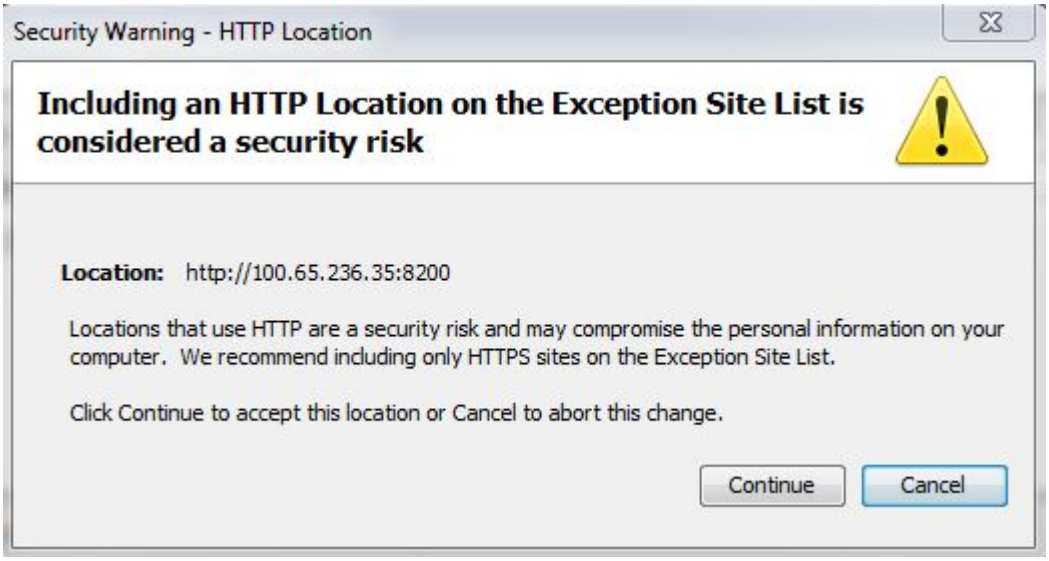


Figure 18: Security Warning for HTTP Location

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`.

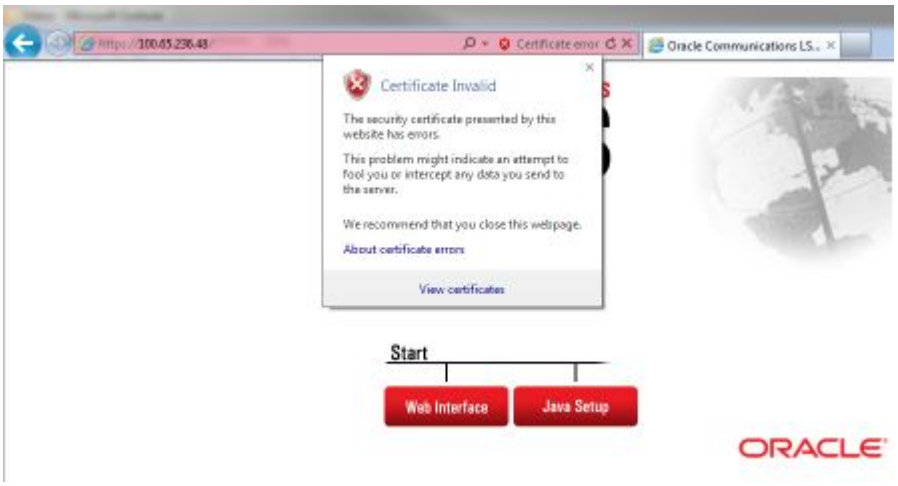


Figure 19: Certificate Error

The `Certificate` screen is displayed:

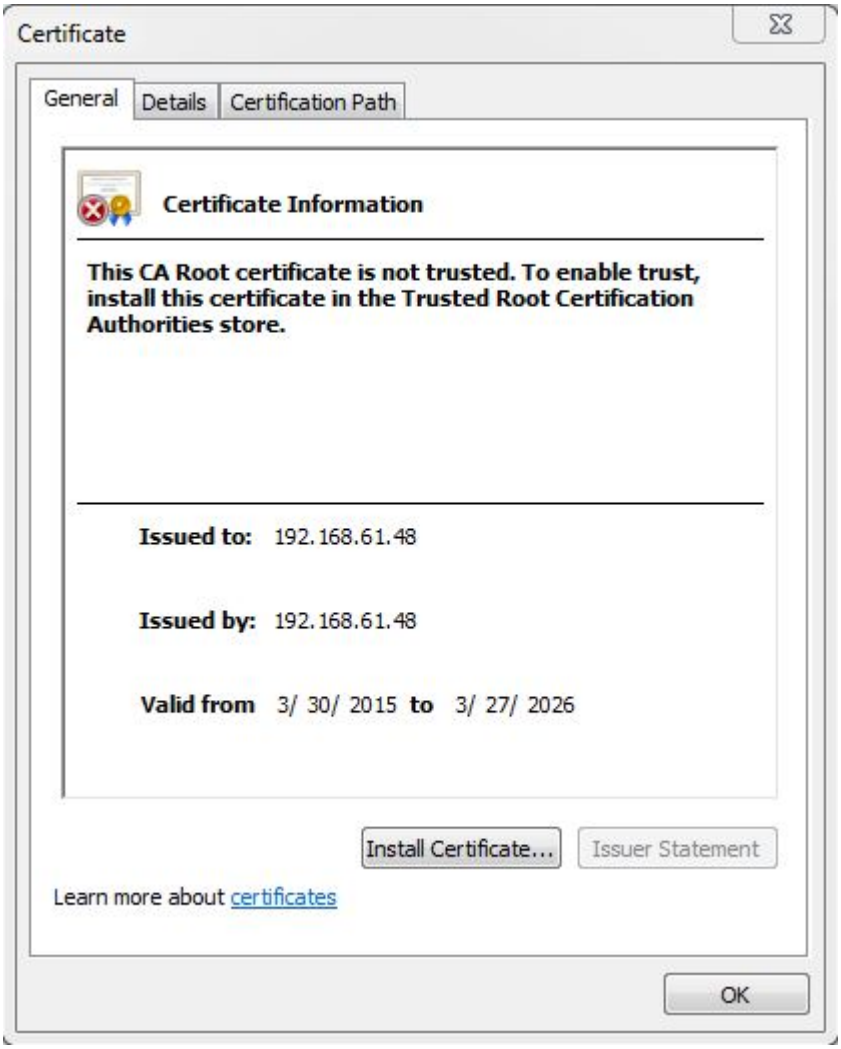


Figure 20: Certificate Screen

b) Click on **Install Certificate**.
The **Certificate Import Wizard** opens:

Figure 21: Certificate Import Wizard

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

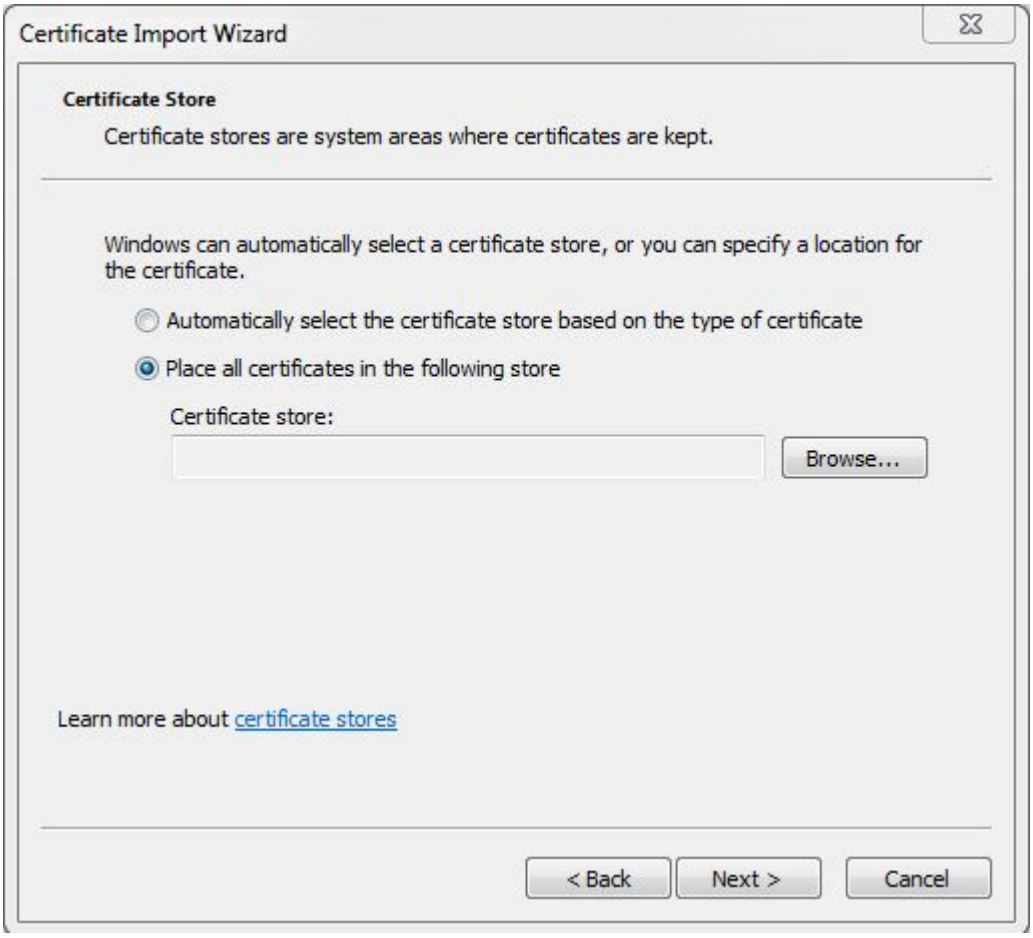


Figure 22: Certificate Import Wizard (continued)

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

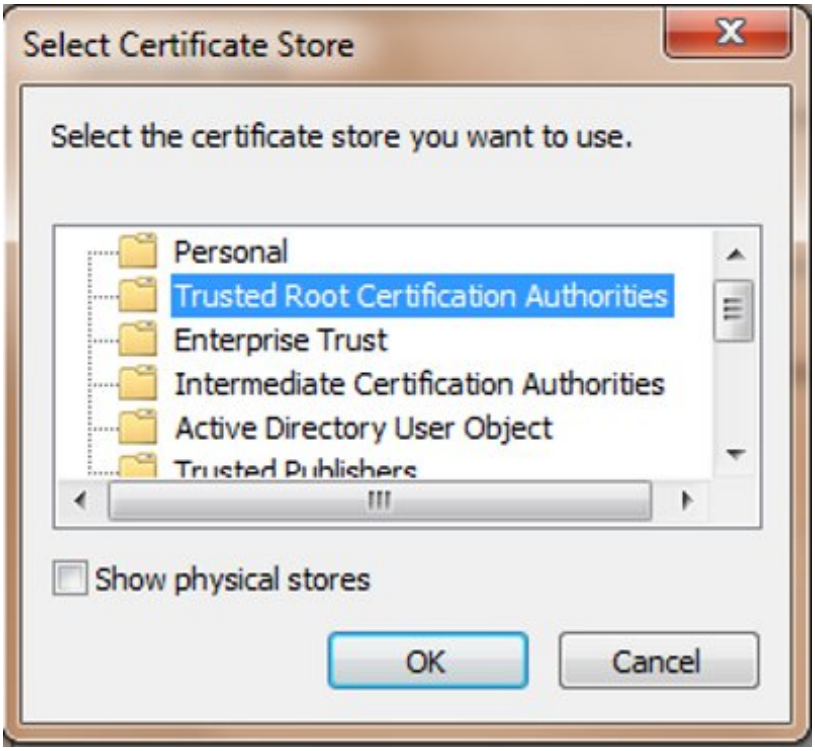


Figure 23: Select Certificate Store

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

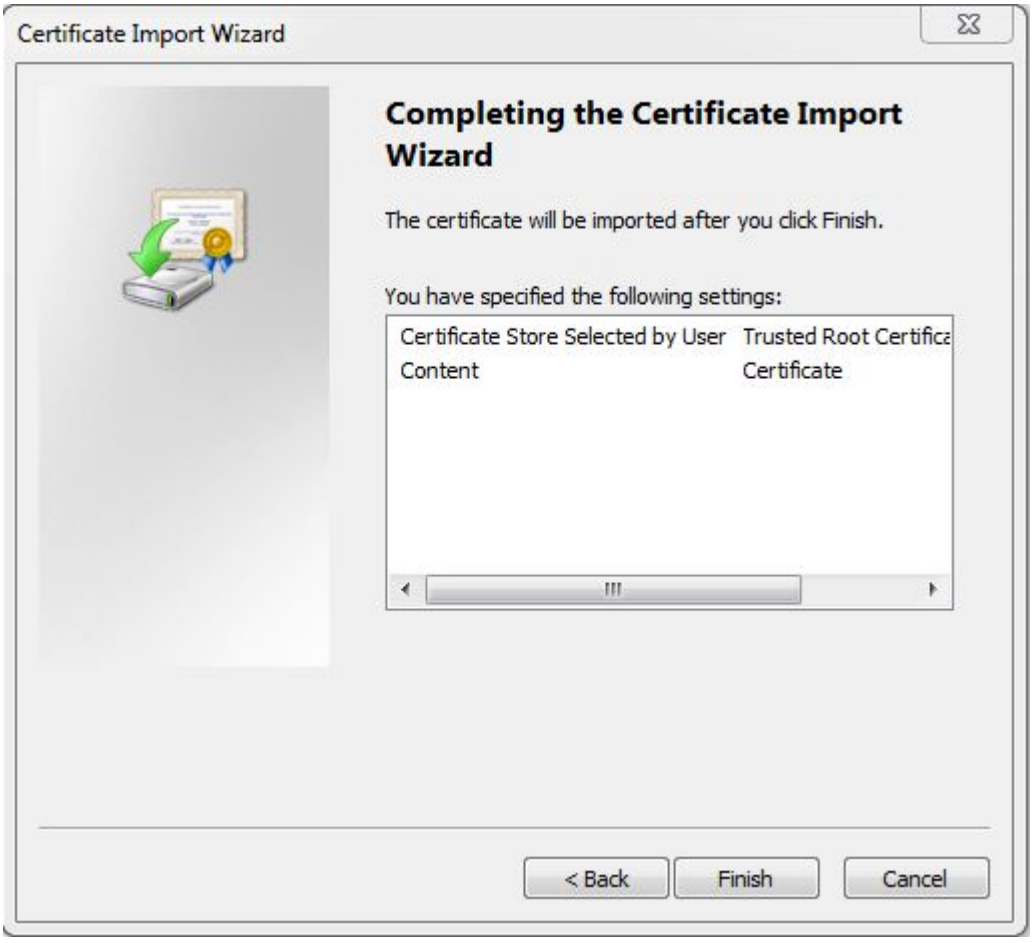


Figure 24: Completing the Certificate Import Wizard

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

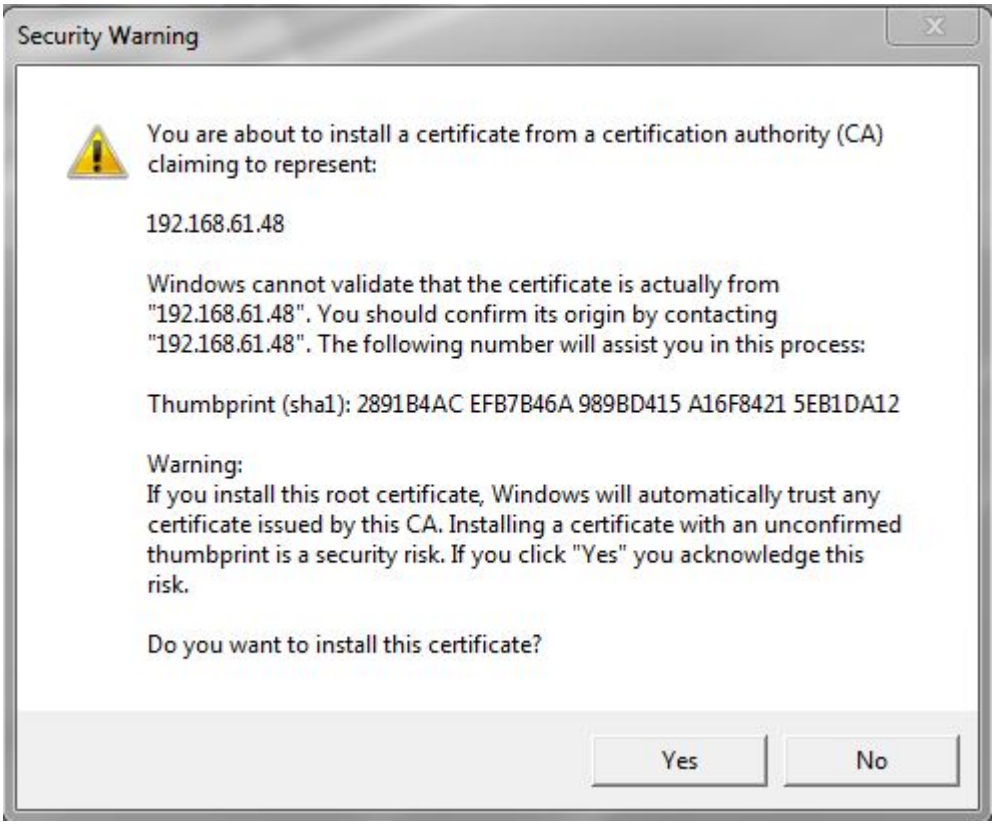


Figure 25: Certificate Installation Security Warning

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

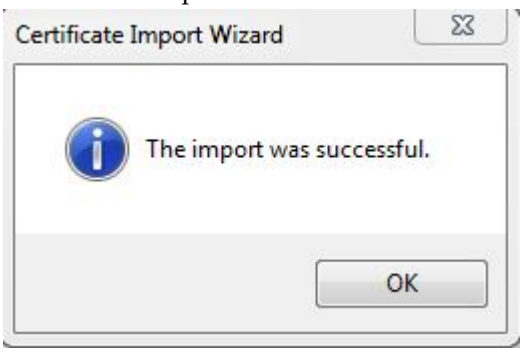


Figure 26: Certificate Import Successful

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:

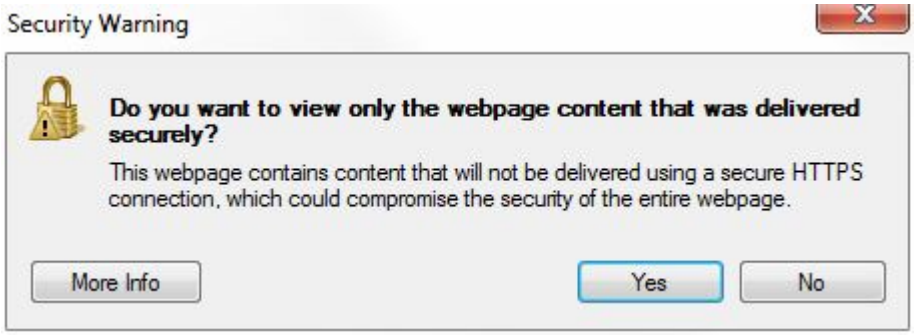


Figure 27: Insecure Content Warning

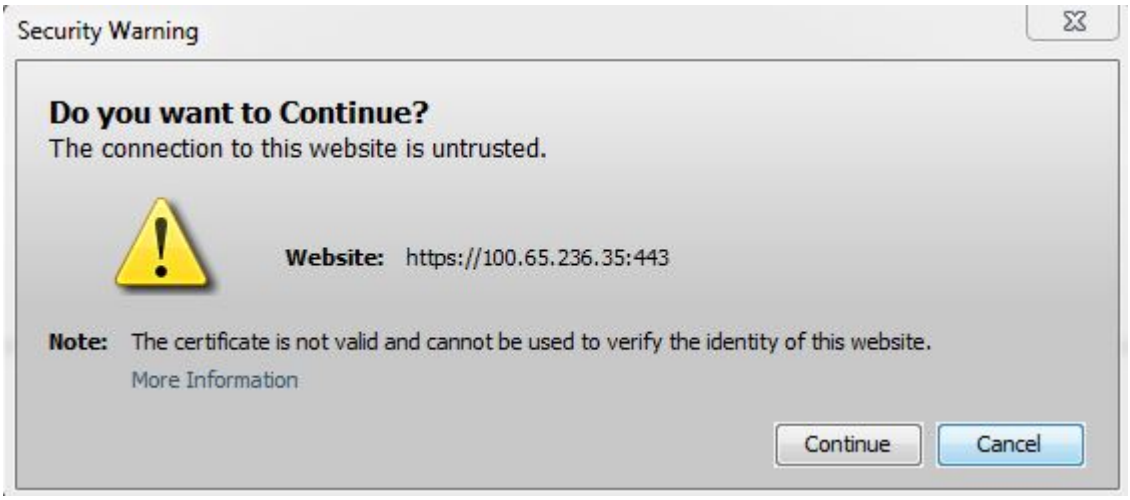


Figure 28: Untrusted Website Warning

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

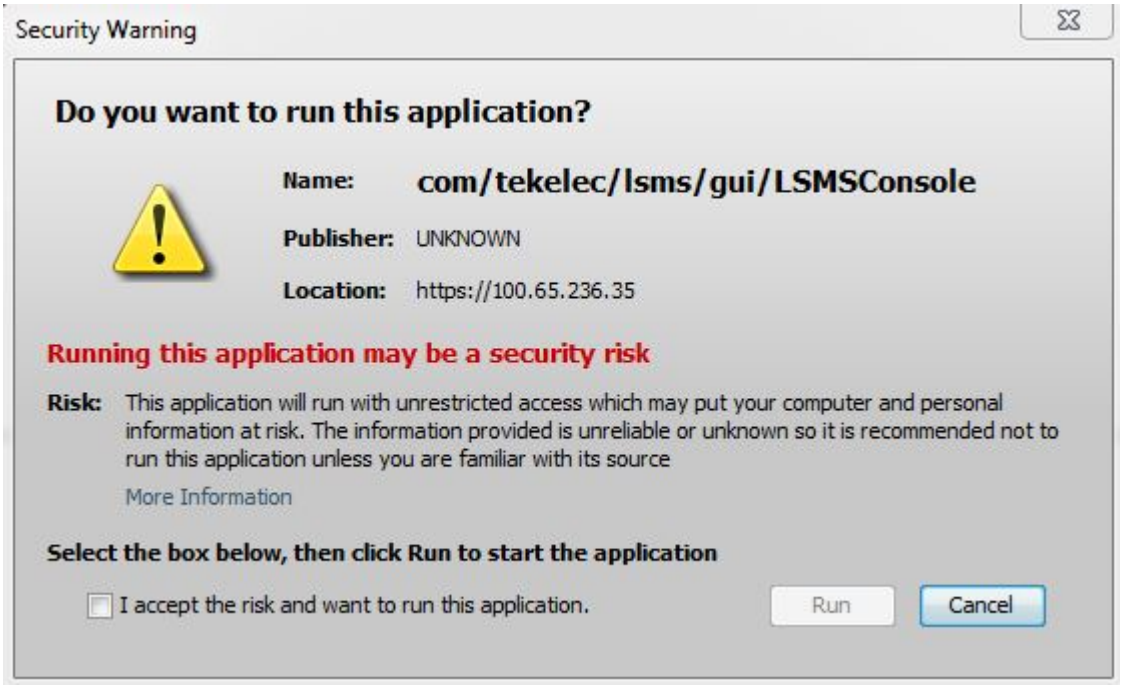


Figure 29: Application Security Warning

The **LSMS Web GUI Start Page** displays:

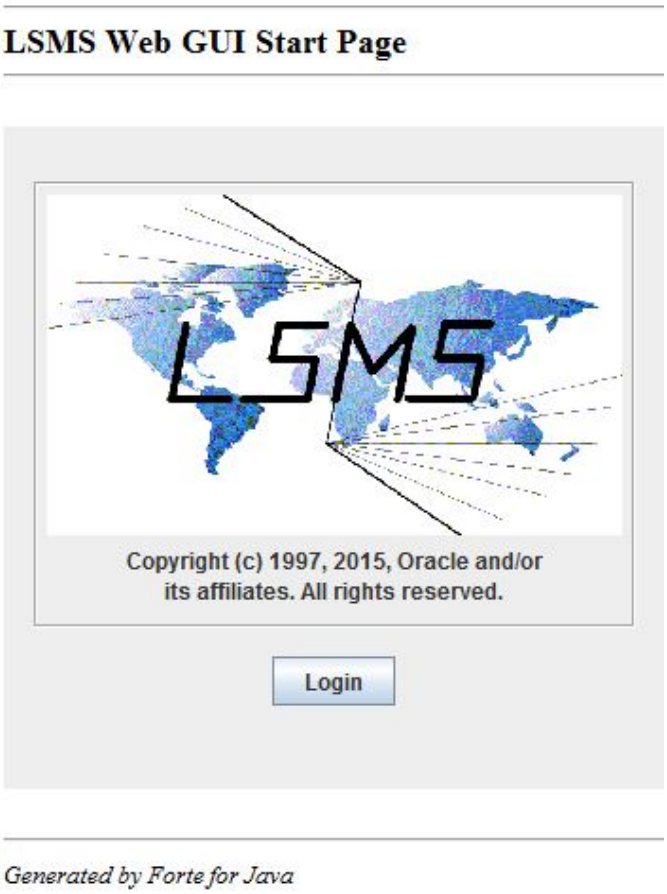


Figure 30: LSMS Web GUI Start Page with Login Button

13. Click the **Login** button.

    The LSMS Login screen appears. Next, perform the procedure described in *Logging in to 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.

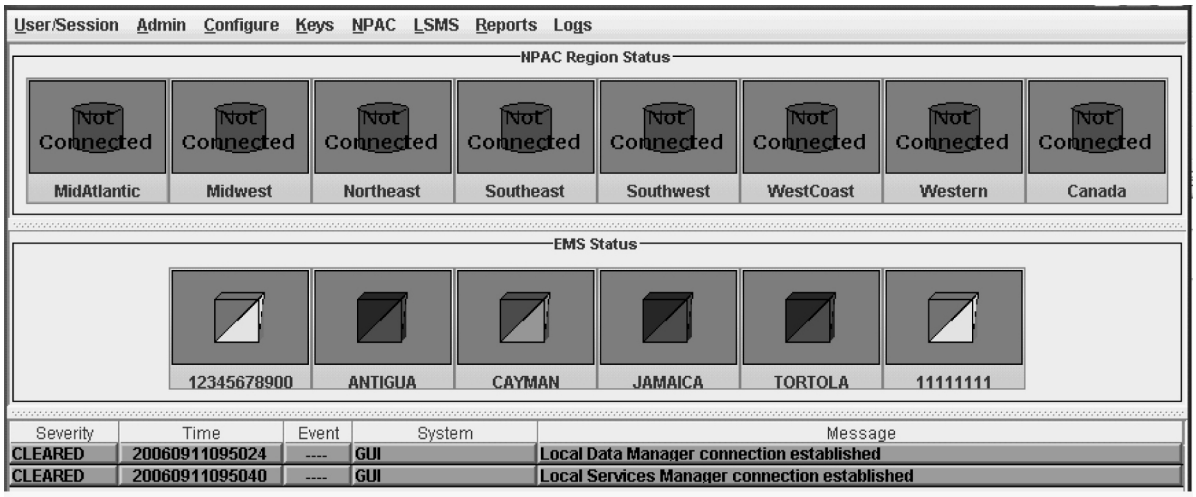


Figure 31: LSMS Console Window

- 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 32: Example Tool Tip* shows an example of an LSMS tool tip.

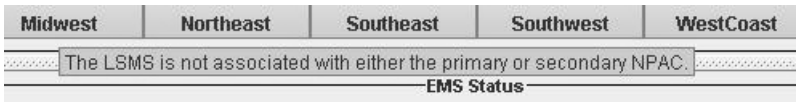


Figure 32: Example Tool Tip

- *Main Menu Bar* – This component contains the main GUI menu items. Refer to *Figure 35: LSMS GUI Structure* 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 31: LSMS Console Window*).

  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 33: Inactive NPAC Regions Pop-up Menu* 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.

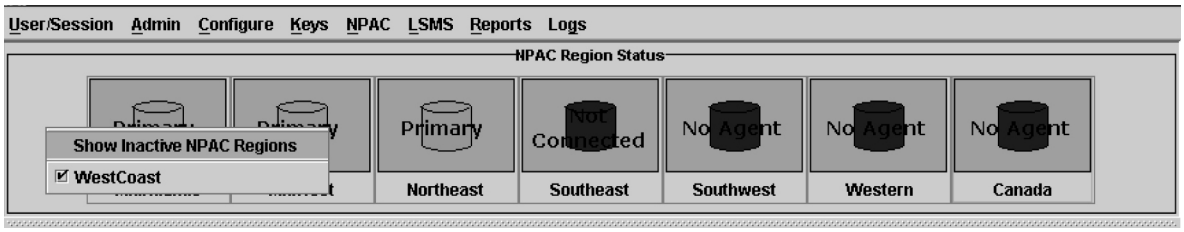


Figure 33: Inactive NPAC Regions Pop-up Menu

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 3: NPAC Icon Pop-up Menu Selectability*.

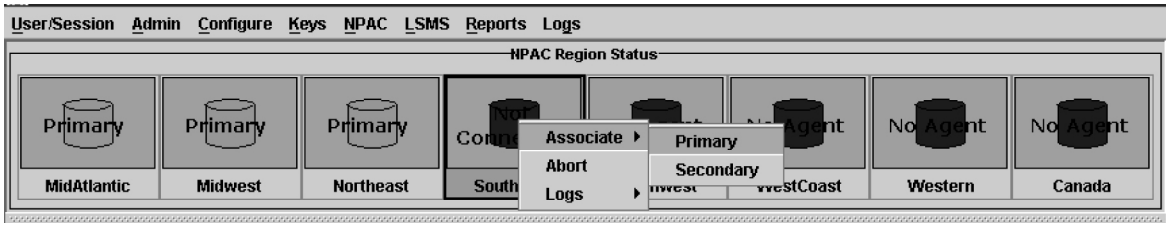


Figure 34: NPAC Pop-up Menu

Table 3: 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 4: Characters Allowed by LSMS GUI Field Types* lists the characters allowed in each type of LSMS GUI field.

Table 4: 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 35: LSMS GUI Structure*. To follow the flow, start at **LSMS Login**.

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

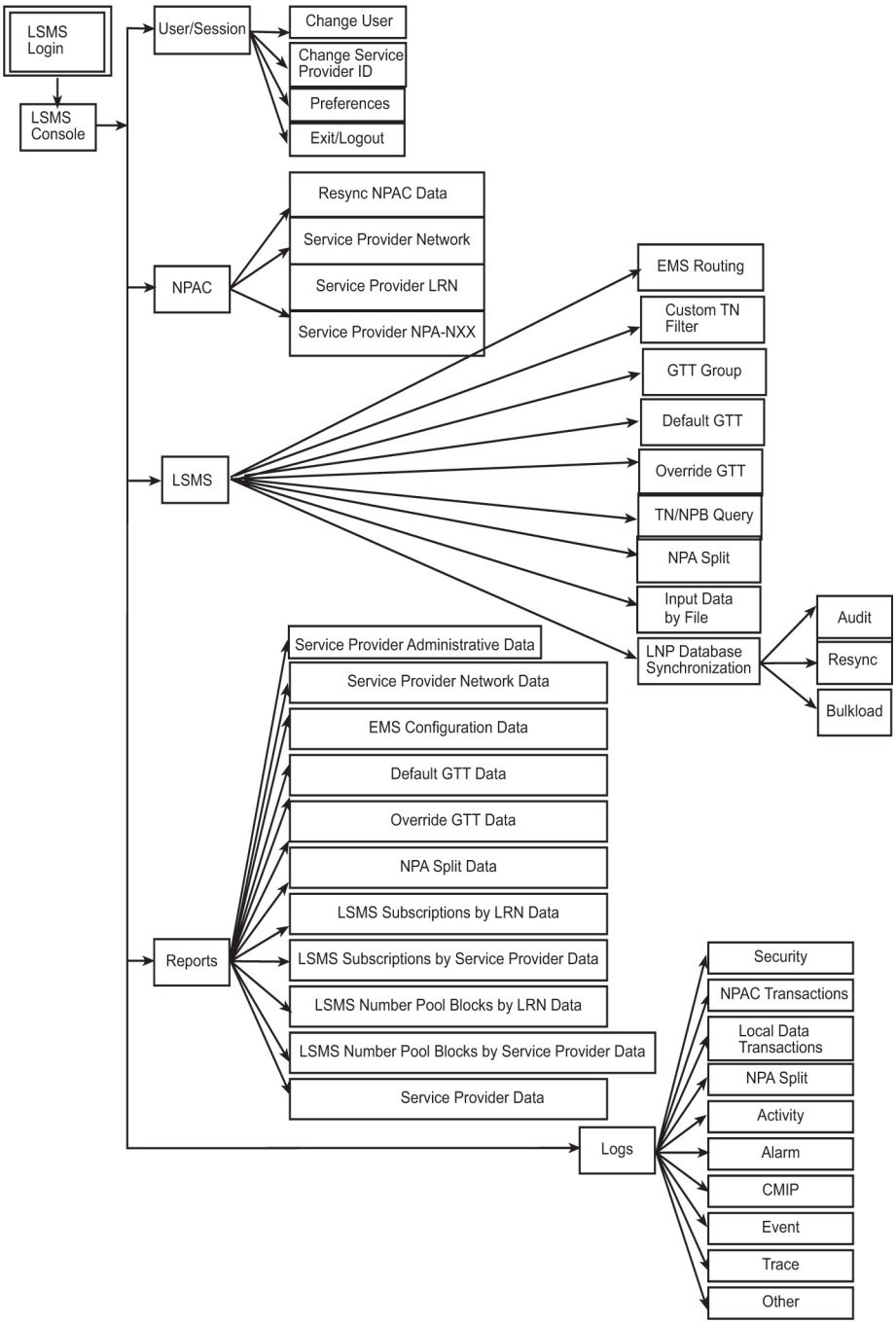


Figure 35: LSMS GUI Structure

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 5: 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 6: 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	
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 7: 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

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
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
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

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
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 8: 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

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 9: 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 10: 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	

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
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
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

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
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 36: LSMS User/Session Menu

- **Change User** - Selecting this option enables you to exit the LSMS GUI, and displays the login screen again.

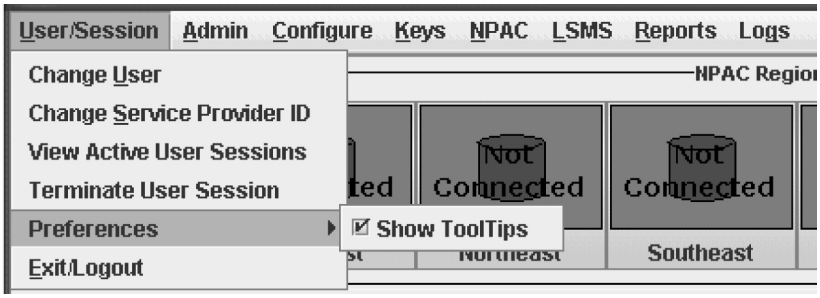
  A confirmation dialog displays before you exit, enabling you to return to the GUI without exiting.

- **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 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.

Chapter 3

Managing NPAC Relations

Topics:

- *Resynchronizing LSMS and NPAC Data.....75*
- *Viewing an NPAC Service Provider Network...81*
- *Managing NPAC Service Provider Local Routing Number (LRN).....82*
- *Managing NPAC Service Provider NPA-NXX.....85*

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.

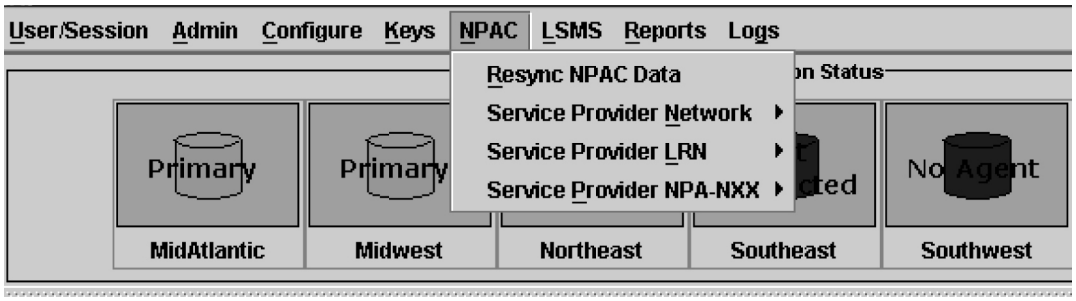


Figure 38: LSMS NPAC Menu

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** > **Resync NPAC Data**.

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

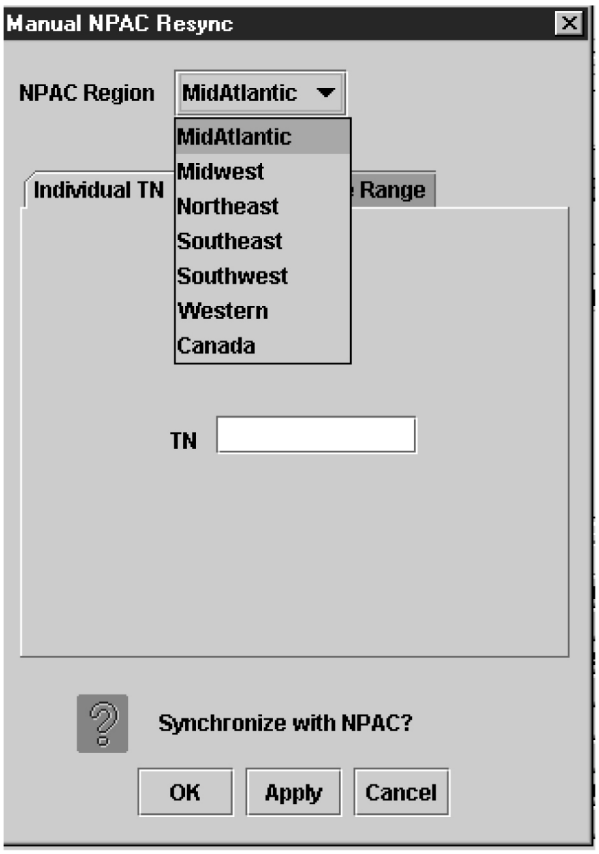


Figure 39: NPAC Region Pull-Down Menu

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** > **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.

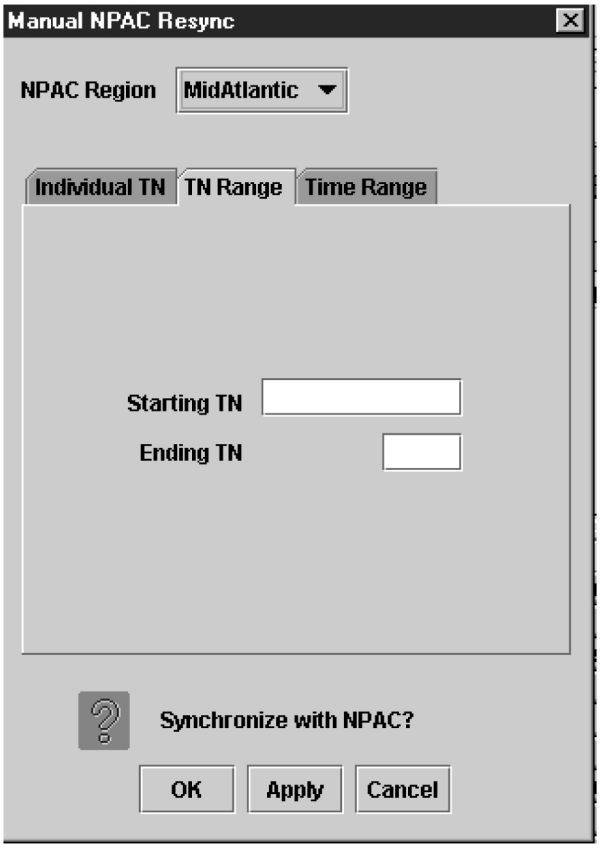


Figure 40: Manual NPAC Resync – Range of TNs Window

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 *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** > **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 *Step 5*
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** > **Resync NPAC Data**.
   The **Manual NPAC Resync** window displays.

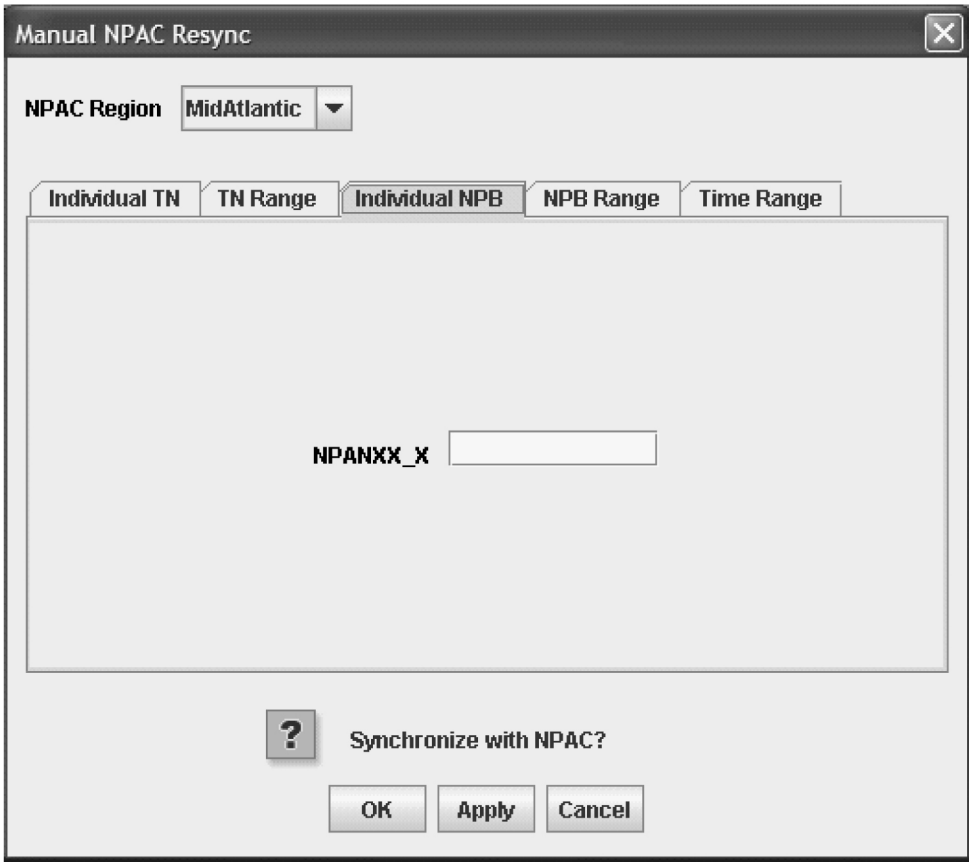


Figure 41: Manual NPAC Resync Window

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.

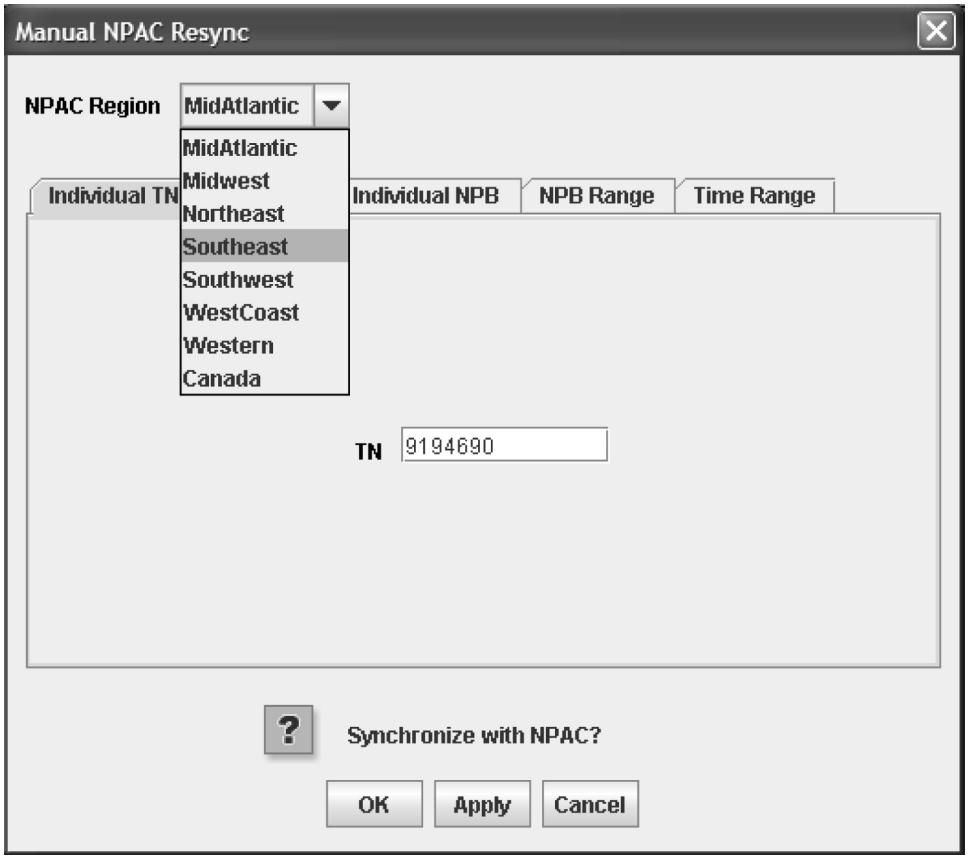


Figure 42: NPAC Region Pull-Down Menu

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** > **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.

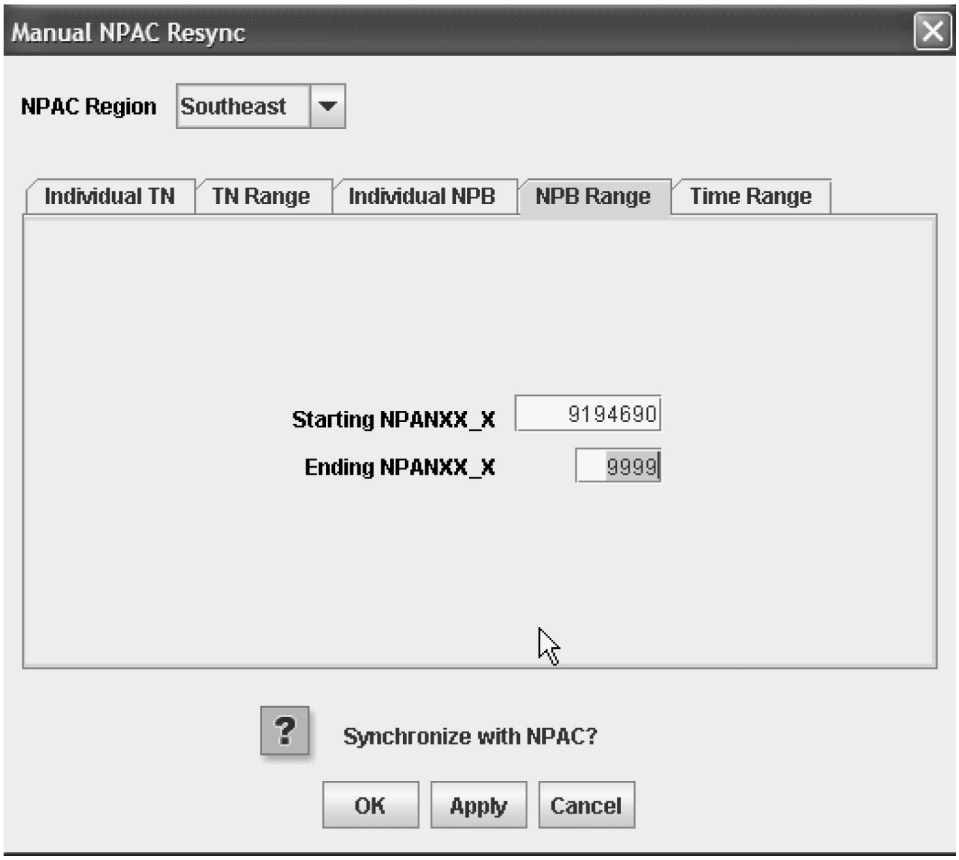


Figure 43: Manual NPAC Resync – Range of NPBs Window

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** > **Service Provider Network** > **View**.

   The **View Service Provider Network** window displays.

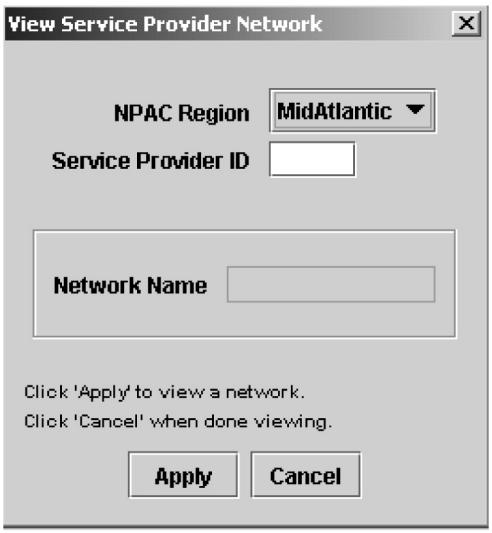


Figure 44: View Service Provider Network Window

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** > **Service Provider LRN** > **Create**.
   The **Create Service Provider LRN** window displays.

Figure 45: 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** > **Service Provider LRN** > **View**.
   The **View Service Provider LRN** window appears.

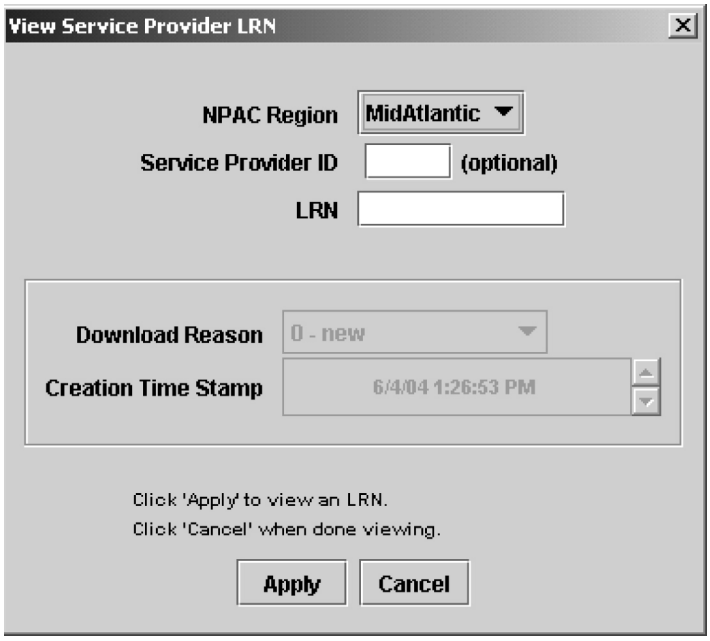


Figure 46: View Service Provider LRN Window

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 *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** > **Service Provider LRN** > **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** > **Service Provider NPA-NXX** > **Create**.
   The **Create Service Provider NPA-NXX** window appears.

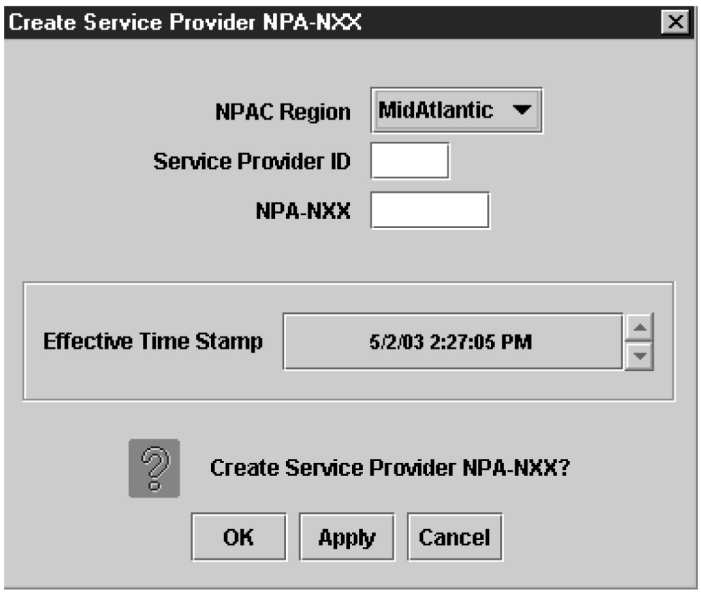


Figure 47: Create Service Provider NPA-NXX Window

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 *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** > **Service Provider NPA-NXX** > **View**.
   The **View Service Provider NPA-NXX** window appears.

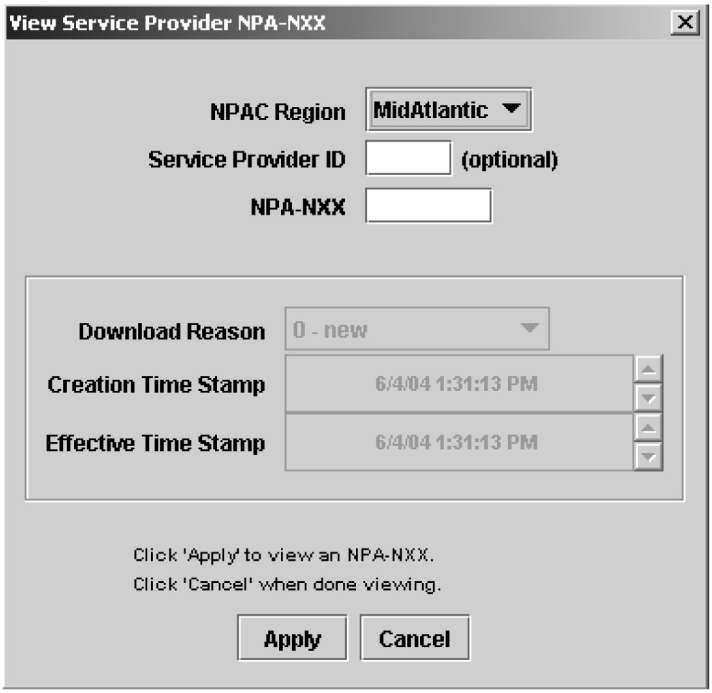


Figure 48: View Service Provider NPA-NXX Window

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** > **Service Provider NPA-NXX** > **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**.

Chapter 4

Managing Locally Provisioned Data

Topics:

- *Introduction.....89*
- *EMS Routing.....89*
- *Custom TN Filters.....91*
- *GTT Groups.....95*
- *Default GTT.....97*
- *Override GTT.....100*
- *TN/NPB Query.....103*
- *NPA Splits.....108*
- *Input Data By File.....113*
- *Default GTT Input File.....114*
- *Override GTT Input File.....120*
- *NPA-NXX Split Input File.....126*
- *Custom TN Filter Input File.....130*
- *Error Codes.....134*

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.

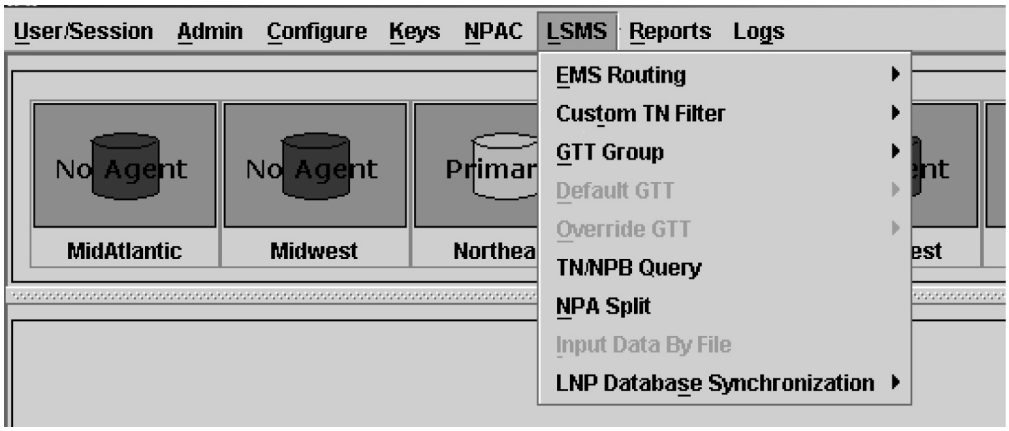


Figure 49: LSMS Menu

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** > **EMS Routing** > **Modify**.

   The **Modify EMS Routing window appears**.

Figure 50: 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**.

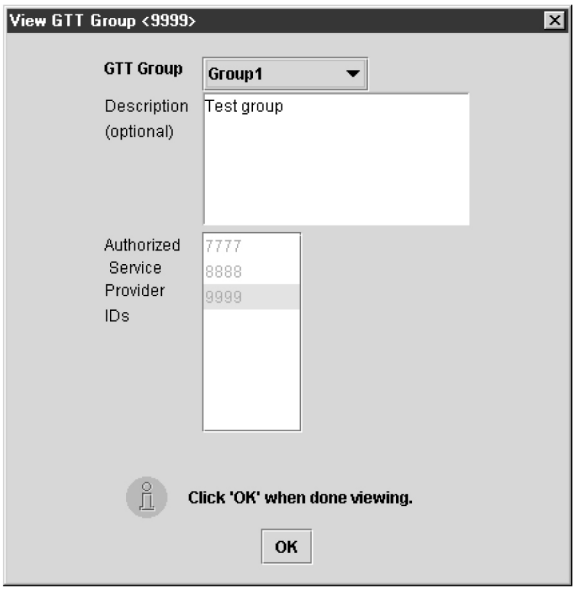


Figure 51: View GTT Group

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** > **EMS Routing** > **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.

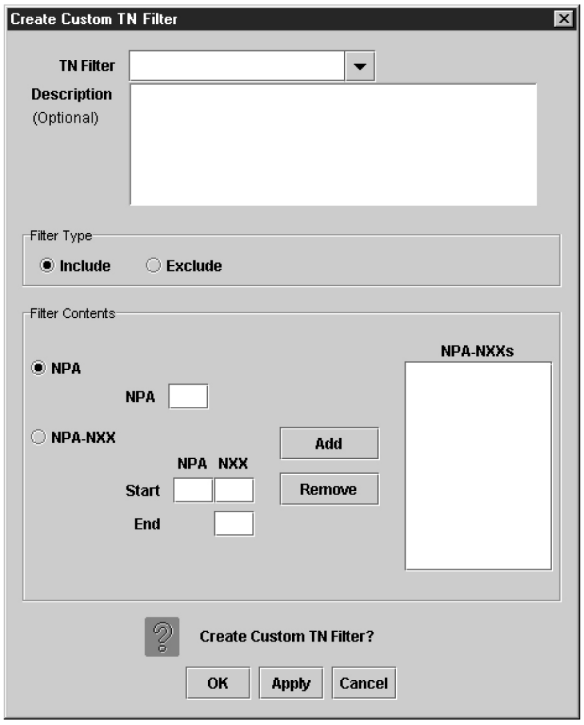


Figure 52: Create Custom Custom TN Filter

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** > **Custom TN Filter** > **Create**.

   The **Create Custom TN Filter** dialog appears.

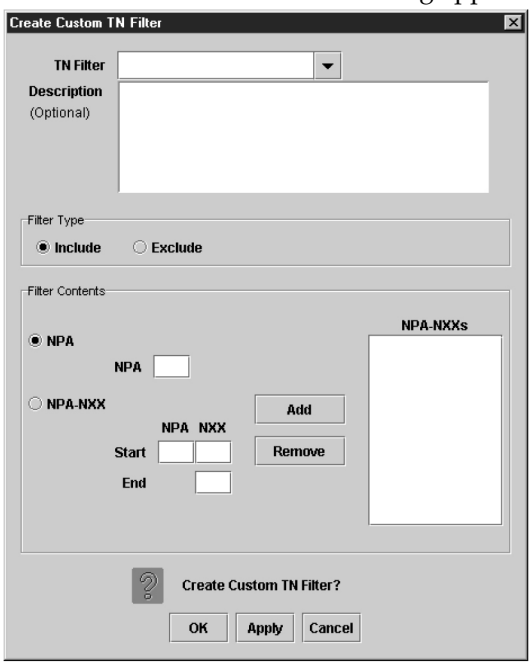


Figure 53: Create Custom TN Filter Dialog

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 11: Create Custom TN Filter Dialog Field Descriptions* for a list of the remaining Custom TN Filter fields and the corresponding field descriptions.

Table 11: 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.

Custom TN Filter Field	Description
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** > **Custom TN Filter** > **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** > **Custom TN Filter** > **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** > **Custom TN Filter** > **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** > **GTT Group** > **Create**.

   The **Create GTT Group** dialog appears.

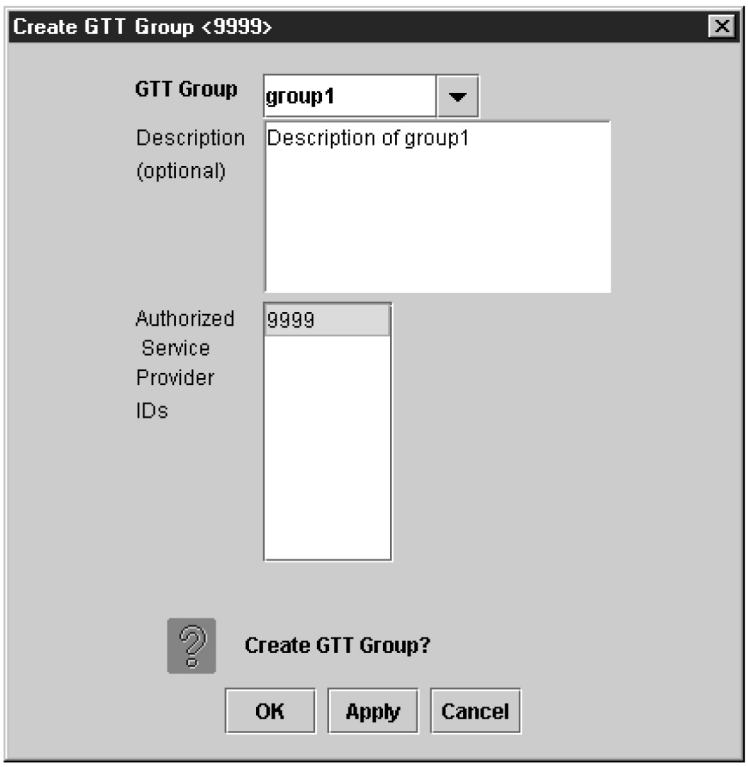


Figure 54: Create GTT Group Dialog

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** > **GTT Group** > **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** > **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** > **GTT Group** > **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** > **Default GTT** > **Create**.
   The **Create Default GTT** dialog appears.

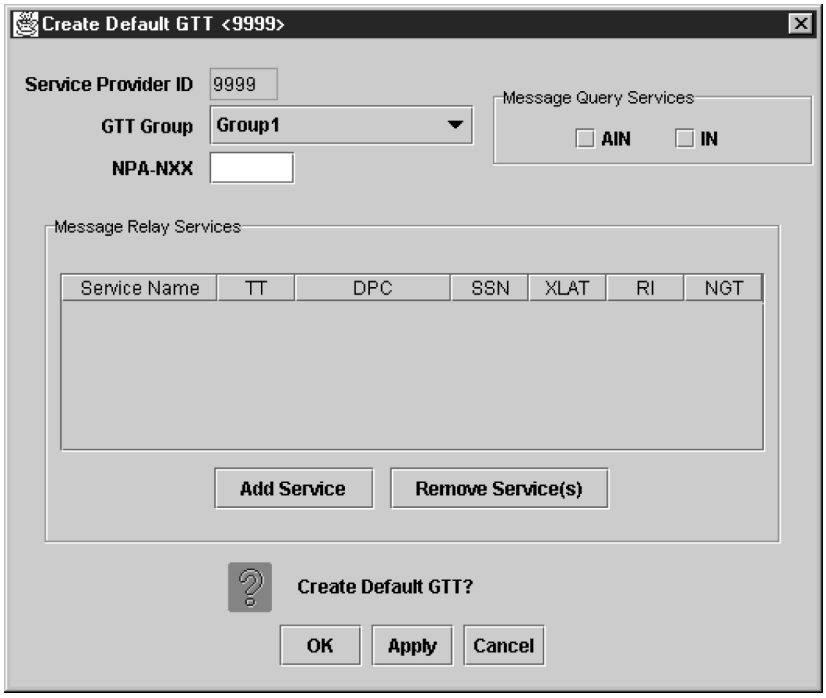


Figure 55: Create Default GTT Dialog

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 12: Create Default GTT Dialog Field Descriptions* for a list of the remaining Default GTT fields and the corresponding field descriptions.

Table 12: 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.
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** > **Default GTT** > **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** > **Default GTT** > **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** > **Default GTT** > **Delete**.
   The **Delete 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** 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** > **Override GTT** > **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 13: Create Override GTT Dialog Field Descriptions* for a list of the remaining Override GTT fields and the corresponding field descriptions.

Table 13: 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

Override GTT Field	Description
	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** > **Override GTT** > **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** > **Override GTT** > **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** > **Override GTT** > **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.

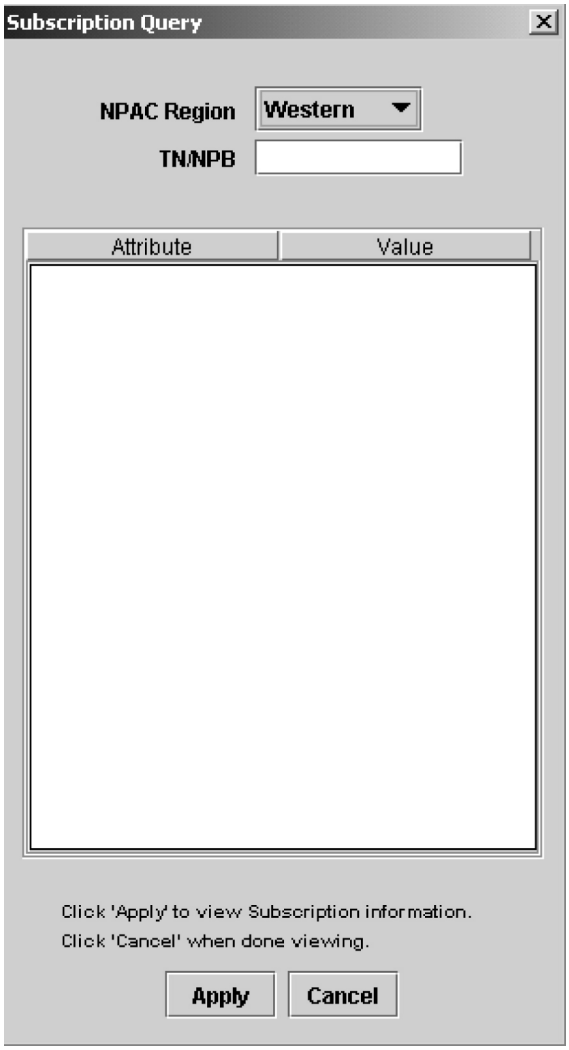


Figure 56: Subscription Query Dialog

TN Query

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

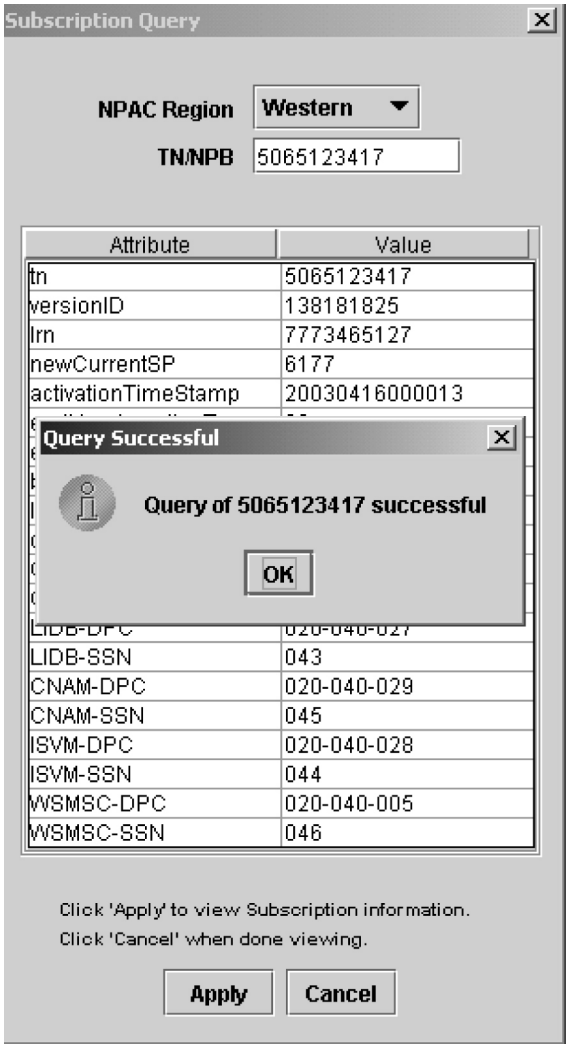


Figure 57: Query Successful Dialog.

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 14: TN Subscription Query Data - Field Descriptions* 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 14: TN Subscription Query Data - Field Descriptions describes the fields that display when a TN query is successful.

Table 14: 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 15: NPB Subscription Query Data - Field Descriptions* for a description of the NPB fields that display in the **Subscription Query** window when the query is successful.

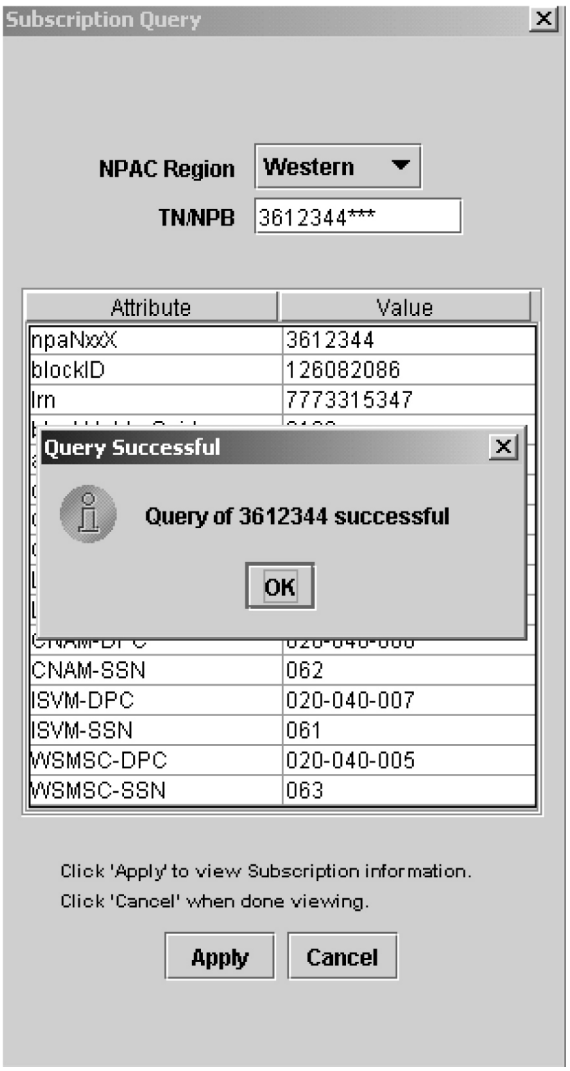


Figure 58: Query Successful Dialog

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 59: 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 15: 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** > **NPA Split**.
   The **NPA Splits** dialog appears.

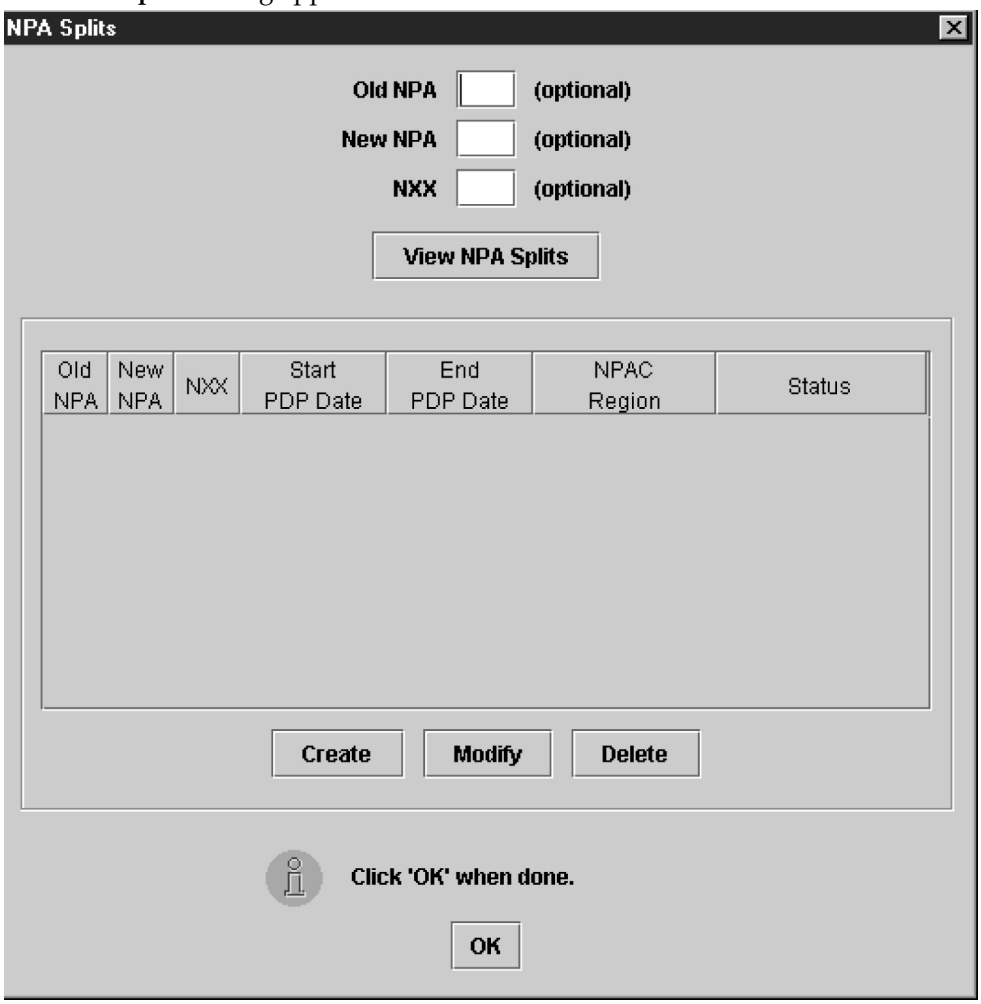


Figure 60: NPA Splits Dialog

3. Select `Create`.
   The **Create NPA Split** dialog appears.

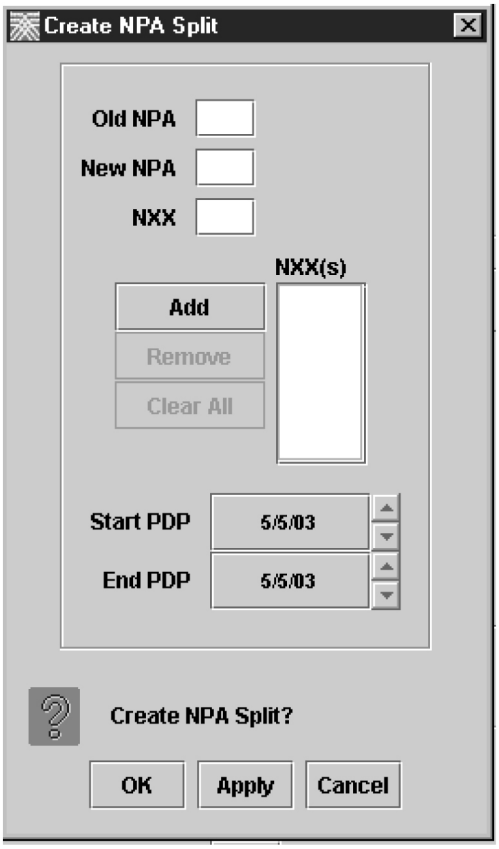


Figure 61: Create NPA Split Dialog

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** > **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.

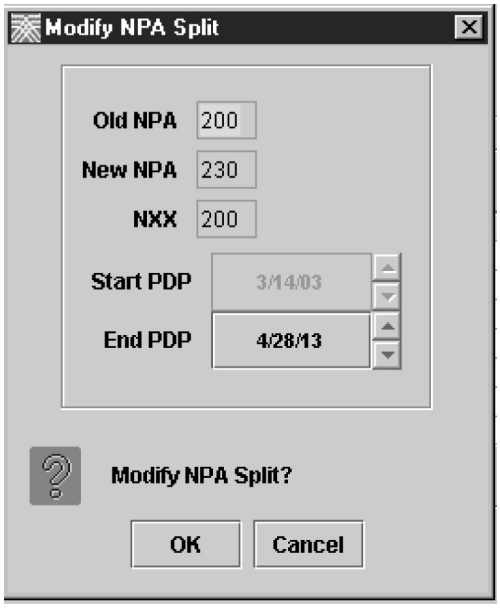


Figure 62: Modify NPA Split Dialog

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** > **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 *Step 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 16: 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 63: Example Default GTT Input File is an example of a default GTT input file with one entry. See *Table 17: Explanation of the Fields in the Default Input File* for an explanation of the fields.

```
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
```

Figure 63: Example Default GTT Input File

Table 17: 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}

Field Number	Field Name	Value in Example	Range of Values
3	NPANXX Value	919420	[0-9]{6 digits}
4	AIN	AIN	AIN or empty pipe to indicate no AIN
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]

Field Number	Field Name	Value in Example	Range of Values
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]
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 18: 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 63: Example Default GTT Input File* for more information about the format of a default GTT input file. See *Table 17: Explanation of the Fields in the Default Input File* 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 64: Example Default GTT Result File. shows a picture of a 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
```

Figure 64: Example Default GTT Result File.

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 19: 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 65: Example Override GTT Input File is an example of an override GTT input file with one entry. See *Table 20: Explanation of the Fields in the Override GTT Input File* for an explanation of the fields.

```
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
```

Figure 65: Example Override GTT Input File

Table 20: 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}

Field Number	Field Name	Value in Example	Range of Values
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]

Field Number	Field Name	Value in Example	Range of Values
26	S3-NGT	0	[0…255]
27	S3-RGTA	NO	[YES, NO]
28	S4-ServiceName	LIBD	Character {up to 8 characters}
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 21: 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

[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 65: Example Override GTT Input File* for more information about the format of an override GTT input file. See *Table 20: Explanation of the Fields in the Override GTT Input File* 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** > **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 66: Example Override GTT Result File. shows a picture of an 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 919423100000 Failed E152 Invalid LRN value length - 919423100000

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
```

Figure 66: Example Override GTT Result File.

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 67: Example NPA-NXX Split Input File is an example of an NPA-NXX Split input file with one entry. See *Table 22: NPA-NXX Split Input File Fields and Their Values* for an explanation of the fields.

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

Figure 67: Example NPA-NXX Split Input File

Table 22: 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 23: 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 67: Example NPA-NXX Split Input File* for more information about the format of an NPA-NXX split input file. See *Table 22: NPA-NXX Split Input File Fields and Their Values* 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** > **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 68: Example NPA-NXX Split Result File shows a picture of an 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
```

Figure 68: Example NPA-NXX Split Result File

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 24: 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 69: Sample Custom TN Filter Input File is an example of a Custom TN Filter input file with two entries. See *Table 25: Explanation of the Fields in the Custom TN Filter Input File* for an explanation of the fields.

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

Figure 69: Sample Custom TN Filter Input File

Table 25: 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 26: 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	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 69: Sample Custom TN Filter Input File* for more information about the format of a custom TN filter input file. See *Table 25: Explanation of the Fields in the Custom TN Filter Input File* 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** > **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 70: Example Custom TN Filter Result from File Validation Phase shows a picture of a custom TN filter result file.

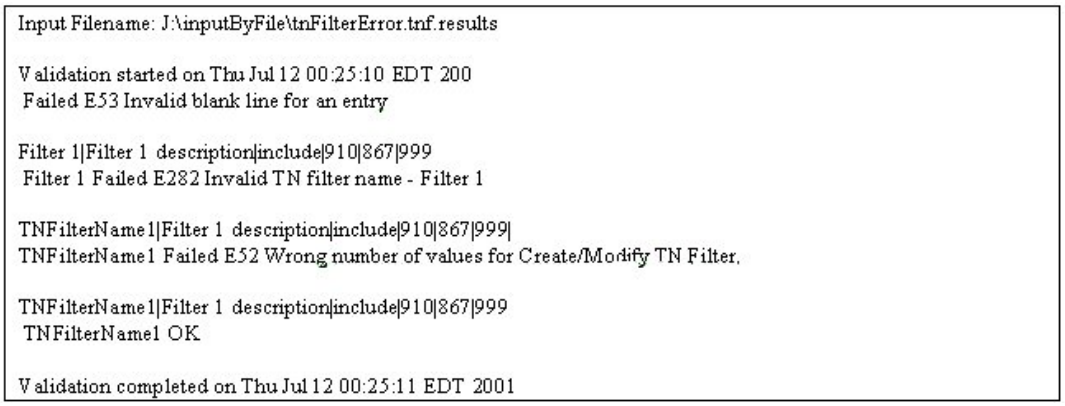


Figure 70: Example Custom TN Filter Result from File Validation Phase

Custom TN Filter Error Codes

See *Error Codes*.

Error Codes

Table 27: Input Data by File Error Codes 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 27: Input Data by File Error Codes

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

Error Number	Error Text	Cause
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.
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.

Error Number	Error Text	Cause
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.

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.

Error Number	Error Text	Cause
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.
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 .

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

Chapter 5

LSMS Reports

Topics:

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- *Service Provider Network Data Reports.....143*
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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** > **Service Provider Administrative Data** .

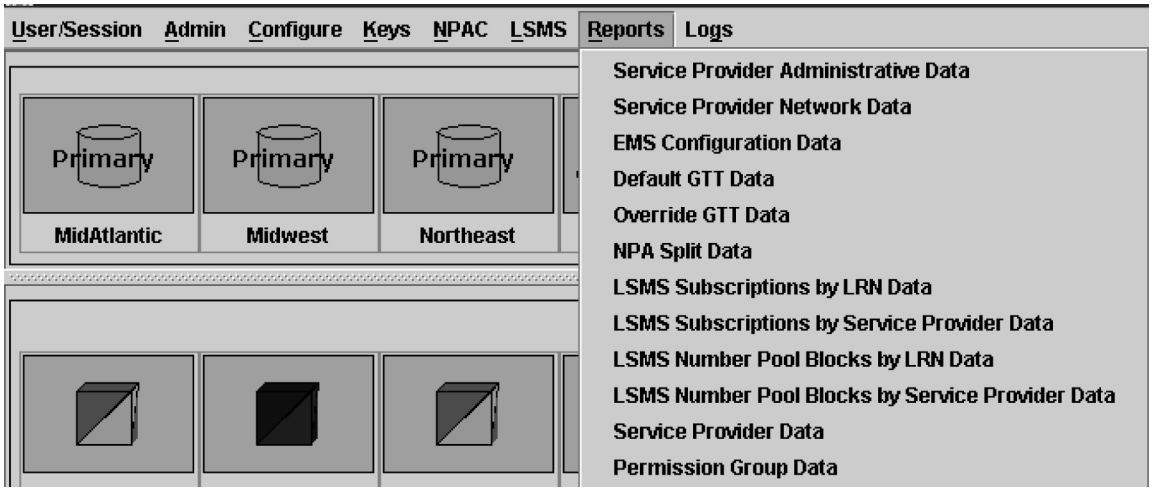


Figure 71: Reports Pull-Down List

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** > **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** > **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.

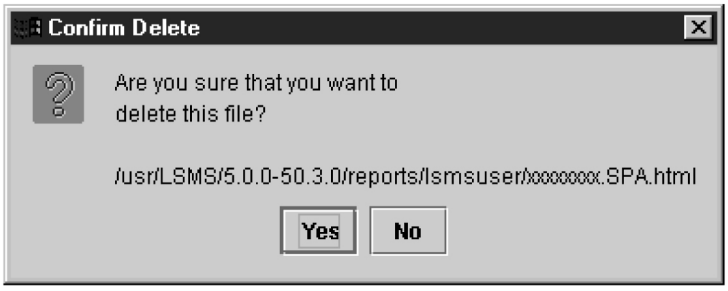


Figure 72: Confirm Delete Message Window

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 73: 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** > **Service Provider Network Data** .

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

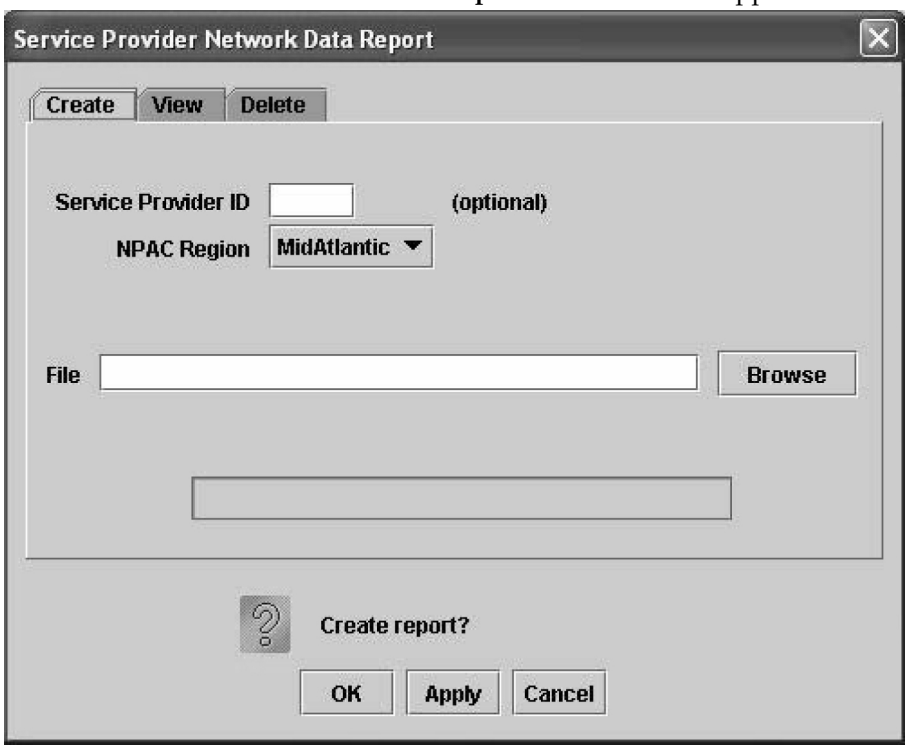


Figure 74: Service Provider Network Data Report Create Window

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 28: 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)*.

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

Figure 75: Service Provider Network Data Report Example

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** > **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** > **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:

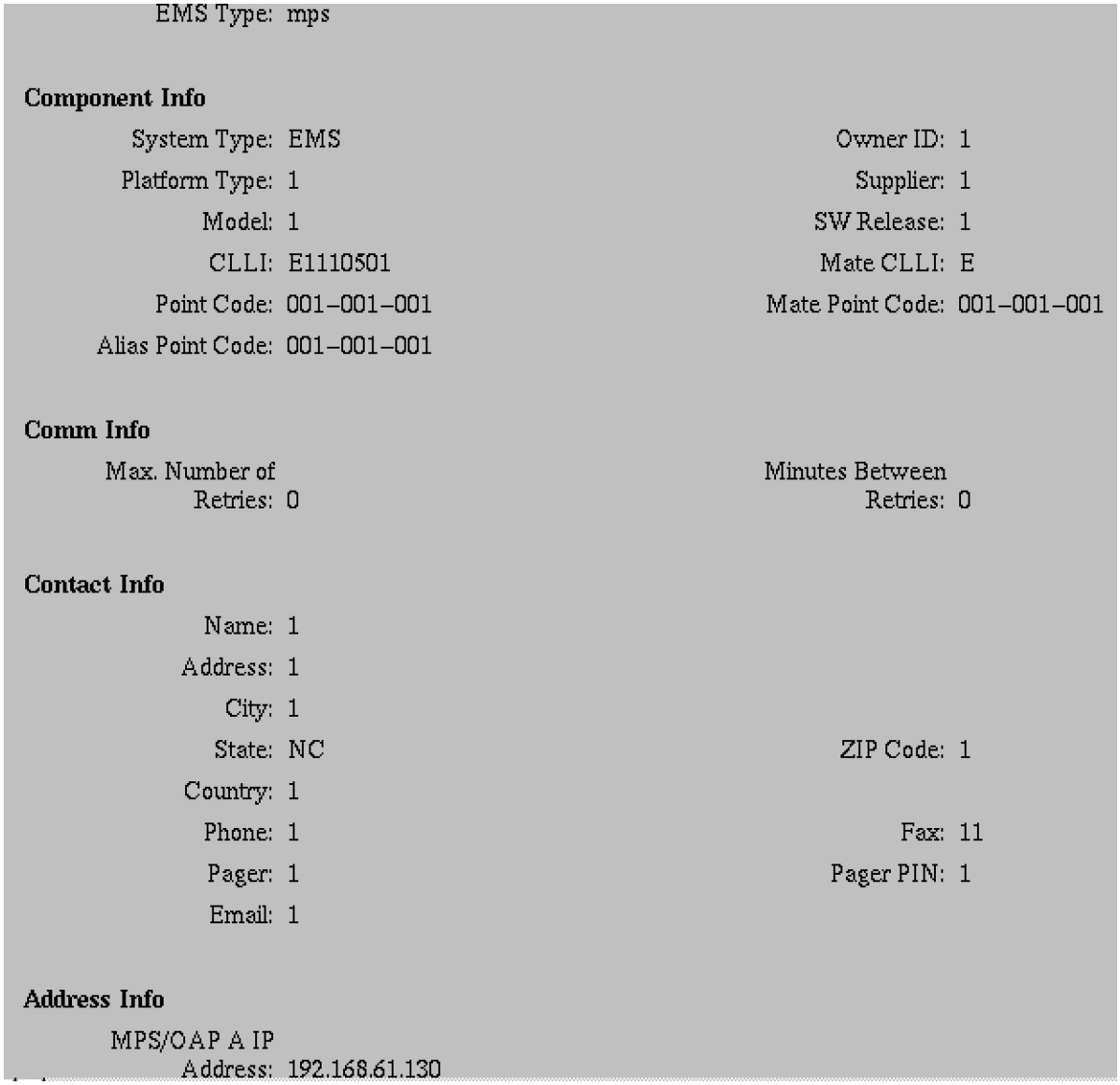
1. Log in to LSMS as a member of the permission group that is authorized to perform this operation.
2. From the **LSMS Console** window, select **Reports** > **EMS Configuration Data**.

   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.



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:	001–001–001
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

Figure 76: EMS Configuration Data Report Example

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** > **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** > **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** > **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 29: Using the Optional DPC Parameter (Default GTT Report)* for the report contents that are selected and displayed depending upon whether you specify a value for the optional DPC parameter.

   Table 29: 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)*.

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

Figure 77: Default GTT Report Example

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** > **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** > **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** > **Override GTT**.

   The **Override GTT Data Report Create** window appears.

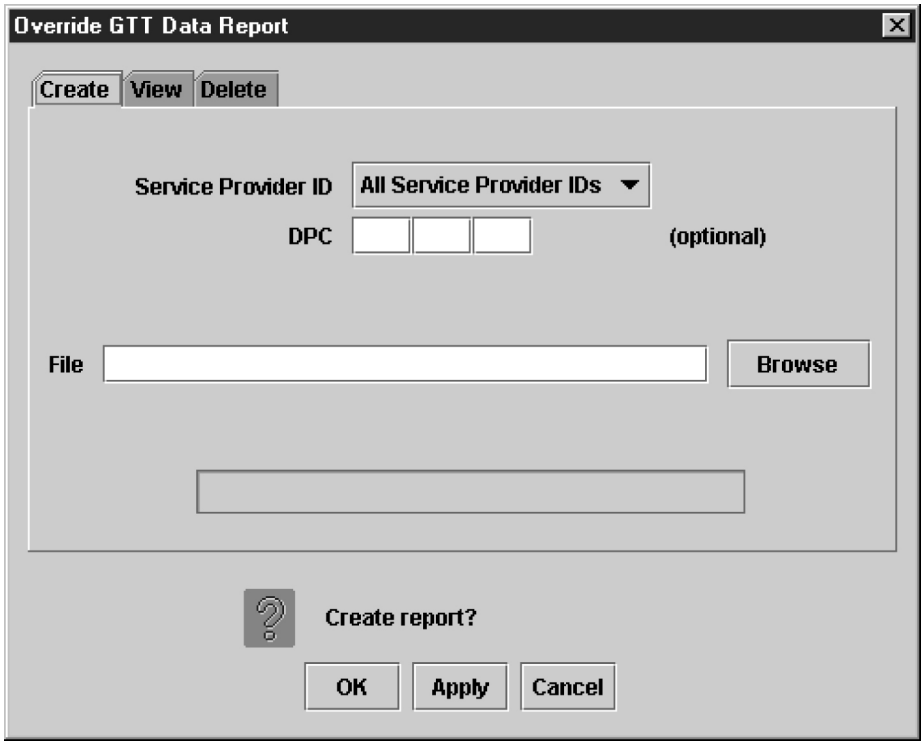


Figure 78: Override GTT Data Report Create Window

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 30: Using the Optional DPC Parameter (Override GTT Report)* for the report contents that are selected and displayed depending upon whether you specify a value for the optional DPC parameter.

   Table 30: 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.

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								

Figure 79: Override GTT Report Example

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** > **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** > **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** > **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.

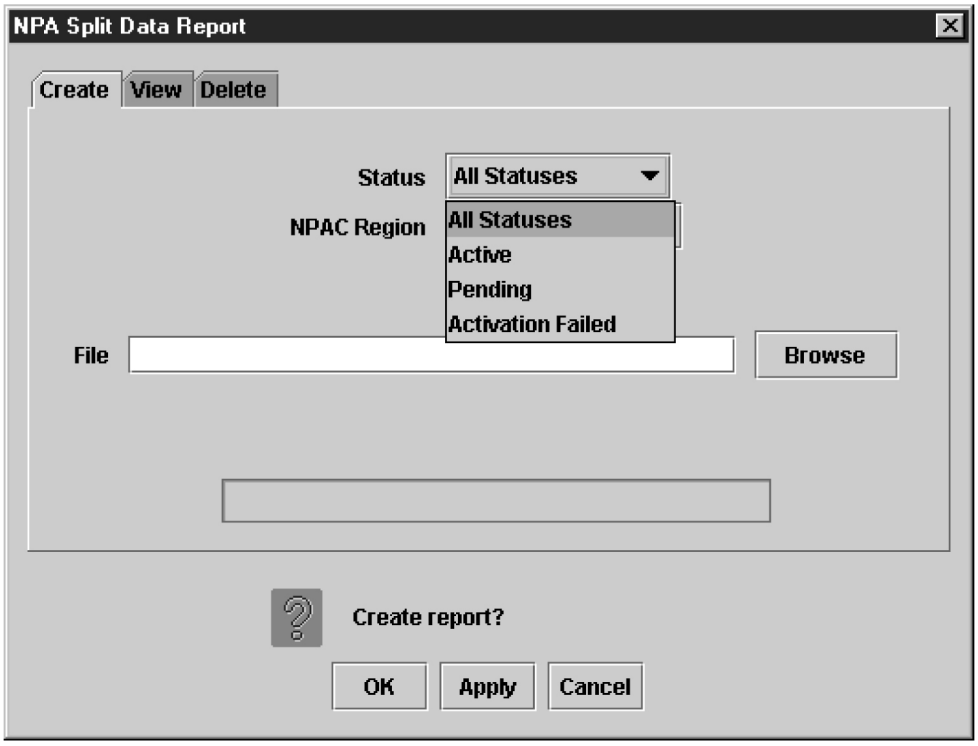


Figure 80: NPA Split Data Report Statuses

4. In the **NPAC Region** field, select the desired region (or All NPAC Regions) for which you require information.

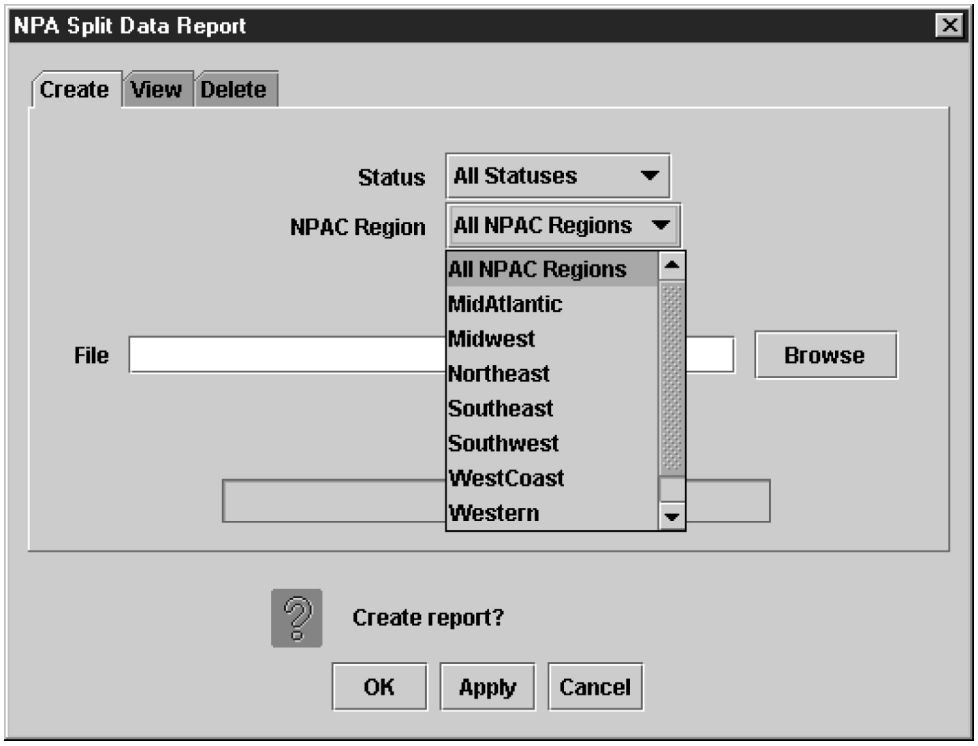
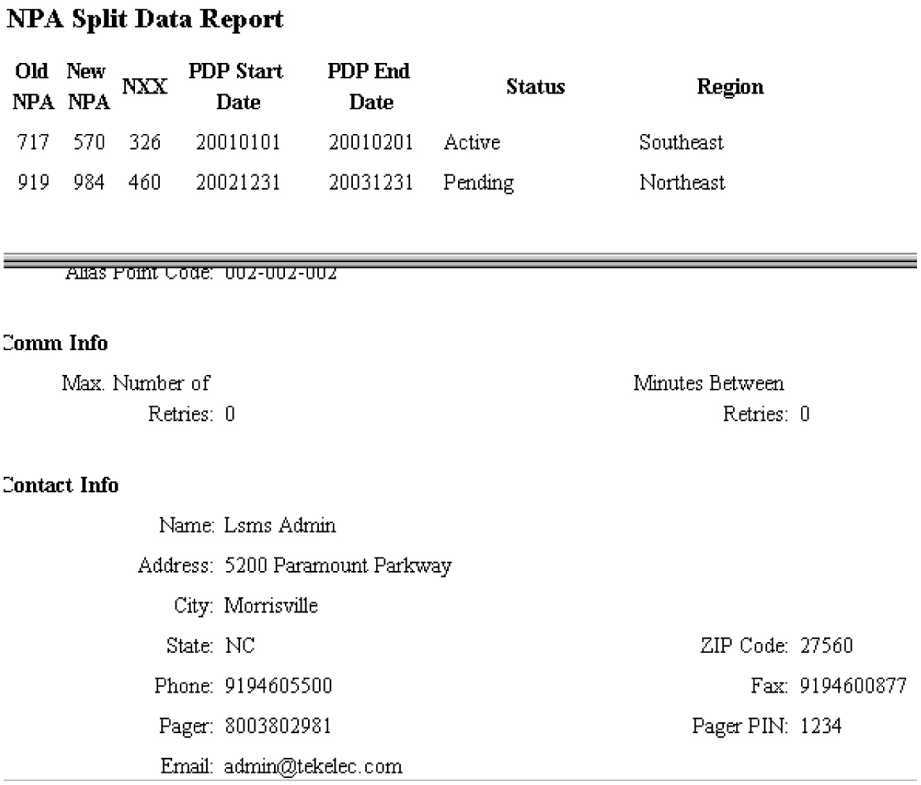


Figure 81: NPA Split Data NPAC Regions

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.



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

Figure 82: NPA Split Data Report Example

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** > **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** > **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.

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** > **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.

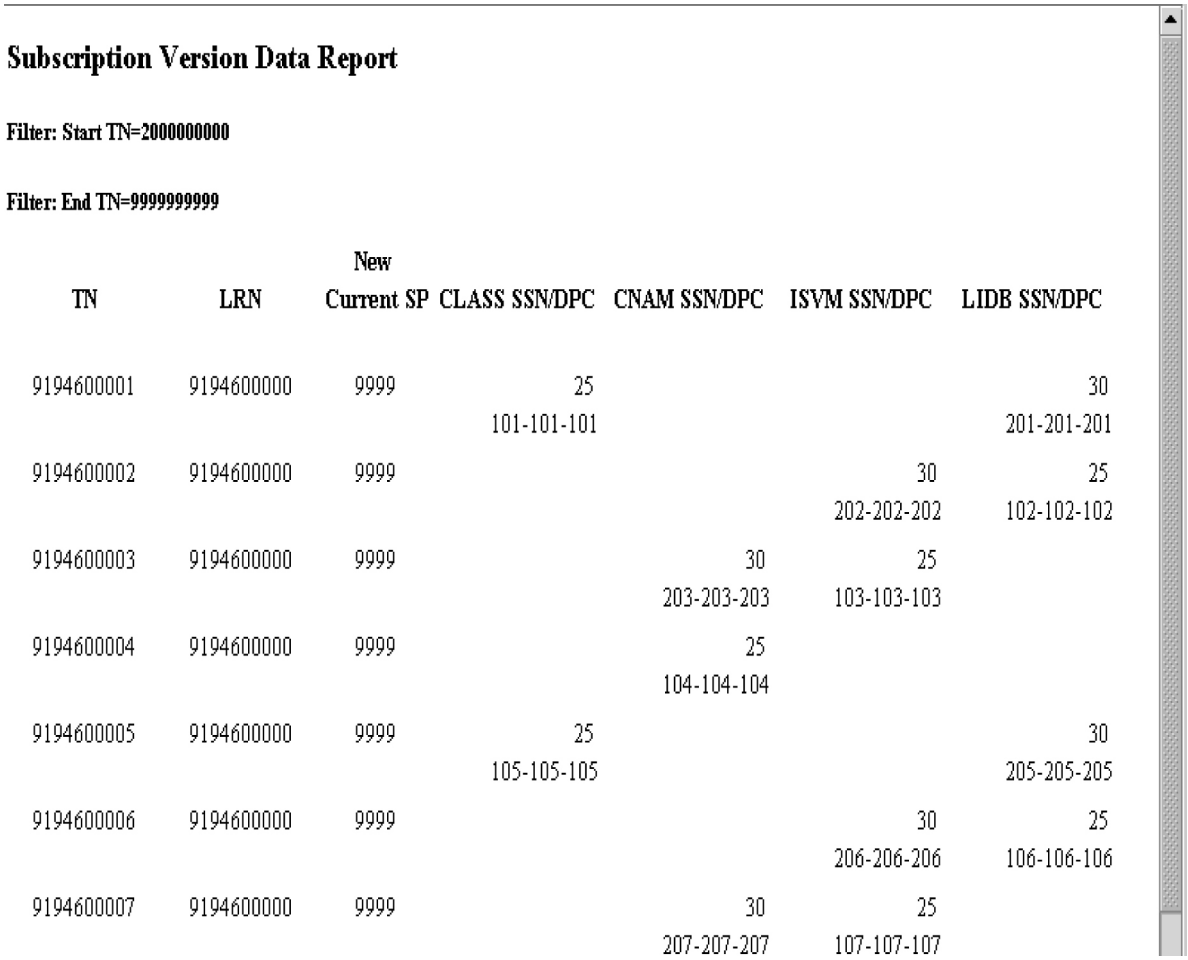
   This is an optional field.

   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.



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	

Figure 83: LSMS Subscriptions by LRN Report Example

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** > **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** > **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** > **LSMS Subscriptions by Service Provider Data**.
   The **LSMS Subscriptions by Service Provider Report Create** window appears.

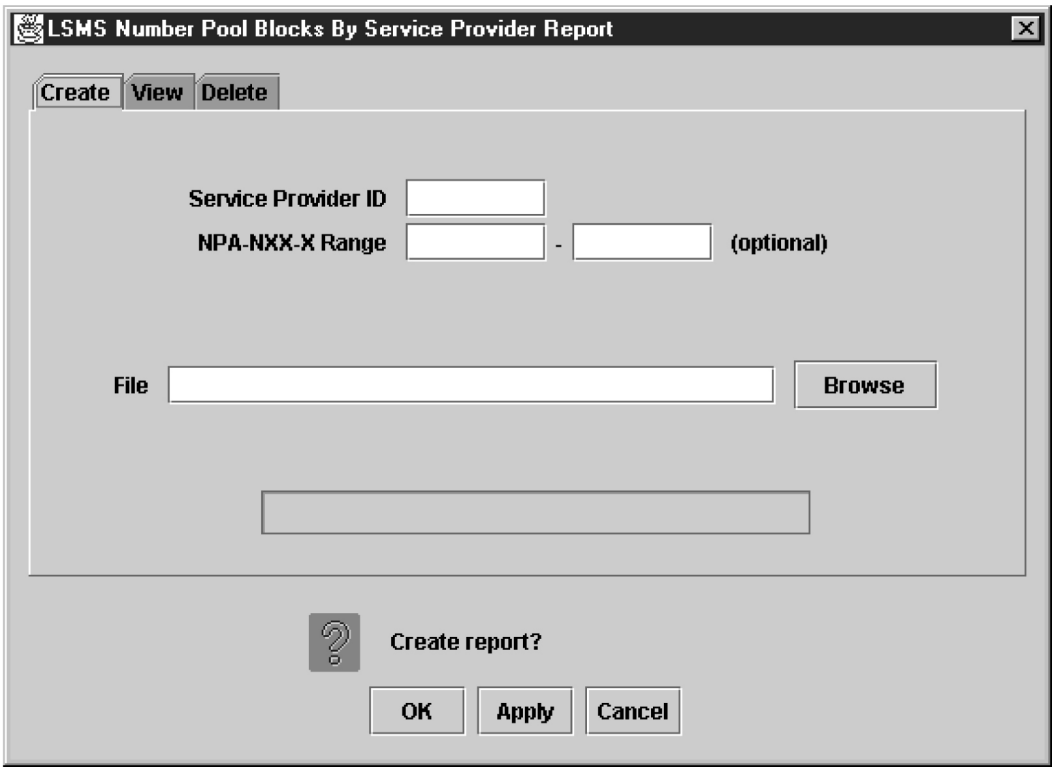


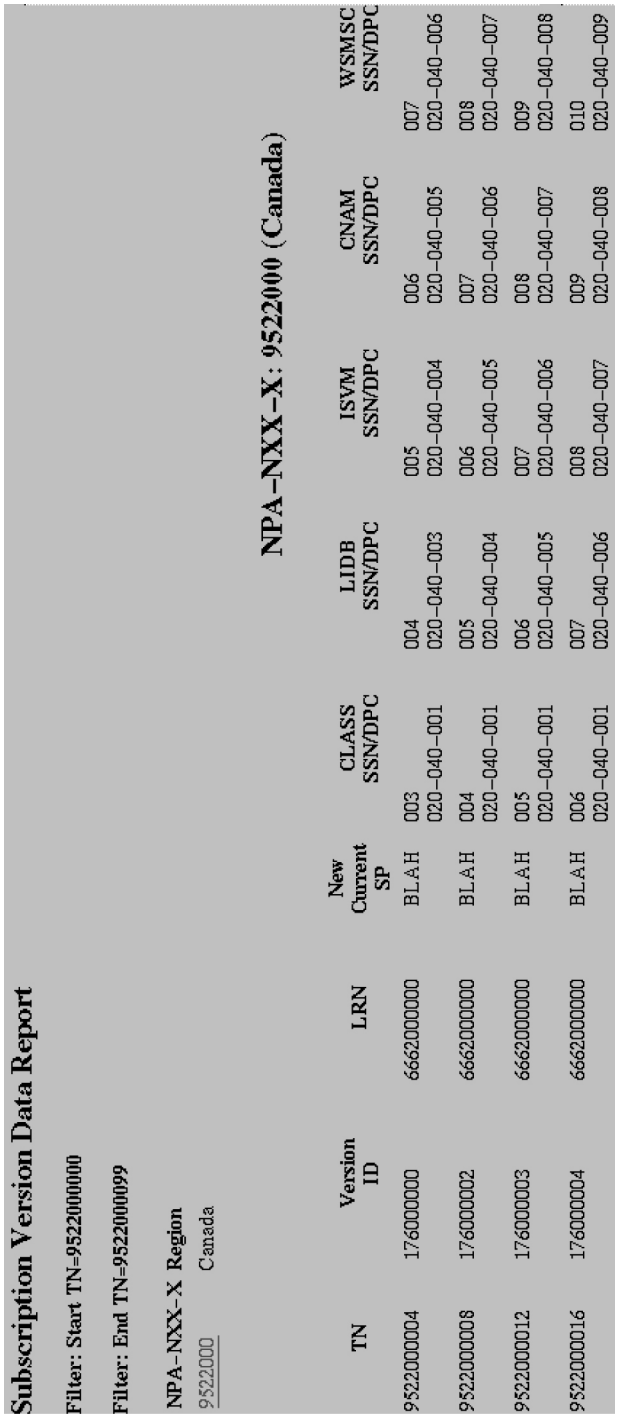
Figure 84: LSMS Subscriptions by Service Provider Report Create Window

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.



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

Figure 85: LSMS Subscriptions by Service Provider Data Report Example

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** > **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** > **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** > **LSMS Number Pool Blocks by LRN Data**.

The **LSMS Number Pool Blocks by LRN Report Create** window appears.

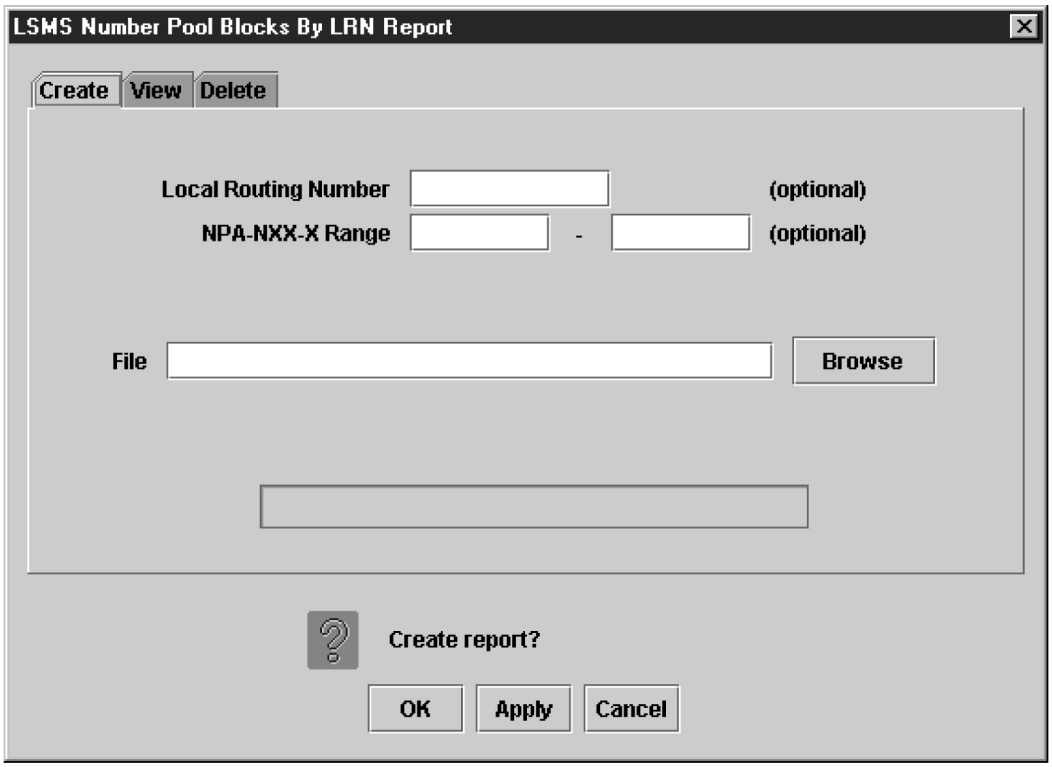


Figure 86: LSMS Number Pool Blocks by LRN Report Create Window

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.

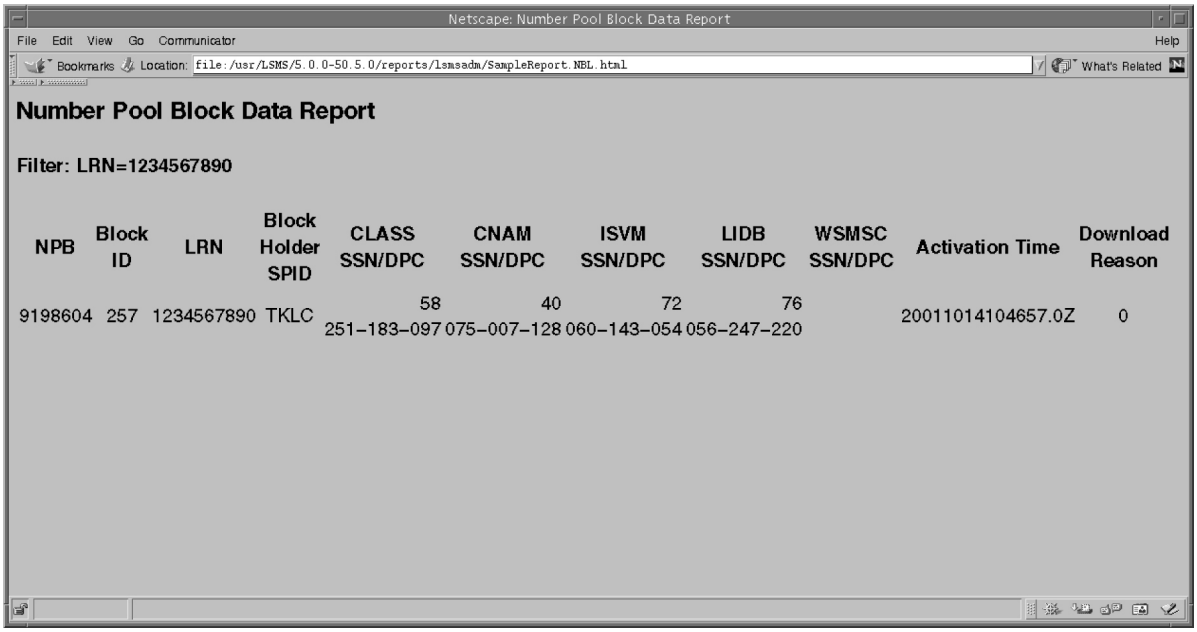


Figure 87: LSMS Number Pool Blocks by LRN Report Window

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** > **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** > **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** > **LSMS Number Pool Blocks by Service Provider Data**.

   The **LSMS Number Pool Blocks by Service Provider Report Create** window appears.

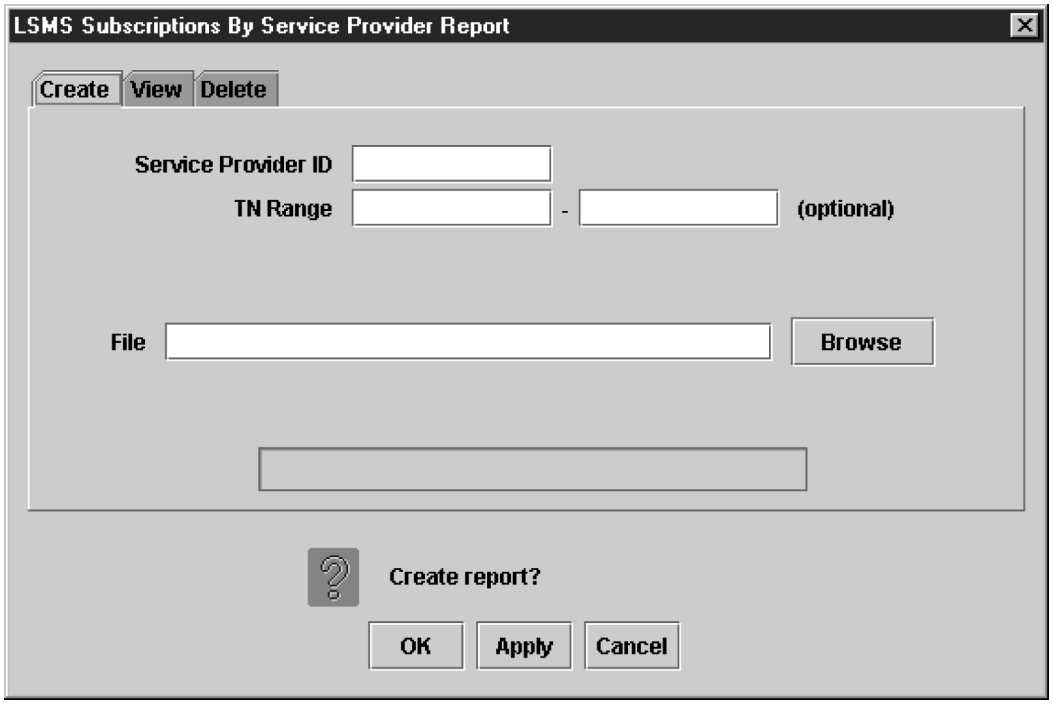


Figure 88: LSMS Number Pool Blocks by Service Provider Report Create Window

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.

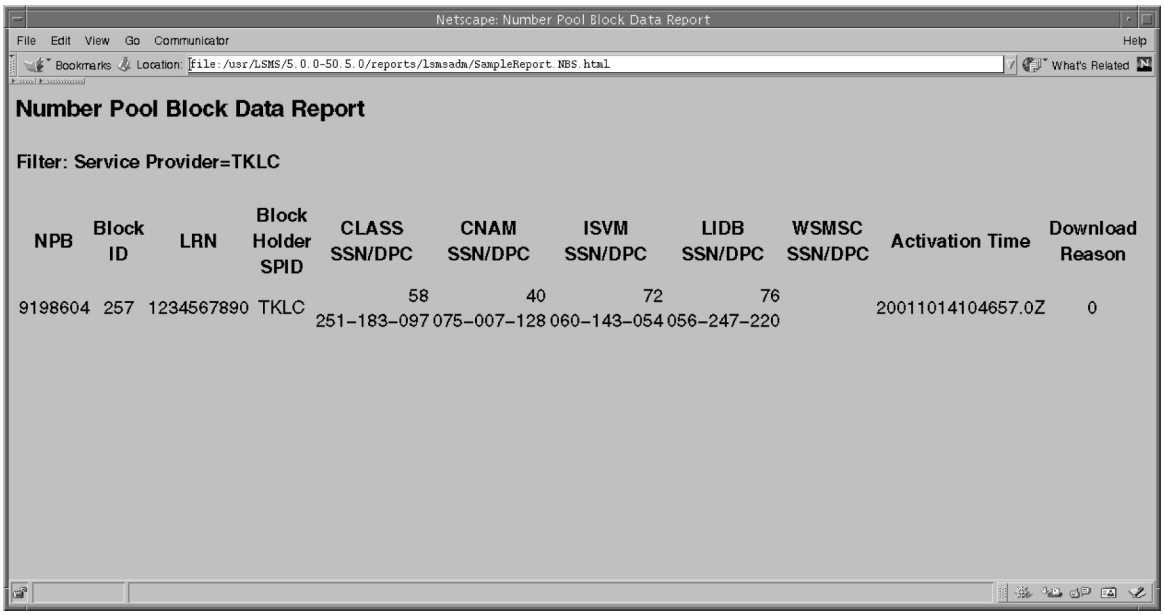


Figure 89: LSMS Number Pool Blocks by Service Provider Data Window

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** > **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** > **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** > **Service Provider Data**.

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

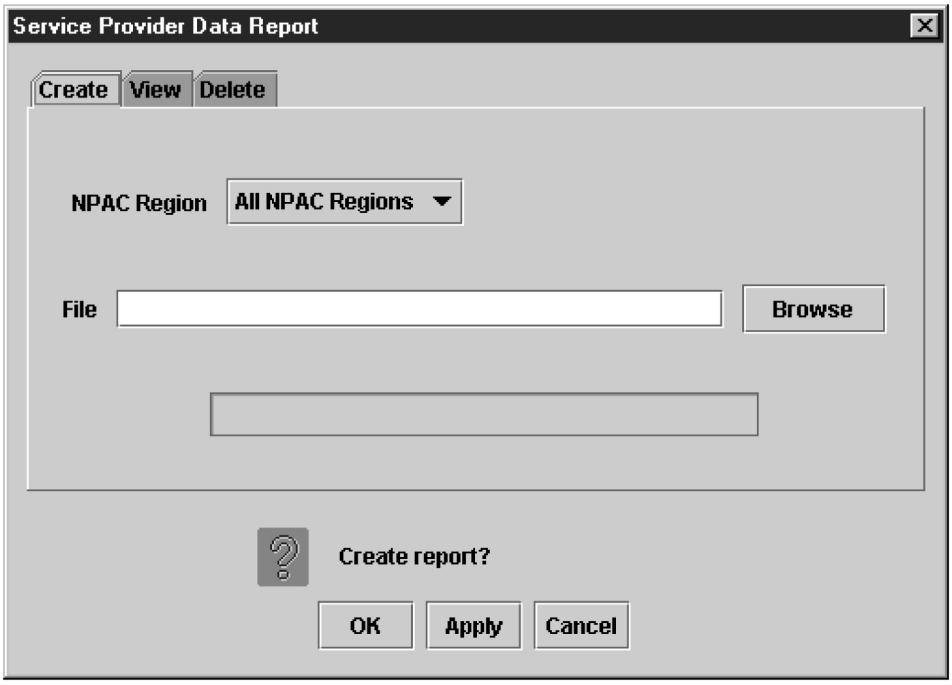


Figure 90: Service Provider Data Report Create Window

3. In the **NPAC Region** field, select the desired region (or All NPAC Regions) for which you require information.

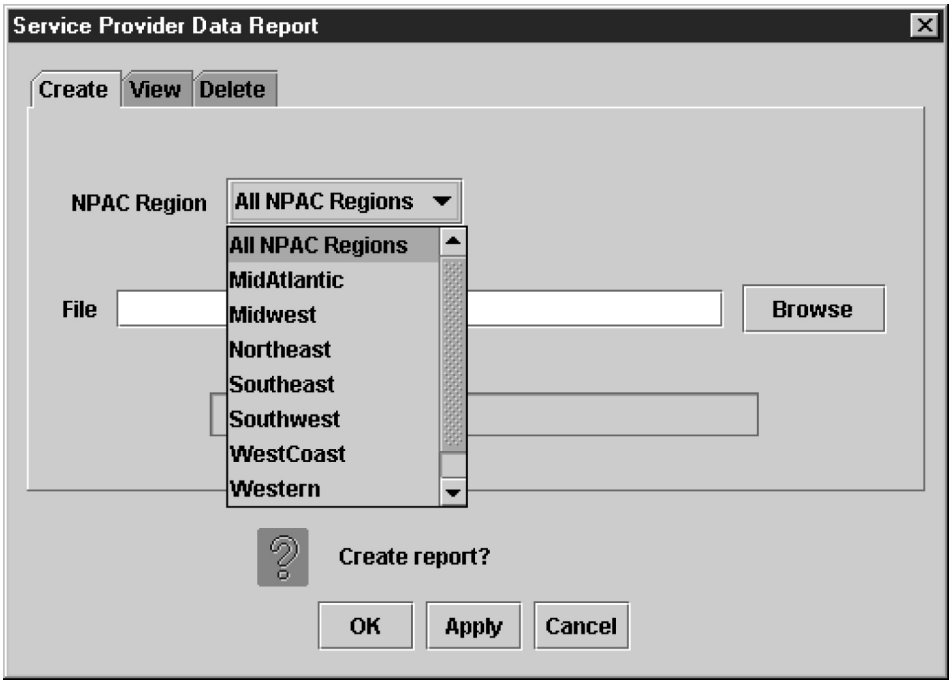


Figure 91: Service Provider Data Report NPAC Regions

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.

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

Figure 92: Service Provider Data Report Window

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** > **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** > **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** > **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 31: Permission Group Data Report Dialog - Field Constraints* and *Table 32: Permission Group Data Report Dialog - Field Descriptions* for information about field constraints and field descriptions.

Table 31: 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 32: 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.

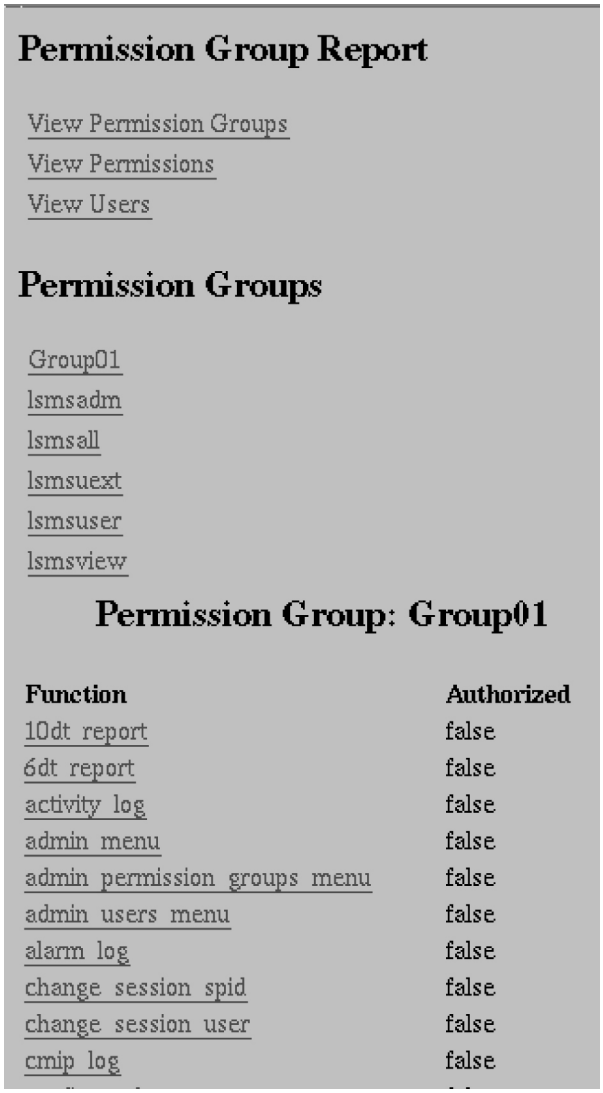


Figure 93: Permission Group Data Report Window

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** > **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** > **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):

- *USING REGION <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 33: 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 34: 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

SQL Data Type	Description
	long. As part of a WHERE clause, a CHAR field must be compared against a character string (e.g. TN = '9194600000', not TN=9194600000).
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 35: SV Table Column Names

Column Name	Indexed?	Output Width	Data Type
VERSION_ID	YES	10	SHORT
TN	YES	10	CHAR[10]

Column Name	Indexed?	Output Width	Data Type
LRN	NO	10	CHAR[10]
NEW_CURRENT_SP	NO	10	CHAR[4]
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 36: NPB Table Column Names Used in WHERE Expressions

Column Name	Indexed?	Output Width	Data Type
BLOCK_ID	YES	10	SHORT
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 37: DGTT Table Column Names Used in WHERE Expressions

Column Name	Indexed?	Output Width	Data Type
GTT_GROUP	NO	40	VARCHAR[40]
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

Column Name	Indexed?	Output Width	Data Type
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 38: 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
LIDB_RGTA	NO	4	BYTE
ISVM_TT	NO	4	BYTE
ISVM_DPC	NO	11	CHAR[11]

Column Name	Indexed?	Output Width	Data Type
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 39: 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

Column Name	Indexed?	Output Width	Data Type
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 40: Query Performance Examples provides some example performance times, assuming an SV table that contains 1,000,005 records.

Table 40: 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

Query	Search Using Index?	Number of Records Searched	Number of Records Matched	Time to Complete Query
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
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
```

Chapter 6

LSMS Logs and Measurements

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- *Removing Accumulated Logs.....196*
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- *Security Logs.....201*
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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 9: Logs GUI Access by Permission Group* and *Table 10: Popup Menus GUI Access by Permission Group*.

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.

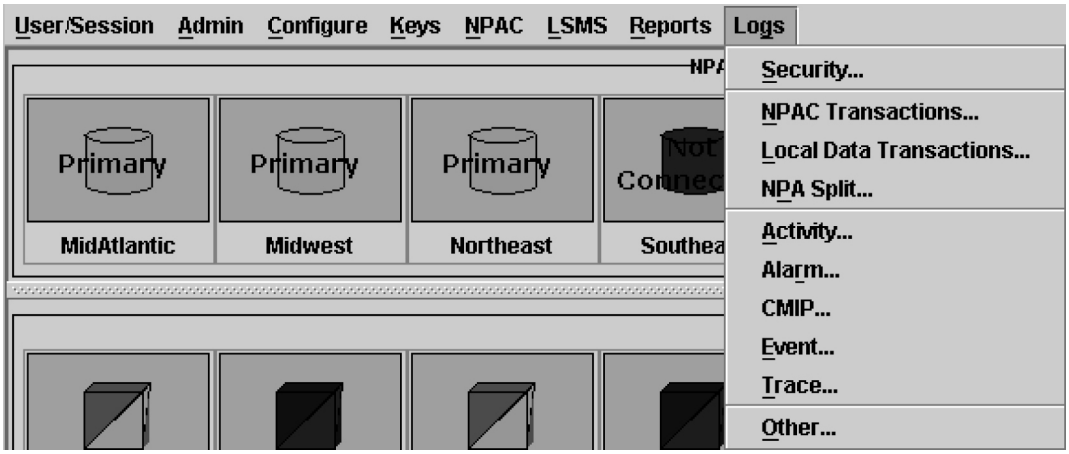

Figure 94: Logs Pull-down Menu

2. When the **Open** window appears, select the file you want to view and then click **Open** to view the log file.

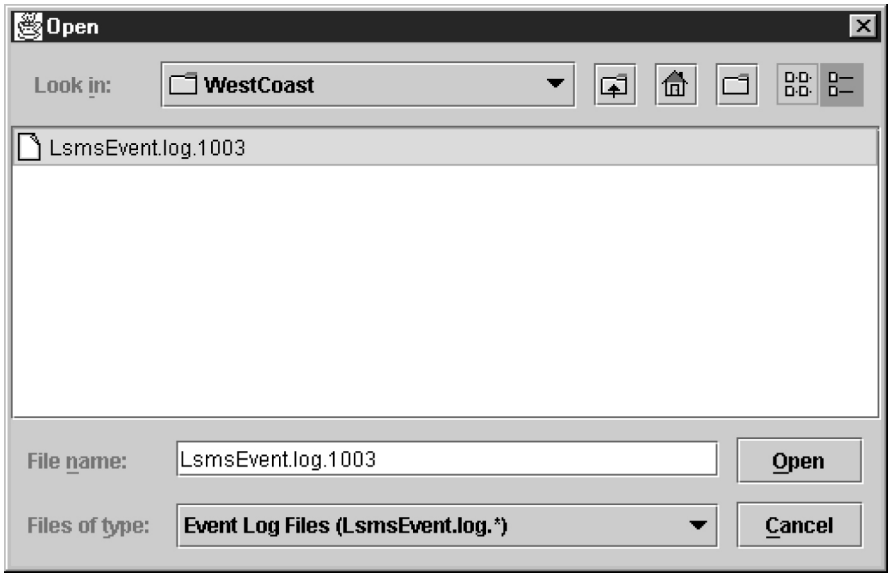

Figure 95: Open Window

Log File Names and Locations

This section describes how log files are named and where they are located.

Log Naming Conventions

Table 41: Log File Information 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 41: 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

Log Type	File Name	Accessible From the GUI?
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.

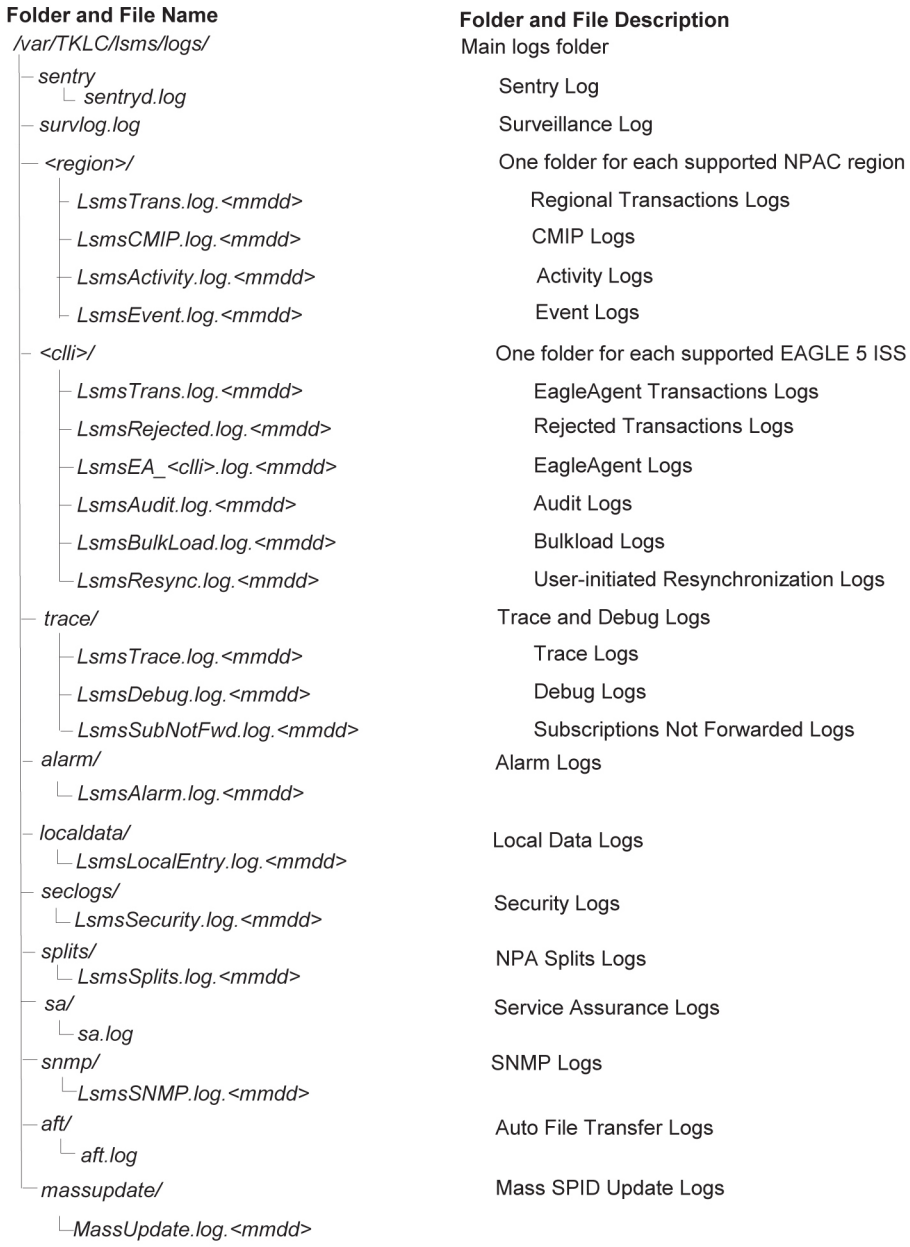

Figure 96: LSMS Application Log File Locations

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:

   ```
   LsmsType.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** > **Print**.

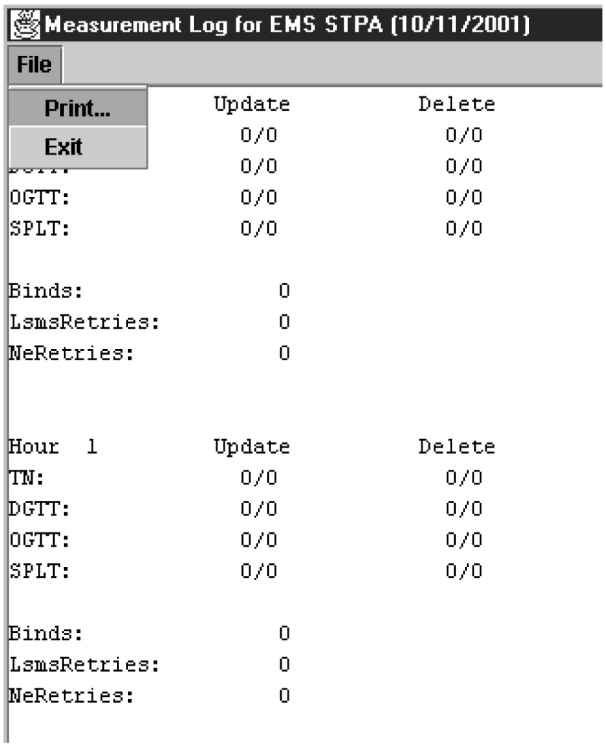

Figure 97: Printing Measurement Logs Using the File Pull-down Menu

The **Print** window appears.

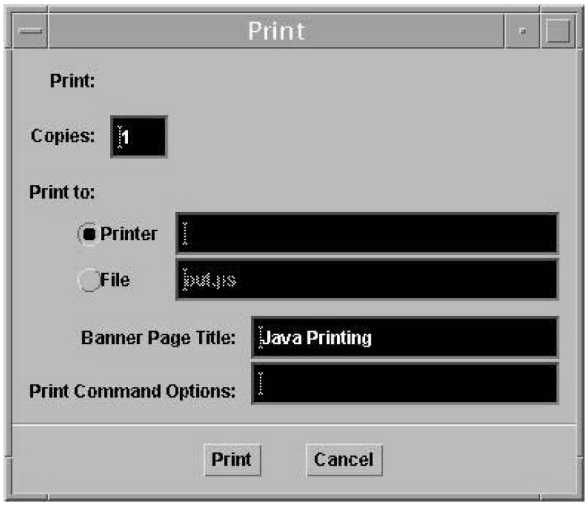

Figure 98: Linux Print Window Example

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** > **Print**.

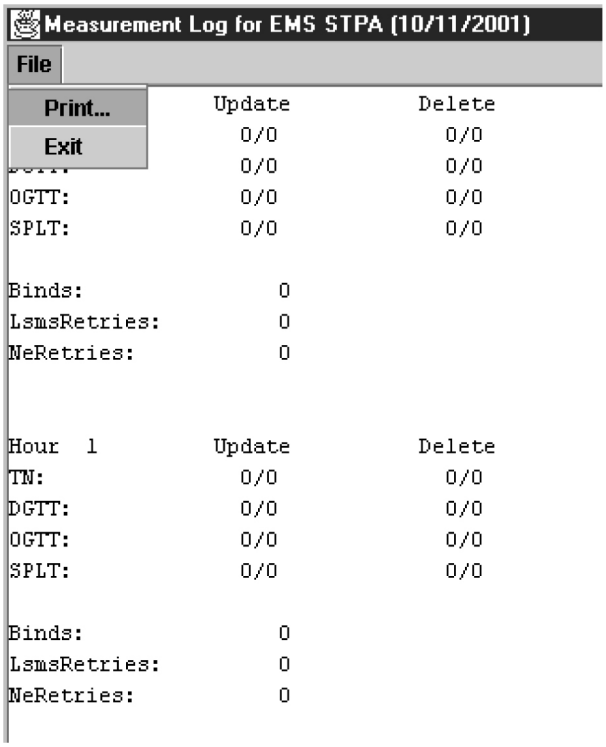

Figure 99: Printing Measurement Logs Using the File Pull-down Menu

The **Print** window displays.

2. Select the printer you want to use and print the measurement log.

Exiting Measurement Log Windows

To exit the Measurement Log output window, select **File** > **Exit**

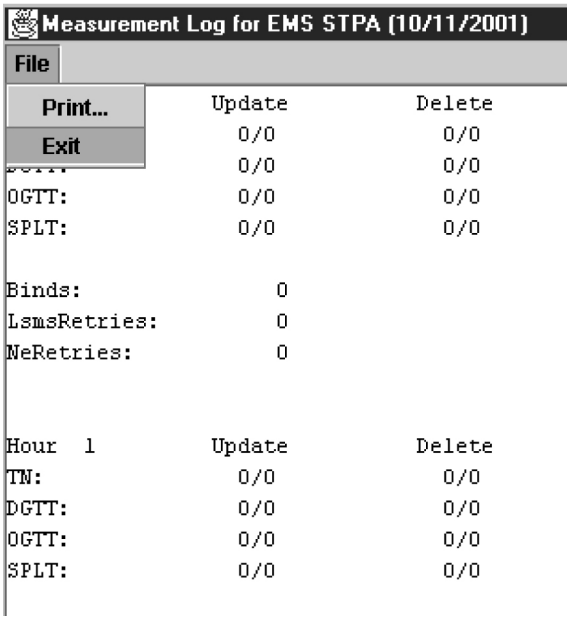

Figure 100: Exiting Measurement Logs Using the File Pull-down Menu

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** > **Security**.

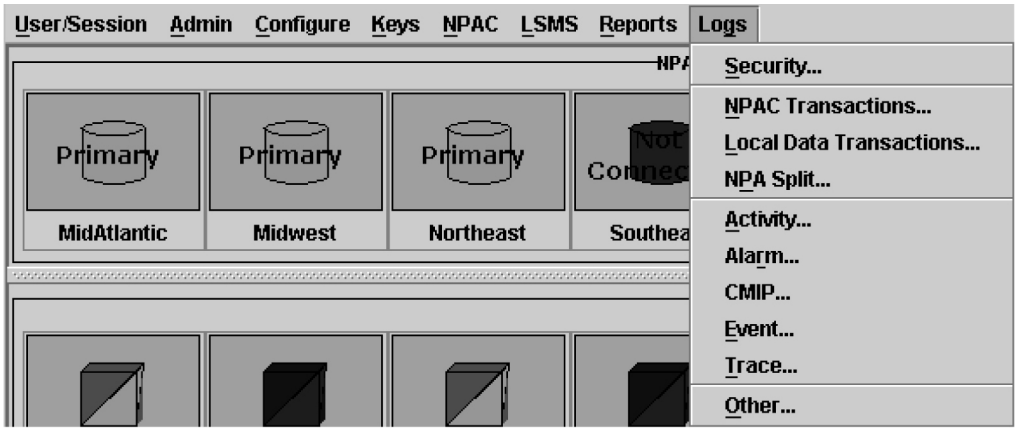

Figure 101: Logs Pull-down Menu

The security log **Open** window appears.

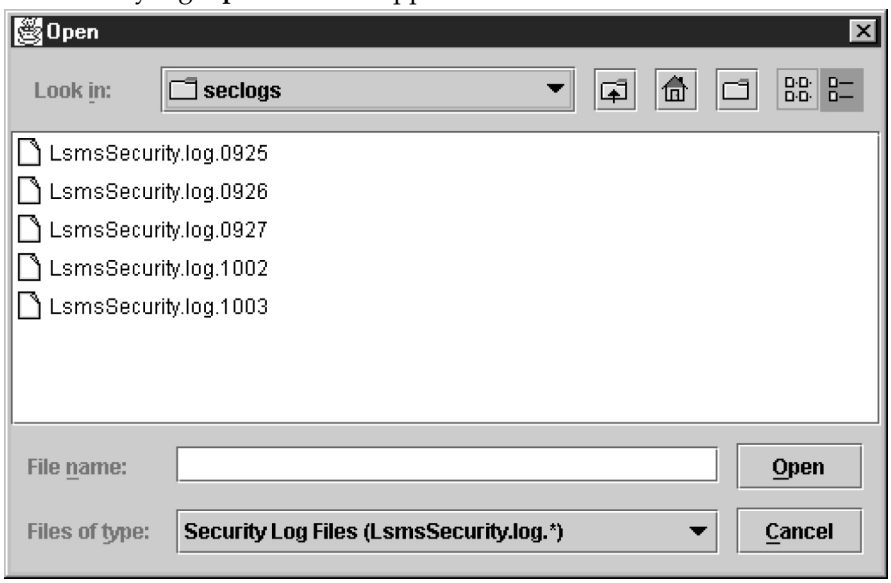

Figure 102: Security Log Open Window

2. Select the log you want to view and click **Open**.
   The security log appears.

```
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
```

Figure 103: Example Security Log

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 42: NPAC Transactions Log Format Symbols (for SVs) explains each field used in the NPAC transactions log for SVs, and also provides the possible values for each variable. *Table 43: NPAC Transactions Log Format Symbols (for NPBs)* 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 42: 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

Field	Content	Description
		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
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

Field	Content	Description
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 104: Example NPAC Transactions Log (SVs) shows a portion of an example Transactions Log for SVs.

NE|20030707001026|subVersn|D|16041597|2032741060|2035540011|6214||20021120211442|1|0

Figure 104: Example NPAC Transactions Log (SVs)

Table 43: 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
8	Block Holder	4 characters: Example: TKLC

Field	Content	Description
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 105: Example NPAC Transactions Log (NPBs) shows a portion of an example Transactions Log for NPBs.

NE|20030707000007|nmPoolBlk|C|6496|5085585***|5083609729|6664|20030707040100|T|0

Figure 105: Example NPAC Transactions Log (NPBs)

Local Data Transactions Logs

Local data transactions logs provide information about locally provisioned data. *Figure 106: Example Local Data Transactions Log* shows an example of a 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
```

Figure 106: Example Local Data Transactions Log

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:

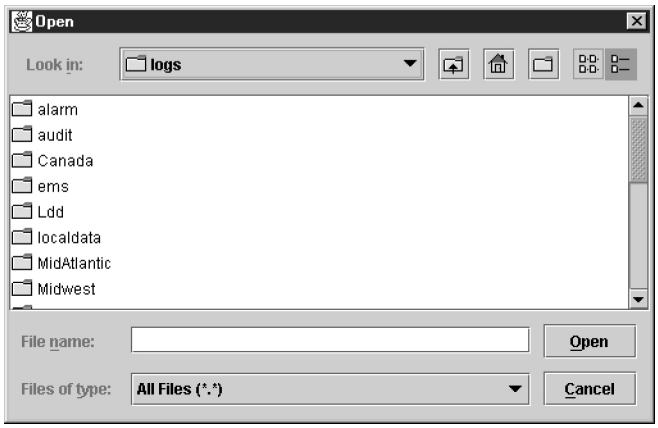

Figure 107: Browsing for Audit Log Files

- Select **Logs** > **Other**... from the main menu of the LSMS Console window.
- Click on the LSMS Console window's EMS Status Icon that corresponds to the network element being audited so that the icon is highlighted. Right-click and select **Logs** > **LNP Database Synchronization** > **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 108: Example of an Audit Log File for a Completed Audit shows an example of an audit log file that contains two separate audits and reconciles performed on the same day.

```
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
```

Figure 108: Example of an Audit Log File for a Completed Audit

Audit Log File Example for a Partially Completed Audit

Figure 109: Example of Audit Log File for Partially Completed Audit shows an example of an audit log file for an Object Range Audit that was interrupted.

```
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
```

Figure 109: Example of Audit Log File for Partially Completed Audit

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 109: Example of Audit Log File for Partially Completed Audit* 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 110: Audit Log File Example for Data Discrepancies* shows an example of an audit section of an log file that contains 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
```

Figure 110: Audit Log File Example for Data Discrepancies

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.

```
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
```

Figure 111: Example LSMS Split Log

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.

```
CREATE|OK|2000-01-15 12:34:56
910|919|555|20000115000000|20000715000100
```

Figure 112: Sample Create 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 113: Sample Activation Entry in a NPA Split Log File

```
DELETE|OK|2000-01-15 12:34:56
910|919|555|20000115000000|20000715000000
```

Figure 114: Sample Delete Entry in a NPA Split Log File

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 115: Example (Partial) Activity Log* for an example of a 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
```

Figure 115: Example (Partial) Activity Log

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.

```
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.
```

Figure 116: Example Alarm Log

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 117: Example CMIP Log* for an example of a 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....
```

Figure 117: Example CMIP Log

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 44: NPAC Event Log Fields and Field Descriptions* 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 (||).

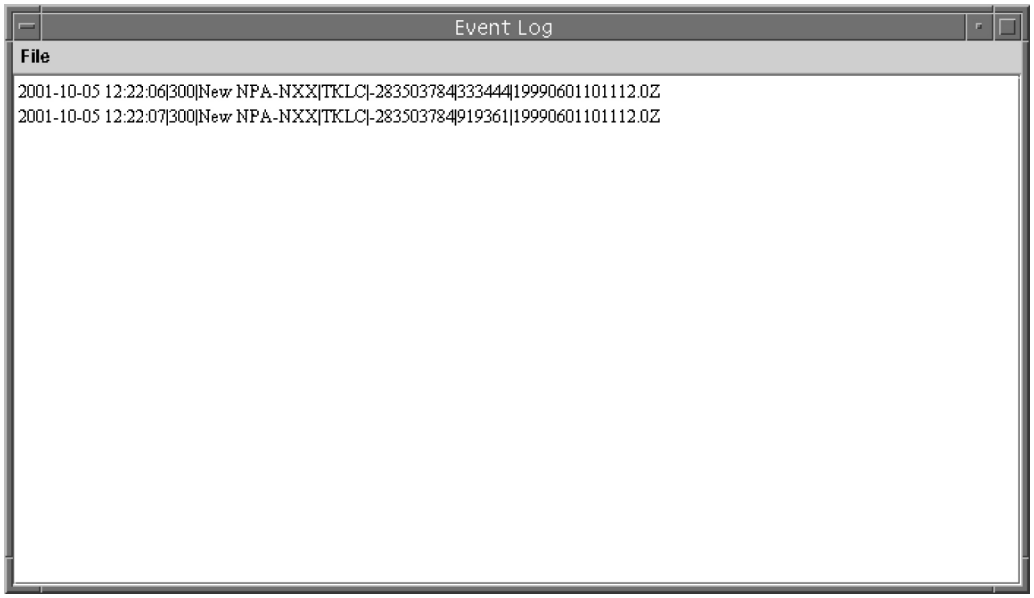

Figure 118: Example Event Log

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 44: NPAC Event Log Fields and Field Descriptions* 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 *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 *Table 44: NPAC Event Log Fields and Field Descriptions* 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 *Local Time Calculation and World Time Zone Data*.

NPAC Event Log Fields and Field Descriptions

Table 44: 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 44: 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.

Field	Field Name	Field Description
		• **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.
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 119: Example Trace Log*, contains a timestamp and debug information.

```
 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
```

Figure 119: Example Trace Log

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 120: Example eagleagent Transactions Log shows an example of an entry in the 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))
```

Figure 120: Example `eagleagent` Transactions Log

Transactions Log Fields

Table 45: eagleagent Transactions Log Fields, Field Descriptions, and Sample/Restriction Data shows describes the fields in entries in the eagleagent Transactions log.

Table 45: `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 `(`
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,`

Field Number	Field	Description	Sample/Restriction Data
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=(`

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)`

Field Number	Field	Description	Sample/Restriction Data
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 46: Format of Pipe-Delimited Record Data in Transactions Log Entry* and *Table 47: Definitions of Fields for Pipe Delimited Records* 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 45: eagleagent Transactions Log Fields, Field Descriptions, and Sample/Restriction Data*, 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 46: Format of Pipe-Delimited Record Data in Transactions Log Entry* shows the format for each record type and command type and *Table 47: Definitions of Fields for Pipe Delimited Records* describes each of the fields used in these formats.

Table 46: 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 47: 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)

Name	Description	Restrictions/Comments
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)
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 121: Example eagleagent Rejected Transactions Log Entry* shows an example of one entry in a Rejected Transactions Log.

```
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))
```

Figure 121: Example `eagleagent` Rejected Transactions Log Entry

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 45: eagleagent Transactions Log Fields, Field Descriptions, and Sample/Restriction Data*, *Table 46: Format of Pipe-Delimited Record Data in Transactions Log Entry* , and *Table 47: Definitions of Fields for Pipe Delimited Records*. *Table 48: Rejected Transactions Log* shows the format of fields 19 through 22 in the Rejected Transactions Log.

Table 48: 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 122: EMS Status Icon Popup Menu*.

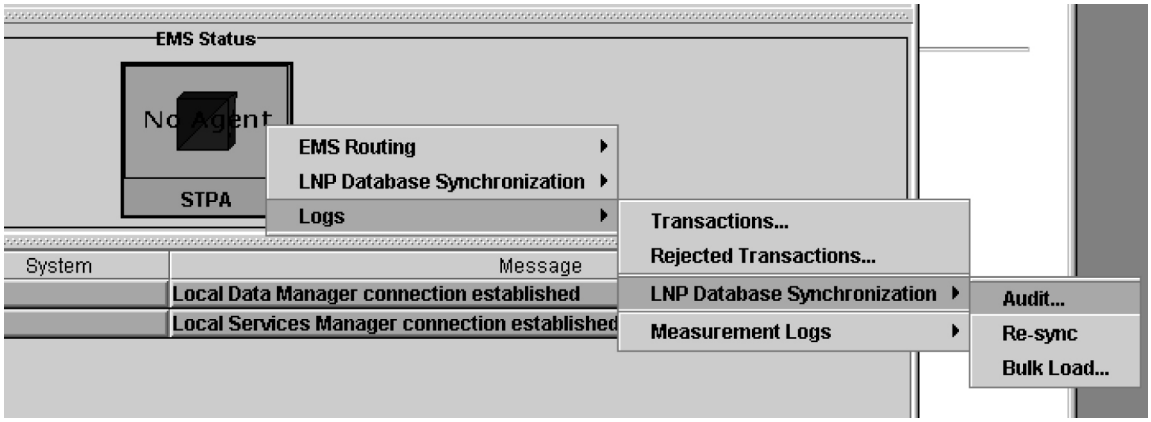

Figure 122: EMS Status Icon Popup Menu

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 123: 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

Figure 123: Example Measurements Log File

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 49: Notification ID 1 Field Values*.

Table 49: 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 50: Notification ID 8 Field Values*.

Table 50: 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
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

Appendix A

Local Time Calculation and World Time Zone Data

Topics:

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- *24-Hour Clock Conversion.....235*
- *Calculating Local Time.....236*
- *World Time Zones and Representative Locations.....237*

This appendix 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).

Introduction

Universal Time is the international time standard and is based at the prime meridian (0 degrees longitude). Zero (0) hours Universal Time is midnight in Greenwich, England, which lies on the zero longitudinal meridian.

UTC (Universal Time, Coordinated), UCT (Universal Coordinated Time), GMT (Greenwich Mean Time), and Z (Zulu) all refer to Universal Time.

This appendix uses the GMT designation.

24-Hour Clock Conversion

Universal time uses a 24-hour clock, as shown in *Table 51: Conversion from 24-Hour Clock to 12-Hour Clock*. For example, 2:00 pm on the 12-hour clock is expressed as 14:00 GMT (fourteen hours, zero minutes) on the 24-hour clock.

Table 51: Conversion from 24-Hour Clock to 12-Hour Clock

24-Hour Clock	12-Hour Clock
00:00	12:00 Midnight
01:00	1:00 am
02:00	2:00 am
03:00	3:00 am
04:00	4:00 am
05:00	5:00 am
06:00	6:00 am
07:00	7:00 am
08:00	8:00 am
09:00	9:00 am
10:00	10:00 am
11:00	11:00 am
12:00	12:00 noon
13:00	1:00 pm
14:00	2:00 pm

24-Hour Clock	12-Hour Clock
15:00	3:00 pm
16:00	4:00 pm
17:00	5:00 pm
18:00	6:00 pm
19:00	7:00 pm
20:00	8:00 pm
21:00	9:00 pm
22:00	10:00 pm
23:00	11:00 pm

Calculating Local Time

Table 52: Calculating Local Time in the U.S. shows the number of hours to subtract from GMT to calculate local time in the 48 contiguous United States (exceptions, such as Phoenix, Arizona which does not participate in daylight savings time, are not included in this table). If your result is a number less than zero, add 24 hours and reduce the date by one. The result of your calculation is your local time on a 24-hour clock.

For example, on the west coast of the United States, subtract 8 hours (7 hours during daylight savings time) from Universal Time to calculate local time. When it is 01:00 UTC, it is 5:00 pm in Seattle (PST).

Table 52: Calculating Local Time in the U.S.

Time Zone	Standard Time	Daylight Savings Time
Pacific	GMT - 8 hours	GMT - 7 hours
Mountain	GMT - 7 hours	GMT - 6 hours
Central	GMT - 6 hours	GMT - 5 hours
Eastern	GMT - 5 hours	GMT - 4 hours

World Time Zones and Representative Locations

*Table 53: World Time Zones and Representative Locations*shows the breakdown of the world time zones expressed in hours (plus or minus) from Greenwich Mean Time (GMT). The table also lists representative locations within each time zone.

Table 53: World Time Zones and Representative Locations

+ or - Greenwich Mean Time (GMT)	Representative City
GMT	London (United Kingdom)
GMT +1	Amsterdam (Netherlands)
GMT +2	Helsinki (Finland)
GMT +3	Moscow (Russian Fed.)
GMT +3.5	Tehran (Iran)
GMT +4	Abu Dhabi (Un. Arab Emira.)
GMT +4.5	Kabul (Afghanistan)
GMT +5	Islamabad (Pakistan)
GMT +5.5	New Delhi (India)
GMT +5.45	Katmandu (Nepal)
GMT +6	Dhaka (Bangladesh)
GMT +6.5	Rangoon (Burma)
GMT +7	Bangkok (Thailand)
GMT +8	Peking (China)
GMT +9	Tokyo (Japan)
GMT +9.5	Adelaide (South Australia)
GMT +10	Sydney (New South Wales)
GMT +11	Noumea (New Caledonia)
GMT +12	Wellington (New Zealand)
GMT -11	Pago Pago (American Samoa)
GMT -10	Honolulu (Hawaii)
GMT -9	Juneau (Alaska)

+ or - Greenwich Mean Time (GMT)	Representative City
GMT -8	Sacramento (California)
GMT -7	Phoenix (Arizona)
GMT -6	Montgomery (Alabama)
GMT -5	Washington, DC (USA)
GMT -4	Santiago (Chile)
GMT -3.5	St. John’s (Newfoundland)
GMT -3	Buenos Aires (Argentina)
GMT -2	Godthab (Greenland)
GMT -1	Azores Islands

Glossary

A

AIN	Advanced Intelligent Network A dynamic database used in Signaling System 7. It supports advanced features by dynamically processing the call based upon trigger points throughout the call handling process and feature components defined for the originating or terminating number.
AM	application manager A server within a network that is responsible for establishing and managing subscriber sessions associated with a specific application.
AND	AIN Number of Digits (in GTT address for AIN query)
ANSI	American National Standards Institute An organization that administers and coordinates the U.S. voluntary standardization and conformity assessment system. ANSI develops and publishes standards. ANSI is a non-commercial, non-government organization which is funded by more than 1000 corporations, professional bodies, and enterprises.
AOPS	Area of Portability Service

A

ASCII	American Standard Code for Information Interchange
Association	An association refers to an SCTP association. The association provides the transport for protocol data units and adaptation layer peer messages.

B

BDD	Bulk Data Download

C

CA	Canada (NPAC Region) Conditioning Action NPP CAs indicate what digit conditioning actions to execute when processing a digit string. Certificate Authority: An entity that issues digital certificates
CLASS	Custom Local Area Signaling Service Custom Local Area Subscriber Services
CLLI	Common Language Location Identifier The CLLI uniquely identifies the STP in terms of its physical location. It is usually comprised of a combination of identifiers for the STP's city (or locality), state (or province), building, and traffic unit identity. The format of the CLLI is: The first four characters identify the city, town, or locality. The first character of the CLLI must be an alphabetical character.

C

	The fifth and sixth characters identify state or province. The seventh and eighth characters identify the building. The last three characters identify the traffic unit.
CMIP	Common Management Information Protocol
CNAM	Calling Name Delivery An IN (Intelligent Network) service that displays the caller's name on the calling party's phone. This is similar to caller ID except that the calling party's name is displayed along with the calling number or instead of the calling number.

D

Database	All data that can be administered by the user, including cards, destination point codes, gateway screening tables, global title translation tables, links, LNP services, LNP service providers, location routing numbers, routes, shelves, subsystem applications, and 10 digit telephone numbers.
DC	Direct Current Data Collection
DD	Detailed Design
DPC	Destination Point Code - DPC refers to the scheme in SS7 signaling to identify the receiving signaling point. In the SS7 network,

D

	the point codes are numeric addresses which uniquely identify each signaling point. This point code can be adjacent to the EAGLE, but does not have to be.

E

EBDA	Enhanced Bulk Download and Audit
EDR	Efficient Data Representation Enhanced Data Representation
ELAP	EAGLE Local Number Portability Application Processor The EAGLE LNP Application Processor (ELAP) platform provides capacity and performance required to support the ported number database.
EMS	Element Management System The EMS feature consolidates real-time element management at a single point in the signaling network to reduce ongoing operational expenses and network downtime and provide a higher quality of customer service.

F

FTP	File Transfer Protocol A client-server protocol that allows a user on one computer to transfer files to and from another computer over a TCP/IP network.
	Feature Test Plan

G

G

GMT	Greenwich Mean Time
GT	Global Title Routing Indicator
GTT	Global Title Translation A feature of the signaling connection control part (SCCP) of the SS7 protocol that the EAGLE uses to determine which service database to send the query message when an MSU enters the EAGLE and more information is needed to route the MSU. These service databases also verify calling card numbers and credit card numbers. The service databases are identified in the SS7 network by a point code and a subsystem number.
GUI	Graphical User Interface The term given to that set of items and facilities which provide the user with a graphic means for manipulating screen data rather than being limited to character based commands.

H

HSOP	High Speed Operation Protocol

I

ID	Identity, identifier
IN	Intelligent Network A network design that provides an open platform for developing, providing and managing services.
IP	Intelligent Peripheral

I

	Internet Protocol - IP specifies the format of packets, also called datagrams, and the addressing scheme. The network layer for the TCP/IP protocol suite widely used on Ethernet networks, defined in STD 5, RFC 791. IP is a connectionless, best-effort packet switching protocol. It provides packet routing, fragmentation and re-assembly through the data link layer.
ISVM	Inter-switch Voice Messaging

L

LIDB	Line Information Database
LNP	Local Number Portability The ability of subscribers to switch local or wireless carriers and still retain the same phone number.
LRN	Location Routing Number A 10-digit number in a database called a Service Control Point (SCP) that identifies a switching port for a local telephone exchange. LRN is a technique for providing Local Number Portability.
LSMS	Local Service Management System An interface between the Number Portability Administration Center (NPAC) and the LNP service databases. The LSMS receives LNP data from the NPAC and downloads that data to the service databases. LNP data can be entered into the LSMS database. The data can then be downloaded to the

L

	LNP service databases and to the NPAC.
LSOA	Local Service Order Administration

M

MA	Mated Application Management Agent
MB	Megabyte — A unit of computer information storage capacity equal to 1,048, 576 bytes.
MPS	Multi-Purpose Server The Multi-Purpose Server provides database/reload functionality and a variety of high capacity/high speed offboard database functions for applications. The MPS resides in the General Purpose Frame. Messages Per Second A measure of a message processor's performance capacity. A message is any Diameter message (Request or Answer) which is received and processed by a message processor.

N

NANC	North American Numbering Council
NE	Network Element An independent and identifiable piece of equipment closely associated with at least one processor, and within a single location.

N

	In a 2-Tiered DSR OAM system, this includes the NOAM and all MPs underneath it. In a 3-Tiered DSR OAM system, this includes the NOAM, the SOAM, and all MPs associated with the SOAM. Network Entity
NGT	New Global Title
NO	Network OAM&P A server that manages a collection of SOs and their corresponding MPs. NO servers are deployed in active/standby pairs.
NPA	Number Plan Area The North American "Area Codes." (3 digits: 2- to-9, 0-or 1, 0-to-9. Middle digit to expand soon).
NPAC	Number Portability Administration Center This center administers the Service Management System (SMS) regional database, managed by an independent third party, to store all Local Number Portability data, including the status of a ported telephone number, the current service provider and the owner of the telephone number.
NPA-NXX	Numbering Plan Area - Numbering Plan Exchange A six-digit code used in the North American numbering plan. The area code and office prefix of a

N

telephone number. For example, with the telephone number 919-555-1212, the digits 919 are the area code (NPA) and the digits 555 are the office prefix (NXX).

NPB — Numbering Pool Block

NXX — Central Office Exchange Code

P

PC — Point Code

The identifier of a signaling point or service control point in a network. The format of the point code can be one of the following types:

- ANSI point codes in the format network indicator-network cluster-network cluster member (**ni-nc-ncm**).
- Non-ANSI domestic point codes in the format network indicator-network cluster-network cluster member (**ni-nc-ncm**).
- Cluster point codes in the format network indicator-network cluster-* or network indicator-*-*.
- ITU international point codes in the format **zone-area-id**.
- ITU national point codes in the format of a 5-digit number (**nnnnn**), or 2, 3, or 4 numbers (members) separated by dashes (**m1-m2-m3-m4**) as defined by the Flexible Point Code system option. A group code is required (**m1-m2-m3-m4-gc**)

P

	when the ITUDUPPC feature is turned on. • 24-bit ITU national point codes in the format main signaling area-subsignaling area-service point (**msa-ssa-sp**).
PDP	Permissive Dialing Period Power Distribution Panel Monitors primary and secondary power sources on a continuous basis. Packet Data Protocol
PM	Processing Module
PST	Primary State A field in the `rept-stat` command outputs showing the primary state of the specified entity.

R

RI	Routing Indicator
RMTP	Reliable Multicast Transport Protocol

S

SE	South East
SPID	Service Provider ID
SS7	Signaling System #7

S

	A communications protocol that allows signaling points in a network to send messages to each other so that voice and data connections can be set up between these signaling points. These messages are sent over its own network and not over the revenue producing voice and data paths. The EAGLE is an STP, which is a device that routes these messages through the network.
SSN	SS7 Subsystem Number The subsystem number of a given point code. The subsystem number identifies the SCP application that should receive the message, or the subsystem number of the destination point code to be assigned to the LNP subsystem of the EAGLE. Subsystem Number A value of the routing indicator portion of the global title translation data commands indicating that no further global title translation is required for the specified entry. Subsystem Number Used to update the CdPA.
STP	Signal Transfer Point The STP is a special high-speed switch for signaling messages in SS7 networks. The STP routes core INAP communication between the Service Switching Point (SSP) and the Service Control Point (SCP) over the network. Spanning Tree Protocol

S

Subsystem Number	See SSN.
SV	Subscription Version
SW	Software Switch

T

TKLC	Tekelec
TN	Telephone Number A 10 digit ported telephone number.
Translation Type	See TT.
TT	Translation Type Resides in the Called Party Address (CdPA) field of the MSU and determines which service database is to receive query messages. The translation type indicates which Global Title Translation table determines the routing to a particular service database.

U

UNKN	FNAI class Unknown
UTC	Coordinated Universal Time

V

VIP	Virtual IP Address Virtual IP is a layer-3 concept employed to provide HA at a host level. A VIP enables two or more

V

	IP hosts to operate in an active/standby HA manner. From the perspective of the IP network, these IP hosts appear as a single host.

W

WC	West Coast
WE	Western
WSMSC	Wireless Short Message Service Center

X

XLAT	Translate Indicator