NPAC SMS

XML Interface Specification

NANC Version 1.6

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#

# Introduction

1

## Document Overview

The NPAC SMS XML Interface Specification contains the information model for the Number Portability Administration Center and Service Management System (NPAC SMS) mechanized XML interfaces. Both Service Order Activation (SOA) and Local Service Management System (LSMS or Local SMS) interfaces to the NPAC SMS are described in this document.

## How to Use This Document

The NPAC SMSXML Interface Specification is intended to document the specific details of the NPAC XML Interface. To understand the NPAC and its interfaces this document must be used in conjunction with the NPAC Functional Requirements Specification (FRS) and the NPAC SMS Interoperable Interface Specification (IIS). For example, specific requirements for the XML interface are found in the FRS and the message flow diagrams for the both the CMIP and XML interfaces are found in appendix B of the IIS.

This document contains the following sections:

Section 1 ***Introduction*** ‑‑ This section describes the conventions and organization of this document. It also lists related documentation.

Section 2 ***Interface Overview*** ‑‑ This section contains an overview of protocol requirements and a brief description of the functionality provided in each interface.

Section 3 ***HTTPS Connections*** ‑‑ This section contains information on establishing and securing connections over the XML interface to the NPAC.

Section 4 ***XMLSchemaDefinition*** ‑‑ This section contains the XML Schema definition supporting the SOA to NPAC SMS interface and the NPAC SMS to Local SMS interface

Section 5 ***XML Messages*** ‑‑ This section contains a detail description of each XML message, as well as the attributes and behavior associated with the message.

## Document Numbering Strategy

The documentation number of the XIS document will be Version X.Y.Z as follows:

X – will only be incremented when a new major release of the NPAC SMS system is authorized. It will contain only the Change Orders that have been authorized for inclusion in this new major release.

Y – will only be incremented when a new sub-release of an existing release X is authorized. It will contain only the Change Orders that have been authorized for inclusion in this new sub-release.

Z – will be incremented when documentation only clarifications and/or backward compatibility issues or other deficiency corrections are made in the document. This number will be reset to 0 when Y is incremented.

1. will include a "lowercase letter" following the Z designation. This "lowercase letter" will essentially serve as a version indicator for the release of the documentation, such that the X.Y.Za will be a unique identifier. It will be used for both drafts and final versions. The “lower case letter” shall be reset to ‘a’ when Z is incremented

For example, the first release of the XIS will be numbered 1.0.0. If documentation only clarifications are introduced in the next release of the XIS document it will be numbered 1.0.1. If requirements are added that require NPAC SMS software changes then the next release of the XIS document will be numbered 1.1.0.

This number scheme is intended to make the mapping between NPAC SMS and the FRS, IIS and XIS documentation consistent.

## Document Version History

Release 1.0.0 - Initial release of the XIS.

Release 1.1.0 – Release on 6/11/2013 – Contains updates from LNPAWG review.

Release 1.2.0 – Release on 6/28/2013 – Contains updates from LNPAWG review.

Release 1.3.0 – Release on 8/26/2013 – Contains updates from LNPAWG review.

Release 1.4.0 – Release on 10/18/2013 – Contains updates from LNPAWG review.

Release 1.5.0 – Release on 12/13/2013 – Contains updates from LNPAWG review.

Release 1.5.1 – Release on 02/14/2014 – Contains updates from LNPAWG review.

## References

### Standards

RFC2616 - Hypertext Transfer Protocol -- HTTP/1.1

RFC5246 – The Transport Layer Security (TLS) Protocol, Version 1.2

### Related Publications

*Illinois Commerce Commission Number Portability Administration Center and Service Management System Request for Proposal (ICC NPAC/SMS RFP),* February 6, 1996.

*Lockheed Martin Team Response to the Illinois Commerce Commission Number Portability Administration Center and Management System Request for Proposal,* March 18, 1996.

North American Number Council (NANC) Functional Requirements Specification, Number Portability Administration Center (NPAC), Service Management System (SMS).

North American Number Council (NANC) NPAC SMS Interoperable Interface Specification (IIS)

## Definitions

|  |  |
| --- | --- |
| Central Time (standard/daylight) | This is the time in the central time zone, which includes daylight savings time. It changes twice a year based on standard time and daylight savings time. The NPAC SMS runs on hardware that uses this time. |
| Activity Timestamp | A timestamp the NPAC maintains on each object in the database to retain the “Origination Timestamp” for the last update made to a record. The local system should also maintain this timestamp to capture the “Origination Timestamp” for the last update made for data received from the NPAC. This timestamp should contain milliseconds accuracy. |
| Departure Timestamp | A timestamp placed on the request just before it is sent. It should contain milliseconds accuracy. |
| Local Time | The time zone of the local user. Most time representations in the NPAC OP GUI are represented in the user’s local time zone based on the PC’s clock setting. The time zone label is included in time display in the GUI.EST for Eastern Time ZoneCST for Central Time ZoneMST for Mountain Time ZonePST for Pacific Time Zone |
| Origination Timestamp | A timestamp when a request or reply is created (as distinguished from delivery). For example, in the NPAC this would be when a notification or download is created. Each request or reply sent over the XML interface must have an Origination Timestamp regardless of the system that originates the message. This timestamp should contain milliseconds accuracy. |
|  |  |

## Abbreviations

|  |  |
| --- | --- |
| CA | Certificate Authority |
| CLASS | Custom Local Area Signaling Services |
| CNAM | Caller Id with Name |
| CRL | Certificate Revocation List |
| HTTP | Hypertext Transfer Protocol |
| HTTPS | Hypertext Transfer Protocol over SSL |
| ISO  | International Organization of Standardization |
| ISVM | Inter-Switch Voice Mail |
| L | Locality (certificate field) |
| LIDB | Line Information Database |
| LNP | Local Number Portability |
| LRN | Location Routing Number |
| LSMS | Local Service Management System |
| LSPP | Local Service Provider Portability |
| MD5 | Message Digest (Version 5) |
| NPAC SMS | Number Portability Administration Center and Service Management System |
| NPA | Numbering Plan Area |
| NXX | Exchange |
| OCN | Operating Company Number |
| OU | Organizational Unit (certificate field) |
| PEM | Privacy-enhanced Electronic Mail |
| RSA | Encryption Scheme |
| SOA | Service Order Activation |
| SMS | Service Management System |
| SSL | Secure Sockets Layer |
| TLS | Transport Layer Security |
| TN | Telephone Number |
| URI | Uniform Resource Identifier |
| UTC | Universal Time Coordinated |
| WSMSC | Wireless Short Message Service Center |
| XML | Extensible Markup Language |

# Interface Overview

2

## Overview

This specification defines the XML interfaces between the NPAC SMS and the service providers’ Service Order Entry System (SOA) and Local SMS (LSMS). The XML interfaces, defined using the HTTPS protocol, are referred to as the SOA to NPAC SMS interface and the Local SMS to NPAC SMS interface. All messages sent over the XML interface are done using the HTTPS POST operation with state-less, session-less connections. The interface operates with synchronous acknowledgements and a bidirectional client-server model. Guaranteed sequencing of operations can only be obtained through the asynchronous reply, and NOT by the synchronous acknowledgement of the operation request.

The sections that follow provide an overview of protocol requirements and a description of the functionality provided in each interface. A complete description for the messages sent over the interfaces is provided in the *Section 5, XML Messages* and the message flow diagrams can be found in the IIS *Appendix B*, *Message Flow Diagrams*.

## XML Interface Architecture

The architecture of the NPAC XML interface is a client-server model where the system that originates a message (request or reply, explained below) always assumes the role of the client and the system that receives the message operates as a server. Anytime a system operates as a server it poses the networking challenge of clients requiring access through firewalls to communicate with the server. This challenge is solved in the NPAC XML interfaces by placing the requirement on the system acting as the server to open a firewall port for clients to access the server.

When a server receives a request from a client, it’s responsible for validating the message and providing the synchronous acknowledgement to the client indicating the request has been received. After acknowledging the request, the server processes the request and determines the result. To communicate the result to the originator, the server must switch roles and become a client connecting to the request originator’s server, sending the reply and accepting the synchronous acknowledgement for the reply.

Each request or reply sent in the XML interface will include an invoke ID attribute that’s used to associate a reply to the original request. Invoke IDs are unique unsigned integer numbers (between 1 and 4,294,967,295) that originate in a request and must not be reused by the sender until the receiving system provides an asynchronous reply. To avoid confusion when diagnosing an issue, it’s recommended that reuse of invoke IDs occur as infrequently as possible.

Each server (SOA, LSMS, and NPAC) participating in the NPAC XML interface must provide a URL that clients use to access that system. The URL includes an IP address (Or DNS resolvable hostname) and port that uniquely identifies the connection point. The server’s owner determines the IP address and port, and these values can change over time. Therefore, the client software must be able to configure these settings dynamically.

Figure 1 shows the message flow for a SOA system acting as a client sending a request to the NPAC acting as a server. In this example, the SOA sends a NewSpCreateRequest (HTTPS Request) to the NPAC to initiate a port. The NPAC receives the request, validates it and then sends the synchronous acknowledgement to the SOA.

**Request from SOA to NPAC**



Figure - Request from SOA Client to NPAC Server

Figure 2 shows the message flow for the NPAC acting as client sending a reply to the SOA acting as a server. In this example, the NPAC sends a NewSPCreateReply (HTTPS Request) to the SOA providing the result of the NewSPCreateRequest. The SOA receives the reply, validates it and then sends the synchronous acknowledgement to the NPAC.

**Reply from NPAC to SOA**



Figure - Reply from NPAC Client to SOA Server

## XML Interface Operations

The NPAC XML Interface uses an HTTPS/1.1 POST operation for origination of all messages and an HTTPS response for the synchronous acknowledgement. Each message contains an HTTPS header complying with Hypertext Transfer Protocol – HTTPS/1.1 - RFC2616 and an XML string in the body of the message. The XML string for both the request and the synchronous acknowledgement must successfully be parsed using the NPAC XML Schema described in *Section 4, XML Interface Schema*.

**HTTPS POST - Requests**

POST / HTTP/1.1

Content-Type: text/xml

Content-Length: <nnnn>

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<KeepAlive/>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

**HTTPS Response – Synchronous Acknowledgement**

Success Example:

HTTP/1.1 200 OK

Content-Type: text/xml

Content-Length: 121

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SyncAck xmlns="urn:lnp:npac:1.0"

xmlns:xsi="<http://www.w3.org/2001/XMLSchema-instance>">

 <sync\_ack\_status>

 <basic\_code>success</basic\_code>

 </sync\_ack\_status>

</SyncAck>

Failure Example:

HTTP/1.1 200 OK

Content-Type: text/xml

Content-Length: 121

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SyncAck xmlns="urn:lnp:npac:1.0"

xmlns:xsi="<http://www.w3.org/2001/XMLSchema-instance>">

 <sync\_ack\_status>

 <basic\_code>results\_too\_large</basic\_code>

 <status\_code>6101</status\_code>

 <status\_info>Payload size of 1000000 exceeds limit of 500000</status\_info>

 </sync\_ack\_status>

</SyncAck>

## HTTPS Persistent Connections

The HTTPS protocol is relatively expensive in terms of connection establishment time. Incurring the overhead of connection establishment for each message will have a significant negative impact on the throughput of the interface.

To avoid this overhead for each message, HTTPS protocol has a feature called persistent connections. Without the use of persistent connections, the HTTPS connection is closed immediately following the transmission of the reply to the first request. When persistent connections are used, the connection remains open after the request or reply and synchronous acknowledgement have been exchanged. This way, additional messages can be exchanged without any connection setup overhead.

The persistent connection feature (also known as HTTP Keep-Alive) is controlled through directives in the http header. The directives can be used to indicate whether or not persistent connections are desired, how long the connection will be maintained during periods of silence, and how many requests can be processed before the connection is terminated.

For the NPAC XML interface, it is recommended that persistent connections are used, that the connection timeout value be set to 2 minutes, and that the maximum number of requests per persistent connection be unlimited.

Note that these settings apply to both the client and the server. Local systems should set these values accordingly. While the details of the HTTP protocol are beyond the scope of this document, it is expected that implementers will use toolkits to implement their connections, and those toolkits provide higher-level functions to control the persistent connections feature.

## Concurrent HTTPS Connections

The NPAC system will allow multiple concurrent incoming HTTPS (server) connections for any SOA or LSMS system, up to a tunable limit. Once that limit is reached, attempts at making another connection will result in a synchronous acknowledgement with a basic\_code of too\_many\_connections when the first request is sent on the connection. The NPAC system may make multiple concurrent outgoing HTTPS (client) connections to any one SOA or LSMS system, up to a tunable limit.

Idle connections in either direction may close based on the HTTP connection keep-alive timeout.

When using concurrent HTTPS connections, care must be taken to ensure message ordering is preserved across all the connections for the NPAC and each SOA and LSMS system. It is feasible that applying messages out of order can have an adverse impact on an LNP system. The mechanism that should be implemented on the NPAC, SOA, and LSMS systems to recognize out of order messages is a solution using origination timestamps to verify messages are being applied in the correct order.

Details about the timestamps used to validate message ordering:

* The ordering validation is done on these objects: SV, Pooled Block, NPA-NXX, NPA-NXX-X, LRN, and SPID).
* An “Origination Timestamp” is present in all messages.
* An “Activity Timestamp” is included in query replies and in the BDD for providers that support it.
* The xs:dateTime data type is used by both the "Origination Timestamp" and "Activity Timestamp" to allow inclusion of milliseconds. Anytime either timestamp is used in a message it must contain milliseconds.
* The NPAC will store an "Origination Timestamp" and an "Activity Timestamp" in the database for each object.
* To minimize contention for Subscription Version objects, each contains two "Origination Timestamps", one for the New Service Provider fields and one for the Old Service Provider fields.

See Figure 3 for an example message flow that results in a reject of an out of order message.



Figure 3 – Message Ordering Example

### Requests from the SOA/LSMS to the NPAC

Each request sent by a SOA or LSMS must have an “Origination Timestamp”. This timestamp indicates when the request was set into motion, not the time the request was sent to the NPAC. It should go back to the point where the originator can ensure data consistency for the request. In the case of a batched message, each request will have its own timestamp.

When the NPAC processes the request, it will compare the “Origination Timestamp” in the message with the “Origination Timestamp” stored in the associated database object (or logical division of an object) being updated. If the timestamp in the message is older than the timestamp in the object, then the request is rejected with the basic\_code in the asynchronous reply set to origination\_ts\_failure indicating it should be re-evaluated by the sender. Otherwise, the change will be applied, and “Origination Timestamp” associated with the database object will be updated to the timestamp in the requestors' message.

### Notifications and downloads sent from the NPAC to the SOA/LSMS

Each download and notification sent from the NPAC will contain an “Origination Timestamp”. As the NPAC sets the "Origination Timestamp" it will also populate the "Activity Timestamp" on the database object with the same value to indicate broadcast activity has occurred on the database object.

When the SOA/LSMS system receives a notification or download it should compare the “Origination Timestamp” in the message with the “Origination Timestamp” stored on the database object being updated. If the timestamp in the message is older than the timestamp in the object, the SOA/LSMS system should determine the correct message order before applying the update or fail the out-of-order notification or download with the basic\_code in the asynchronous reply set to origination\_ts\_failure and the update should not be applied to local database. The SOA/LSMS system may need to query the NPAC to get the current version of the object. If the timestamp in the message is newer they should apply the update and set the “Origination Timestamp” associated with the database object to the timestamp in the message

## Recovery of Failed or Missed Messages

In the event that a service provider SOA or LSMS system is unavailable to respond or fails a message sent from the NPAC, the NPAC will continuously retry sending the message until successful delivery is achieved. In order to preserve message ordering, other messages queued to the SOA or LSMS system will be held waiting for successful delivery of the failed message. There are four different types of failures that can be encountered when initiating a message from the NPAC to a provider’s SOA or LSMS:

1. The NPAC fails in attempting to establish a connection to the HTTPS server provided by the SOA or LSMS system, or fails to receive a synchronous acknowledgement before the connection times out.
2. The NPAC is able to establish a connection to the SOA or LSMS system HTTPS server, but a synchronous acknowledgement message is returned with a failure status.
3. The NPAC is able to establish a connection with the SOA or LSMS system HTTPS server and a successful synchronous acknowledgement is received, but no asynchronous reply is received before the established reply timeout period.
4. The NPAC is able to establish a connection with the SOA or LSMS system HTTPS server and a successful synchronous acknowledgement is received, however, the asynchronous reply to the message indicates an error.

In cases 1, 2, and 3 the default behavior of the NPAC system will be to continuously retry the message until successful. For case 4, subscription versions and pooled blocks will be automatically re-transmitted in the next housekeeping resend. For network data download and notifications, provider systems are responsible for either querying the NPAC or requesting a BDD.

It is also important to note that in cases 1 and 2, the NPAC will repeatedly resend the same message until it can be delivered and a successful synchronous acknowledgement message is returned. In cases where the local system can determine that the failure is due to a temporary condition that affects all messages (e.g. a database issue), the default behavior of allowing the NPAC to continuously retry the current message is desirable. In cases where the failure is message specific (e.g. a software error is preventing the parsing of that particular message), it may be desirable to respond with an access\_denied error to allow other messages to flow to the local system.

The NPAC will have the capability to turn off the continuous retries for any specific message or all queued messages for a SPID. When this is done, the SOA or LSMS system must take corrective action (a BDD, query, or audit) to recover what has been missed.

## XML Interface Failover Behavior

This section describes the expected failover behavior of the NPAC, SOA and LSMS systems when using the XML interface. Each system provides a designated primary and secondary URL for clients to connect to their server. Under normal conditions, the system serving the primary URL will be responding by accepting requests while the system serving the secondary URL (if running) will be responding by denying requests with an error code of try\_other\_host.

When the primary system needs to go down for only a short period of time (secondary will not take over), the primary will either not be responding (if down) or denying requests with an error code of try\_same\_host (if partially up). The secondary system will be responding by denying requests with error code of try\_other\_host.

When the primary system goes down (scheduled or unscheduled) and the secondary is re-synchronizing to become active, the primary will be denying requests with an error code of try\_other\_host. The secondary will be responding by denying requests with an error code of try\_same\_host. Once the secondary is done initializing, it will then start accepting requests.

### LNP Systems Failover Procedures

The following is an algorithm that can be used by the NPAC as well as service provider’s SOA and Local SMS client systems when trying to send a request to a LNP system providing an XML server:

try to send a request to the primary system URL if an error response was obtained check for failover error codes:

{

 switch (basic code)

 {

 case access\_denied

 find out what is causing the error and fix it

 retry the request to the primary system URL

 case try\_same\_host

 wait X seconds

 retry the request to the same system

 case try\_other\_host

 wait X seconds

 retry the request to the secondary system URL

 }

}

else

{

 # timeout - some type of network error has occurred

 # a number of different things can be done:

 #

 # wait X seconds

 # try primary system URL

 #

 # or

 #

 # find out what is causing the error and fix it

 # try the request on the primary system URL

 #

 # or

 #

 # wait X seconds

 # execute this algorithm again substituting

 # "secondary" for "primary"

}

## Out-Bound Flow Control

Out-Bound Flow Control is a mechanism used by the NPAC to ensure that it is not delivering messages to a local system faster than that local system can process the messages. Under normal conditions the NPAC SMS sends messages to the SOA/LSMS and the SOA/LSMS is able to keep up with the NPAC, and Flow Control is not encountered. However, under certain conditions (e.g. high volume or problems in the local system) that cause the SOA/LSMS to be unable to keep up with the messages sent from the NPAC SMS, Flow Control may be engaged.

For a SOA/LSMS that is currently in a normal state (not in Flow Control), the NPAC SMS monitors the number of outstanding messages (where the NPAC is awaiting an asynchronous reply) for that system. While the number of outstanding messages is less than or equal to the Flow Control Upper Threshold (tunable value), the NPAC will continue to send to the system. Once the number of outstanding messages is greater than the Flow Control Upper Threshold tunable, the NPAC engages Flow Control for the system, and no new messages are sent to the system.

Once a system enters Flow Control, it will remain in Flow Control until the system replies to enough of the outstanding messages that the total number of outstanding messages reaches the Flow Control Lower Threshold tunable.

When a SOA/LSMS is in a Flow Control state the NPAC will hold both outstanding messages and deferred messages (messages that have not been delivered because the system is in Flow Control). For all outstanding messages that were sent, NPAC response timers will apply and messages will be resent when they expire. For all messages NOT sent but held because the system is in Flow Control, the NPAC response timers will NOT be started.

Note that Flow Control only applies to new messages and does not apply to asynchronous reply messages. For example, a SOA system that is in Flow Control will still be able to send requests to the NPAC, and will still receive asynchronous replies from the NPAC, but it will not receive new message from the NPAC such as Notifications and downloads. Also, ProcessingError and application level KeepAlive messages are sent even when a system is in Flow Control.

Flow Control is implemented on the NPAC SMS side of the XML interface and it is optionally implemented on the SOA/LSMS. The implementation of Flow Control by the sending system is independent of any implementation of Flow Control by the receiving system and is applicable on a per system basis.

## Query Expression

To provide flexibility for specifying query expressions the NPAC XML Schema provides a query\_expression parameter defined as a text string. The following section defines the operations and the syntax of the expressions supported for the NPAC XML Interface. The following are general syntax rules for the query\_expression:

* All parameters and enumerations are expected to be in abbreviated 4 character mnemonics.
* The values for integers and enumerations should **NOT** be enclosed with any delimiter (single quote, double quote, or parentheses).
* The values for all string and dateTime parameters are expected to be enclosed in single quotes, double quotes aren’t supported.
* Parentheses should be used to specify operand priority.
* All date/time parameters should be in xs:dateTime format.
* Query expressions that cannot be processed will result in an asynchronous reply with a basic\_code of invalid\_data\_values, and if supported, a status\_code will be defined for this situation.
* Queries that would return too much data receive an asynchronous reply with a basic\_code of results\_too\_large. A new status\_code will be defined for this situation.
* Queries that would return no data receive an asynchronous reply with a basic\_code of not\_found. A new status\_code will be defined for this situation.
* All of the query expression string is case insensitive except the values for string parameters that are enclosed in single quotes.

### AuditQueryRequest

For the AuditQueryRequest operation from the SOA, the NPAC must support the following query expressions for Audit objects:

| **Operation** | **Direction** | **Operands** | **Parameters** |
| --- | --- | --- | --- |
| AuditQueryRequest | SOA to NPAC | <= <>=>=!=ANDORNOT | audit\_idaudit\_name |

Example:

 (audit\_name = 'Audit-1' OR audit\_name='Audit-2')

### LrnQueryRequest

For the LrnQueryRequest operation from the SOA or the LSMS, the NPAC must support the following query expressions for LRN objects:

| **Operation** | **Direction** | **Operands** | **Parameters** |
| --- | --- | --- | --- |
| LrnQueryRequest | SOA to NPACLSMS to NPAC | <= <>=>=!=ANDORNOT | sp\_idlrn\_idlrn\_valuelrn\_creation\_timestamp |

Example:

 (lrn\_creation\_timestamp>='2004-04-01T15:00:00' OR lrn\_value='1111110000')

### NpaNxxDxQueryRequest

For the NpaNxxDxQueryRequest operation from the SOA or the LSMS, the NPAC must support the following query expressions for NPA-NXX-X objects:

| **Operation** | **Direction** | **Operands** | **Parameters** |
| --- | --- | --- | --- |
| NpaNxxDxQueryRequest | SOA to NPACLSMS to NPAC | <= <>=>=!=ANDORNOT | sp\_idnpa\_nxx\_x\_idnpa\_nxx\_x\_valuenpa\_nxx\_x\_effective\_timestampnpa\_nxx\_x\_creation\_timestampnpa\_nxx\_x\_modified\_timestamp |

Example:

(npa\_nxx\_x\_value>='1111110' AND npa\_nxx\_x\_value>='1111119')

### NpaNxxQueryRequest

For the NpaNxxQueryRequest operation from the SOA or the LSMS, the NPAC must support the following query expressions for NPA-NXX objects:

| **Operation** | **Direction** | **Operands** | **Parameters** |
| --- | --- | --- | --- |
| NpaNxxQueryRequest | SOA to NPACLSMS to NPAC | <= <>=>=!=ANDORNOT | sp\_idnpa\_nxx\_idnpa\_nxx\_valuenpa\_nxx\_effective\_timestampnpa\_nxx\_creation\_timestampnpa\_nxx\_modified\_timestamp |

Example:

 (npa\_nxx\_value>='111000' AND npa\_nxx\_value<='111999')

### NpbQueryRequest

For the NpbQueryRequest operation from the SOA or the LSMS, the NPAC must support the following query expressions for Number Pool objects:

| **Operation** | **Direction** | **Operands** | **Parameters** |
| --- | --- | --- | --- |
| NpbQueryRequest | SOA to NPACLSMS to NPAC | <= <>=>=!=ANDORNOT | sp\_idblock\_idblock\_status 1block\_dash\_xsvb\_lrnsvb\_activation\_timestampsvb\_broadcast\_timestamp |

Note:

1. The query\_expression in an NpbQueryRequest is considered invalid if the only parameter it contains is block\_status.

Example:

 (block\_id=17 OR block\_id=7 OR block\_id=71)

### QueryLsmsNpbRequest

Th QueryLsmsNpbRequest is sent from the NPAC to the LSMS when the NPAC is performing an audit. In processing this message, LSMS must support the following query expressions for Number Pool Blocks:

| **Operation** | **Direction** | **Operands** | **Parameters** |
| --- | --- | --- | --- |
| QueryLsmsNpbRequest | NPAC to LSMS | <= >==AND | block\_dash\_xsvb\_activation\_timestamp |

Example:

(block\_dash\_x = '1111113' AND

(svb\_activation\_timestamp >= '2012-09-28T15:00:00Z' AND

 svb\_activation\_timestamp <= '2012-09-28T19:00:00Z'))"

### QueryLsmsSvRequest

The QueryLsmsSvRequest is sent from the NPAC to the LSMS when the NPAC is performing an audit. In processing this message, the LSMS must support the following query expression for SVs:

| **Operation** | **Direction** | **Operands** | **Parameters** |
| --- | --- | --- | --- |
| QueryLsmsSvRequest | NPAC to LSMS | <= >==AND | sv\_tnsvb\_activation\_timestamp |

Example:

((sv\_tn >= '1111119000' AND sv\_tn <= '1111119049') AND

 (svb\_activation\_timestamp >= '2012-09-28T15:00:00Z' AND

 svb\_activation\_timestamp <= '2012-09-28T19:00:00Z'))

### SpidQueryRequest

For the SpidQueryRequest operation from the SOA or the LSMS, the NPAC must support the following query expressions for NPAC Customer objects:

| **Operation** | **Direction** | **Operands** | **Parameters** |
| --- | --- | --- | --- |
| SpidQueryRequest | SOA to NPACLSMS to NPAC | <= <>=>=!=ANDORNOT | sp\_id |

Example:

 (sp\_id='1111' OR sp\_id='5555')

### SvQueryRequest

For the SvQueryRequest operation from the SOA or the LSMS, the NPAC must support the following query expressions for SV objects:

| **Operation** | **Direction** | **Operands** | **Parameters** |
| --- | --- | --- | --- |
| SvQueryRequest | SOA to NPACLSMS to NPAC | <= <>=>=!=ANDORNOT | sp\_id 2sv\_tn 3sv\_idsv\_status 1sv\_lnp\_type 1sv\_porting\_to\_original\_sp\_switch 1sv\_precancellation\_status 1svb\_lrnsv\_old\_spsv\_old\_sp\_due\_datesvb\_new\_sp 2svb\_new\_sp\_due\_datesvb\_creation\_timestampsvb\_activation\_timestampsvb\_broadcast\_timestamp |

Notes:

1. The query\_expression in an SvQueryRequest is considered invalid if the only parameter it contains is one of the following:
* sv\_status
* sv\_lnp\_type
* sv\_porting\_to\_original\_sp\_switch
* sv\_precancellation\_status
1. The “not” operator and "!=" operator may not be used in conjunction with the sv\_tn parameter. A query that includes such a term will return a basic\_code with a value of invalid\_data\_values.
2. The parameters sp\_id and svb\_new\_sp both map to the SPID of the new SP for an SV.

Example:

 (svb\_new\_sp='1111' AND (sv\_tn>='1111110000' AND sv\_tn<='1111119999'))

## NPAC Rules for Handling of Optional Data Fields

Information is provided on how the NPAC handles the XML string as well as how providers system should deal with Activate and Modify downloads that contain the XML structure svb\_optional\_data. Disconnects are not covered here because they don’t contain the XML svb\_optional\_data structure. If a SOA request contains multiple optional data fields with the same field name, the first of the duplicates will be used.

* Activate – The svb\_optional\_data structure contains only those fields supported by the provider and specified in the create request.
	+ Provider systems should store the fields specified in the message.
* Modify - The svb\_optional\_data structure contains only those fields supported by the provider and that were modified in the modify request.
	+ If the modify removed a value from an optional field, it is included in the svb\_optional\_data structure with an od\_value of nil.
	+ Provider systems should modify only the fields specified in the message. Any other optional fields should be retained.
* Downloads resulting from an Audit - The svb\_optional\_data structure is included only for fields supported by the provider.
	+ Only the optional data fields supported by an LSMS are audited.
	+ Only the optional data fields supported by the auditing SOA are returned to the SOA in the discrepancy notifications
	+ For Modify downloads that result from an Audit:
		- The svb\_optional\_data contains all fields supported by the provider, regardless of whether or not that individual field was discrepant, and regardless of whether or not the NPAC’s subscription version has values for those fields.
		- Fields not supported by the provider are omitted even if they were returned in the Audit query reply from the LSMS.
		- Fields supported by the provider but not present in the NPAC’s subscription version are included with a od\_value of nil.
	+ Provider systems should store the fields as specified above for Activate or Modify downloads.
* Notifications –
	+ For a create notification (Number Pool Block only), the svb\_optional\_data structure contains only fields supported by the provider and specified in the create request.
	+ For an AVC the svb\_optional\_data structure contains only those fields supported by the provider that were modified. If a supported field is removed, it is included in the structure with a od\_value of nil.
* BDD - Each field supported by the provider has a position in the BDD record.
	+ For fields supported by the provider but not present in the NPAC’s subscription version, the field is included in the string with an empty value (two adjacent pipe characters).
	+ For fields not supported by the provider, no field placeholder is included in the string (no adjacent pipe characters).
	+ Provider systems should replace all fields with those in the BDD.

Please refer to [www.npac.com](http://www.npac.com) for a complete list of optional data fields supported by the NPAC. Specifically, the XML schema file, XML Specification (XIS), and the excel spreadsheet that maps schema attributes long names to the 4 character abbreviated names can all be found in the NPAC software release documentation. To find these on the NPAC website, select "The NPAC", "Software Releases", and then the desired release number from the listed on the left side of the screen.

## Subscription Version Deletes

Delete messages are not sent for subscription versions set to old as a result of subsequent porting activity. Delete messages for subscription versions are only sent as a result of disconnect or port to original processing. Local SMS systems are responsible for deletion of the subscription versions in their Local SMS database due to the fact that some LSMS implementations may choose to retain old subscription versions in their database.

## Error Handling

Generally, errors can be transmitted to a remote system in two ways:

* In the synchronous acknowledgement of an http post operation.
* In the asynchronous reply to a previous request.

For the second form above, most of the time error information is contained within a reply message whose type is associated with the request message that caused the error (e.g. an NewSpCreateReply would contain error information for a received NewSpCreateRequest). However, in rare circumstances, it might not be possible to determine the specific reply message type. For example, this will happen when the incoming XML cannot be parsed. In these cases, a generic ProcessingError message is generated. Details of the ProcessingError message are found in section 5 of this document.

Both synchronous and asynchronous error reporting make use of the BasicStatus XML structure. This structure contains a basic\_code element indicating a high level indication of the success or failure status of the operation. The table below indicates each of the possible values as well as whether the value is possible in a synchronous acknowledgement, asynchronous reply, or both:

| **basic\_code**  | **Sync Ack** | **Async Reply** |
| --- | --- | --- |
| success | Indicates the message was received successfully. | Indicates the message was processed successfully. |
| failed | N/A | Indicates there was a general failure in processing the message. |
| soa\_not\_authorized | N/A | Indicates the requesting system is not authorized to perform the requested operation. |
| not\_found | N/A | Indicates the data requested in the operation was not found. For example, a query found no records. |
| invalid\_data\_values | Indicates there is a problem with the departure time. Correct the date/time and resend the message. | Indicates an invalid data value was specified in the requested operation. |
| already\_exists | N/A | Indicates the data requested in the operation already exists. |
| prior\_to\_effective\_date | N/A | Indicates the operation cannot occur before an effective date on this object or a related object has been reached. |
| invalid\_subscription\_versions | N/A | Indicates the subscription versions referenced are not valid for this operation. |
| results\_too\_large | Indicates that a batch of messages contains too many requests/replies or too many bytes. The configuration of both systems need to be reviewed and changed to agree. The requesting system should then retransmit the requests/replies. | Indicates the results of a query operation contain too many records or too many bytes. |
| too\_many\_connections | Indicates the requesting system has opened too many connects to the remote system. The requesting system should shut down a connection and resend the message. | N/A |
| try\_other\_host | Indicates the requesting system has contacted the remote system at the idle host and should attempt a new connection at the alternate host. | N/A |
| try\_same\_host | Indicates the requesting system has contacted the remote system while it is still being initialized, and a new connection to this same host should be attempted shortly. | N/A |
| access\_denied | Indicates there was an error in the HTTP operation, a security error such as a bad certificate, or an error in the XML header attributes. Typically, these errors require a system change to correct. Attempting to resend the message will likely continue to fail. | Indicates the requesting system is not authorized to perform the requested operation. |
| origination\_ts\_failure | N/A | Indicates the operation could not be completed because the origination timestamp in the request is older than the origination timestamp in the receiving system’s database. |

Table – basic\_code Usage Details

The basic\_status structure also contains optional status\_code and status\_info fields. Providers can opt-in to receive these fields. The status\_code indicates a more precise indication of any failure and the status\_info contains a string that complements the status\_code with specific information.

The table below lists details about specific SyncAck error scenarios and the approach used to report the error in the BasicStatus structure:

|  |  |  |  |
| --- | --- | --- | --- |
| **Error Scenario** | **basic code** | **status code** | **status info** |
| HTTP message is not “POST HTTP/1.1” | access denied | 14517 | Only POST-HTTP/1.1 accepted - received XXX-YYY |
| Certificate CN is not the connection SPID | access denied | 14512 | Client certificate validation failure |
| Certificate OU is not the connection system type | access denied | 14512 | Client certificate validation failure |
| Certificate L is not the connection region | access denied | 14512 | Client certificate validation failure |
| Certificate not found/supplied | access denied | 14513 | No inbound client certificate |
| Message header fields (schemaversion, spid, key, region, message direction) not valid | access denied | 14514 | MessageHeader schema, spid, key, region, msgXtoY validation failure |
| Message batch count too large | results too large | 14515 | Payload message count of 99999 exceeds limit of 99999 |
| Message size too large | results too large | 14516 | Payload message size of 99999 exceeds limit of 99999 |
| Departure time invalid | invalid data values | 9001 | Departure time XXXXXX is not valid/UTC format |
| Departure time out of range | invalid data values | 14506 | Departure time XXXXXX not within 999 seconds of YYYYYY |
| Too many XML connections established | too many connections | N/A | N/A |
| System needs to retry connection to same host | try same host | N/A | N/A |
| System needs to try connection to other host | try other host | N/A | N/A |

Table – Detailed SyncAck Error Scenarios

For SOA and LSMS systems sending an asynchronous response message that contains the optional status\_code or status\_info parameters, it should be noted that the NPAC system considers only the basic\_code in the processing the response. The status\_code and status\_info parameters may be specified by the SOA/LSMS systems and the NPAC will record these parameters in the log, but it will not use them in processing the response.

For LSMS download reply messages, some basic\_code values have specific meanings, as follows:

* not\_found – For a reply to an SvDeleteDownload or an NpbDeleteDownload, the NPAC will treat this as a successful reply.
* already\_exists – For a reply to an SvCreateDownload or an NpbCreateDownload, the NPAC will treat this as a successful reply.

# HTTPS Connections

3

## Overview

This section describes the security and connection management procedures for the service provider SOAs and Local SMSs to follow, and how error information will be passed between interfaces.

The first section describes the security and authentication procedures used in the NPAC SMS interface. The second section describes the NPAC SMS's behavior and error handling and suggests how a service provider SOA or Local SMS should proceed when establishing a connection.

## Security

This section describes the security processes and procedures necessary for service provider SOA systems and Local SMSs to establish a secure connection and maintain secure communication with the NPAC SMS. TLS server and client authentication is used to establish and maintain secure connection for all communication. Security threats to the NPAC SMS include:

1. Spoofing - An intruder may masquerade as either the SOA, Local SMS, or NPAC SMS to falsely report information.
2. Message Tampering - An intruder may modify, delete, or create messages passed.
3. Denial or Disruption of Service - An intruder may cause denial or disruption of service by generating or modifying messages.
4. Diversion of Resources - An intruder may generate or modify messages that cause resources to be diverted to unnecessary tasks.
5. Slamming - An intruder may generate or modify messages that cause customer’s service to be moved between service providers.

Security threats are prevented in the NPAC SMS by use of the following methods:

1. strong two way authentication at association.
2. insuring data integrity by detection of replay, deletion, or modification to a message.
3. insuring non-repudiation of data by guaranteeing integrity and supporting data origination authentication for each incoming message.
4. Enforcement of server and client certificate authentication and application level spid and key authentication that allows only authorized parties to cause changes to the NPAC SMS database.

## NPAC Use of Certificates

The NPAC uses standard X.509 certificates and CRLs as part of the authentication mechanism for both clients and servers. The certificate is a document that contains some basic identifying information about a system, along with a public key that can be used to initiate a secure connection to that system. Certificates are digitally signed by a trusted authority prior to use. CRLs are issued by the same trusted authority and are used to revoke certificates that are no longer valid.

In most web-base secure communications, certificates can be signed and authenticated by any number of publically trusted CAs (e.g., Equifax). In the NPAC XML interface, the only trusted authority is the NPAC Certificate Authority (CA). This means that a certificate signed by any CA other than the NPAC CA won’t be recognized when connecting to the NPAC.

The following is an overview of the process for requesting and using certificates for use with the NPAC XML interface:

* The provider obtains the public certificate for the NPAC Certificate Authority (CA) and installs it in their system. Installation means that the certificate is available to validate certificates that are supposedly signed by the NPAC CA.
* The provider fills out an XML Certificate Request Form and sends it to the NPAC Certificate Authority.
* The NPAC Certificate Authority creates and signs the certificate and returns it to the provider.
* The provider installs their signed certificate. Installation means that the signed certificate is available when the NPAC requests the provider’s certificate during establishment of a secure session.
* During a provider’s normal execution over the XML interface, a connection is formed from the provider’s system to the NPAC, and another connection is formed from the NPAC to the provider’s system. For each of these connections, the client requests the certificate of the server, and the server requests the certificate of the client. The authenticating party then uses the CA certificate to authentic the certificate of the other party.
* If a certificate is compromised (lost, stolen, etc.), contact the NPAC help desk to have the certificate revoked.

### The NPAC Certificate Authority

The NPAC maintains a Certificate Authority (CA) for the purpose of signing certificate requests from providers for use in the NPAC XML interface. The NPAC CA will accept XML Certificate Requests from providers as specified in the NPAC XML Certificate Trust Authority M&P that can be found at <https://www.npac.com/npac-user/access-connectivity/npac-xml-certificate-trust-authority>.

Processing of the XML Certificate Request results in a signed certificate. The file is in Privacy-enhanced Electronic Mail (PEM) format, and is emailed back to the requester.

The NPAC CA also issues a Certificate Revocation List (CRL) on a periodic basis. The CRL contains a timespan that it is valid and serial numbers of certificates that have been revoked. A new CRL will be issued every 24 hours and will be valid for 7 days. The CRL file will be in PEM format.

### Using Certificates at Runtime

There are two certificates that are required for a local system to properly communicate with the NPAC.

The first is the local system’s signed certificate. The process for obtaining this certificate is described in section 3.3.1. This certificate file must be accessed by the local system when it is connecting to the NPAC, because the NPAC will ask for it during the setup of the TLS connection. This certificate must also be accessed when the NPAC is connecting to the local system, where the local system is acting as a server. In this case as well, the NPAC will ask for the local system’s certificate. As part of validating the certificate, the NPAC will validate the following:

* The certificate has been signed by the NPAC CA.
* The CN in the certificate matches the sp\_id field in the message header of the XML message.
* The OU in the certificate matchs the type of connection (SOA or LSMS or ‘\*’).
* The L in the certificate matches the NPAC region (or ‘\*’).

The second certificate required by the local system is the public certificate of the NPAC CA. This certificate is required so that the local system can validate that the remote system it is talking to is in fact the NPAC system. When communicating with the NPAC, the local system will act as both a client and a server. In both cases it will request the certificate of the other party as part of the TLS secure connection setup. In this case the other party should be the NPAC. The NPAC system itself also operates with a certificate that is signed by the NPAC CA. The local system must use the NPAC CA’s public certificate to validate that the certificate returned has been signed by the NPAC CA. Additionally, it must validate that the CN field in the certificate is the four-character NPAC SPID for the region in question, the OU field in the certificate is “NPAC”, and that the L field in the certificate is the 2-character NPAC region. The following table shows the NPAC SPID value and NPAC Region value for each region:

|  |  |  |
| --- | --- | --- |
| **Region** | **NPAC SPID Value** | **NPAC Region Value** |
| Midwest | 0000 | MW |
| Mid-Atlantic | 0001 | MA |
| Northeast | 0002 | NE |
| Southeast | 0003 | SE |
| Southwest | 0004 | SW |
| Western | 0005 | WE |
| West Coast | 0006 | WC |
| Canada | 0007 | CA |

Table - NPAC Region Information

Note that unlike typical Internet Browser HTTPS authentication, the certificate’s CN is not used to validate the hostname or IP address of the server. The CN in the certificates used for the NPAC XML interface contain the SPID value, not the hostname. Therefore, any attempt to perform hostname validation will fail.

### Using CRLs at Runtime

When a new CRL is issued, it should be incorporated into the LNP system and any cache used for certificates should be cleared. A new CRL will be issued every 24 hours and will be valid for 7 days. Access to the latest CRL will be via a pair of URLs, one for the primary site and one for the secondary site. Each CRL has has a limited timespan that it's valid; failure to update the CRL may result in the inability to communicate with the NPAC.

## Service Provider Keys

As an additional level of security, a key will be issued for each system that makes connections over the XML interface. The NPAC will have a key that it includes in all messages and SOA/LSMS systems are responsible to verify the key. Likewise, the SOA/LSMS systems will have a key that is included in all the messages it sends. The NPAC is responsible to verify the key is correct.

All keys will be distributed by the NPAC. The process used to distribute and update these keys will be documented in an M&P and supported by NPAC personnel. The NPAC will support the ability to use a different pair of keys (NPAC and SOA/LSMS) for each system in each region, or to use the same pair of keys for the SPID as a whole (SOA and LSMS), as well as cross-regionally. Operationally, the normal configuration will be to use a different set of keys for each system in each region. The NPAC key will never be shared across SPIDs.

# XML Interface Schema

4

The latest version of the XML Schema definition is available on the NPAC website ([**www.npac.com**](http://www.npac.com)). Specifically, the XML schema file, XML Specification (XIS), and the excel spreadsheet that maps schema attributes long names to the 4 character abbreviated names can all be found in the NPAC software release documentation. To find these on the NPAC website, select "The NPAC", "Software Releases", and then the desired release number from the listed on the left side of the screen.

The schema is organized into the following sections:

* Simple and complex attribute definitions
* Structures primarily associated with the SOA messages
* Structures primarily associated with the LSMS messages
* Definitions for messages from the SOA to the NPAC
* Definitions for messages from the NPAC to the SOA
* Definitions for messages from the LSMS to the NPAC
* Definitions for messages from the NPAC to the LSMS

Refer to section ***5 – XML Interface Messaging*** for details on individual messages and their attributes.

There are several conventions used in the schema in an attempt to provide a consistent and logical representation of the messages:

* Requests from the SOA/LSMS to the NPAC all end with “Request”. For example, NpbQueryRequest and ActivateRequest.
* Replies to previous requests always end with the “Reply”. For example, NpbQueryReply and ActivateReply.
* Generally speaking, messages that disseminate NPAC objects are called downloads. Examples of NPAC objects include subscription versions, pooled blocks, LRNs, NPANXXs, DashX and SPID. In all cases, these download messages are sent to all providers when data needs to be broadcast. In most cases, the entire object is included in the message (this is true for create downloads, but not modify or delete downloads). All of these messages end with “Download”. For example, LrnDeleteDownload and SvCreateDownload. Downloads are present for both the SOA and LSMS branches of the schema.
* Generally speaking, messages that alert one or more local systems of some activity in the NPAC are called notifications. For example, when a new subscription version is created, or when a response timer has expired. Most notifications are related to activity on subscription versions and pooled block objects, and are sent only to the providers that are directly associated with the object (i.e. they are the old or new provider on the subscription version, or are the block holder for the pooled block). However, there are a few exceptions to this – for example, the NewNpaNxxNotification and the LnpSpidMigrationNotification messages are sent to all local systems. Notifications typically include only the subset of NPAC object data relevant to the action being notified, rather than the entire object. All of these messages end with Notification. For example, SvObjectCreationNotification and SvAttributeValueChangeNotification. Notifications are present for both the SOA and LSMS branches of the schema, but most are specific to the SOA interface.
* While there are many types of Downloads and Notifications, the reply to any one of these messages is DownloadReply and NotificationReply respectively.
* There are several lexical conventions used in the schema:
	+ - * A prefix of Npb in a message name indicates the message is related to a Number Pooled Block.
			* A prefix of Sv in a message name indicates the message is related to a Subscription Version.
			* A prefix of svb is used for any attribute that can exist in either a Subscription Version or a Number Pooled Block.
			* Attribute names are lower-case and have segments separated with underscores (e.g. svb\_lrn). Message names and data types are mixed case, with segments using upper-case (e.g. SpidCreateDownload, NumberString).

All date-time fields in the LNP XML schema use the standard dateTime type defined by W3.org. Example fields from the schema that use this type are npa\_nxx\_effective\_timestamp and svb\_creation\_timestamp. The dateTime type consists of a date string, the character T, and a time string that may include 3digits of fractions of a second. Unless explicitly stated to require fractions of a second, all date-time strings should be formatted as follows:

"YYYY-MM-DDThh:mm:ssZ"

The format of the date-time strings that contain miliseconds is as follows:

"YYYY-MM-DDThh:mm:ss.fffZ"

Listed below are examples of the accepted date-time formats:

|  |  |  |
| --- | --- | --- |
| **Specification** | **Example** | **Meaning** |
| The character Z | <startdate>2012-05-30T09:30:10Z</startdate> | The string is interpreted with a timezone of UTC |
| The character Z with fractions of a second included | <startdate>2012-05-30T09:30:10.219Z</startdate> | The string is interpreted with a timezone of UTC |

Table - Date/Time Formats

# XML Interface Messaging

5

The XML Schema document is the official description of the XML interface for the SOA and LSMS. This section provides commentary and examples to further describe and clarify the interface.

Note that while the runtime schema uses abbreviated names for the XML tags, the schema described here is the equivalent long form. The shorter form provides operating efficiencies for the runtime system, but is somewhat harder to read.

## Message Structure

At the highest level, the schema messages are divided into two separate branches – one for the SOA and one for the LSMS. However, there are similarities within each of these branches. Each message consists of three sections – an XML header, a message header and the message contents.

The following is an example XML message that shows these three sections:

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0"

xmlns:xsi="<http://www.w3.org/2001/XMLSchema-instance>">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<lsms\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SpidQueryRequest/>

</Message>

</lsms\_to\_npac>

</MessageContent>

</LSMSMessages>

The first line is the XML header (not the Message Header) and identifies the XML version (not the schema version), the "UTF-8" character encoding, and an indication this document is using an external reference with the "standalone=no" declaration.

The second line is the main envelope for the message, and identifies that this is a message for the LSMS branch (as opposed to the SOA branch) of the schema. Additionally, the default namespace (urn:lnp:npac:1.0) and the xsi namespace (<http://www.w3.org/2001/XMLSchema-instance>) are defined.

Within the main envelope are two structures. The first is the MessageHeader and the second is the MessageContent.

The message header consists of 5 mandatory fields:

|  |  |
| --- | --- |
| **Header Field Name** | **Description** |
| schema\_version | The version of the schema being used by the message originator. This may be used in future versions to provide for backward compatibility. The message originator should populate this field with the version of the schema it is using. The version number must be of the form A.B, where A and B are integers greater than or equal to 0. In addition to this syntactic checking, the NPAC may reject messages with an un-recognized schema version.The schema version can be found in the schema itself, in a comment section near the beginning of the document, in a line that looks like this:  Schema Version: 1.1  |
| sp\_id | The 4 character identifier used to identify this provider in the NPAC. |
| sp\_key | The key for this system. The key is specific to each XML system (i.e. a SOA or LSMS system for a particular SPID). The key is provided by the NPAC administrator. The key is a character field with a maximum length of 12. Alphabetic, numeric, and punctuation (except a pipe '|') characters are allowed.  |
| npac\_region | The region for which this message is intended. This field is an enumeration with the following possible values:* midwest\_region
* midatlantic\_region
* northeast\_region
* southeast\_region
* southwest\_region
* western\_region
* westcoast\_region
* canadian\_region
 |
| departure\_timestamp | The time when the message was transmitted. The NPAC will reject messages that are too old, as measured by the difference between the current time and the value in this field. The allowable time differential is a configurable parameter in the NPAC. This timestamp should contain milliseconds accuracy. |

Table - Message Header Fields

The MessageContent tag follows the MessageHeader. The first tag within the MessageContent indicates the direction that this message is flowing – in the example the message is going from the LSMS to the NPAC (other possible tag include npac\_to\_lsms, soa\_to\_npac, and npac\_to\_soa). The next structure is the Message. This structure includes a set of standard fields common to all types of messages for that direction, as well as any other fields specific to the message. In this example the message is very simple, and just includes a single tag (SpidQueryRequest).

The following table describes the common fields within the message structure. Some fields only apply to the SOA portion of the interface, as indicated:

| **Directions** | **Field Name** | **Description** |
| --- | --- | --- |
| npac\_to\_soasoa\_to\_npacnpac\_to\_lsmslsms\_to\_npac | invoke\_id | A unique unsigned integer (between 1 and 4,294,967,295) that originates in a request, and is included in the associated reply message. The originator must not reuse an invoke id value until the receiving system provides an asynchronous reply. To avoid confusion when diagnosing issues, it’s recommended that reuse of invoke IDs occur as infrequently as possible. |
| npac\_to\_soasoa\_to\_npac | secondary\_sp\_id | Used by a service bureau when submitting a request on behalf of their secondary spid. The value of the field is set to the secondary spid. The sp\_id in the message header is set to the primary spid.Reply messages also have this field populated with the secondary spid value when their associated request came from a service this field populated when their associated request d:riod to allow easy identification of a message in log bureau on behalf of a secondary spid.In notification and download messages generated for a secondary spid, this field is populated with the secondary spid value.This field only exists for the SOA portion of the interface. |
| npac\_to\_soasoa\_to\_npac | request\_sp\_id | The field is used by a delegate when they are submitting a request on behalf of a grantor spid. The value of the field is set to the grantor spid. The sp\_id in the message header is set to the delegate spid.Reply messages also have this field populated with the grantor spid value when their associated request came from a delegate spid on behalf of the grantor spid.In notification messages generated for a delegate spid due to their delegate relationship with a grantor, this field is populated with grantor spid. This allows the delegate spid to understand which grantor spid the notification belongs to.In notification messages generated for a grantor spid as a result of an action performed by their delegate, this field is populated with delegate spid. This allows the grantor spid to recognize that it was the delegate spid who performed the operation that resulted in this notification.This field only exists for the SOA portion of the interface. |
| npac\_to\_soasoa\_to\_npacnpac\_to\_lsmslsms\_to\_npac | origination\_timestamp | A timestamp indicating when a request or reply is created (as distinguished from delivery). For example, in the NPAC this would be when a notification or download is created. Each request or reply sent over the XML interface must have an Origination Timestamp regardless of the system that originates the message. This timestamp should contain milliseconds accuracy. This timestamp should never be later than the departure timestamp in the message header. |
| soa\_to\_npac | initiator\_suppression | This field specifies no value, but when present indicates notifications for this request should be suppressed to the initiator/self of the request. The initiator of the request is determined from the sp\_id field in the message header and is always independent of any delegation mechanism used to act on behalf of another provider. |
| soa\_to\_npac | request\_sp\_id\_suppression | This field can be specified with a value as one of three enumerations:* suppress\_provider
* suppress\_delegates
* suppress\_provider and delegates
 |
| soa\_to\_npac | other\_sp\_id\_suppression | This field can be specified with a value as one of three enumerations:* suppress\_provider
* suppress\_delegates
* suppress\_provider and delegates
 |

Table - Message Specific Common Fields

For messages coming from the SOA to the NPAC, the NPAC considers three fields to determine which SPID is actually issuing the request. The determination is made by examining the fields in the following order:

* the request\_sp\_id from the message\_content (if populated),
* the secondary\_sp\_id from the message\_content (if populated)
* The sp\_id from the message\_header (always populated).

For example, for a message that specifies the sp\_id as 1111 and a request\_sp\_id as 2222, the NPAC will evaluate the message as if it was requested by spid 2222.

## Notification Suppression

Notification suppression allows SOA systems to send requests to the NPAC indicating the notifications typically created and sent to the SOA shouldn't be generated for this request. In some scenarios such as mass updates or TN reassignment, notifications are not needed for normal operations. The XML MessageContent fields initiator\_suppression, request\_sp\_id\_suppression, and other\_sp\_id\_suppression can be used in a SOA request to suppress notifications to any combination of:

* the SOA system making the request.
* the SOA system for a grantor of the provider making the request.
* the SOA systems for delegates of the provider making the request.
* the SOA system for the grantor of the other provider when both new and old providers are involved in a request.
* the SOA system of the delegates of the other provider when both new and old providers are involved in a request.

Listed below are examples of partial XML messages with MessageContent sections that contain the notification suppression fields for the scenarios above:

SOA system suppressing notifications to self/initiator:

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<initiator\_suppression/>

<ActivateRequest>

<sv\_id>1000</sv\_id>

</ActivateRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

SOA system suppressing notifications to their grantor:

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>

<request\_spid>2222</request\_spid>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<request\_sp\_id\_suppression>suppress\_provider

 </request\_sp\_id\_suppression>

<ActivateRequest>

<sv\_id>1000</sv\_id>

</ActivateRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

SOA system suppressing notifications to their delegates or delegates of their grantor:

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>

<request\_spid>2222</request\_spid>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<request\_sp\_id\_suppression>suppress\_delegates

 </request\_sp\_id\_suppression>

<ActivateRequest>

<sv\_id>1000</sv\_id>

</ActivateRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

SOA system suppressing notifications to the other provider when both new and old providers are involved in a request:

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>

<request\_spid>2222</request\_spid>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<other\_sp\_id\_suppression>suppress\_provider

 </other\_sp\_id\_suppression>

<CancelRequest>

<sv\_id>1000</sv\_id>

</CancelRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

SOA system suppressing notifications to the delegates of the other provider when both new and old providers are involved in a request:

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>

<request\_spid>2222</request\_spid>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<other\_sp\_id\_suppression>suppress\_delegates

 </other\_sp\_id\_suppression>

<CancelRequest>

<sv\_id>1000</sv\_id>

</CancelRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

The notification suppression attributes may be combined as well, for example a SOA system suppressing notification to new and old providers as well as new and old provider's delegates:

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>

<request\_spid>2222</request\_spid>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<request\_sp\_id\_suppression>suppress\_provider\_and\_delegates

 </request\_sp\_id\_suppression>

<other\_sp\_id\_suppression>suppress\_provider\_and\_delegates</other\_sp\_id\_suppression>

<CancelRequest>

<sv\_id>1000</sv\_id>

</CancelRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

### Authorizations

Anytime the NPAC receives a request that contains notification suppression for any SPID except their own, it will be validated against a table of authorizations. Requests that are made to suppress notifications without authorization won't fail, but notifications won't be suppressed. Entries in the authorization table are created when a provider calls the NPAC help desk and requests a notification suppression relationship be added for their SPID. These relationships can be specified as a request initiating SPID and a notification destination SPID. For example, if SPID 1111 contacts the NPAC and requests a notification suppression relationship be established with SPID 2222, then SPID 2222 is authorized to send requests to the NPAC that include notification suppression for their SPID as well as SPID 1111.

For providers that utilize the grantor/delegate feature, a grantor can be included in the notification suppression relationship. For example, SPID 1111 contacts the NPAC and requests a notification suppression relationship be established with SPID 2222 where SPID 3333 is the grantor. This means that SPID 2222 is authorized to send requests to the NPAC that include notification suppression for SPID 1111 when the request specifies SPID 3333 as the grantor.

### Options

Refer to Table 7 for details on which notification suppression requests require authorization and which options can be specified for a given role of the requestor. Requests that are made with incorrect options for a role or requests that are made with correct options, but without a required authorization relationship will result in the request being processed and notifications won't be suppressed.

|  |  |
| --- | --- |
|  |  **Notification Suppression Options** |
| **Role of SPID Sending Request** | **Initiator/Self** | **Grantor** | **Delegate(s)** | **Other SPID** | **Delegate(s) of Other SPID** |
|  |  |  |  |  |  |
| **BAU SPID** | Y | N/A | N/A | Y | Y |
| **Delegate** | Y | Y | Y | Y | Y |
| **Grantor** | Y | N/A | Y | Y | Y |
|  |  |  |  |  |  |
| (shading) |  = Authorization required from the SPID being suppressed |

Table 7 - Notification Suppression Options

## Message Batching

The preceding text shows that XML message can be divided into several distinct parts – the XML Header, the Message Header, and the Message Content. Within the MessageContent we have the request or reply itself (the Message tag). However, the MessageContent can contain more than 1 request or reply, as shown in the example below (only the MessageContent portion is shown):

<MessageContent>

<lsms\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SpidQueryRequest/>

</Message>

<Message>

<invoke\_id>262</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<DownloadReply>

<basic\_code>success</basic\_code>

</DownloadReply>

</Message>

</lsms\_to\_npac>

</MessageContent>

This XML message contains a request (SpidQueryRequest) and a reply (DownloadReply).

Batching of requests or replies provides a major benefit to interface throughput. HTTPS is a synchronous protocol, which means that a second message cannot be transmitted until the previously delivered message has been acknowledged. Due to network latency, this can slow the rate of message transmission. By putting multiple requests or replies into a single XML message, the latency per application message has much less impact and throughput improves significantly.

There are several things to note about this ability to batch several requests or replies into a single XML messages:

* An XML message can only be related to SOA or LSMS, but not both. Therefore all requests or replies within an XML message are for the same system type.
* The message direction is only specified once within the MessageContent tag, so all requests or replies in the XML message will be in the same direction – either from the client to the NPAC (lsms\_to\_npac or soa\_to\_npac) or from the NPAC to the client (npac\_to\_lsms or npac\_to\_soa)
* The messages can contain a combination of new requests and replies to previous requests. In the example above, the first is a request (SpidQueryRequest) and the second (DownloadReply) is a reply to a previous request from the NPAC.
* Each request or reply has its own invoke\_id. This allows the receiving side to treat each request or reply independently once they have all been unpacked. For example, if the NPAC sends the LSMS an XML message containing three SVCreateDownload requests, the LSMS can send the associated asynchronous DownloadReply replies back the NPAC in separate XML messages.
* There is only one sync ack for the XML message as a whole.
* The client does not have to batch outbound XML messages. However, throughput will be significantly improved if batching is used.
* The client is required to handle batches on inbound XML messages from the NPAC.
* To help ensure messages in a batch are processed in the correct order, the NPAC will sort a batch of messages by the message origination timestamp for both inbound and outbound XML message batches.
* The NPAC will have the ability to control batching sizes. One setting will limit the total number of bytes in the XML message and the other will limit the total number of requests or replies contained in the message. Each system (both NPAC and the local system) should ensure these limits aren’t exceeded when sending messages over the XML interface.
* If a system receives a batch that is either larger than the tunable limit or contains more requests/replies than the tunable limit the entire batch should be failed in the synchronous reply with a basic\_code status of results\_too\_large.

## Message Flow

Generally speaking, all messages described in the schema follow the following paradigm:

* Originating entity sends a request with a specific invoke id.
* Receiving entity replies synchronously with an acknowledgement of receipt of the request.
* Receiving entity processes the request.
* Receiving entity send an asynchronous response that includes the invoke\_id from the request.
* Originating entity replies synchronously with an acknowledgement of receipt of the response.

In the above example the originating entity could be either the SOA/LSMS, or the NPAC. For example, in the case of an ActivateRequest, the originating entity is the SOA and the receiving entity is the NPAC. In the case of an SvCreateDownload, the originating entity is the NPAC and the receiving entity is the LSMS.

There is only one exception to this general message flow – the ProcessingError message. The ProcessingError message is intended to inform the receiving system that the originating system has received a message from them that could not be parsed, and therefore no reply could be issued. Because it is just informational there is no need for the receiving system to send an asynchronous reply.

In Table 7 below, each of the XML interface requests are listed with the expected reply:

| **Request** | **Direction** | **Reply** |
| --- | --- | --- |
| ActivateRequest | SOA to NPAC | ActivateReply |
| AuditCancelRequest | SOA to NPAC | AuditCancelReply |
| AuditCreateRequest | SOA to NPAC | AuditCreateReply |
| AuditQueryRequest | SOA to NPAC | AuditQueryReply |
| CancelRequest | SOA to NPAC | CancelReply |
| DisconnectRequest | SOA to NPAC | DisconnectReply |
| KeepAlive | SOA to NPAC | NotificationReply |
| LrnCreateRequest | SOA to NPAC | LrnCreateReply |
| LrnDeleteRequest | SOA to NPAC | LrnDeleteReply |
| LrnQueryRequest | SOA to NPAC | LrnQueryReply |
| ModifyRequest | SOA to NPAC | ModifyReply |
| NewSpCreateRequest | SOA to NPAC | NewSpCreateReply |
| NpaNxxCreateRequest | SOA to NPAC | NpaNxxCreateReply |
| NpaNxxDeleteRequest | SOA to NPAC | NpaNxxDeleteReply |
| NpaNxxQueryRequest | SOA to NPAC | NpaNxxQueryReply |
| NpaNxxDxQueryRequest | SOA to NPAC | NpaNxxDxQueryReply |
| NpbCreateRequest | SOA to NPAC | NpbCreateReply |
| NpbModifyRequest | SOA to NPAC | NpbModifyReply |
| NpbQueryRequest | SOA to NPAC | NpbQueryReply |
| OldSpCreateRequest | SOA to NPAC | OldSpCreateReply |
| RemoveFromConflictRequest | SOA to NPAC | RemoveFromConflictReply |
| SpidQueryRequest | SOA to NPAC | SpidQueryReply |
| SvQueryRequest | SOA to NPAC | SvQueryReply |
|  |  |  |
| AuditResultsNotification | NPAC to SOA | NotificationReply |
| KeepAlive | NPAC to SOA | NotificationReply |
| LnpSpidMigrationNotification | NPAC to SOA | NotificationReply |
| LrnCreateDownload | NPAC to SOA | DownloadReply |
| LrnDeleteDownload | NPAC to SOA | DownloadReply |
| NewNpaNxxNotification | NPAC to SOA | NotificationReply |
| NpaNxxCreateDownload | NPAC to SOA | DownloadReply |
| NpaNxxModifyDownload | NPAC to SOA | DownloadReply |
| NpaNxxDeleteDownload | NPAC to SOA | DownloadReply |
| NpaNxxDxCreateDownload | NPAC to SOA | DownloadReply |
| NpaNxxDxModifyDownload | NPAC to SOA | DownloadReply |
| NpaNxxDxDeleteDownload | NPAC to SOA | DownloadReply |
| NpbAttributeValueChangeNotification | NPAC to SOA | NotificationReply |
| NpbObjectCreationNotification | NPAC to SOA | NotificationReply |
| SpidCreateDownload | NPAC to SOA | DownloadReply |
| SpidDeleteDownload | NPAC to SOA | DownloadReply |
| SpidModifyDownload | NPAC to SOA | DownloadReply |
| SvAttributeValueChangeNotification | NPAC to SOA | NotificationReply |
| SvCancelAckNotification | NPAC to SOA | NotificationReply |
| SvCustomerDisconnectDateNotification | NPAC to SOA | NotificationReply |
| SvNewSpCreateNotification | NPAC to SOA | NotificationReply |
| SvNewSpFinalCreateWindowExpiration Notification | NPAC to SOA | NotificationReply |
| SvObjectCreationNotification | NPAC to SOA | NotificationReply |
| SvOldSpConcurrenceNotification | NPAC to SOA | NotificationReply |
| SvOldSpFinalConcurrenceWindowExpirationNotification | NPAC to SOA | NotificationReply |
|  |  |  |
| KeepAlive | LSMS to NPAC | NotificationReply |
| LrnQueryRequest | LSMS to NPAC | LrnQueryReply |
| NpaNxxDxQueryRequest | LSMS to NPAC | NpaNxxDxQueryReply |
| NpaNxxQueryRequest | LSMS to NPAC | NpaNxxQueryReply |
| NpbQueryRequest | LSMS to NPAC | NpbQueryReply |
| SpidQueryRequest | LSMS to NPAC | SpidQueryReply |
| SvQueryRequest | LSMS to NPAC | SvQueryReply |
|  |  |  |
| KeepAlive | NPAC to LSMS | NotificationReply |
| LnpSpidMigrationNotification | NPAC to LSMS | NotificationReply |
| LrnCreateDownload | NPAC to LSMS | DownloadReply |
| LrnDeleteDownload | NPAC to LSMS | DownloadReply |
| NewNpaNxxNotification | NPAC to LSMS | NotificationReply |
| NpaNxxCreateDownload | NPAC to LSMS | DownloadReply |
| NpaNxxModifyDownload | NPAC to LSMS | DownloadReply |
| NpaNxxDeleteDownload | NPAC to LSMS | DownloadReply |
| NpaNxxDxCreateDownload | NPAC to LSMS | DownloadReply |
| NpaNxxDxDeleteDownload | NPAC to LSMS | DownloadReply |
| NpaNxxDxModifyDownload | NPAC to LSMS | DownloadReply |
| NpbCreateDownload | NPAC to LSMS | DownloadReply |
| NpbDeleteDownload | NPAC to LSMS | DownloadReply |
| NpbModifyDownload | NPAC to LSMS | DownloadReply |
| QueryLsmsNpbRequest | NPAC to LSMS | QueryLsmsNpbReply |
| QueryLsmsSvRequest | NPAC to LSMS | QueryLsmsSvReply |
| SpidCreateDownload | NPAC to LSMS | DownloadReply |
| SpidModifyDownload | NPAC to LSMS | DownloadReply |
| SpidDeleteDownload | NPAC to LSMS | DownloadReply |
| SvCreateDownload | NPAC to LSMS | DownloadReply |
| SvDeleteDownload | NPAC to LSMS | DownloadReply |
| SvModifyDownload | NPAC to LSMS | DownloadReply |

Table 8- XML Interface Messages

## SOA to NPAC Messages

### ActivateRequest

SOA requests the activation of a subscription version. The request can be done via SVID, a TN, or a TN range.

The asynchronous reply to this message is an ActivateReply message.

#### ActivateRequest Parameters

| **Parameter** | **Description** |
| --- | --- |
| sv\_idsv\_tntn\_range | This required field is a choice among SV ID, a single TN (sv\_tn) or a range of TNs (tn\_range). Sv\_tn identifies the 10 digit telephone number. tn\_range identifies a contiguous telephone number range. It consists of a 10 digit field called start\_tn and a 4 digit field called stop\_tn. |

#### ActivateRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0"

xmlns:xsi="<http://www.w3.org/2001/XMLSchema-instance>">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<initiator\_suppression/>

<ActivateRequest>

<sv\_id>1000</sv\_id>

</ActivateRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### AuditCancelRequest

SOA requests the cancellation of an audit. The SOA provides the audit\_id for the audit(s) to be cancelled. The asynchronous reply to this message is an AuditCancelReply message.

#### AuditCancelRequest Parameters

| Parameter | Description |
| --- | --- |
| audit\_id  | This required field specifies the id of the audit to cancel. |

#### AuditCancelRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0"

xmlns:xsi="<http://www.w3.org/2001/XMLSchema-instance>">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<AuditCancelRequest>

<audit\_id>1029</audit\_id>

</AuditCancelRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### AuditCreateRequest

SOA requests the audit of a single LSMS or all LSMSs for a range of TNs. SOA can optionally specify the range of activation timestamps. The asynchronous reply to this message is an AuditCreateReply message.

Note that an audit compares all fields in the SV/Block that are supported by the LSMS being audited. It is not possible to limit the audit to a subset of fields.

#### AuditCreateRequest Parameters

| Parameter | Description |
| --- | --- |
| audit\_name | This required field specifies the name of the audit |
| tn\_range | This required field specifies the TN range to be audited. Only a contiguous range of numbers can be specified. The range is specified as a starting number and an ending station (station is the last 4 digits of the phone number). Therefore, the maximum number of TNs to be audited is 10,000. |
| audit\_activation\_range | This optional field specifies the TN activation date/time range to be audited. The NPAC will find all TNs that were activated during the specified time range, and perform an audit. |
| audit\_spid\_range | This required field specifies the service providers to be audited. It is a choice of two possible elements. Values include:* audit\_all\_service\_providers – audit all service providers
* audit\_sp\_name\_or\_id – audit only a single spid, identified by either sp\_id or Service Provider Name.
 |

#### AuditCreateRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0"

xmlns:xsi="<http://www.w3.org/2001/XMLSchema-instance>">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<AuditCreateRequest>

<audit\_name>Audit #1</audit\_name>

<tn\_range>

<start\_tn>5512340000</start\_tn>

<stop\_tn>0999</stop\_tn>

</tn\_range>

<audit\_activation\_range>

<start\_time>2001-12-17T08:30:47Z</start\_time>

<stop\_time>2001-12-17T09:30:47Z</stop\_time>

</audit\_activation\_range>

<audit\_spid\_range>

<audit\_sp\_name\_or\_id>2222</audit\_sp\_name\_or\_id>

</audit\_spid\_range>

</AuditCreateRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### AuditQueryRequest

SOA queries the NPAC about an existing audit. The query is done using an audit id that was returned via a previous AuditCreateReply. The asynchronous reply to this message is an AuditQueryReply message.

#### AuditQueryRequest Parameters

| Parameter | Description |
| --- | --- |
| audit\_id query\_expression | This required field is a choice between an audit ID or a query expression. The query expression attribute is used to convey a formatted string indicating objects to be queried and returned. Please see Section 2.9.1 for a detail description of the format of this string. |

#### AuditQueryRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0"

xmlns:xsi="<http://www.w3.org/2001/XMLSchema-instance>">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<AuditQueryRequest>

<audit\_id>10</audit\_id>

</AuditQueryRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### CancelRequest

This message has two distinct uses. In the first usage, the issuer requests the cancellation of an existing subscription version that is in pending, conflict or cancel-pending status. After successful processing of the request, the subscription version goes to either cancelled or cancel-pending status.

In the second usage, the owner of a subscription version in Disconnect-pending status requests the cancellation of a previously issued disconnect request. After successful processing of the request, the subscription version goes back to active status.

In both usages, the only parameters for this request are used to specify the set of subscription versions that should be operated upon. This can be done in one of several ways:

* A single SVID
* A single 10 digit telephone number
* A TN Range (a range of contiguous phone numbers specified as a 10 digit starting telephone number and a 4 digit ending station number to complete the range).

The asynchronous reply to this message is a CancelReply message

#### CancelRequest Parameters

| Parameter | Description |
| --- | --- |
| sv\_idsv\_tntn\_range | This required field is a choice among SV ID, a single TN (sv\_tn) or a range of TNs (tn\_range). Sv\_tn identifies the 10 digit telephone number. tn\_range identifies a contiguous telephone number range. It consists of a 10 digit field called start\_tn and a 4 digit field called stop\_tn. |

#### CancelRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0"

xmlns:xsi="<http://www.w3.org/2001/XMLSchema-instance>">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<CancelRequest>

<sv\_id>100023</sv\_id>

</CancelRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### DisconnectRequest

SOA requests the disconnect of a subscription version with the DisconnectRequest message.

A disconnect request occurs when a customer desires to have their phone service terminated. When this message is processed, the telephone number disconnect is either immediate or scheduled for later date/time based on the sv\_effective\_release\_date parameter. If the parameter is absent, the portability record is set to sending status and immediately broadcast to the LSMS systems. If the parameter is present, the disconnect is scheduled for the specified date and the portability record is set to disconnect-pending status. Once the effective release date is reached, the portability record is set to sending status and the disconnect is broadcast to the LSMS systems. At the conclusion of this broadcast process, the portability record changes from sending to old status.

At the start of the broadcast to the LSMS systems, a SvCustomerDisconnectDateNotification message is sent to the NPANXX code holder’s SOA, advising them that this number is returning to their inventory.

At any point between the time the portability record is changed to disconnect-pending status until the time the disconnect is broadcast, the disconnect can be canceled via a CancelRequest message. This changes the status of the record from disconnect-pending to active.

While the record is in disconnect-pending status prior to the disconnect broadcast, the disconnect dates may be modified.

Once the disconnect of the SV record is broadcast to the LSMS systems, it can no longer be cancelled or modified.

The asynchronous reply to this message is a DisconnectReply message.

#### DisconnectRequest Parameters

| Parameter | Description |
| --- | --- |
| sv\_info | This structure specifies the subscription to be disconnected. It is a choice between the following:* sv\_id - A single version id.
* sv\_tn - A single telephone number.
* tn\_range - specified wth start\_tn (10 digit) and stop\_tn (4 digit ending station).
 |
| sv\_customer\_disconnect\_date | This required field specifies the date and time that the customer’s service is to be disconnected.  |
| sv\_effective\_release\_date | This optional field specifies the date and time the disconnect should be broadcast to the LSMS systems. If it is not specified in the request, it is assumed to be the current time. |

#### DisconnectRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<DisconnectRequest>

<sv\_info>

<sv\_id>100024</sv\_id>

</sv\_info>

<sv\_customer\_disconnect\_date>2012-12-17T09:30:47Z </sv\_customer\_disconnect\_date>

<sv\_effective\_release\_date>2012-12-17T09:30:47Z </sv\_effective\_release\_date>

</DisconnectRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### DownloadReply

SOA replies to a download initiated by the NPAC. There is rarely an error that is returned from a download. The reply is intended to confirm to the NPAC processing of the download by the SOA system.

This message is the asynchronous reply to all of the download messages.

#### DownloadReply Parameters

|  |  |
| --- | --- |
| Parameter | Description |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |

#### DownloadReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<DownloadReply>

<basic\_code>success</basic\_code>

</DownloadReply>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### Keep Alive

The KeepAlive message is a heartbeat from one entity to the other. The intention is for the originating entity to inform the receiving entity of its presence.

The asynchronous reply to this message is a NotificationReply message.

#### KeepAlive Parameters

None.

#### KeepAlive XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<KeepAlive/>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### LrnCreateRequest

SOA requests the creation of a LRN. The request can be done via a LRN value.

The asynchronous reply to this message is a LrnCreateReply message.

#### LrnCreateRequest Parameters

| Parameter | Description |
| --- | --- |
| lrn\_value | This required field identifies the LRN value. |

#### LrnCreateRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<LrnCreateRequest>

<lrn\_value>2024593456</lrn\_value>

</LrnCreateRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### LrnDeleteRequest

SOA requests the deletion of a LRN. The request can be done via a LRN ID or LRN value.

The asynchronous reply to this message is a LrnDeleteReply message.

#### LrnDeleteRequest Parameters

| Parameter | Description |
| --- | --- |
| lrn\_id lrn\_value | This required field is a choice of an LRN ID or LRN value.  |

#### LrnDeleteRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<LrnDeleteRequest>

<lrn\_value>2024593456</lrn\_value>

</LrnDeleteRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### LrnQueryRequest

SOA queries the NPAC about existing LRN(s). The query can be done via LRN id, LRN value, or a query expression.

The asynchronous reply to this message is an LrnQueryReply message.

#### LrnQueryRequest Parameters

| Parameter | Description |
| --- | --- |
| lrn\_id lrn\_valuequery\_expression | This required field is a choice of a LRN ID, LRN value, or a query expression. The query expression attribute is used to convey a formatted string indicating objects to be queried and returned. Please see Section 2.9.2 for a detail description of the format of this string. |

#### LrnQueryRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<LrnQueryRequest>

<lrn\_id>10</lrn\_id>

</LrnQueryRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### ModifyRequest

New SP or Old SP can request modification of existing SVs. This message has the following uses:

* New SP SOA requests the modification of pending-like SV(s). Pending-like means statuses of pending, cancel-pending, or conflict.
* Old SP SOA requests the modification of pending-like SV(s). Pending-like means statuses of pending, cancel-pending, or conflict.
* New SP SOA requests the modification of active SV(s).
* New SP SOA requests the undo cancel of cancel-pending SV(s).
* Old SP SOA requests the undo cancel of cancel-pending SV(s).

The asynchronous reply to this message is a ModifyReply message.

#### ModifyRequest Parameters

| Parameter | Description |
| --- | --- |
| sv\_info | This structure specifies the subscription to be modified. It is a choice between the following:* sv\_id - A single version id.
* sv\_tn - A single telephone number.
* tn\_range specified wth start\_tn (10 digit) and stop\_tn (4 digit ending station).
 |
| sv\_status | This optional field is the status of SVs to be modified.  |
| modify\_data | It is required since at least one of the modify types must be specified as follows:* modify\_pending\_new
* modify\_pending\_old
* modify\_active\_new
* modify\_cancel\_undo
 |
| modify\_pending\_new | This complex element contains all the data fields that follow. It is required if this option is chosen. All of the fields that follow are optional since a modify request may or may not involve any particular field:* svb\_new\_sp\_due\_date
* svb\_lrn
* svb\_class\_dpc
* svb\_class\_ssn
* svb\_lidb\_dpc
* svb\_lidb\_ssn
* svb\_isvm\_dpc
* svb\_isvm\_ssn
* svb\_cnam\_dpc
* svb\_cnam\_ssn
* svb\_wsmsc\_dpc
* svb\_wsmsc\_ssn
* svb\_end\_user\_location\_type
* svb\_end\_user\_location\_value
* svb\_billing\_id
* svb\_optional\_data
* svb\_sv\_type
* sv\_customer\_disconnect\_date
* sv\_effective\_release\_date
* sv\_new\_sp\_medium\_timer\_indicator
 |
| modify\_pending\_old | This complex element contains all the data fields that follow. It is required if this option is chosen. All of the fields that follow are optional since a modify request may or may not involve any particular field:* sv\_old\_sp\_due\_date
* sv\_old\_sp\_authorization
* sv\_status\_change\_cause\_code
* sv\_old\_sp\_medium\_timer\_indicator
 |
| modify\_active\_new | This complex element contains all the data fields that follow. It is required if this option is chosen. All of the fields that follow are optional since a modify request may or may not involve any particular field:* svb\_lrn
* svb\_class\_dpc
* svb\_class\_ssn
* svb\_lidb\_dpc
* svb\_lidb\_ssn
* svb\_isvm\_dpc
* svb\_isvm\_ssn
* svb\_cnam\_dpc
* svb\_cnam\_ssn
* svb\_wsmsc\_dpc
* svb\_wsmsc\_ssn
* svb\_end\_user\_location\_type
* svb\_end\_user\_location\_value
* svb\_billing\_id
* svb\_optional\_data
* svb\_sv\_type
 |
| modify\_cancel\_undo | It is required if this option is chosen. No data is needed. |
| svb\_new\_sp\_due\_date | This field specifies the due date specified by new SP. |
| sv\_old\_sp\_due\_date | This field specifies the due date specified by old SP. |
| sv\_old\_sp\_authorization | This field specifies the authorization indicator specified by old SP. |
| sv\_status\_change\_cause\_code | This optional field specifies the cause code if sv\_old\_sp\_authorization is set to false. |
| svb\_lrn | This field specifies the LRN value of the SV.  |
| svb\_class\_dpc | This optional field specifies the CLASS DPC value of the SV.  |
| svb\_class\_ssn | This optional field specifies the CLASS SSN value of the SV.  |
| svb\_lidb\_dpc | This optional field specifies the LIDB DPC value of the SV.  |
| svb\_lidb\_ssn | This optional field specifies the LIDB SSN value of the SV.  |
| svb\_isvm\_dpc | This optional field specifies the ISVM DPC value of the SV.  |
| svb\_isvm\_ssn | This optional field specifies the ISVM SSN value of the SV.  |
| svb\_cnam\_dpc | This optional field specifies the CNAM DPC value of the SV.  |
| svb\_cnam\_ssn | This optional field specifies the CNAM SSN value of the SV.  |
| svb\_wsmsc\_dpc | This optional field specifies the WSMSC DPC value of the SV.  |
| svb\_wsmsc\_ssn | This optional field specifies the WSMSC SSN value of the SV.  |
| svb\_end\_user\_location\_value | This optional field specifies the End user location value value of the SV.  |
| svb\_end\_user\_location\_type | This optional field specifies the End user location type value of the SV.  |
| svb\_billing\_id | This optional field specifies the Billing ID value of the SV.  |
| sv\_customer\_disconnect\_date | This optional field specifies the Customer disconnect date of the SV. For SV in disconnect –pending status only. |
| sv\_effective\_release\_date | This optional field specifies the Effective release date of the SV. For SV in disconnect –pending status only. |
| svb\_sv\_type | This optional field specifies the SV type value of the SV.  |
| svb\_optional\_data | This structure specifies a set of optional fields to be modified. They must be specified as od\_name and od\_value pair. |
| sv\_new\_sp\_medium\_timer\_indicator | This optional field specifies the Medium timer indicator for new SP. |
| sv\_old\_sp\_medium\_timer\_indicator | This optional field specifies the Medium timer indicator for old SP. |

#### ModifyRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<ModifyRequest>

<sv\_info>

<sv\_id>1000</sv\_id>

</sv\_info>

<sv\_status>status\_pending</sv\_status>

<modify\_data>

<modify\_pending\_new>

<svb\_lrn>2023563780</svb\_lrn>

<svb\_new\_sp\_due\_date>2012-12-17T09:30:47Z</svb\_new\_sp\_due\_date>

<svb\_class\_dpc>111222111</svb\_class\_dpc>

<svb\_class\_ssn>0</svb\_class\_ssn>

<svb\_lidb\_dpc>111222111</svb\_lidb\_dpc>

<svb\_lidb\_ssn>0</svb\_lidb\_ssn>

<svb\_isvm\_dpc>111222111</svb\_isvm\_dpc>

<svb\_isvm\_ssn>0</svb\_isvm\_ssn>

<svb\_cnam\_dpc>111222111</svb\_cnam\_dpc>

<svb\_cnam\_ssn>0</svb\_cnam\_ssn>

<svb\_end\_user\_location\_value>10</svb\_end\_user\_location\_value>

<svb\_end\_user\_location\_type>10</svb\_end\_user\_location\_type>

<svb\_billing\_id>10</svb\_billing\_id>

<svb\_wsmsc\_dpc>111222111</svb\_wsmsc\_dpc>

<svb\_wsmsc\_ssn>0</svb\_wsmsc\_ssn>

<svb\_sv\_type>wireline</svb\_sv\_type>

<svb\_optional\_data>

<od\_field>

<od\_name>ALTSPID</od\_name>

<od\_value>2222</od\_value>

</od\_field>

</svb\_optional\_data>

<sv\_new\_sp\_medium\_timer\_indicator>false </sv\_new\_sp\_medium\_timer\_indicator>

</modify\_pending\_new>

</modify\_data>

</ModifyRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### NewSpCreateRequest

New SP requests the creation of a subscription version.

This message creates one or more new SV records. Upon successful creation of a record, a SvObjectCreationNotification is sent to both the new and the old SPs for inter-provider ports, and timers are created to wait for the second create from the other SP. For intra-provider ports, a SvObjectCreationNotification is sent to the new SP, and no timers are created because no authorization is needed.

The asynchronous reply to this message is a NewSpCreateReply message.

#### NewSpCreateRequest Parameters

| Parameter | Description |
| --- | --- |
| sv\_tntn\_range | This required field is a choice between a single TN (sv\_tn) or a range of TNs (tn\_range). Sv\_tn identifies the 10 digit telephone number. tn\_range identifies a contiguous telephone number range. It consists of a 10 digit field called start\_tn and a 4 digit field called stop\_tn. |
| svb\_new\_sp | This is a required field specifying new SP. |
| sv\_old\_sp | This is a required field specifying old SP. |
| svb\_new\_sp\_due\_date | This required field is the due date specified by new SP. |
| svb\_lrn | This optional field is the LRN value of the SV.  |
| svb\_class\_dpc | This optional field specifies the CLASS DPC value of the SV.  |
| svb\_class\_ssn | This optional field specifies the CLASS SSN value of the SV.  |
| svb\_lidb\_dpc | This optional field specifies the LIDB DPC value of the SV.  |
| svb\_lidb\_ssn | This optional field specifies the LIDB SSN value of the SV.  |
| svb\_isvm\_dpc | This optional field specifies the ISVM DPC value of the SV.  |
| svb\_isvm\_ssn | This optional field specifies the ISVM SSN value of the SV.  |
| svb\_cnam\_dpc | This optional field specifies the CNAM DPC value of the SV.  |
| svb\_cnam\_ssn | This optional field specifies the CNAM SSN value of the SV.  |
| svb\_wsmsc\_dpc | This optional field specifies the WSMSC DPC value of the SV.  |
| svb\_wsmsc\_ssn | This optional field specifies the WSMSC SSN value of the SV.  |
| svb\_end\_user\_location\_type | This optional field specifies the End user location type value of the SV.  |
| svb\_end\_user\_location\_value | This optional field specifies the End user location value value of the SV.  |
| svb\_billing\_id | This optional field specifies the Billing ID value of the SV.  |
| sv\_lnp\_type | This required field specifies the LNP type as one of the following:* inter\_provider
* intra\_provider
 |
| sv\_porting\_to\_original\_sp\_switch | This required field indicates if the port is a port to original. |
| svb\_sv\_type | This optional field specifies the SV type value of the SV.  |
| svb\_optional\_data | This optional field specifies a set of optional items to be modified. They must be specified as od\_name and od\_value pair. |
| sv\_new\_sp\_medium\_timer\_indicator | Medium timer indicator for new SP. |

#### NewSpCreateRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NewSpCreateRequest>

<sv\_tn>2023561000</sv\_tn>

<svb\_lrn>2024593456</svb\_lrn>

<svb\_new\_sp>1111</svb\_new\_sp>

<sv\_old\_sp>2222</sv\_old\_sp>

<svb\_new\_sp\_due\_date>2012-12-17T09:30:47Z</svb\_new\_sp\_due\_date>

<svb\_class\_dpc>111222111</svb\_class\_dpc>

<svb\_class\_ssn>0</svb\_class\_ssn>

<svb\_lidb\_dpc>111222111</svb\_lidb\_dpc>

<svb\_lidb\_ssn>0</svb\_lidb\_ssn>

<svb\_isvm\_dpc>111222111</svb\_isvm\_dpc>

<svb\_isvm\_ssn>0</svb\_isvm\_ssn>

<svb\_cnam\_dpc>111222111</svb\_cnam\_dpc>

<svb\_cnam\_ssn>0</svb\_cnam\_ssn>

<svb\_end\_user\_location\_value>387</svb\_end\_user\_location\_value>

<svb\_end\_user\_location\_type>12</svb\_end\_user\_location\_type>

<svb\_billing\_id>3333</svb\_billing\_id>

<sv\_lnp\_type>inter\_provider</sv\_lnp\_type>

<sv\_porting\_to\_original\_sp\_switch>false

</sv\_porting\_to\_original\_sp\_switch>

<svb\_wsmsc\_dpc>111222111</svb\_wsmsc\_dpc>

<svb\_wsmsc\_ssn>0</svb\_wsmsc\_ssn>

<svb\_sv\_type>wireline</svb\_sv\_type>

<svb\_optional\_data>

<od\_field>

<od\_name>ALTSPID</od\_name>

<od\_value>3333</od\_value>

</od\_field>

</svb\_optional\_data>

<sv\_new\_sp\_medium\_timer\_indicator>true

</sv\_new\_sp\_medium\_timer\_indicator>

</NewSpCreateRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### NotificationReply

SOA replies to a notification or KeepAlive initiated by the NPAC. There is rarely an error that is returned from a Notification. The reply is intended to confirm to the NPAC processing of the notification by the SOA system.

This message is the asynchronous reply to all of the notification messages.

#### NotificationReply Parameters

|  |  |
| --- | --- |
| Parameter | Description |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |

#### NotificationReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NotificationReply>

<basic\_code>success</basic\_code>

</NotificationReply>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### NpaNxxCreateRequest

SOA requests the creation of a NPA-NXX. The request can be done via a NPA-NXX value.

The asynchronous reply to this message is an NpaNxxCreateReply message.

#### NpaNxxCreateRequest Parameters

| Parameter | Description |
| --- | --- |
| npa\_nxx\_value | This required field identifies the NPA-NXX value. |
| npa\_nxx\_effective\_timestamp | This required field specifies the effective date of the NPA-NXX. |

#### NpaNxxCreateRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxCreateRequest>

<npa\_nxx\_value>111222</npa\_nxx\_value>

<npa\_nxx\_effective\_timestamp>2012-12-17T09:30:47Z </npa\_nxx\_effective\_timestamp>

</NpaNxxCreateRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### NpaNxxDeleteRequest

SOA requests the deletion of a NPA-NXX. The request can be done via a NPA-NXX ID or a NPA-NXX value.

The asynchronous reply to this message is an NpaNxxDeleteReply message.

#### NpaNxxDeleteRequest Parameters

| Parameter | Description |
| --- | --- |
| npa\_nxx\_idnpa\_nxx\_value | This required field is a choice of an NPA-NXX ID or an NPA-NXX value. |

#### NpaNxxDeleteRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxDeleteRequest>

<npa\_nxx\_value>111222</npa\_nxx\_value>

</NpaNxxDeleteRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### NpaNxxQueryRequest

SOA queries the NPAC about an existing NPANXX. The query can be done via NPANXX id, NPANXX value, or a query expression.

The asynchronous reply to this message is a NpaNxxQueryReply message.

#### NpaNxxQueryRequest Parameters

| Parameter | Description |
| --- | --- |
| npa\_nxx\_id npa\_nxx\_valuequery\_expression | This required field is a choice among a NPA-NXX ID, NPA-NXX value, or a query expression. The query expression attribute is used to convey a formatted string indicating objects to be queried and returned. Refer to Section 2.9.4 for a detail description of the format of this string. |

#### NpaNxxQueryRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxQueryRequest>

<npa\_nxx\_value>111222</npa\_nxx\_value>

</NpaNxxQueryRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### NpaNxxDxQueryRequest

SOA queries the NPAC about an existing NPA-NXX-X. The query can be done via NPA-NXX-X id, NPA-NXX-X value, or a query expression.

The asynchronous reply to this message is an NpaNxxDxQueryReply message.

#### NpaNxxDxQueryRequest Parameters

| Parameter | Description |
| --- | --- |
| npa\_nxx\_x\_id npa\_nxx\_x\_valuequery\_expression | This required field is a choice among a NPA-NXX-X ID, NPA-NXX-X value, or a query expression. The query expression attribute is used to convey a formatted string indicating objects to be queried and returned. Refer to Section 2.9.4 for a detail description of the format of this string. |

#### NpaNxxDxQueryRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxDxQueryRequest>

<npa\_nxx\_x\_value>1112221</npa\_nxx\_x\_value>

</NpaNxxDxQueryRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### NpbCreateRequest

SOA requests the creation of a PoolBlock. The request can be done via a DashX value.

The asynchronous reply to this message is an NpbCreateReply message.

#### NpbCreateRequest Parameters

| Parameter | Description |
| --- | --- |
| block\_dash\_x | This required field identifies the 7 digit NPA-NXX-X to be created.  |
| svb\_new\_sp | This required field required field specifying new SP. |
| svb\_lrn | This required field is the LRN value for the block.  |
| svb\_class\_dpc | This optional field is the CLASS DPC value of the block.  |
| svb\_class\_ssn | This optional field is the CLASS SSN value of the block.  |
| svb\_lidb\_dpc | This optional field is the LIDB DPC value of the block.  |
| svb\_lidb\_ssn | This optional field is the LIDB SSN value of the block.  |
| svb\_isvm\_dpc | This optional field is the ISVM DPC value of the block.  |
| svb\_isvm\_ssn | This optional field is the ISVM SSN value of the block.  |
| svb\_cnam\_dpc | This optional field is the CNAM DPC value of the block.  |
| svb\_cnam\_ssn | This optional field is the CNAM SSN value of the block.  |
| svb\_wsmsc\_dpc | This optional field is the WSMSC DPC value of the block.  |
| svb\_wsmsc\_ssn | This optional field is the WSMSC SSN value of the block.  |
| svb\_sv\_type | This optional field is the SV type value of the block.  |
| svb\_optional\_data | This optional field specifies a set of optional fields to be modified. They must be specified as od\_name and od\_value pair. |

#### NpbCreateRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpbCreateRequest>

<block\_dash\_x>1112221</block\_dash\_x>

<svb\_new\_sp>1111</svb\_new\_sp>

<svb\_lrn>2024593456</svb\_lrn>

<svb\_class\_dpc>111222111</svb\_class\_dpc>

<svb\_class\_ssn>0</svb\_class\_ssn>

<svb\_lidb\_dpc>111222111</svb\_lidb\_dpc>

<svb\_lidb\_ssn>0</svb\_lidb\_ssn>

<svb\_isvm\_dpc>111222111</svb\_isvm\_dpc>

<svb\_isvm\_ssn>0</svb\_isvm\_ssn>

<svb\_cnam\_dpc>111222111</svb\_cnam\_dpc>

<svb\_cnam\_ssn>0</svb\_cnam\_ssn>

<svb\_wsmsc\_dpc>111222111</svb\_wsmsc\_dpc>

<svb\_wsmsc\_ssn>0</svb\_wsmsc\_ssn>

<svb\_sv\_type>wireline</svb\_sv\_type>

<svb\_optional\_data>

<od\_field>

<od\_name>ALTSPID</od\_name>

<od\_value>3333</od\_value>

</od\_field>

</svb\_optional\_data>

</NpbCreateRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### NpbModifyRequest

SOA requests the modification of a PoolBlock. The request can be done via a PoolBlock ID or a DashX value.

The asynchronous reply to this message is an NpbModifyReply message.

#### NpbModifyRequest Parameters

| Parameter | Description |
| --- | --- |
| block\_idblock\_dash\_x | This required field is a choice between a Pool Block ID and a 7 digit NPA-NXX-X value..  |
| svb\_lrn | This optional field is the LRN value of the block.  |
| svb\_class\_dpc | This optional field is the CLASS DPC value of the block.  |
| svb\_class\_ssn | This optional field is the CLASS SSN value of the block.  |
| svb\_lidb\_dpc | This optional field is the LIDB DPC value of the block.  |
| svb\_lidb\_ssn | This optional field is the LIDB SSN value of the block.  |
| svb\_isvm\_dpc | This optional field is the ISVM DPC value of the block.  |
| svb\_isvm\_ssn | This optional field is the ISVM SSN value of the block.  |
| svb\_cnam\_dpc | This optional field is the CNAM DPC value of the block.  |
| svb\_cnam\_ssn | This optional field is the CNAM SSN value of the block.  |
| svb\_wsmsc\_dpc | This optional field is the WSMSC DPC value of the block.  |
| svb\_wsmsc\_ssn | This optional field is the WSMSC SSN value of the block.  |
| svb\_sv\_type | This optional field is the SV type value of the block.  |
| svb\_optional\_data | This optional structure specifies a set of optional fields to be modified. They must be specified as od\_name and od\_value pair. |

#### NpbModifyRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpbModifyRequest>

<block\_id>10</block\_id>

<svb\_lrn>1001001000</svb\_lrn>

<svb\_class\_dpc>111222111</svb\_class\_dpc>

<svb\_class\_ssn>0</svb\_class\_ssn>

<svb\_lidb\_dpc>111222111</svb\_lidb\_dpc>

<svb\_lidb\_ssn>0</svb\_lidb\_ssn>

<svb\_isvm\_dpc>111222111</svb\_isvm\_dpc>

<svb\_isvm\_ssn>0</svb\_isvm\_ssn>

<svb\_cnam\_dpc>111222111</svb\_cnam\_dpc>

<svb\_cnam\_ssn>0</svb\_cnam\_ssn>

<svb\_wsmsc\_dpc>111222111</svb\_wsmsc\_dpc>

<svb\_wsmsc\_ssn>0</svb\_wsmsc\_ssn>

<svb\_sv\_type>wireline</svb\_sv\_type>

<svb\_optional\_data>

<od\_field>

<od\_name>ALTSPID</od\_name>

<od\_value>3333</od\_value>

</od\_field>

</svb\_optional\_data>

</NpbModifyRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### NpbQueryRequest

SOA queries the NPAC about an existing PoolBlock. The query can be done via PoolBlock id, DashX value, or a query expression.

The asynchronous reply to this message is an NpbQueryReply message.

#### NpbQueryRequest Parameters

| Parameter | Description |
| --- | --- |
| block\_idblock\_dash\_xquery\_expression | This required field is a choice among a block ID, DashX value, or a query expression. The query expression attribute is used to convey a formatted string indicating objects to be queried and returned. Refer to Section 2.9.5 for a detail description of the format of the query\_expression string. |

#### NpbQueryRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpbQueryRequest>

<block\_id>45</block\_id>

</NpbQueryRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### OldSpCreateRequest

The old service provider SOA requests the creation of an individual or range of subscription versions. The asynchronous reply to this message is an OldSpCreateReply message.

#### OldSpCreateRequest Parameters

| Parameter | Description |
| --- | --- |
| sv\_tntn\_range | This required field is a choice between a single TN (sv\_tn) or a range of TNs (tn\_range). It specifies the TN(s) that are included in the old SP create request. |
| svb\_new\_sp | This required field specifies the SPID of the new service provider for the SV(s). |
| sv\_old\_sp | This required field specifies the SPID of the old service provider for the SV(s). This should be the same SPID as the initiator of this request. |
| sv\_old\_sp\_due\_date | This required field specifies the date/time the old service provider agrees for the port. |
| sv\_old\_sp\_authorization | This required field indicates if the old service provider agrees to the port. If specified as false, the sv\_status\_change\_cause\_code is a required field. |  |
| sv\_status\_change\_cause\_code | This required field indicates the reason the old service provider has not authorized the port. It’s required if the sv\_old\_sp\_authorization is specified as false. Valid values are:* lsr\_wpr\_not\_received
* foc\_wprr\_not\_issued
* due\_date\_mismatch
* vacant\_number\_port
* general\_conflict
 |
| svb\_lnp\_type | This required field specifies the LNP type for the subscription versions. Valid values are: * inter\_provider
* intra\_provider
 |
| sv\_old\_sp\_medium\_timer\_indicator | If supported by the requestor, this field is required. It indicates if the port request if for an SV that can be ported using medium timers. |

#### OldSpCreateRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>2222</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<OldSpCreateRequest>

<sv\_tn>2023561000</sv\_tn>

<svb\_new\_sp>1111</svb\_new\_sp>

<sv\_old\_sp>2222</sv\_old\_sp>

<sv\_old\_sp\_due\_date>2012-12-17T09:30:47Z</sv\_old\_sp\_due\_date>

<sv\_old\_sp\_authorization>false</sv\_old\_sp\_authorization>

<sv\_status\_change\_cause\_code>vacant\_number\_port

</sv\_status\_change\_cause\_code>

<sv\_lnp\_type>inter\_provider</sv\_lnp\_type>

<sv\_old\_sp\_medium\_timer\_indicator>true

</sv\_old\_sp\_medium\_timer\_indicator>

</OldSpCreateRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### ProcessingError

This message is an error reply that will be sent rarely. When the receiving system is able to return a synchronous acknowledgement for a request, any error can be indicated as part of the asynchronous reply. However, in certain circumstances the receiving system may not be able to send the asynchronous reply as part of a reply message that directly corresponds to the request. For example, if the request contains invalid XML the receiving system will have a parsing failure and will not be able to determine the type of request, and therefore will not be able to determine the corresponding type of reply message. In these cases, the receiving system should send a ProcessingError message to indicate the error. The invoke id of the ProcessingError message must match that of the incoming message. This means that if the receiving system cannot determine the invoke id of the request, it will not be able to generate a ProcessingError.

When multiple requests are sent as a batch, a separate ProcessingError message will be created for each one. Note that the batch itself is one large XML message. Any parsing error in the batch will cause all messages in the batch to be failed with a ProcessingError.

#### ProcessingError Parameters

|  |  |
| --- | --- |
| Parameter | Description |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | This optional field specifies the error number.  |
| status\_info | This optional field describes the error info.  |

#### ProcessingError XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<ProcessingError>

<basic\_code>failed</basic\_code>

<status\_code>6100</status\_code>

<status\_info>request could not be processed</status\_info>

</ProcessingError>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### RemoveFromConflictRequest

SOA requests the removal of a conflict subscription version. The request can be done via SVID, a TN, or a TN range.

The asynchronous reply to this message is a RemoveFromConflictReply message.

#### RemoveFromConflictRequest Parameters

| Parameter | Description |
| --- | --- |
| sv\_idsv\_tntn\_range | This required field is a choice among SV ID, a single TN (sv\_tn) or a range of TNs (tn\_range). Sv\_tn identifies the 10 digit telephone number. tn\_range identifies a contiguous telephone number range. It consists of a 10 digit field called start\_tn and a 4 digit field called stop\_tn. |

#### RemoveFromConflictRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" >

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<RemoveFromConflictRequest>

<sv\_id>100245</sv\_id>

</RemoveFromConflictRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

### SpidQueryRequest

This message is used by the SOA to query the NPAC about an existing service provider. There are three different formats for this request:

* No parameter is specified – This is a query for all service provider information. The SpidQueryReply short\_form will be returned (see SpidQueryReply for details) for all SPID objects.
* The sp\_id parameter is specified – This is a query for a specific service provider. If this sp\_id parameter matches the SPID issuing the query , the SpidQueryReply long\_form is returned (see SpidQueryReply for details). Otherwise, the SpidQueryReply short\_form is returned for the specified SPID object. See the section 5.1 (“Message Structure”) for details on how the NPAC determines which spid is issuing the query.
* The query\_expression is specified – This is a query that can return multiple SPID records. Regardless of which objects match the criteria, the SpidQueryReply short\_form is returned (see SpidQueryReply for details) for the service provider objects that match the query\_expression criteria.

The asynchronous reply to this message is a SpidQueryReply message.

#### SpidQueryRequest Parameters

| Parameter | Description |
| --- | --- |
| sp\_idquery\_expression | This optional field is a choice between sp\_id and a query expression. Refer to Section 2.9.8 for a detail description of the format of the query\_expression string. |

#### SpidQueryRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SpidQueryRequest/>

</Message>

</soa\_to\_npac>

 </MessageContent>

</SOAMessages>

### SvQueryRequest

SOA queries the NPAC about an existing subscription version. The query can be done via subscription version id, a single TN, and a query expression.

The asynchronous reply to this message is a SvQueryReply message.

#### SvQueryRequest Parameters

| Parameter | Description |
| --- | --- |
| sv\_id sv\_tnquery\_expression | This required field is a choice between a SV ID, sv\_tn, and a query expression. The query expression attribute is used to convey a formatted string indicating objects to be queried and returned. Refer to Section 2.9.9 for a detail description of the format of this string. |

#### SvQueryRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<soa\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvQueryRequest>

<sv\_id>100245</sv\_id>

</SvQueryRequest>

</Message>

</soa\_to\_npac>

</MessageContent>

</SOAMessages>

## NPAC to SOA Messages

### ActivateReply

This message is the asynchronous reply to an ActivateRequest message.

#### ActivateReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | This optional field specifies the error number.  |
| status\_info | This optional field specifies the error info.  |

#### ActivateReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<ActivateReply>

<basic\_code>success</basic\_code>

</ActivateReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### AuditCancelReply

This message is the asynchronous reply to an AuditCancelRequest message.

#### AuditCancelReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| audit\_id | This optional field provides id of the audit that was cancelled. |

#### AuditCancelReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<AuditCancelReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<audit\_id>10</audit\_id>

</AuditCancelReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### AuditCreateReply

This message is the asynchronous reply to an AuditCreateRequest message.

#### AuditCreateReply Parameters

| Parameter | Description |
| --- | --- |
| audit\_id | This optional field provides the unique identifier of the audit. |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |

#### AuditCreateReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<AuditCreateReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<audit\_id>100</audit\_id>

</AuditCreateReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### AuditQueryReply

This message is the asynchronous reply to an AuditQueryRequest message.

#### AuditQueryReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| audit\_list | This optional field provides list of the audit data items that satisfy the criteria specified on the request. The following parameters make up the audit\_data structure:* audit\_id – the unique ID for the audit
* audit\_name – The name assigned to audit when it was created.
* audit\_status – One of the following statuses:
	+ audit\_in\_progress
	+ audit\_cancelled
	+ audit\_complete
* tn\_range – 10 digit start\_tn and a 4 digit stop\_tn (ending station)
* audit\_activation\_range – a start\_time and stop\_time specified when the audit was created.
* audit\_spid\_range – either audit\_all\_service\_providers or audit\_sp\_name\_or\_id with a service provider SPID or name specified to audit.
* audit\_tn\_count - a count of the number of TNs in the audit
* audit\_tns\_complete – a count of the number of TNs that are complete in an active audit. If the audit is complete this should match the audit\_tn\_count.
* audit\_requesting\_spid – The SPID of the provider that requested the audit.
 |

#### AuditQueryReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2011-12-31T12:00:00.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<AuditQueryReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<audit\_list>

<audit\_data>

<audit\_id>10</audit\_id>

<audit\_name>Audit 3045</audit\_name>

<audit\_status>audit\_complete</audit\_status>

<tn\_range>

<start\_tn>2023562020</start\_tn>

<stop\_tn>2024</stop\_tn>

</tn\_range>

<audit\_activation\_range>

<start\_time>2011-12-31T12:00:00Z</start\_time>

<stop\_time>2011-12-31T13:00:00Z</stop\_time>

</audit\_activation\_range>

<audit\_spid\_range>

<audit\_all\_service\_providers/>

</audit\_spid\_range>

<audit\_tn\_count>5</audit\_tn\_count>

<audit\_tns\_complete>5</audit\_tns\_complete>

<audit\_requesting\_spid>1111</audit\_requesting\_spid>

</audit\_data>

<audit\_data>

<audit\_id>14</audit\_id>

<audit\_name>Audit 3055</audit\_name>

<audit\_status>audit\_complete</audit\_status>

<tn\_range>

<start\_tn>2023564020</start\_tn>

<stop\_tn>4021</stop\_tn>

</tn\_range>

<audit\_spid\_range>

<audit\_sp\_name\_or\_id>Service Provider 1111 </audit\_sp\_name\_or\_id>

</audit\_spid\_range>

<audit\_tn\_count>2</audit\_tn\_count>

<audit\_tns\_complete>2</audit\_tns\_complete>

<audit\_requesting\_spid>1111</audit\_requesting\_spid>

</audit\_data>

</audit\_list>

</AuditQueryReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### AuditResultsNotification

This message is sent from the NPAC to the SOA upon completion of an audit to notify the SOA of the audit results.

#### AuditResultsNotification Parameters

| Parameter | Description |
| --- | --- |
| audit\_id | Identifier of the audit assigned by the NPAC |
| audit\_results\_status | The status of the audit performed. Enumeration values include:* audit\_success
* audit\_failed\_due\_to\_discrepancies
* audit\_failed\_on\_lsms
* audit\_no\_audit\_performed
 |
| audit\_failed\_list | Optional list of LSMSs that that either don’t support audit queries or those that didn’t successfully respond to the audit queries. |
| audit\_discrepancy\_data | The list discrepant TN that were corrected The following fields are included for each discrepancy:* sv\_tn – 10 digit telephone number
* sv\_id – the unique ID for the SV
* sp\_id – the SPID of the provider that owns the SV
* audit\_discrepancy\_reason - one of the following values: audit\_tn\_missing\_npac, audit\_tn\_missing\_lsms, audit\_tn\_mismatch\_data which indicates the field that was discrepant.
 |
| audit\_discrepancy\_count | Number of discrepancies between the LSMS of the audited service provider and the NPAC |
| audit\_completion\_time | Timestamp of the completion of the audit |

#### AuditResultsNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<AuditResultsNotification>

<audit\_id>95</audit\_id>

<audit\_results\_status>audit\_failed\_due\_to\_discrepancies</audit\_results\_status>

<audit\_failed\_list>

<sp\_id>3333</sp\_id>

<sp\_name>Service Provider #3</sp\_name>

</audit\_failed\_list>

<audit\_discrepancy\_data>

<sv\_tn>2023562000</sv\_tn>

<sv\_id>100345</sv\_id>

<sp\_id>2222</sp\_id>

<audit\_discrepancy\_reason>

<audit\_tn\_missing\_lsms/>

</audit\_discrepancy\_reason>

</audit\_discrepancy\_data>

<audit\_discrepancy\_count>1</audit\_discrepancy\_count>

<audit\_completion\_time>2012-12-17T09:30:46</audit\_completion\_time>

</AuditResultsNotification>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### CancelReply

This message is the asynchronous reply to a CancelRequest message.

#### CancelReply Parameters

|  |  |
| --- | --- |
| Parameter | Description |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |

#### CancelReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<CancelReply>

<basic\_code>success</basic\_code>

</CancelReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### DisconnectReply

This message is the asynchronous reply to a DisconnectRequest message.

#### DisconnectReply Parameters

|  |  |
| --- | --- |
| Parameter | Description |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |

#### DisconnectReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<DisconnectReply>

<basic\_code>success</basic\_code>

</DisconnectReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### KeepAlive

The KeepAlive message is a heartbeat from one entity to the other. The intention is for the originating entity to inform to receiving entity of its presence.

The asynchronous reply to this message is a NotificationReply message.

#### KeepAlive Parameters

None.

#### KeepAlive XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<KeepAlive/>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### LnpSpidMigrationNotification

The NPAC notifies the SOA with the pending SPID migration. All the parameters listed below are required.

#### LnpSpidMigrationNotification Parameters

| Parameter | Description |
| --- | --- |
| migration\_from\_sp | Identifier of the migrate-from SP. |
| migration\_to\_sp | Identifier of the migrate-to SP. |
| migration\_npa\_nxx\_data | List of involved NPA-NXX data in following pair:* npa\_nxx\_id
* npa\_nxx\_value
 |
| migration \_creation\_timestamp | Timestamp of the creation of the migration |
| migration \_due\_date | Due date of the migration |
| migration \_activation\_timestamp | Timestamp of the activation of the migration |

#### LnpSpidMigrationNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<LnpSpidMigrationNotification>

<migration\_from\_sp>2222</migration\_from\_sp>

<migration\_to\_sp>1111</migration\_to\_sp>

<migration\_npanxx\_data>

<npa\_nxx\_data>

<npa\_nxx\_id>25</npa\_nxx\_id>

<npa\_nxx\_value>111222</npa\_nxx\_value>

</npa\_nxx\_data>

</migration\_npanxx\_data>

<migration\_creation\_timestamp>2012-12-01T12:00:00 </migration\_creation\_timestamp>

<migration\_due\_date>2012-12-31T12:00:00</migration\_due\_date>

<migration\_activation\_timestamp>2012-12-31T12:00:00 </migration\_activation\_timestamp>

</LnpSpidMigrationNotification>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### LrnCreateDownload

The NPAC notifies the SOA with the LRN creation download. All the parameters listed below are required.

#### LrnCreateDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | Owning spid. |
| lrn\_id | Identifier of the LRN. |
| lrn\_value | Value of the LRN. |
| lrn \_creation\_timestamp | Timestamp of the creation of the lrn |
| download\_reason | Download reason of the LRN specificed as dr\_new.  |

#### LrnCreateDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<LrnCreateDownload>

<sp\_id>1111</sp\_id>

<lrn\_id>10</lrn\_id>

<lrn\_value>2023563780</lrn\_value>

<download\_reason>dr\_new</download\_reason>

<lrn\_creation\_timestamp>2012-12-16T12:00:00 </lrn\_creation\_timestamp>

</LrnCreateDownload>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### LrnCreateReply

This message is the asynchronous reply to an LrnCreateRequest message.

#### LrnCreateReply Parameters:

| Parameter | Description |
| --- | --- |
| lrn\_id | The optional unique identifier of the LRN. This field will be present if the request is successful, and not present otherwise. |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| invalid\_data | This optional field is present when the request to create an LRN fails due to an incorrect lrn value. |

#### LrnCreateReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<LrnCreateReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<lrn\_id>123</lrn\_id>

</LrnCreateReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### LrnDeleteDownload

The NPAC notifies the SOA with the LRN delete download.

#### LrnDeleteDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field specifies the owning SPID. |
| lrn\_id | This required field specifies the unique identifier of the LRN. |
| download\_reason | This field specifies the reason for the download of the deleted LRN – should always be dr\_delete. |

#### LrnDeleteDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<LrnDeleteDownload>

<sp\_id>1111</sp\_id>

<lrn\_id>55</lrn\_id>

<download\_reason>dr\_delete</download\_reason>

</LrnDeleteDownload>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### LrnDeleteReply

This message is the asynchronous reply to an LrnDeleteRequest message.

#### LrnDeleteReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| lrn\_id | This optional field provides LRN ID of the deleted LRN. |

#### LrnDeleteReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<LrnDeleteReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<lrn\_id>10</lrn\_id>

</LrnDeleteReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### LrnQueryReply

This message is the asynchronous reply to an LrnQueryRequest message.

#### LrnQueryReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| lrn\_list | This optional field is a list of one or more lrn\_data structures. Each lrn\_data structure contains the following 6 values. This list will not be present if the query finds no results. |
| sp\_id | This required field indicates the SPID that created the LRN. |
| lrn\_id | This required field specifies the unique numeric identifier of the LRN |
| lrn\_value | This required field specifies the value of the LRN. |
| download\_reason | This required field specifies the reason for the download of the LRN |
| lrn\_creation\_timestamp | This required field specifies the timestamp of when the LRN was created. |
| activity\_timestamp | This required field specifies the timestamp of when the NPAC last created a notification or download for this object. |

#### LrnQueryReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<LrnQueryReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<lrn\_list>

<lrn\_data>

<sp\_id>1111</sp\_id>

<lrn\_id>10</lrn\_id>

<lrn\_value>2023563780</lrn\_value>

<download\_reason>dr\_new</download\_reason>

<lrn\_creation\_timestamp>2012-12-16T12:00:00 </lrn\_creation\_timestamp>

<activity\_timestamp>2012-12-17T09:30:46.936Z </activity\_timestamp>

</lrn\_data>

<lrn\_data>

<sp\_id>1111</sp\_id>

<lrn\_id>11</lrn\_id>

<lrn\_value>2023563785</lrn\_value>

<download\_reason>dr\_new</download\_reason>

<lrn\_creation\_timestamp>2010-10-31T12:00:00Z </lrn\_creation\_timestamp>

<activity\_timestamp>2012-12-17T09:30:46.936Z </activity\_timestamp>

</lrn\_data>

</lrn\_list>

</LrnQueryReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### ModifyReply

This message is the asynchronous reply to a ModifyRequest message.

#### ModifyReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| invalid\_data | This optional field indicates the fields in the request that caused the modify request to fail:* svb\_lrn
* svb\_new\_sp\_due\_date
* sv\_effective\_release\_date
* sv\_old\_sp\_due\_date
* sv\_old\_sp\_authorization
* svb\_class\_dpc
* svb\_class\_ssn
* svb\_lidb\_dpc
* svb\_lidb\_ssn
* svb\_isvm\_dpc
* svb\_isvm\_ssn
* svb\_cnam\_dpc
* svb\_cnam\_ssn
* svb\_end\_user\_location\_value
* svb\_end\_user\_location\_type
* svb\_billing\_id
* sv\_status\_change\_cause\_code
* svb\_wsmsc\_dpc
* svb\_wsmsc\_ssn
* sv\_customer\_disconnect\_date
* sv\_effective\_release\_date
* svb\_sv\_type
* svb\_optional\_data
* sv\_status
* sv\_new\_sp\_medium\_timer\_indicator
* sv\_old\_sp\_medium\_timer\_indicator
 |

#### ModifyReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<ModifyReply>

<reply\_status>

<basic\_code>failed</basic\_code>

<status\_code>5126</status\_code>

<status\_info>LRN specified for SV is in a different LATA from TN.</status\_info>

</reply\_status>

<invalid\_data>

<svb\_lrn>2023563700</svb\_lrn>

</invalid\_data>

</ModifyReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NewNpaNxxNotification

The NPAC notifies the SOA with the NPANXX creation notification. All the parameters listed below are required.

#### NewNpaNxxNotification Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field specifies the SPID that owns the NPA-NXX where the first port was done. |
| npa\_nxx\_id | The unique identifier of the NPA-NXX. |
| npa\_nxx\_value | The 6 digit value of the NPA-NXX. |
| npa\_nxx \_effective\_timestamp | The effective timestamp of the NPA-NXX. |

#### NewNpaNxxNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NewNpaNxxNotification>

<sp\_id>1111</sp\_id>

<npa\_nxx\_id>10</npa\_nxx\_id>

<npa\_nxx\_value>202356</npa\_nxx\_value>

<npa\_nxx\_effective\_timestamp>2011-12-31T12:00:00Z </npa\_nxx\_effective\_timestamp>

</NewNpaNxxNotification>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NewSpCreateReply

This message is the asynchronous reply to a NewSpCreateRequest message.

#### NewSpCreateReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| invalid\_data | This optional field indicates which parameter in the request caused a failure:* sv\_tn
* tn\_range
* svb\_lrn
* svb\_new\_sp
* svb\_old\_sp
* svb\_new\_sp\_due\_date
* svb\_class\_dpc
* svb\_class\_ssn
* svb\_lidb\_dpc
* svb\_lidb\_ssn
* svb\_isvm\_dpc
* svb\_isvm\_ssn
* svb\_cnam\_dpc
* svb\_cnam\_ssn
* svb\_end\_user\_location\_type
* svb\_end\_user\_location\_value
* svb\_billing\_id
* sv\_lnp\_type
* sv\_porting\_to\_original\_sp\_switch
* svb\_wsmsc\_dpc
* svb\_wsmsc\_ssn
* svb\_sv\_type
* svb\_optional\_data
* sv\_new\_sp\_medium\_timer\_indicator
 |

#### NewSpCreateReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NewSpCreateReply>

<reply\_status>

<basic\_code>failed</basic\_code>

<status\_code>5126</status\_code>

<status\_info> LRN specified for SV is in a different LATA from TN.</status\_info>

</reply\_status>

<invalid\_data>

<svb\_lrn>2023563780</svb\_lrn>

</invalid\_data>

</NewSpCreateReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NotificationReply

NPAC replies to a KeepAlive initiated by the SOA. There is rarely an error that is returned from a KeepAlive. The reply is intended to confirm to the SOA processing of the KeepAlive by the NPAC system.

This message is the asynchronous reply to all of the notification messages.

#### NotificationReply Parameters

|  |  |
| --- | --- |
| Parameter | Description |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |

#### NotificationReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NotificationReply>

<basic\_code>success</basic\_code>

</NotificationReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpaNxxCreateDownload

The NPAC notifies the SOA with the NPANXX creation download.

#### NpaNxxCreateDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field indicates the SPID that created the NPA-NXX. |
| npa\_nxx\_id | This required field is the unique identifier of the NPA-NXX. |
| npa\_nxx\_value | This required field is the 6 digit value of the NPA-NXX. |
| npa\_nxx \_effective\_timestamp | This required field is the effective timestamp of the NPA-NXX |
| download\_reason | This required field is the download reason of the NPA-NXX (dr\_new) |
| npa\_nxx \_creation\_timestamp | This required field is the timestamp for when the NPA-NXX was created. |

#### NpaNxxCreateDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2011-12-31T12:00:00.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxCreateDownload>

<sp\_id>1111</sp\_id>

<npa\_nxx\_id>25</npa\_nxx\_id>

<npa\_nxx\_value>111222</npa\_nxx\_value>

<npa\_nxx\_effective\_timestamp>2011-12-31T12:00:00Z </npa\_nxx\_effective\_timestamp>

<download\_reason>dr\_new</download\_reason>

<npa\_nxx\_creation\_timestamp>2011-12-31T12:00:00Z </npa\_nxx\_creation\_timestamp>

</NpaNxxCreateDownload>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpaNxxCreateReply

This message is the asynchronous reply to an NpaNxxCreateRequest.

#### NpaNxxCreateReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| npa\_nxx\_id | This field is optional with NPA-NXX ID |
| invalid\_data | This optional field indicates the invalid parameter that that caused the request to fail:* npa\_nxx\_value
* npa\_nxx\_effective\_timestamp
 |

#### NpaNxxCreateReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxCreateReply>

<reply\_status>

<basic\_code>failed</basic\_code>

<status\_code>5135</status\_code>

<status\_info>NPA-NXX not valid for this region.</status\_info>

</reply\_status>

<invalid\_data>

<npa\_nxx\_value>111222</npa\_nxx\_value>

</invalid\_data>

</NpaNxxCreateReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpaNxxDeleteDownload

This message is a download to a SOA for an NPA-NXX deletion. All the parameters listed below are required.

#### NpaNxxDeleteDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This field is the SPID that owned the NPA-NXX that has been deleted. |
| npa\_nxx\_id | This field is the unique identifier of the NPA-NXX. |
| download\_reason | This required field specifies the reason for the download of the created NPA-NXX – should always be dr\_delete. |

#### NpaNxxDeleteDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxDeleteDownload>

<sp\_id>1111</sp\_id>

<npa\_nxx\_id>25</npa\_nxx\_id>

<download\_reason>dr\_delete</download\_reason>

</NpaNxxDeleteDownload>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpaNxxDeleteReply

This message is the asynchronous reply to an NpaNxxDeleteRequest message.

#### NpaNxxDeleteReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| npa\_nxx\_id | This optional npa\_nxx ID indicates the object that was deleted by the request. |

#### NpaNxxDeleteReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxDeleteReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<npa\_nxx\_id>25</npa\_nxx\_id>

</NpaNxxDeleteReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpaNxxDxCreateDownload

This message is a download to a SOA for an NPA-NXX-X creation. All parameters listed below are required.

#### NpaNxxDxCreateDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This field indicates the SPID that owns the NPA-NXX.-X. |
| npa\_nxx\_x\_id | This field is the unique identifier of the NPA-NXX-X. |
| npa\_nxx\_x\_value | This field is the 7 digit value of the NPA-NXX-X. |
| npa\_nxx\_x\_effective\_timestamp | This field is the effective timestamp of the NPA-NXX-X. |
| npa\_nxx\_x\_creation\_timestamp | This field is the creation timestamp of the NPA-NXX-X. |
| npa\_nxx\_x\_modified\_timestamp | This field is the modification timestamp of the NPA-NXX-X. For NPA-NXX-X objects that haven’t been modified, this timestamp will be the same as the creation timestamp. |
| download\_reason | This field is the download reason (dr\_new) |

#### NpaNxxDxCreateDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxDxCreateDownload>

<sp\_id>1111</sp\_id>

<npa\_nxx\_x\_id>35</npa\_nxx\_x\_id>

<npa\_nxx\_x\_value>1112221</npa\_nxx\_x\_value>

<npa\_nxx\_x\_effective\_timestamp>2001-12-17T09:30:47Z </npa\_nxx\_x\_effective\_timestamp>

<npa\_nxx\_x\_creation\_timestamp>2001-12-17T09:30:47Z </npa\_nxx\_x\_creation\_timestamp>

<npa\_nxx\_x\_modified\_timestamp>2001-12-17T09:30:47Z </npa\_nxx\_x\_modified\_timestamp>

<download\_reason>dr\_new</download\_reason>

</NpaNxxDxCreateDownload>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpaNxxDxModifyDownload

This message is a download to a SOA for an NPA-NXX-X modification. All the parameters listed below are required.

#### NpaNxxDxModifyDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This field indicates the SPID that owns the NPA-NXX.-X. |
| npa\_nxx\_x\_id | This field is the unique identifier of the NPA-NXX-X. |
| npa\_nxx\_x\_effective\_timestamp | This field is the effective timestamp of the NPA-NXX-X. |
| npa\_nxx\_x\_modified\_timestamp | This field is the modification timestamp of the NPA-NXX-X. |
| download\_reason | This field is the download reason (dr\_modified) |

#### NpaNxxDxModifyDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxDxModifyDownload>

<sp\_id>1111</sp\_id>

<npa\_nxx\_x\_id>35</npa\_nxx\_x\_id>

<npa\_nxx\_x\_effective\_timestamp>2001-12-17T09:30:47Z </npa\_nxx\_x\_effective\_timestamp>

<npa\_nxx\_x\_modified\_timestamp>2001-12-17T09:30:47Z </npa\_nxx\_x\_modified\_timestamp>

<download\_reason>dr\_modified</download\_reason>

</NpaNxxDxModifyDownload>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpaNxxDxDeleteDownload

This message is a download to a SOA for an NPA-NXX-X deletion. All parameters listed below are required.

#### NpaNxxDxDeleteDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This field indicates the SPID that owns the NPA-NXX.-X. |
| npa\_nxx\_x\_id | This field is the unique identifier of the NPA-NXX-X. |
| download\_reason | This field specifies the reason for the download of the deleted NPA-NXX-X – should always be dr\_delete. |

#### NpaNxxDxDeleteDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxDxDeleteDownload>

<sp\_id>2222</sp\_id>

<npa\_nxx\_x\_id>35</npa\_nxx\_x\_id>

<download\_reason>dr\_delete</download\_reason>

</NpaNxxDxDeleteDownload>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpaNxxDxQueryReply

This message is the asynchronous reply to an NpaNxxDxQueryRequest message.

#### NpaNxxDxQueryReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| npa\_nxx\_x\_list | This element is a list of npa\_nxx\_x\_data structures that contain the results of the query. |
| npa\_nxx\_x\_data | This field is an optional list with one or more sets of the following 8 values: |
| sp\_id | This required field specifies the SPID that owns the NPA-NXX-X |
| npa\_nxx\_x\_id | This required field specifies the unique numeric identifier of the NPA-NXX-X |
| npa\_nxx\_x\_value | This required field specifies the value of the NPA-NXX-X. |
| npa\_nxx\_x\_effective\_timestamp | This required field specifies the timestamp of when the NPA-NXX-X is effective. |
| npa\_nxx\_x\_creation\_timestamp | This required field specifies the timestamp of when the NPA-NXX-X was created. |
| npa\_nxx\_x\_modified\_timestamp | This required field specifies the timestamp of when the NPA-NXX-X was last modified. |
| download\_reason | This required field specifies the reason for the download of the NPA-NXX-X |
| activity\_timestamp | This required field specifies the timestamp of when the NPAC last created a notification or download for this object. |

#### NpaNxxDxQueryReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxDxQueryReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<npa\_nxx\_x\_list>

<npa\_nxx\_x\_data>

<sp\_id>1111</sp\_id>

<npa\_nxx\_x\_id>123</npa\_nxx\_x\_id>

<npa\_nxx\_x\_value>1234567</npa\_nxx\_x\_value>

<npa\_nxx\_x\_effective\_timestamp>2001-12-17T09:30:47Z

</npa\_nxx\_x\_effective\_timestamp>

<npa\_nxx\_x\_creation\_timestamp>2001-12-17T09:30:47Z

</npa\_nxx\_x\_creation\_timestamp>

<npa\_nxx\_x\_modified\_timestamp>2001-12-17T09:30:47Z

</npa\_nxx\_x\_modified\_timestamp>

<download\_reason>dr\_new</download\_reason>

<activity\_timestamp>2012-12-17T09:30:46.136Z </activity\_timestamp>

</npa\_nxx\_x\_data>

</npa\_nxx\_x\_list>

</NpaNxxDxQueryReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpaNxxModifyDownload

This message is a download to a SOA for an NPA-NXX modification.

#### NpaNxxModifyDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field indicates the SPID that created the NPA-NXX. |
| npa\_nxx\_id | This field is the unique identifier of the NPA-NXX. |
| npa\_nxx\_effective\_timestamp | This required field is the effective timestamp of the NPA-NXX |
| download\_reason | This required field is the download reason of the NPA-NXX (dr\_modified) |
| npa\_nxx\_modified\_timestamp | This required field is the timestamp for when the NPA-NXX was modified. |

#### NpaNxxModifyDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxModifyDownload>

<sp\_id>1111</sp\_id>

<npa\_nxx\_id>123</npa\_nxx\_id>

<npa\_nxx\_effective\_timestamp>2011-12-17T09:30:47Z

</npa\_nxx\_effective\_timestamp>

<download\_reason>dr\_modified</download\_reason>

<npa\_nxx\_modified\_timestamp>2011-12-25T09:30:47Z

</npa\_nxx\_modified\_timestamp>

</NpaNxxModifyDownload>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpaNxxQueryReply

This message is the asynchronous reply to an NpaNxxQueryRequest message.

#### NpaNxxQueryReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| npa\_nxx\_list | This element is a list of npa\_nxx\_data structures that contain the results of the query |
| npa\_nxx\_data | This field is an optional list with one or more sets of the following 8 values: |
| sp\_id | This required field specifies the SPID that owns the NPA-NXX |
| npa\_nxx\_id | This required field specifies the unique numeric identifier of the NPA-NXX |
| npa\_nxx\_value | This required field specifies the value of the NPA-NXX |
| npa\_nxx\_effective\_timestamp | This required field specifies the timestamp of when the NPA-NXX is effective. |
| download\_reason | This required field specifies the reason for the download of the NPA-NXX |
| npa\_nxx\_creation\_timestamp | This required field specifies the timestamp of when the NPA-NXX was created. |
| npa\_nxx\_modified\_timestamp | This optional field specifies the timestamp of when the NPA-NXX was last modified. |
| activity\_timestamp | This required field specifies the timestamp of when the NPAC last created a notification or download for this object. |

#### NpaNxxQueryReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:47.224Z </origination\_timestamp>

<NpaNxxQueryReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<npa\_nxx\_list>

<npa\_nxx\_data>

<sp\_id>1234</sp\_id>

<npa\_nxx\_id>123</npa\_nxx\_id>

<npa\_nxx\_value>111222</npa\_nxx\_value>

<npa\_nxx\_effective\_timestamp>2011-12-17T09:30:47Z

</npa\_nxx\_effective\_timestamp>

<download\_reason>dr\_new</download\_reason>

<npa\_nxx\_creation\_timestamp>2011-12-17T09:30:47Z

</npa\_nxx\_creation\_timestamp>

<activity\_timestamp>2012-12-17T09:30:47.136Z </activity\_timestamp>

</npa\_nxx\_data>

<npa\_nxx\_data>

<sp\_id>1234</sp\_id>

<npa\_nxx\_id>125</npa\_nxx\_id>

<npa\_nxx\_value>111223</npa\_nxx\_value>

<npa\_nxx\_effective\_timestamp>2011-12-17T09:30:47Z

</npa\_nxx\_effective\_timestamp>

<download\_reason>dr\_new</download\_reason>

<npa\_nxx\_creation\_timestamp>2011-12-17T09:30:47Z

</npa\_nxx\_creation\_timestamp>

<activity\_timestamp>2012-12-17T09:30:47.136Z </activity\_timestamp>

</npa\_nxx\_data>

</npa\_nxx\_list>

</NpaNxxQueryReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpbAttributeValueChangeNotification

This message is a notification to a SOA that attribute values of a number pool block have been changed.

#### NpbAttributeValueChangeNotification Parameters

| Parameter | Description |
| --- | --- |
| block\_id | This required field is the unique identifier of the number pooled block that has changed.  |
| block\_dash\_x | This required field is the NPA-NXX-X value associated with the block that has changed. It helps to identify the block, and does not indicate that the NPA-NXX-X value has changed. |
| block\_status | This optional field indicates the status of the block as one of the following: * block\_status\_active
* block\_status\_sending
* block\_status\_failed
* block\_status\_partial\_failed
* block\_status\_old
 |
| svb\_failed\_sp\_list | This optional field is a list of LSMSs that have not successfully received download of a pooled block. |
| svb\_lrn | This optional field is the Location Routing Number of the block. |
| svb\_class\_dpc | This optional field it the CLASS DPC value of the block. |
| svb\_class\_ssn | This optional field is the CLASS SSN value of the block |
| svb\_lidb\_dpc | This optional field is the LIDB DPC value of the block |
| svb\_lidb\_ssn | This optional field is the LIDB SSN value of the block |
| svb\_isvm\_dpc | This optional field is the ISVM DPC value of the block |
| svb\_isvm\_ssn | This optional field is the ISVM SSN value of the block |
| svb\_cnam\_dpc | This optional field is the CNAM DPC value of the block |
| svb\_cnam\_ssn | This optional field is the CNAM SSN value of the block |
| svb\_wsmsc\_dpc | This optional field is the WSMSC DPC value of the block |
| svb\_wsmsc\_ssn | This optional field is the WSMSC SSN value of the block |
| block\_soa\_origination | This optional field indicates if SOA Origination is set. |
| svb\_sv\_type | This optional field indicates the SV type for the block. Possible values are: * wireline
* wireless
* class2\_voip\_no\_num\_assgnmt
* vowifi
* prepaid\_wireless
* class1\_and\_2\_voip\_with\_num\_assgnmt
* sv\_type\_6
* sv\_type\_7
* sv\_type\_8
* sv\_type\_9
 |
| svb\_optional\_data | This optional field specifies the optional data for the block. |

#### NpbAttributeValueChangeNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpbAttributeValueChangeNotification>

<block\_id>35</block\_id>

<block\_dash\_x>2023563</block\_dash\_x>

<svb\_lrn>2023563000</svb\_lrn>

</NpbAttributeValueChangeNotification>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpbCreateReply

This message is the asynchronous reply to an NpbCreateRequest message.

#### NpbCreateReply Parameters

| Parameter | Description |
| --- | --- |
| block\_id | This field is the unique identifier of the number pooled block. |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| invalid\_data | This optional field indicates the invalid data when an error is returned. One of the following will be populated:* block\_dash\_x
* svb\_lrn
* svb\_class\_dpc
* svb\_class\_ssn
* svb\_lidb\_dpc
* svb\_lidb\_ssn
* svb\_isvm\_dpc
* svb\_isvm\_ssn
* svb\_cnam\_dpc
* svb\_cnam\_ssn
* svb\_wsmsc\_dpc
* svb\_wsmsc\_ssn
* svb\_sv\_type
* svb\_optional\_data
 |

#### NpbCreateReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpbCreateReply>

<block\_id>35</block\_id>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

</NpbCreateReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpbModifyReply

This message is the asynchronous reply to an NpbModifyRequest message.

#### NpbModifyReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| invalid\_data | This optional field indicates the invalid data when an error is returned. One of the following will be populated:* svb\_lrn
* svb\_class\_dpc
* svb\_class\_ssn
* svb\_lidb\_dpc
* svb\_lidb\_ssn
* svb\_isvm\_dpc
* svb\_isvm\_ssn
* svb\_cnam\_dpc
* svb\_cnam\_ssn
* svb\_wsmsc\_dpc
* svb\_wsmsc\_ssn
* svb\_sv\_type
* svb\_optional\_data.
 |
| block\_id | An optional block\_id identifying the block that was successfully modified. This field will not be present if the operation was not successful. |

#### NpbModifyReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpbModifyReply>

<reply\_status>

<basic\_code>failed</basic\_code>

<status\_code>5127</status\_code>

<status\_info>LRN specified for Block is in a different LATA from DashX</status\_info>

</reply\_status>

<invalid\_data>

<svb\_lrn>2023563780</svb\_lrn>

</invalid\_data>

<block\_id>70</block\_id>

</NpbModifyReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpbObjectCreationNotification

This message is a notification to a SOA indicating a number pool block object has been created.

#### NpbObjectCreationNotification Parameters

| Parameter | Description |
| --- | --- |
| block\_id | This required field is the unique identifier of the number pooled block. |
| block\_soa\_origination | This required field indicates if SOA Origination is set. |
| svb\_creation\_timestamp | This required field indicates if SOA Origination is set. |
| block\_dash\_x | This required field is the NPA-NXX-X value associated with the block |
| sp\_id | This required field identifies the SPID that owns the block. |
| svb\_lrn | This required field is the Location Routing Number of the block. |
| svb\_class\_dpc | This optional field it the CLASS DPC value of the block. |
| svb\_class\_ssn | This optional field is the CLASS SSN value of the block |
| svb\_lidb\_dpc | This optional field is the LIDB DPC value of the block |
| svb\_lidb\_ssn | This optional field is the LIDB SSN value of the block |
| svb\_isvm\_dpc | This optional field is the ISVM DPC value of the block |
| svb\_isvm\_ssn | This optional field is the ISVM SSN value of the block |
| svb\_cnam\_dpc | This optional field is the CNAM DPC value of the block |
| svb\_cnam\_ssn | This optional field is the CNAM SSN value of the block |
| svb\_wsmsc\_dpc | This optional field is the WSMSC DPC value of the block |
| svb\_wsmsc\_ssn | This optional field is the WSMSC SSN value of the block |
| svb\_sv\_type | This optional field indicates the SV type for the block. Possible values are: * wireline
* wireless
* class2\_voip\_no\_num\_assgnmt
* vowifi
* prepaid\_wireless
* class1And2VoIP-WithNumAssgnmt.
* sv\_type\_6
* sv\_type\_7
* sv\_type\_8
* sv\_type\_9
 |
| svb\_optional\_data | This optional field specifies the optional data for the block. |

#### NpbObjectCreationNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpbObjectCreationNotification>

<block\_id>35</block\_id>

<block\_soa\_origination>false</block\_soa\_origination>

<svb\_creation\_timestamp>2001-12-17T09:30:47Z

</svb\_creation\_timestamp>

<block\_dash\_x>1112221</block\_dash\_x>

<sp\_id>1111</sp\_id>

<svb\_lrn>2023563780</svb\_lrn>

</NpbObjectCreationNotification>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### NpbQueryReply

This message is the asynchronous reply to an NpbQueryRequest message.

#### NpbQueryReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| npb\_list  | This is a list of npb\_data structures that contain the data returned by the query. |
| npb\_data  | This optional field is a list with one or more sets of the following values: |
| block\_id | This required field specifies the unique numeric identifier of the created number pool block |
| block\_soa\_origination | This required true/false field specifies if the SOA originates the data for the block |
| svb\_creation\_timestamp | This required field specifies when the block was created |
| block\_status | This required field specifies the status of the block |
| block\_dash\_x | This required field specifies the NPA-NXX-X value of the block |
| sp\_id | This field specifies the SPID that owns the block (block holder) |
| svb\_lrn | This required field specifies the LRN of the block |
| svb\_class\_dpc | This optional field specifies the CLASS DPC of the block |
| svb\_class\_ssn | This optional field specifies the CLASS SSN of the block |
| svb\_lidb\_dpc | This optional field specifies the LIDB DPC of the block |
| svb\_lidb\_ssn | This optional field specifies the LIDB SSN of the block |
| svb\_isvm\_dpc | This optional field specifies the ISVM DPC of the block |
| svb\_isvm\_ssn | This optional field specifies the ISVM SSN of the block |
| svb\_cnam\_dpc | This optional field specifies the CNAM DPC of the block |
| svb\_cnam\_ssn | This optional field specifies the CNAM SSN of the block |
| svb\_wsmsc\_dpc | This optional field specifies the WSMSC DPC of the block |
| svb\_wsmsc\_ssn | This optional field specifies the WSMSC SSN of the block |
| svb\_activation\_timestamp | This optional field specifies the timestamp of when the block was activated |
| svb\_broadcast\_timestamp | This field specifies the timestamp of when the block was last broadcast |
| svb\_disconnect\_complete\_timestamp | This optional field specifies the timestamp of when the block was disconnected |
| svb\_modified\_timestamp | This optional field specifies the timestamp of when the block was last modified |
| download\_reason | This required field is the download reason of the block |
| svb\_sv\_type | This optional field specifies the SV type of the block |
| svb\_optional\_data | This optional field specifies (possibly multiple) name-value pairs of optional data associated with the block |
| svb\_failed\_sp\_list | This optional field specifies (possibly multiple) spid/name pairs of LSMSs that may not have the latest information on this block  |
| activity\_timestamp | This required field specifies the timestamp of when the NPAC last created a notification or download for this object. |

#### NpbQueryReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:47.224Z </origination\_timestamp>

<NpbQueryReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<npb\_list>

<npb\_data>

<block\_id>45</block\_id>

<block\_soa\_origination>false</block\_soa\_origination>

<svb\_creation\_timestamp>2001-12-17T09:30:47Z

</svb\_creation\_timestamp>

<block\_status>block\_status\_active</block\_status>

<block\_dash\_x>1112221</block\_dash\_x>

<sp\_id>1111</sp\_id>

<svb\_lrn>2023563780</svb\_lrn>

<svb\_activation\_timestamp>2001-12-17T09:30:47Z </svb\_activation\_timestamp>

<svb\_broadcast\_timestamp>2001-12-17T09:30:47Z </svb\_broadcast\_timestamp>

<svb\_disconnect\_complete\_timestamp>2001-12-17T09:30:47Z </svb\_disconnect\_complete\_timestamp>

<svb\_modified\_timestamp>2001-12-17T09:30:47Z </svb\_modified\_timestamp>

<download\_reason>dr\_new</download\_reason>

<svb\_sv\_type>wireline</svb\_sv\_type>

<activity\_timestamp>2012-12-17T09:30:47.136Z </activity\_timestamp>

</npb\_data>

</npb\_list>

</NpbQueryReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### OldSpCreateReply

This message is the asynchronous reply to an OldSpCreateRequest message.

#### OldSpCreateReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| invalid\_data | One of sv\_tn, tn\_range, svb\_new\_sp, sv\_old\_sp, sv\_old\_sp\_due\_date, sv\_old\_sp\_authorization, sv\_status\_change\_cause\_code, sv\_lnp\_type, sv\_old\_sp\_medium\_timer\_indicator |

#### OldSpCreateReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<OldSpCreateReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

</OldSpCreateReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### ProcessingError

This message is an error reply that will be sent rarely. When the receiving system is able to return a synchronous acknowledgement for a request, any error can be indicated as part of the asynchronous reply. However, in certain circumstances the receiving system may not be able to send the asynchronous reply as part of a reply message that directly corresponds to the request. For example, if the request contains invalid XML the receiving system will not be able to determine the type of request, and therefore will not be able to determine the corresponding type of reply message. In these cases, the receiving system should send a ProcessingError message to indicate the error. The invoke id of the ProcessingError message must match that of the incoming request. This means that if the receiving system cannot determine the invoke id of the request, it will not be able to generate a ProcessingError.

When multiple requests are sent as a batch, a separate ProcessingError message will be created for each one. Note that the batch itself is one large XML message. Any parsing error in the batch will cause all messages in the batch to be failed with a ProcessingError.

#### ProcessingError Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |

#### ProcessingError XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<ProcessingError>

<basic\_code>invalid\_data\_values</basic\_code>

<status\_code>14506</status\_code>

<status\_info>Specified departure time is more than 5 minutes old</status\_info>

</ProcessingError>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### RemoveFromConflictReply

This message is the asynchronous reply to a RemoveFromConflictRequest message.

#### RemoveFromConflictReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |

#### RemoveFromConflictReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<RemoveFromConflictReply>

<basic\_code>success</basic\_code>

</RemoveFromConflictReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### SpidCreateDownload

This message is a download to a SOA when a new NPAC Service Provider Profile has been created at the NPAC.

#### SpidCreateDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field indicates the Service Provider ID. |
| sp\_name | This optional field indicates the Service Provider name and it will be populated in all SpidCreateDownload messages. It is optional because it part of a structure that is also used in the SpidModifyDownload message. |
| sp\_type | This optional field indicates the Service Provider type and, if supported, it will be populated as one of the following in SpidCreateDownload messages:* wireline
* wireless
* non\_carrier
* class1\_and\_2\_voip\_with\_num\_assgnmt
* sp\_type\_4
* sp\_type\_5
 |
| download\_reason | This required field indicates the cause of the download as dr\_new. |

#### SpidCreateDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SpidCreateDownload>

<sp\_id>2222</sp\_id>

<sp\_name>2 Telecom</sp\_name>

<sp\_type>wireline</sp\_type>

<download\_reason>dr\_new</download\_reason>

</SpidCreateDownload>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### SpidDeleteDownload

This message is a download to a SOA when an existing NPAC Service Provider Profile has been deleted at the NPAC.

#### SpidDeleteDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field indicates the Service Provider ID. |
| download\_reason | This required field is the reason for the download of the deleted SP – should always be dr\_delete |

#### SpidDeleteDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SpidDeleteDownload>

<sp\_id>2222</sp\_id>

<download\_reason>dr\_delete</download\_reason>

</SpidDeleteDownload>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### SpidModifyDownload

This message is a download to a SOA when an existing NPAC Service Provider Profile has been modified at the NPAC.

#### SpidModifyDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field indicates the Service Provider ID. |
| sp\_name | This optional field indicates the Service Provider name. |
| sp\_type | This optional field indicates the Service Provider type and, if supported, when modified it will be set to one of the following:* wireline
* wireless
* non\_carrier
* class1\_and\_2\_voip\_with\_num\_assgnmt
* sp\_type\_4
* sp\_type\_5
 |
| download\_reason | This required field indicates the cause of the download as dr\_modified. |

#### SpidModifyDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SpidModifyDownload>

<sp\_id>2222</sp\_id>

<sp\_name>3 Telecom Changed</sp\_name>

<download\_reason>dr\_modified</download\_reason>

</SpidModifyDownload>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### SpidQueryReply

This message is the asynchronous reply to a SpidQueryRequest message.

There are two forms for this reply. The short form includes the sp\_id, sp\_name, and sp\_type. The long form adds the Service Providers contact information. Replies will be in short form unless the criteria specified in the SpidQueryRequest was just a sp\_id parameter and it matches the SPID issuing the query. See the section 5.1 (“Message Structure”) for details on how the NPAC determines which spid is issuing the query.

#### SpidQueryReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| spid\_list (short form) | This field contains an optional repeating list of sp\_data items where each contains the following items:* sp\_id
* sp\_name
* optional sp\_type
* activity\_timestamp
* download\_reason
 |
| spid\_list (long form) | This field contains the Service Provider profile information for the requesting SPID. It’s an optional list that contains a single sp\_data item with the following parameters:* sp\_id
* sp\_name
* optional sp\_type
* sp\_system\_type
* sp\_address
* address\_line1
* optional address\_line2
* address\_city
* address\_state
* address\_zip
* optional address\_province
* address\_country
* address\_contract\_phone
* address\_contact
* optional address\_contact\_fax
* optional address\_contact\_pager
* optional address\_contact\_pager\_pin
	+ optional address\_contact\_email
* sp\_billing\_address \*
* optional sp\_soa\_address \*
* optional sp\_lsms\_address \*
* optional sp\_web\_address \*
* optional sp\_net\_address \*
* optional sp\_conflict\_address \*
* optional sp\_operations\_address \*
* sp\_repair\_center\_address \*
* sp\_security\_address \*
* optional sp\_user\_admin\_address \*
* activity\_timestamp
* download\_reason

\* See sp\_address for complete list of parameters in an “address” |

#### SpidQueryReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>2222</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:47.224Z </origination\_timestamp>

<SpidQueryReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<spid\_list>

<spid\_data>

<sp\_id>2222</sp\_id>

<sp\_name>2 Telecom</sp\_name>

<sp\_type>wireline</sp\_type>

<sp\_system\_type>lsms\_soa\_system</sp\_system\_type>

<sp\_address>

<address\_line1>2222 Two St</address\_line1>

<address\_city>Anytown</address\_city>

<address\_state>NV</address\_state>

<address\_zip>12345</address\_zip>

<address\_country>US</address\_country>

<address\_contact\_phone>1234567890</address\_contact\_phone>

<address\_contact>John Doe</address\_contact>

</sp\_address>

<sp\_billing\_address>

<address\_line1>222 Two St</address\_line1>

<address\_city>Anytown</address\_city>

<address\_state>NV</address\_state>

<address\_zip>12345</address\_zip>

<address\_country>US</address\_country>

<address\_contact\_phone>1234567890</address\_contact\_phone>

<address\_contact>John Doe</address\_contact>

</sp\_billing\_address>

<sp\_repair\_center\_address>

<address\_line1>222 Two St</address\_line1>

<address\_city>Anytown</address\_city>

<address\_state>NV</address\_state>

<address\_zip>12345</address\_zip>

<address\_country>US</address\_country>

<address\_contact\_phone>1234567890</address\_contact\_phone>

<address\_contact>John Doe</address\_contact>

</sp\_repair\_center\_address>

<sp\_security\_address>

<address\_line1>222 Two St</address\_line1>

<address\_city>Anytown</address\_city>

<address\_state>NV</address\_state>

<address\_zip>12345</address\_zip>

<address\_country>US</address\_country>

<address\_contact\_phone>1234567890</address\_contact\_phone>

<address\_contact>John Doe</address\_contact>

</sp\_security\_address>

<activity\_timestamp>2012-12-17T09:30:47.136Z </activity\_timestamp>

<download\_reason>dr\_new</download\_reason></spid\_data>

</spid\_list>

</SpidQueryReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### SvAttributeValueChangeNotification

This message is a notification to a SOA that attribute values of an SV have been changed.

#### SvAttributeValueChangeNotification Parameters

| Parameter | Description |
| --- | --- |
| range\_notif\_tn\_id\_info | This field is a structure that identifies the subscription versions affected by this notification message. It’s a choice between one or more lists of TNs with associated SVIDs, or one or more lists of TN ranges with associated SVID ranges.list\_info: sv\_tn – A 10 digit phone number sv\_id – A unique SV Id range\_info:  start\_tn – A 10 digit phone number stop\_tn – A 4 digit ending TN station start\_id – The starting SV unique Id stop\_id – The ending SV unique Id |
| object\_info | This field is a structure of SV information for the following SV objects: |
| svb\_new\_sp\_due\_date | This optional field is the new SP due date of the SV |
| svb\_new\_sp\_creation\_ts | This optional field is the date/time the SV was created by the new SP |
| sv\_old\_sp\_due\_date | This optional field is the old SP due date of the SV |
| sv\_old\_sp\_authorization\_ts | This optional field indicates the timestamp when the old SP provided authorization for the port. |
| sv\_old\_sp\_authorization | This optional field indicates if the old SP authorizes the port |
| sv\_conflict\_timestamp | This optional field indicates the timestamp when the SV was placed into conflict status. |
| svb\_lrn | This optional field is the Location Routing Number of the SV. |
| svb\_class\_dpc | This optional field it the CLASS DPC value of the SV. |
| svb\_class\_ssn | This optional field is the CLASS SSN value of the SV |
| svb\_lidb\_dpc | This optional field is the LIDB DPC value of the SV |
| svb\_lidb\_ssn | This optional field is the LIDB SSN value of the SV |
| svb\_isvm\_dpc | This optional field is the ISVM DPC value of the SV |
| svb\_isvm\_ssn | This optional field is the ISVM SSN value of the SV |
| svb\_cnam\_dpc | This optional field is the CNAM DPC value of the SV |
| svb\_cnam\_ssn | This optional field is the CNAM SSN value of the SV |
| svb\_wsmsc\_dpc | This optional field is the WSMSC DPC value of the SV |
| svb\_wsmsc\_ssn | This optional field is the WSMSC SSN value of the SV |
| svb\_billing\_id | This optional field is the Billing ID value of the SV. |
| svb\_end\_user\_location\_value | This optional field is the End user location value value of the SV |
| svb\_end\_user\_location\_type | This optional field is the End user location type value of the SV.  |
| svb\_sv\_type | This optional field indicates the SV type for the SV. Possible values are: * wireline
* wireless
* class2\_voip\_no\_num\_assgnmt
* vowifi
* prepaid\_wireless
* class1\_and\_2\_voip\_with\_num\_assgnmt
* sv\_type\_6
* sv\_type\_7
* sv\_type\_8
* sv\_type\_9
 |
| svb\_optional\_data | This optional field specifies the optional data for the block. |
| sv\_timer\_type | This optional field is timer type and consists of one of the following:* short\_timers
* long\_timers
* medium\_timers
 |
| sv\_business\_type | This optional field is the business type and consists of one of the following values:* short\_days\_hours
* long\_days\_hours
* medium\_days\_hours
 |
| sv\_new\_sp\_medium\_timer\_indicator | This optional field is set to true if the new SP indicated medium timers for this SV. |
| sv\_old\_sp\_medium\_timer\_indicator | This optional field is set to true if the old SP indicated medium timers for this SV. |
| sv\_status | This field indicates the current status of the SV as one of the following values:* status\_conflict
* status\_active
* status\_pending
* status\_failed
* status\_partial\_failed
* status\_disconnect\_pending
* status\_old
* status\_canceled
* status\_cancel\_pending
 |
| sv\_failed\_sp\_list | This optional field is a list of LSMSs that have not successfully received download of an SV. |
| sv\_status\_change\_cause\_code | This optional field is the status change cause code set by the old SP when they place the SV into conflict or when the SV status changed to conflict as a result of automatic flow processing by the NPAC. Valid values are:* cause\_code\_none
* npac\_auto\_cancel
* npac\_auto\_conflict
* lsr\_wpr\_not\_received
* foc\_wprr\_not\_issued
* due\_date\_mismatch
* vacant\_number\_port
* general\_conflict
 |

#### SvAttributeValueChangeNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvAttributeValueChangeNotification>

<range\_notif\_tn\_id\_info>

<list\_info>

<sv\_tn>2023561000</sv\_tn>

<sv\_id>100245</sv\_id>

</list\_info>

</range\_notif\_tn\_id\_info>

<object\_info>

<svb\_new\_sp\_due\_date>2012-12-31T09:00:00Z

</svb\_new\_sp\_due\_date>

<svb\_new\_sp\_creation\_ts>2012-12-17T09:30:47Z

</svb\_new\_sp\_creation\_ts>

<sv\_old\_sp\_due\_date>2012-12-31T09:00:00Z

</sv\_old\_sp\_due\_date>

<sv\_old\_sp\_authorization\_ts>2012-12-17T09:30:47Z

</sv\_old\_sp\_authorization\_ts>

<sv\_old\_sp\_authorization>true</sv\_old\_sp\_authorization>

<sv\_conflict\_timestamp>2012-12-17T09:30:47Z

</sv\_conflict\_timestamp>

<sv\_timer\_type>medium\_timers</sv\_timer\_type>

<sv\_business\_type>medium\_days\_hours</sv\_business\_type>

<sv\_new\_sp\_medium\_timer\_indicator>true</sv\_new\_sp\_medium\_timer\_indicator>

<sv\_old\_sp\_medium\_timer\_indicator>true</sv\_old\_sp\_medium\_timer\_indicator>

<sv\_status>status\_active</sv\_status>

</object\_info>

</SvAttributeValueChangeNotification>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### SvCancelAckNotification

This message is a notification to a SOA that an SV cancellation has been acknowledged.

#### SvCancelAckNotification Parameters

| Parameter | Description |
| --- | --- |
| range\_notif\_tn\_id\_info | This field is a structure that identifies the subscription versions affected by this notification message. It’s a choice between one or more lists of TNs with associated SVIDs, or one or more lists of TN ranges with associated SVID ranges.list\_info: sv\_tn – A 10 digit phone number sv\_id – A SV unique Id range\_info:  start\_tn – A 10 digit phone number stop\_tn – A 4 digit ending TN station start\_id – The starting SV unique Id stop\_id – The ending SV unique Id |

#### SvCancelAckNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvCancelAckNotification>

<range\_notif\_tn\_id\_info>

<list\_info>

<sv\_tn>2023561000</sv\_tn>

<sv\_id>100245</sv\_id>

</list\_info>

</range\_notif\_tn\_id\_info>

</SvCancelAckNotification>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### SvCustomerDisconnectDateNotification

This message is a notification to a SOA that an SV has been scheduled for disconnect.

#### SvCustomerDisconnectDateNotification Parameters

| Parameter | Description |
| --- | --- |
| range\_notif\_tn\_id\_info | This field is a structure that identifies the subscription versions affected by this notification message. It’s a choice between one or more lists of TNs with associated SVIDs, or one or more lists of TN ranges with associated SVID ranges.list\_info: sv\_tn – A 10 digit phone number sv\_id – A SV unique Id range\_info:  start\_tn – A 10 digit phone number stop\_tn – A 4 digit ending TN station start\_id – The starting SV unique Id stop\_id – The ending SV unique Id |
| sv\_customer\_disconnect\_date | This required field is the customer disconnect date of the SV. |
| sv\_effective\_release\_date | This optional field is the effective release date of the SV. |

#### SvCustomerDisconnectDateNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvCustomerDisconnectDateNotification>

<range\_notif\_tn\_id\_info>

<list\_info>

<sv\_tn>2023561000</sv\_tn>

<sv\_id>100245</sv\_id>

</list\_info>

</range\_notif\_tn\_id\_info>

<sv\_customer\_disconnect\_date>2012-12-31T09:00:00Z

</sv\_customer\_disconnect\_date>

<sv\_effective\_release\_date>2012-12-31T09:00:00Z

</sv\_effective\_release\_date>

</SvCustomerDisconnectDateNotification>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### SvNewSpCreateNotification

This message is a notification to the SOA that SVs have been created in which they are the new SP.

#### SvNewSpCreateNotification Parameters

| Parameter | Description |
| --- | --- |
| range\_notif\_tn\_id\_info | This field is a structure that identifies the subscription versions affected by this notification message. It’s a choice between one or more lists of TNs with associated SVIDs, or one or more lists of TN ranges with associated SVID ranges.list\_info: sv\_tn – A 10 digit phone number sv\_id – A SV unique Id range\_info:  start\_tn – A 10 digit phone number stop\_tn – A 4 digit ending TN station start\_id – The starting SV unique Id stop\_id – The ending SV unique Id |
| sv\_old\_sp | This required field is the unique Service Provider ID for the old SPID on the SV(s). |
| sv\_old\_sp\_due\_date | This required field is the old SP due date of an SV. |
| sv\_old\_sp\_authorization\_ts | This required field is the authorization timestamp indicating the time the old SP provided authorization for the SV. |
| sv\_old\_sp\_authorization | This required file indicates if the old service provider has authorized the SV. |
| sv\_status\_change\_cause\_code | This optional field is the status change cause code set by the old SP when they place the SV into conflict. Valid values are:* lsr\_wpr\_not\_received
* foc\_wprr\_not\_issued
* due\_date\_mismatch
* vacant\_number\_port
* general\_conflict
 |
| sv\_timer\_type | This optional field is timer type and consists of one of the following:* short\_timers
* long\_timers
* medium\_timers
 |
| sv\_business\_type | This optional field is the business type and consists of one of the following values:* short\_days\_hours
* long\_days\_hours
* medium\_days\_hours
 |

#### SvNewSpCreateNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvNewSpCreateNotification>

<range\_notif\_tn\_id\_info>

<list\_info>

<sv\_tn>2023561000</sv\_tn>

<sv\_id>100245</sv\_id>

</list\_info>

</range\_notif\_tn\_id\_info>

<sv\_old\_sp>1111</sv\_old\_sp>

<sv\_old\_sp\_due\_date>2012-12-31T09:00:00Z

</sv\_old\_sp\_due\_date>

<sv\_old\_sp\_authorization\_ts>2012-12-31T09:00:00Z

</sv\_old\_sp\_authorization\_ts>

<sv\_old\_sp\_authorization>true</sv\_old\_sp\_authorization>

<sv\_status\_change\_cause\_code>due\_date\_mismatch</sv\_status\_change\_cause\_code>

<sv\_timer\_type>short\_timers</sv\_timer\_type>

<sv\_business\_type>short\_days\_hours</sv\_business\_type>

</SvNewSpCreateNotification>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### SvNewSpFinalCreateWindowExpirationNotification

This message is a notification to a SOA that the final window for creation of an SV by the new SP has expired.

#### SvNewSpFinalCreateWindowExpirationNotification Parameters

| Parameter | Description |
| --- | --- |
| range\_notif\_tn\_id\_info | This field is a structure that identifies the subscription versions affected by this notification message. It’s a choice between one or more lists of TNs with associated SVIDs, or one or more lists of TN ranges with associated SVID ranges.list\_info: sv\_tn – A 10 digit phone number sv\_id – A subscription version unique Id range\_info:  start\_tn – A 10 digit phone number stop\_tn – A 4 digit ending TN station start\_id – The starting subscription version unique Id stop\_id – The ending subscription version unique Id |
| sv\_old\_sp | This required field is the old Service Provider ID |
| sv\_old\_sp\_due\_date | This required field is the old SP due date of the SV. |
| sv\_old\_sp\_authorization\_ts | This required field is the timestamp of when the old SP provided authorization for the old SP |
| sv\_old\_sp\_authorization | This required field indicates if the old service provider has authorized the SV |
| sv\_status\_change\_cause\_code | This optional field is the status change cause code set by the old SP when they place the SV into conflict. Valid values are:* lsr\_wpr\_not\_received
* foc\_wprr\_not\_issued
* due\_date\_mismatch
* vacant\_number\_port
* general\_conflict
 |
| sv\_timer\_type | This optional field is timer type and consists of one of the following:* short\_timers
* long\_timers
* medium\_timers
 |
| sv\_business\_type | This optional field is the business type and consists of one of the following values:* short\_days\_hours
* long\_days\_hours
* medium\_days\_hours
 |

#### SvNewSpFinalCreateWindowExpirationNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvNewSpFinalCreateWindowExpirationNotification>

<range\_notif\_tn\_id\_info>

<list\_info>

<sv\_tn>2023561000</sv\_tn>

<sv\_id>100245</sv\_id>

</list\_info>

</range\_notif\_tn\_id\_info>

<sv\_old\_sp>1111</sv\_old\_sp>

<sv\_old\_sp\_due\_date>2012-12-31T09:00:00Z

</sv\_old\_sp\_due\_date>

<sv\_old\_sp\_authorization\_ts>2012-12-31T09:00:00Z

</sv\_old\_sp\_authorization\_ts>

<sv\_old\_sp\_authorization>true</sv\_old\_sp\_authorization>

<sv\_status\_change\_cause\_code>due\_date\_mismatch</sv\_status\_change\_cause\_code>

<sv\_timer\_type>short\_timers</sv\_timer\_type>

<sv\_business\_type>short\_days\_hours</sv\_business\_type>

</SvNewSpFinalCreateWindowExpirationNotification>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### SvObjectCreationNotification

This message is a notification to a SOA that an SV has been created.

#### SvObjectCreationNotification Parameters

| Parameter | Description |
| --- | --- |
| range\_notif\_tn\_id\_info | This field is a structure that identifies the subscription versions affected by this notification message. It’s a choice between one or more lists of TNs with associated SVIDs, or one or more lists of TN ranges with associated SVID ranges.list\_info: sv\_tn – A 10 digit phone number sv\_id – A SV unique Id range\_info:  start\_tn – A 10 digit phone number stop\_tn – A 4 digit ending TN station start\_id – The starting SV unique Id stop\_id – The ending SV unique Id |
| object\_info | This field is a structure of SV information for the following SV objects: |
| svb\_new\_sp | This field is the new SP unique ID |
| sv\_old\_sp | This field is the old SP unique ID |
| svb\_new\_sp\_due\_date | This optional field is the new SP due date of the SV |
| sv\_old\_sp\_due\_date | This optional field is the old SP due date of the SV |
| sv\_old\_sp\_authorization | This optional field indicates if the old SP authorizes the port |
| sv\_old\_sp\_authorization\_ts | This optional field indicates the timestamp when the old SP provided authorization for the port. |
| svb\_new\_sp\_creation\_ts | This optional field is the date/time the SV was created by the new SP |
| sv\_status\_change\_cause\_code | This optional field is the status change cause code set by the old SP when they place the SV into conflict. Valid values are:* lsr\_wpr\_not\_received
* foc\_wprr\_not\_issued
* due\_date\_mismatch
* vacant\_number\_port
* general\_conflict
 |
| sv\_status | This field indicates the current status of the SV as one of the following values:* status\_conflict
* status\_pending
 |
| sv\_conflict\_timestamp | This optional field indicates the timestamp when the old SP places the SV into conflict. |
| sv\_timer\_type | This optional field is timer type and consists of one of the following:* short\_timers
* long\_timers
* medium\_timers
 |
| sv\_business\_type | This optional field is the business type and consists of one of the following values:* short\_days\_hours
* long\_days\_hours
* medium\_days\_hours
 |
| sv\_new\_sp\_medium\_timer\_indicator | This optional field is set to true if the new SP indicated medium timers for this SV. |
| sv\_old\_sp\_medium\_timer\_indicator | This optional field is set to true if the old SP indicated medium timers for this SV. |

#### SvObjectCreationNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvObjectCreationNotification>

<range\_notif\_tn\_id\_info>

<list\_info>

<sv\_tn>1234567890</sv\_tn>

<sv\_id>987654321</sv\_id>

</list\_info>

</range\_notif\_tn\_id\_info>

<object\_info>

<svb\_new\_sp>1111</svb\_new\_sp>

<sv\_old\_sp>2222</sv\_old\_sp>

<svb\_new\_sp\_due\_date>2012-12-31T09:00:00Z

</svb\_new\_sp\_due\_date>

<sv\_old\_sp\_due\_date>2012-12-31T09:00:00Z

</sv\_old\_sp\_due\_date>

<sv\_old\_sp\_authorization>true</sv\_old\_sp\_authorization>

<sv\_old\_sp\_authorization\_ts>2012-12-17T09:30:47Z

</sv\_old\_sp\_authorization\_ts>

<svb\_new\_sp\_creation\_ts>2012-12-17T09:30:47Z

</svb\_new\_sp\_creation\_ts>

<sv\_status>status\_pending</sv\_status>

<sv\_conflict\_timestamp>2012-12-17T09:30:47Z

</sv\_conflict\_timestamp>

<sv\_timer\_type>medium\_timers</sv\_timer\_type>

<sv\_business\_type>medium\_days\_hours</sv\_business\_type>

<sv\_new\_sp\_medium\_timer\_indicator>true</sv\_new\_sp\_medium\_timer\_indicator>

<sv\_old\_sp\_medium\_timer\_indicator>true</sv\_old\_sp\_medium\_timer\_indicator>

</object\_info>

</SvObjectCreationNotification>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### SvOldSpConcurrenceNotification

This message is a request to an old SP’s SOA for concurrence to an SV.

#### SvOldSpConcurrenceNotification Parameters

| Parameter | Description |
| --- | --- |
| range\_notif\_tn\_id\_info | This field is a structure that identifies the subscription versions affected by this notification message. It’s a choice between one or more lists of TNs with associated SVIDs, or one or more lists of TN ranges with associated SVID ranges.list\_info: sv\_tn – A 10 digit phone number sv\_id – A subscription version unique Id range\_info:  start\_tn – A 10 digit phone number stop\_tn – A 4 digit ending TN station start\_id – The starting subscription version unique Id stop\_id – The ending subscription version unique Id |
| svb\_new\_sp | This required field is the unique Service Provider ID. |
| svb\_new\_sp\_due\_date | This required field is the new SP due date of an SV. |
| svb\_new\_sp\_creation\_ts | This required field is the date/time the SV was created by the new SP |
| sv\_timer\_type | This optional field is timer type and consists of one of the following:* short\_timers
* long\_timers
* medium\_timers
 |
| sv\_business\_type | This optional field is the business type and consists of one of the following values:* short\_days\_hours
* long\_days\_hours
* medium\_days\_hours
 |

#### SvOldSpConcurrenceNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvOldSpConcurrenceNotification>

<range\_notif\_tn\_id\_info>

<list\_info>

<sv\_tn>1234567890</sv\_tn>

<sv\_id>987654321</sv\_id>

</list\_info>

</range\_notif\_tn\_id\_info>

<svb\_new\_sp>1111</svb\_new\_sp>

<svb\_new\_sp\_due\_date>2012-12-31T09:00:00Z

</svb\_new\_sp\_due\_date>

<svb\_new\_sp\_creation\_ts>2012-12-31T09:00:00Z

</svb\_new\_sp\_creation\_ts>

<sv\_timer\_type>short\_timers</sv\_timer\_type>

<sv\_business\_type>short\_days\_hours</sv\_business\_type>

</SvOldSpConcurrenceNotification>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### SvOldSpFinalConcurrenceWindowExpirationNotification

This message is a notification to a SOA that the final window for old SP concurrence has expired.

#### SvOldSpFinalConcurrenceWindowExpirationNotification Parameters

| Parameter | Description |
| --- | --- |
| range\_notif\_tn\_id\_info | This field is a structure that identifies the subscription versions affected by this notification message. It’s a choice between one or more lists of TNs with associated SVIDs, or one or more lists of TN ranges with associated SVID ranges.list\_info: sv\_tn – A 10 digit phone number sv\_id – A subscription version unique Id range\_info:  start\_tn – A 10 digit phone number stop\_tn – A 4 digit ending TN station start\_id – The starting subscription version unique Id stop\_id – The ending subscription version unique Id |
| sv\_timer\_type | This optional field is the time type for the SV and consists of one of the following:* short\_timer
* long\_timers
* medium\_timers
 |
| sv\_business\_type | This optional field is the business type for the SV and consists of one of the following:* short\_days\_hours
* long\_days\_hours
* medium\_days\_hours
 |

#### SvOldSpFinalConcurrenceWindowExpirationNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvOldSpFinalConcurrenceWindowExpirationNotification>

<range\_notif\_tn\_id\_info>

<list\_info>

<sv\_tn>1234567890</sv\_tn>

<sv\_id>987654321</sv\_id>

</list\_info>

</range\_notif\_tn\_id\_info>

<sv\_timer\_type>short\_timers</sv\_timer\_type>

<sv\_business\_type>short\_days\_hours</sv\_business\_type>

</SvOldSpFinalConcurrenceWindowExpirationNotification>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

### SvQueryReply

This message is the asynchronous reply to a SvQueryRequest message.

#### SvQueryReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| sv\_list | This field is a list of sv\_data objects that describe the SVs returned by the query |
| sv\_id | This required field is the unique identifier for this SV |
| sv\_tn  | This required field is the telephone number of this SV |
| svb\_lrn | This optional field is the Location Routing Number of the SV |
| sbv\_new\_sp | This required field is the unique identifier for the SPID that owns this SV. |
| svb\_activation\_timestamp | This optional field indicates the timestamp for the activation of this SV. |
| svb\_class\_dpc | This optional field it the CLASS DPC value of the SV. |
| svb\_class\_ssn | This optional field is the CLASS SSN value of the SV |
| svb\_lidb\_dpc | This optional field is the LIDB DPC value of the SV |
| svb\_lidb\_ssn | This optional field is the LIDB SSN value of the SV |
| svb\_isvm\_dpc | This optional field is the ISVM DPC value of the SV |
| svb\_isvm\_ssn | This optional field is the ISVM SSN value of the SV |
| svb\_cnam\_dpc | This optional field is the CNAM DPC value of the SV |
| svb\_cnam\_ssn | This optional field is the CNAM SSN value of the SV |
| svb\_end\_user\_location\_value | This optional field is the End user location value value of the SV |
| svb\_end\_user\_location\_type | This optional field is the End user location type value of the SV.  |
| svb\_billing\_id | This optional field is the Billing ID value of the SV. |
| sv\_lnp\_type | This required type indicates the portability type for this SV. Valid values include* inter\_provider
* intra\_provider
* pooled
 |
| download\_reason | This required field indicates the reason for the most recent download for this SV. The valid values include:* dr\_new
* dr\_delete
* dr\_modified
* dr\_audit\_discrepancy
 |
| svb\_wsmsc\_dpc | This optional field is the WSMSC DPC value of the SV.  |
| svb\_wsmsc\_ssn | This optional field is the WSMSC SSN value of the SV.  |
| sv\_status | This required field is the status of the SV.  |
| sv\_old\_sp | This required field is the unique identifier for the SPID that own the telephone number for this SV prior to the creation of this SV. |
| svb\_new\_sp\_due\_date | This optional field specifies the due date specified by the new SP. |
| svb\_new\_sp\_creation\_ts | This optional field is the date/time the SV was created by the new SP |
| svb\_old\_sp\_due\_date | This optional field specifies the due date specified by the old SP. |
| sv\_old\_sp\_authorization | This optional field indicates if the old SP has authorized the port |
| sv\_status\_change\_cause\_code | This optional field is the status change cause code set by the old SP when they place the SV into conflict or when the SV status changed to conflict as a result of automatic flow processing by the NPAC. Valid values are:* cause\_code\_none
* npac\_auto\_cancel
* npac\_auto\_conflict
* lsr\_wpr\_not\_received
* foc\_wprr\_not\_issued
* due\_date\_mismatch
* vacant\_number\_port
* general\_conflict
 |
| svb\_broadcast\_timestamp | This field specifies the timestamp of when the SV was last broadcast |
| sv\_conflict\_timestamp | This optional field indicates the timestamp when the SV was placed into conflict status. |
| sv\_customer\_disconnect\_date | This optional field is the customer disconnect date of the SV. |
| sv\_effective\_release\_date | This optional field is the effective release date of the SV. |
| sv\_disconnect\_complete\_timestamp | This optional field is the timestamp that the disconnect of this SV was completed. |
| sv\_cancellation\_timestamp | This optional field is the timestamp that the cancellation of this SV was completed. |
| sv\_creation\_timestamp | This optional field is the timestamp that the SV was created. |
| sv\_cancellation\_timestamp | This optional field is the timestamp that the cancellation of this SV was completed. |
| svb\_failed\_sp\_list | This optional field specifies (possibly multiple) spid/name pairs of LSMSs that may not have the latest information for this SV  |
| svb\_modified\_timestamp | This optional field specifies the timestamp of when the SV was last modified |
| svb\_old\_timestamp | This optional field specifies the timestamp of when the SV went to a status of Old. |
| sv\_old\_sp\_cancellation\_timestamp | This optional field specifies the timestamp of when the old SP cancelled this SV. |
| sv\_new\_sp\_cancellation\_timestamp | This optional field specifies the timestamp of when the new SP cancelled this SV. |
| sv\_old\_sp\_conflict\_resolution\_timestamp | This optional field specifies the timestamp of when the old SP resolves a conflict on this SV. |
| sv\_new\_sp\_conflict\_resolution\_timestamp | This optional field specifies the timestamp of when the new SP resolves a conflict on this SV. |
| sv\_porting\_to\_original\_sp\_switch | This required field indicates if this SV represents a port to the original switch, thereby returning the SV to default routing. |
| sv\_precancellation\_status | This optional field indicates the status of the SV prior to cancellation |
| sv\_timer\_type | This optional field is timer type for the SV and consists of one of the following:* short\_timers
* long\_timers
* medium\_timers
 |
| sv\_business\_type | This optional field is the business type for the SV and consists of one of the following values:* short\_days\_hours
* long\_days\_hours
* medium\_days\_hours
 |
| svb\_sv\_type | This optional field indicates the SV type for the SV. Possible values are: * wireline
* wireless
* class2\_voip\_no\_num\_assgnmt
* vowifi
* prepaid\_wireless
* class1\_and\_2\_voip\_with\_num\_assgnmt
* sv\_type\_6
* sv\_type\_7
* sv\_type\_8
* sv\_type\_9
 |
| svb\_optional\_data | This optional field specifies the optional data for the SV. |
| sv\_new\_sp\_medium\_timer\_indicator | This optional field is set to true if the new SP indicated medium timers for this SV. |
| sv\_old\_sp\_medium\_timer\_indicator | This optional field is set to true if the old SP indicated medium timers for this SV. |
| activity\_timestamp | This required field specifies the timestamp of when the NPAC last created a notification or download for this SV. |
| sv\_remaining\_count | The number of sv\_data elements remaining from the query which have not yet been sent. |

#### SvQueryReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<SOAMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>zyxwvuts</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_soa>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvQueryReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<sv\_list>

<sv\_data>

<sv\_id>1000</sv\_id>

<sv\_tn>5512341234</sv\_tn>

<svb\_lrn>1234567890</svb\_lrn>

<svb\_new\_sp>1111</svb\_new\_sp>

<svb\_activation\_timestamp>2001-12-17T09:30:47Z

</svb\_activation\_timestamp>

<svb\_class\_dpc>111222111</svb\_class\_dpc>

<svb\_class\_ssn>0</svb\_class\_ssn>

<svb\_lidb\_dpc>111222111</svb\_lidb\_dpc>

<svb\_lidb\_ssn>0</svb\_lidb\_ssn>

<svb\_isvm\_dpc>111222111</svb\_isvm\_dpc>

<svb\_isvm\_ssn>0</svb\_isvm\_ssn>

<svb\_cnam\_dpc>111222111</svb\_cnam\_dpc>

<svb\_cnam\_ssn>0</svb\_cnam\_ssn>

<svb\_end\_user\_location\_value>1</svb\_end\_user\_location\_value>

<svb\_end\_user\_location\_type>12</svb\_end\_user\_location\_type>

<svb\_billing\_id>3333</svb\_billing\_id>

<sv\_lnp\_type>inter\_provider</sv\_lnp\_type>

<download\_reason>dr\_new</download\_reason>

<svb\_wsmsc\_dpc>111222111</svb\_wsmsc\_dpc>

<svb\_wsmsc\_ssn>0</svb\_wsmsc\_ssn>

<sv\_status>status\_active</sv\_status>

<sv\_old\_sp>2222</sv\_old\_sp>

<svb\_new\_sp\_due\_date>2001-12-17T09:30:47Z

</svb\_new\_sp\_due\_date>

<svb\_new\_sp\_creation\_ts>2001-12-17T09:30:47Z

</svb\_new\_sp\_creation\_ts>

<sv\_old\_sp\_due\_date>2001-12-17T09:30:47Z

</sv\_old\_sp\_due\_date>

<sv\_old\_sp\_authorization>true</sv\_old\_sp\_authorization>

<sv\_status\_change\_cause\_code>cause\_code\_none</sv\_status\_change\_cause\_code>

<sv\_old\_sp\_authorization\_ts>2001-12-17T09:30:47Z

</sv\_old\_sp\_authorization\_ts>

<svb\_broadcast\_timestamp>2001-12-17T09:30:47Z

</svb\_broadcast\_timestamp>

<sv\_conflict\_timestamp>2001-12-17T09:30:47Z

</sv\_conflict\_timestamp>

<sv\_customer\_disconnect\_date>2001-12-17T09:30:47Z

</sv\_customer\_disconnect\_date>

<sv\_effective\_release\_date>2001-12-17T09:30:47Z

</sv\_effective\_release\_date>

<svb\_disconnect\_complete\_timestamp>2001-12-17T09:30:47Z

</svb\_disconnect\_complete\_timestamp>

<sv\_cancellation\_timestamp>2001-12-17T09:30:47Z

</sv\_cancellation\_timestamp>

<svb\_creation\_timestamp>2001-12-17T09:30:47Z

</svb\_creation\_timestamp>

<svb\_failed\_sp\_list>

<sp\_id>1111</sp\_id>

<sp\_name>Telco 1</sp\_name>

</svb\_failed\_sp\_list>

<svb\_modified\_timestamp>2001-12-17T09:30:47Z

</svb\_modified\_timestamp>

<sv\_old\_sp\_cancellation\_timestamp>2001-12-17T09:30:47Z

</sv\_old\_sp\_cancellation\_timestamp>

<sv\_new\_sp\_cancellation\_timestamp>2001-12-17T09:30:47Z

</sv\_new\_sp\_cancellation\_timestamp>

<sv\_old\_sp\_conflict\_resolution\_timestamp>2001-12-17T09:30:47Z

</sv\_old\_sp\_conflict\_resolution\_timestamp>

<sv\_new\_sp\_conflict\_resolution\_timestamp>2001-12-17T09:30:47Z

</sv\_new\_sp\_conflict\_resolution\_timestamp>

<sv\_porting\_to\_original\_sp\_switch>true

</sv\_porting\_to\_original\_sp\_switch>

<sv\_precancellation\_status>pre\_cancel\_status\_conflict

</sv\_precancellation\_status>

<sv\_timer\_type>medium\_timers</sv\_timer\_type>

<sv\_business\_type>medium\_days\_hours</sv\_business\_type>

<svb\_sv\_type>wireless</svb\_sv\_type>

<svb\_optional\_data>

<od\_field>

<od\_name>ALTSPID</od\_name>

<od\_value>3333</od\_value>

</od\_field>

</svb\_optional\_data>

<sv\_new\_sp\_medium\_timer\_indicator>true

</sv\_new\_sp\_medium\_timer\_indicator>

<sv\_old\_sp\_medium\_timer\_indicator>true

</sv\_old\_sp\_medium\_timer\_indicator>

<activity\_timestamp>2012-12-17T09:30:46.136Z </activity\_timestamp>

</sv\_data>

</sv\_list>

<sv\_remaining\_count>0</sv\_remaining\_count>

</SvQueryReply>

</Message>

</npac\_to\_soa>

</MessageContent>

</SOAMessages>

## LSMS to NPAC Messages

### DownloadReply

This message lets the NPAC know that the LSMS has successfully processed the work for the corresponding download request.

This message is the asynchronous reply to all the DownloadRequest messages.

#### DownloadReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |

#### DownloadReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>12345678</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<lsms\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<DownloadReply>

<basic\_code>success</basic\_code>

</DownloadReply>

</Message>

</lsms\_to\_npac>

</MessageContent>

</LSMSMessages>

### KeepAlive

The KeepAlive message is a heartbeat from one entity to the other such as LSMS to NPAC or vise versa. The intention is for the originating entity to inform to receiving entity of its presence.

The asynchronous reply to this message is a NotificationReply message.

#### KeepAlive Parameters

None

#### KeepAlive XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>12345678</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<lsms\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<KeepAlive/>

</Message>

</lsms\_to\_npac>

</MessageContent>

</LSMSMessages>

### LrnQueryRequest

LSMS queries the NPAC about an existing LRN. The query can be done via lrn\_id, lrn\_value or a query\_expression.

#### LrnQueryRequest Parameters

| Parameter | Description |
| --- | --- |
| lrn\_id | Identifier of the LRN to be queried |
| lrn\_value | The 10 digit LRN value to be queried |
| query\_expression | The query expression attribute is used to convey a formatted string indicating objects to be queried and returned. Please see Section 2.9.2 for a detail description of the format of this string |

#### LrnQueryRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>12345678</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<lsms\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<LrnQueryRequest>

<lrn\_value>2023563780</lrn\_value>

</LrnQueryRequest>

</Message>

</lsms\_to\_npac>

</MessageContent>

</LSMSMessages>

### NotificationReply

LSMS replies to a notification or KeepAlive initiated by the NPAC. There is rarely an error that is returned from a Notification. The reply is intended to confirm to the NPAC processing of the notification by the LSMS system.

This message is the asynchronous reply to all of the notification messages.

#### NotificationReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |

#### NotificationReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>12345678</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<lsms\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NotificationReply>

<basic\_code>success</basic\_code>

</NotificationReply>

</Message>

</lsms\_to\_npac>

</MessageContent>

</LSMSMessages>

### NpaNxxDxQueryRequest

LSMS queries the NPAC about an existing NPANXX-X. The query can be done via NPA-NXX-X id, NPA-NXX-X value or a query expression.

#### NpaNxxDxQueryRequest Parameters

| Parameter | Description |
| --- | --- |
| npa\_nxx\_x\_id | Identifier of the NPANXX-X to be queried |
| npa\_nxx\_x\_value | The 7 digit NPANXX-X value to be queried |
| query\_expression | The query expression attribute is used to convey a formatted string indicating objects to be queried and returned. Refer to Section 2.9.3 for a detail description of the format of this string |

#### NpaNxxDxQueryRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>12345678</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:46.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<lsms\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxDxQueryRequest>

<npa\_nxx\_x\_value>1112221</npa\_nxx\_x\_value>

</NpaNxxDxQueryRequest>

</Message>

</lsms\_to\_npac>

</MessageContent>

</LSMSMessages>

### NpaNxxQueryRequest

LSMS queries the NPAC about an existing NPANXX. The query can be done via NPANXX id, NPANXX value or a query expression.

#### NpaNxxQueryRequest Parameters

| Parameter | Description |
| --- | --- |
| npa\_nxx\_id | Identifier of the NPANXX to be queried |
| npa\_nxx\_x\_value | The 6 digit NPANXX value to be queried |
| query\_expression | The query expression attribute is used to convey a formatted string indicating objects to be queried and returned. Please see Section 2.9.4 for a detail description of the format of this string |

#### NpaNxxQueryRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>12345678</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<lsms\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxQueryRequest>

<npa\_nxx\_id>10</npa\_nxx\_id>

</NpaNxxQueryRequest>

</Message>

</lsms\_to\_npac>

</MessageContent>

</LSMSMessages>

### NpbQueryRequest

LSMS queries the NPAC about an existing number pooled block (NPB). The query can be done via block id, block value or a query expression.

#### NpbQueryRequest Parameters

| Parameter | Description |
| --- | --- |
| block\_id | Identifier of the block to be queried |
| block\_dash\_x | The 7 digit block value to be queried |
| query\_expression | The query expression attribute is used to convey a formatted string indicating objects to be queried and returned. Refer to Section 2.9.5 for a detail description of the format of this string |

#### NpbQueryRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>12345678</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<lsms\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpbQueryRequest>

<block\_dash\_x>1112221</block\_dash\_x>

</NpbQueryRequest>

</Message>

</lsms\_to\_npac>

</MessageContent>

</LSMSMessages>

### ProcessingError

This message is an error reply that will be sent rarely. When the receiving system is able to return a synchronous acknowledgement for a request, any error can be indicated as part of the asynchronous reply. However, in certain circumstances the receiving system may not be able to send the asynchronous reply as part of a reply message that directly corresponds to the request. For example, if the request contains invalid XML the receiving system will not be able to determine the type of request, and therefore will not be able to determine the corresponding type of reply message. In these cases, the receiving system should send a ProcessingError message to indicate the error. The invoke id of the ProcessingError message must match that of the incoming request. This means that if the receiving system cannot determine the invoke id of the request, it will not be able to generate a ProcessingError.

When multiple requests are sent as a batch, a separate ProcessingError message will be created for each one. Note that the batch itself is one large XML message. Any parsing error in the batch will cause all messages in the batch to be failed with a ProcessingError.

#### ProcessingError Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |

#### ProcessingError XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>12345678</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<lsms\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<ProcessingError>

<basic\_code>failed</basic\_code>

<status\_code>9020</status\_code>

<status\_info>processing error: cannot parse reply</status\_info>

</ProcessingError>

</Message>

</lsms\_to\_npac>

</MessageContent>

</LSMSMessages>

### QueryLsmsNpbReply

This message is the asynchronous reply to a QueryLsmsNpbRequest message.

The LSMS uses this message to reply to a number pool block query initiated by the NPAC. This is part of the audit process. The NPAC can issue a query for a single number or a range of consecutive blocks. The LSMS uses this message to reply with the results.

#### QueryLsmsNpbReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| npb\_list | List of number pool block data containing the query result |
| block\_dash\_x | The 7 digit NPA-NXX-X value associated with the block |
| block\_id | The unique identifier of the number pool block. |
| sp\_id | Service Provider ID (block holder) |
| svb\_lrn | LRN value of the SV.  |
| svb\_activation\_timestamp | The activation time stamp of a subscription or pool block |
| svb\_class\_dpc | CLASS DPC value of the SV.  |
| svb\_class\_ssn | CLASS SSN value of the SV.  |
| svb\_lidb\_dpc | LIDB DPC value of the SV.  |
| svb\_lidb\_ssn | LIDB SSN value of the SV.  |
| svb\_isvm\_dpc | ISVM DPC value of the SV.  |
| svb\_isvm\_ssn | ISVM SSN value of the SV.  |
| svb\_cnam\_dpc | CNAM DPC value of the SV.  |
| svb\_cnam\_ssn | CNAM SSN value of the SV.  |
| svb\_wsmsc\_dpc | WSMSC DPC value of the SV.  |
| svb\_wsmsc\_ssn | WSMSC SSN value of the SV.  |
| download\_reason | An enumeration that indicates the reason this download is being sent. The valid values include:* dr\_ new
* dr\_ delete
* dr\_ modified
* dr\_ audit\_discrepancy
 |
| svb\_sv\_type | One of wireline, wireless, class2\_voip\_no\_num\_assgnmt , vowifi, prepaid\_wireless, class1\_and\_2\_voip\_with\_num\_assgnmt , sv\_type\_6, sv\_type\_7, sv\_type\_8, sv\_type\_9.  |
| svb\_optional\_data | This structure specifies a set of optional fields to be modified. They must be specified as od\_name and od\_value pair. |

#### QueryLsmsNpbReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>12345678</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<lsms\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<QueryLsmsNpbReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<npb\_list>

<npb\_data>

<block\_id>97</block\_id>

<block\_dash\_x>1001009</block\_dash\_x>

<sp\_id>1111</sp\_id>

<svb\_activation\_timestamp>2001-12-31T12:00:00 </svb\_activation\_timestamp>

<svb\_lrn>2023563780</svb\_lrn>

<svb\_class\_dpc>111222111</svb\_class\_dpc>

<svb\_class\_ssn>0</svb\_class\_ssn>

<svb\_lidb\_dpc>111222111</svb\_lidb\_dpc>

<svb\_lidb\_ssn>0</svb\_lidb\_ssn>

<svb\_isvm\_dpc>111222111</svb\_isvm\_dpc>

<svb\_isvm\_ssn>0</svb\_isvm\_ssn>

<svb\_cnam\_dpc>111222111</svb\_cnam\_dpc>

<svb\_cnam\_ssn>0</svb\_cnam\_ssn>

<svb\_wsmsc\_dpc>111222111</svb\_wsmsc\_dpc>

<svb\_wsmsc\_ssn>0</svb\_wsmsc\_ssn>

<download\_reason>dr\_new</download\_reason>

<svb\_sv\_type>wireline</svb\_sv\_type>

<svb\_optional\_data>

<od\_field>

<od\_name>ALTSPID</od\_name>

<od\_value>3333</od\_value>

</od\_field>

</svb\_optional\_data>

</npb\_data>

</npb\_list>

</QueryLsmsNpbReply>

</Message>

</lsms\_to\_npac>

</MessageContent>

</LSMSMessages>

### QueryLsmsSvReply

This message is the asynchronous reply to a QueryLsmsSvRequest message.

The LSMS uses this message to reply to a subscription version query initiated by the NPAC. This is part of the audit process. The NPAC can issue a query for a single number or a range of consecutive numbers. The LSMS uses this message to reply with the results.

#### QueryLsmsSvReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| sv\_list | List of SV data containing the query result |
| sv\_tn | The 10 digit telephone number |
| sv\_id | Identifier of the subscription version. |
| svb\_lrn | LRN value of the SV.  |
| svb\_new\_sp | The new SP of an SV or pooled block. |
| svb\_activation\_timestamp | The activation time stamp of a subscription or pool block |
| svb\_class\_dpc | CLASS DPC value of the SV.  |
| svb\_class\_ssn | CLASS SSN value of the SV.  |
| svb\_lidb\_dpc | LIDB DPC value of the SV.  |
| svb\_lidb\_ssn | LIDB SSN value of the SV.  |
| svb\_isvm\_dpc | ISVM DPC value of the SV.  |
| svb\_isvm\_ssn | ISVM SSN value of the SV.  |
| svb\_cnam\_dpc | CNAM DPC value of the SV.  |
| svb\_cnam\_ssn | CNAM SSN value of the SV.  |
| svb\_wsmsc\_dpc | WSMSC DPC value of the SV.  |
| svb\_wsmsc\_ssn | WSMSC SSN value of the SV.  |
| svb\_end\_user\_location\_type | End user location type value of the SV.  |
| svb\_end\_user\_location\_value | End user location value value of the SV.  |
| svb\_billing\_id | Billing ID value of the SV.  |
| sv\_lnp\_type | It is required since at least one of the LNP type must be specified as follows:* inter\_provider
* intra\_provider
 |
| download\_reason | An enumeration that indicates the reason this download is being sent. The valid values include:* dr\_new
* dr\_delete
* dr\_modified
* dr\_audit\_discrepancy
 |
| svb\_sv\_type | One of wireline, wireless, class2\_voip\_no\_num\_assgnmt, vowifi, prepaid\_wireless, class1\_and\_2\_voip\_with\_num\_assgnmt , sv\_type\_6, sv\_type\_7, sv\_type\_8, sv\_type\_9.  |
| svb\_optional\_data | This structure specifies a set of optional fields to be modified. They must be specified as od\_name and od\_value pair. |

#### QueryLsmsSvReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>12345678</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<lsms\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<QueryLsmsSvReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<sv\_list>

<sv\_data>

<sv\_tn>1001001000</sv\_tn>

<sv\_id>1235</sv\_id>

<svb\_lrn>1111111111</svb\_lrn>

<svb\_new\_sp>1234</svb\_new\_sp>

<svb\_activation\_timestamp>2001-12-31T12:00:00 </svb\_activation\_timestamp>

<svb\_class\_dpc>111222111</svb\_class\_dpc>

<svb\_class\_ssn>0</svb\_class\_ssn>

<svb\_lidb\_dpc>111222111</svb\_lidb\_dpc>

<svb\_lidb\_ssn>0</svb\_lidb\_ssn>

<svb\_isvm\_dpc>111222111</svb\_isvm\_dpc>

<svb\_isvm\_ssn>0</svb\_isvm\_ssn>

<svb\_cnam\_dpc>111222111</svb\_cnam\_dpc>

<svb\_cnam\_ssn>0</svb\_cnam\_ssn>

<svb\_end\_user\_location\_value>120</svb\_end\_user\_location\_value>

<svb\_end\_user\_location\_type>12</svb\_end\_user\_location\_type>

<svb\_billing\_id>3333</svb\_billing\_id>

<sv\_lnp\_type>inter\_provider</sv\_lnp\_type>

<download\_reason>dr\_new</download\_reason>

<svb\_wsmsc\_dpc>111222111</svb\_wsmsc\_dpc>

<svb\_wsmsc\_ssn>0</svb\_wsmsc\_ssn>

<svb\_sv\_type>wireline</svb\_sv\_type>

<svb\_optional\_data>

<od\_field>

<od\_name>ALTSPID</od\_name>

<od\_value>3333</od\_value>

</od\_field>

</svb\_optional\_data>

</sv\_data>

</sv\_list>

</QueryLsmsSvReply>

</Message>

</lsms\_to\_npac>

</MessageContent>

</LSMSMessages>

### SpidQueryRequest

This message is used by the LSMS to query the NPAC about an existing service provider. There are three different formats for this request:

* No parameter is specified – This is a query for all service provider information. The SpidQueryReply short\_form (see SpidQueryReply for details) will be returned for all SPID objects.
* The sp\_id parameter is specified – This is a query for a specific service provider. If the sp\_id parameter matches the SPID issuing the query, the SpidQueryReply long\_form is returned (see SpidQueryReply for details). Otherwise the SpidQueryReply short\_form is returned for the specified SPID object. See the section 5.1 (“Message Structure”) for details on how the NPAC determines which spid is issuing the query.
* The query\_expression is specified – This is a query that can return multiple SPID records. Regardless of which objects match the criteria, the SpidQueryReply short\_form is returned (see SpidQueryReply for details) for the service provider objects that match the query\_expression criteria.

The asynchronous reply to this message is a SpidQueryReply message.

#### SpidQueryRequest Parameters

| Parameter | Description |
| --- | --- |
| sp\_idquery\_expression | This optional field is a choice between sp\_id and a query expression.  |

#### SpidQueryRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<lsms\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SpidQueryRequest/>

</Message>

</lsms\_to\_npac>

</MessageContent>

</LSMSMessages>

### SvQueryRequest

LSMS queries the NPAC about an existing subscription version (SV). The query can be done via SV id, TN value or a query expression.

#### SvQueryRequest Parameters

| Parameter | Description |
| --- | --- |
| sv\_id sv\_tnquery\_expression | This field is a required choice of an SV ID, a 10 digit SV TN, or a query\_expression. Refer to Section 2.9.9 for a detail description of the format of this string. |

#### SvQueryRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<lsms\_to\_npac>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvQueryRequest>

<sv\_tn>2023561000</sv\_tn>

</SvQueryRequest>

</Message>

</lsms\_to\_npac>

</MessageContent>

</LSMSMessages>

## NPAC to LSMS Messages

### KeepAlive

The KeepAlive message is a heartbeat from one entity to the other. The intention is for the originating entity to inform the receiving entity of its presence.

The asynchronous reply to this message is a NotificationReply message.

#### KeepAlive Parameters

None.

#### KeepAlive XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<KeepAlive/>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### LrnQueryReply

This message is the asynchronous reply to an LrnQueryRequest message.

#### LrnQueryReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| lrn\_list  | This optional field is a list of lrn\_data structures that contain the data resulting from the query. |
| lrn\_data  | This required field is a list with one or more sets of the following 6 values: |
| sp\_id | This required field indicates the SPID that created the LRN. |
| lrn\_id | This required field specifies the unique numeric identifier of the LRN |
| lrn\_value | This required field specifies the value of the LRN. |
| download\_reason | This required field specifies the reason for the download of the LRN |
| lrn\_creation\_timestamp | This required field specifies the timestamp of when the LRN was created. |
| activity\_timestamp | This required field specifies the timestamp of when the NPAC last created a notification or download for this object. |

#### LrnQueryReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<LrnQueryReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<lrn\_list>

<lrn\_data>

<sp\_id>1111</sp\_id>

<lrn\_id>100</lrn\_id>

<lrn\_value>2023561000</lrn\_value>

<download\_reason>dr\_new</download\_reason>

<lrn\_creation\_timestamp>2011-12-17T09:30:47Z </lrn\_creation\_timestamp>

<activity\_timestamp>2012-12-17T09:30:46.136Z </activity\_timestamp>

</lrn\_data>

</lrn\_list>

</LrnQueryReply>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### LnpSpidMigrationNotification

The LnpSpidMigrationNotification message is sent from the NPAC to notify the LSMS about a SPID migration.

#### LnpSpidMigrationNotification Parameters

| Parameter | Description |
| --- | --- |
| migration\_from\_sp | This required field is the Service Provider ID of the migrate-from SP. |
| migration\_to\_sp | This required field is the Service Provider ID of the migrate-to SP. |
| migration\_npanxx\_data | This required field is a list of the NPA-NXXs involved in the migration in following pair:* npa\_nxx\_id
* npa\_nxx\_value
 |
| migration\_creation\_timestamp | This required field is the timestamp of the creation of the migration |
| migration\_due\_date | This required field is the due date of the migration |
| migration\_activation\_timestamp | This required field is the timestamp of the activation of the migration |

#### LnpSpidMigrationNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<LnpSpidMigrationNotification>

<migration\_from\_sp>2222</migration\_from\_sp>

<migration\_to\_sp>3333</migration\_to\_sp>

<migration\_npanxx\_data>

<npa\_nxx\_data>

<npa\_nxx\_id>10</npa\_nxx\_id>

<npa\_nxx\_value>111222</npa\_nxx\_value>

</npa\_nxx\_data>

</migration\_npanxx\_data>

<migration\_creation\_timestamp>2012-12-17T12:00:00 </migration\_creation\_timestamp>

<migration\_due\_date>2012-12-31T12:00:00</migration\_due\_date>

<migration\_activation\_timestamp>2012-12-31T12:00:00 </migration\_activation\_timestamp>

</LnpSpidMigrationNotification>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### LrnCreateDownload

The LrnCreateDownload message is sent from the NPAC to a LSMS to provide details of a new LRN.

#### LrnCreateDownload parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field specifies the SPID that owns the created LRN |
| lrn\_id | This required field specifies the unique numeric identifier of the created LRN |
| lrn\_value | This required field specifies the value of the created LRN. |
| download\_reason | This required field specifies the reason for the download of the created LRN – should always be dr\_new. |
| lrn\_creation\_timestamp | This required field specifies the timestamp of when the LRN was created. |  |

#### LrnCreateDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<LrnCreateDownload>

<sp\_id>2222</sp\_id>

<lrn\_id>15</lrn\_id>

<lrn\_value>2023563780</lrn\_value>

<download\_reason>dr\_new</download\_reason>

<lrn\_creation\_timestamp>2012-12-17T09:30:07Z </lrn\_creation\_timestamp>

</LrnCreateDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### LrnDeleteDownload

The LrnDeleteDownload message is sent from the NPAC to a LSMS to indicate an LRN has been deleted from the NPAC.

#### LrnDeleteDownload parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field specifies the SPID that owns the deleted LRN |
| lrn\_id | This required field specifies the unique numeric identifier of the deleted LRN |
| download\_reason | This field specifies the reason for the download of the deleted LRN – should always be dr\_delete. |

#### LrnDeleteDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<LrnDeleteDownload>

<sp\_id>2222</sp\_id>

<lrn\_id>10</lrn\_id>

<download\_reason>dr\_delete</download\_reason>

</LrnDeleteDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### NewNpaNxxNotification

The NPAC sends a NewNpaNxxNotification to a LSMS to indicate the first subscription version has been created in an NPA-NXX code.

#### NewNpaNxxNotification Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field indicates the Service Provider ID for the NPA-NXX. |
| npa\_nxx\_id | This required field is the unique identifier of the NPA-NXX. |
| npa\_nxx\_value | This required field is the 6 digit value of the NPA-NXX. |
| npa\_nxx\_effective\_timestamp | This required field is the effective timestamp of the NPA-NXX |

#### NewNpaNxxNotification XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NewNpaNxxNotification>

<sp\_id>2222</sp\_id>

<npa\_nxx\_id>100</npa\_nxx\_id>

<npa\_nxx\_value>111222</npa\_nxx\_value>

<npa\_nxx\_effective\_timestamp>2012-12-18T09:30:46.284Z </npa\_nxx\_effective\_timestamp></NewNpaNxxNotification>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### NotificationReply

NPAC replies to a KeepAlive initiated by the LSMS. There is rarely an error that is returned from a KeepAlive. The reply is intended to confirm to the LSMS processing of the KeepAlive by the NPAC system.

This message is the asynchronous reply to all of the notification messages.

#### NotificationReply Parameters

|  |  |
| --- | --- |
| Parameter | Description |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |

#### NotificationReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>abcdefgh</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NotificationReply>

<basic\_code>success</basic\_code>

</NotificationReply>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### NpaNxxCreateDownload

The NpaNxxCreateDownload message is sent from the NPAC to a LSMS to provide details of a new NPA-NXX.

#### NpaNxxCreateDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field specifies the SPID that owns the created NPA-NXX (code holder) |
| npa\_nxx\_id | This required field specifies the unique numeric identifier of the created NPA-NXX |
| npa\_nxx\_value | This required field specifies the value of the created NPA-NXX. |
| npa\_nxx\_effective\_timestamp | This required field specifies the timestamp at which the NPA-NXX becomes available for porting. SVs that are part of this NPA-NXX cannot have a due date prior to the effective timestamp. |
| download\_reason | This required field specifies the reason for the download of the created NPA-NXX – should always be dr\_new. |
| npa\_nxx\_creation\_timestamp | This required field specifies the timestamp of when the NPA-NXX was created. |  |

#### NpaNxxCreateDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxCreateDownload>

<sp\_id>2222</sp\_id>

<npa\_nxx\_id>0</npa\_nxx\_id>

<npa\_nxx\_value>111222</npa\_nxx\_value>

<npa\_nxx\_effective\_timestamp>2012-12-21T09:30:47Z </npa\_nxx\_effective\_timestamp>

<download\_reason>dr\_new</download\_reason>

<npa\_nxx\_creation\_timestamp>2012-12-17T09:20:47Z </npa\_nxx\_creation\_timestamp>

</NpaNxxCreateDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### NpaNxxDeleteDownload

The NpaNxxDeleteDownload message is sent from the NPAC to a LSMS to indicate an NPA-NXX has been deleted from the NPAC.

#### NpaNxxDeleteDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field specifies the SPID that owns the deleted NPA-NXX (code holder) |
| npa\_nxx\_id | This required field specifies the unique numeric identifier of the deleted NPA-NXX |
| download\_reason | This required field specifies the reason for the download of the deleted NPA-NXX – should always be dr\_delete. |

#### NpaNxxDeleteDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxDeleteDownload>

<sp\_id>2222</sp\_id>

<npa\_nxx\_id>25</npa\_nxx\_id>

<download\_reason>dr\_delete</download\_reason>

</NpaNxxDeleteDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### NpaNxxDxCreateDownload

The NpaNxxDxCreateDownload message is sent from the NPAC to a LSMS to provide details of a new NPA-NXX-X. All parameters listed below are required.

#### NpaNxxDxCreateDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This field specifies the SPID that owns the created NPA-NXX-X (block holder) |
| npa\_nxx\_x\_id | This field specifies the unique numeric identifier of the created NPA-NXX-X |
| npa\_nxx\_x\_value | This field specifies the value of the created NPA-NXX-X. |
| npa\_nxx\_x\_effective\_timestamp | This field specifies the timestamp at which the NPA-NXX-X becomes available for porting. SVs that are part of this NPA-NXX-X cannot have a due date prior to the effective timestamp. |
| npa\_nxx\_x\_creation\_timestamp | This field specifies the timestamp of when the NPA-NXX-X was created. |
| npa\_nxx\_x\_modified\_timestamp | This field specifies the timestamp of when the NPA-NXX-X was modified. |
| download\_reason | This field specifies the reason for the download of the created NPA-NXX-X – should always be dr\_new. |

#### NpaNxxDxCreateDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxDxCreateDownload>

<sp\_id>2222</sp\_id>

<npa\_nxx\_x\_id>35</npa\_nxx\_x\_id>

<npa\_nxx\_x\_value>1112221</npa\_nxx\_x\_value>

<npa\_nxx\_x\_effective\_timestamp>2012-12-18T09:30:47Z </npa\_nxx\_x\_effective\_timestamp>

<npa\_nxx\_x\_creation\_timestamp>2012-12-17T09:30:47Z </npa\_nxx\_x\_creation\_timestamp>

<npa\_nxx\_x\_modified\_timestamp>2012-12-17T09:30:47Z </npa\_nxx\_x\_modified\_timestamp>

<download\_reason>dr\_new</download\_reason>

</NpaNxxDxCreateDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### NpaNxxDxDeleteDownload

The NpaNxxDxDeleteDownload message is sent from the NPAC to a LSMS to indicate an NPA-NXX-X has been deleted from the NPAC.

#### NpaNxxDxDeleteDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field specifies the SPID that owns the deleted NPA-NXX-X (block holder) |
| npa\_nxx\_x\_id | This required field specifies the unique numeric identifier of the deleted NPA-NXX-X |
| download\_reason | This field specifies the reason for the download of the deleted NPA-NXX-X – should always be dr\_delete. |

#### NpaNxxDxDeleteDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxDxDeleteDownload>

<sp\_id>2222</sp\_id>

<npa\_nxx\_x\_id>35</npa\_nxx\_x\_id>

<download\_reason>dr\_delete</download\_reason>

</NpaNxxDxDeleteDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### NpaNxxDxModifyDownload

The NpaNxxDxModifyDownload message is sent from the NPAC to a LSMS to indicate an NPA-NXX-X has been modified at the NPAC.

#### NpaNxxDxModifyDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field specifies the SPID that owns the modified NPA-NXX-X (block holder) |
| npa\_nxx\_x\_id | This required field specifies the unique numeric identifier of the modified NPA-NXX-X |
| npa\_nxx\_x\_effective\_timestamp | This required field specifies the timestamp at which the NPA-NXX-X becomes available for porting. SVs that are part of this NPA-NXX-X cannot have a due date prior to the effective timestamp. |
| download\_reason | This required field specifies the reason for the download of the modified NPA-NXX-X – should always be dr\_modified. |
| npa\_nxx\_x\_modified\_timestamp | This optional field specifies the timestamp of when the NPA-NXX-X was modified. |

#### NpaNxxDxModifyDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxDxModifyDownload>

<sp\_id>2222</sp\_id>

<npa\_nxx\_x\_id>35</npa\_nxx\_x\_id>

<npa\_nxx\_x\_effective\_timestamp>2012-12-19T09:30:45Z </npa\_nxx\_x\_effective\_timestamp>

<npa\_nxx\_x\_modified\_timestamp>2012-12-17T09:30:45Z </npa\_nxx\_x\_modified\_timestamp>

<download\_reason>dr\_modified</download\_reason>

</NpaNxxDxModifyDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### NpaNxxDxQueryReply

This message is the asynchronous reply to an NpaNxxDxQueryRequest message.

The NpaNxxDxQueryReply is sent from the NPAC to provide the results of an NpaNxxDxQueryRequest that was initiated by a LSMS.

#### NpaNxxDxQueryReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| npa\_nxx\_x\_list | This field is an optional list of npa\_nxx\_x\_data structures containing the results of the query. |
| npa\_nxx\_x\_data | This field is a structure that describes an NPANXX-X object. It contains the following 8 values: |
| sp\_id | This required field specifies the SPID that owns the NPA-NXX-X |
| npa\_nxx\_x\_id | This required field specifies the unique numeric identifier of the NPA-NXX-X |
| npa\_nxx\_x\_value | This required field specifies the value of the NPA-NXX-X. |
| npa\_nxx\_x\_effective\_timestamp | This required field specifies the timestamp of when the NPA-NXX-X is effective. |
| npa\_nxx\_x\_creation\_timestamp | This required field specifies the timestamp of when the NPA-NXX-X was created. |
| npa\_nxx\_x\_modified\_timestamp | This required field specifies the timestamp of when the NPA-NXX-X was last modified. |
| download\_reason | This required field specifies the reason for the download of the NPA-NXX-X |
| activity\_timestamp | This required field specifies the timestamp of when the NPAC last created a notification or download for this object. |

#### NpaNxxDxQueryReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxDxQueryReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<npa\_nxx\_x\_list>

<npa\_nxx\_x\_data>

<sp\_id>1111</sp\_id>

<npa\_nxx\_x\_id>35</npa\_nxx\_x\_id>

<npa\_nxx\_x\_value>1112221</npa\_nxx\_x\_value>

<npa\_nxx\_x\_effective\_timestamp>2001-12-17T09:30:47Z </npa\_nxx\_x\_effective\_timestamp>

<npa\_nxx\_x\_creation\_timestamp>2001-12-17T09:30:47Z </npa\_nxx\_x\_creation\_timestamp>

<npa\_nxx\_x\_modified\_timestamp>2001-12-17T09:30:47Z </npa\_nxx\_x\_modified\_timestamp>

<download\_reason>dr\_new</download\_reason>

<activity\_timestamp>2012-12-17T09:30:46.136Z</activity\_timestamp>

</npa\_nxx\_x\_data>

</npa\_nxx\_x\_list>

</NpaNxxDxQueryReply>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### NpaNxxModifyDownload

The NpaNxxModifyDownload message is sent from the NPAC to an LSMS to indicate an NPA-NXX has been modified at the NPAC.

#### NpaNxxModifyDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field specifies the SPID that owns the modified NPA-NXX (code holder) |
| npa\_nxx\_id | This required field specifies the unique numeric identifier of the modified NPA-NXX |
| npa\_nxx\_effective\_timestamp | This required field specifies the timestamp at which the NPA-NXX becomes available for porting. SVs that are part of this NPA-NXX cannot have a due date prior to the effective timestamp. |
| download\_reason | This required field specifies the reason for the download of the modified NPA-NXX – should always be dr\_modified. |
| npa\_nxx\_modified\_timestamp | This required field specifies the timestamp of when the NPA-NXX was modified. |  |

#### NpaNxxModifyDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxModifyDownload>

<sp\_id>2222</sp\_id>

<npa\_nxx\_id>25</npa\_nxx\_id>

<npa\_nxx\_effective\_timestamp>2001-12-17T09:30:47Z </npa\_nxx\_effective\_timestamp>

<download\_reason>dr\_modified</download\_reason>

<npa\_nxx\_modified\_timestamp>2001-12-17T09:30:47Z </npa\_nxx\_modified\_timestamp>

</NpaNxxModifyDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### NpaNxxQueryReply

This message is the asynchronous reply to a NpaNxxQueryRequest message.

The NpaNxxQueryReply is sent from the NPAC to provide the results of an NpaNxxQueryRequest that was initiated by a LSMS.

#### NpaNxxQueryReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| npa\_nxx\_list | This element is a list of npa\_nxx\_data structures that contain the results of the query |
| npa\_nxx\_data | This field is an optional list with one or more sets of the following 8 values: |
| sp\_id | This required field indicates the SPID that owns the NPA-NXX. |
| npa\_nxx\_id | This required field specifies the unique numeric identifier of the NPA-NXX |
| npa\_nxx\_value | This required field specifies the value of the NPA-NXX |
| npa\_nxx\_effective\_timestamp | This required field specifies the timestamp of when the NPA-NXX is effective. |
| download\_reason | This required field specifies the reason for the download of the NPA-NXX |
| npa\_nxx\_creation\_timestamp | This required field specifies the timestamp of when the NPA-NXX was created. |
| npa\_nxx\_modified\_timestamp | This optional field specifies the timestamp of when the NPA-NXX was last modified. |
| activity\_timestamp | This required field specifies the timestamp of when the NPAC last created a notification or download for this object. |

#### NpaNxxQueryReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpaNxxQueryReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<npa\_nxx\_list>

<npa\_nxx\_data>

<sp\_id>1111</sp\_id>

<npa\_nxx\_id>25</npa\_nxx\_id>

<npa\_nxx\_value>111222</npa\_nxx\_value>

<npa\_nxx\_effective\_timestamp>2001-12-17T09:30:47Z </npa\_nxx\_effective\_timestamp>

<download\_reason>dr\_new</download\_reason>

<npa\_nxx\_creation\_timestamp>2001-12-17T09:30:47Z </npa\_nxx\_creation\_timestamp>

<npa\_nxx\_modified\_timestamp>2001-12-17T09:30:47Z </npa\_nxx\_modified\_timestamp>

<activity\_timestamp>2012-12-17T09:30:46.136Z </activity\_timestamp>

</npa\_nxx\_data>

</npa\_nxx\_list>

</NpaNxxQueryReply>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### NpbCreateDownload

The NpbCreateDownload message is sent from the NPAC to an LSMS to provide details of a new pooled block that has been created at the NPAC.

#### NpbCreateDownload Parameters

| Parameter | Description |
| --- | --- |
| block\_id | This field specifies the unique numeric identifier of the block |
| block\_dash\_x | This field specifies the NPA-NXX-X value of the block |
| sp\_id | This field specifies the SPID that owns the block (block holder) |
| svb\_activation\_timestamp | This field specifies the timestamp of when the block was activated |
| svb\_lrn | This field specifies the LRN of the block |
| svb\_class\_dpc | This optional field specifies the CLASS DPC of the block |
| svb\_class\_ssn | This optional field specifies the CLASS SSN of the block |
| svb\_lidb\_dpc | This optional field specifies the LIDB DPC of the block |
| svb\_lidb\_ssn | This optional field specifies the LIDB SSN of the block |
| svb\_isvm\_dpc | This optional field specifies the ISVM DPC of the block |
| svb\_isvm\_ssn | This optional field specifies the ISVM SSN of the block |
| svb\_cnam\_dpc | This optional field specifies the CNAM DPC of the block |
| svb\_cnam\_ssn | This optional field specifies the CNAM SSN of the block |
| svb\_wsmsc\_dpc | This optional field specifies the WSMSC DPC of the block |
| svb\_wsmsc\_ssn | This optional field specifies the WSMSC SSN of the block |
| download\_reason | This field specifies the reason for the download of the block – should always be dr\_new |
| svb\_sv\_type | This optional field specifies the SV type of the block |
| svb\_optional\_data | This optional field specifies (possibly multiple) name-value pairs of optional data associated with the block |

#### NpbCreateDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpbCreateDownload>

<block\_id>100</block\_id>

<block\_dash\_x>1112221</block\_dash\_x>

<sp\_id>2222</sp\_id>

<svb\_activation\_timestamp>2001-12-17T09:30:47Z </svb\_activation\_timestamp>

<svb\_lrn>2024563870</svb\_lrn>

<svb\_class\_dpc>111222111</svb\_class\_dpc>

<svb\_class\_ssn>0</svb\_class\_ssn>

<svb\_lidb\_dpc>111222111</svb\_lidb\_dpc>

<svb\_lidb\_ssn>0</svb\_lidb\_ssn>

<svb\_isvm\_dpc>111222111</svb\_isvm\_dpc>

<svb\_isvm\_ssn>0</svb\_isvm\_ssn>

<svb\_cnam\_dpc>111222111</svb\_cnam\_dpc>

<svb\_cnam\_ssn>0</svb\_cnam\_ssn>

<svb\_wsmsc\_dpc>111222111</svb\_wsmsc\_dpc>

<svb\_wsmsc\_ssn>0</svb\_wsmsc\_ssn>

<download\_reason>dr\_new</download\_reason>

<svb\_sv\_type>wireline</svb\_sv\_type>

<svb\_optional\_data>

<od\_field>

<od\_name>ALTSPID</od\_name>

<od\_value>3333</od\_value>

</od\_field>

</svb\_optional\_data>

</NpbCreateDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### NpbDeleteDownload

The NpbDeleteDownload message is sent from the NPAC to an LSMS to indicate a number pooled block has been deleted from the NPAC.

#### NpbDeleteDownload Parameters

| Parameter | Description |
| --- | --- |
| block\_id | This field specifies the unique numeric identifier of the deleted number pool block |
| download\_reason | This field specifies the reason for the download of the deleted block – should always be dr\_delete. |

#### NpbDeleteDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpbDeleteDownload>

<block\_id>35</block\_id>

<download\_reason>dr\_delete</download\_reason>

</NpbDeleteDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### NpbModifyDownload

The NpbModifyDownload message is sent from the NPAC to a LSMS to indicate a pooled block has been modified at the NPAC.

#### NpbModifyDownload Parameters

| Parameter | Description |
| --- | --- |
| block\_id | Required - the unique numeric identifier of the modified number pool block |
| block\_dash\_x | Required - the NPA-NXX-X value of the modified number pool block |
| sp\_id | Required - the SPID that owns the modified number pool block (block holder) |
| svb\_activation\_timestamp | Optional - the timestamp of when the modified number pool block was activated |
| svb\_lrn | Optional - the LRN of the modified number pool block |
| svb\_class\_dpc | Optional – the CLASS DPC of the modified number pool block |
| svb\_class\_ssn | Optional – the CLASS SSN of the modified number pool block |
| svb\_lidb\_dpc | Optional – the LIDB DPC of the modified number pool block |
| svb\_lidb\_ssn | Optional – the LIDB SSN of the modified number pool block |
| svb\_isvm\_dpc | Optional – the ISVM DPC of the modified number pool block |
| svb\_isvm\_ssn | Optional – the ISVM SSN of the modified number pool block |
| svb\_cnam\_dpc | Optional – the CNAM DPC of the modified number pool block |
| svb\_cnam\_ssn | Optional – the CNAM SSN of the modified number pool block |
| svb\_wsmsc\_dpc | Optional – the WSMSC DPC of the modified number pool block |
| svb\_wsmsc\_ssn | Optional – the WSMSC SSN of the modified number pool block |
| download\_reason | This field specifies the reason for the download of the modified number pool block – should always be dr\_modified |
| svb\_sv\_type | Optional – the SV type of the modified number pool block |
| svb\_optional\_data | Optional – specifies (possibly multiple) name-value pairs of optional data associated with the modified number pool block |

#### NpbModifyDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpbModifyDownload>

<block\_id>45</block\_id>

<block\_dash\_x>1112221</block\_dash\_x>

<sp\_id>2222</sp\_id>

<svb\_activation\_timestamp>2001-12-17T09:30:47Z </svb\_activation\_timestamp>

<svb\_lrn>2023563870</svb\_lrn>

<svb\_class\_dpc>111222111</svb\_class\_dpc>

<svb\_class\_ssn>0</svb\_class\_ssn>

<svb\_lidb\_dpc>111222111</svb\_lidb\_dpc>

<svb\_lidb\_ssn>0</svb\_lidb\_ssn>

<svb\_isvm\_dpc>111222111</svb\_isvm\_dpc>

<svb\_isvm\_ssn>0</svb\_isvm\_ssn>

<svb\_cnam\_dpc>111222111</svb\_cnam\_dpc>

<svb\_cnam\_ssn>0</svb\_cnam\_ssn>

<svb\_wsmsc\_dpc>111222111</svb\_wsmsc\_dpc>

<svb\_wsmsc\_ssn>0</svb\_wsmsc\_ssn>

<download\_reason>dr\_modified</download\_reason>

<svb\_sv\_type>wireline</svb\_sv\_type>

<svb\_optional\_data>

<od\_field>

<od\_name>ALTSPID</od\_name>

<od\_value>3333</od\_value>

</od\_field>

</svb\_optional\_data>

</NpbModifyDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### NpbQueryReply

This message is the asynchronous reply to an NpbQueryRequest message.

The NpbQueryReply is sent from the NPAC to provide the results of an NpbQueryRequest that was initiated by a LSMS.

#### NpbQueryReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| npb\_list  | This is a list of npb\_data structures that contain the data returned by the query. |
| npb\_data  | This optional field is a list with one or more sets of the following values: |
| block\_id | This required field specifies the unique numeric identifier of the created number pool block |
| block\_soa\_origination | This required true/false field specifies if the SOA originates the data for the block |
| svb\_creation\_timestamp | This required field specifies when the block was created |
| block\_status | This required field specifies the status of the block |
| block\_dash\_x | This required field specifies the NPA-NXX-X value of the block |
| sp\_id | This field specifies the SPID that owns the block (block holder) |
| svb\_lrn | This required field specifies the LRN of the block |
| svb\_class\_dpc | This optional field specifies the CLASS DPC of the block |
| svb\_class\_ssn | This optional field specifies the CLASS SSN of the block |
| svb\_lidb\_dpc | This optional field specifies the LIDB DPC of the block |
| svb\_lidb\_ssn | This optional field specifies the LIDB SSN of the block |
| svb\_isvm\_dpc | This optional field specifies the ISVM DPC of the block |
| svb\_isvm\_ssn | This optional field specifies the ISVM SSN of the block |
| svb\_cnam\_dpc | This optional field specifies the CNAM DPC of the block |
| svb\_cnam\_ssn | This optional field specifies the CNAM SSN of the block |
| svb\_wsmsc\_dpc | This optional field specifies the WSMSC DPC of the block |
| svb\_wsmsc\_ssn | This optional field specifies the WSMSC SSN of the block |
| svb\_activation\_timestamp | This optional field specifies the timestamp of when the block was activated |
| svb\_broadcast\_timestamp | This field specifies the timestamp of when the block was last broadcast |
| svb\_disconnect\_complete\_timestamp | This optional field specifies the timestamp of when the block was disconnected |
| svb\_modified\_timestamp | This optional field specifies the timestamp of when the block was last modified |
| download\_reason | This required field is the download reason of the block |
| svb\_sv\_type | This optional field specifies the SV type of the block |
| svb\_optional\_data | This optional field specifies (possibly multiple) name-value pairs of optional data associated with the block |
| svb\_failed\_sp\_list | This optional field specifies (possibly multiple) spid/name pairs of LSMSs that may not have the latest information on this block  |
| activity\_timestamp | This required field specifies the timestamp of when the NPAC last created a notification or download for this object. |

#### NpbQueryReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<NpbQueryReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<npb\_list>

<npb\_data>

<block\_id>100</block\_id>

<block\_soa\_origination>true</block\_soa\_origination>

<svb\_creation\_timestamp>2001-12-17T09:30:47Z </svb\_creation\_timestamp>

<block\_status>block\_status\_active</block\_status>

<block\_dash\_x>1112221</block\_dash\_x>

<sp\_id>2222</sp\_id>

<svb\_lrn>2023563870</svb\_lrn>

<svb\_class\_dpc>111222111</svb\_class\_dpc>

<svb\_class\_ssn>0</svb\_class\_ssn>

<svb\_lidb\_dpc>111222111</svb\_lidb\_dpc>

<svb\_lidb\_ssn>0</svb\_lidb\_ssn>

<svb\_isvm\_dpc>111222111</svb\_isvm\_dpc>

<svb\_isvm\_ssn>0</svb\_isvm\_ssn>

<svb\_cnam\_dpc>111222111</svb\_cnam\_dpc>

<svb\_cnam\_ssn>0</svb\_cnam\_ssn>

<svb\_wsmsc\_dpc>111222111</svb\_wsmsc\_dpc>

<svb\_wsmsc\_ssn>0</svb\_wsmsc\_ssn>

<svb\_activation\_timestamp>2011-12-17T09:30:47Z </svb\_activation\_timestamp>

<svb\_broadcast\_timestamp>2011-12-17T09:30:47Z </svb\_broadcast\_timestamp>

<svb\_disconnect\_complete\_timestamp>2001-12-17T09:30:47Z </svb\_disconnect\_complete\_timestamp>

<svb\_modified\_timestamp>2011-12-17T09:30:47Z </svb\_modified\_timestamp>

<download\_reason>dr\_new</download\_reason>

<svb\_sv\_type>wireline</svb\_sv\_type>

<svb\_optional\_data>

<od\_field>

<od\_name>ALTSPID</od\_name>

<od\_value>3333</od\_value>

</od\_field>

</svb\_optional\_data>

<svb\_failed\_sp\_list>

<sp\_id>4444</sp\_id>

<sp\_name>Provider 4444</sp\_name>

</svb\_failed\_sp\_list>

<activity\_timestamp>2012-12-17T09:30:46.136Z </activity\_timestamp>

</npb\_data>

</npb\_list>

</NpbQueryReply>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### ProcessingError

This message is an error reply that will be sent rarely. When the receiving system is able to return a synchronous acknowledgement for a request, any error can be indicated as part of the asynchronous reply. However, in certain circumstances the receiving system may not be able to send the asynchronous reply as part of a reply message that directly corresponds to the request. For example, if the request contains invalid XML the receiving system will not be able to determine the type of request, and therefore will not be able to determine the corresponding type of reply message. In these cases, the receiving system should send a ProcessingError message to indicate the error. The invoke id of the ProcessingError message must match that of the incoming request. This means that if the receiving system cannot determine the invoke id of the request, it will not be able to generate a ProcessingError.

When multiple requests are sent as a batch, a separate ProcessingError message will be created for each one. Note that the batch itself is one large XML message. Any parsing error in the batch will cause all messages in the batch to be failed with a ProcessingError.

#### ProcessingError Parameters

|  |  |
| --- | --- |
| Parameter | Description |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |

#### ProcessingError XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<ProcessingError>

<basic\_code>failed</basic\_code>

<status\_code>6100</status\_code>

<status\_info>request rejected</status\_info>

</ProcessingError>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### QueryLsmsSvRequest

The QueryLsmsSvRequest message is sent from the NPAC to an LSMS to query subscription versions that are part of an audit.

#### QueryLsmsSvRequest Parameters

Refer to section 2.9.7 for details on the query expression for the QueryLsmsSvRequest.

#### QueryLsmsSvRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.284Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<QueryLsmsSvRequest>((sv\_tn &gt;= '1111119000' AND sv\_tn &lt;= '1111119049') AND (svb\_activation\_timestamp &gt;= '2012-09-28T15:00:00' AND svb\_activation\_timestamp &lt;= '2012-09-28T19:00:00'))</QueryLsmsSvRequest>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### QueryLsmsNpbRequest

The QueryLsmsNpbRequest message is sent from the NPAC to an LSMS to query number pooled blocks that are part of an audit.

#### QueryLsmsNpbRequest Parameters

Refer to section 2.9.6 for details on the query expression for the QueryLsmsNpbRequest.

#### QueryLsmsNpbRequest XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<QueryLsmsNpbRequest>(block\_dash\_x = '1111113' AND

(svb\_activation\_timestamp &gt;= '2012-09-28T15:00:00' AND svb\_activation\_timestamp &lt;= '2012-09-28T19:00:00'))</QueryLsmsNpbRequest>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### SpidCreateDownload

The SpidCreateDownload message is sent from the NPAC to a LSMS to provide details of a new SPID that has been created at the NPAC.

#### SpidCreateDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | The service provider identifier of the created SP |
| sp\_name | This optional field is the service provider name of the created SP and it will be set on all SpidCreateDownload messages. It's optional because it's part of a structure that is also used in the SpidModifyDownload message. |
| sp\_type | This optional field is the service provider type of the created SP and, if supported, it will be set to one of the following:* wireline
* wireless
* non\_carrier
* class1\_and\_2\_voip\_with\_num\_assgnmt
* sp\_type\_4
* sp\_type\_5
 |
| download\_reason | The reason for the download of the created SP – should always be dr\_new |

#### SpidCreateDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SpidCreateDownload>

<sp\_id>2222</sp\_id>

<sp\_name>Service Provider 2222</sp\_name>

<sp\_type>wireline</sp\_type>

<download\_reason>dr\_new</download\_reason>

</SpidCreateDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### SpidDeleteDownload

The SpidDeleteDownload message is sent from the NPAC to a LSMS to indicate that a SPID that has been deleted at the NPAC.

#### SpidDeleteDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field it the service provider identifier of the deleted SP |
| download\_reason | This required field is the reason for the download of the deleted SP – should always be dr\_delete |

#### SpidDeleteDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SpidDeleteDownload>

<sp\_id>3333</sp\_id>

<download\_reason>dr\_delete</download\_reason>

</SpidDeleteDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### SpidModifyDownload

The SpidModifyDownload message is sent from the NPAC to a LSMS to indicate that a SPID that has been modified at the NPAC.

#### SpidModifyDownload Parameters

| Parameter | Description |
| --- | --- |
| sp\_id | This required field is the service provider ID of the modified SP |
| sp\_name | This optional field is the service provider name of the modified SP |
| sp\_type | This optional field is the service provider type and, if supported, when modified it will be set to one of the following:* wireline
* wireless
* non\_carrier
* class1\_and\_2\_voip\_with\_num\_assgnmt
* sp\_type\_4
* sp\_type\_5
 |
| download\_reason | This required field is the reason for the download of the modified SP – should always be dr\_modified |

#### SpidModifyDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SpidModifyDownload>

<sp\_id>2222</sp\_id>

<sp\_name>Service Provider 2222</sp\_name>

<sp\_type>wireline</sp\_type>

<download\_reason>dr\_modified</download\_reason>

</SpidModifyDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### SpidQueryReply

This message is the asynchronous reply to a SpidQueryRequest message.

There are two forms for this reply. The short form includes the sp\_id, sp\_name, and sp\_type. The long form adds the Service Providers contact information. Replies will be in short form unless the criteria specified in the SpidQueryRequest was just a sp\_id parameter and it matches the SPID issuing the query. See the section 5.1 (“Message Structure”) for details on how the NPAC determines which spid is issuing the query.

#### SpidQueryReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| spid\_list (short form) | This field contains an optional repeating list of sp\_data items where each contains the following items:* sp\_id
* sp\_name
* optional sp\_type
* activity\_timestamp
* download\_reason
 |
| spid\_list (long form) | This field contains the Service Provider profile information for the requesting SPID. It’s an optional list that contains a single sp\_data item with the following parameters:* sp\_id
* sp\_name
* optional sp\_type
* sp\_system\_type
* sp\_address
* address\_line1
* optional address\_line2
* address\_city
* address\_state
* address\_zip
* optional address\_province
* address\_country
* address\_contract\_phone
* address\_contact
* optional address\_contact\_fax
* optional address\_contact\_pager
* optional address\_contact\_pager\_pin
	+ optional address\_contact\_email
* sp\_billing\_address \*
* optional sp\_soa\_address \*
* optional sp\_lsms\_address \*
* optional sp\_web\_address \*
* optional sp\_net\_address \*
* optional sp\_conflict\_address \*
* optional sp\_operations\_address \*
* sp\_repair\_center\_address \*
* sp\_security\_address \*
* optional sp\_user\_admin\_address \*
* activity\_timestamp
* download\_reason

\* See sp\_address for complete list of parameters in an “address” |

#### SpidQueryReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>2222</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SpidQueryReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<spid\_list>

<spid\_data>

<sp\_id>2222</sp\_id>

<sp\_name>2 Telecom</sp\_name>

<sp\_type>wireline</sp\_type>

<sp\_system\_type>lsms\_soa\_system</sp\_system\_type>

<sp\_address>

<address\_line1>2222 Two St</address\_line1>

<address\_city>Anytown</address\_city>

<address\_state>NV</address\_state>

<address\_zip>12345</address\_zip>

<address\_country>US</address\_country>

<address\_contact\_phone>1234567890</address\_contact\_phone>

<address\_contact>John Doe</address\_contact>

</sp\_address>

<sp\_billing\_address>

<address\_line1>222 Two St</address\_line1>

<address\_city>Anytown</address\_city>

<address\_state>NV</address\_state>

<address\_zip>12345</address\_zip>

<address\_country>US</address\_country>

<address\_contact\_phone>1234567890</address\_contact\_phone>

<address\_contact>John Doe</address\_contact>

</sp\_billing\_address>

<sp\_repair\_center\_address>

<address\_line1>222 Two St</address\_line1>

<address\_city>Anytown</address\_city>

<address\_state>NV</address\_state>

<address\_zip>12345</address\_zip>

<address\_country>US</address\_country>

<address\_contact\_phone>1234567890</address\_contact\_phone>

<address\_contact>John Doe</address\_contact>

</sp\_repair\_center\_address>

<sp\_security\_address>

<address\_line1>222 Two St</address\_line1>

<address\_city>Anytown</address\_city>

<address\_state>NV</address\_state>

<address\_zip>12345</address\_zip>

<address\_country>US</address\_country>

<address\_contact\_phone>1234567890</address\_contact\_phone>

<address\_contact>John Doe</address\_contact>

</sp\_security\_address>

<activity\_timestamp>2012-12-17T09:30:46.136Z </activity\_timestamp>

<download\_reason>dr\_new</download\_reason>

</spid\_data>

</spid\_list>

</SpidQueryReply>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### SvCreateDownload

The SvCreateDownload message is sent from the NPAC to an LSMS to provide details of a new subscription version that has been created at the NPAC.

#### SvCreateDownload Parameters

| Parameter | Description |
| --- | --- |
| range\_notif\_tn\_id\_info | This field is a structure that identifies the subscription versions affected by this download message. It’s a choice between one or more lists of TNs with associated SVIDs, or one or more lists of TN ranges with associated SVID ranges.list\_info: sv\_tn – A 10 digit phone number sv\_id – A unique SV Id range\_info:  start\_tn – A 10 digit phone number stop\_tn – A 4 digit ending TN station start\_id – The starting SV unique Id stop\_id – The ending SV unique Id |
| svb\_lrn | Required - the LRN of the created subscription version(s) |
| svb\_new\_sp | Required - the SPID that owns the created subscription version(s) |
| svb\_activation\_timestamp | Required - the timestamp of when the created subscription version(s) was(were) activated |
| svb\_class\_dpc | Optional – the CLASS DPC of the created subscription version(s) |
| svb\_class\_ssn | Optional – the CLASS SSN of the created subscription version(s) |
| svb\_lidb\_dpc | Optional – the LIDB DPC of the created subscription version(s) |
| svb\_lidb\_ssn | Optional – the LIDB SSN of the created subscription version(s) |
| svb\_isvm\_dpc | Optional – the ISVM DPC of the created subscription version(s) |
| svb\_isvm\_ssn | Optional – the ISVM SSN of the created subscription version(s) |
| svb\_cnam\_dpc | Optional – the CNAM DPC of the created subscription version(s) |
| svb\_cnam\_ssn | Optional – the CNAM SSN of the created subscription version(s) |
| svb\_end\_user\_location\_value | Optional – the EULV of the created subscription version(s) |
| svb\_end\_user\_location\_type | Optional – the EULT of the created subscription version(s) |
| svb\_billing\_id | Optional – the billing id of the created subscription version(s) |
| sv\_lnp\_type | This field specifies the LNP type of the created subscription version(s) |
| download\_reason | This field specifies the reason for the download of the created subscription version(s) – should always be ‘dr\_new’ |
| svb\_wsmsc\_dpc | Optional – the WSMSC DPC of the created subscription version(s) |
| svb\_wsmsc\_ssn | Optional – the WSMSC SSN of the created subscription version(s) |
| svb\_sv\_type | Optional – the SV type of the created subscription version(s) |
| svb\_optional\_data | Optional – specifies (possibly multiple) name-value pairs of optional data associated with the created subscription version(s) |

#### SvCreateDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvCreateDownload>

 <range\_notif\_tn\_id\_info>

 <list\_info>

 <sv\_tn>1112223333</sv\_tn>

 <sv\_id>10245</sv\_id>

 </list\_info>

 </range\_notif\_tn\_id\_info>

<svb\_lrn>2023563780</svb\_lrn>

<svb\_new\_sp>2222</svb\_new\_sp>

<svb\_activation\_timestamp>2001-12-17T09:30:47Z </svb\_activation\_timestamp>

<svb\_class\_dpc>111222111</svb\_class\_dpc>

<svb\_class\_ssn>0</svb\_class\_ssn>

<svb\_lidb\_dpc>111222111</svb\_lidb\_dpc>

<svb\_lidb\_ssn>0</svb\_lidb\_ssn>

<svb\_isvm\_dpc>111222111</svb\_isvm\_dpc>

<svb\_isvm\_ssn>0</svb\_isvm\_ssn>

<svb\_cnam\_dpc>111222111</svb\_cnam\_dpc>

<svb\_cnam\_ssn>0</svb\_cnam\_ssn>

<svb\_end\_user\_location\_value>0</svb\_end\_user\_location\_value>

<svb\_end\_user\_location\_type>00</svb\_end\_user\_location\_type>

<svb\_billing\_id>3333</svb\_billing\_id>

<sv\_lnp\_type>inter\_provider</sv\_lnp\_type>

<download\_reason>dr\_new</download\_reason>

<svb\_wsmsc\_dpc>111222111</svb\_wsmsc\_dpc>

<svb\_wsmsc\_ssn>0</svb\_wsmsc\_ssn>

<svb\_sv\_type>wireline</svb\_sv\_type>

<svb\_optional\_data>

<od\_field>

<od\_name>ALTSPID</od\_name>

<od\_value>3333</od\_value>

</od\_field>

</svb\_optional\_data>

</SvCreateDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### SvDeleteDownload

The SvDeleteDownload message is sent from the NPAC to an LSMS to indicate that one or more subscription versions have been deleted at the NPAC.

#### SvDeleteDownload Parameters

| Parameter | Description |
| --- | --- |
| range\_notif\_tn\_id\_info | This field is a structure that identifies the subscription versions affected by this download message. It’s a choice between one or more lists of TNs with associated SVIDs, or one or more lists of TN ranges with associated SVID ranges.list\_info: sv\_tn – A 10 digit phone number sv\_id – A unique SV Id range\_info:  start\_tn – A 10 digit phone number stop\_tn – A 4 digit ending TN station start\_id – The starting SV unique Id stop\_id – The ending SV unique Id |
| download\_reason | This field specifies the reason for the download of the deleted subscription version(s) – should always be ‘dr\_delete’ |

#### SvDeleteDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvDeleteDownload>

 <range\_notif\_tn\_id\_info>

 <list\_info>

 <sv\_tn>1112223333</sv\_tn>

 <sv\_id>10245</sv\_id>

 </list\_info>

 </range\_notif\_tn\_id\_info>

<download\_reason>dr\_delete</download\_reason>

</SvDeleteDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### SvModifyDownload

The SvModifyDownload message is sent from the NPAC to an LSMS to indicate that a subscription version has been modified at the NPAC. The subscription version(s) may be specified by SVID, TN or TN range.

#### SvModifyDownload Parameters

| Parameter | Description |
| --- | --- |
| range\_notif\_tn\_id\_info | This field is a structure that identifies the subscription versions affected by this download message. It’s a choice between one or more lists of TNs with associated SVIDs, or one or more lists of TN ranges with associated SVID ranges.list\_info: sv\_tn – A 10 digit phone number sv\_id – A unique SV Id range\_info:  start\_tn – A 10 digit phone number stop\_tn – A 4 digit ending TN station start\_id – The starting SV unique Id stop\_id – The ending SV unique Id |
| svb\_lrn | Optional - the LRN of the modified subscription version |
| svb\_activation\_timestamp | Optional - the timestamp of when the modified subscription version was modified |
| svb\_class\_dpc | Optional – the CLASS DPC of the modified subscription version |
| svb\_class\_ssn | Optional – the CLASS SSN of the modified subscription version |
| svb\_lidb\_dpc | Optional – the LIDB DPC of the modified subscription version |
| svb\_lidb\_ssn | Optional – the LIDB SSN of the modified subscription version |
| svb\_isvm\_dpc | Optional – the ISVM DPC of the modified subscription version |
| svb\_isvm\_ssn | Optional – the ISVM SSN of the modified subscription version |
| svb\_cnam\_dpc | Optional – the CNAM DPC of the modified subscription version |
| svb\_cnam\_ssn | Optional – the CNAM SSN of the modified subscription version |
| svb\_end\_user\_location\_value | Optional – the EULV of the modified subscription version |
| svb\_end\_user\_location\_type | Optional – the EULT of the modified subscription version |
| svb\_billing\_id | Optional – the billing id of the modified subscription version |
| download\_reason | This field specifies the reason for the download of the modified subscription version – should always be ‘dr\_modified’ |
| svb\_wsmsc\_dpc | Optional – the WSMSC DPC of the modified subscription version |
| svb\_wsmsc\_ssn | Optional – the WSMSC SSN of the modified subscription version |
| svb\_sv\_type | Optional – the SV type of the modified subscription version |
| svb\_optional\_data | Optional – specifies (possibly multiple) name-value pairs of optional data associated with the modified subscription version |

#### SvModifyDownload XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvModifyDownload>

 <range\_notif\_tn\_id\_info>

 <list\_info>

 <sv\_tn>1112223333</sv\_tn>

 <sv\_id>10245</sv\_id>

 </list\_info>

 </range\_notif\_tn\_id\_info>

 <svb\_lrn>2023563780</svb\_lrn>

 <download\_reason>dr\_modified</download\_reason>

</SvModifyDownload>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>

### SvQueryReply

This message is the asynchronous reply to a SvQueryRequest message.

The SvQueryReply is sent from the NPAC to provide the results of an SvQueryRequest that was initiated by a LSMS.

#### SvQueryReply Parameters

| Parameter | Description |
| --- | --- |
| basic\_code | This required attribute will always be populated in this message. basic\_code indicates the high level success or failure, and is described in detail in the “Error Handling” section. |
| status\_code | status\_code is an optional field that specifies the error number.  |
| status\_info | status\_info is an optional field that describes the error info.  |
| sv\_list | This field is a list of sv\_data objects that describe the SVs returned by the query |
| sv\_id | This required field is the unique identifier for this SV |
| sv\_tn  | This required field is the telephone number of this SV |
| svb\_lrn | This optional field is the Location Routing Number of the SV |
| sbv\_new\_sp | This required field is the unique identifier for the SPID that owns this SV. |
| svb\_activation\_timestamp | This optional field indicates the timestamp for the activation of this SV. |
| svb\_class\_dpc | This optional field it the CLASS DPC value of the SV. |
| svb\_class\_ssn | This optional field is the CLASS SSN value of the SV |
| svb\_lidb\_dpc | This optional field is the LIDB DPC value of the SV |
| svb\_lidb\_ssn | This optional field is the LIDB SSN value of the SV |
| svb\_isvm\_dpc | This optional field is the ISVM DPC value of the SV |
| svb\_isvm\_ssn | This optional field is the ISVM SSN value of the SV |
| svb\_cnam\_dpc | This optional field is the CNAM DPC value of the SV |
| svb\_cnam\_ssn | This optional field is the CNAM SSN value of the SV |
| svb\_end\_user\_location\_value | This optional field is the End user location value value of the SV |
| svb\_end\_user\_location\_type | This optional field is the End user location type value of the SV.  |
| svb\_billing\_id | This optional field is the Billing ID value of the SV. |
| sv\_lnp\_type | This required type indicates the portability type for this SV. Valid values include* inter\_provider
* intra\_provider
* pooled
 |
| download\_reason | This required field indicates the reason for the most recent download for this SV. The valid values include:* dr\_new
* dr\_delete
* dr\_modified
* dr\_audit\_discrepancy
 |
| svb\_wsmsc\_dpc | This optional field is the WSMSC DPC value of the SV.  |
| svb\_wsmsc\_ssn | This optional field is the WSMSC SSN value of the SV.  |
| sv\_status | This required field is the status of the SV.  |
| sv\_old\_sp | This required field is the unique identifier for the SPID that own the telephone number for this SV prior to the creation of this SV. |
| svb\_new\_sp\_due\_date | This optional field specifies the due date specified by the new SP. |
| svb\_new\_sp\_creation\_ts | This optional field is the date/time the SV was created by the new SP |
| svb\_old\_sp\_due\_date | This optional field specifies the due date specified by the old SP. |
| sv\_old\_sp\_authorization | This optional field indicates if the old SP has authorized the port |
| sv\_status\_change\_cause\_code | This optional field is the status change cause code set by the old SP when they place the SV into conflict or when the SV status changed to conflict as a result of automatic flow processing by the NPAC. Valid values are:* cause\_code\_none
* npac\_auto\_cancel
* npac\_auto\_conflict
* lsr\_wpr\_not\_received
* foc\_wprr\_not\_issued
* due\_date\_mismatch
* vacant\_number\_port
* general\_conflict
 |
| svb\_broadcast\_timestamp | This field specifies the timestamp of when the SV was last broadcast |
| sv\_conflict\_timestamp | This optional field indicates the timestamp when the SV was placed into conflict status. |
| sv\_customer\_disconnect\_date | This optional field is the customer disconnect date of the SV. |
| sv\_effective\_release\_date | This optional field is the effective release date of the SV. |
| sv\_disconnect\_complete\_timestamp | This optional field is the timestamp that the disconnect of this SV was completed. |
| sv\_cancellation\_timestamp | This optional field is the timestamp that the cancellation of this SV was completed. |
| sv\_creation\_timestamp | This optional field is the timestamp that the SV was created. |
| sv\_cancellation\_timestamp | This optional field is the timestamp that the cancellation of this SV was completed. |
| svb\_failed\_sp\_list | This optional field specifies (possibly multiple) spid/name pairs of LSMSs that may not have the latest information for this SV  |
| svb\_modified\_timestamp | This optional field specifies the timestamp of when the SV was last modified |
| svb\_old\_timestamp | This optional field specifies the timestamp of when the SV went to a status of Old. |
| sv\_old\_sp\_cancellation\_timestamp | This optional field specifies the timestamp of when the old SP cancelled this SV. |
| sv\_new\_sp\_cancellation\_timestamp | This optional field specifies the timestamp of when the new SP cancelled this SV. |
| sv\_old\_sp\_conflict\_resolution\_timestamp | This optional field specifies the timestamp of when the old SP resolves a conflict on this SV. |
| sv\_new\_sp\_conflict\_resolution\_timestamp | This optional field specifies the timestamp of when the new SP resolves a conflict on this SV. |
| sv\_porting\_to\_original\_sp\_switch | This required field indicates if this SV represents a port to the original switch, thereby returning the SV to default routing. |
| sv\_precancellation\_status | This optional field indicates the status of the SV prior to cancellation |
| sv\_timer\_type | This optional field is timer type for the SV and consists of one of the following:* short\_timers
* long\_timers
* medium\_timers
 |
| sv\_business\_type | This optional field is the business type for the SV and consists of one of the following values:* short\_days\_hours
* long\_days\_hours
* medium\_days\_hours
 |
| svb\_sv\_type | This optional field indicates the SV type for the SV. Possible values are: * wireline
* wireless
* class2\_voip\_no\_num\_assgnmt
* vowifi
* prepaid\_wireless
* class1\_and\_2\_voip\_with\_num\_assgnmt
* sv\_type\_6
* sv\_type\_7
* sv\_type\_8
* sv\_type\_9
 |
| svb\_optional\_data | This optional field specifies the optional data for the SV. |
| sv\_new\_sp\_medium\_timer\_indicator | This optional field is set to true if the new SP indicated medium timers for this SV. |
| sv\_old\_sp\_medium\_timer\_indicator | This optional field is set to true if the old SP indicated medium timers for this SV. |
| activity\_timestamp | This required field specifies the timestamp of when the NPAC last created a notification or download for this SV. |
| sv\_remaining\_count | The number of sv\_data elements remaining from the query which have not yet been sent. |

#### SvQueryReply XML Example

<?xml version="1.0" encoding="UTF-8" standalone="no"?>

<LSMSMessages xmlns="urn:lnp:npac:1.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<MessageHeader>

<schema\_version>1.1</schema\_version>

<sp\_id>1111</sp\_id>

<sp\_key>87654321</sp\_key>

<npac\_region>midwest\_region</npac\_region>

<departure\_timestamp>2012-12-17T09:30:47.244Z</departure\_timestamp>

</MessageHeader>

<MessageContent>

<npac\_to\_lsms>

<Message>

<invoke\_id>261</invoke\_id>
<origination\_timestamp>2012-12-17T09:30:46.284Z </origination\_timestamp>

<SvQueryReply>

<reply\_status>

<basic\_code>success</basic\_code>

</reply\_status>

<sv\_list>

<sv\_data>

<sv\_id>100245</sv\_id>

<sv\_tn>2023561000</sv\_tn>

<svb\_lrn>2023563780</svb\_lrn>

<svb\_new\_sp>1111</svb\_new\_sp>

<svb\_activation\_timestamp>2001-12-17T09:30:47Z

</svb\_activation\_timestamp>

<svb\_class\_dpc>111222111</svb\_class\_dpc>

<svb\_class\_ssn>0</svb\_class\_ssn>

<svb\_lidb\_dpc>111222111</svb\_lidb\_dpc>

<svb\_lidb\_ssn>0</svb\_lidb\_ssn>

<svb\_isvm\_dpc>111222111</svb\_isvm\_dpc>

<svb\_isvm\_ssn>0</svb\_isvm\_ssn>

<svb\_cnam\_dpc>111222111</svb\_cnam\_dpc>

<svb\_cnam\_ssn>0</svb\_cnam\_ssn>

<svb\_end\_user\_location\_value>387</svb\_end\_user\_location\_value>

<svb\_end\_user\_location\_type>11</svb\_end\_user\_location\_type>

<svb\_billing\_id>3333</svb\_billing\_id>

<sv\_lnp\_type>inter\_provider</sv\_lnp\_type>

<download\_reason>dr\_new</download\_reason>

<sv\_status>status\_active</sv\_status>

<sv\_old\_sp>2222</sv\_old\_sp>

<svb\_new\_sp\_due\_date>2001-12-17T09:30:47Z </svb\_new\_sp\_due\_date>

<svb\_new\_sp\_creation\_ts>2001-12-17T09:30:47Z </svb\_new\_sp\_creation\_ts>

<sv\_old\_sp\_due\_date>2001-12-17T09:30:47Z </sv\_old\_sp\_due\_date>

<sv\_old\_sp\_authorization>true</sv\_old\_sp\_authorization>

<sv\_status\_change\_cause\_code>cause\_code\_none

</sv\_status\_change\_cause\_code>

<sv\_old\_sp\_authorization\_ts>2001-12-17T09:30:47Z

</sv\_old\_sp\_authorization\_ts>

<svb\_broadcast\_timestamp>2001-12-17T09:30:47Z </svb\_broadcast\_timestamp>

<sv\_conflict\_timestamp>2001-12-17T09:30:47Z </sv\_conflict\_timestamp>

<sv\_customer\_disconnect\_date>2001-12-17T09:30:47Z </sv\_customer\_disconnect\_date>

<sv\_effective\_release\_date>2001-12-17T09:30:47Z </sv\_effective\_release\_date>

<svb\_disconnect\_complete\_timestamp>2001-12-17T09:30:47Z </svb\_disconnect\_complete\_timestamp>

<sv\_cancellation\_timestamp>2001-12-17T09:30:47Z </sv\_cancellation\_timestamp>

<svb\_creation\_timestamp>2001-12-17T09:30:47Z </svb\_creation\_timestamp>

<svb\_modified\_timestamp>2001-12-17T09:30:47Z </svb\_modified\_timestamp>

<sv\_old\_sp\_cancellation\_timestamp>2001-12-17T09:30:47Z </sv\_old\_sp\_cancellation\_timestamp>

<sv\_new\_sp\_cancellation\_timestamp>2001-12-17T09:30:47Z </sv\_new\_sp\_cancellation\_timestamp>

<sv\_old\_sp\_conflict\_resolution\_timestamp>2001-12-17T09:30:47Z</sv\_old\_sp\_conflict\_resolution\_timestamp>

<sv\_new\_sp\_conflict\_resolution\_timestamp>2001-12-17T09:30:47Z</sv\_new\_sp\_conflict\_resolution\_timestamp>

<sv\_porting\_to\_original\_sp\_switch>true </sv\_porting\_to\_original\_sp\_switch>

<sv\_precancellation\_status>pre\_cancel\_status\_pending</sv\_precancellation\_status>

<sv\_timer\_type>short\_timers</sv\_timer\_type>

<sv\_business\_type>long\_days\_hours</sv\_business\_type>

<svb\_sv\_type>wireline</svb\_sv\_type>

<sv\_new\_sp\_medium\_timer\_indicator>true</sv\_new\_sp\_medium\_timer\_indicator>

<sv\_old\_sp\_medium\_timer\_indicator>true</sv\_old\_sp\_medium\_timer\_indicator>

<activity\_timestamp>2012-12-17T09:30:46.136Z </activity\_timestamp>

</sv\_data>

</sv\_list>

<sv\_remaining\_count>0</sv\_remaining\_count>

</SvQueryReply>

</Message>

</npac\_to\_lsms>

</MessageContent>

</LSMSMessages>