NRS SMPP Platform

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User Guide

Contents

1   Introduction

SMPP means Short Message Peer to Peer, (SMPP), protocol is an open industry standard messaging protocol designed to simplify integration of data applications with wireless mobile networks such as GSM, TDMA, CDMA and PDC. The protocol is widely deployed in the mobile telecommunications industry. The SMPP protocol specification is freely available from http://www.smpp.org

NRS-Group currently supports version 3.3 and 3.4 of the SMPP protocol.

1.1   Requirements

The following requirements must be met to enable the sending of short messages (SMS) via NRS-Group Connectivity:

• You need a customer account
• You need sufficient credit on your NRS-Group Connectivity customer account

Access to the NRS-Group services is subject to our general terms and conditions of business.

Please address technical questions by email to:

tech@nrs-group.com

You can reach our technical hotline under the following telephone number:

902 014 480 (from Spain) or +34 964 523 331 (from abroad)

Monday to Friday between 9:00am-07:00pm, CET

2   Glossary

The parameters used in the NRS SMPPServer:

- **SMS:** Short Message Service

- **PDU:** Protocol Description Unit (way how the SMSs are sent)

- **DR:** Delivery Report notification

- **SMPPServer:** SMPP Server that allows to the clients to send SMSs

- **SMPPClient:** Client that wants to send SMSs through our SMPPServer

- **IP:** IP number where the SMPPServer is hosted*

- **Port:** Connection port that the SMPPServer is listening*

- **System_id:** unique system ID sent to the SMPPClient in a confidential mail

- **Password:** unique system password sent to the SMPPClient in a confidential mail

- **Client_id:** Client identifier provided to the SMPPClient

- **Account_id:** Account identifier when the credits will be charged

- **System_type:** Identifies the type of ESME system requesting to bind as a transmitter with the SMSC. We will this parameter to specify client_id and account_id.

* NRS-Group will provide you with the IP address and port number

3   Technical information

The GSM specifications have limited the Short Message from the SMSC to the handset to 140 octets. If 7 bit encoding is used we may deliver 160 characters to the handset, otherwise for 8 bit data the maximum number of characters will be limited to 140.

The character sets supported by NRS-Group Platform are ISO,CP1252

The SMPPServer allows to the SMPPClient to send SMSs. This implies that the SMPPClient must connect to the SMPPServer using some PDU connection parameters.

Mandatory parameters

- **IP:** 89.17.205.194

- **Port:** 2345

- **System_id:** alphanumerical secret string that will be given to the SMPPClient by phone, email or SMS

- **Password:** alphanumerical secret string that will be given to the SMPPClient by phone, email or SMS

Other recommended parameters

- **bind-mode:** transceiver
- **sync-mode:** async
- **addr-ton:** 1
- **addr-npi:** 1
- **source-ton:** 5
- **source-npi:** 0
- **destination-ton:** 1
- **destination-npi:** 1

Message encoding

- **data-coding:** 0 (for ISO8859-1 encoding)
- **data-coding:** 3 (for GSM0338 encoding)

3.1   SMPP TON/NPI Parameters

SMPP parameter	Type of address	TON	NPI
Destination address	Always international	1	1
Source address	International	1	1
	National/shortcode	2	1
	Alphanumeric	5	0

International originators
Source address and destination address in international format shall not contain any leading "+" or "00", but only starting with the countrycode.

Sample International Source Address
Displayed on handset: +34609939891
SMPP Parameter: TON = 1
NPI = 1
SOURCE_ADDRESS = "34609939891"

Alphanumeric originators
Length of an alphanumeric originator is limited to 11 characters; this limit is set by the pertinent GSM Standards.

4   Error Codes

4.1   Bind Response error codes

Error Code	Error Name	Description	Action
0x00000000	OK	Message received and processed	
0x000000C4	INV_OPTION_PARAM	If the client id and account is invalid format, this will be returned. Ex: alphanumeric value for client: system_type=c1|1	Verify System_type value and send the proper value
0x000000C3	EXP_OPTION_PARAM	If client id and account id is not sent to XNRS 2.0 in proper format. Ex: system_type=1 system_type=<blank>	Verify System_type value and send the proper value
0x0000000F	AUTH_FAIL	Authentication failure	Check username, password, client ID and account ID

4.2   Submit Response Error codes

Error Code	Error Name	Description
0x00000000	OK	Message received and processed
0x000000FE	NET_FAILURE	Network failure
0x000000C5 – 0xffffffC5	NO_CREDIT	Account does not have credits
0x000004FF	NO_DELIVERY	Not delivered
0x000004FA	Submit fail	Not delivered
0x00000401	NO_ROUTE	No route can be assigned
0x000004FF	REJECTED	rejected message
0x000000C6	MOBILE_BLACKLISTED	Blacklisted mobile number
0x000004FA	SUBMIT_FAILED	Failed to submit message
0x000004FB	MOBILE_INVALID	invalid MSISDN number :HLR lookup
0x000000C7	AIRBAG_BLACKLISTED	Airbag blacklisted
0x000000C8	ENROUTE	
0x0000000B	INV_MSISDN	invalid destination number
0x00000058	Throttle Error	Client throttle exceeded

5   Delivery Reports

SMPPServer provides for return of an SMSC delivery receipt via the **deliver_sm** or **data_sm** PDU, which indicates the delivery status of the message.

The informational content of an SMSC Delivery Receipt may be inserted into the **short_message** parameter of the **deliver_sm** operation. The format for this Delivery Receipt message is SMSC vendor specific but following is a typical example of Delivery Receipt report:

"**id:IIIIIIIIII sub:SSS dlvrd:DDD submit date:YYMMDDhhmm done date:YYMMDDhhmm stat:DDDDDDD err:E Text: . . . .**"

The fields of the above delivery receipt example are explained in the following table:

Field	Size(octects)	Type	Description
id	10	C-Octet String (Decimal)	The message ID allocated to the message by the SMSC when originally submitted.
sub	3	C-Octet String (Decimal)	Number of short messages originally submitted. This is only relevant when the original message was submitted to a distribution list.The value is padded with leading zeros if necessary.
dlvrd	3	C-Octet String (Decimal)	Number of short messages delivered. This is only relevant where the original message was submitted to a distribution list.The value is padded with leading zeros if necessary.
submit date	10	C-Octet Fixed Length String	The time and date at which the short message was submitted. In the case of a message which has been replaced, this is the date that the original message was replaced.The format is
done date	10	C-Octet Fixed Length String	The time and date at which the short message reached it's final state. The format is the same as for the submit date.
stat	7	C-Octet Fixed Length String	The final status of the message.
err	3	C-Octet Fixed Length String	Where appropriate this may hold a Network specific error code or an SMSC error code for the attempted delivery of the message. These errors are Network or SMSC specific and are not included here. Probably in next versions this section will be more specified.
text	20	Octet String	The first 20 characters of the short message.

6 Message States

Message State	Final Message states	DESCRIPTION
DELIVERED	DELIVRD	Message is delivered to destination
EXPIRED	EXPIRED	Message validity period has expired
DELETED	DELETED	Message has been deleted
UNDELIVERABLE	UNDELIV	Message is undeliverable
ACCEPTED	ACCEPTD	Message is in accepted state (i.e. has been manually read on behalf of the subscriber by customer service)
UNKNOWN	UNKNOWN	Message is in invalid state
REJECTED	REJECTD	Message is in a rejected state

7 Action For Submit Response Error Codes

7.1 Billing

When client receives NO_CREDIT error messages,

1. Stop sending further messages

2. contact call center

.Throttle Configuration

Client connected to the NRS server will be provided with a throttle.

Throttle specifies number of messages client can send per second. If the number of messages sent by the client exceeds the throttle provided, throttle error(0x0000003A) will be send to the client.

Following are the actions client should perform during throttle.

1. Wait for 60-120 seconds before sending further messages

2. Set the throttle according to the agreed throttle

3. Resend the throttled messages after 60-120 sec.

7.2   Airbag blacklist Error code

When client receives AIRBAG_BLACKLISTED   error code, then

    a.   Stop sending messages to the NRS server

    b.   Contact commercial team before sending further messages.

8   Binding Guidelines

Only one session is available for systemID provided to the client.

1.   When session drops(due to network fluctuation or planned unbind), before rebinding to the server, the client application should wait for 60 sec before issuing the bind request

2.   The session should not drop frequently. Once bind, session should stay for long time rather than issuing bind request.

3.   Client should not attempt to spam the server with bind request.

4.   Before unbind, client should issue unbind request to the system

9   Enquirelink - Keep Alive Signal

1.   The Enquirelink signal should be sent for every 60 sec. Otherwise client session will be dropped by the XNRS platform

2.   Client should not attempt to spam the server with Enquirelink request.

10 Resolving Bind Problems

1. First try to ping server IP:

   Ex: ping 89.17.205.194

   If you are not able to ping Sever IP, contact customer care.

2. If ping is Successful do telnet

   Ex: telnet   89.17.205.194<port> . If you are not able to do telnet, contact customer care

3. If you get any error bind response, please check the error code against the error codes mentioned in the section 5.1

4. If all confirmations are correct and still you are facing problems in binding, please contact customer care who will redirect you to technical department.

11 Frequently Asked Questions

1. How Long Should The ESME Application Wait For A submit_sm_response?

   Server provides response in transaction mode. I,e, response from the operator itselt. This depends on the operator delay. Otherwise better option is to send the messages in the async manner.

2. What IS "Enquire_Link" And Do I Need To Support It?

   This command is used to provide a confidence-check of the communication path between ESME and the SMSC. All SMPP sessions on the SMSC are configured with an 80 seconds idle timeout. All ESMEs are expected to initiate an enquire_link every 60 seconds to ensure the session is not closed by the SMSC during idle periods

12 References

- http://opensmpp.logica.com/introhtml/menu.htm