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RoutoMessaging SMPP Specification

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Preface:

Please register for [SMS or MMS account](#) for testing our SMS and MMS services and integration to our SMS, MMS APIs. The following features and services are available:

- Straightforward, SMS API, MMS API integration
- Send and receive SMS using SMPP
- Send MMS using SMPP
- Free 24 hours support; our support to answer any questions
- Minimal SMS and MMS development time
- Deploy with confidence; we have over 6 years of experience in Text Messages Integration
- Sending and Receiving (with delivery reports) of SMS and MMS

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1 Change History

| Date | Changes | Section |
|------------|-----------------|---------|
| 2000-09-23 | Initial release | All |
| | | |
| | | |
| | | |
| | | |

Table 1: Change history

2 Introduction

2.1 Overview

This document provides technical details intended for software architects and designers who wish to develop their own SMPP v3.4 clients in order to make use of our SMPP gateways.

This document will only describe SMPP connectivity issues. You can find documents describing other methods for connecting with Routo Messaging at the following URL: <http://www.routomessaging.com/routo-downloads/Connecting%20to%20Routo%20Messaging.pdf>

Please note that Routo will send each message with the request for delivery report set to "On", but the delivery report will only be sent back to the customer in case the customer has requested it.

In addition, please note that delivery receipts are held in the system only for 3 days which is network maximum validity period for SMS.

2.2 Requirements

In order to be able to use Routo SMPP gateway to send messages, you need to fulfill the following requirements:

- 1) **have a valid account with Routo** - if you do not have a valid Routo Messaging account, you can always create one by visiting our web site at <https://www.routomessaging.com/free-sms-test-account.pmx?jsc=1>
- 2) **have a positive balance on account** - all customers who create an account with Routo Messaging will initially receive 10 messages to fully test the system. If you need more credit in test purposes, please contact our 24/7 support support@routotelecom.com
- 3) **have a valid SMPP v3.4 client software in order to be able to connect to Routo SMPP gateways** - SMPP client software can be purchased from various companies; alternatively you can build one if you have special integration demands

All customers who use SMPP connectivity are initially allowed to make up to 5 parallel binds.

2.3 About SMPP

The Short Message Peer to Peer (SMPP) is an open, industry standard protocol designed to simplify interconnection between various entities and allow sending and receiving of short text messages (SMS) over Internet.

Routo Messaging is compliant with SMPP version 3.4 including the support for Unicode concatenated (long sms), Long Unicode and various binary messages (MMS notifications, operator logos, ringtones, etc.).

Connecting to Routo Messaging through SMPP protocol requires full understanding of the SMPP protocol. From this point on, in this document the client's application will be referred to as **ESME** (external short message entity) and Routo SMSC will be referred to as **SMSC**. Routo SMSC message mode is Store and Forward.

For information on further reading about this protocol, please see the References chapter at the end of this document.

3 Supported PDU's

Routo Messaging SMSC will only accept and process the following SMPP v3.4 commands:

| Esme to Smsc | Smsc to Esme |
|------------------|-----------------------|
| bind_transciever | bind_transciever_resp |
| bind_transmitter | bind_transmitter_resp |
| bind_receiver | bind_receiver_resp |
| submit_sm | submit_sm_resp |
| enquiry_link | enquiry_link_resp |
| delivery_sm_resp | delivery_sm |
| unbind | unbind_resp |

Table 2: Supported PDU's

Once the requirements have been met (see Requirements 2.2), you can connect to the following of Routo Messaging SMSCs:

- **IP:** smsc5.routotelecom.com
 - **tcp port:** 7777
- **IP:** smsc6.routotelecom.com
 - **tcp port:** 7777

The only required parameters in 'bind' commands are 'system_id' and 'password'. All other parameters will not influent the Routo SMSC behavior in any way.

Once Routo SMSC receives a valid 'submit_sm' command, it will either reject it and state the reason or accept it and give the message a unique 'message_id'.

4 TON and NPI

TON (Type of number) and NPI (Numbering plan identification) are special parameters within the SMS message which describes the type of source and destination address used in the message.

For both source and destination address these parameters are defined as:

| Parameter | Description |
|-----------|-----------------|
| s_ton | source TON |
| s_npi | source NPI |
| d_ton | destination TON |
| d_npi | destination NPI |

Table 3: TON and NPI parameters

Because the destination address is usually represented in full international format (see section 9), the parameters 'd_ton' and 'd_npi' are always set to value '1'.

As for the source address (originator) following values apply:

| Type of source address | TON | NPI |
|------------------------|-----|--------|
| alphanumeric | 5 | 0 or 1 |
| local number | 2 | 1 |
| international | 1 | 1 |

Table 4: Originator parameters

The alphanumeric type of source address might contain numbers (0-9) and/or English vocabulary letters (A-Z, a-z) and/or punctual characters.

Please note that all blank spaces within the alphanumeric source address will be replaced with the underline character '_ '.

Also there might be some restrictions on the provider side, so please do the necessary testing with our 24/7 support team. The maximum length is 11 characters.

The local number type of source address consists of numbers only (0-9) and can have a maximum length of 11 numbers. Local number type is also known as 'national number' where the prefix or escape digits will not be included.

The international type of source address contains numbers (0-9) and can have a maximum length of 15 numbers. Some examples of various types of source address (originator) are shown in table below:

| Sent to Routo | TON | NPI | Arrives on handset | Type |
|---------------|-----|-----|--------------------|------------------|
| 381641234567 | 1 | 1 | +381641234567 | International |
| 123456 | 2 | 0 | 123456 | Local (National) |
| Routo | 5 | 0 | Routo | Alphanumeric |

Table 5: Examples of various types of source address

5 DCS and ESM

The DCS (data coding scheme) and ESM (message class) are parameters within SMS message which define the type of content as well as some of the most common values which are shown in the table below:

| DCS | ESM | Type |
|-----|-------|--|
| 0 | 0 | ISO-8859-1 8-bit text |
| 0 | 64/67 | concatenated ISO-8859-1 8-bit text (or binary content) |
| 1 | 0 | GSM 03.38 7-bit text |
| 1 | 64/67 | concatenated GSM 03.38 7-bit text (or binary content) |
| 8 | 0 | Unicode |
| 8 | 64/67 | concatenated Unicode |

Table 6: DCS and ESM

The default data encoding supported by RoutoMessaging SMSC is 'ISO-8859-1', which means that the message will be treated according to the table below:

| DCS | Type |
|-----|------------------|
| 0 | ISO-8859-1 8-bit |
| 1 | GSM 03.38 7-bit |
| 3 | ISO-8859-1 8-bit |
| 8 | Unicode |

Table 7: Data encoding

Please note that the content of the messages which have '0' for a DCS parameter will be treated as ISO-8859-1 8-bit text.

6 Enquire link

The enquire link commands are used to check the connectivity between ESME and SMSC and can be issued from both entities.

Please note that our default timeout for these commands is 30 seconds. In case Routo SMSC does not receive a valid response within 30 seconds after sending the 'enquire_link' command it will treat the connection as expired.

A common problem which might appear in case there is an unstable IP connection between ESME and SMSC is that ESME will not receive a valid 'enquire_link_response'. If that happens, ESME will usually try to establish another 'bind_transmitter', 'bind_transciever' or 'bind_receiver' command, thus it will increase the number of parallel connections.

Once this number reaches the maximum allowed for parallel connections, all other attempts to bind will be rejected which resulting in inability for ESME to connect to SMSC.

In case this happens, the customer should contact our 24/7 support team and ask them to delete these 'ghosts' connections in order to be able to re-establish a valid connection to our SMSC.

7 Two way messaging

Routo Messaging is also offering 'two way' messaging for those customers who need that service. All customers interested in this service should contact their account manager for further information or send general inquiry to sales@routotelecom.

This service is based on a separate platform and it should not be considered a part of our SMSC used to send plain text messages.

Furthermore, this service requires dedicated account credentials and once gained the customer will be provided with the necessary connectivity details.

Basically, by using this service the customer will send a text message, the source address (originator) will be changed with a special number and then the message will be sent out.

Once the recipient receives the message, he will send back the reply and Routo Messaging will receive that reply.

Once we receive the message, our system will look into the database to find the original source address for this message, substitute the recipient with that address and then send the reply message back to the customer over 'deliver_sm' SMPP command.

This way the customer will be able to both send and receive the text messages.

8 Incoming system

Another system which is quite popular is an 'incoming' system which provides a customer with a dedicated number (long international number, not a short code).

This number allows you to receive the message from any location in the world. In other words the sender always sends the message to that number regardless of his current location and you will receive it over SMPP protocol ('deliver_sm' SMPP command).

In case you need this service, please contact your account manager, or send general query to sales@routotelecom.com. Our 24/7 support team will gladly assist you and they are available at: support@routotelecom.com or over live chat on our web site <http://www.routomessaging.com>.

9 References

The following is the list of references:

- a. **SMPP v.3.4** – <http://www.smsforum.net>
- b. **SMPP** - http://en.wikipedia.org/wiki/Short_message_peer-to-peer_protocol
- c. **GSM 03.38** - <http://en.wikipedia.org/wiki/SMS#GSM>
- d. **ITU-T numbering** - <http://en.wikipedia.org/wiki/E.164>