##  **STANDARD SMPP Specifications MAUAL**

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# Assumptions

It is assumed that readers of this document have a basic understanding of SMPP Protocol specifications v3.4

# Connection Configuration

|  |  |
| --- | --- |
| SMPP Version | 3.4 |
| Bind Type | Transmitter, Receiver or Transceiver |
| Service Type, auth TON and auth NPI | All values are ignored and can be blank |
| Maximum allowed sessions | Account specific configuration |

# Hosts

You can connect existing SMPP account by adding additional parameters mentioned in point number 11.

# Encoding Formats

Please ensure that you choose the correct data coding scheme as per the below

|  |  |  |
| --- | --- | --- |
| **Message Type** | **DCS** | **UDH** |
| Normal Text Message – GSM | 0 | 0 |
| Long SMS – GSM | 0 | 1 |
| Normal Text Message - Latin 1 (ISO-8859-1) | 3 | 0 |
| Long SMS - Latin 1 (ISO-8859-1) | 3 | 1 |
| Unicode Messages | 8 | 0 |
| Flash Messages | 16 | 0 |

# Bind Operations

There are three ways to open a connection using SMPP. You can connect as:

* + **Transmitter**: Send short messages to SMSC and receive responses from SMSC.
	+ **Receiver**: receive delivery receipts from the SMSC and return the corresponding responses.
	+ **Transceiver**: send and receive messages to and from the SMSC over a single SMPP session.

# Session States

Your connection to our server across an SMPP link can be in one of five states:

* + **OPEN**: connected and bind pending
	+ **BOUND\_TX**: connected and requested to bind as a Transmitter
	+ **BOUND\_RX:** connected and requested to bind as a Receiver
	+ **BOUND\_TRX:** connected and requested to bind as a Transceiver
	+ **CLOSED:** unbound and disconnected

# Bind Parameters

The syntax for initiating a bind\_transmitter, bind\_receiver or bind\_transceiver instance uses the following parameters:

* + **system\_id**: identifies the user requesting to bind (username)
	+ **password**: password to allow access
	+ **system\_type**: identifies the system type (ignored, set to blank)
	+ **interface\_version**: indicates SMPP version supported by user
	+ **addr\_ton**: identifies user type of number (ignored, set to blank)
	+ **addr\_npi**: numbering plan indicator for user (ignored, set to blank)
	+ **address\_range**: The user address (ignored, set to blank)

# Bind lifetime

We recommend enquire link for every minute (less than 60 seconds) to keep the bind alive at the server end, failing to do this may cause the bind get disconnected.

# Submit\_SM Parameters

The parameters required for the SUBMIT\_SM request (used to send an SMS) are:

* + **service\_type**: indicates SMS application service
	+ **source\_addr\_ton**: type of number for source address
	+ **source\_addr\_npi**: numbering plan indicator for source address
	+ **source\_addr**: source address
	+ **dest\_addr\_ton**: type of number for destination
	+ **dest\_addr\_npi**: numbering plan indicator for destination
	+ **destination\_addr**: destination address of the short message
	+ **esm\_class**: message mode and type
	+ **protocol\_id**: protocol identifier (network specific)
	+ **priority\_flag**: sets the priority of the message (this is ignored)
	+ **schedule\_delivery\_time**: set to NULL for immediate delivery (this is ignored)
	+ **validity\_period**: validity period of message
	+ **registered\_delivery**: indicator to signify if an SMSC delivery receipt or acknowledgment is required
	+ **replace\_if\_present\_flag**: flag indicating if submitted message should replace an existing message (this is ignored)
	+ **data\_coding**: defines the encoding scheme of the SMS message
	+ **sm\_default\_msg\_id**: indicates short message to send from a predefined list of messages stored on SMSC (this is ignored)
	+ **sm\_length**: length in octets of the short\_message user data
	+ **short\_message**: up to 254 octets of short message user data.
	+ **user\_message\_reference**: user assigned reference number (this is ignored)

# SMPP TLV parameters:

For sending messages in Submit\_SM using SMPP , there will be Two mandatory parameters introduced in SMPP PDU.

These new tags are introduced in the optional parameter list. However, the TLV values will be checked by our DLT scrubber :

|  |  |  |
| --- | --- | --- |
| **Optional Parameter** | **Tag value in Hex** | **Tag Value in Decimal** |
| PE\_ID | 1400 | 5120 |
| Template\_ID | 1401 | 5121 |

# SMPP Commands

The SMS Gateway supports the following SMPP commands:

1. Supported client-to-server commands

|  |  |
| --- | --- |
| * BIND\_TRASMITTER
 | * SUMIT\_SM
 |
| * BIND\_RECEIVER
 | * ENQUERY\_LINK
 |
| * BIND\_TRANSCEIVER
 | * DELIVERY\_SM\_RESP
 |
| * UNBIND
 |  |

1. Unsupported client-to-server commands

|  |  |
| --- | --- |
| * SUBMIT\_MULTI
 | * REPLACE\_SM
 |
| * DATA\_SM
 | * ALERT\_NOTIFICATION
 |
| * QUERY\_SM
 |  |

1. Supported server-to-client commands

|  |  |
| --- | --- |
| * BIND\_TRANSMITTER\_RESP
 | * SUBMIT\_SM\_RESP
 |
| * BIND\_RECEIVER\_RESP
 | * UNBIND\_RESP
 |
| * BIND\_TRANSCEIVER\_RESP
 | * ENQUIRE\_LINK\_RESP
 |
| * GENERIC\_NACK
 | * DELIVER\_SM
 |

# Command State

SMPP supports the following commands through the following SMPP session states:

|  |  |
| --- | --- |
| **Command** | **Required state** |
| bind\_transmitter | OPEN |
| bind\_transmitter\_resp | OPEN |
| bind\_receiver | OPEN |
| bind\_receiver\_resp | OPEN |
| bind\_transceiver | OPEN |
| bind\_transceiver\_resp | OPEN |
| Unbind | BOUND\_TX, BOUND\_RX,BOUND\_TRX |
| unbind\_resp | BOUND\_TX, BOUND\_RX,BOUND\_TRX |
| submit\_sm | BOUND\_TX, BOUND\_TRX |
| submit\_sm\_resp | BOUND\_TX, BOUND\_TRX |
| deliver\_sm | BOUND\_RX, BOUND\_TRX |
| deliver\_sm\_resp | BOUND\_RX, BOUND\_TRX |
| enquire\_link | BOUND\_TX, BOUND\_RX,BOUND\_TRX |
| enquire\_link\_resp | BOUND\_TX, BOUND\_RX,BOUND\_TRX |
| generic\_nack | BOUND\_TX, BOUND\_RX,BOUND\_TRX |

# Submitting Messages

# Submitting Message

Originators, Referred to as source\_addr. For billed message the originator must be the short code if it is not set to the short code platform will not accept the message.

**Destination** - (referred to as dest\_addr). Destination address types are not supported. You may set these to anything, but they will always be interpreted as 1,1. Destination addresses (MSISDN) should always be submitted in international format without leading 00 or + e.g. (917751123456). MSISDN length Must be 12 digits in submission packet

**Data & Unicode (UTF16) message body types** - set data\_coding appropriately as per the relevant vendor specification for the type of Data or Unicode message you’re sending, and the type of handset you’re sending it to.

**Character Encoding** - By default messages must be submitted using the GSM encoding character set.

**Message Expiry (validity\_period)** – Is supported by platform unless there is restriction from the supplier. This feature is set at account level and maximum validity is restricted to 6 hours

# Submit Responses

A positive response to a submit will contain an error code of zero and a non-null message reference. The message reference will be given in decimal. A negative response will most likely contain vendor specific error code or SMPP v3.4 error codes and a null message reference.

# Message ID

At present the message reference provided is 19 digits, it may change in future (Maximum 40).

# Delivery Receipts

SMPP delivery receipts take the following format:

id:IIIIIIIIII sub:SSS dlvrd:DDD submit date:YYMMDDhhmmss done date:YYMMDDhhmmss

stat:DDDDDDD err:E Text .........

Where:

* + **id**: the message ID allocated to the message by the server
	+ **sub**: the number of short messages originally submitted (this is ignored)
	+ **dlvrd**: the number of short messages delivered (this is ignored)
	+ **submit date**: the date and time at which the short message was submitted
	+ **done date**: the date and time at which the short message reached its final state
	+ **stat**: the final status of the message. Please see section Message Status for more information.
	+ **err**: where appropriate this may hold a network specific error code or an SMSC error code
	+ **text**: the first 20 characters of the short message (this is ignored)

***Note****: To enable enable/disable seconds parameter in “submit date” & “done date” please contact support team*

# Message Status

The delivery report status indicates whether the SMS message was delivered successfully by the SMSC. If the SMS was not successfully delivered, then the delivery report will give a reason in the form of an [error code].

SMPP message states and their meanings are listed here for your convenience:

|  |  |
| --- | --- |
| **CODE** | **DESCRIPTION** |
| DELIVRD | Message delivered to destination |
| FAILED | Message is undelivered |
| EXPIRED | Message validity period has expired |
| REJECTD | Message is in rejected state |

# Terminology

* + **SMPP**: Short Message Peer to Peer Protocol
	+ **ACK**: Acknowledgement
	+ **DLR**: Delivery Report
	+ **DND**: Do Not Disturb
	+ **ESME**: External Short Message Entity
	+ **MSISDN**: Mobile Subscriber Integrated Services Digital Network: the mobile number in international format.
	+ **MSC**: Mobile Switching Centre: the destination network equipment that receives an SMS (via forward-SM operation) in a destination mobile network.
	+ **HLR**: Home Location Register: the destination network equipment that returns status and routing information about an MSISDN to the SMSC (via SRI-SM operation).
	+ **SMSC**: Short Message Service Centre: the equipment belonging to CLX or one of its carriers that transmits SMS to the destination network via SS7.
	+ **SS7**: Signalling System 7: the transport protocol that interconnects global GSM networks.
	+ **MNP**: Mobile Number Portability: the process of a subscriber moving from one mobile network to another but retaining the same MSISDN.
	+ **IMSI**: International Mobile Subscriber Identity: a unique identification number which identifies the destination country, actual network, and network subscriber ID.
	+ **Subscriber**: The mobile user who has a SIM card.

# Transactional Error Codes (NACK Errors in Decimal format)

To help you identify what might be causing a problem with your SMPP transaction, here is a list of error codes with a small description:

|  |  |
| --- | --- |
| **Error Code** | **Description** |
| 0 | No error |
| 3 | Invalid command ID |
| 4 | Invalid bind status for given command |
| 5 | ESME already in bound state |
| 10 | Invalid source address |
| 12 | Message ID is invalid |
| 13 | Bind failed |
| 14 | Invalid password |
| 15 | Invalid system ID |
| 20 | Message queue full |
| 21 | Invalid system type |
| 97 | Invalid scheduled delivery time |
| 98 | Invalid message delivery period |

# Reference Documents

* + SMPP Protocol Specification v3.4