

SMPP INTEGRATION MANUAL

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Introduction

This document will provide instruction and examples how to use Infobip SMPP communication interface.

SMPP INTRODUCTION

The Short Message Peer-to-Peer (SMPP) is an open, industry standard protocol used by the telecommunication industry for exchanging SMS messages between Short Message Service Centres (SMSC) and an SMS application systems. The protocol is a level-7 TCP/IP protocol, which allows fast delivery of SMS messages.

The connection between the application and the Infobip SMPP server is **SMPP version 3.4** (version 3.3 is not supported).

SMPP parameters

| Name | Description |
|------------------------------------|--|
| <i>system_id</i> | Required. Provided for each client. |
| <i>password</i> | Required. Provided for each client. Maximum password length is 8 characters. |
| <i>IP address</i> | Required. Primary connection point: smpp3.infobip.com Secondary connection point: smpp1.infobip.com SSL Connection point: smpp2.infobip.com |
| <i>port</i> | Required. 8888 (primary and secondary) / 8887 (ssl) |
| <i>timeout (keep alive or msg)</i> | Required. 30 sec |
| <i>system_type</i> | Optional. <r:route_code> |

Important: You are allowed to bind as **transmitter**, **receiver** or **transceiver**. In order to receive delivery reports, you must bind as **transceiver** or **receiver**. You'll receive delivery reports only if your route provides delivery reporting. Delivery reports will be sent equally over all of your currently available sessions capable of receiving them (**transceiver** or **receiver**).

By default, you are allowed to bind with **4 sessions**.

PDUS SUPPORTED:

- **bind_transmitter**
- **bind_receiver**
- **bind_transceiver**
- **unbind**
- **submit_sm**
- **deliver_sm**
- **enquire_link**

DELIVERY REPORT FORMAT

Format

```
“id:<message_id> sub:<message_sub> dlvrld:<message_dlvrld>  
submit date:<message_submit_date> done date:<message_done_date>  
stat:<message_stat> err:<message_err>”
```

DELIVERY STATUSES (MESSAGE_STAT):

- DELIVRD
- EXPIRED
- UNDELIV
- ACCEPTD
- UNKNOWN
- ENROUTE
- REJECTD

DATA CODING SCHEME

If you set **DCS 0** or **DCS 1** when sending messages, we will treat that as **default GSM7 encoding** (SMSC Default Alphabet or IA5).

For **Latin1** (ISO-8859-1) please use **DCS 3** and **DCS 8** for sending messages as **Unicode** (ISO/IEC-10646).

If needed, the content of messages can be processed in **Latin1** (ISO-8859-1) even with **DCS 0**, and in that case a simple adjustment is needed on account level.

COMMAND STATUS & GSM ERROR CODES

Each request sent to our system is to receive an acknowledgement in `submit_sm resp PDU` and it is fully compliant with SMPP v 3.4 standard. A few proprietary platform command statuses with platform specific delivery report error code are described in the SMPP Command Status & GSM Error Codes section.

SCHEDULED DELIVERY

Scheduled delivery is supported over SMPP protocol using the **relative time format**.

EXAMPLE:

“`070605040302100R`” – this would mean that message will be delivered in 7 years, 6 months, 5 days, 4 hours, 3 minutes, 2 seconds and 1 tenth of second from now.

NUMBER CONTEXT OVER SMPP SPECIFICATION

Using Infobip SMPP account, it is possible to request **Number Context** data (IMSI). In order to use Number Context, you can use your default **system_id** and **password**, setting **system_type** = "HLR" (without quotation marks) in Bind PDU.

SubmitSM PDU is used for submitting the Number Context request, having **destAddress** parameter set to the required destination address. All other parameters will be ignored (**srcAddress**, **TON/NPI**, etc).

Infobip Number Context subsystem will respond using a regular **SubmitSMResp**, containing **message-id** reference.

Once the Number Context request is being finalised on the Infobip system, you will receive **DeliverSM PDU**, containing:

- **IMSI** for the required **destAddress** or
- **error code** in case of failure.

DeliverSM will contain:

- short message data with our regular delivery report
- IMSI part ("IMSI:xxxxxxxx")
- serving MSC
- additional **optional info fields** depending on your package.

| Optional Info Fields | Type | Hex | Decimal |
|------------------------------------|-----------|--------|---------|
| <i>Original network name</i> | TLVString | 0x1412 | 5138 |
| <i>Original network prefix</i> | TLVString | 0x140B | 5131 |
| <i>Original country</i> | TLVString | 0x1422 | 5154 |
| <i>Original country code</i> | TLVString | 0x1423 | 5155 |
| <i>Original country prefix</i> | TLVString | 0x1424 | 5156 |
| <i>Ported network name</i> | TLVString | 0x1413 | 5139 |
| <i>Ported country prefix</i> | TLVString | 0x1442 | 5186 |
| <i>Ported network prefix</i> | TLVString | 0x143e | 5182 |
| <i>Ported network country name</i> | TLVString | 0x143f | 5183 |
| <i>Is number ported</i> | TLVInt | 0x1421 | 5153 |
| <i>Roaming network name</i> | TLVString | 0x1414 | 5140 |
| <i>Roaming network prefix</i> | TLVString | 0x1419 | 5145 |
| <i>Roaming country name</i> | TLVString | 0x1415 | 5141 |
| <i>Roaming country code</i> | TLVString | 0x1417 | 5143 |
| <i>Roaming country prefix</i> | TLVString | 0x1420 | 5152 |
| <i>MCCMNC</i> | TLVString | 0x1416 | 5142 |

| | | | |
|---|-----------|--------|------|
| Price per message <i>For compatibility reasons, price per message is multiplied by 100</i> | TLVInt | 0x1418 | 5144 |
| Serving HLR | TLVString | 0x1409 | 5129 |
| Is number correct | TLVInt | 0x1425 | 5157 |

INFO: Besides DeliverSM.shortMessage, we included IMSI also as an extra-optional parameter:

SMPP_VENDOR_SPECIFIC_IMSI = 0x1403

EXAMPLE:

In case that Number Context request was successful, **DeliverSM** will be as follows (**IMSI 21910110053751**):

Groovy

```

addr: 0 0 38591xxxxxxx
addr: 0 0 0000000000

msg: id:40072910491427628 sub:001 dlvr:001 submit date:1007291049 done date:1007291049 stat:D
ELIVRD err:000
IMSI:219101100935850 MSC:38591016 HLR:38591xxxxxxx ORN:VipNet PON:VipNet RON:VipNet ROC:HR MCC
MNC:21910

opt: (oct: (tlv: 1059) 030000) (byte: (tlv: 1063) 2) (str: (tlv: 30) 40072910491427628) (str:
(tlv: 5129)38591xxxxxxx) (str: (tlv: 5138) VipNet) (str: (tlv: 5139) VipNet) (str: (tlv: 5140)
VipNet) (str: (tlv:5141) Croatia ) (str: (tlv: 5143) HR) (str: (tlv: 5142) 21910) (int: (tlv:
5144) 1) (str: (tlv: 5145) 91) (str: (tlv: 5152) 385) (int: (tlv: 5153) 1) (str: (tlv: 5154) C
roatia ) (str: (tlv: 5155) HR) (str: (tlv: 5156) 385) (int: (tlv: 5157) 1) ) (extraopt: (oct:
(tlv: 5123) 323139313031313030393335383530) (oct: (tlv: 5126) 3338353931303136) )

```

If an error occurred, **DeliverSM** will be as follows:

Groovy

```
addr: 0 0 385915369423
```

```
addr: 0 0 0000000000
```

```
msg: id:40072910491419819 sub:001 dlvr:001 submit date:1007291049 done date:1007291049 stat:U  
NDELIV err:001
```

```
IMSI: MSC: ORN:VipNet MCCMNC:
```

```
opt: (oct: (tlv: 1059) 030001) (byte: (tlv: 1063) 5) (str: (tlv: 30) 40072910491419819) (str:  
(tlv: 5138) VipNet) (str: (tlv: 5142) ) (int: (tlv: 5144) 1) (int: (tlv: 5153) 0) (str: (tlv:  
5154) Croatia ) (str: (tlv: 5155) HR) (str: (tlv: 5156) 385) (int: (tlv: 5157) 1) )
```

FLASH NOTIFICATIONS OVER SMPP SPECIFICATION

You can use your Infobip SMPP account to send **Flash notifications**. Such notifications are immediately displayed on a mobile phone screen upon arrival and aren't stored in the memory of the device.

In order to use Flash notifications, you can use your default `system_id` and `password`, setting `system_type = "NSMS"` (without quotation marks) in Bind PDU.

Procedure for submitting Flash notifications is exactly the same as for normal SMS, using **SubmitSM PDU**. Infobip system will automatically convert your message into the Flash notification using message parameters you have submitted.

Delivery reports will be sent to you using **DeliverSM PDU**.

NOTE: Long SMS feature is not supported for Flash notifications.

SMPP COMMAND STATUS & GSM ERROR CODES

SMPP Command status

Command status is received as a response for **Submit_SM**, on special events, illustrated in the table below.

| Value (HEX/DEC) | Description |
|------------------|----------------------------------|
| 0x00000022 / 34 | Network not covered |
| 0x000000FF / 255 | Account has insufficient balance |
| 0x0000000a | Invalid_Source_Address |
| 0x0000000c | Duplicate_Message_ID |
| 0x000004a1 | System_Error or Channel_Disabled |

SMPP GSM error codes

SMPP GSM errors which could be provided by Infobip.

| Id | Short description | Is permanent |
|----|-----------------------------------|--------------|
| 0 | NO_ERROR | NULL |
| 1 | EC_UNKNOWN_SUBSCRIBER | 1 |
| 5 | EC_UNIDENTIFIED_SUBSCRIBER | 0 |
| 6 | EC_ABSENT_SUBSCRIBER_SM | 0 |
| 9 | EC_ILLEGAL_SUBSCRIBER | 1 |
| 10 | EC_BEARER_SERVICE_NOT_PROVISIONED | 0 |
| 11 | EC_TELESERVICE_NOT_PROVISIONED | 1 |
| 12 | EC_ILLEGAL_EQUIPMENT | 1 |
| 13 | EC_CALL_BARRED | 0 |
| 20 | EC_SS_INCOMPATIBILITY | 0 |
| 21 | EC_FACILITY_NOT_SUPPORTED | 0 |
| 27 | EC_ABSENT_SUBSCRIBER | 0 |
| 31 | EC_SUBSCRIBER_BUSY_FOR_MT_SMS | 0 |
| 32 | EC_SM_DELIVERY_FAILURE | 0 |
| 33 | EC_MESSAGE_WAITING_LIST_FULL | 0 |
| 34 | EC_SYSTEM_FAILURE | 0 |

| Id | Short description | Is permanent |
|-----|-------------------------------------|--------------|
| 35 | EC_DATA_MISSING | 1 |
| 36 | EC_UNEXPECTED_DATA_VALUE | 1 |
| 51 | EC_RESOURCE_LIMITATION | 0 |
| 71 | EC_UNKNOWN_ALPHABET | 1 |
| 72 | EC_USSD_BUSY | 1 |
| 255 | EC_UNKNOWN_ERROR | 1 |
| 256 | EC_SM_DF_memoryCapacityExceeded | 0 |
| 257 | EC_SM_DF_equipmentProtocolError | 0 |
| 258 | EC_SM_DF_equipmentNotSM_Equipped | 0 |
| 259 | EC_SM_DF_unknownServiceCentre | 0 |
| 260 | EC_SM_DF_sc_Congestion | 0 |
| 261 | EC_SM_DF_invalidSME_Address | 0 |
| 262 | EC_SM_DF_subscriberNotSC_Subscriber | 0 |
| 500 | EC_PROVIDER_GENERAL_ERROR | 0 |
| 502 | EC_NO_RESPONSE | 0 |
| 503 | EC_SERVICE_COMPLETION_FAILURE | 0 |
| 504 | EC_UNEXPECTED_RESPONSE_FROM_PEER | 0 |

| Id | Short description | Is permanent |
|------|--|--------------|
| 507 | EC_MISTYPED_PARAMETER | 0 |
| 508 | EC_NOT_SUPPORTEDED_SERVICE | 0 |
| 509 | EC_DUPLICATED_INVOKE_ID | 0 |
| 511 | EC_INITIATING_RELEASE | 0 |
| 1024 | EC_OR_appContextNotSupported | 0 |
| 1025 | EC_OR_invalidDestinationReference | 0 |
| 1026 | EC_OR_invalidOriginatingReference | 0 |
| 1027 | EC_OR_encapsulatedAC_NotSupported | 0 |
| 1028 | EC_OR_transportProtectionNotAdequate | 0 |
| 1029 | EC_OR_noReasonGiven | 0 |
| 1030 | EC_OR_potentialVersionIncompatibility | 0 |
| 1031 | EC_OR_remoteNodeNotReachable | 0 |
| 1152 | EC_NNR_noTranslationForAnAddressOfSuchNature | 0 |
| 1153 | EC_NNR_noTranslationForThisSpecificAddress | 0 |
| 1154 | EC_NNR_subsystemCongestion | 0 |
| 1155 | EC_NNR_subsystemFailure | 0 |
| 1156 | EC_NNR_unequippedUser | 0 |

| Id | Short description | Is permanent |
|------|---|--------------|
| 1157 | EC_NNR_MTPfailure | 0 |
| 1158 | EC_NNR_networkCongestion | 0 |
| 1159 | EC_NNR_unqualified | 0 |
| 1160 | EC_NNR_errorInMessageTransportXUDT | 0 |
| 1161 | EC_NNR_errorInLocalProcessingXUDT | 0 |
| 1162 | EC_NNR_destinationCannotPerformReassemblyXUDT | 0 |
| 1163 | EC_NNR_SCCPfailure | 0 |
| 1164 | EC_NNR_hopCounterViolation | 0 |
| 1165 | EC_NNR_segmentationNotSupported | 0 |
| 1166 | EC_NNR_segmentationFailure | 0 |
| 1281 | EC_UA_userSpecificReason | 0 |
| 1282 | EC_UA_userResourceLimitation | 0 |
| 1283 | EC_UA_resourceUnavailable | 0 |
| 1284 | EC_UA_applicationProcedureCancellation | 0 |
| 1536 | EC_PA_providerMalfunction | 0 |
| 1537 | EC_PA_supportingDialogOrTransactionReleased | 0 |
| 1538 | EC_PA_resourceLimitation | 0 |

| Id | Short description | Is permanent |
|------|--------------------------------------|--------------|
| 1539 | EC_PA_maintenanceActivity | 0 |
| 1540 | EC_PA_versionIncompatibility | 0 |
| 1541 | EC_PA_abnormalMapDialog | 0 |
| 1792 | EC_NC_abnormalEventDetectedByPeer | 0 |
| 1793 | EC_NC_responseRejectedByPeer | 0 |
| 1794 | EC_NC_abnormalEventReceivedFromPeer | 0 |
| 1795 | EC_NC_messageCannotBeDeliveredToPeer | 0 |
| 1796 | EC_NC_providerOutOfInvoke | 0 |
| 2048 | EC_TIME_OUT | 0 |
| 2049 | EC_IMSI_BLACKLISTED | 1 |
| 2050 | EC_DEST_ADDRESS_BLACKLISTED | 1 |
| 2051 | EC_InvalidMscAddress | 0 |
| 4096 | EC_invalidPduFormat | 1 |
| 4097 | EC_NotSubmittedToGMSC | 1 |
| 4100 | EC_Cancelled | 1 |
| 4101 | EC_ValidityExpired | 1 |
| 4102 | EC_NotSubmittedToSmppChannel | 0 |