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Clickatell two-way technical guide

V1.8

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1. Overview

This document is intended for those users who wish to develop applications that make use of Clickatell's SMS gateway, for standard rate mobile originated (MO)/two-way services, to and from mobile subscriber handsets.

Please note: Separate documentation exists for short codes. Pricing and coverage information can be found at <http://www.clickatell.com/pricing/twoway.php>.

2. Context

This document is designed to follow from the latest Clickatell HTTP, SMTP, FTP, XML, SMPP, SOAP and COM API specification documents. It is presumed that the reader has a thorough understanding of these documents (whichever may be appropriate), prior to reading this addendum. These documents can be found at: <http://www.clickatell.com/apis-scripts/>

As you will need to configure your numbers from within Clickatell Central, it is suggested that you read the online help on configuring two-way messaging within Clickatell Central.

3. Introduction

There are various applications and services that are associated with MO messaging. Clickatell's role in this regard is to act as a conduit between the mobile user and the service provider's application. Clickatell receives messages from mobile users and routes these to your application. We will also route any responses from your application back to mobile recipients and vice versa. There is a predefined set of variables that Clickatell will pass back to your application when a message is received. You will need to ensure that your application is capable of interpreting these and responding accordingly.

4. Standard-rated Virtual Mobile Numbers (VMNs)

Clickatell offers the following VMN types for standard-rate two-way messaging:

4.1 Standard-length VMN

A standard-length VMN is determined by the country of origin, for example:

- A UK standard VMN will consist of 12 digits: 44 xxx xxxxxxxx

4.2 Tagged VMN range

A Tagged VMN range represents all possible VMN combinations created by appending a selected number of digits to a standard VMN.

Please note: As Tagged VMNs are longer than standard VMNs, not all Network Operators support them. For example: certain network operators in the UK do not support Tagged VMNs.

If a Standard VMN is 44777xxxxxx, any number of digits from 0 – 9999 can be appended to create a range. See table below for examples:

Number of digits	Available tagged VMNs	Amount of tagged VMNs you will receive
1	44777xxxxxx[0-9]	10 Numbers
2	44777xxxxxx[0-99]	100 Numbers
3	44777xxxxxx[0-999]	1 000 Numbers
3	44777xxxxxx[0-999]	10 000 Numbers

For example: a Tagged VMN Range which is created with one additional digit tagged to a Standard VMN, as displayed in the table above, would enable you to send and receive messages on the following ten Tagged VMNs:

44777xxxxxx0	44777xxxxxx3	44777xxxxxx6	44777xxxxxx9
44777xxxxxx1	44777xxxxxx4	44777xxxxxx7	
44777xxxxxx2	44777xxxxxx5	44777xxxxxx8	

Please note: A Tagged VMN range is viewed and managed as one number on the Clickatell System, for example: 447771234567[0-9999].

5. Available VMN ranges

Clickatell has a variety of VMN ranges from which a randomly assigned VMN can be rented. Each number range supports different countries and operators. Please consult:

http://www.clickatell.com/pricing/advanced_coverage.php for more information.

Short codes are also available in various regions. Please consult the short code section which can be found at: <http://www.clickatell.com/products/shortcode.php>

6. How outbound messaging works

MT messages are delivered by your application to the user via the Clickatell Gateway. There are several ways of routing these messages to the Clickatell Gateway for delivery:

- SMTP (E-MAIL to SMS) - enabling a server- or client-generated e-mail to be delivered as an SMS.
- HTTP/S - submitting either a POST or GET to the API server.

- FTP Upload – Uploading a text file to Clickatell's FTP Server.
- COM Object – Windows-based application development.
- XML – XML wrapper over HTTP.
- SOAP – Submit SOAP packets over HTTP/S.
- SMPP - Short Message Peer to Peer (SMPP) protocol.

The API you choose to send these outbound messages with must be linked by Clickatell to the VMN that you use. This can be done within Clickatell Central.

Step 1: Log into your account at: <http://www.clickatell.com/>

Step 2: On the main screen, select Manage My Products.

Step 3: On the left select Two-Way Messaging.

Step 4: Click Edit on the number you want to configure and choose the API you want to link it to from the drop-down box provided.

Please review your chosen API Specification document for more information on how to implement outbound messaging.

7. How inbound messaging works

7.1 Method 1: The mobile user initiates the conversation

A mobile handset user will create and send a text message to a predefined, published VMN, which will be routed to your application by Clickatell.

Example: a mobile user sends a comment into a radio show via SMS to the number 44777xxxxxx.

7.2 Method 2: Your application initiates the conversation

Your application sends a message via the Clickatell Gateway to the user with the sender ID set to your assigned VMN. The user then replies to the message which is routed back to your application via the Clickatell Gateway.

For this, Clickatell will route your messages through a specific carrier that will enable the ability for mobile users to reply to your allocated VMN.

Example: You send out a SMS to your users asking them to comment on a new product you have launched. You set the sender ID to 44777xxxxxx. They reply to the SMS with their comments.

8. Stop command

8.1 Stop commands - automatic unsubscribe

The system will ensure that a mobile user's wish to unsubscribe is honored in the event that your application or service fails to do so.

Note: Clickatell will always deliver all messages that were received from the handset to you, provided you have sufficient credits in your account.

8.1.1 STOP command implementation – short codes & MO numbers

Example: A handset sends in one of the following case-insensitive keywords (STOP, END, CANCEL, UNSUBSCRIBE or QUIT) to a short code.

Clickatell will pass this message on to you. The Clickatell gateway will expect a "confirmation of cancellation" message from you to the handset within a period of 6 hours. This must be sent either from the short code it was sent to, or in the case of an MT short code, it must be sent from a linked standard rate MO number such that the user is not billed.

If no confirmation of cancellation message is sent: You will no longer be able to send MT messages to the mobile number from the short code or MO number, you sent it from. Clickatell will also send the message "You will no longer receive messages from the short code xxxxx" to the mobile number on your behalf. This will be billed to your account at normal message rates. This message will be sent from your short code unless the short code is MT, in which case it will be sent from a linked standard rate MO number such that the handset is not billed. This MO number will be assigned and linked to your short code by Clickatell. If the short code is MO premium rated, then this rule does not apply.

Note: If the handset sends in a new message that does not contain one of the following: **STOP, END, CANCEL, UNSUBSCRIBE, QUIT, STOP STOP or STOP ALL**, then you will once again be allowed to send messages to the mobile number.

If the handset sends in "STOP ALL" or "STOP STOP" to a short code, then you will no longer be able to send messages from any of your MO numbers that are linked to your account.

10.1.2 STOP command - Shared short codes

If a shared short code is used, the chosen keyword will be expected to be before or after the STOP command. For example, if your keyword is "Fun" then the message "STOP fun" or "fun STOP" will result in no further messages being sent to the user from the keyword "Fun". Note that this is also case-insensitive.

If the handset sends in a new message containing your keyword and not containing one of the following: **STOP, END, CANCEL, UNSUBSCRIBE, QUIT, STOP STOP or STOP ALL**, then you will once again be allowed to send messages to the mobile number.

8.2 Stop commands – Custom Reply

The cancellation message sent to a mobile user that wishes to unsubscribe from your service can be customized.

8.2.1 Custom Reply implementation – short codes & MO numbers

Example: A handset sends in one of the following case-insensitive keywords (STOP, END, CANCEL, UNSUBSCRIBE or QUIT) to a short code. Custom Replies have been enabled for all these keywords.

If the handset sends in one of the above-mentioned keywords, a custom message linked to the keyword will be sent back to the user as confirmation that they have unsubscribed.

If the custom message option is enabled for the keyword but no message has been defined, the default confirmation message will be sent to the user.

In addition, a customized message can also be set up for the keyword HELP. If the custom message option is enabled for this keyword but no messages have been defined, no reply message will be sent to the user's handset.

Note: This feature is only available by special request. To have this feature enabled please contact our Customer Service Centre:

Email: support@clickatell.com

Phone: +27 21 910 7700

9. How to configure your application

NB: It is assumed that you have already integrated your chosen API and are able to send messages.

9.1 How to set the MO parameter

When sending messages to mobile users that should be able to reply, the MO parameter must be set to 1. If you use SMPP the MO parameter is automatically set to 1. For more information on how to set this for your chosen API, see the appropriate API specification document.

When this parameter is set to 1, Clickatell will:

- Use a specific carrier to deliver the message.
- Set the correct sender ID when sending to the handset.

Note: The destination address must be in international format when setting this parameter to 1.

9.2 How to configure the sender ID

When you send a message where you may need a reply, you will need to set the correct sender ID (pre-configured VMN) and set the MO parameter to 1. The pre-configured VMN is the number that you have chosen to link to the API that you use to send outbound (MT) messages.

If the MO parameter is set to 1 and you specify a sender ID that is different from the pre-configured sender ID, then your setting will take preference. Clickatell will still use a specific carrier to try and enable the ability for the user to reply to the message. If, however, your sender ID is not supported by the carrier being used, the message will fail.

When Clickatell delivers the message, the sender ID may be changed as follows:

Your sender ID	Send ID set by Clickatell	
	If mo=1	If mo=0 or not set
If you set an alpha sender ID (e.g., from=abc)	We will try to set the sender ID you submitted. If we cannot, we will set a default Clickatell number.	We will try to set the sender ID you submitted. If we cannot, we will set a default Clickatell number.
If you set a numeric sender ID that is not a configured VMN.	We will try to set the sender ID you submitted. If we cannot, we will set a default Clickatell number.	We will try to set the sender ID you submitted. If we cannot, we will set a default Clickatell number.
If you set a configured VMN.	We will try to set the sender ID you submitted.	We will try to set the sender ID you submitted. If we cannot, we will set a default Clickatell Number
If you set a short code as the sender ID field.	See the appropriate premium rate technical guide for the region in which the short code is used.	We will try to set the sender ID you submitted. If we cannot, we will set a default Clickatell number.
If you do not set anything as the sender ID field.	We will set a default Clickatell number – you will not receive the replies.	We will set a default Clickatell number – you will not receive the replies.

9.3 How to receive inbound messages

In order to receive inbound messages, one of the methods below can be used. You can change which method you wish to use at any time. Configuration is done through Clickatell Central. Login to Developers Central, go to https://central.clickatell.com/central/twoway/twoway_central.php and select the number you wish to configure.

MO callback methods:

- HTTP GET
- HTTP POST

- SMPP
- XML GET
- XML POST
- FTP
- SOAP GET
- SOAP POST
- Online Reports

All inbound messages are recorded on your Clickatell account, which can be viewed and downloaded through **Reports** within Clickatell Central. This is useful if you do not wish to receive inbound messages into your application.

Extended length messages will be sent to you as individual messages. The last two digits of the UDH header will indicate which message part it is. The remaining part of the UDH header will be identical for all messages that are part of the extended message.

Example UDH header for message part 1: 050003330201

Example UDH header for message part 2: 050003330202

9.3.1 HTTP

Callback URLs will be used to send messages back to applications via a standard HTTP GET or POST. The reply-path URL is set by you within Central. The URL must begin with http://. HTTPS is accepted but only encryption is supported. Variables are passed back by the API on message response.

The variables returned to the URL are:

- Api_id (api_id=)
- MO message ID (moMsgId)
- Originating ISDN (from=)
- Destination ISDN (to=)
- Date and Time [MySQL format, GMT + 0200] (timestamp=)
- DCS Character Coding (charset=) [when applicable]
- Header Data [e.g. UDH etc.] (udh=) [when applicable]
- Message Data (text=)

Example: If you provide this URL <http://www.yourdomain.com/sms/sms.asp> then we will do a POST or GET as follows:

https://www.yourdomain.com/sms/sms.asp?api_id=12345&from=279991235642&to=27123456789×tamp=2008-08-0609:43:50&text=Hereisthe%20messagetext&charset=ISO-8859-1&udh=&moMsgId=b2aee337abd962489b123fda9c3480fa

What happens when we are unable to connect to your server?

Clickatell provides retries of MO callbacks. We follow retry as follows:

1. 2 minutes after the original attempt
2. 4 minutes after last retry
3. 8 minutes after last retry
4. 16 minutes after last retry
5. 32 minutes after last retry
6. 64 minutes after last retry
7. 128 minutes after last retry (max retries reached)

After this, we do not retry again.

9.3.2 FTP log file

As an alternative to using a callback URL, replies can be logged to an FTP file. The FTP file will be a text file containing messages that are URL encoded into a single string. These messages can be retrieved manually, or via a script.

The fields in the text file will match those listed above. If necessary, an example of a text file will be provided on request.

If you don't already have an FTP product within your Central account, you can add the product within your Central account under **My Connections**.

The values returned to the log file are:

- Date and time when MO was received
- Mobile number
- MO Number
- Text
- api_id
- moMsgId
- Character set
- UDH
- Network ID (if network info setting is enabled)

Note: You can expect to see three different character set values, for example, ISO-8859-1; UTF-16BE and 8-BIT

Text file name: mo.log

Example of text within text-file:

```
2012-05-25 [space] 13:55:04 [tab] handset_number [tab] mo_number [tab] sample%20message1 [tab] api_id [tab]
moMsgId [tab] character set [tab] UDH [tab] network_id
```

```
2012-05-25 [space] 13:55:04 [tab] handset_number [tab] mo_number [tab] sample%20message2 [tab] api_id [tab]
moMsgId [tab] character set [tab] UDH [tab] network_id
```

```
2012-05-25 [space] 13:55:04 [tab] handset_number [tab] mo_number [tab] sample%20message3 [tab] api_id [tab]
moMsgId [tab] character set [tab] UDH [tab] network_id
```

9.3.3 SMPP (for advanced users)

We can also send the response back to you via SMPP. Please see our SMPP API specification document for more information.

9.3.4 XML (over HTTP/S)

Callback URLs will be used to post XML formatted messages back to applications via a standard HTTP/S GET or POST. The reply-path URL is set by you within Clickatell Central. The URL must begin with `http://`. HTTPS is accepted but only encryption is supported. Variables are passed back by the API on message response. The data contained in the XML elements is encoded using standard XML entities.

The variables returned to the in the xml <clickmo> packet are:

- Api_id (<api_id>)
- MO message ID (moMsgId)
- Originating ISDN (<from>)
- Destination ISDN (<to>)
- Date and Time [MySQL format, GMT + 0200] (<timestamp>)
- DCS Character Coding (<charset>) [when applicable]
- Header Data [e.g. UDH etc.] (<udh>) [when applicable]
- Message Data (<text>)

Example: If you provide this: <http://www.yourdomain.com/sms/sms.asp> then we will do a post via a standard HTTP POST as follow:

```
data=<?xml version="1.0"?>
<clickmo>
  <api_id>xxx</api_id>
  <moMsgId>fa6ba35b330ce1bc7e2008e5d92d57aa</moMsgId>
  <from>handset_number_here</from>
  <to>mo_number_here</to>
  <timestamp>2007-02-26 14:36:50</timestamp>
  <text>xxx</text>
  <charset>ISO-8859-1</charset>
  <udh></udh>
</clickmo>
```

9.3.5 SOAP

SOAP callbacks can be sent as an HTTP GET or POST with in the 'data' parameter (e.g.: [http://www.yourscript.com/callback.php?data=<?xml version='1.0'](http://www.yourscript.com/callback.php?data=<?xml version='1.0'>)

Example

```
Data=<?xml version="1.0" encoding="ISO-8859-1"?>
<SOAP-ENV:Envelope SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/" xmlns:tns="clickatell_mo">
<SOAP-ENV:Body>
<tns:mo_callback xmlns:tns="clickatell_mo">
<api_id xsi:type="xsd:int">xyz</api_id>
<from xsi:type="xsd:string">xyz</from>
<to xsi:type="xsd:string">xyz</to>
<timestamp xsi:type="xsd:string">xyz</timestamp>
<charset xsi:type="xsd:string">xyz</charset>
<udh xsi:type="xsd:string">xyz</udh>
<text xsi:type="xsd:string">xyz</text>
<momsgid xsi:type="xsd:string">xyz</momsgid>
</tns:mo_callback>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

9.3.6 Online reports only

All inbound messages are recorded on your Clickatell account, which can be viewed within Clickatell Central. Go to **Message Reports>>Two-Way** and generate a report using the parameters supplied. Choose this option if you do not wish inbound messages to be sent to your application.

9.4 How tagged VMN ranges work

A tagged VMN range is viewed as one number on the Clickatell system. You can only set one reply method for the entire range. Configuration is done through Clickatell Central.

Step 1: Log into your account at <http://www.clickatell.com/>

Step 2: Go to **Manage my Products**.

Step 3: Select **Two-way messaging** and select the tagged VMN you wish to configure.

You can, however, set any of the individual VMNs as the Sender ID when sending out the message. Replies to this VMN will be sent through to your system with the source address (the VMN the message was sent to) equal to this VMN.

9.5 Important notice about testing:

Do not try and send to the premium rated VMN(s) via Clickatell's system. This may cause your messages to go into a loop. The premium rated VMN(s) should only be used to receive incoming messages.

10. Billing

We automatically deduct the credit charge for each inbound message. Please contact your sales consultant if you are unclear about the charge you pay. The standard charge is a third of a credit, per inbound message. Messages will only be released to your application/online reports when payment has been received for them. The two-way report within Clickatell Central will indicate if you have unreleased messages. You can be notified when your balance goes below a user-defined number of credits. This can be configured within Central>>Message Reports>>Two-Way.

11. Visual diagram

11.1 Mobile originated (MO) without a response

A message originates from the handset. Clickatell receives the message from the operator and sends the message to your application. Your application can communicate with the Clickatell gateway via one of the following APIs: SMPP, HTTP and FTP.

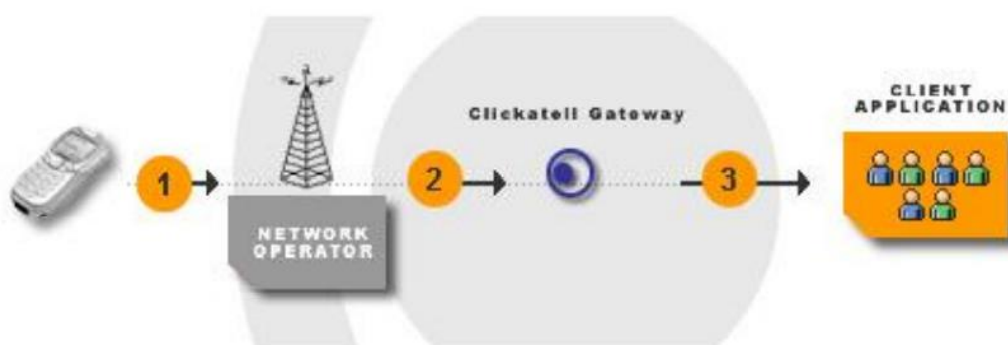


Figure 1

You can then choose to respond back to the phone or not. If you do, then we will route the message back to the handset as explained in *Figure 2* below.

11.2 Mobile terminated with a reply from the handset

A message is routed to a handset. The recipient would then choose to reply to your message or not to.

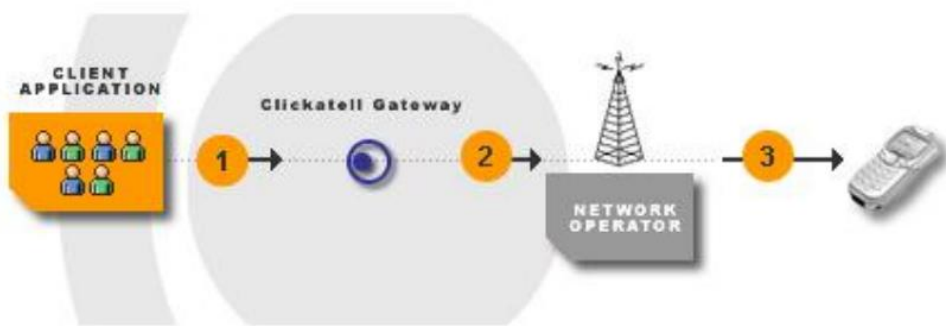


Figure 2

12. Terminology

- **Mobile originated (MO):** A message sent (originating) from a mobile handset to an application via Clickatell.
- **Mobile terminated (MT):** A message sent from an application to (terminating on) a mobile handset via Clickatell.
- **Premium rated message (MO):** A mobile user is charged a premium for the message that they send to a particular short or long code. This service is not available in all regions; please contact an Account Manager for more information.
- **Revenue share:** This refers to the portion of the premium charge associated with a premium rated message, which is passed on to the content provider.
- **Content provider:** This is the Clickatell customer who is offering one or more services that are usually premium rated SMS system.
- **Customer:** A registered Clickatell customer utilizing the Clickatell API for message delivery and receipt.
- **Sender ID:** The “from” address that appears on the user’s handset. This is also known as the message originator or source address. A Sender ID must be registered within your account and approved by us before it may be used.
- **Destination address:** The mobile number/MSISDN of the handset to which the message must be delivered. The number should be in international number format, e.g., country code + local mobile number, excluding the leading zero (0).
- **Source address:** See ‘Sender ID’ above.
- **Short code:** A short number which is common across all the operators for a specific region.
- **Subscriber:** The mobile network subscriber who owns the mobile number (MSISDN) which will send or receive SMSs or be billed for premium rated services.
- **Upstream gateway:** A network operator, third party or our own short message service center (SMSC).