

SMSBullet

HTTP/S Protocol API

Booklet

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Table of Contents

Table of Contents.....	2
Introduction.....	3
API specification.....	4
Overview.....	4
Data formats, conventions and constraints.....	4
Message Payload.....	5
Arguments common to all API commands.....	6
Submit an SMS messaging job (msg.php).....	7
Query message delivery status (msgtrk.php).....	9
Retrieve received replies (rcv.php).....	10
Download SMS sending log (log.php).....	11
Change default SMS origin (tpoa.php).....	12
Query account credit (cred.php).....	13
Scheduled jobs info and cancellation (smsg.php).....	14
Job cost calculator (msgcost.php).....	15
References.....	16
Essential reading.....	16
More information.....	16
Additional information and practical examples.....	16
Common data ports.....	16
3rd party ringtone conversion for binary sending.....	17

Introduction

The HTTP/S API provides non-interactive, direct access to the messaging system's core functions, for integration with third-party applications or websites.

The following functions are currently implemented:

- mobile-terminated SMS messaging (text and binary) with optional scheduling features and origin control
- SMS-MT delivery status tracking
- reception of mobile-originated SMS replies
- downloading of message logs (sent / received) in machine-readable format
- account credit query
- configuration of default message origin

If you are a developer needing assistance in writing an application or building a website with SMSBullet as an uplink gateway, please read the contents of this document for reference and feel free to contact us for more information, help or code samples.

API specification

Overview

The HTTP/S API consists in a number of commands accessible by HTTP or HTTPS requests. Each command takes a number of arguments, encoded as CGI parameters and passed via HTTP GET or HTTP POST. In general, either method can be used unless otherwise specified in the documentation.

The server will return a HTTP result code and some content. The result code can be one of:

HTTP/400 - incorrect login, missing mandatory argument or severe syntax error

HTTP/200 - command accepted and executed, result follows

The message format is specific to every command and documented separately.

WARNING:

HTTP persistent connection mode is currently NOT supported by the API. The client application may make exactly one request per connection, then the connection will be closed.

A client application should not maintain more than 2 simultaneous connections to the server.

All optional HTTP / HTTPS protocol features not noted as supported in this document are not supported.

Data formats, conventions and constraints

Some API command arguments expect the input data to be in specific formats. These are the most commonly used formats:

<i>numeric</i>	a number in decimal notation, may contain decimals
<i>integer</i>	a natural number in decimal notation (eg. '31415926')
<i>byte</i>	an integer in the 0-255 range
<i>short</i>	an integer in the 0-65535 range
<i>boolean</i>	0 or 1 (0 for NO and 1 for YES)
<i>string</i>	a series of printable alphanumeric characters (eg. 'Hello')
<i>hex string</i>	a series of hex-encoded data bytes (eg. '65486c6c0a6f')
<i>MSISDN</i>	a phone number including country code, formatted as a 4-16 digit integer (eg. '61419286443')
<i>numbers</i>	one or more MSISDN's, comma-separated
<i>TPOA string</i>	either an MSISDN (4-16 digits) or a string of 1-11 characters
<i>MySQL time</i>	a date/time value formatted as YYYYMMDDhhmmss (eg. '20051225012345'= 2005-12-25 01:23:45)
<i>UNIX time</i>	a date/time value expressed as the number of seconds elapsed from 1 January 1970, 00:00:00 UTC -also referenced as UNIX Epoch (eg. '1135434225'= 2005-12-25 01:23:45)
<i>timestamp</i>	either MySQL time or UNIX time (server will autodetect)
<i>smstext</i>	a <i>string</i> of 1-160 printable characters (see Message Payload section)
<i>smsdata</i>	a <i>hex string</i> of 1-140 bytes (see Message Payload section)
<i>msgstatus</i>	a byte indicating message delivery status: 0=pending, 1=sent, 2=failed, 3=not sent, 4=cancelled

In addition to formatting information, the arguments' requirement level is indicated where relevant by enclosing the argument format indication in angle brackets for mandatory arguments or square brackets for optional arguments. For example, an indication of *<string>* means 'mandatory string argument', while *[string]* means 'optional string argument'.

Message Payload

The maximum payload size of an SMS message in the GSM world is 140 bytes.

In **text mode sending**, a 8:7 compression algorithm is used internally to extend the maximum size to 160 printable (7-bit) characters.

Text mode messages are submitted using the ASCII character set. The ASCII-to-GSM conversion is handled internally on server side. The application must take into account the fact that some characters will use two 7-bit positions after conversion, see GSM 03.38 section 6.2.1 for details.

In **binary mode sending**, the 140-byte limit applies. In **port mode** (see related msg.php section), part of the 140-byte payload is reserved for the user data header (UDH), reducing the maximum size to (140-udh_size) bytes. For single-fragment messages, the port mode UDH size is typically 7 bytes, resulting in a payload limit of 133 bytes.

Multi-fragment messages are not supported in port mode (only in User-data mode, see below).

Sending large messages:

It is the user's responsibility to adjust or split the message to an acceptable size before submitting. Messages of illegal sizes will produce unspecified, yet probably undesired results. Concatenated sending of large messages is supported in **User-Data/UDH mode**. The user application must fragment the message prior to submission, by inserting UDH concatenation information elements in accordance with GSM 03.40 section 9.2.3.24.1 'Concatenated Short Messages.' Each message fragment will be submitted (and billed) as a separate message.

Arguments common to all API commands

All API commands require, at a minimum, two mandatory arguments: the account's username and password. If any of these is incorrect or missing, nothing will work –HTTP error 400 is usually a symptom of this.

Mandatory arguments:

u <string> account username (eg SMS0123)
p <string> account password (from the web interface)

Example (using GET method):

<https://www.smsbullet.com.au/cred.php?u=SMS0123&p=Sh3cR37>

Note that these are the same login details that are used to access the interactive web interface. A change of password in the web interface will have immediate effect in the HTTP interface.

Submit an SMS messaging job (msg.php)

URL:

<https://www.smsbullet.com.au/msg.php>

Synopsis:

Submits a Mobile-Terminated SMS (SMS-MT) messaging job (consisting of one message body and one or more recipient numbers) to the server's processing queue.

Messages can be submitted in one of three modes: text, port-based binary and user-data binary. The submission mode is autodetected by the server from the provided arguments. The default mode is Text.

Arguments common to all modes:

u, p	<string>	account identification (documented above)
d	<numbers>	destination number(s)
o	[tpoa string]	message origin
r	[integer]	schedule delivery time (relative) the desired number of seconds to delay delivery from time of posting
s	[timestamp]	schedule delivery time (absolute) the desired delivery date/time - minimum scheduling time is 1 hour
rr	[boolean]	"receive replies" directive setting this argument to 1 will set the message origin to a special number, enabling message recipients to reply to your account; overrides "o"
rs	[integer]	"route selection" directive rs=1 = force message via foreign SMS Centres (cheaper) rs=2 = force message via domestic SMS Centres rs=0 (or none) = let the system select the route
dc	[byte]	SMPP data coding byte - NEVER USE
cl	[byte]	SMPP ESM class byte - NEVER USE

Arguments for Text mode:

m	<smstext>	message text (1-160 printable characters)
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Arguments for Port mode:

sp	<short>	source port
dp	<short>	destination port
bl	<integer>	binary data length
m	<smsdata>	binary message, 1-137 bytes

Arguments for User-Data mode:

hi	<boolean>	"header included" flag set to 1 to select User-Data mode (usually when message contains a UDH)
bl	<integer>	binary data length
m	<smsdata>	binary message, 1-140 bytes

Server responses:

ACK	integer	- the message was accepted, Job ID follows
NAK	string	- the message was not accepted, reason follows

Examples:

u=SMS0000&p=secret&d=61419286443&m=test&rr=1
send message test to number 61419286443 in text mode and enable replies

u=SMS0000&p=secret&d=61419286443,61419000000&m=Merry+Christmas
&o=SantaClaus&s=20051225000000

schedule text message "Merry Christmas" from origin SantaClaus for delivery to multiple destinations on 25th December 2005, zero hour

`u=SMS0000&p=secret&d=0412000001&sp=5505&dp=5505&bl=29&m=024A3A51D195CDD008001B205505906105605585505485408208499000`

send a Nokia ringtone, presumably to a Nokia phone - the source and destination ports are both set to 5505 (hex 1581), the Nokia port for ringtone download

Notes:

- the message origin feature is only available to selected accounts and subject to a premium charge, calculated as a percentage of the total transmission cost; see pricing page
- to set a different origin for a large number of messages (or in other cases where it would be un-economical to set the origin on a per-message bases), you can use the alternative origin control command (tpoa.php).
- reply reception (rr) will incur an additional processing charge, see pricing page. The extra charge is applied per message destination number.
- origin will be overridden if the receive parameters are used.
- as of December 2005, the Port mode is **deprecated** and only included for backward compatibility with legacy applications. New applications should use User-Data mode instead, as it provides better flexibility.

Query message delivery status (msgtrk.php)

URL:

<https://www.smsbullet.com.au/msgtrk.php>

Synopsis:

Query the delivery status of a previously submitted SMS-MT job.

Arguments:

u,p <string>account identification (username and password)
i <integer> numeric ID of queried job (from msg.php)

Example request:

u=SMS0000&p=secret&i=7357

Response format:

The query will return the list of numbers that the message was addressed to, with the message status separated by a colon, one recipient per line.

Example response:

61416905149:1
61419286443:2
61402213429:0

In the above example, the message was successfully delivered to 61416905149, failed to 61419286443 and is pending delivery to 61402213429.

Retrieve received replies (rcv.php)

URL:

<https://www.smsbullet.com.au/rcv.php>

Synopsis:

Download mobile-originated SMS (SMS-MO) messages from the server, in machine-readable format. Optional query scope arguments can be specified.

Arguments:

u, p <*string*>account identification (documented above)
s, e [*timestamp*] optional time interval for query (start/end)
l [*integer*]optional last read reply ID for sequential reading
j [*integer*]optional job ID - only fetch messages received in reply to a specific message (the job ID is the ACK number returned by msg.php)

Server response:

The output from the rcv.php command is a tab separated list, in order (tabs shown as spaces):
Reply_ID Job_ID Date Time Number Text

Reply_ID *integer* a unique ID assigned by the system to each reply message
Job_ID *integer* identifier of the message being replied to (from msg.php)
Date, Time *string* reply reception date and time
Number *msisdn* sender number in international format
Text *string* reply text enclosed in double quotes

Example request:

u=SMS00000&p=secret&s=1133515800&e=1133519400

Example response (tabs shown as spaces):

1973 589589 2005-08-18 13:34 61419286443 "Hello to you too"
1976 589589 2005-08-18 15:16 61402213429 "Do I know you?"

Notes:

Although the server will not enforce the mutual exclusion, combinations of the s/e, l and j arguments are probably useless for any practical purpose.

Download SMS sending log (log.php)

URL:

<https://www.smsbullet.com.au/log.php>

Synopsis:

Download mobile-terminated (SMS-MT) message log. The logs are transferred in delimited text format, suitable for immediate import into most common spreadsheet or database programs.

Arguments:

u, p <string>Account identification
s, e [timestamp] Start and end timestamps of the interval of interest
l [integer]last read Job ID for sequential reading
j [integer]query a specific Job ID
xf [integer]specify extended output formats

Server response:

The command output is a TAB-separated list, in order (tabs shown as spaces):

Default format (xf=0 or none):

JobID Time Number Status Cost Text

JobID	<i>integer</i>	Job identifier number (from msg.php)
Time	<i>mysql time</i>	reply reception date and time
Number	<i>msisdn</i>	destination number in international format
Status	<i>msgstatus</i>	delivery status
Cost	<i>numeric</i>	transmission cost in credits
Text	<i>string</i>	reply text enclosed in double quotes

Extended format type 1 (xf=1):

UniqID JobID FragID/Frags Time TPOA Number Status FRoute Replies Cost Text

UniqID	<i>integer</i>	unique message identifier
FragID	<i>integer</i>	fragment ID in concatenated SMS
Frags	<i>integer</i>	total number of fragments in concatenated SMS
TPOA	<i>tpoa string</i>	message origin string
FRoute	<i>integer</i>	forced route selection directive
Replies	<i>integer</i>	"receive replies"(rr) directive

Example request:

log.php?u=SMS00000&p=secret&s=1014940800&e=1017619200
(download the message log from March 1st 2002 to April 1st 2002)

Note: log.php will not show pending/scheduled messages; for real-time status queries, use the msgtrk.php command.

Change default SMS origin (tpoa.php)

URL:

<https://www.smsbullet.com.au/tpoa.php>

Synopsis:

Set account's default message origin (TPOA). The origin change is subject to premium charges (see pricing page) and selective availability.

Arguments:

u,p <string>Account identification (username and password)
o <tpoa string> Desired origin, 16 numeric or 11 alphanumeric characters

Example request:

u=SMS00000&p=secret&o=NewOrigin

Note: To specify the origin on a per-message basis, you can also use the o parameter in the SMS submission command.

Query account credit (cred.php)

URL:

<https://www.smsbullet.com.au/cred.php>

Synopsis:

Returns a *numeric* value representing the account's available credit.

Arguments:

u,p <string>Account identification (username and password)

Scheduled jobs info and cancellation (smsg.php)

URL:

<https://www.smsbullet.com.au/smsg.php>

Synopsis:

List scheduled jobs or cancel an existing scheduled job.

Arguments:

u,p <string>Account identification
d [integer]If specified, the job ID identified by "d" will be cancelled

Example requests:

u=SMS00000&p=secret *list all scheduled jobs*
u=SMS00000&p=secret&d=133 *delete job ID 133*

Note: A scheduled job cannot be deleted if the remaining time is less than 3 minutes.

Job cost calculator (msgcost.php)

URL:

<https://www.smsbullet.com.au/msgcost.php>

Synopsis:

Request an evaluation of the total cost of an SMS transmission before the actual sending is made. This cost depends on a variety of factors, such as the home network of each number, the number's reachability, as well as the account's settings.

Arguments:

u, p <string>Account identification (username and password)
d <numbers> Destination number(s)

Example request:

u=VSMS0000&p=secret&d=0412000001,0419000002

Server response:

The server will return a number representing the total cost in credits of a one-message transmission to the number(s) supplied in the request.

Notes:

- the job cost estimation assumes a 100% success rate and does not take into account run-time options such as origin customization (the "o" flag in the SMS interface)

References

Essential reading

GSM 03.38 'Alphabets and language-specific information'

- section 6.2 contains the list of characters allowed in 7-bit (text) SMS messages

GSM 03.40 'Technical realization of the Short Message Service (SMS) point-to-point (PP)'

- section 9.2.3.24 describes the User Data Header (UDH) syntax, including information on sending large (concatenated) messages

Nokia Smart Messaging specification:

- local copy at: http://www.streetdata.com.au/download/sms3_0_0.pdf

More information

This section provides links to public online resources, not affiliated with or endorsed by SMSBullet. These links are provided in the hope that they will be useful, but without any warranty of accuracy or fitness for a particular purpose.

Information:

- for information on SMS/WAP/MMS specifications, see the Open Mobile Alliance Website at <http://www.openmobilealliance.org>
- GSM specification documents can be downloaded from the European Telecommunication Standards Institute (ETSI): <http://pda.etsi.org/pda/queryform.asp>

Conversion utilites:

- free online ringtone converter: <http://www.convert-ringtones.com>
- ASCII converter: <http://www.onlineconversion.com/asciengine.htm>
- timestamp converter: http://www.onlineconversion.com/unix_time.htm

Additional information and practical examples

Common data ports

Service	Source	Destination
Nokia business card	226	226
Nokia calendar	228	228
Nokia ringtone	5505	5505
Nokia operator logo	5506	5506
Nokia group icon	5507	5507
Nokia picture message	5514	5514
Nokia TTML	5580	5580

For more information regarding ports and data formats, please refer to the phone manufacturer's information.

Warning: Some documentation gives the port numbers in hexadecimal notation. Please be aware that the HTTPS API requires the ports to be specified in decimal.

3rd party ringtone conversion for binary sending

- create a file with your ringtone in a format of your choice
- go to <http://www.convert-ringtones.com/> (This website is not affiliated or endorsed by SMSBullet. There is no warranty on the services that this organisation or its website provide)
- scroll down to "input and requirements"
- change your filename's extension to match the site's naming convention
- ignore Windows' warning about the file becoming unusable
- click "browse" under "input and requirements", select your file
- click "convert!" and wait for a few seconds for the process to complete
- save the ZIP file to disk when prompted, ignore warnings if any
- close your browser
- open the ZIP file in WinZip or Windows Explorer (recent versions).

The following steps are for Nokia phones only, for other brands select the format that matches the phone type.

- select the file named (filename).nokia, write down the size -- this will be your bl parameter
- extract the file named (filename).noktxt -- the content of this file will be your m parameter (one single line, no spacing or word-wrapping)

Using the previously obtained bl and m parameters, submit the message as documented and remember to set your sp and dp parameters to 5505 if using port mode, or prepend a UDH header (06050415811581) if using UDH mode.

Document No.	Rev.	Date
5001	8.3	2008/01/16