



## SMS Gateway

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### I. General Information

In addition to [SMS Matrix](http://www.smsmatrix.com) web (GUI) based SMS/Voice messaging platform, SMS Matrix also offers the SMS/TTS/Voice Gateway.

Matrix SMS Gateway provides an easy way to integrate SMS capabilities with your IT system, be it a simple website or a complex messaging or alerting system. It allows to deliver SMS, TTS and Voice messages to phone numbers **around the world**. SMS Matrix provides coverage to all countries.

SMS Matrix Gateway is extremely reliable and developer friendly; it handles either simple HTTP/HTTPS Post or XML access, which allows usage of any programming language capable of making HTTP posts. So far, access to Matrix SMS Gateway has been successfully implemented and tested with the following programming languages: PHP, Perl, Java, C#, Python, C.

If in doubt, please refer to Perl examples, as they were most thoroughly tested.

Because our service is focused on the North American market, we can provide really easy to use API, and much better customer support than our competition.

SMS Text messages in the Unicode (utf-8) are supported, as long as wireless carrier and phone receiver support given language. When the Unicode is used, most of Asian languages, including Chinese, are supported.

Text to Speech (TTS) and Voice messaging, however not being a part of the 'SMS' functionality, are also covered in this document.

Technical Support for the SMS Gateway is available at this email address: [support@smsmatrix.com](mailto:support@smsmatrix.com)

### II. Basic API Functions

Matrix SMS/TTS/Voice Gateway provides the following **API functions**, all available via HTTP/HTTPS calls:

- **Send SMS Message**
- **Send TTS Message**
- **Send Voice Message**
- **Query Message Status**
- **Cellular Carrier Lookup**
- **Query Account Balance**
- **Query Message Fee**

## ● Send SMS Message

HTTP/HTTPS call:

**URL:** <http://www.smsmatrix.com/matrix>

**METHOD:** POST

**POST VARIABLES:**

username:	Account user name (login) – an email address
password:	Account password
phone:	phone number, or comma delimited list of phone numbers
group:	group name (as defined in GUI/Groups)
txt:	Text of the SMS message to be sent
tts:	0 or 1 [optional, default 0]

Either '**phone**' or '**group**' variable has to be specified (but not both).

'**Phone**' variable will also accept email addresses (besides numeric phone numbers) for email delivery.

If '**tts**' variable is set to 1, system will automatically check if provided phone number is mobile or land-line, so appropriate message (SMS or TTS) will be sent. Otherwise, sending SMS to land-line numbers will result in failure. This feature only works for USA/CAN numbers.

**Return value:** For each phone number provided in the request, the following text entry is returned:

```
PIN=NNNNNNNNNN
ID=TTTTTTTTTTTT
STATUSCODE=NNN
STATUSTXT=TTTTTTTTTTTTTTTTTTTTTTTTTTTT
TIMESTAMP=NNNNNNNNNN
```

Each line ends with '\n' character. There is no '\r' character.

**ID** represents unique string assigned by the Gateway to this SMS message.

It is needed when the status of the message is queried.

**STATUSCODE** represents three digit error/success code. See **Error Codes** at the end of this document. Generally any status code from 0 to 399 means success.

**STATUSTXT** represents textual error/success description, such as 'OK MESSAGE QUEUED'

**TIMESTAMP** represents a [time](#) – number of seconds since January 1<sup>st</sup>, 1970.

## ● Send TTS Message

HTTP/HTTPS call:

**URL:** [http://www.smsmatrix.com/matrix\\_tts](http://www.smsmatrix.com/matrix_tts)

**METHOD:** POST

**POST VARIABLES:**

username:	Account user name (login) – an email address
password:	Account password
phone:	phone number
callerid:	Optional, 'caller id' phone number
gender:	Optional, 'male' or 'female' (default)
response:	Optional, 1 or 0, see next chapter
txt:	Text of the SMS message to be sent

**Return value:** The following text entry is returned:

```
ID=TTTTTTTTTTTTTTT
STATUSCODE=NNN
STATUSTXT=TTTTTTTTTTTTTTTTTTTTTTTTTTT
TIMESTAMP=NNNNNNNNNNN
```

Each line ends with '\n' character. There is no '\r' character.

**ID** represents unique string assigned by the Gateway to this SMS message.

It is needed when the status of the message is queried.

**STATUSCODE** represents three digit error/success code. See **Error Codes** at the end of this document. Generally any status code from 0 to 399 means success.

**STATUSTXT** represents textual error/success description, such as 'OK MESSAGE QUEUED'

**TIMESTAMP** represents a [time](#) – number of seconds since January 1<sup>st</sup>, 1970.

### ● Send Voice Message

HTTP/HTTPS call:

**URL:** [http://www.smsmatrix.com/matrix\\_voice](http://www.smsmatrix.com/matrix_voice)

**METHOD:** POST

Content-Type: form-data

**POST VARIABLES:**

username: Account user name (login) – an email address

password: Account password

phone: phone number (or comma delimited list)

callerid: Optional, 'caller id' phone number

response: Optional, 1 or 0, see next chapter

voicefile: wave or mp3 file

**Return value:** For each phone number provided in the request, the following text entry is returned:

```
ID=TTTTTTTTTTTTTTT
STATUSCODE=NNN
STATUSTXT=TTTTTTTTTTTTTTTTTTTTTTTTTTT
TIMESTAMP=NNNNNNNNNNN
```

Each line ends with '\n' character. There is no '\r' character.

**ID** represents unique string assigned by the Gateway to this Voice message.

It is needed when the status of the message is queried.

**STATUSCODE** represents three digit error/success code. See **Error Codes** at the end of this document. Generally any status code from 0 to 399 means success.

**STATUSTXT** represents textual error/success description, such as 'OK MESSAGE QUEUED'

**RESPONSE** represents recipients response (a digit pressed), see next chapter for details

**TIMESTAMP** represents a [time](#) – number of seconds since January 1<sup>st</sup>, 1970.

### ● Send Voice Message using voice URL

HTTP/HTTPS call:

**URL:** [http://www.smsmatrix.com/matrix\\_voicew](http://www.smsmatrix.com/matrix_voicew)

**METHOD:** POST

**POST VARIABLES:**

username:	Account user name (login) – an email address
password:	Account password
phone:	phone number (or comma delimited list)
callerid:	Optional, 10 digit 'caller id' phone number
voiceurl:	url of the voice file
response:	Optional, 1 or 0, see next chapter

**Return value:** For each phone number provided in the request, the following text entry is returned:

```
ID=TTTTTTTTTTTTTT
STATUSCODE=NNN
STATUSTXT=TTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
TIMESTAMP=NNNNNNNNNN
```

Each line ends with '\n' character. There is no '\r' character.

**ID** represents unique string assigned by the Gateway to this Voice message. It is needed when the status of the message is queried.

**STATUSCODE** represents three digit error/success code. See **Error Codes** at the end of this document. Generally any status code from 0 to 399 means success.

**STATUSTXT** represents textual error/success description, such as 'OK MESSAGE QUEUED'

**RESPONSE** represents recipients response (a digit pressed), see next chapter for details

**TIMESTAMP** represents a [time](#) – number of seconds since January 1<sup>st</sup>, 1970.

## ● Send Combined: Voice and TTS Message

HTTP/HTTPS call:

**URL:** [http://www.smsmatrix.com/matrix\\_vtts](http://www.smsmatrix.com/matrix_vtts)

**METHOD:** POST

**CONTENT\_TYPE:** application/json

**POST VARIABLES:** none

**JSON BODY:**

```
{
  "username": Account user name (login) – an email address
  "password": Account password
  "phone": Phone number (or comma delimited list)
  "language": "us" or "es" (optional)
  "gender": "female" or "male" (optional)
  "callerid": Phone number (optional)
  "response": 0 or 1 (optional)
  "msg": list of entries (voice URL or Text) – see example below
}
```

**Return value:** For each phone number provided in the request, the following text entry is returned:

```
ID=TTTTTTTTTTTTTT
STATUSCODE=NNN
STATUSTXT=TTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
TIMESTAMP=NNNNNNNNNN
```

## ● Query Message Status

HTTP/HTTPS call:

**URL:** [http://www.smsmatrix.com/matrix\\_status](http://www.smsmatrix.com/matrix_status)

**METHOD:** POST

**POST VARIABLES:**

username:	Account user name (login) – an email address
password:	Account password
id:	Message ID returned by /matrix call

**Return value:** The following text entry is returned:

```
ID=TTTTTTTTTTTTTTT
STATUS=NNN
TIMEZONE=PDT
RESPONSE=N
STATUSTXT=TTTTTTTTTTTTTTTTTTTTTTTTTTT
TIMESTAMP=NNNNNNNNNNN
```

Each line ends with '\n' character. There is no '\r' character.

**ID** represents unique string assigned by the Gateway to this SMS message.

**STATUS** represents three digit error/success code. See **Error Codes** at the end of this document. Generally any status code from 0 to 399 means success.

**STATUSTXT** represents textual error/success description, such as 'OK MESSAGE QUEUED'

**RESPONSE** represents recipients response (a digit pressed), see next chapter for details

**TIMESTAMP** represents a [time](#) – number of seconds since January 1<sup>st</sup>, 1970.

## ● Cellular Carrier Lookup

HTTP/HTTPS call:

**URL:** <http://www.smsmatrix.com/carrier>

**METHOD:** POST

**POST VARIABLES:**

username:	Account user name (login) – an email address
password:	Account password
phone:	10 digit North American cell phone number

**Return value:** The following text entry is returned:

```
CARRIER=TTTTTTTTTTTTTTT
```

Function returns cellular carrier's name, if resolved. If name can not be resolved, strings

UNKNOWN or ERROR will be returned, e.g. CARRIER=UNKNOWN

Current list of supported (for lookup) cellular carriers is available at this address:

<http://www.smsmatrix.com/?sms-carriers>

### ● Query Account Balance

HTTP/HTTPS call:

**URL:** <http://www.smsmatrix.com/balance>

**METHOD:** POST

**POST VARIABLES:**

username: Account user name (login) – an email address  
password: Account password

**Return value:** The following text entry is returned:

BALANCE=NNN

Function returns number of credits in user's account. If the balance can not be retrieved, string ERROR will be returned, e.g. BALANCE=ERROR

### ● Query Message Fee

HTTP/HTTPS call:

**URL:** [http://www.smsmatrix.com/voice\\_rate](http://www.smsmatrix.com/voice_rate)

or **URL:** [http://www.smsmatrix.com/sms\\_rate](http://www.smsmatrix.com/sms_rate)

or **URL:** [http://www.smsmatrix.com/tts\\_rate](http://www.smsmatrix.com/tts_rate)

**METHOD:** POST

**POST VARIABLES:**

phone: Phone number (e.g. 12506546544 or 48774752834)

**Return value:** The following text entry is returned:

VOICE\_RATE=NNN

or SMS\_RATE=NNN

or TTS\_RATE=NNN

Function returns number of credits needed to send message to given phone number. If this phone number is invalid or not supported, applicable string will be returned, e.g. VOICE\_RATE=NOT SUPPORTED

### III. Optional parameters for Voice and TTS calls

All functions for sending **voice and text to speech** messages support additional, optional parameters.

- **callerid** – caller's phone number. This number should include country code, e.g. 16042349876
- **repeat** – if set to 1, the recipient will be offered an option to “Press 1 repeat this message or hung up”. This option is especially useful for TTS messages, in which case recipients may not be able to understand well the words being spoken, and they would like to listen again to the message.
- **response** – if set to 1, system will allow the recipient to press a digit on the phone as a response to the message received. For example, you may want to send a message of this kind: ***“Hello Adam, this is dentist Kamranakis. You have an appointment with me, Tuesday, 9am. Press 1 to confirm your appointment or press 2 to cancel. Press 9 to repeat this message.”***

If recipient presses something (any number on the keypad), our system will capture this response, and it will indicate it in the message status. Typical message status may look like this: ***“Voice call answered, duration 18 seconds. R = 1”***.

The response digit will be also returned by Query Message Status (matrix\_status()) call.

Please remember than '9' is reserved for 'repeat this message' function, so it should not be used for any other purpose.

If this option is set to 1, the 'repeat' option (if set) will be ignored.

- **language** – optional and valid only for TTS messages, can be set to 'us' or 'es' for American English or American Spanish languages respectively. Case sensitive. If not specified, the default language will be set to 'us'.
- **gender** – optional and valid only for TTS messages, can be set to 'male' or 'female'. If not specified, the gender will be set to 'female'. Case sensitive.

At present time, all Gateway calls do work via HTTP Post and Get, however only Post will be supported in the future.

However the parameter name for phone number, in all Gateway calls, is set to '**phone**', for the compatibility with previous versions of the API, name '**pin**' can be used instead.

#### IV. Two Way messaging for Voice/TTS – Capturing Recipient's Response

It is possible to send voice or text-to-speech message, that would ask the recipient to make a choice by pressing a number on the dial.

- For instance, a dentist would like to send a message - **appointment reminder**:

*"Hello, this is dentist Adam Smith. Press 1 to confirm your appointment tomorrow at 9am, or press 2 to cancel the appointment.  
Press 9 to repeat this message."*

- Or a car serviceman wants to ask if his customers are happy:

*"Hello, this is your Toyota Service in Cleveland.  
You visited us last week. We would like to know if were happy with the service we provided.  
Press 1 if you were happy, or press 2 if you were not.  
Press 9 to repeat this message."*

If '**response**' field is set to 1, our system will deliver voice or TTS message, and it will wait and capture recipient's response. If '**reponse**' field is not set, no response will be expected nor captured.

The recipient would listen to the message, and then press 1 or 2.

The number pressed will later show up in the message status, so it will be easy for the sender to see the actual recipient's response.

'9' is always reserved for the 'repeat this message', it should not be used it for other purposes.

When sender checks the status of the message in the 'History', the status of the message will include the information what key (digit) was pressed by the recipient.

Example of the message status: *"Voice call answered, duration 18 seconds. R = 1"*

It means that recipient pressed '1' in a response to the message (e. g. appointment was confirmed).

## V. Examples in Perl

### Send SMS Message Perl Example

```
use LWP::UserAgent;
use HTTP::Request::Common;

my $ua = LWP::UserAgent->new();
my $res = $ua->request
(
    POST 'http://www.smsmatrix.com/matrix',
    Content_Type => 'application/x-www-form-urlencoded',
    Content      => [ 'username' => 'user66@yahoo.com',
                    'password' => 'pass7878',
                    'phone'    => '12506063167,12508763211',
                    'txt'      => 'This is a test, pls ignore' ]
);
if ($res->is_error) { die "HTTP Error\n"; }
print "Matrix API Response: " . $res->content . "\n\n";
```

### Send TTS Message Perl Example

```
use LWP::UserAgent;
use HTTP::Request::Common;

my $ua = LWP::UserAgent->new();
my $res = $ua->request
(
    POST 'http://www.smsmatrix.com/matrix_tts',
    Content_Type => 'application/x-www-form-urlencoded',
    Content      => [ 'username' => 'user@hotmail.com',
                    'password' => 'pass2727',
                    'phone'    => '12506063167',
                    'response' => 0,
                    'txt'      => 'Adam, web server is down' ]
);

if ($res->is_error) { die "HTTP Error\n"; }
print "Matrix API Response: " . $res->content . "\n\n";
```

### Send Voice Message Perl Example

```
use LWP::UserAgent;
use HTTP::Request::Common;

my $ua = new LWP::UserAgent;
my $res = $ua->request
(
    POST 'http://www.smsmatrix.com/matrix_voice',
    Content_Type => 'form-data',
    Content      => [ username => 'user@hotmail.com',
                    password => 'pass72727',
                    phone    => '12502795621',
                    voicefile => ['/sounds/nov2009/sale2_2.wav'],
                    callerid => '6308891723' ## optional ]
);

if ($res->is_error) { die "HTTP Error\n"; }
print "Matrix API Response: " . $res->content . "\n\n";
```

## ● Send Voice Message with voice URL Perl Example

```
use LWP::UserAgent;
use HTTP::Request::Common;

my $ua = new LWP::UserAgent;
my $res = $ua->request
(
    POST 'http://www.smsmatrix.com/matrix_voicew',
    Content_Type => 'application/x-www-form-urlencoded',
    Content      => [
        username => 'user@hotmail.com',
        password => 'pass72727',
        phone    => '12502795621',
        voiceurl => 'http://www.myweb.ca/sounds/welcome1.mp3',
        response => 1,
        callerid => '6308891723' ## optional
    ]
);
if ($res->is_error) { die "HTTP Error\n"; }
print "Matrix API Response: " . $res->content . "\n\n";
```

## ● Query Message Status Perl Example

```
use LWP::UserAgent;
use HTTP::Request::Common;

my $ua = new LWP::UserAgent;
my $res = $ua->request
(
    POST 'http://www.smsmatrix.com/matrix_status',
    Content_Type => 'application/x-www-form-urlencoded',
    Content      => [
        username => 'user@hotmail.com',
        password => 'pass72727',
        id       => 'a876f1267536589be789effa879'
    ]
);
if ($res->is_error) { die "HTTP Error\n"; }
print "Matrix API Response: " . $res->content . "\n\n";
```

## ● Send Combined: Voice and TTS Message Perl example

```
use LWP::UserAgent;
use HTTP::Request::Common;
use JSON();

my $msg =
{
    username => 'user55@hotmail.com',
    password => 'mypass',
    phone    => '12502012503',      # comma delimited list
    language => 'us',              # optional
    gender   => 'male',            # optional
    callerid => '12501112233',     # optional
    response => 0,                 # optional
    msg      => [ 'http://www.myserver.com/voices/welcome_prompt.wav',
                 'This text will be converted to voice by TTS engine.',
                 'http://www.myserver.com/voices/segment2.mp3' ]
};

my $ua = new LWP::UserAgent;
my $res = $ua->request
(
    POST 'http://www.smsmatrix.com/matrix_vtts',
    Content_Type => 'application/json',
    Content      => JSON::to_json ($msg)
);
if ($res->is_error) { die "HTTP Error\n"; }
print "Matrix API Response:\n" . $res->content . "\n\n";
```

## ● Cellular Carrier Lookup Perl Example

```
use LWP::UserAgent;
use HTTP::Request::Common;

my $ua = LWP::UserAgent->new();
my $res = $ua->request
(
    POST 'http://www.smsmatrix.com/carrier',
    Content_Type => 'application/x-www-form-urlencoded',
    Content      => [ 'username' => 'user78@yahoo.ca',
                    'password' => 'passui8888',
                    'phone'    => '2504447766' ]
);
if ($res->is_error) { die "HTTP Error\n"; }
print "Matrix API Response: " . $res->content . "\n\n";
```

## ● Query Account Balance

```
use LWP::UserAgent;
use HTTP::Request::Common;

my $ua = LWP::UserAgent->new();
my $res = $ua->request
(
    POST 'http://www.smsmatrix.com/balance',
    Content_Type => 'application/x-www-form-urlencoded',
    Content      => [ 'username' => 'user77@gmail.com',
                    'password' => 'mypass' ]
);
if ($res->is_error) { die "HTTP Error\n"; }
print "Matrix API Response: " . $res->content . "\n\n";
```

## ● Query Message Rate

```
use LWP::UserAgent;
use HTTP::Request::Common;

my $ua = LWP::UserAgent->new();
my $res = $ua->request
(
    POST 'http://www.smsmatrix.com/sms_rate',
    Content_Type => 'application/x-www-form-urlencoded',
    Content      => [ 'phone' => '12506053342' ]
);
if ($res->is_error) { die "HTTP Error\n"; }
print "Matrix API Response: " . $res->content . "\n\n";
```

## VI. Other Examples

### Send SMS Message PHP Example

```
<?php
$URL = 'http://www.smsmatrix.com/matrix';
$PIN = '12506063167'; // comma separated list of phone numbers
// $PIN = '12506063167,12508763211';
$USERNAME = urlencode ('user@hotmail.com');
$PASSWORD = urlencode ('pass72727');
$TXT = urlencode ('This is a test, pls ignore');

$Q = "$URL?username=$USERNAME&password=$PASSWORD&pin=$PIN&txt=$TXT";

$res = implode ('', file ($Q));
echo "Matrix API Response :\n$res\n";
?>
```

### Send SMS Message Java Example

```
try
{
    String MATRIXURL = "http://www.smsmatrix.com/matrix";
    String PIN = "12506063167";
    String USERNAME = "user@hotmail.com";
    String PASSWORD = "pass72727";
    String TXT = "This is a test, pls ignore";

    String q = "username=" + URLEncoder.encode (USERNAME, "UTF-8");
    q += "&" + "password=" + URLEncoder.encode (PASSWORD, "UTF-8");
    q += "&" + "pin=" + PIN;
    q += "&" + "txt=" + URLEncoder.encode (TXT, "UTF-8");

    URL url = new URL (MATRIXURL);
    URLConnection conn = url.openConnection();
    conn.setDoOutput (true);
    OutputStreamWriter wr = new OutputStreamWriter (conn.getOutputStream());
    wr.write (q);
    wr.flush();

    BufferedReader rd = new BufferedReader (new InputStreamReader (conn.getInputStream()));
    String line;
    System.out.println ("Matrix API Response :");
    while ((line = rd.readLine()) != null) { System.out.println (line); }
    wr.close();
    rd.close();
} catch (Exception e) { }
```

## ● Send SMS Message C# Example

```
string MATRIXURL = "http://www.smsmatrix.com/matrix";
string PIN = "12506063167";
string USERNAME = Server.UrlEncode ("user@hotmail.com");
string PASSWORD = Server.UrlEncode ("pass72727");
string TXT = Server.UrlEncode ("This is a test, pls ignore");

string q = "username=" + USERNAME +
"&password=" + PASSWORD +
"&pin=" + PIN +
"&txt=" + TXT;

HttpWebRequest req = (HttpWebRequest)WebRequest.Create (MATRIXURL);
req.Method = "POST";
req.ContentType = "application/x-www-form-urlencoded";
req.ContentLength = q.Length;

StreamWriter streamOut = new StreamWriter(req.GetRequestStream(), System.Text.Encoding.ASCII);
streamOut.Write (q);
streamOut.Close();

StreamReader streamIn = new StreamReader(req.GetResponse().GetResponseStream());
string res = streamIn.ReadToEnd();
Console.WriteLine ("Matrix API Response:\n" + res);
streamIn.Close();
```

## VII. Error Codes

The following numerical values are returned as STATUS:

```
200 - OK

404 - ACCOUNT OR USER DOES NOT EXIST
502 - PIN IN DO NOT CALL DATABASE
503 - INSUFFICIENT BALANCE
504 - DATABASE ERROR
505 - USER NOT FOUND OR WRONG PASSWORD
506 - ACCOUNT NOT ACTIVE
507 - DATABASE ERROR
508 - DATABASE ERROR
510 - INVALID USERNAME
511 - INVALID TXT
512 - INVALID PASSWORD
513 - INVALID PIN
520 - ERROR PARSING XML
```

All values from 0 - 399 (inclusive) mean success, all other values mean failure.

## VIII. Incoming SMS (Virtual Mobile Phone Number)

For all incoming SMS messages (when using virtual mobile phone number feature), our system can submit HTTP POST to an URL associated with the number.

The following data (HTTP POST variables) will be submitted:

```
phonefrom : phone number of the sender
phoneto   : virtual phone number
id        : unique alphanumerical ID
orgserver : our hostname (usually www.smsmatrix.com)
timestamp : UNIX timestamp (PST)
txt       : body of the SMS
```