

API

Messaging REST API

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Preface

Intended Audience

This guide is part of the Inventive Labs SMS Cloud services. It is intended for use by application developers that wish to integrate their applications with our SMS services. This guide describes a way to use our SMS services using a REST API. You can also integrate with our services using our C# Voice Elements Client which does not require this document. The Voice Elements documentation is separate to this document.

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Document History

Paper copies are valid only on the day they are printed. Contact the author if you are in any doubt about the accuracy of this document.

Revision History

This document has been revised by:

Revision Number	Revision Date	Summary of Changes	Author
v1	9-10-2018	Initial Document	Lisa Comstock
V2	4-15-2020	New commands	Ron Tanner

Reference Documents

Please see the following documents for more information:

Document Name	Version	Author
Main Web Site	www.voiceelements.com	
Various support docs	www.voiceelements.com/docs	

1. Overview

The REST APIs provide programmatic access to send and receive SMS messages through the Inventive Labs Cloud. The REST API identifies valid commands and users using an API token that can be obtained and changed via our customer portal. (<https://customer.voiceelements.com>) All responses are in JSON format.

The API is a Web API which uses the HTTPS protocol for all communications.

For events back to your application we will POST JSON messages back to your Web API. (WebHooks). You specify your URL and Authorization information using our customer portal.

Example events would be:

- Incoming SMS Text
- Delivery Report on Outgoing SMS Text

This documentation will give you some overall tips on authentication and making the REST calls and then detail each available REST call available

1.1. Conventions

We use the following conventions in this document:

- Responses are listed under 'Responses' for each method.
- Responses are in JSON format.
- Request parameters are mandatory unless explicitly marked as Optional.
- The type of values accepted for a request parameter are shown the **values** column.
- The | symbol means OR.

1.2. Schema

All API access is over HTTPS, and accessed from the <https://ivlrest.voiceelements.com>.

All data is sent and received as JSON.

All timestamps are returned in ISO 8601 format: YYYY-MM-DDTHH:MM:SSZ

Summary Representations - When you fetch a list of resources, the response includes a subset of the attributes for that resource. This is the "summary" representation of the resource.

Detailed Representations - When you fetch an individual resource, the response typically includes all attributes for that resource. This is the "detailed" representation of the resource.

1.3. HTTP Requests

API requests must be written as HTTP requests, and include the following components:

- **HTTP Method:** Describes the type of HTTP action (POST, GET, PUT or DELETE)
- **URL:** Describes the resource you are creating or accessing, along with any optional arguments
- **HTTP Headers:** Specifies attributes of the request, including authentication, encoding and request format
- **Request Body:** Describes resources or specifies a call-control script (The JSON request)

1.4. HTTP Methods

Identify the methods used in this document.

The [Name] API supports POST, GET, PUT and DELETE HTTP methods.

1.4.1. POST

Updates an existing resource. Most of the commands in the API are of this variety

Example:

```
POST /v1/sendsms
```

Sends a message

1.4.2. GET

Retrieves an existing resource or returns a list of things.

Example:

```
GET /v1/ListNumbers
```

Retrieves a list of phone numbers assigned to your account

1.5. Authentication

You must obtain an Authorization API token before you can use the system. This token is obtained through our customer portal at customer.voiceelements.com. The customer portal also allows you to obtain a new API token. When you update your API token, the previous token is immediately invalidated. We recommend that you periodically change your API Token. Find it here: Settings / API Keys. Then select the "RestAPI" tab. The token is at the bottom of the page. It is called API Token.

Your API token must go in the HTTP Headers:

```
Token: <Your API Token>
```

Example:

```
Token: 9767fa78-ec88-9133-99d7-b9cffb594444
```

Requests that fail authentication will return 403 Forbidden.

There are many browser-based REST client applications or extensions that you can use to test this API. In these apps, you can set the URL, select the method, put in the headers and data and Send. Very easy to use and makes it very easy to get started. A very popular one is "Postman".

1.6. URL Format

The API URL uses the following format:

```
https://ivlrest.voiceelements.com/v1/<MethodName>
```

Example:

```
POST https://ivlrest.voiceelements.com/v1/SendSMS
```

2. API Reference Documentation

2.1. Messaging Overview

Method	Purpose
SendSms	Send an outgoing text message
ListMyNumbers	List numbers currently assigned to your account
ListAvailableNumbersByPrefix	List phone numbers available that can be assigned to your account. (By Area Code)
AssignNumber	Assign a phone number to your account
ReturnNumber	Remove a phone number from your account (Disconnect)

2.2. SendSms

This method sends an SMS (Text) message using your account. Your account is identified by the Token that you send in the HTTP Header.

Method	URL
POST	https://ivlrest.voiceelements.com/v1/SendSMS

2.2.1 Parameters

Name	Type	Description	Required
toNumber	string	Phone to send SMS TO	Yes
fromNumber	string	Which number in your account the text is coming from.	Yes
Text	string	The message to send	Yes
customerTag	string	When you get delivery post backs, this will be included so that you can match to your database	No
media	array	MMS media sources to send. You can post any URL that is accessible from the general Internet OR if you want the image secure use UploadMedia API Call	No

		Example: "media":["https://s3.amazonaws.com/bw-v2-api/demo.jpg"]	
--	--	--	--

SAMPLE JSON POST DATA:

```
{
  "toNumber": "3035551212",
  "fromNumber": "6025551212",
  "text": "Your text here",
  "customerTag": ""
}
```

2.2.2 Response

```
{
  "status": string,
  "reason": string,
  "customerTag": string,
  "trackingId": long
}
```

Name	Type	Description
status	string	Error code (see appendix) = "0" if success
reason	string	Error description (see appendix) "Success" on successful transaction.
customerTag	string	Your customerTag returned
trackingId	Long	The message identifier in our system.

2.2.3 Sample Request

POST <https://ivlrest.voiceelements.com/v1/SendSMS>

HTTP Header: token: 9767fa78-ec88-9133-99d7-b9cffb594444

SAMPLE JSON POST DATA:

```
{
  "toNumber": "3035551212",
  "fromNumber": "6025551212",
  "text": "Your text here",
  "customerTag": "mytag"
}
```

2.2.4 Sample Response

If successful, returns the HTTP status of 200 and a transaction object.

```
{
  "status": "0",
  "reason": "Success",
  "customerTag": "mytag",
  "trackingId": "669915"
}
```

Status	Response
200	<pre>{ "status": "0", "reason": "Success", "customerTag": "mytag", "trackingId": "669915" }</pre>
	See section 3 and 4 for error return codes

2.3 ListMyNumbers

This method lists all of the SMS numbers on your account

Method	URL
GET	https://ivlrest.voiceelements.com/v1/ListMyNumbers

2.3.1 Parameters

Name	Type	Description	Required
None			

2.3.2 Response

```
{
  "status": string,
  "reason": string,
  "numbers": string[]
}
```

Name	Type	Description
status	string	Error code (see appendix) = "0" if success
reason	string	Error description (see appendix) "Success" on successful transaction.
numbers	String[]	The active phone numbers in your account

2.3.3 Sample Request

GET <https://ivlrest.voiceelements.com/v1/ListMyNumbers>

HTTP Header: token: 9767fa78-ec88-9133-99d7-b9cffb594444

2.3.4 Sample Response

If successful, returns the HTTP status of 200 and a transaction object.

```
{  
  "status": "0",  
  "reason": "Success",  
  "numbers": ["7205757673"]  
}
```

Status	Response
200	{"status": "0", "reason": "Success", "numbers": ["7205757673"]}
	See section 3 and 4 for error return codes

2.4 ListAvailableNumbersByPrefix

This method returns new available phone numbers that you can assign to your account. You specify the area code (prefix) that you want the phone number in.

Method	URL
GET	https://ivlrest.voiceelements.com/v1/ListAvailableNumbersByPrefix?Prefix=xxx

2.4.1 Parameters

Name	Type	Description	Required
Prefix	String	3 digit area code where you want to find numbers. Not all area codes are available.	Yes.

2.4.2 Response

```
{
  "status": string,
  "reason": string,
  "numbers": string[]
}
```

Name	Type	Description
status	string	Error code (see appendix) = "0" if success
reason	string	Error description (see appendix) "Success" on successful transaction.
numbers	array	List of available phone numbers in the requested area code. If there are no numbers available in your selected area code it will return and empty array. In the event there are no numbers, try a different area code. A maximum of 1000 numbers will be returned.

2.4.3 Sample Request

```
GET
https://ivlrest.voiceelements.com/v1/ListAvailableNumbersByPrefix?P
refix=720
HTTP Header: token: 9767fa78-ec88-9133-99d7-b9cffb594444
```

2.4.4 Sample Response

If successful, returns the HTTP status of 200 and a transaction object.

```
{
  "status": "0",
  "reason": "Success",
  "numbers": ["4253126520", "4253126526", "4253127774", "4253157150"]
}
```

Status	Response
200	{"status": "0", "reason": "Success", "numbers": ["4253126520", "4253157150"]}
	See section 3 and 4 for error return codes

2.5 ListAvailableNumbersByCity

This method returns a list of cities by area code that have available new phone numbers. It includes a count of available numbers and the list of the actual telephone numbers that you can assign to your account. You specify the area code (prefix) that you want the list of cities that have phone numbers.

Method	URL
GET	https://ivlrest.voiceelements.com/v1/ListAvailableNumbersByCity?AreaCode=xxx

2.5.1 Parameters

Name	Type	Description	Required
AreaCode	String	3 digit area code where you want to find numbers. Some area codes will not have available numbers.	Yes.

2.5.2 Response

```
{
  "status": string,
  "reason": string,
  "availableCities": [
    {
      "city": string,
      "totalAvailable": int,
      "numbers": [string, string, etc ]
    },
    ...
  ]
}
```

Name	Type	Description
status	string	Error code (see appendix) = "0" if success

reason	string	Error description (see appendix "Success" on successful transaction).
availableCities	array	List of city, totalAvailable, List of numbers

2.5.3 Sample Request

GET

<https://ivlrest.voiceelements.com/v1/ListAvailableNumbersByCity?AreaCode=303>

HTTP Header: token: 9767fa78-ec88-9133-99d7-b9cffb594444

2.5.4 Sample Response

If successful, returns the HTTP status of 200 and a transaction object.

```
{
  "status": "0",
  "reason": "Success",
  "availableCities": [
    {
      "city": "NORTH PHOENIX",
      "totalAvailable": 3,
      "numbers": [
        "6026400552",
        "6026400598",
        "6026400901"
      ]
    },
    {
      "city": "PHOENIX",
      "totalAvailable": 2,
      "numbers": [
        "6026491037",
        "6029106295"
      ]
    }
  ]
}
```

```

    }
  ]
}

```

Status	Response
200	{"status":"0","reason":"Success","availableCities":[{"city":"NORTH PHOENIX","totalAvailable":3,"numbers":["6026400552","6026400598","6026400901"]}, {"city":"PHOENIX","totalAvailable":2,"numbers":["6026491210","6026491211"]}]}
	See section 3 and 4 for error return codes

2.6 AssignNumber

This method assigns a phone number to your account and activates it for voice and SMS. The number must be available as listed in the ListAvailableNumbersByPrefix

Method	URL
GET	https://ivlrest.voiceelements.com/v1/AssignNumber?Number=xxxxxxxxxx

2.6.1 Parameters

Name	Type	Description	Required
Number	String	An available phone number as returned in the ListAvailableNumbersByPrefix array. It is possible for this method to fail if someone else assigns the number before you do.	Yes.

2.6.2 Response

```
{
  "status": string,
  "reason": string
}
```

Name	Type	Description
status	string	Error code (see appendix) = "0" if success
reason	string	Error description (see appendix) "Success" on successful transaction.

2.6.3 Sample Request

```
GET
https://ivlrest.voiceelements.com/v1/AssignNumber?Number=3035551212
HTTP Header: token: 9767fa78-ec88-9133-99d7-b9cffb594444
```

2.6.4 Sample Response

If successful, returns the HTTP status of 200 and a transaction object.

```
{  
  "status": "0",  
  "reason": "Success"  
}
```

Status	Response
200	{"status": "0", "reason": "Success"}
	See section 3 and 4 for error return codes

2.7 ReturnNumber

This method returns (disconnects) a phone number that is already assigned to your account.

Method	URL
GET	https://ivlrest.voiceelements.com/v1/ReturnNumber?Number=xxxxxxxxxx

2.7.1 Parameters

Name	Type	Description	Required
Number	String	The phone number you wish to disconnect from your account.	Yes.

2.7.2 Response

```
{
  "status": string,
  "reason": string
}
```

Name	Type	Description
status	string	Error code (see appendix) = "0" if success
reason	string	Error description (see appendix) "Success" on successful transaction.

2.7.3 Sample Request

```
GET
https://ivlrest.voiceelements.com/v1/ReturnNumber?Number=3035551212
HTTP Header: token: 9767fa78-ec88-9133-99d7-b9cffb594444
```

2.7.4 Sample Response

If successful, returns the HTTP status of 200 and a transaction object.

```
{  
  "status": "0",  
  "reason": "Success"  
}
```

Status	Response
200	{"status": "0", "reason": "Success"}
	See section 3 and 4 for error return codes

2.8 GetMedia

This method returns a stream of the media from an incoming MMS message. The incoming webhook returns “media” which is a list of URL’s of pictures that have come in. These are securely stored on our servers for 48 hours. You must authenticate using the normal authentication before the image will be streamed down to you.

The ContentType is set depending on the file extension.

Method	URL
GET	https://ivlrest.voiceelements.com/v1/media/{filenameUrl} (Normally comes from an Incoming MMS which is passed to your incoming WebHook) (See section 3) You could also download a file that you have previously uploaded using UploadMedia

2.8.1 Parameters

Name	Type	Description	Required
None			

2.8.2 Response

```

If error:
{
  "status": string,
  "reason": string
}
Otherwise the stream of data is downloaded.
    
```

Name	Type	Description
status	string	Error code (see appendix) = “0” if success
reason	string	Error description (see appendix) “Success” on successful transaction.

2.8.3 Sample Request

```
GET
```



```
https://ivlrest.voiceelements.com/v1/media/64/4715c86c-15a1-4bc7-9af8-9340d4b757c3/1/IMG_3078.jpg
```

```
HTTP Header: token: 9767fa78-ec88-9133-99d7-b9cffb594444
```

2.8.4 Sample Response

If successful, returns the HTTP status of 200 and a file stream. If error, HTTP status of 404 and the following

```
{
  "status": "11",
  "reason": "Failed retrieving image from carrier"
}
```

Status	Response
404	{"status": "11", "reason": "Failed retrieving image from carrier"}
	See section 3 and 4 for error return codes

2.9 UploadMedia

This method uploads a picture or other media stream prior to sending an MMS message using the SendSms REST call. The URL is the URL where your file will be stored in your account. This same URL is what you will use in the media parameter of the SendSms call. The PostData body contains the binary byte array of the file you want to send up. In the The media is securely stored on our servers for 48 hours. You must authenticate using the normal authentication before the image will be streamed up to us.

Method	URL
PUT	https://ivlrest.voiceelements.com/v1/media/{Yourfilename.ext}

2.9.1 Parameters

Name	Type	Description	Required
None			

2.9.2 Response

```
{
  "status": string,
  "reason": string
}
```

Name	Type	Description
status	string	Error code (see appendix) = "0" if success
reason	string	Error description (see appendix) "Success" on successful transaction.

2.9.3 Sample Request

```
GET
https://ivlrest.voiceelements.com/v1/media/mypic.jpg
HTTP Header: token: 9767fa78-ec88-9133-99d7-b9cffb594444
```

2.9.4 Sample Response

If successful, returns the HTTP status of 200 and a file stream. If error, HTTP status of 404 and the following

```
{
  "status": "0",
  "reason": "Success"
}
```

Status	Response
200	{"status": "0", "reason": "Success"}
	See section 3 and 4 for error return codes

3. Webhook Reference Documentation

There are certain events where we need to notify your system. This section describes those. In the customer portal, click Settings / API Keys and then press the Rest API tab. You will see “Webhook URL” which is the webhook that we will send to when we receive an incoming SMS message. If you wish to receive delivery reports regarding outbound SMS messages that you have sent, please insert a url under “Webhook Delivery Receipts”. Entry is optional. There are also optional fields where you can set HTTP header information.



SMS Keys

Edit web hooks and API keys for sending and receiving SMS.

Voice Elements API **Rest API**

SMS Rest API Setup

Webhook URL:

Webhook Delivery Receipts:
(optional)

Webhook HTTP Header:
(optional)

Webhook HTTP Header Value:
(optional)

3.1. Webhook Events Overview

Method	Purpose
Inbound Text	An inbound text was sent to a phone number assigned to your account
Delivery Report	Delivery information event about an outbound text that you have sent through this API

3.2. Inbound Text Webhook

Upon receiving an inbound text on your account, we will POST to your specified Webhook URL the following Json:

```
{
  "toNumber": "7205757673",
  "fromNumber": "7202731927",
  "text": "Good stuff",
  "messageDateTime": "2018-09-06T21:37:32",
  "messageId": "666313",
  "lastMessageId": "666312"
}
```

Name	Type	Description	Required
toNumber	string	Which number on your account the message was sent TO	Yes
fromNumber	string	The sender's phone number	Yes
text	string	The incoming message	Yes
messageDateTime	string	The time our system received the message.	Yes
messageId	Long	The message identifier in our system	Yes
lastMessageId	Long	The message identifier in our system of the last outbound message to the sender's phone number. This would match to the trackingId of the SendSms method.	No
Media	Array	List of strings of the url's to the media files. Use GetMedia to retrieve.	

3.3. Delivery Report Webhook

After sending an outbound SMS using the SendSms method, you may receive a delivery report confirmation. This will work only if you have set up the Delivery Receipts webhook in the customer portal. When our system receives a delivery receipt from our SMS aggregator for a message sent on your account, we in turn POST it to you using the following JSON:

```
{
  "emailSmsId":669915,
  "messageTo":"3032635341",
  "messageFrom":"7205757673",
  "body":"Test out 18",
  "messageGuid":"de53ab63-b6bf-4313-9bda-629ca65a6dd5",
  "deliveryState":"delivered",
  "deliveryDescription":"Message delivered to carrier",
  "messageDate":"2018-09-10T20:40:19",
  "customerTag":"mytag"
}
```

Name	Type	Description	Required
emailSmsId	string	This is our internal messageId. This would match to the trackingId of the SendSms method.	Yes
messageTo	string	The number you sent a text to	Yes
messageFrom	string	The number on your account that you sent the message from	Yes
body	string	The content of the text	Yes
messageGuid	Guid	For internal use if you are using the Voice Elements client	Yes
deliveryState	String	This can be waiting, delivered, not-delivered. A status of delivered is what you are looking for. If you do not get a delivered delivery report, it does not mean the message was not delivered.	Yes
deliveryDescription	String	Description of the delivery report	Yes
messageDate	Datetime	The date of the original sent message.	Yes
customerTag	String	The customer tag that you specified when you sent the text using the SendSms method.	No

4. HTTP Return / Status Codes

The API uses the following HTTP status codes. 2XX – Success; 4XX - Error in client; 5XX - Error in server.

Status Code	Description
200	OK
201	Created
202	Accepted (Request accepted, and queued for execution)
400	Bad request
401	Authentication failure
403	Forbidden
404	Resource not found
405	Method Not Allowed
409	Conflict
412	Precondition Failed
413	Request Entity Too Large
500	Internal Server Error
501	Not Implemented
503	Service Unavailable

5. Json Status / Reason Values

The response Json always returns a status and a reason. Below are the possible values

Status	Reason
0	Success
1	Command Not Found
2	Invalid phone number
3	Invalid text message
4	From number could not be found
5	From number is not in your account
6	Send SMS failed – various reasons returned
7	Could not find user in BorderController
8	Could not find Accounts in BorderController
9	Could not find any phone numbers
10	Could not find Token in Header
10	Requires HTTPS
10	Invalid Token
10	Database is DOWN
10	Token has expired
11	Invalid Prefix
12	Error provisioning border rows – various reasons returned
13	Requested number does not belong to your account
99	Unknown – various reasons or exception message