API MONETIZATION PLATFORM 4.1.1

AGILE SERVICE ENABLEMENT 1.1

OneAPI v2.0 SMS REST

Document Version v1.1

Document Properties

Document ID	OneAPI v2.0 SMS REST
Document Version	1.1
Approval Date	5 April 2013
Originator	TWS team, from previous version
Approver	Jim Beggs
Version Information	Updated to reflect changes in PME 4.1, from v1.0 issued on 13 Feb 2013

Copyright

Table of Contents

1 SMS REST Overview

The SMS interface allows an application to send and receive SMS messages. You can find some examples of when you may want to do this in the use cases at http://www.oneapi.gsmworld.com.

! Throughout this document, the examples may be shown WITHOUT URL encoding for readability purposes, e.g. if the address "tel:+123456789" is in the URL example, this should be encoded as "tel%3A%2B123456789", where the character ":" is "%3A" and the character "+" is "%2B"

2 Authentication

A server side certificate is required plus HTTP Basic Authentication.

For more information, refer to the 'Developer Access' section in the 'OneAPI v2.0 Common Information Guide'.

3 Methods

The following methods are available:

- Sending SMS:
  - Send an SMS from Your Application – section 4.1
  - Query the Delivery Status of an SMS – section 4.2
  - Notify Client About Message Delivery Status – section 4.3
- Receiving SMS:
  - Retrieve SMS Sent to your Application (which is identified by **registrationId**) – section 5.1
  - Notify Client about Message Arrival – section 5.2

POST and GET are used in OneAPI SMS.

Steps to start and stop notifications are described in Appendix A.

? The SMS API supports JSON content types for POST operations. The response content type is application/JSON.

3.1 URIs

The URIs of the resources are as follows:

- Sending SMS:

  Send an SMS from your Application (to one or more mobile terminals):

https://{serverRoot}/{api version}/smsmessaging/outbound/{senderAddress}/requests

Query the delivery status of an SMS (identified by requestId):

https://{serverRoot}/{api version}/smsmessaging/outbound/{senderAddress}/requests/{requestId}/deliveryInfos

- A message delivery status notification is sent to the client by the server, with the format as described in section 4.3.

- Receiving SMS:

  Retrieve SMS sent to your application (which is identified by **registrationId**):

  https://{serverRoot}/{api version}/smsmessaging/inbound/registrations/{registrationId}/messages

  - A message delivery status notification is sent to the client by the server, with the format as described in section 5.2.

The variables used in request URLs are described below:

Name	Description
{serverRoot}	Server base url: hostname+base path. Base path is optional. The application may pick up the endpoint URL from the Portal, for example: *http://developer.aepona.com/services/ReceiveSmsService/OneAPIRESTv2/sandbox.* *example.com* is used in the examples in this document.
{apiVersion}	Version of the API that the client wants to use. In this case 2_0.
{senderAddress}	Typically the SMS short code, which identifies the client application. If this is used as a parameter in the request body, the values must match.
{requestId}	The outbound message request ID generated by the server.
{registrationId}	The reference to the off-line retrieval criteria provisioned in advance and known to the application.

! The SMS API supports JSON content types for POST operations. The response content type is application/JSON.

3.2 Parameters

Inline parameters are contained in defined data structures, which are noted by their Type. For example, in the Request sample code at section 4.1.1 below, the parameters are contained within the data structure *outboundSMSMessageRequest*. Many data structures nest other sub-structures.

4 Sending SMS

4.1 Send an SMS from Your Application

This allows you to send an SMS from your application to one or more addresses.

4.1.1 Request

```
POST
https://example.com/2_0/smsmessaging/outbound/tel:+12345/requests
HTTP/1.1
Accept: application/json
Content-Type: application/json

{"outboundSMSMessageRequest":
     {
     "address": ["tel:+16472260269"],
     "clientCorrelator": "67891",
     "outboundSMSTextMessage": {"message": "Test Message:SMSX-02"},
     "receiptRequest": {"notifyURL":
"http://tirpitz:8201/MockRestService/rest"},
     "senderAddress": "tel:+12345"
     }
}
```

4.1.2 Request Parameters

Table 1: Send an SMS - Request Parameters (outboundSMSMessageRequest Type)

! Use POST to create the SMS. The **senderAddress** in the URL must be URL-escaped.

Parameter	Data Type	Description	Optional
address	xsd:anyURI [1..unbounded]	Destination addresses for the Message. This is a full international number and prefixed with "tel:+"	No
clientCorrelator	xsd:string	A correlator that the client can use to tag this particular resource representation during a request to create a resource on the	Yes

		server. This field SHOULD be present. Note: this allows the client to recover from communication failures during resource creation and therefore avoids re-sending the message in such situations.	
outboundSMSTextMessage	outboundSMSTextMessage	Contains the message parameter with the associated message text.	No
receiptRequest	common:CallbackReference	The application endpoint that will be used to notify the application when the message has been delivered to a terminal or delivery is impossible. The parameter includes the URL-escaped notifyURL.	Yes
senderAddress	xsd:anyURI	The address of the sender to whom a responding message may be sent. This value should be set to the short code assigned to your application.	No
senderName	xsd:string	Name of the sender to appear on the user's terminal as the originator of the message.	Yes

4.1.3 Response

```
HTTP/1.1 201 Created
Content-Type: application/json
Date: Thu, 22 Sep 2011 05:11:36 GMT
Location:
https://example.com/2_0/smsmessaging/outbound/tel:+12345/requests/600022
Content-Length: 152
Server: Jetty(6.1.x)

{"resourceReference": {"resourceURL":
"https://example.com/smssend/2_0/smsmessaging/outbound/tel:+12345/request
s/600022"}}
```

201 shows that the message was created.

4.1.4 Response Parameters

The Location header field shows the URI of the created message, including the **senderAddress** and **requestID** in the path. You can append '**/deliveryInfos**' to this URI to query the delivery status of an SMS as described in the next section 4.2.

Table 2: Send an SMS - Response Parameters

Parameter	Data Type	Description	Optional
resourceURL	xsd:anyURI	Self referring URL.	No

This URI is also included in the response body as the **resourceURL** pair within the **resourceReference** object.

4.2 Query the Delivery Status of an SMS

You can query the delivery status of an SMS which has been sent from your application.

4.2.1 Request

```
GET
https://example.com/2_0/smsmessaging/outbound/tel:+12345/requests/600022/
deliveryInfos HTTP/1.1
Accept: application/json

Host: example.com
```

4.2.2 Request Parameters

Table 3: Query the Delivery Status - Request Parameters

Parameter	Data Type	Description	Optional
requestId	URI variable	This identifies the specific SMS delivery request. In the examples, this value is '60022', which was returned when the message was created. (See Send an SMS from Your Application on page 9.)	No

4.2.3 Response

```
HTTP/1.1 200 OK
```



```
Content-Type: application/json

{"deliveryInfoList": {
     "resourceURL":
"https://example.com/2_0/smsmessaging/outbound/tel:+12345
     /requests/600022/deliveryInfos",
     "deliveryInfo": [   {
           "address": "tel:+16472260269",
           "deliveryStatus": "DeliveredToTerminal"
     }]
}}
```

4.2.4 Response Parameters

The deliveryInfoList type contains the delivery information for each address to which you sent the message, in a **deliveryInfo** array.

Table 4: Query the Delivery Status - Response Parameters (deliveryInfoList Type)

Parameter	Data Type	Description	Optional
resourceURL	xsd:anyURI	This is a reference to this response.	No
deliveryInfo	deliveryInfo[1…unbounded]	Contains delivery information. (See table 4.1 below for details).	No

Table 4.1: Query the Delivery Status - Response Parameters (deliveryInfo Type)

Parameter	Data Type	Description	Optional
address	xsd:anyURI	Outbound message destination address.	No
deliveryStatus	DeliveryStatus	Contains the delivery result for the destination address. (See table 4.2 below for details).	No

Table 4.2: DeliveryStatus

Status	Description
DeliveredToTerminal	Successful delivery to terminal.
DeliveryUncertain	Delivery status unknown, e.g. because it was handed off to another network.

DeliveryImpossible	Unsuccessful delivery; the message could not be delivered before it expired.
MessageWaiting	The message is still queued for delivery. This is a temporary state, pending transition to one of the preceding states.
DeliveredToNetwork	Successful delivery to the network enabler responsible for routing the SMS.
DeliveryNotificationNotSupported	Unable to provide delivery receipt notification.

4.3 Notify Client About Message Delivery Status

This section describes the format of delivery notifications sent from the server to the client application. A delivery notification is sent to the client application callback URL provided in the sendSMS request, typically when the message is DeliveredToTerminal or DeliveryImpossible.

Starting and stopping notifications is carried out via the Dev Portal. For instructions on how to do this, please see Appendix A.

4.3.1 Request

```
POST /notifications/DeliveryInfoNotification HTTP/1.1
Accept: application/json
Content-Type: application/json
Content-Length: nnnn
Host: application.example.com
{"deliveryInfoNotification": {
     "deliveryInfo": {
           "address": "tel:+15555550101",
           "deliveryStatus": "DeliveredToNetwork"
       }
     }
}
```

4.3.2 Request Parameter

Table 5: Notify Client about Message Delivery Status - Request Parameters (deliveryInfoNotification Type)

Parameter	Data Type	Description	Optional

deliveryInfo	deliveryInfo[1…unbounded]	Contains delivery information. (See table 5.1 below for details).	No

Table 5.1: Notify Client about Message Delivery Status - Request Parameter s (deliveryInfo Type)

Parameter	Data Type	Description	Optional
address	xsd:anyURI	Outbound message destination address.	No
deliveryStatus	DeliveryStatus	Contains the delivery result for the destination address. (See Table 4.2 for details).	No

4.3.3 Response

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

4.3.4 Response Parameters

N/A

5 Receiving SMS

5.1 Retrieve SMS Sent to your Application

This method allows you to retrieve any SMS that have been sent to your application.

5.1.1 Request

```
GET
https://example.com/2_0/smsmessaging/inbound/registrations/3456abc/messages?maxBa
tchSize=2 HTTP/1.1
Accept: application/json
Host: example.com
```

5.1.2 Request Parameters

Table 6: Retrieve Messages Sent to your Application - Request Parameters

Parameter	Data Type	Description	Optional
registrationId	URI variable	This is the registration ID agreed with the OneAPI operator. In the sample code above, this value is '3456abc'.	No
maxBatchSize	URI variable	This is the maximum number of messages to retrieve in this request.	Yes

5.1.3 Response

```
HTTP/1.1 200 OK
Content-Type: application/json

{"inboundSMSMessageList": {
     "inboundSMSMessage": [   {
           "destinationAddress": "tel:+12345",
           "senderAddress": "tel:+147852369",
           "message": "sampleMessage",
           "dateTime": "2011-09-22T15:43:33.000+08:00",
           "resourceURL":
           "https://example.com/2_0/smsmessaging/inbound/registrations/11
           00011/messages/1100017",
```



```
            "messageId": "1100017"
      }],
      "totalNumberOfPendingMessages": 0,
      "numberOfMessagesInThisBatch": 1,
      "resourceURL":
      "https://example.com/2_0/smsmessaging/inbound/registrations/1100011/
      messages"
}}
```

5.1.4 Response Parameters

Parameters are returned in the **inboundSMSMessageList** object.

Table 7: Retrieve Messages Sent to your Application - Response Parameters (inboundSMSMessageList Type)

Parameter	Data Type	Description	Optional
inboundSMSMessage	inboundSMSMessage [0..unbounded]	Contains an array of messages received according to the specified registrationId. (See table 7.1 below for details).	Yes
numberOfMessagesInThisBatch	xsd:int	The number of messages included in the response (part of the totalNumberOfPendingMessages).	Yes
resourceURL	xsd:anyURI	Self referring URL.	No
totalNumberOfPendingMessages	xsd:int	Total number of messages in the gateway storage waiting for retrieval at the time of the request.	Yes

Table 7.1: Retrieve Messages Sent to your Application - Response Parameters (inboundSMSMessage Type)

Parameter	Data Type	Description	Optional
dateTime	xsd:dateTime	The date and time at which the message was received.	Yes
destinationAddress	xsd:anyURI	This is the short code associated with the service.	No

messageId	xsd:string	This is a server-generated message identifier.	Yes
message	xsd:string	This is the SMS message itself.	No
resourceURL	xsd:anyURI	Self referring URL.	Yes
senderAddress	xsd:anyURI	This is the MSISDN of the sender.	No

5.2 Notify Client about Message Arrival

This section describes the format of SMS message arrival notifications sent from the server to the client application callback URL. The callback URL is configured for a given set of notification criteria (shortcode and keyword) in the Dev Portal.

Starting and stopping notifications is carried out via the Dev Portal. For instructions on how to do this, please see Appendix A.

```
POST /notifications/SMSNotification HTTP/1.1
Accept: application/json
Content-Type: application/json
Content-Length: nnnn
Host: application.example.com

{"inboundSMSMessageNotification": {
     "inboundSMSMessage": {
           "dateTime": "2009-11-19T12:00:00",
           "destinationAddress": "tel:+12345",
           "message": "First simple message",
           "messageId": "msg001",
           "senderAddress": "tel:+15555550120"
           }
}}
```

There will be one notification for every SMS received matching the notification criteria.

The **inboundMessageNotification** object includes an **inboundSMSMessage** array with the following parameters:

Table 8: Notification of a Received Message - Response Parameters (inboundSMSMessage Type)

Parameter	Data Type	Description	Optional

dateTime	xsd:dateTime	The date and time at which the message was received.	Yes
destinationAddress	xsd:anyURI	This is the number associated with your service, e.g. an agreed short code.	No
messageId	xsd:string	This is a server-generated message identifier.	Yes
message	xsd:string	This is the SMS message itself.	No
resourceURL	xsd:anyURI	This is a link to the message.	Yes
senderAddress	xsd:anyURI	This is the MSISDN of the sender.	No

5.2.1 Response

The client application should return HTTP 204 – No Content.

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

5.2.2 Response Parameters

N/A

6 Response Codes & Exceptions

6.1 Response Codes

HTTP response codes are used to indicate:

- **200** – Success!
- **400** – Bad request; check the error message for details
- **401** – Authentication failure, check your authentication details.
- **403** – Forbidden; please provide authentication credentials
- **404** – Not found: mistake in the host or path of the service URI
- **405** – Method not supported: for example you mistakenly used a HTTP GET to create an MMS instead of a POST
- **500** – Internal Error 500; the server encountered an unexpected condition which prevented it from fulfilling the request
- **503** – Server busy and service unavailable. Please retry the request.

For more details on these, refer to http://www.ietf.org/rfc/rfc2616.txt.

6.2 Exceptions

```
HTTP/1.1 400 Bad Request
Content-Type: application/json
Content-Length: 1234
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"requestError": {
 "serviceError": {
 "messageId": "SVC0002",
 "text": " Invalid input value for message part %1",
 "variables": " tel:+016309700000"
 }
}}
```

This section lists the available error codes, the possible reasons why the exception may have occurred, and possible solutions.

6.2.1 Service Exceptions

A service exception describes the reason why the service cannot accept the request.

The following service exceptions may be thrown:

Table 9: Service Exceptions

Error	Explanation
SVC0001 – Service error occurred	A service-related error has occurred as a result of a client invocation on the service. This category can be used for implementation-specific errors. Contact the support team.
SVC0002 – Invalid input value	An input parameter value is not of the expected type. Check the parameter types and re-submit your request.
SVC0004 – No valid address(es)	The requested terminal device address does not exist. Use an address that exists.

6.2.2 Policy Exceptions

A policy exception means that the request syntax is valid, however an operator policy has been broken.

POL0001 - Policy error occurred

The above exception may be thrown to indicate a fault relating to a policy associated with the service. This category can be used for implementation-specific errors such as:

Table 10: Policy Error Codes

Error	Explanation
POL-006: TPA exceeded its maximum allowed rate of transactions	The maximum rate of transactions is exceeded. Ensure that the rate of your requests is within the limits set up in your SLA, e.g. 10 TPS (Transactions Per Second).
POL-008: TPA is invalid	The Third Party Application authentication details are incorrect. Check your basic authentication username and password are correct and re-submit your request.
POL-014: White List is enforced, and address is not in White List	A white list is enforced and the number is not in the white list. Check your SLA details.
POL-015: Black List is enforced, and address is in Black List	A black list is enforced and the number is in the black list. Check you SLA details.

Error	Explanation
POL-016: Max Requests is enforced, and max requests has been exceeded	The maximum number of requests for this service is exceeded. Contact the support team.
POL-017: Operation is not allowed	The method/operation is not supported in your current SLA. Check your SLA and use a method that is supported.
POL-018: All targets were rejected for MDN access and authorization failure	This indicates that none of the destination numbers can be retrieved by the internal address resolver such as LDAP or Lookup. It includes white/black list rejection when the destination number cannot be found in either list that is enforced. In this case, check your policy contract and request the number to be added to/removed from the appropriate list.
POL-020: Max Message Length is enforced, and max message length has been exceeded	A maximum message length policy is in place and you have exceeded this. Check you SLA for the maximum message length, update your message and re-submit your request.
POL-021: Min Message Length is enforced, and message length is less than min allowed	A minimum message length policy is in place and you have a message length that is less than this minimum. Check your SLA for the maximum message length, update your message and re-submit your request.
POL-022: Receipting is enforced, and receipting has not been enabled	A receipt has been requested but it is not enabled for this service. Remove the receipt request and re-submit your request.
POL-040: Max Destination Addresses is enforced and maximum destination addresses has been exceeded	A maximum destination address limit is enforced and it has been exceeded. Check your SLA for the limit and re-submit your request.
POL-049: SPID Black List is enforced and address SPID is in the SPID Black List.	Applicable in multiple carrier deployments, Black List is enforced and the carrier identified by the Service Provider ID is in the black list. Therefore all the addresses from the carrier are rejected.

A Starting/Stopping Notifications

Starting and stopping notifications is managed from the Dev Portal. You will use one of the codes assigned to your Partner entity on the platform, or configure a callback URL, and keyword to automatically start receiving SMS arrival and receipt notifications. You can pause or stop by a button from the GUI.

The steps described below assume that you have a login on the Dev Portal which allows you to manage notifications for your Partner's applications.

A.1 Starting Notifications

The task is divided into three sub-sections in a standard workflow:

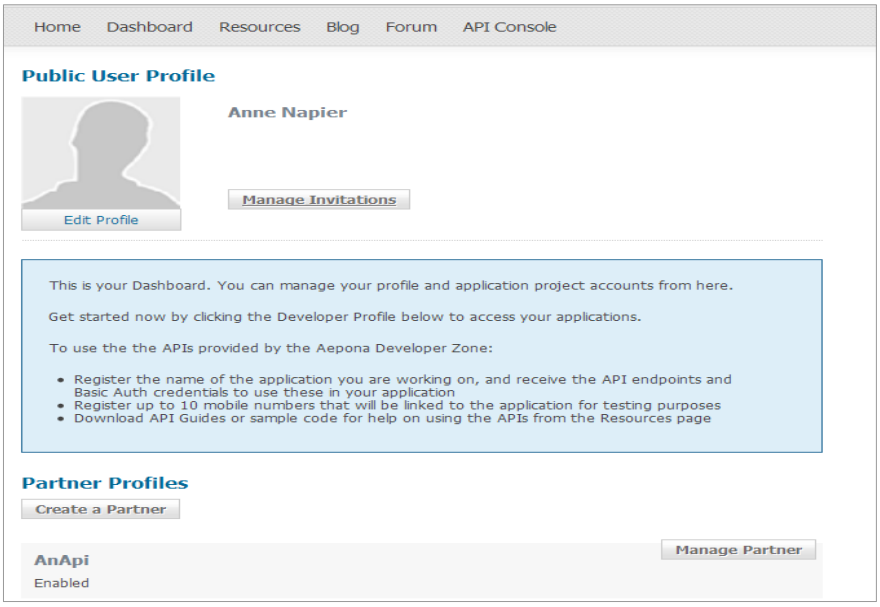
1. Requesting Codes
2. Creating Keywords
3. Creating Notifications

A.1.1 Requesting Codes

You need to request the administrator to assign a code to your project.

1 Login to the Dev Portal.

The Dashboard is displayed, as shown below. Partners associated with you are displayed in the Partner Profiles area.



4. Click **Manage Partner** for the Partner whose application you want to set up the notification for.

The Partner Profile page is displayed. Registered applications are listed as projects in the Partner Projects area.

5. Click **Manage Project** for the relevant project.

   The Project Profile page is displayed for your selected project.

6. Click **Manage Notifications**.

   The Manage Notifications page is displayed.

7. Click **Request Number**.

   The Create a New Number page is displayed.

8. Select the **Number Type** to request from the dropdown list: Short Code or Long Number.

   Select to have a number assigned automatically by the Admin Portal administrator.

   OR

   to specify one for the project, by entering the **Number** in the field that will appear. This will be unique to your project, called an unshareable number.

9. Select the **Enabler Type**: SMS.

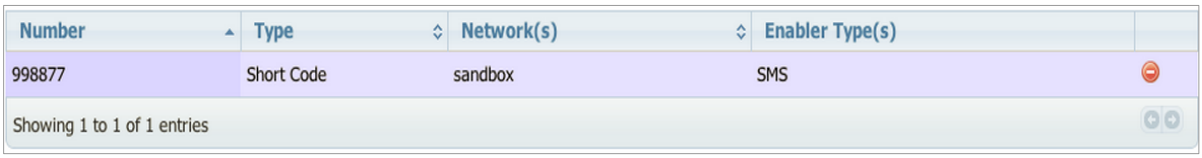
10. Select **Country** and **Networks** from the list displayed. You can assign only one network to a long number.

> **?** If you are testing your application against the Sandbox version of the service, choose the Test network.

11. Click **Submit**.

Your request is submitted to the administrator, and until approved, will be listed in the Pending Requests page. (Click **Pending Requests** on the Manage Notifications page.)

You will receive an email when your request is approved. It will contain the number assigned. Your Manage Notifications page will show the assigned number in the Number panel as shown below:



> **?** You can remove the number from your project by using the red icon in the Number panel. To add it back, use the **Assign Partner Number** button.

? As an option, you can create **Callback Credentials** from the Manage Notifications page. This will add authentication for the notification to access your application.

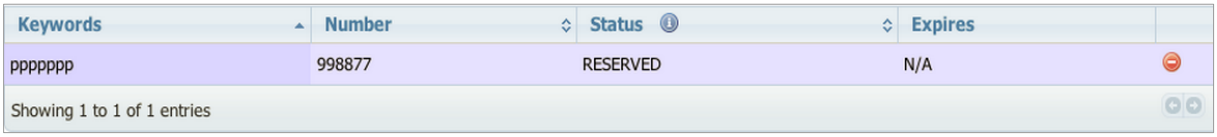
A.1.2 Creating Keywords

You need to create a keyword in combination with the number you are going to use for your notification. Each keyword+number pair must be unique across the platform, which means that if you are creating a single notification using your application specific number, keyword isn't necessary. In this case you can skips the steps below and go directly to create your notification.

? A keyword can be created during notification creation, also.

1. From the Manage Notifications page, click **Create Keyword**. The Create Keyword page is displayed.
2. Specify the number you wish to associate the keyword with, from the **Number** dropdown list.
3. Enter the **Keyword**. An error message will be returned if the keyword is in use or it does not conform to the system rules.

   Manage Notifications page is refreshed and shows the keyword created, in RESERVED status, as shown below:



The status will change to ACTIVE when the keyword is in use with a notification. The RESERVED status will expire after a system configured number of days, for example, 180 days.

See Appendix C on managing RESERVED status keywords.

A.1.3 Creating Notifications

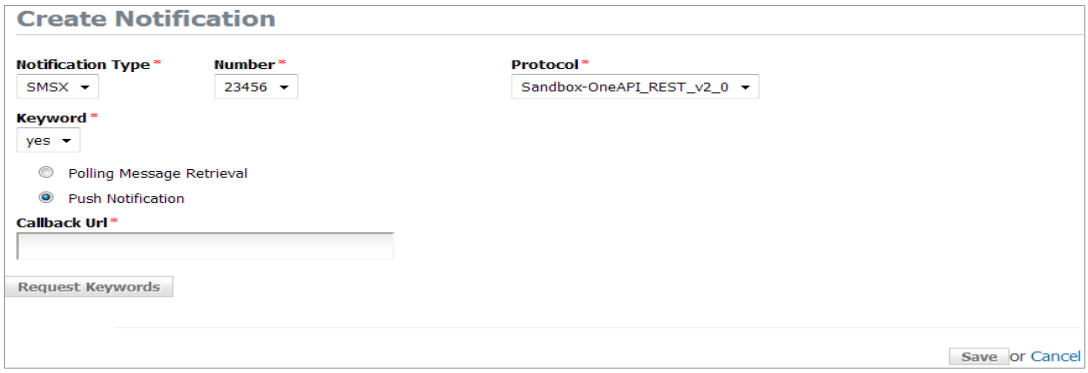
You are now ready to create a notification, which will start immediately.

1. From the Manage Notifications page, click **Create Notifications**.
2. Select the **Notification Type** from the dropdown list. SMSX is available by default.
3. Select the **Number** to use from the dropdown list.
4. Select the **Protocol** from the dropdown list.

> ! If you are testing your application against the Sandbox version of the service, choose Sandbox-OneAPI_REST-v2_0.

5. Select the **Keyword** from the dropdown list, OR create one by clicking **Request Keywords**.
6. Select either Poll or Push notification model:

Notification Model	Description
Polling Message Retrieval	Cache & collect model. No application callback is required. The application will periodically retrieve messages from the platform via the API.
Push Notification	Direct push of notifications. An application callback is required.



If Push Notification is selected, enter the **Callback Url** in the field that appears:

7. Click **Save**.

The notification is started.

The Manage Notifications page will be refreshed to display the notification with its ID, and the Callback URL as entered, with the pause and stop buttons at the right hand end of the row, as shown in the screenshot below:

B Pausing, Restarting and Stopping Notifications

To pause, restart and stop a notification:

1. From the Dashboard, click **Manage Partner > Manage Project > Manage Notifications** to find the notification you wish to manage.
2. Click the appropriate button at the right end of the row:
   - To pause a notification that has been started, click the icon.
   - To restart a notification that has been paused, click the icon.
   - To stop a notification, click the icon at the far right.
3. Confirm your action when prompted.

! When you stop a notification, it will be removed from the system. You will not be able to restart it, but you can recreate an identical notification.

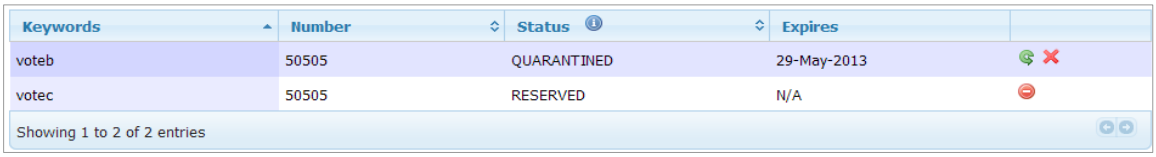
C De-assigning and Reactivating Keywords

Keywords in RESERVED status can be de-assigned from the application and put into QUARANTINED status, and reactivated back to RESERVED status.

To de-assign a keyword from a project:

1. From the Manage Notifications page, find the keyword you wish to de-assign.
2. Click the icon on the right.

The keyword is now in QUARANTINED status, as shown below, showing its expiry date after the system configured number of days (90, in the example below):



Keywords	Number	Status	Expires	
voteb	50505	QUARANTINED	29-May-2013	
votec	50505	RESERVED	N/A	
Showing 1 to 2 of 2 entries				

- To reactivate the keyword, to RESERVED status, click the **green icon** on the right.
- To purge the keyword, click the **red cross icon** on the right.

