

# SAP Digital Interconnect

SAP Intelligent Notification 365, Multi-channel API  
specification for Social, Push and SMS

EXTERNAL



**THE BEST RUN**





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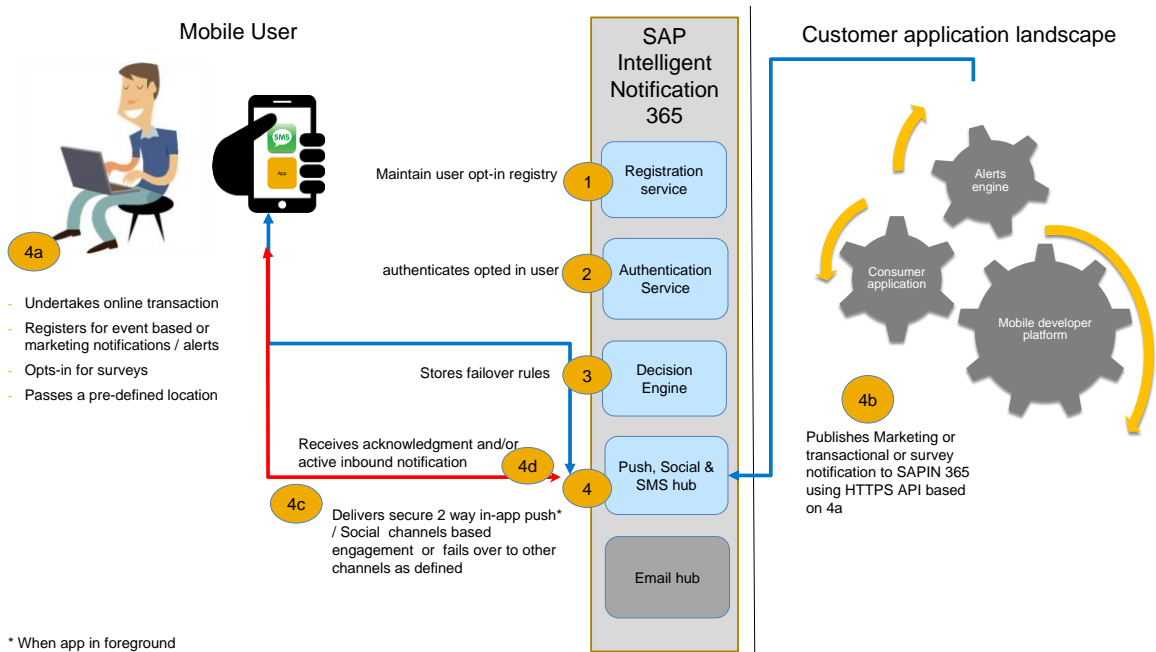
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## 1. INTRODUCTION

SAP Intelligent Notification 365 delivers a set of JSON/ restful API's that provides the ability to optimize engagement using communication channels such as email, push, SMS and Social channels. The API interfaces are easily consumable by any upstream application.

This multi-channel API specification deals with integrated Social, Push and SMS capabilities. A similar and separate API specification document deals with email capabilities.

The workflow diagram below shows a high-level view of how the multi-channel service / infrastructure interface with an enterprise application:



To get started, an enterprise application (marketing or transactional) integrates with the Push, Social & SMS hub using the REST/ JSON API specification (as described in this document) with its own event notification / alerts engine. This establishes the Social/ Push / SMS plug-in. As you read this document; a couple of key highlights:

1. The REST/ JSON interface also maps to the legacy HTTP SMS interface from SAP Digital Interconnect. This document provides references to the mapping as well.
2. Mobile # (MSISDN) is used a common communication handle across the different channels with the registration service / decision engine handling the consumer preference. Please review the section 7 on registration service as part of this spec.
3. Please also reference the separate on-boarding reference guides for Push and Social Channels for the additional steps needed to activate the respective service.

## 2. MT API

### Base URL

SAP Intelligent Notification 365, multi-channel API has its own domain name:

```
https://in365-eu2.sapdigitalinterconnect.com/
```

### Credentials

HTTP requests to the REST API are protected with HTTP Basic Authentication:

```
Authorization: Basic sdfjkerwyvnewrlj==
```

### Content Type

The MIME type of the request body must be JSON:

```
Content-Type: application/json
```

### API Method

```
POST /api/{version}/{accountName}/notifications
```

To send a message to user registered channel, it could be as simple as just 2 parameters:

```
POST https://in365-eu2.sapdigitalinterconnect.com/api/1.0/testAccount/notifications
Content-Type: application/json
Authorization: Basic sdfjkerwyvnewrlj==

{
  "SAPnotification": {
    "recipients": ["+6598765432"],
    "contentText": "Hello World"
  }
}
```

### MT Message Body with All Supported Parameters

```
{
  "SAPnotification": {
    "recipients": ["+6512341234", "tel:+12345678"],
    "contentText": "Message content",
    "contentTextEncoding": "ASCII",
    "channelFailover": "Channel failover sequence",
    "channelPreferences": "Delivery channel",
    "configuration": {
      "ack": {
        "mobileNotification": true,
        "ackReplyAddress": "http://url.to/customer/",
        "ackFinalStatus": true,
        "ackOperatorId": false,
        "ackInternalStatus": true,
        "ackCountryCode": false,
        "ackMMTReceivedTime": false,
        "ackDeliveredTime": false,
        "ackTpoa": false,
        "ackTimeInGMT": true,
        "ackFinalOnly": false
      },
      "sms": {
        "sender": "TPOA",

```

```

    "subject": "Subject field",
    "validityPeriod": "VP",
    "messageClass": "message class",
    "operatorId": "SAP 365 Operator ID",
    "pId": "Process ID",
    "sessionId": "Session ID"
  },
  "facebook": {
    "contentTemplate": "not required"
  },
  "push": {
    "contentTemplate": "<size>15</size><color>red</color><img>image/url</img>"
  },
  "wechat": {
    "contentTemplate": "WeChat template, if any"
  },
  "telegram": {
    "contentTemplate": "not required"
  }
}
}
}

```

## Common Parameters

REST API Field	Required	Description
recipients	Y	<p>MSISDN in international format with a plus sign (+). If the same message needs to be sent to multiple mobile numbers, up to 100 MSISDNs can be listed; more than 100 MSISDNs must be split into multiple requests.</p> <p>Optionally, prefix "tel:" can be used together with MSISDN.</p> <p>Examples:  "recipients": ["+6598765432"],  "recipients": ["tel:+12345678"],  "recipients": ["+6598765432", "tel:+12345678"],</p>
contentText	Y	<p>Default content for all channels, it can be overwritten if channel template is specified in the configuration block.</p> <p>Contents are in Hex format if contentTextEncoding is UCS2.</p> <p>Depending on content length and encoding, content may be split into multiple segments, and multiple Notification ID will be returned.</p> <p>Examples:  "contentText": "7bit ASCII",  "contentText": "UTF8 Chinese 中文",  "contentText": "4E2D6587",</p>
contentTextEncoding	N	<p>3 encoding schemas are supported, ASCII, UTF8 (default), UCS2.</p> <p>If this parameter is absent, contentText will be treated as UTF8.</p> <p>When it is ASCII, content will be validated based on SAP Character Set, if any undefined character is found, request will be rejected;</p> <p>When it is UCS2 Hex, content will be saved as it is;</p> <p>When it is UTF8, content will be validated based on SAP Character Set, if any undefined character is found, request will be converted and saved to UCS2, else it will be saved as ASCII.</p> <p>Examples:  "contentTextEncoding": "ASCII",  "contentTextEncoding": "UTF8",  "contentTextEncoding": "UCS2",</p>

## Configuration Parameters – Push and Social Channels

REST API Field	Required	Description
channelFailover	N	Specify failover rule, if it is absent, message failover will follow account level failover setting or user preferences Accepted values: NO_FAILOVER, SMS_ONLY, SOCIAL_ONLY, USER_PREFERENCE Examples: "channelFailover": "NO_FAILOVER", "channelFailover": "SMS_ONLY",
channelPreferences	N	Specify which channel to deliver, if it is not used, message is delivered by account setting, or users preferences. Accepted values: RMS, WECHAT, FB, TELEGRAM, SMS Examples: "channelPreferences": "FB", "channelPreferences": "SMS",
configuration / push contentTemplate	N	Push channel parameters. Only XML template is supported at this moment. Examples: "contentTemplate": "<question type=\"SCQ\" allowReply=\"1\">"
configuration / facebook contentTemplate	N	Facebook channel parameters. No special configuration for FB at this moment.
configuration / wechat contentTemplate	N	Wechat channel parameters. Only Wechat XML template is supported at this moment. Examples: "contentTemplate": "<templated>1</templated>",
configuration / telegram contentTemplate	N	Telegram channel parameters. No special configuration for Telegram at this moment.

## Configuration Parameters - SMS

REST API Field	Required	Description
configuration / sms sender	N	Used only when a customer would like to specify the Originating Address (TPOA) value (or is advised to do so). It is an operator-dependent feature and may not be available for all destinations. If this parameter is absent, account level TPOA will be used. Sender can be alphanumeric string. Examples: "sender": "1234", "sender": "Customer ABC"
configuration / sms subject	N	Customer-provided reference text for tracking purposes, it is not sent to the mobile recipient. This field is returned with each acknowledgment and notification coming from SAP. This field can be useful to set your own unique ID which will be returned in notifications and will ease tracking of messages statuses. Examples: "subject": "Incident – 1234987 – 2017-09-09 12:34:56 ",
configuration / ack ackReplyAddress	N	Customer-provided URL for receiving message acknowledgment The URL must not be longer than 99 characters. If this parameter is absent, customer will not receive Ack Examples: "ackReplyAddress": "http://customer.url/",

configuration / ack mobileNotification	N	<p>Only used when a customer requests to receive Mobile Notifications.</p> <p>If this parameter is absent, DR will not be requested</p> <p>Examples: "mobileNotification": true,</p>
configuration / sms validityPeriod	N	<p>Used only when the customer wants to specify the Validity Period. A Validity Period is assigned to each short message submitted to SAP, setting the maximum time that the short message is retained in SAP's network and/or in the network of the corresponding wireless operator.</p> <p>Format: validityPeriod: "n[w d h m]"</p> <p>Where: n=number of units w=week d=day h=hour m=minute</p> <p>Only the two first characters of the parameter are considered.</p> <p>Examples: validityPeriod: "1w" // One week validityPeriod: "3d" // Three days</p> <p>If this parameter is absent, SAP uses the GSM default validity period setting: 48hrs.</p>
configuration / sms operatorId	N	<p>Used to specify the destination operators for the message. In order to specify an operator ID, please see the SAP Operator List document for connected operators and their corresponding operator IDs.</p> <p>If this parameter is absent, SAP determines the destination operator based on its global numbering plan.</p> <p>Examples: "operatorId": "1234",</p>
configuration / sms messageClass	N	<p>Used to specify the message class. Message class is an operator dependent feature.</p> <p>Class=0 Immediate display (flash) Class=1 Handset Specific (SAP Default) Class=2 SIM Specific Class=3 TE Specific</p> <p>The Class values are described in GSM TS 03.38. (3GPP 23.038)</p> <p>If this parameter is absent, Class=1 will be set</p> <p>Examples: "messageClass": "0",</p>
configuration / sms pId	N	<p>PID could be used to replace previous message within SMS-C or handset. This feature is only supported by a few operators so please consult your account manager if you are interested in using it.</p> <p>If this parameter is absent, the PID set by the SAP Gateway is equal to 0x00 (0 in Hexadecimal format).</p> <p>Examples: "pId": "2A",</p>
configuration / sms sessionId	N	<p>Optional parameter for session tracking or other purposes. When supported by an operator, you may receive information in the sessionId field of an incoming MO request. Upon receiving such information, you are expected to post it back into the SESSION_ID field of the MT reply.</p> <p>Examples: "sessionId": "1283690871233",</p>



## Configuration Parameters - Acknowledgments

REST API Field	Required	Description
ackFinalStatus	N	Request to receive Final Status Indicator in Ack. Default: false
ackOperatorId	N	Request to receive Operator ID in Ack. Default: false
ackInternalStatus	N	Request to receive Internal Status Code in Ack Default: false
ackCountryCode	N	Request to receive Country Code in Ack Default: false
ackMTReceivedTime	N	Request to receive MailSubmitTime in Ack Default: false
ackDeliveredTime	N	Request to receive delivery time in Ack Default: false
ackTpoa	N	Request to receive TPOA in Ack Default: false
ackTimeInGMT	N	Request to receive GMT time in Ack Default: false
ackFinalOnly	N	Request to send only Ack that has Final Status, non-Final Ack will be trashed Default: false

## MT Response - Positive response

```

HTTP/1.1 200
Content-Type: application/json

{
  "SAPnotification": {
    "notificationId": ["1234567890", "1234567891"],
    "status": {
      "statusCode": "0",
      "statusText": "Successful",
      "timestamp": "2015-03-08 14:59:30.252"
    }
  }
}

```

REST API Field	Description
HTTP status code	200
notificationId	OrderID. More than one order ID are generated if (and only if) the message is split over several short messages.
statusText	Successful
statusCode	0
timestamp	Current time

## MT Response - Negative response

```
HTTP/1.1 400 Bad Request
Content-Type: application/json

{
  "SAPnotification": {
    "status": {
      "statusCode": "6100",
      "statusText": "Error processing message",
      "timestamp": "2015-03-08 14:59:30.252"
    }
  }
}
```

REST API Field	Description
HTTP status code	4xx, 5xx
statusCode	In the event that an error occurs, an error code and a message explaining the reason for the error is returned. This message is generated when the application has a problem with the message submission, in most case it occurs when the application has detected an incorrect parameter or an invalid field inside the body of the message.
statusText	
timestamp	Current time

### Sample: Text with line feeds (UTF-8)

```
{
  "SAPnotification": {
    "recipients": ["+6512341234"],
    "contentText": "Test message\\nline 2\\nend"
  }
}
```

### Sample: Text with line feeds (ASCII)

```
{
  "SAPnotification": {
    "recipients": ["+6512341234"],
    "contentText": "Test message<CR>line 2<CR>line 3<LF>end",
    "contentTextEncoding": "ASCII"
  }
}
```

### Sample: Text with non-English characters

```
{
  "SAPnotification": {
    "recipients": ["+6512341234"],
    "contentText": "This is a text message\\n这是中文测试\\nयह एक परीक्षण संदेश है। ",
  }
}
```

## Sample: Text with Greek characters

```
{
  "SAPnotification": {
    "recipients": ["+6512341234"],
    "contentText": "Hello YOU'VE GOT SMS! Σ Υ Γ Χ Α Ρ Η Τ Ι Κ Ε Δ Ν Ε Ο Θ Λ Β Μ Ω Α Π Ε Ο Λ Φ",
  }
}
```

## Sample: Emoji UCS2 Hex

```
{
  "SAPnotification": {
    "recipients": ["+6512341234"],
    "contentText":
      "0054006800690073002000690073002000610020006D0065007300730061006700650020007700690074006800200065006
      D006F006A00690020D83DDE0A002026BD002026C4D83CDFB8",
    "contentTextEncoding": "UCS2"
  }
}
```

Example:



## Sample: Long Text

```
{
  "SAPnotification": {
    "recipients": ["+6512341234"],
    "contentText": "This REST interface requires Enterprises to develop an REST client for sending
    MT messages to SAP, pulling MO and MT message acknowledgments, or REST server for receiving MO and
    MT message acknowledgments. Detailed explanations and samples are provided throughout the document.
    For additional information and support on the REST interface, contact your SAP representative.",
  }
}

Response:

{
  "SAPnotification": {
    "notificationId": [
      "1266475844",
      "1266475845",
      "1266475846"
    ],
    "status": {
      "timestamp": "2018-01-16 06:39:54.751",
      "statusCode": "0",
      "statusText": "Successful"
    }
  }
}
```



**Sample: MT that requests for DR with detailed internal status, in GMT time**

```
{
  "SAPnotification": {
    "recipients": ["+6512341234"],
    "contentText": "test content",
    "configuration": {
      "ack": {
        "mobileNotification": true,
        "ackReplyAddress": "http://url-to-somewhere/",
        "ackFinalStatus": true,
        "ackInternalStatus": true,
        "ackTimeInGMT": true
      }
    }
  }
}
```

**Sample: MT to Facebook Messenger only**

```
{
  "SAPnotification": {
    "recipients": ["+6512341234"],
    "contentText": "This message is meant for Facebook Messenger only",
    "channelPreferences": "FB"
  }
}
```

**Sample: MT to all Social Channel only**

```
{
  "SAPnotification": {
    "recipients": ["+6512341234"],
    "contentText": "This message needs to be retried within Social Channels.",
    "channelFailover": "SOCIAL_ONLY"
  }
}
```

## Sample: MT Survey to Push

```
{
  "SAPnotification": {
    "recipients": ["+6512341234"],
    "contentText": "How are you satisfied with our service? Rate 1(worst) - 5 (best)",
    "configuration": {
      "push": {
        "contentTemplate": "<question type='SCQ' allowReply='1'><instruction>Overall, I am very
satisfied with the service I just received</instruction><options><option value='1'>Strongly
Disagree</option><option value='2'>Somewhat Disagree</option><option value='3'>Neither Agree nor
Disagree</option><option value='4'>Somewhat Agree</option><option value='5'>Strongly
Agree</option></options></question>"
      }
    }
  }
}
```

### Example:

**Question**

Overall, I am very satisfied with the service I just received

- Strongly Disagree
- Somewhat Disagree
- Neither Agree nor Disagree
- Somewhat Agree
- Strongly Agree

**Submit**

**Cancel**

### 3. MO PUSH API

The SAP REST API initiates an REST MO request to an Enterprises' URL when there is an MO message waiting to be delivered to a certain Customer Account. Please note that the Enterprise's firewall must be open to the SAP messaging gateway IP before receiving any MO messages.

#### Credentials

HTTP requests to the customer-provided URL can be protected with HTTP Basic Authentication (optional):

```
Authorization: Basic sdfjkerwyvnewrlj==
```

#### Content Type

The MIME type of the request body is JSON:

```
Content-Type: application/json
```

#### API Method

```
POST http://customer-provided.url/path/mo
```

#### Push MO Message Body

```
{
  "SAPnotification": {
    "notificationId": "12304850385",
    "recipient": "short code",
    "sender": "tel:+449876543",
    "contentText": "MO content",
    "parameters": {
      "operatorId": "12303",
      "operatorNetwork": "GSM",
      "operatorCodeMCC": "N/A",
      "operatorCodeMNC": "N/A",
      "accountId": "12221",
      "contentTextEncoding": "UTF8",
      "messageClass": "1",
      "receivedTime": "2017-11-11 11:11:11.111",
      "sessionId": "",
      "keyword": "STOP",
      "tacCode": "",
      "receivedServiceNumber": "",
      "mmsStatus": "34456",
      "imodeStatus": "1234",
      "serviceId": "1234",
      "codeTac": "123",
      "parentalStatus": "18+=",
      "indexNber": "1234",
      "totalIndex": "321",
      "countryCode": "GB",
      "timezone": "GMT",
      "curTime": "2015-12-21 13:25:03",
    }
  }
}
```

## MO Response by Enterprise

```

HTTP/1.1 200
Content-Type: application/json

{
  "SAPnotification": {
    "notificationId": "12304850385",
    "status": {
      "statusText": "Successful",
      "statusCode": "0",
      "timestamp": "2015-03-08 14:59:30.252"
    }
  }
}

```

## MO Parameters

REST API Field	Description
notificationId	The notificationId field specifies the SAP unique identifier of the MO message (MO Order ID). It can be used to detect duplicates. If receiving the same notificationId for another message the content provider platform should accept the message but trash it as it is a duplicate. Example: "notificationId": "12304850385",
recipient	The recipient field contains the short code or service number dedicated to an Enterprise account. An Enterprise can use this value as the sender, under configuration section in the MT request. Examples: "recipient": "1234", "recipient": "CustomerName",
sender	The sender field contains the phone number of the SMS originator. The phone number is in international format, i.e. with '+' at the beginning, followed by country code and phone number. Prefix "tel:" is always used in MO Example: "sender": "tel:+449876543",
contentText	The contentText field contains the text sent by the mobile subscriber. The message is always in UTF8. Example: "contentText": "MO content in UTF8",
operatorId	The operatorId field specifies the identifier of the mobile operator to which the sender belongs. The values are SAP internal values and are given in decimal format. These are described in the SAP Operator List document. Example: "operatorId": "10745",
operatorNetwork	The operatorNetwork field specifies the standard of the mobile operator. Possible values are: GSM, GSM_1900, GSM_1800, GSM_3G, FIXED_LINE, CDMA, TDMA, IDEN, PCS, UMTS, AMPS, UNKNOWN, N/A. Examples: "operatorNetwork": "GSM", "operatorNetwork": "CDMA",
operatorCodeMCC	The operatorCodeMCC field specifies the Mobile Network Code of the operator in decimal format. If no MCC is applicable to the operator, this field value is N/A. Example: "operatorCodeMCC": "N/A",
operatorCodeMNC	The operatorCodeMNC field specifies the Mobile Network Code of the operator in decimal format. If no MNC is applicable to the operator, this field value is N/A. Example: "operatorCodeMNC": "N/A",

accountId	<p>The accountId field specifies the SAP unique identifier of the customer account. This value is used to differentiate accounts when a customer has different accounts with SAP. This parameter is given in decimal format.</p> <p>Example: "accountId": "13909",</p>
contentTextEncoding	<p>MO content in REST API is always UTF8</p> <p>Example: "contentTextEncoding": "UTF8",</p>
messageClass	<p>The messageClass field specifies the received type of short message. There are four possible values: 0, 1, 2, and 3. The Class values are described in the MT section above.</p> <p>Example: "messageClass": "2",</p>
receivedTime	<p>MO received time</p> <p>Example: "receivedTime": "2017-11-11 11:11:11.111",</p>
sessionId (optional)	<p>The sessionId field is used for session tracking or other purposes. When this field is present, its contents must be transferred directly to the sessionId field for each MT associated with this MO. (Depending on the service, this field may be used for other information. If so, this will be discussed by the account manager.)</p> <p>Example: "sessionId": "12345",</p>
keyword (optional)	<p>The keyword field contains the keyword used to parse the body of the message; this element is not inserted inside the request if the MO is not parsed.</p> <p>This parameter is optional.</p> <p>Example: "keyword": "STOP",</p>
tacCode (optional)	<p>If displayed, the tacCode field contains the TAC (Type Allocation Code), which is a part of the IMEI (International Mobile Station Equipment Identity), from the sending operator. It enables the content provider to identify the handset's terminal type.</p> <p>Example: tacCode": "12311",</p>
receivedServiceNumber (optional)	<p>The RECEIVED_SERVICENUMBER field contains the service number sent by the mobile operator.</p> <p>Note: This parameter may be different from the recipient (Short Code).</p> <p>Example: For short code 1229, Enterprise should receive recipient as short code 1229. The operator may send 12291 or 12292 depending on the operator's SMS-C configuration. In this case, the real value from the operator is stored inside the receivedServiceNumber parameter.</p>
Other Parameters (optional)	<p>Optional parameters that are passed to some French carriers</p> <p>mmsStatus imodeStatus serviced codeTac parentalStatus indexNber totalIndex</p>
countryCode (optional)	<p>Example: "countryCode": "GB",</p>
timezone (optional)	<p>Example: "timezone": "GMT",</p>
curTime (optional)	<p>Example: "curTime": "2015-12-21 13:25:03",</p>



## 4. MO PULL API

MO can be pulled by Enterprises, by specifying date range and groupIndex.

### Base URL

MO Pull may have its own domain name:

```
https://restmo-eu2.sapdigitalinterconnect.com/
```

### Credentials

HTTP requests to the MO Pull API are protected with HTTP Basic Authentication:

```
Authorization: Basic sdfjklkerwyvnnwrlj==
```

### Content Type

The MIME type of the request body must be JSON:

```
Content-Type: application/json
```

### API Method

```
GET /api/{version}/{accountName}/mo?  
startUTCTime={startUTCTime}&endUTCTime={endUTCTime}&group={groupIndex}&keyword={keyword}
```

### Parameters

URL Parameter	Required	Description
version	Y	API version. Set it to 1.0 by default. API version may change when a major upgrade happens, SAP will inform all customers prior to the changes.
accountName	Y	It is same as Hub account name (or HTTP Auth login name). Contact your SAP Account Manager for login credentials.
startUTCTime	Y	Start UTC time, e.g., 20170901132122333
endUTCTime	Y	End UTC time, e.g., 20170901132422333
group	N	groupIndex. MO will be split into multiple groups to avoid too many MO returned in one response, the groupCount in the response tells total groups; the groupIndex tells the current group. It is like paging result. If this parameter is absent, it will return first group.
keyword	N	Only return MO with specified keyword. If this parameter is absent, all MO within time range will be returned.

## MO Pull Request

The MO Pull response will be similar to MO Push, list of the MO within time range will be returned:

```
GET /api/1.0/testAccount/mo?startUTCTime=
20170901132122333&endUTCTime=20170901132422333&group=2&keyword=STOP
Authorization: Basic sdfj1kerwyvnewrlj==
Content-Type: application/json
```

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

```
{
  "SAPnotificationList": {
    "groupIndex": 2,
    "groupCount": 3,
    "SAPnotifications": [{
      "notificationId": "12304850385",
      "recipient": "Citibank",
      "sender": "tel:+4456797651",
      "contentText": "STOP sending this to me again",
      "parameters": {
        "operatorId": "12306",
        "operatorNetwork": "GSM",
        "operatorCodeMCC": "N/A",
        "operatorCodeMNC": "N/A",
        "accountId": "12112",
        "contentTextEncoding": "UTF8",
        "messageClass": "1",
        "receivedTime": "2017-11-11 11:11:11.111",
        "keyword": "STOP"
      }
    },
    {
      "notificationId": "12304850412",
      "recipient": "Citibank",
      "sender": "tel:+4498765432",
      "contentText": "STOP please",
      "parameters": {
        "operatorId": "12333",
        "operatorNetwork": "GSM",
        "operatorCodeMCC": "N/A",
        "operatorCodeMNC": "N/A",
        "accountId": "12112",
        "contentTextEncoding": "UTF8",
        "messageClass": "1",
        "receivedTime": "2017-11-11 11:11:11.111",
        "keyword": "STOP"
      }
    },
    {
      "notificationId": "12304850565",
      "recipient": "Citibank",
      "sender": "tel:+4459087622",
      "contentText": "STOP stop!!!!!!",
      "parameters": {
        "operatorId": "12307",
        "operatorNetwork": "GSM",
        "operatorCodeMCC": "N/A",
        "operatorCodeMNC": "N/A",
        "accountId": "12112",
        "contentTextEncoding": "UTF8",
        "messageClass": "1",
        "receivedTime": "2017-11-11 11:11:11.111",
        "keyword": "STOP"
      }
    }
  ]
}
```

## 5. ACK PUSH API

Delivery Notifications are message acknowledgments sent from the SAP network to customers. When delivering messages through our network, customers can request to receive the following three levels of acknowledgment: SAP Ack, SMS-C Ack, and Handset Ack. For unsuccessful delivery attempts, SAP returns a negative acknowledgment (Nack) outlining the reason for the failure. Message acknowledgments are sent to an Enterprise specified URL. In the case SAP messaging gateway doesn't deliver the notifications successfully, it will retry up to 9 times, every 30 minutes.

### Credentials

HTTP requests to the customer-provided URL can be protected with HTTP Basic Authentication (optional):

```
Authorization: Basic sdfjkerwyvnewrlj==
```

### Content Type

The MIME type of the request body is JSON:

```
Content-Type: application/json
```

### API Method

```
POST http://customer-provided.url/path/status
```

### Push Ack Message Body

```
{
  "SAPnotification": {
    "notificationId": "12304850385",
    "recipient": "tel:+6598765432",
    "customerId": "12431",
    "timestamp": "2017-09-01 11:11:11",
    "parameters": {
      "messageId": "1",
      "nmbOfMessage": "1",
      "subject": "subject",
      "operatorId": "12300",
      "tpoa": "1234",
      "mtReceivedTime": "2017-09-01 11:11:11",
      "deliveredTime": "2017-09-01 11:11:11"
    }
  },
  "status": {
    "statusCode": "DBxx, 45xx, external status code",
    "statusText": "description",
    "internalStatusCode": "optional, if requested",
    "finalStatus": true
  }
}

HTTP/1.1 200
Content-Type: application/json
{
  "SAPnotification": {
    "notificationId": "12304850385",
    "status": {
      "statusCode": "0",
      "statusText": "Successful",
      "timestamp": "2015-03-08 14:59:30.252"
    }
  }
}
```

## Parameters

REST API Field	Description
notificationId	Identifier of the request message sent by customer. For example, five MSISDNs are provided in the MT request, only one notificationId is generated for this request. Example: "notificationId": "12304850385",
messageId	Sequence Number of each message created when processing a MT request. For example, five MSISDNs are provided in the MT request, messageId for the first MSISDN is 1, for the second MSISDN is 2, all the way to 5 accordingly. Example: "messageId": "1",
nmbOfMessage	Number of messages generated from the request. Example: "nmbOfMessage": "1",
customerId	Identifier of the customer account. Example: "customerId": "12431",
recipient	Destination phone number in international format (i.e., with "+" and prefix). Example: "recipient": "tel:+6598765432",
subject	Returns the Subject parameter given in the MT request. Example: "subject": "original MT subject",
timestamp	Ack received time, in CET/CEST time, or in GMT time if <b>ackTimeInGMT: true</b> is set in MT request. Example: "timestamp": "2017-09-01 11:11:11",
statusCode	Status Code. Only present when error happens, for a positive status, statusCode is 1. StatusCode uses EM Hub status ID: DBxx, 45xx. Examples: "statusCode": "DB52", "statusCode": "4503", "statusCode": "1",
statusText	Status description Examples: "statusText": "Rejected by Operator", "statusText": "Successful",
finalStatus	Indicate if the status is Final status This field will be returned only when <b>ackFinalStatus: true</b> is set in MT request Example: "finalStatus": true,
operatorId	Identifier of the destination operator as identified by SAP SMS 365, enterprise service. Please contact your SAP representative should you need the list of operatorIDs. This field will be returned only when <b>ackOperatorId: true</b> is set in MT request Example: "operatorId": "12306",
internalStatusCode	Add additional information to the statusCode provided in the delivery notification. This field will be returned only when <b>ackInternalStatus: true</b> is set in MT request Example: "internalStatusCode": "DB32"

countryCode	Country code This field will be returned only when <b>ackCountryCode: true</b> is set in MT request Example: "countryCode": "GB"
mtReceivedTime	When the MT is received (MailSubmitTime), in CET/CEST time, or in GMT time if <b>ackTimeInGMT: true</b> is set in MT request. This field will be returned only when <b>ackMTReceivedTime: true</b> is set in MT request Example: 'mtReceivedTime': "2017-09-01 11:11:11",
deliveredTime	When the Ack is submitted, in CET/CEST time, or in GMT time if <b>ackTimeInGMT: true</b> is set in MT request. This field will be returned only when <b>ackDeliveredTime: true</b> is set in MT request Example: "deliveredTime": "2017-09-01 11:11:11",
tpoa	TPOA info This field will be returned only when <b>ackTpoa: true</b> is set in MT request Examples: "tpoa": "1234", "tpoa": "Citibank",

There are three levels of acknowledgments available in the SAP REST interface: SAP-Ack, SMSC-Ack, Handset-Ack.

### SAP Ack Example

The SAP Acceptance ACK is generated when an MT message request is processed by the SAP messaging gateway. Enterprises will always receive this acknowledgment, which includes the number of short messages created and the notificationId for all.

```
{
  "SAPnotification": {
    "notificationId": "12304850385",
    "recipient": "tel:+6598765432",
    "customerId": "12431",
    "timestamp": "2017-09-01 11:11:11",
    "parameters": {
      "messageId": "1",
      "nmbOfMessage": "1",
      "subject": "subject"
    },
    "status": {
      "statusCode": "1",
      "statusText": "Processed"
    }
  }
}
```

## SMS-C Ack Example

The SMS-C ACK is generated when an MT message has been sent to the destination mobile operator SMS-C and is waiting to be delivered to the handset. The SMS-C Ack therefore represents a temporary status (awaiting Handset Ack); although in cases where the Handset Ack is not requested, or not supported by the destination operator, the SMS-C Ack constitutes the final notification.

```
{
  "SAPnotification": {
    "notificationId": "12304850385",
    "recipient": "tel:+6598765432",
    "customerId": "12431",
    "timestamp": "2017-09-01 11:11:11",
    "parameters": {
      "messageId": "1",
      "nmbOfMessage": "1",
      "subject": "subject"
    },
    "status": {
      "statusCode": "1",
      "statusText": "Sent"
    }
  }
}
```

### Or failure

```
{
  "SAPnotification": {
    "notificationId": "12304850385",
    "recipient": "tel:+6598765432",
    "customerId": "12431",
    "timestamp": "2017-09-01 11:11:11",
    "parameters": {
      "messageId": "1",
      "nmbOfMessage": "1",
      "subject": "subject"
    },
    "status": {
      "statusCode": "DB52",
      "statusText": "Rejected by Operator"
    }
  }
}
```

## Handset Ack Example

The Handset Ack is generated when an MT message has been delivered to the mobile phone. This is an operator dependent feature.

```
{
  "SAPnotification": {
    "notificationId": "12304850385",
    "recipient": "tel:+6598765432",
    "customerId": "12431",
    "timestamp": "2017-09-01 11:11:11",
    "parameters": {
      "messageId": "1",
      "nmbOfMessage": "1",
      "subject": "subject"
    },
    "status": {
      "statusCode": "1",
      "statusText": "Received"
    }
  }
}
```

### Or failure

```
{
```



```
"SAPnotification": {
  "notificationId": "12304850385",
  "recipient": "tel:+6598765432",
  "customerId": "12431",
  "timestamp": "2017-09-01 11:11:11",
  "parameters": {
    "messageId": "1",
    "nmbOfMessage": "1",
    "subject": "subject"
  },
  "status": {
    "statusCode": "DB52",
    "statusText": "Rejected by Operator"
  }
}
```

## 6. ACK PULL API

Ack can be pulled by Enterprises, by specifying date range and groupIndex.

### Base URL

Ack Pull may be on its own domain name:

```
https://restack-eu2.sapdigitalinterconnect.com/
```

### Credentials

HTTP requests to the Ack Pull API are protected with HTTP Basic Authentication:

```
Authorization: Basic sdfjklkerwyvnnnewrlj==
```

### Content Type

The MIME type of the request body must be JSON:

```
Content-Type: application/json
```

### API Method

```
GET /api/{version}/{accountName}/status?  
startUTCTime={startUTctime}&endUTCTime={endUTctime}&group={groupIndex}&status={nok}
```

### Parameters

URL Parameter	Required	Description
version	Y	API version. Set it to 1.0 by default. API version may change when a major upgrade happens, SAP will inform all customers prior to the changes.
accountName	Y	It is same as Hub account name (or HTTP Auth login name). Contact your SAP Account Manager for login credentials.
startUTCTime	Y	Start UTC time, e.g., 20170901132122333
endUTCTime	Y	End UTC time, e.g., 20170901132422333
group	N	groupIdx. MO will be split into multiple groups to avoid too many MO returned in one response, the groupCount in the response tells total groups; the groupIndex tells the current group. It is like paging result. If this parameter is absent, it will return first group.
status	N	Request to only return negative status. status=nok If this parameter is absent, all ack will be returned.



## Ack Pull Request

The Ack Pull response will be similar to Ack Push.

```
GET /api/1.0/testAccount/status?startUTCTime= 20170901132122333&endUTCTime=20170901132422333&group=2
Authorization: Basic sdfj1kerwyvnnnewrlj==
Content-Type: application/json

HTTP/1.1 200
Content-Type: application/json

{
  "SAPnotificationList": {
    "groupIndex": 2,
    "groupCount": 3,
    "SAPnotifications": [{
      "notificationId": "12304850385",
      "recipient": "tel:+6598765432",
      "customerId": "12431",
      "timestamp": "2017-09-01 11:11:11",
      "parameters": {
        "messageId": "1",
        "nmbOfMessage": "1",
        "subject": "subject"
      },
      "status": {
        "statusCode": "DB52",
        "statusText": "Rejected by Operator"
      }
    },
    {
      "notificationId": "12304851235",
      "recipient": "tel:+6598765432",
      "customerId": "12431",
      "timestamp": "2017-09-01 11:11:11",
      "parameters": {
        "messageId": "1",
        "nmbOfMessage": "1",
        "subject": "subject"
      },
      "status": {
        "statusCode": "DB52",
        "statusText": "Rejected by Operator"
      }
    }
  ]
}
```



## 7.0 REGISTRATION SERVICE AND API

The registration service and API is an independent service as part of the SAP Intelligent Notification 365 portfolio. Please access the registration service API documentation here:

<https://community.sapmobileservices.com/t5/SAP-Intelligent-Notification-365/SAP-Intelligent-Notification-365-Registration-Service-API/m-p/2870#M47>

## APPENDIX A. STATUS CODES

The list of all available Internal Status ID, how they are registered in our system and their corresponding External StatusID is displayed in the table below.

Internal StatusID	MT Status Description	External StatusID
4503	No SMSC found for current MSISDN	4503
4507	Msg received by SMSC	450A
4510	Msg processed by SAP.	N/A
4518	No SMSC found to send UDH	DB52
4524	Trashed Messages	4524
4525	Trashed Messages on customer request	4524
4526	Unknown operator	DB52
4527	Unknown SMSC	DB52
4529	NRS error	DB62
4530	Customer Blacklisted	4524
450A	Msg received	450A
450D	Msg refused by billing	450D
451A	Handset Ack	451A
DA10	Invalid MSISDN	DB52
DA11	Invalid TPOA	DB52
DB02	SYNTAX_ERROR	DB52
DB03	SMS service not available	DB52
DB04	Operator connection error	DB52
DB05	Call barred by destination operator	DB05
DB07	AUTH_FAILURE	DB52
DB11	REPET_LEG_FAILURE	DB52
DB16	REVERS_CHARG_NOT_ALLOWED	DB78
DB19	NEW_AC_NOT_VALID	DB52
DB22	TIME_PERIOD_NOT_VALID	DB52
DB23	MSG_TYPE_NOT_SUPPORTED	DB52
DB24	MSG_TOO_LONG	DB52
DB35	Customer busy	DB52
DB36	RPID_ALREADY_IN_USE	DB52
DB37	DELIVERY_IN_PROGRESS	N/A
DB42	NO_MSG_ASSOCIATED	DB52
DB43	TELESERVICE_NOT_PROVISIONED	DB52
DB44	MEMORY_CAPACITY_EXCEEDED	DB62
DB46	VALIDITY_PERIOD_NOT_VALID	DB52
DB47	ADC_INVALID	DB99
DB48	Invalid MSISDN	DB99
DB51	INVALID_PWD_ID	DB52
DB52	MSG_SEND_FAILURE	DB52

Internal StatusID	MT Status Description	External StatusID
DB53	SERVER_BUSY	DB62
DB54	TOO_MANY_CONNECTION	DB62
DB55	Operator network error	DB52
DB56	STATUS_UNKNOW	DB52
DB58	INVALID_SIZE	DB52
DB60	Data format not supported	DB52
DB62	OTHER_FAILURE_REASON	DB62
DB63	Unknown subscriber	DB99
DB64	FACILITY_NOT_SUPPORTED	DB52
DB65	Validity period expired	DB65
DB66	SMS_NOT_PROVISIONED	DB52
DB67	MS_ERROR	DB52
DB69	Brite subscriber	DB76
DB70	Distant operator network failure	DB52
DB71	NO_RESPONSE_FROM_SMSC	DB52
DB73	CONNECTION_TO_SMSC_FAILED	DB52
DB74	BAD_REQUEST	DB52
DB76	INVALID_SUBSCRIPTION	DB76
DB77	SERVER_INTERNAL_ERROR	DB62
DB78	BILLING_NO_BALANCE	DB78
DB80	ACK_ONLY	DB62
DB81	BLACKLISTED	DB52
DB85	Message Validity Period Expired (KGT)	DB65
DB99	unknown or ported number	DB99
DBA3	Handset cannot be reached (Sunday)	DB52
DBA4	Subscriber cannot be reached (Sunday)	DB52
DBA5	Subscriber SIM Card Full (Sunday)	DB62
DBA6	SMSC currently busy	DB62
DBA7	Temporary Traffic Congestion (Sunday)	DB62
DBF1	Message rejected by SAP Output Interface. Message not sent to Operator	DB52
DBF2	Message rejected by Operator. This a generic error	DB52
DBF3	Retry currently done on message	DBF3
DBF5	End User roamed on an unreachable network	DB52
DBF6	Message rejected by Operator. User must send MO to unblock messages	DBF6
DBF7	Message rejected by Operator. Exceed more than 50MT per month not allowed	DB52
DBF8	Message rejected by Operator. End user not registered for the service	DB76

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