Delivery Notification Codes

Technical Guide

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1 Document information

1.1 Purpose

Purpose

This document provides the list of Message Status used by The Ring Ring Company.
A description of the actions performed on Message Status is provided to better understand the mechanism behind the Delivery Notification process.
The latest version of the document is available at the address
http://interactive.ringring.be/public/documentation/DeliveryNotificationCodes.pdf

1.2 Change history

Changes

Release date	Changes
2009-09-30	Initial version
2010-12-14	Update some codes
2011-11-15	Add information related to Service Level
2013-01-17	Add new status "809 – MSISDN in DoNotCall list
2014-02-21	Add new status "912 – SimCard Configuration : Daily quota reached"

1.3 Release notes

Versions

2009-09-30
- Initial version

2010-12-14
- Add code 10 and 905
- Update of code 400

2011-11-15
- Add information related to Service Level

2013-01-17
- Add code 809

2014-02-21
- Add code 912

1.4 Contact

Contact

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2 Message Status

List of Message Status

Message Status is representing an internal status code used to standardize the different Delivery Notification Codes received by mobile providers.

Message Status	Category	State	Reason
0	Not Sent	Temporary	Message scheduled to be sent in future.
10	Pending	Temporary	The message is being submitted to the provider.
100	Pending	Temporary	Acknowledgment received .
200	Delivered	Final OK	Delivered.
300	Not Delivered	Final Error	Technical Error.
301	Not Delivered	Final Error	Subscriber absent (mobile device is switched off, …).
302	Not Delivered	Final Error	Subscriber cannot receive premium messages.
303	Not Delivered	Final Error	Subscriber cannot receive premium when using the roaming.
305	Not Delivered	Final Error	No more credit on the prepaid sim card.
309	Not Delivered	Final Error	End-user don't belong to a mobile provider.
310	Not Delivered	Final Error	Validity Period expired or refused by mobile provider.
400	Unknown	Final Unknown	An unknown error occurred.
800	Not Delivered	Final Error	Message was canceled by Ring Ring.
801	Not Delivered	Final Error	Shortcode not available.
802	Not Delivered	Final Error	The Validity Period of the message expired.
803	Not Delivered	Final Error	The format of the msisdn is not correct.
809	Not Delivered	Final Error	The MSISDN is in "Do Not Call" list
900	Pending	Temporary	Technical error, message will be sent later (retry mechanism).
901	Pending	Temporary	Subscriber absent, message will be sent later (retry mechanism).
902	Pending	Temporary	Bad mobile provider, message will be sent to another mobile provider (retry mechanism).
903	Pending	Temporary	Subscriber not able to receive message, message will be sent later (retry mechanism).
905	Pending	Temporary	Subscriber as not enough Credit (retry mechanism)
912	Pending	Temporary	SimCard Configuration : Daily Quota Reached (retry mechanism).

3 Flow

The flow consists of 2 sequential steps and 2 asynchronous actions.

3.1 Checking constraints

Verify The first step in the process is to check if the message must be sent or not.
There are some checks on the Validity Period, shortcode… If the message cannot be
handled then the Message Status value will be set to 8xx.
This important check is performed whenever a message must be submitted.

3.2 Submitting messages

Submit When sending a message to the mobile provider, this one is sending back a positive
(ACK - Acknowledgment) or negative response (NACK - Negative Acknowledgment).
This operation is called "Submitting" message.
When the ACK is received then the Message Status comes 100 (Submitted).
When a NACK is received then the Message Status will change depending on the
number of remaining retries:
 If the number of retries is exhausted then the Message Status will become 3XX.
If retries are still possible then the Message Status will become 9XX and the complete
process will restart after a delay.
NACK means mainly that there is a technical issue at the mobile provider side or that the
mobile subscriber cannot receive premium SMS (account blocked or prepaid card is
empty: 302, 303, 305)
For Message Status equals to 302 or 303, the retries are not performed.
The delay between retries depends on the type of error received.

3.3 Receiving the Delivery Notification Codes

Delivery Notification Codes

This step is asynchronous and is not linked to the sending of the message. The mobile providers decide when the delivery notification is sent.

The Ring Ring Company translates all Delivery Notification Codes from mobile providers into a standardized list of Message Status.

The Message Status will pass from 100 to 200 or 3XX

3.4 Closing Message Status

Close

This step is asynchronous and performed by the Ring Ring Company.

Mobile providers can have issues when sending the delivery notifications code, The Ring Ring Company "close" the Message Status after 96 hours.

For all messages not having a Final State, the Message Status is put to 400 (Unknown).

Note that if for any reason, the mobile provider is sending the delivery notification code after 96 hours, The Ring Ring Company takes it into account and update the Message Status.

4 Cautions on Delivery Time

Depending on the mobile providers, the timestamps used to determine the delivery time is subject to caution.
When timestamps are provided by mobile providers, the date & time depends on the clock synchronization of the mobile providers.
For information, clocks of servers owned by The Ring Ring Company are synchronized with the Network Time Protocol (NTP) every 30 minutes.

For non-premium message on Proximus (MT), the timestamp provided by Proximus don't indicate the seconds.
Then a message can be sent at 10:55:26 and the delivery time will be 10:55:00, meaning that the message is delivered before sent.

For premium message on Proximus (MTR), the timestamp is not delivered.
The Ring Ring Company provides the timestamp when the report was received.

Based on these remarks, the time between the Message Sent and the Message Delivery cannot be taken into account to measure the performances of delivery; the information must be used as is.

These constraints are linked to mobile providers then all application service providers are facing the same issue and limitations.

5 Service Level

The Service level cannot be measured from the creation to the delivery of SMS for the following reasons:
- The phone number used by the customer to send the message can be inactive then the delivery will fail.
- The GSM device can be off or simply out of range then first delivery attempt will fail.
- The delivery notification received from mobile providers is asynchronous and the timestamp provided is not always accurate or present.

In conclusions, the guaranteed delivery percentage (or the speed to deliver) is not depending on the services of The Ring Ring Company but depends first on the end-user and mobile providers.
This statement is valid for ALL application service providers.

The Ring Ring Company can provide Service Level based on the availability of the tools (SMS Gateway, SMS mailer, web interface, SMS infrastructure …) and on the submit of messages to the mobile providers (the submit process explained in chapter 3.2 Submitting messages).
The submit process can be measured in term of quantity and speed between The Ring Ring Company and the mobile provider. The Service Level will exclude all issues related to the mobile providers (out of the scope of Ring Ring's responsibility)

The Ring Ring Company provides information about the percentage of delivery, the reasons of non-delivery and performs also a close monitoring of the transactions enabling a faster reaction than mobile providers in case of issue.

These constraints are linked to mobile providers then all application service providers are facing the same issue and limitations.