QR Technologies
90 Cyber World Tower,
Room No. B2703, Ratchadapisek
Road, Huay Kwang, Bangkok
10310 Thailand

Tel: +66(0)2-16833123 Fax: +66(0)2-1683314

QR Technologies
SMS Gateway API Documentation

Date: 10 Dec 2014
Version: 1.6

Copyright ® QR Technologies

This document has been specifically prepared for QR Technologies clients and business partners. The content of this document is confidential and is the sole property of QR Technologies Its distribution is strictly limited to QR Technologies Employees and clients involved in the evaluation of this document. Any reproduction or divulgence of the content of this document without the written consent of the QR Technologies Is prohibited.

Disclaimer

The information in this document is provided as is, with no warranties whatsoever. The said information does not include any commercial warranty for any particular purpose, or any warranty otherwise arising out of any proposal, specification or sample. Furthermore, information provided in this document may be changed substantially prior to final release. This document is provided for information purpose only.

QR Technologies Disclaims all liability, including liability for infringement of any proprietary rights, relating to the implementation of information presented in this document. QR Technologies does not warrant or represent that such use will not infringe such rights.

QR Technologies retains the right to make changes to this specification at any time, without notice.

Third party brands and names are the property of their respective owners.

Support Information

QR Technologies
90 Cyber World Tower,
Building, 27th Floor,
Room No. B2703, Ratchadapisek Road,
Huay Kwang, Bangkok
10310 Thailand

Phone +66(0)2-16833123
Fax +66(0)2-1683314
Email : support@qrtec.co.th
Website : www.qrtec.co.th

2014 QR Technologies

Table of Contents

Document History

	Date	Version	Description
1	10/12/2014	1.0	Initial creation
2	16/12/2014	1.1	Change GET method to POST
		1.2	Change message max length based on ctype
		1.3	Change MSISDN max length
3	2/02/2015	1.4	Insert MT Broadcast for Content Push
4	8/09/2015	1.5	Added MT Content Header
5	28/09/2015	1.6	Added DN Parameters

2.0 Terminology and Conventions

Definition	Full Forms
Premium	Chargeable MT
Non-Premium	Non-chargeable MT (FREE)
Operator	All operator in Thailand – AIS,DTAC,TMV

Abbreviation	Full Forms
CP	Content Providers (External)
QR	QR SMS Gateway Platform
HTTP	Hyper Text Transport Protocol
MSISDN	Mobile Station International ISDN Number
SMS	Short Messaging Service
MO	Mobile Originating
MT	Mobile Terminating
DN	Delivery Notification
URL	Uniform Resource Locator
CP MO URL	Content Provider MO URL
CP DN URL	Content Provider DN URL
MCP MT URL	QR Technologies Reverse Billing Platform MT URL
CP SUBSCRIBE URL	Content Provider URL to receive STOP keyword from subscribers

3.0 Introduction

The objective of this document is to outline the architecture and technical specifications to connect to QR Technologies SMS Gateway via the internet. QR is a solution that enables simple integration for Content Providers (CPs) applications or services to receive and send SMS to all Thailand mobile phones.

This document will describe how to use the HTTP protocol to gain access to QR Technologies messaging network to send SMS. The implementation of this interface requires configuration of client/server software over TCP/IP. We will not explain the entire HTTP protocol but only the relevant transaction process necessary for implementation.

For normative information on the HTTP 1.1 protocol, please refer to RFC 2616.

4.0 Scope of Document

This document describes how CP can integrate with QR to receive and send SMS. This document is intended for technical architect, designer and developer.

5.0 System Requirement

Web server with a fixed domain name or fixed IP

- Content provider will be interfacing with QRSG via HTTP protocol
- QR server will be listening on port 82
- Content provider server are allowed to use any port

6.0 Security

Only CP server IP will be allowed to gain access to QR server. CP server IP will be provision into QR firewall

- CP will provide QR Technologies with a password during service provisioning. This password will be used as authentication when posting MO to CP
- QR Technologies will provide a CPTOKKEN to CP during service provisioning. This CPTOKEN are used for authentication and must be submitted for each MT posting

7.0 API Overview for SMS

The following categories of APIs provided to the CP to interface to the QR platform:

QR provides the basic functionalities:

- Receive mobile originated (MO) short messages
- Send mobile terminating (MT) short messages
- Receive delivery notification (DN) for submitted MTs

There are three categories of API:

- MO API – for CP to receive MO
- MT API – for CP to send Content
- DN API – for CP to receive DN

The following diagram describes the whole system flow:

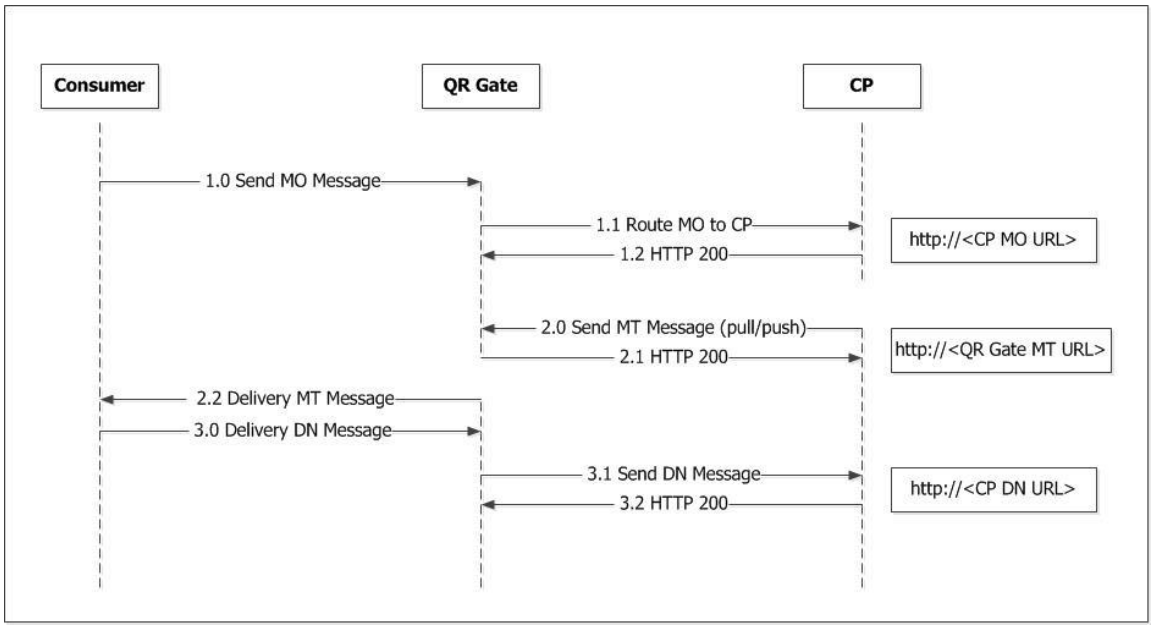

Diagram 1: System Flow Architecture

1.0 Mobile users send a MO request to a short code. EG: They type “P1” and send to 4219202

1.1 Once QR receives the MO request from mobile users, it will route the particular message to content provider based on their keyword.

1.2 When CP receives the MO request, CP needs to return HTTP 200 to QR

2.0 CP will process the MO request and reply to mobile user with an MT message. CP needs to initiate a HTTP POST request to http://< QR MT URL> to insert the content

2.1 Once MT is verified, an HTTP 200 will be return as acknowledgement and result field will be place in the header for more detail

2.2 QR will then forward the MT message to respective mobile operator to send the MT to the mobile user

3.0 When mobile user receives the MT message, a DN will be sent back to QR

3.1 QR will forward the DN message to CP instantly

3.2 Once CP receive the DN, HTTP 200 should be returned to QR as an acknowledge

8.0 Step by Step Guide to connect QR API

8.1 Receiving MO Message

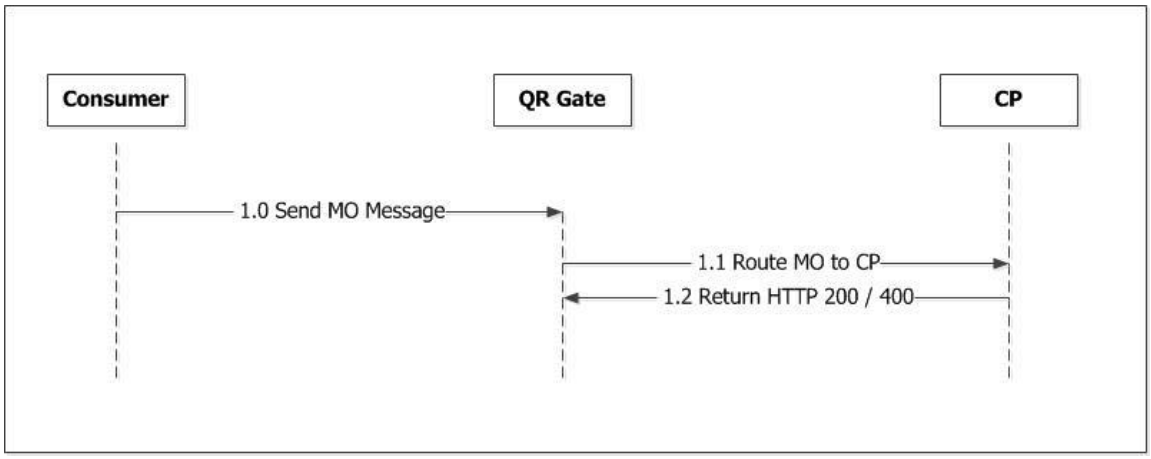

Diagram 2: Receive MO from subscriber

QR receive a MO message from subscriber. QR will route the message to CP by sending a HTTP POST Request to CP (http://<CP MO URL>)

Table below are the **HTTP POST METHOD** parameters that will be transferred to your server / web script from QR to CP:

No	Parameter Name	Type	Min / Max Value	Description
1	msgid	Numeric	Max = 64	Unique transaction id generated by QR Gateway.
2	msisdn	String	Max = 20	Number of the sender (in international format) Eg: 66819197088

3	message	String	Max = 280	The message sends from sender. Eg: P1 1 – text/ASCII (160 characters) 2 – Unicode (280 characters)
4	shortcode	String	Max = 7	Short code number of which the MO is sent to. Eg: 4219112
5	motoken	String	Min = 6; Max = 50	Password given by CP for authentication
6	productid	String	Max = 64	Subscription ID of the sender (only apply for DTAC)
7	operator	String	Min = 1, Max = 16	Telco Thailand 1. AIS 2. DTAC 3. TMV
8	keyword	String	Min = 1, Max = 10	Keyword based on registered shortcode 1. P1 2. Stop P1

Note: CP will need to return the unique transaction id in the MT message to tie to the request (except for push MT)

QR will be expecting HTTP 200 to be returned to indicate that CP has successfully received the MO message. If not 200, QR will consider it is a failed request and will retry for a number of times to contact CP. If it is still fails, QR will return an error message to sender.

This example illustrates on how we will send the request to your URL, via HTTP POST.

```
POST http://www.CPurl.com/receiver.php HTTP/1.1
HOST: CPHost
msgid=_msgid123&msisdn=66819197088&message=P1&shortcode=4219112&motoken
=cp123&productid=&operator=1&keyword=P1
```

8.2 Sending MT Message (Broadcast)

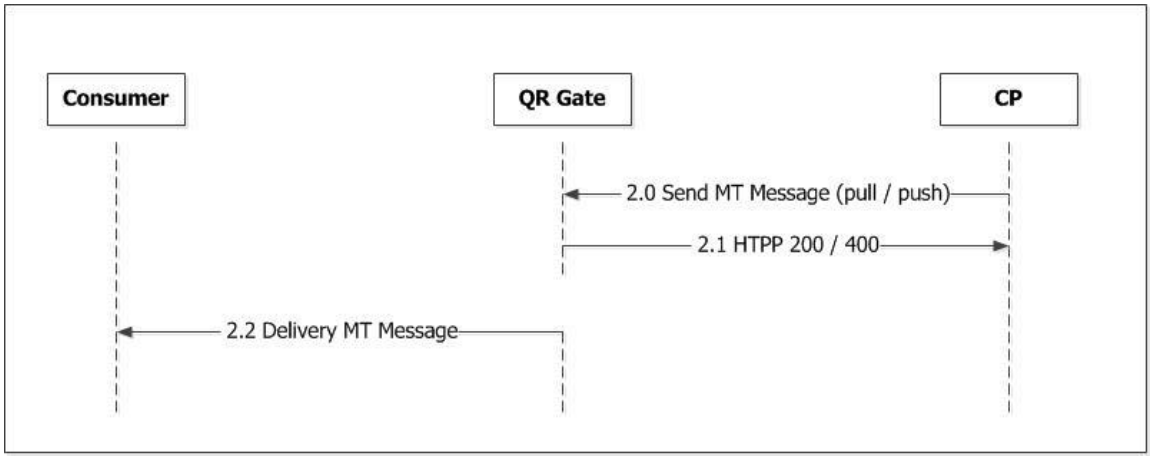

Diagram 3: Sending MT Message to Subscribers

QR will control the broadcast based on the insert content from CP. Broadcast time are from 8:30AM – 12:30PM (GMT+7) Thailand local time.

To insert content MT message, CP are required to insert the HTTP request header fields and send a HTTP POST Request to QR (http://<QR_MT_URL>)

Table below are the **HTTP POST METHOD** fields that will be passed from CP to QR.

No	Parameter Name	Type	Min / Max Value	Description
1	username	String	Max = 32	Username that is assigned to your account.
2	serviceid	Numeric	Max = 64	Short code number of which the MO is sent to. Eg: 4219112
3	broadcastdate	String	Length=8	Broadcast date in format yyyymmdd
4	ctype	Numeric	Max = 1	Indicate the content type to send: 1 – text/ASCII (160 characters) 2 – Unicode (280 characters) 3 – WAP (200 characters)
5	content	String	Min = 1	The content of the message. 1 – text/ASCII (160 characters) 2 – Unicode (280 characters) 3 – WAP (200 characters)
6	header	String	Min= 1	The content header to differentiate the content

				01 – for first content 02 – for second content 03 – for third content

Following are some examples for sending MT to QR via HTTP POST:-

Type	Text/ASCII
Original Text	This is sample text
URL Encoded	This+is+sample+text
Broadcast date	2015-02-11 (yyyy-mm-dd)
Sample API	POST : <QR_MT_URL> Host: <QR Host> username=username1&serviceid=4139716&broadcastdate=20150211&ctype=1&message=this+is+sample+text

Type	Unicode
Original Text	ได้สิ
HEX Code	0E440E140E490E2A0E34
Broadcast date	2015-02-11 (yyyy-mm-dd)
Sample API	POST : <QR_MT_URL> Host: <QR Host> username=username1&serviceid=4139716&broadcastdate=20150211&ctype=2&message=4F60597D5417

Type	WAP
Original Text	tinyurl.com/3et8ha5
HEX Code	0E440E140E490E2A0E34
Broadcast date	2015-02-11 (yyyy-mm-dd)
Sample API	POST : <QR_MT_URL> Host: <QR Host> username=username1&serviceid=4139716&broadcastdate=20150211&ctype=2&message=tinyurl.com/3et8ha5

Below are the values that will be returned in the result field.

No	Result value	Description
1	> 0 (positive value)	AlphaNumeric string. (Refer as QR MT ID)
2	-10	Invalid parameter msgid
3	-11	Invalid parameter token
4	-12	Invalid parameter operator
5	-13	Invalid parameter shortcode
6	-14	Invalid parameter msisdn
7	-15	Invalid parameter cprefid
9	-17	Invalid parameter ctype
10	-18	Invalid parameter message length
11	-19	Invalid parameter keyword
13	-21	Invalid parameter apitype
14	-23	Invalid parameter subid
15	-24	DB Error
16	-25	Invalid MT URL Form

8.3 Receiving DN

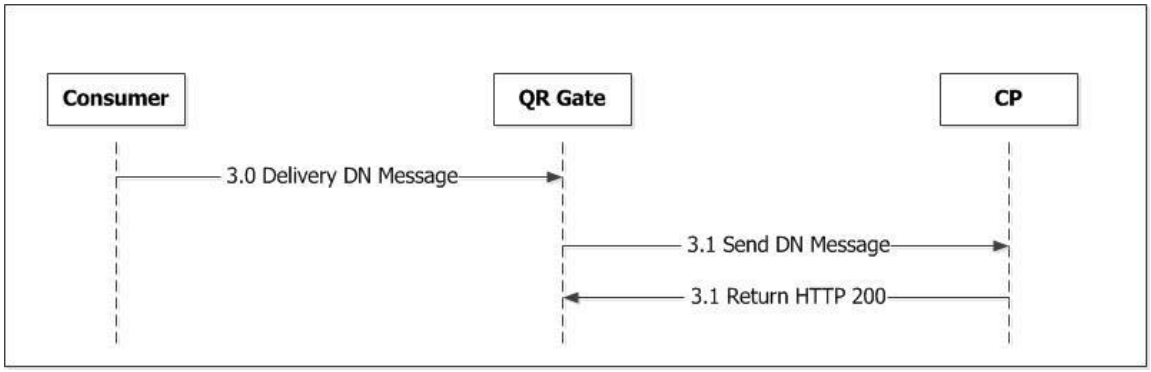

Diagram 4: Receiving DN

Once MT is delivered to subscriber, DN will return to QR. DN will be returned only to premium MT. Once QR receive a DN Message from Telco, it will pass to CP by sending a HTTP POST Request to CP (http://<CP_DN_URL>)

Below are the HTTP request header parameters that will be passed from QR to CP.

No	Parameter Name	Type	Min / Max Value	Description
1	dnid	String	Max = 64	Unique transaction id generated by QR Gateway.
2	msisdn	String	Length = 8	DN return date in format yyyymmdd
3	shortcode	String	Max = 7	Short code number of which the MO is sent to. Eg: 4219112
4	operator	String	Max = 16	Telco Thailand 1. AIS 2. DTAC 3. TMV
5	bcdate	Date	Length=8	Broadcast date in format yyyymmdd
6	dnerrorcode	Numeric	Length = 3	Indicate status for dn. Please refer to dnerrorcode table
7	keyword	String	Min = 1, Max = 10	Keyword based on registered shortcode

Below are the values that will be returned in the dnerrorcode field.

No	dnerrorcode	Description
1	200	MT delivered successfully
2	100	MT sent to queue successfully
3	500	MT rejected
4	501	Message format error
5	510	Unknown Subscriber
6	511	Subscriber barred
7	512	Subscriber not provisioned or unavailable/ Invalid subscriber
8	520	Operator failure
9	521	Operator having congestion
10	530	Error in charging
11	531	Subscriber does not have enough balance for charging
12	532	Subscriber exceeded allowed usage/frequency
13	550	Other error

QR will be expecting HTTP 200 to be returned to indicate that CP has successfully received the DN message. If it is not 200, it is a failed request. QR retry for a configured number of times to contact CP.