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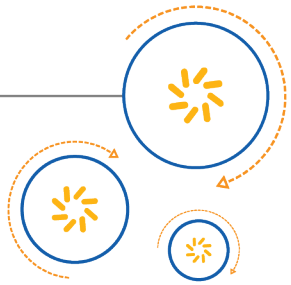

QMI WMS 1.24 for MPSS.JO.1.0

QMI Wireless Message Service Spec

80-NV300-9 A

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Revision History

Revision	Date	Description
A	Mar 2015	Initial release. Created from 80-NH952-9 AD. Updates for this revision include minor version 24. Updated Sections 3.33.3, 3.54.3, and 3.55.2. Added new TLVs: • SIM ready information events (Sections 3.33.1 and 3.39.2) • SIM ready events registration information (Section 3.54.2) • SIM ready status information (Sections 3.54.2 and 3.55.1)

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1 Introduction

1.1 Purpose

This specification documents Major Version 1 of the Qualcomm Messaging Interface for Wireless Message Service (QMI_WMS).

QMI_WMS provides commands related to wireless messaging to applications running on a host PC, including:

- Sending raw data
- Reading, writing, deleting data to/from device memory
- Modifying tags
- Reading and setting routes
- Reading and setting Short Message Service Center (SMSC) addresses

It is expected that user-level applications, e.g., connection managers and/or device drivers residing on the Terminal Equipment (TE), will use QMI_WMS to access such functionality on the MSM™ device. QMI_WMS is a QMI native service, conforming to the generalized behavior for QMI services, as defined in 80-VB816-1.

1.2 Scope

This document is intended for software developers who will be using QMI_WMS. This document provides the following details about the QMI_WMS:

- Theory of operation – Chapter 2 provides the theory of operation of QMI_WMS. The chapter includes messaging conventions, assigned QMI service type, fundamental service concepts, and state variables related to the service.
- Message formats, syntax, and semantics – Chapter 3 provides the specific syntax and semantics of messages included in this version of the QMI_WMS specification.
- Additional information – Appendix A through Appendix C provide tables for cause codes, service category assignments, and protocol identifier data; list deprecated messages; and list references and acronyms.

1.3 Conventions

Function declarations, function names, type declarations, and code samples appear in a different font, for example, `#include`.

An asterisk (*) in a Message/TLV/Parameter indicates that it is applicable only for 3GPP2.

A double asterisk (**) in a Message/TLV/Parameter indicates that it is applicable only for 3GPP.

Unless otherwise specified, settings are persistent across reboot, take place immediately, and are global.

1.4 Technical Assistance

For assistance or clarification on information in this document, submit a case to Qualcomm Technologies at https://support.cdmatech.com.

If you do not have access to the CDMATech Support website, register for access or send email to support.cdmatech@qti.qualcomm.com.

2 Theory of Operation

2.1 Generalized QMI Service Compliance

The QMI_WMS service complies with the generalized QMI service specification, including the rules for messages, indications and responses, byte ordering, arbitration, constants, result, and error code values described in 80-VB816-1. Extensions to the generalized QMI service theory of operation are noted in subsequent sections of this chapter.

2.2 WMS Service Type

WMS is assigned QMI service type 0x05.

2.3 Message Definition Template

2.3.1 Response Message Result TLV

This Type-Length-Value (TLV) is present in all Response messages defined in this document. It is not present in the Indication messages.

Name	Version introduced	Version last modified
Result Code	Corresponding response's *Version introduced*	Corresponding response's *Version last modified*

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x02			1	Result Code
Length	4			2	
Value	→	uint16	qmi_result	2	Result code • QMI_RESULT_SUCCESS • QMI_RESULT_FAILURE
		uint16	qmi_error	2	Error code – Possible error code values are described in the error codes section of each message definition

2.4 QMI_WMS Fundamental Concepts

2.4.1 Wireless Message Network Architecture

A network supports wireless messaging with three main components:

- A wireless MSM device supporting WMS is designated as an Endpoint (EP) (refer to 3GPP2 C.S0015-A) within a larger network. WMS EPs are capable of both originating and terminating WMS messages.
- A wireless network may include one or more SMSCs (refer to 3GPP2 C.S0015-A). These are responsible for routing WMS messages between the origination and destination EPs.
- Relay points are included in the wireless network and are responsible for safely transferring messages between EPs and SMSCs within the network.

These components are the main building blocks that make up a short messaging network and can be found in both CDMA and WCDMA networks, although the names may be slightly different.

When the MSM device sends a WMS message, it is submitted to the wireless network using a Base Station (BS). The BS relays the WMS message to the SMSC, which acknowledges the message, then the BS, in turn, relays the acknowledgment back to the MSM device. The SMSC is then responsible for routing and delivery of the WMS to the destination EP.

The WMS architecture for a CDMA network can be found in 3GPP2 C.S0015-A Figure 1.5.1. The WMS architecture for a WCDMA network can be found in 3GPP TS 23.040 Figure 4 and Figure 5.

2.4.2 Wireless Message Types

QMI_WMS supports the message types defined in the standardized protocols for CDMA in 3GPP2 C.S0015-A and WCDMA in 3GPP TS 23.040. Both CDMA and WCDMA support Point-to-Point (PP) and Broadcast (BC) (refer to 3GPP2 C.S0015-A) message functionality. Messages are further classified into Mobile-Originated (MO) and Mobile-Terminated (MT) messages (refer to 3GPP2 C.S0015-A), relative to the control point.

The WMS protocol dictates that a PP WMS message solicits a response or Acknowledgment (ACK) (refer to 3GPP2 C.S0015-A) to the network upon receipt by the addressee. The ACK is relayed to the network SMSC verifying delivery, but not to the originator unless requested in the original message.

QMI_WMS supports point-to-point messaging and associated WMS types, and broadcast messaging. It also supports sending ACKs to the network.

2.4.3 WMS Client/Service Architecture

The WMS service provides its clients the means to send messages over the wireless network, read and write messages to persistent storage on the device, and to configure various WMS service configuration options.

The WMS service running on the MSM device supports multiple clients. In addition, other WMS service clients may operate within the MSM device.

Note that, even if no QMI_WMS or other WMS clients are active, the WMS service is still running on the MSM device. This allows the MSM device to accept, store (if configured to allow), and acknowledge delivery of incoming WMS messages.

2.4.4 Incoming Message Indication

Each QMI_WMS control point may independently enable indications of new MT messages. When the WMS service accepts a new MT message from the wireless network, a QMI_WMS indication message is sent to each QMI_WMS control point that has enabled notification.

Resetting the QMI_WMS control point returns an MT message indication back to the default disabled state. After each reset, the control point must again register for these indications using the QMI_WMS_SET_EVENT_REPORT message.

2.4.5 WMS Message Layers

The WMS message layers are:

- WMS teleservice layer – This layer is also known as the Transfer Protocol data unit (TPDU) layer in GSM/WCDMA. In this layer, the message is sent, received, and presented to users. The message structure in this layer includes a message body encoded with a specified encoding, a message identifier that enables the MSM device to transfer messages to/from the wireless network, the date of reception, etc. Refer to 3GPP2 C.S0015-A Section 4 and 3GPP TS 23.040 Section 9.2.3 for details of the parameters defined for this layer.
- WMS transport layer – In addition to carrying the WMS teleservice layer message, the message in this layer is considered as a sequence of octets containing information, such as a teleservice ID, message originator or recipient address, bearer reply option in CDMA, or service center address in GSM/WCDMA. Refer to 3GPP2 C.S0015-A Section 3.4 and 3GPP TS 23.040 Section 9.2.3.24 for details of the parameters defined for this layer.

2.4.6 Raw Message Parameters

The raw QMI_WMS messages defined later in this document take or return transport layer encoded messages as parameters.

2.4.7 Routes

A message category is defined as a unique tuple of:

- WMS message type (PP or BC)
- WMS message class

For each message type, PP or BC, there are one or more message classes, depending on the message protocol in use. CDMA defines one message class, while WCDMA defines five unique classes.

A message action is defined as a unique tuple of:

- WMS action, when receiving a message of this type and class
- WMS storage type (for store actions)

When a new message arrives, its type and class determine how the message is processed. When the message is delivered from the network, there are four possibilities: discard, store and notify, transfer only, or transfer and ACK. Discard accepts the message and then deletes it without storing the message. Store and notify writes the message to the designated memory storage on the MSM device and then sends notification to all QMI_WMS control points that have enabled incoming message notification. Transfer only transfers the message to the client and lets the client send the ACK to the network. Transfer and ACK transfers the message to the client and sends the ACK to the network.

There are other routing actions provided by the MSM WMS service that are not applicable to QMI_WMS. Route actions that are not supported by QMI_WMS are returned as unknown by the QMI_WMS_GET_ROUTES response message. If one of these actions is set by an external MSM WMS client, unexpected behavior results.

A message route refers to the action associated with a message category. Consequently, a message route is described by its message category and the action performed when a message matching that category is received by the device.

2.4.8 Device Memory Storage

The types of memory that are available on the MSM device to store messages are:

- User Identity Module (UIM) – Removable media used by the phone
- Nonvolatile (NV) – Persistent memory located within the phone

Each WMS protocol supporting these storage types is allocated its own storage. These storage types are unique to each protocol and cannot be accessed by the other protocols.

2.5 Service State Variables

2.5.1 Shared State Variable

The following is a shared state variable for all control points using the QMI_WMS service:

Name	Description	Possible values
message_mode	System mode used for a WMS message	• CDMA • WCDMA

Note: If the device is capable of supporting more than one message protocol, this shared state variable will not be maintained.

2.5.2 State Variable Per Control Point

The following are nonshared state variables for each QMI_WMS control point:

Name	Description	Possible values	Default value
report_mt_message	Whether new MT messages are reported to a control point	• FALSE • TRUE	FALSE
report_call_control_info	Whether MO SMS call control information is reported to a control point	• FALSE • TRUE	FALSE
report_mwi_message	Whether new MWI messages are reported to a control point	• FALSE • TRUE	FALSE

3 QMI_WMS Messages

Table 3-1 QMI_WMS messages

Command	ID	Description
QMI_WMS_RESET	0x0000	Resets the WMS service state variables of the requesting control point.
QMI_WMS_SET_EVENT_REPORT	0x0001	Sets the WMS event reporting conditions for the control point.
QMI_WMS_EVENT_REPORT_IND	0x0001 indication	Indicates a QMI_WMS event.
QMI_WMS_GET_SUPPORTED_MSGS	0x001E	Queries the set of messages implemented by the currently running software.
QMI_WMS_GET_SUPPORTED_FIELDS	0x001F	Queries the fields supported for a single command as implemented by the currently running software.
QMI_WMS_RAW_SEND	0x0020	Sends a new message in its raw format.
QMI_WMS_RAW_WRITE	0x0021	Writes a new message given in its raw format.
QMI_WMS_RAW_READ	0x0022	Reads a message from the device memory storage and returns the message in its raw format.
QMI_WMS_MODIFY_TAG	0x0023	Modifies the metadata tag of a message in the MSM device storage.
QMI_WMS_DELETE	0x0024	Deletes the message in a specified memory location.
QMI_WMS_GET_MESSAGE_PROTOCOL	0x0030	Queries the message protocol currently in use for the WMS client.
QMI_WMS_LIST_MESSAGES	0x0031	Requests a list of WMS message indices and meta information within the specified memory storage, matching a specified message tag.
QMI_WMS_SET_ROUTES	0x0032	Sets the action performed upon WMS message receipt for the specified message routes. It also sets the action performed upon WMS receipt of status reports.

Table 3-1 QMI_WMS messages (cont.)

Command	ID	Description
QMI_WMS_GET_ROUTES	0x0033	Queries the currently configured action performed upon WMS message receipt for the specified message routes. It also queries the action performed upon WMS receipt of status reports.
QMI_WMS_GET_SMSC_ADDRESS**	0x0034	Queries the currently configured SMSC address.
QMI_WMS_SET_SMSC_ADDRESS**	0x0035	Sets the SMSC address used when storing or saving SMS messages.
QMI_WMS_GET_STORE_MAX_SIZE	0x0036	Queries the maximum number of messages that can be stored per memory storage, as well as the number of slots currently available.
QMI_WMS_SEND_ACK	0x0037	Sends an ACK to the network for transfer-only routes.
QMI_WMS_SET_RETRY_PERIOD	0x0038	Configures the retry period.
QMI_WMS_SET_RETRY_INTERVAL	0x0039	Configures the retry interval.
QMI_WMS_SET_DC_DISCONNECT_TIMER*	0x003A	Configures the CDMA dedicated channel autodisconnect timer.
QMI_WMS_SET_MEMORY_STATUS	0x003B	Indicates whether the client has storage available for new SMS messages. **Note:** The client must set itself as the primary client of QMI_WMS in order for this request to be successful. This can be done using the QMI_WMS_SET_PRIMARY_CLIENT request.
QMI_WMS_SET_BROADCAST_ACTIVATION	0x003C	Enables or disables the reception of broadcast SMS messages.
QMI_WMS_SET_BROADCAST_CONFIG	0x003D	Sets the broadcast SMS configuration.
QMI_WMS_GET_BROADCAST_CONFIG	0x003E	Gets the current broadcast SMS configuration.
QMI_WMS_MEMORY_FULL_IND	0x003F	Indicates that the SMS storage is full.
QMI_WMS_GET_DOMAIN_PREF**	0x0040	Queries the GW domain preference. (Deprecated)
QMI_WMS_SET_DOMAIN_PREF**	0x0041	Sets the GW domain preference. (Deprecated)
QMI_WMS_SEND_FROM_MEM_STORE	0x0042	Sends a message from a memory store.
QMI_WMS_GET_MESSAGE_WAITING**	0x0043	Gets the message waiting information.

Table 3-1 QMI_WMS messages (cont.)

Command	ID	Description
QMI_WMS_MESSAGE_WAITING_IND**	0x0044	Indicates a change in the message waiting information.
QMI_WMS_SET_PRIMARY_CLIENT	0x0045	Allows the client to set or unset itself as the primary client of QMI_WMS.
QMI_WMS_SMSC_ADDRESS_IND**	0x0046	Indicates a change in the SMSC address used by QMI_WMS.
QMI_WMS_INDICATION_REGISTER	0x0047	Sets the registration state for different QMI_WMS indications for the requesting control point.
QMI_WMS_GET_TRANSPORT_LAYER_INFO	0x0048	Gets the transport layer information.
QMI_WMS_TRANSPORT_LAYER_INFO_IND	0x0049	Indicates a change in the transport layer information.
QMI_WMS_GET_TRANSPORT_NW_REG_ INFO	0x004A	Gets the transport network registration information.
QMI_WMS_TRANSPORT_NW_REG_INFO_ IND	0x004B	Indicates a change in the transport network registration information.
QMI_WMS_BIND_SUBSCRIPTION	0x004C	Binds the current control point to a specific subscription.
QMI_WMS_GET_INDICATION_REGISTER	0x004D	Gets the registration state for different QMI_WMS indications for the requesting control point.
QMI_WMS_GET_SMS_PARAMETERS	0x004E	Reads the SMS parameters from EF-SMSP.
QMI_WMS_SET_SMS_PARAMETERS	0x004F	Writes the SMS parameters to EF-SMSP.
QMI_WMS_CALL_STATUS_IND	0x0050	Indicates a change in the SMS call status.
QMI_WMS_GET_DOMAIN_PREF_CONFIG	0x0051	Queries the domain preference configuration.
QMI_WMS_SET_DOMAIN_PREF_CONFIG	0x0052	Sets the domain preference configuration.
QMI_WMS_GET_RETRY_PERIOD	0x0053	Queries the retry period.
QMI_WMS_GET_RETRY_INTERVAL	0x0054	Queries the retry interval.
QMI_WMS_GET_DC_DISCONNECT_TIMER	0x0055	Queries the CDMA dedicated channel autodisconnect timer.
QMI_WMS_GET_MEMORY_STATUS	0x0056	Queries the client-set memory status for new SMS messages.
QMI_WMS_GET_PRIMARY_CLIENT	0x0057	Queries whether the client has set itself as the primary client of QMI_WMS.
QMI_WMS_GET_SUBSCRIPTION_BINDING	0x0058	Queries the specific subscription to which the control point is bound.
QMI_WMS_ASYNC_RAW_SEND	0x0059	Sends a new message asynchronously in its raw format.

Table 3-1 QMI_WMS messages (cont.)

Command	ID	Description
QMI_WMS_ASYNC_RAW_SEND_IND	0x0059 indication	Asynchronous result of QMI_WMS_ASYNC_RAW_SEND_ REQ.
QMI_WMS_ASYNC_SEND_ACK	0x005A	Sends an ACK asynchronously to the network for transfer-only routes.
QMI_WMS_ASYNC_SEND_ACK_IND	0x005A indication	Asynchronous result of QMI_WMS_ASYNC_SEND_ACK.
QMI_WMS_ASYNC_SEND_FROM_MEM_ STORE	0x005B	Sends a message asynchronously from a memory store.
QMI_WMS_ASYNC_SEND_FROM_MEM_ STORE_IND	0x005B indication	Asynchronous result of QMI_WMS_ASYNC_SEND_FROM_ MEM_STORE.
QMI_WMS_GET_SERVICE_READY_STATUS	0x005C	Gets the service ready status.
QMI_WMS_SERVICE_READY_IND	0x005D	Indicates whether the SMS service is ready.
QMI_WMS_BROADCAST_CONFIG_IND	0x005E	Indicates when broadcast configuration has been changed.
QMI_WMS_SET_MESSAGE_WAITING	0x005F	Sets the message waiting information.
QMI_WMS_TRANSPORT_LAYER_MWI_IND	0x0060	Indicates changes in the message waiting information.

3.1 QMI_WMS_RESET

Resets the WMS service state variables of the requesting control point.

WMS message ID

0x0000

Version introduced

Major - 1, Minor - 1

3.1.1 Request - QMI_WMS_RESET_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.1.2 Response - QMI_WMS_RESET_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

3.1.3 Description of QMI_WMS_RESET REQ/RESP

This command resets the issuing control point's state kept by the service.

As a result, each shared state variable may change according to its arbitration policy (see Section 2.5.2). Although it is performed as one operation, this is equivalent to closing the service and reopening it; therefore, the client ID of the requesting control point does not change.

The control point's state variables change to their default values before the response is issued.

3.2 QMI_WMS_SET_EVENT_REPORT

Sets the WMS event reporting conditions for the control point.

WMS message ID

0x0001

Version introduced

Major - 1, Minor - 1

3.2.1 Request - QMI_WMS_SET_EVENT_REPORT_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

At least one of the following optional TLVs must be included in this request.

Name	Version introduced	Version last modified
New MT Message Indicator	Unknown	1.1
MO SMS Call Control Information	1.16	1.16
MWI Message Indicator	1.17	1.17

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	New MT Message Indicator
Length	1			2	
Value	→	boolean	report_mt_message	1	Report new MT messages. Values: • 0x00 – Disable • 0x01 – Enable
Type	0x11			1	MO SMS Call Control Information
Length	1			2	
Value	→	boolean	report_call_control_info	1	Report MO SMS call control information. Values: • 0x00 – Disable • 0x01 – Enable

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x12			1	MWI Message Indicator
Length	1			2	
Value	→	boolean	report_mwi_message	1	Report new MWI messages. Values: • 0x00 – Disable • 0x01 – Enable

3.2.2 Response - QMI_WMS_SET_EVENT_REPORT_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	A required TLV was not provided

3.2.3 Description of QMI_WMS_SET_EVENT_REPORT REQ/RESP

The control point's event reporting state variables are modified according to the settings specified in the TLVs included in the request message. The service maintains a set of state variables for each control point. See Section 2.5.2 for more details regarding control point state variables.

Specified events are communicated to the registered WMS control point via QMI_WMS_EVENT_REPORT_IND.

The MWI Indicator TLV must be set to 1 if the control point needs the MWI PDU (sent via QMI_WMS_EVENT_REPORT_IND) for parsing the information. The default setting is to send the decoded information via QMI_WMS_MESSAGE_WAITING_IND.

3.2.4 Indication - QMI_WMS_EVENT_REPORT_IND

Message type

Indication

Sender

Service

Indication scope

Unicast (per control point)

Mandatory TLVs

None

Optional TLVs

At least one of the following optional TLVs shall be included in this indication.

Name	Version introduced	Version last modified
MT Message	Unknown	1.1
Transfer Route MT Message	Unknown	1.1
Message Mode	Unknown	1.2
ETWS Message	Unknown	1.4
ETWS PLMN Information	Unknown	1.4
SMSC Address	Unknown	1.4
SMS on IMS	1.4	1.9
Call Control Result	1.16	1.16

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	MT Message
Length	5			2	
Value	→	enum8	storage_type	1	Memory storage. Values: • 0x00 – STORAGE_TYPE_UIM • 0x01 – STORAGE_TYPE_NV
		uint32	storage_index	4	MT message index.
Type	0x11			1	Transfer Route MT Message
Length	Var			2	
Value	→	enum8	ack_indicator	1	Parameter to indicate if ACK needs to be sent by the control point. Values: • 0x00 – ACK_INDICATOR_SEND_ACK – Send ACK • 0x01 – ACK_INDICATOR_DO_NOT_SEND_ACK – Do not send ACK
		uint32	transaction_id	4	Transaction ID of the message.

Field	Field value	Field type	Parameter	Size (byte)	Description
		enum8	format	1	Message format. Values: • 0x00 – MESSAGE_FORMAT_CDMA – CDMA • 0x02 to 0x05 – Reserved • 0x06 – MESSAGE_FORMAT_GW_PP – GW_PP • 0x07 – MESSAGE_FORMAT_GW_BC – GW_BC
		uint16	len	2	Number of sets of the following elements: • data
		uint8	data	Var	Raw message data.
Type	0x12			1	Message Mode
Length	1			2	
Value	→	enum8	message_mode	1	Message mode. Values: • 0x00 – MESSAGE_MODE_CDMA – CDMA • 0x01 – MESSAGE_MODE_GW – GW
Type	0x13			1	ETWS Message
Length	Var			2	
Value	→	enum8	notification_type	1	Notification Type. Values: • 0x00 – Primary • 0x01 – Secondary GSM • 0x02 – Secondary UMTS
		uint16	len	2	Number of sets of the following elements: • data
		uint8	data	Var	Raw message data.
Type	0x14			1	ETWS PLMN Information
Length	4			2	
Value	→	uint16	mobile_country_code	2	16-bit integer representation of the MCC. Values: • 0 to 999
		uint16	mobile_network_code	2	16-bit integer representation of the MNC. Values: • 0 to 999
Type	0x15			1	SMSC Address
Length	Var			2	
Value	→	uint8	len	1	Number of sets of the following elements: • data
		uint8	data	Var	SMSC address.
Type	0x16			1	SMS on IMS
Length	1			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	boolean	sms_on_ims	1	Indicates whether the message is received from IMS. Values: • 0x00 – Message is not received from IMS • 0x01 – Message is received from IMS • 0x02 to 0xFF – Reserved **Note:** In minor version 9, the implementation was changed in such a way that this TLV may be included at times when it previously may not have been included.
Type	0x17			1	Call Control Result
Length	Var			2	
Value	→	enum	mo_control_type	4	MO SMS control. Values: • WMS_MO_CONTROL_DISALLOW (0x00) – Disallow the MO message • WMS_MO_CONTROL_ALLOW (0x01) – Allow the MO message with no modification • WMS_MO_CONTROL_ALLOW_ BUT_MODIFIED (0x02) – Allow the MO message with modification
		uint8	alpha_id_len	1	Number of sets of the following elements: • alpha_id
		uint8	alpha_id	Var	Alpha ID.

3.2.5 Description of QMI_WMS_EVENT_REPORT_IND

This unsolicited indication is sent to specified control points when the device state that corresponds to any TLV listed above changes. Specified control points are those that previously registered for the corresponding state to be reported using the QMI_WMS_SET_EVENT_REPORT_REQ message.

This indication with the MT message received TLV or transfer route MT message TLV is generated when a new MT message is received by the device. The MT message TLV is sent in the indication when the route for the MT message is store and notify. The transfer route MT message TLV is sent in the indication when the route for the MT message is transfer only or transfer and ACK.

The Call Control Result TLV is sent when MO SMS initiated by other WMS clients has the call control result as disallowed, allowed, or allowed with modifications.

3.3 QMI_WMS_GET_SUPPORTED_MSGS

Queries the set of messages implemented by the currently running software.

WMS message ID

0x001E

Version introduced

Major - 1, Minor - 12

3.3.1 Request - QMI_WMS_GET_SUPPORTED_MSGS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.3.2 Response - QMI_WMS_GET_SUPPORTED_MSGS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Common version introduced	Common version last modified
Result Code	1.6	1.7

Optional TLVs

Name	Common version introduced	Common version last modified
List of Supported Messages	1.6	1.6

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	List of Supported Messages
Length	Var			2	
Value	→	uint16	supported_msgs_len	2	Number of sets of the following elements: • supported_msgs
		uint8	supported_msgs	Var	This array of uint8 is a bitmask where each bit represents a message ID, i.e., starting with the LSB, bit 0 represents message ID 0, bit 1 represents message ID 1, etc. The bit is set to 1 if the message is supported; otherwise, it is set to zero. For example, if a service supports exactly four messages with IDs 0, 1, 30, and 31 (decimal), the array (in hexadecimal) is 4 bytes [03 00 00 c0].

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_INFO_UNAVAILABLE	Information is not available

3.3.3 Description of QMI_WMS_GET_SUPPORTED_MSGS REQ/RESP

This command queries the set of messages implemented by the currently running software. This may be a subset of the messages defined in this revision of the service.

3.4 QMI_WMS_GET_SUPPORTED_FIELDS

Queries the fields supported for a single command as implemented by the currently running software.

WMS message ID

0x001F

Version introduced

Major - 1, Minor - 12

3.4.1 Request - QMI_WMS_GET_SUPPORTED_FIELDS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Common version introduced	Common version last modified
Service Message ID	1.6	1.6

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Service Message ID
Length	2			2	
Value	→	uint16	msg_id	2	ID of the command for which the supported fields are requested.

Optional TLVs

None

3.4.2 Response - QMI_WMS_GET_SUPPORTED_FIELDS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Common version introduced	Common version last modified
Result Code	1.6	1.7

Optional TLVs

Name	Common version introduced	Common version last modified
List of Supported Request Fields	1.6	1.6
List of Supported Response Fields	1.6	1.6
List of Supported Indication Fields	1.6	1.6

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	List of Supported Request Fields
Length	Var			2	
Value	→	uint8	request_fields_len	1	Number of sets of the following elements: • request_fields
		uint8	request_fields	Var	This field describes which optional field IDs are supported in the QMI request. The array of uint8 is a bitmask where each bit represents a field (TLV) ID. Because fields 0 to 15 (decimal) are mandatory by definition, the first bit represents field ID 16. Starting with the LSB, bit 0 represents field ID 16, bit 1 represents field ID 17, etc. The bit is set to 1 if the field ID is supported; otherwise, it is set to zero. For example, if a service supports exactly four fields with IDs 16, 17, 30, and 31 (decimal), the array (in hexadecimal) is 2 bytes [03 c0].
Type	0x11			1	List of Supported Response Fields
Length	Var			2	
Value	→	uint8	response_fields_len	1	Number of sets of the following elements: • response_fields

Field	Field value	Field type	Parameter	Size (byte)	Description
		uint8	response_fields	Var	This field describes which optional field IDs are supported in the QMI response. Its format is the same as request_fields.
Type	0x12			1	List of Supported Indication Fields
Length	Var			2	
Value	→	uint8	indication_fields_len	1	Number of sets of the following elements: • indication_fields
		uint8	indication_fields	Var	This field describes which optional field IDs are supported in the QMI indication. Its format is the same as request_fields.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_REQUESTED_NUM_UNSUPPORTED	Requested message ID is not supported by the currently running software
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_INFO_UNAVAILABLE	Information is not available

3.4.3 Description of QMI_WMS_GET_SUPPORTED_FIELDS REQ/RESP

This command queries the fields supported for a single command as implemented by the currently running software.

If the request, response, or indication is supported for the given message ID, the corresponding optional array is included in QMI_WMS_GET_SUPPORTED_FIELDS_RESP, even if the message does not contain any optional fields. This enables the client to distinguish this case from one where the service does not support the request, response, or indication.

Examples are:

- If the specified message ID is not supported by the service, the response has qmi_result = QMI_RESULT_FAILURE and qmi_error = QMI_ERR_REQUESTED_NUM_UNSUPPORTED.
- If the specified message ID is an empty message, the response has qmi_result = QMI_RESULT_SUCCESS and qmi_error = QMI_ERR_NONE. None of the optional arrays are included.
- If the specified message ID supports the request with 0 optional fields, the response with 3 optional fields (16, 17, and 18 decimal), and does not support an indication, the response has the following:
  - qmi_result = QMI_RESULT_SUCCESS
  - qmi_error = QMI_ERR_NONE
  - request_fields array is included with length zero

– response_fields array is included with length 1 value [07]

– indication_fields array is not included

Trailing zero bytes are omitted from the response. For example, if the message defines 20 different fields but the response only contains 16 bits, the client is to assume the last four fields are not supported.

3.5 QMI_WMS_RAW_SEND

Sends a new message in its raw format.

WMS message ID

0x0020

Version introduced

Major - 1, Minor - 1

3.5.1 Request - QMI_WMS_RAW_SEND_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Raw Message Data	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Raw Message Data
Length	Var			2	
Value	→	enum8	format	1	Message format. Values: • 0x00 – MESSAGE_FORMAT_CDMA – CDMA • 0x02 to 0x05 – Reserved • 0x06 – MESSAGE_FORMAT_GW_PP – GW_PP
		uint16	len	2	Number of sets of the following elements: • raw_message
		uint8	raw_message	Var	Raw message data.

Optional TLVs

Name	Version introduced	Version last modified
Force on DC*	Unknown	1.1
Follow on DC*	Unknown	1.1
Link Control**	Unknown	1.2
SMS on IMS	1.4	1.9
Retry Message	Unknown	1.5
Retry Message ID	Unknown	1.5
Link Control Enabling Information**	1.15	1.15

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Force on DC*
Length	2			2	
Value	→	boolean	force_on_dc	1	Force the message to be sent on the CDMA dedicated channel. Values: • 0x00 – Do not care about the channel on which the message is sent • 0x01 – Request to send the message over the dedicated channel
		enum8	so	1	Service option. Values: • 0x00 – SO_AUTO – AUTO (choose the best service option while setting up the DC) • 0x06 – SO_6 – Service option 6 • 0x0E – SO_14 – Service option 14
Type	0x11			1	Follow on DC*
Length	1			2	
Value	→	enum8	follow_on_dc	1	Flag to request to not disconnect the CDMA dedicated channel after the send operation is completed; this TLV can be included if more messages are expected to follow. Values: • 0x01 – FOLLOW_ON_DC_ON – On (do not disconnect the DC after the send operation) Any value other than 0x01 in this field is treated as an absence of this TLV.
Type	0x12			1	Link Control**
Length	1			2	
Value	→	uint8	link_timer	1	Keeps the GW SMS link open for the specified number of seconds; can be enabled if more messages are expected to follow
Type	0x13			1	SMS on IMS
Length	1			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	boolean	sms_on_ims	1	Indicates whether the message is to be sent on IMS. Values: • 0x00 – Message is not to be sent on IMS • 0x01 – Message is to be sent on IMS • 0x02 to 0xFF – Reserved **Note:** In minor version 9, the implementation was changed in such a way that inclusion of this TLV may affect the SMS routing differently.
Type	0x14			1	Retry Message
Length	1			2	
Value	→	enum8	retry_message	1	Indicates this message is a retry message. Values: • 0x01 – WMS_MESSAGE_IS_A_RETRY – Message is a retry message **Note:** Any value other than 0x01 in this field is treated as an absence of this TLV.
Type	0x15			1	Retry Message ID
Length	4			2	
Value	→	uint32	retry_message_id	4	Message ID to be used in the retry message. The message ID specified here is used instead of the messsage ID encoded in the raw message. **Note:** This TLV is valid only if the Retry Message TLV is specified and set to 0x01.
Type	0x16			1	Link Control Enabling Information**
Length	1			2	
Value	→	boolean	link_enable_mode	1	Indicates whether to keep the link control enabled, until the option is modified by the client. Values: • 0x00 – Enable link control once so that the lower layer keeps the link up for a specified time until the next MO SMS is requested or the timer expires • 0x01 – Always enable link control **Note:** This TLV is valid only if the Link Control TLV is specified and is set to a valid timer value.

3.5.2 Response - QMI_WMS_RAW_SEND_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response. The following mandatory TLVs are always present in the response.

Name	Version introduced	Version last modified
Result Code	1.1	1.1
Message ID	1.1	1.19

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Message ID
Length	2			2	
Value	→	uint16	message_id	2	WMS message ID.

Optional TLVs

If the Result Code TLV indicates failure and the qmi_error field is set to QMI_ERR_CAUSE_CODE, the following parameters are returned.

Name	Version introduced	Version last modified
Cause Code*	1.1	1.1
Error Class*	Unknown	1.2
GW Cause Info**	Unknown	1.2
Message Delivery Failure Type	Unknown	1.4
Message Delivery Failure Cause	Unknown	1.5
Call Control Modified Information**	Unknown	1.5

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Cause Code*
Length	2			2	
Value	→	enum16	cause_code	2	WMS cause code per 3GPP2 N.S0005-0 Section 6.5.2.125; see Table A-1 for more information

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x11			1	Error Class*
Length	1			2	
Value	→	enum8	error_class	1	Error class. Values: • 0x00 – ERROR_CLASS_ TEMPORARY • 0x01 – ERROR_CLASS_ PERMANENT
Type	0x12			1	GW Cause Info**
Length	3			2	
Value	→	enum16	rp_cause	2	GW RP cause per 3GPP TS 24.011 Section 8.2.5.4; see Table A-2 for more information.
		enum8	tp_cause	1	GW TP cause per 3GPP TS 23.040 Section 9.2.3.22; see Table A-3 for more information.
Type	0x13			1	Message Delivery Failure Type
Length	1			2	
Value	→	enum8	message_delivery_failure_ type	1	Message delivery failure type. Values: • 0x00 – WMS_MESSAGE_ DELIVERY_FAILURE_TEMPORARY • 0x01 – WMS_MESSAGE_ DELIVERY_FAILURE_PERMANENT
Type	0x14			1	Message Delivery Failure Cause
Length	1			2	
Value	→	enum8	message_delivery_failure_ cause	1	Message delivery failure cause. Values: • 0x00 – WMS_MESSAGE_ BLOCKED_DUE_TO_CALL_ CONTROL
Type	0x15			1	Call Control Modified Information**
Length	Var			2	
Value	→	uint8	alpha_id_len	1	Number of sets of the following elements: • alpha_id
		uint8	alpha_id	Var	Alpha ID.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_ARG_TOO_LONG	Argument passed in a TLV was larger than the available storage in the device
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value

QMI_ERR_CAUSE_CODE	SMS cause code: For CDMA, refer to 3GPP2 N.S0005-0 Section 6.5.2.125; for GW, refer to 3GPP TS 27.005 Section 3.2.5
QMI_ERR_ENCODING	Message is not encoded properly
QMI_ERR_INVALID_MESSAGE_ID	Message ID specified for the message is invalid
QMI_ERR_MESSAGE_NOT_SENT	Message could not be sent
QMI_ERR_MESSAGE_DELIVERY_ FAILURE	Message could not be delivered
QMI_ERR_DEVICE_NOT_READY	Device is not ready to send the message
QMI_ERR_NETWORK_NOT_READY	Network is not ready to send the message
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device
QMI_ERR_OP_NETWORK_ UNSUPPORTED	Selected operation is not supported by the network
QMI_ERR_SMSC_ADDR	SMSC address specified is invalid
QMI_ERR_CALL_FAILED	Cannot bring up the CDMA dedicated channel
QMI_ERR_MSG_BLOCKED	Message is blocked because the recipient is not on the FDN
QMI_ERR_INVALID_OPERATION	SMS on IMS TLV is set to TRUE; however, IMS is not registered

3.5.3 Description of QMI_WMS_RAW_SEND REQ/RESP

This command requests that a WMS message be sent by the MSM device.

Raw send can be used only with transport layer-encoded messages:

- For 3GPP2 devices, transport layer messages are in Layer 3 format (refer to 3GPP2 C.S0015-A). The control point must ensure that the raw message has these fields encoded (3GPP2 C.S0015-A Section 3.4.2) for a detailed description of these fields):
  - Teleservice ID
  - Destination Address
  - Bearer Reply Option – Used to configure the setting to get the transport layer acknowledgment (only if the control point is interested in receiving the transport layer acknowledgment)
- For 3GPP devices, transport layer messages are in PDU format (refer to 3GPP TS 27.005). The raw message in PDU format must include the SMSC address length identifier as the first byte of the message. If this byte is set to zero, the SMSC provisioned for the device is used (as specified using QMI_WMS_SET_SMSC_ADDRESS). Otherwise, the first byte indicates the length, in bytes, of the SMSC address that is included after the first byte, but before the start of the actual PDU message. The equivalent AT command for this request is AT+CMGS (refer to 3GPP TS 27.005).

If a raw message is not in transport layer format or includes transport layer parameters that cannot be processed for any reason, the command fails and returns a QMI_ERR_ENCODING error. A successful result value in the response implies that the given message send request is complete. The message is not stored in memory; it is only sent by the MSM device. To store the message in memory, the QMI_WMS_RAW_WRITE command must be used.

The behaviors of the Force on DC and Follow on DC TLVs are as follows:

- For 3GPP2 devices, the Force on DC TLV can be included in the request, with value TRUE, to send the message over the CDMA dedicated channel. If the service fails to bring up the dedicated channel, a QMI_ERR_CALL_FAILED error is returned in the response.
- If more messages are expected, the Follow on DC TLV can be included in the request.
- If the Follow on DC TLV is absent and the Force on DC TLV is present (with value TRUE or FALSE), the service attempts to tear down the CDMA dedicated channel after the send operation. However, this disconnection is not guaranteed immediately, e.g., if there are pending messages. The service does not wait for the disconnection to send the QMI_WMS_RAW_SEND_RESP.
- The Follow on DC TLV is ignored if it is sent in the absence of the Force on DC TLV in the request.

For GW, if more messages are expected, the Link Control TLV can be included. The link is kept open for the specified number of seconds. The link can be kept open for a maximum of 5 sec; setting the link timer to a value greater than 5 elicits a QMI_ERR_INVALID_ARG error. The suggested value for the link timer is 5 sec. If multiple messages are expected, the link control can be kept enabled by setting the optional Link Control Enabling Information TLV to 1. If this optional TLV is not present, the default behavior is to keep the link open for the number of seconds specified in the Link Control TLV. The Link Control TLV is required to enable link control; setting the Link Control Enabling Information TLV without the Link Control TLV elicits a QMI_ERR_MISSING_ARG error.

If the Result Code TLV indicates failure and the qmi_error field is set to QMI_ERR_CAUSE_CODE, 3GPP2 devices return the Cause Code and the Error Class TLVs. 3GPP devices return the GW Cause Information TLV.

If the Result Code TLV indicates failure and the qmi_error field is set to QMI_ERR_MESSAGE_DELIVERY_FAILURE, the mobile may return the Message Delivery Failure Type TLV.

If the message was successfully sent but modified due to call control, the mobile may return the Call Control Modified Information TLV.

The Retry Message TLV may be included to indicate this is a retry message. Sending a message as a retry changes the behavior of the message; a message should be specified as a retry only after the message has been sent once and failed. There are two options for setting the message ID for a retry message:

- Retry Message ID TLV not included – The message ID encoded in the raw message is left unchanged.
- Retry Message ID TLV included – The message ID encoded in the raw message is updated with this specified value.

Messages should be sent one at a time. The client should wait for the response from the previous message before sending the next message.

If the SMS on IMS TLV is not included, WMS uses IMS whenever possible, i.e., IMS is the preferred transport. If the TLV is included with value 0x00 (FALSE), WMS does not use IMS as the transport. If the TLV is included with value 0x01 (TRUE) and IMS cannot be used, a QMI_ERR_INVALID_OPERATION error is returned.

3.6 QMI_WMS_RAW_WRITE

Writes a new message given in its raw format.

WMS message ID

0x0021

Version introduced

Major - 1, Minor - 1

3.6.1 Request - QMI_WMS_RAW_WRITE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Raw Message Write Data	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Raw Message Write Data
Length	Var			2	
Value	→	enum8	storage_type	1	Memory storage. Values: • 0x00 – STORAGE_TYPE_UIM – UIM • 0x01 – STORAGE_TYPE_NV – NV
		enum8	format	1	Message format. Values: • 0x00 – MESSAGE_FORMAT_CDMA – CDMA • 0x02 to 0x05 – Reserved • 0x06 – MESSAGE_FORMAT_GW_PP – GW_PP
		uint16	len	2	Number of sets of the following elements: • raw_message
		uint8	raw_message	Var	Raw message buffer.

Optional TLVs

Name	Version introduced	Version last modified
Message Tag	1.10	1.10

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Message Tag
Length	1			2	
Value	→	enum8	tag_type	1	Message tag. Values: • 0x00 – TAG_TYPE_MT_READ • 0x01 – TAG_TYPE_MT_NOT_READ • 0x02 – TAG_TYPE_MO_SENT • 0x03 – TAG_TYPE_MO_NOT_SENT

3.6.2 Response - QMI_WMS_RAW_WRITE_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response. The following mandatory TLVs are present if the result code is QMI_RESULT_SUCCESS.

Name	Version introduced	Version last modified
Message Memory Storage Identification	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Message Memory Storage Identification
Length	4			2	
Value	→	uint32	storage_index	4	Memory index.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocated memory to formulate a response
QMI_ERR_ARG_TOO_LONG	Argument passed in a TLV was larger than the available storage in the device
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters contains an invalid value
QMI_ERR_ENCODING	Message is not encoded properly
QMI_ERR_DEVICE_STORAGE_FULL	Memory storage specified in the request is full
QMI_ERR_DEVICE_NOT_READY	Device is not ready to send the message
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device
QMI_ERR_SMSC_ADDR	SMSC address specified is invalid

3.6.3 Description of QMI_WMS_RAW_WRITE REQ/RESP

This command requests that a WMS message be stored by the MSM device.

Raw write can be used only with transport layer-encoded messages:

- For 3GPP2 devices, transport layer messages are in Layer 3 format (refer to 3GPP2 C.S0015-A).
- For 3GPP devices, transport layer messages are in PDU format (refer to 3GPP TS 27.005). The raw message in PDU format must include the SMSC address length identifier as the first byte of the message. If this byte is set to zero, the SMSC provisioned for the device is used (as specified using QMI_WMS_SET_SMSC_ADDRESS). Otherwise, the first byte indicates the length, in bytes, of the SMSC address that is included after the first byte, but before the start of the actual PDU message. The equivalent AT command for this request is AT+CMGW (refer to 3GPP TS 27.005).

If a raw message is not in transport-layer format or includes transport layer parameters that cannot be processed for any reason, the command fails and returns a QMI_ERR_ENCODING error.

Since each protocol is allocated its own storage, both the storage type and the message format are used to determine where the message will be stored. A successful result value in the response implies that the message write request is complete.

If the optional Message Tag TLV is not present, all messages written to device memory are specified with one of the following tags:

- TAG_TYPE_MO_NOT_SENT for MO messages
- TAG_TYPE_MT_NOT_READ for MT messages

The tag can be changed to another value by using either the optional Message Tag TLV or the QMI_WMS_MODIFY_TAG command.

3.7 QMI_WMS_RAW_READ

Reads a message from the device memory storage and returns the message in its raw format.

WMS message ID

0x0022

Version introduced

Major - 1, Minor - 1

3.7.1 Request - QMI_WMS_RAW_READ_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Message Memory Storage Identification	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Message Memory Storage Identification
Length	5			2	
Value	→	enum8	storage_type	1	Memory storage. Values: • 0x00 – STORAGE_TYPE_UIM – UIM • 0x01 – STORAGE_TYPE_NV – NV
		uint32	storage_index	4	Memory index.

Optional TLVs

Name	Version introduced	Version last modified
Message Mode	Unknown	1.2
SMS on IMS	1.4	1.9

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Message Mode
Length	1			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	enum8	message_mode	1	Message mode. Values: • 0x00 – MESSAGE_MODE_CDMA – CDMA • 0x01 – MESSAGE_MODE_GW – GW
Type	0x11			1	SMS on IMS
Length	1			2	
Value	→	boolean	sms_on_ims	1	Indicates whether the message is to be read from IMS. Values: • 0x00 – Message is not to be read from IMS • 0x01 – Message is to be read from IMS • 0x02 to 0xFF – Reserved **Note:** This TLV is deprecated from minor version 9.

3.7.2 Response - QMI_WMS_RAW_READ_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response. The following mandatory TLVs are present if the result code is QMI_RESULT_SUCCESS.

Name	Version introduced	Version last modified
Raw Message Data	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Raw Message Data
Length	Var			2	
Value	→	enum8	tag_type	1	Message tag. Value: • 0x00 – TAG_TYPE_MT_READ • 0x01 – TAG_TYPE_MT_NOT_READ • 0x02 – TAG_TYPE_MO_SENT • 0x03 – TAG_TYPE_MO_NOT_SENT

Field	Field value	Field type	Parameter	Size (byte)	Description
		enum8	format	1	Message format. Value: • 0x00 – MESSAGE_FORMAT_CDMA – CDMA • 0x02 to 0x05 – Reserved • 0x06 – MESSAGE_FORMAT_GW_PP – GW_PP • 0x08 - MESSAGE_FORMAT_MWI – MWI
		uint16	len	2	Number of sets of the following elements: • data
		uint8	data	Var	Raw message data.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_OP_DEVICE_UNSUPPORTED	Selected operation is not supported by the device
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value
QMI_ERR_INVALID_INDEX	Memory storage index specified in the request is invalid
QMI_ERR_NO_ENTRY	No message exists at the specified memory storage designation
QMI_ERR_TDPU_TYPE	Message in memory contains a TPDU type that cannot be read as a raw message

3.7.3 Description of QMI_WMS_RAW_READ REQ/RESP

This command reads a WMS message from memory storage on the MSM device.

The message is returned in the response in its raw, teleservice layer encoding without being decoded.

- For 3GPP2 devices, transport layer messages are in Layer 3 format (refer to 3GPP2 C.S0015-A).
- For 3GPP devices, transport layer messages are in PDU format (refer to 3GPP TS 27.005). The raw message returned in PDU format includes the SMSC address length identifier as the first byte of the message. This byte indicates the length, in bytes, of the SMSC address that is included after the first byte, but before the start of the actual PDU message. The equivalent AT command for this request is AT+CMGR (refer to 3GPP TS 27.005).

The response also includes metadata for the message, including the tag and format.

For 3GPP devices, requests to read messages of an invalid TPDU type (refer to 3GPP TS 27.005) elicit a QMI_ERR_TPDU_TYPE error.

The Message Mode TLV must be included if the device is capable of supporting more than one protocol. If the TLV is not included, a QMI_ERR_MISSING_ARG error is returned.

3.8 QMI_WMS_MODIFY_TAG

Modifies the metadata tag of a message in the MSM device storage.

WMS message ID

0x0023

Version introduced

Major - 1, Minor - 1

3.8.1 Request - QMI_WMS_MODIFY_TAG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
WMS Message Tag	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	WMS Message Tag
Length	6			2	
Value	→	enum8	storage_type	1	Memory storage. Values: • 0x00 – STORAGE_TYPE_UIM • 0x01 – STORAGE_TYPE_NV
		uint32	storage_index	4	Memory index.
		enum8	tag_type	1	Message tag. Values: • 0x00 – TAG_TYPE_MT_READ • 0x01 – TAG_TYPE_MT_NOT_READ • 0x02 – TAG_TYPE_MO_SENT • 0x03 – TAG_TYPE_MO_NOT_SENT

Optional TLVs

Name	Version introduced	Version last modified
Message Mode	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Message Mode
Length	1			2	
Value	→	enum8	message_mode	1	Message mode. Values: • 0x00 – MESSAGE_MODE_CDMA – CDMA • 0x01 – MESSAGE_MODE_GW – GW

3.8.2 Response - QMI_WMS_MODIFY_TAG_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value
QMI_ERR_INVALID_INDEX	Memory storage index specified in the request is invalid
QMI_ERR_NO_ENTRY	No message exists at the specified memory storage designation
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device

3.8.3 Description of QMI_WMS_MODIFY_TAG REQ/RESP

This command modifies the metadata tag of the message at the specified index in the specified memory storage.

The response is sent after all necessary operations are complete.

If the request attempts to modify the tag of an empty storage index, a QMI_ERR_NO_ENTRY error results.

The Message Mode TLV must be included if the device is capable of supporting more than one protocol. If the TLV is not included, a QMI_ERR_MISSING_ARG error is returned.

3.9 QMI_WMS_DELETE

Deletes the message in a specified memory location.

WMS message ID

0x0024

Version introduced

Major - 1, Minor - 1

3.9.1 Request - QMI_WMS_DELETE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Memory Storage	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Memory Storage
Length	1			2	
Value	→	enum8	storage_type	1	Memory storage. Values: • 0x00 – STORAGE_TYPE_UIM • 0x01 – STORAGE_TYPE_NV

Optional TLVs

Name	Version introduced	Version last modified
Memory Index	Unknown	1.1
Message Tag	Unknown	1.1
Message Mode	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Memory Index
Length	4			2	
Value	→	uint32	index	4	Indicates the storage index of the relevant message.

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x11			1	Message Tag
Length	1			2	
Value	→	enum8	tag_type	1	Message tag. Values: • 0x00 – TAG_TYPE_MT_READ • 0x01 – TAG_TYPE_MT_NOT_READ • 0x02 – TAG_TYPE_MO_SENT • 0x03 – TAG_TYPE_MO_NOT_SENT
Type	0x12			1	Message Mode
Length	1			2	
Value	→	enum8	message_mode	1	Message mode. Values: • 0x00 – MESSAGE_MODE_CDMA – CDMA • 0x01 – MESSAGE_MODE_GW – GW

3.9.2 Response - QMI_WMS_DELETE_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value
QMI_ERR_INVALID_INDEX	Memory storage index specified in the request is invalid
QMI_ERR_NO_ENTRY	No message exists at the specified memory storage designation
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device

3.9.3 Description of QMI_WMS_DELETE REQ/RESP

This command deletes one or more WMS messages from a given memory storage on the MSM device.

If no optional TLVs are specified, all messages are deleted from the storage location specified in the mandatory message store parameter.

The optional storage index and message tag parameters narrow the range of messages being deleted. If a message index is specified, the single message at that index from the specified memory store is deleted. If a message tag is specified, all messages in the specified memory store with a tag that matches the specified tag are deleted.

There are three ways to use this message:

- Specify the memory storage only – Deletes all messages from the memory storage
- Specify the memory storage and a message tag – Deletes all messages from the memory storage that match the specific message tag
- Specify the memory storage and a message index – Deletes only the message at the specific index from the memory storage

The message index and message tag TLVs may not be specified in the same request message. Doing so results in the QMI_ERR_INVALID_ARG error.

The Message Mode TLV must be included if the device is capable of supporting more than one protocol. If the TLV is not included, a QMI_ERR_MISSING_ARG error is returned.

All deletions are complete when the response is sent.

3.10 QMI_WMS_GET_MESSAGE_PROTOCOL

Queries the message protocol currently in use for the WMS client.

WMS message ID

0x0030

Version introduced

Major - 1, Minor - 1

3.10.1 Request - QMI_WMS_GET_MESSAGE_PROTOCOL_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.10.2 Response - QMI_WMS_GET_MESSAGE_PROTOCOL_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response. The following mandatory TLV is present if the result code is QMI_RESULT_SUCCESS.

Name	Version introduced	Version last modified
Message Protocol	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Message Protocol
Length	1			2	
Value	→	enum8	message_protocol	1	WMS message protocol. Values: • 0x00 – MESSAGE_PROTOCOL_CDMA • 0x01 – MESSAGE_PROTOCOL_WCDMA

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_OP_DEVICE_UNSUPPORTED	Selected operation is not supported by the device

3.10.3 Description of QMI_WMS_GET_MESSAGE_PROTOCOL REQ/RESP

This command queries the current messaging mode of the device.

If the device is capable of supporting more than one message protocol, a QMI_ERR_OP_DEVICE_UNSUPPORTED error is returned.

3.11 QMI_WMS_LIST_MESSAGES

Requests a list of WMS message indices and meta information within the specified memory storage, matching a specified message tag.

WMS message ID

0x0031

Version introduced

Major - 1, Minor - 1

3.11.1 Request - QMI_WMS_LIST_MESSAGES_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Requested Memory Storage	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Requested Memory Storage
Length	1			2	
Value	→	enum8	storage_type	1	Memory storage. Values: • 0x00 – STORAGE_TYPE_UIM • 0x01 – STORAGE_TYPE_NV

Optional TLVs

Name	Version introduced	Version last modified
Requested Tag	Unknown	1.1
Message Mode	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Requested Tag
Length	1			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	enum8	tag_type	1	Message tag. Values: • 0x00 – TAG_TYPE_MT_READ • 0x01 – TAG_TYPE_MT_NOT_READ • 0x02 – TAG_TYPE_MO_SENT • 0x03 – TAG_TYPE_MO_NOT_SENT
Type	0x11			1	Message Mode
Length	1			2	
Value	→	enum8	message_mode	1	Message mode. Values: • 0x00 – MESSAGE_MODE_CDMA – CDMA • 0x01 – MESSAGE_MODE_GW – GW

3.11.2 Response - QMI_WMS_LIST_MESSAGES_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response. The following mandatory TLVs are present if the result code is QMI_RESULT_SUCCESS.

Name	Version introduced	Version last modified
Message List	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Message List
Length	Var			2	
Value	→	uint32	N_messages	4	Number of sets of the following elements: • message_index • tag_type
		uint32	message_index	4	Message index of each matched message.
		enum8	tag_type	1	Message tag. Values: • 0x00 – TAG_TYPE_MT_READ • 0x01 – TAG_TYPE_MT_NOT_READ • 0x02 – TAG_TYPE_MO_SENT • 0x03 – TAG_TYPE_MO_NOT_SENT

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device

3.11.3 Description of QMI_WMS_LIST_MESSAGES REQ/RESP

This command generates and returns the number of WMS messages within the specified MSM memory storage.

An optional tag can be used to narrow the search criteria. When this optional tag is specified, only messages within the specified memory storage that match the specified tag are returned.

A successful response includes a count of messages matching the search criteria, along with a list of indices and tags for each matching message.

The Message Mode TLV must be included if the device is capable of supporting more than one protocol. If the TLV is not included, a QMI_ERR_MISSING_ARG error is returned.

3.12 QMI_WMS_SET_ROUTES

Sets the action performed upon WMS message receipt for the specified message routes. It also sets the action performed upon WMS receipt of status reports.

WMS message ID

0x0032

Version introduced

Major - 1, Minor - 1

3.12.1 Request - QMI_WMS_SET_ROUTES_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Route List	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Route List
Length	Var			2	
Value	→	uint16	n_routes	2	Number of sets of the following elements: • message_type • message_class • route_storage • receipt_action
		enum8	message_type	1	Message type matching this route. Values: • 0x00 – MESSAGE_TYPE_POINT_TO_POINT - Point-to-Point

Field	Field value	Field type	Parameter	Size (byte)	Description
		enum8	message_class	1	Message class. Values: • 0x00 – MESSAGE_CLASS_0 – Class 0 • 0x01 – MESSAGE_CLASS_1 – Class 1 • 0x02 – MESSAGE_CLASS_2 – Class 2 • 0x03 – MESSAGE_CLASS_3 – Class 3 • 0x04 – MESSAGE_CLASS_NONE – Class None • 0x05 – MESSAGE_CLASS_CDMA – Class CDMA
		enum8	route_storage	1	If the action is store, where to store the incoming message. Values: • 0x00 – STORAGE_TYPE_UIM • 0x01 – STORAGE_TYPE_NV • -1 – STORAGE_TYPE_NONE
		enum8	receipt_action	1	Action to be taken on receipt of a message matching the specified type and class for this route. Values: • 0x00 – DISCARD – Incoming messages for this route are discarded by the WMS service without notifying QMI_WMS clients • 0x01 – STORE_AND_NOTIFY – Incoming messages for this route are stored to the specified device memory, and new message notifications are sent to registered clients • 0x02 – TRANSFER_ONLY – Incoming messages for this route are transferred to the client, and the client is expected to send ACK to the network • 0x03 – TRANSFER_AND_ACK – Incoming messages for this route are transferred to the client, and ACK is sent to the network

Optional TLVs

Name	Version introduced	Version last modified
Transfer Status Report**	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Transfer Status Report**
Length	1			2	
Value	→	enum8	transfer_ind	1	Values: • 0x01 – TRANSFER_IND_CLIENT – Status reports are transferred to the client

3.12.2 Response - QMI_WMS_SET_ROUTES_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_ARG_TOO_LONG	Argument passed in a TLV was larger than the available storage in the device
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value

3.12.3 Description of QMI_WMS_SET_ROUTES REQ/RESP

This command sets the routing action taken upon receipt of incoming WMS messages per message class. A storage location on the MSM device, and whether indications must be sent to interested WMS clients, may be specified separately for each message category.

All routes need not be set at the same time. Routes not specified in the request message are left unchanged.

Specifying route_instances as zero results in a QMI_ERR_INVALID_ARG error. Similarly, if the number of route tuples given does not match route_instances, a QMI_ERR_INVALID_ARG error is returned.

When multiple routes are specified, error checking is performed on all specified routes before any routes values are changed. If any of the specified routes contains an unsupported or invalid value, the entire requested action is cancelled and no route modifications are made.

For transfer-only and transfer and ACK routes, the route_storage field is ignored in the request.

When the optional Transfer Status Report TLV is present, status reports are transferred to the client. If this TLV is not present, status reports are stored on the SIM if a matching MO message is found on the SIM; otherwise, they are transferred to the client.

A successful response indicates that the specified message routes have been changed.

Under some circumstances, the route setting by the client is not honored.

In the following section:

- + indicates that the route change is implementation-specific
- ++ indicates that the route change is based on an interpretation of the standards

The route is modified by the AMSS WMS module in the following instances:

- For WAP messages, the route is set to transfer and ACK+
- For broadcast messages, the route is set to transfer and ACK+

For MT CDMA messages:

- In the following cases, the route is set to store and notify:
  - Voicemails, message waiting indications+
  - Card Application Toolkit Protocol Teleservice (CATPT) and PP download messages, if the services are not available++
- In the following case, the route is set to transfer and ACK:
  - Flash messages+

For MT GW PP messages:

- For voicemails, the route is set to store and notify if the message needs to be stored, or to transfer and ACK if the message needs to be discarded+
- For messages with PID = 0x40 (short message type 0), the route is set to transfer and ACK+
- If the QMI_WMS_SET_PRIMARY_CLIENT request has been used to set the client as the primary client:
  - In the following case, the route is set to transfer only:
    - If the route is store and notify, and the memory storage is NV++

3.13 QMI_WMS_GET_ROUTES

Queries the currently configured action performed upon WMS message receipt for the specified message routes. It also queries the action performed upon WMS receipt of status reports.

WMS message ID

0x0033

Version introduced

Major - 1, Minor - 1

3.13.1 Request - QMI_WMS_GET_ROUTES_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.13.2 Response - QMI_WMS_GET_ROUTES_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response. The following mandatory TLVs are present if the result code is QMI_RESULT_SUCCESS.

Name	Version introduced	Version last modified
Route List	Unknown	1.5

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Route List
Length	Var			2	
Value	→	uint16	route_instances	2	Number of sets of the following elements: • route_type • route_class • route_memory • route_value
		enum8	route_type	1	Message type matching this route. Values: • 0x00 – MESSAGE_TYPE_POINT_TO_POINT – Point-to-Point
		enum8	route_class	1	Message class. Values: • 0x00 – MESSAGE_CLASS_0 – Class 0 • 0x01 – MESSAGE_CLASS_1 – Class 1 • 0x02 – MESSAGE_CLASS_2 – Class 2 • 0x03 – MESSAGE_CLASS_3 – Class 3 • 0x04 – MESSAGE_CLASS_NONE – Class None • 0x05 – MESSAGE_CLASS_CDMA – Class CDMA
		enum8	route_memory	1	Memory storage. Values: • 0x00 – STORAGE_TYPE_UIM • 0x01 – STORAGE_TYPE_NV • -1 – STORAGE_TYPE_NONE

Field	Field value	Field type	Parameter	Size (byte)	Description
		enum8	route_value	1	Route value. Values: • 0x00 – DISCARD – Incoming messages for this route are discarded by the WMS service, and no notification is sent to clients • 0x01 – STORE_AND_NOTIFY – Incoming messages for this route are stored to the specified device memory, and new message notifications are sent to registered clients • 0x02 – TRANSFER_ONLY – Incoming messages for this route are transferred to the client, and the client is expected to send ACK to the network • 0x03 – TRANSFER_AND_ACK – Incoming messages for this route are transferred to the client, and ACK is sent to the network • -1 – UNKNOWN – Incoming messages for this route are handled in a way that is unknown or unsupported by QMI_WMS

Optional TLVs

Name	Version introduced	Version last modified
Transfer Status Report**	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Transfer Status Report**
Length	1			2	
Value	→	enum8	transfer_ind	1	Values: • 0x00 – TRANSFER_IND_SIM – Status reports are stored on the SIM if a matching MO record is found on the SIM; otherwise, status reports are transferred to the client • 0x01 – TRANSFER_IND_CLIENT – Status reports are transferred to the client

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

3.13.3 Description of QMI_WMS_GET_ROUTES REQ/RESP

This command queries the behavior used to route new MT messages to MSM memory storage and WMS clients.

The response indicates the current actions for all messaging routes on the MSM device taken upon receipt of an incoming WMS message matching that route.

If the optional TLV Transfer Status Report is included, it indicates the current action taken upon receipt of an incoming Status Report.

3.14 QMI_WMS_GET_SMSC_ADDRESS

Queries the currently configured SMSC address.

WMS message ID

0x0034

Version introduced

Major - 1, Minor - 1

3.14.1 Request - QMI_WMS_GET_SMSC_ADDRESS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

Name	Version introduced	Version last modified
SMSC Address Index	1.21	1.21

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	SMSC Address Index
Length	1			2	
Value	→	uint8	index	1	Memory index to read a SMSC address from a specific index in EF-SMSP.

3.14.2 Response - QMI_WMS_GET_SMSC_ADDRESS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response. The following mandatory TLVs are present if the result code is QMI_RESULT_SUCCESS.

Name	Version introduced	Version last modified
SMSC Address	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	SMSC Address
Length	Var			2	
Value	→	char	smsc_address_type	3	Type of SMSC address given in ASCII digits (must be three digits long, with leading zeros used as placeholders)
		uint8	smsc_address_length	1	Number of sets of the following elements: • smsc_address_digits
		char	smsc_address_digits	Var	Address of the SMSC given in ASCII digits; can be prefixed with + (maximum 20 digits, not including the +)

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device
QMI_ERR_DEVICE_NOT_READY	Device has not yet read this value
QMI_ERR_NOT_PROVISIONED	Device does not have this value provisioned
QMI_ERR_INVALID_INDEX	Storage index specified in the request is invalid

3.14.3 Description of QMI_WMS_GET_SMSC_ADDRESS REQ/RESP

This command queries the SMSC address that is currently configured for the device. The AT command equivalent to this command is AT+CSCA (refer to 3GPP TS 27.005).

The control point may provide the optional SMSC Address Index TLV to read the SMSC address from a specific index in EF-SMSP. If the optional TLV is missing, the SMSC address is read from EF-SMSP at index 0 (if no valid record is found) or the index of the most recent valid record.

The SMSC address is applicable to 3GPP devices only. Attempts to read the SMSC address setting from a non-3GPP device elicit a QMI_ERR_OP_DEVICE_UNSUPPORTED error.

3.15 QMI_WMS_SET_SMSC_ADDRESS

Sets the SMSC address used when storing or saving SMS messages.

WMS message ID

0x0035

Version introduced

Major - 1, Minor - 1

3.15.1 Request - QMI_WMS_SET_SMSC_ADDRESS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
SMSC Address	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	SMSC Address
Length	Var			2	
Value	→	string	smsc_address_digits	Var	NULL-terminated string containing the address of the SMSC, given in ASCII digits; can be prefixed with + (maximum 20 digits, not including the +)

Optional TLVs

Name	Version introduced	Version last modified
SMSC Address Type	Unknown	1.1
SMSC Address Index	1.20	1.20

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	SMSC Address Type
Length	Var			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	string	smsc_address_type	Var	NULL-terminated string containing the type of SMSC address, given in ASCII digits (maximum three digits)
Type	0x11			1	SMSC Address Index
Length	1			2	
Value	→	uint8	index	1	Indicates the record index where the SMSC address needs to be written.

3.15.2 Response - QMI_WMS_SET_SMSC_ADDRESS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_ARG_TOO_LONG	Argument passed in a TLV was larger than the available storage in the device
QMI_ERR_INVALID_LOG	One of the parameters specified contains an invalid value
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Device does not support this message
QMI_ERR_INVALID_INDEX	Storage index specified in the request is invalid
QMI_ERR_DEVICE_STORAGE_FULL	SIM storage is full

3.15.3 Description of QMI_WMS_SET_SMSC_ADDRESS REQ/RESP

This command sets the SMSC address that is used by the device when sending or storing SMS messages. If the SMSC address provided is prefixed with a plus sign (+), the SMSC address type defaults to 145, regardless of whether the type is specified. If the optional SMSC address type is not provided and the address is not prefixed with a +, the address type defaults to 129. The AT command equivalent to this command is AT+CSCA (refer to 3GPP TS 27.005).

The control point may provide the optional SMSC Address Index TLV to store the SMSC address in a specific index in EF-SMSP. If the optional TLV is missing, the SMSC address is written to EF-SMSP at index 0 (if no valid record is found) or the index of the most recent valid record.

The SMSC address is applicable to 3GPP devices only. Attempts to set the SMSC address from a non-3GPP device elicit a QMI_ERR_OP_DEVICE_UNSUPPORTED error.

3.16 QMI_WMS_GET_STORE_MAX_SIZE

Queries the maximum number of messages that can be stored per memory storage, as well as the number of slots currently available.

WMS message ID

0x0036

Version introduced

Major - 1, Minor - 1

3.16.1 Request - QMI_WMS_GET_STORE_MAX_SIZE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Memory Store	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Memory Store
Length	1			2	
Value	→	enum8	storage_type	1	Memory storage. Values: • 0x00 – STORAGE_TYPE_UIM • 0x01 – STORAGE_TYPE_NV

Optional TLVs

Name	Version introduced	Version last modified
Message Mode	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Message Mode
Length	1			2	
Value	→	enum8	message_mode	1	Message mode. Values: • 0x00 – MESSAGE_MODE_CDMA • 0x01 – MESSAGE_MODE_GW

3.16.2 Response - QMI_WMS_GET_STORE_MAX_SIZE_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response. The following mandatory TLV is present if the result code is QMI_RESULT_SUCCESS.

Name	Version introduced	Version last modified
Memory Store Size	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Memory Store Size
Length	4			2	
Value	→	uint32	mem_store_max_size	4	Maximum number of messages for this memory storage.

Optional TLVs

Name	Version introduced	Version last modified
Memory Available	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Memory Available
Length	4			2	
Value	→	uint32	free_slots	4	Number of slots currently available for this memory storage.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response

QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value

3.16.3 Description of QMI_WMS_GET_STORE_MAX_SIZE REQ/RESP

This command queries for the maximum size of a specified memory storage.

If the optional Memory Available TLV is included, it indicates the number of available slots in the specified memory storage.

The Message Mode TLV must be included if the device is capable of supporting more than one protocol. If the TLV is not included, a QMI_ERR_MISSING_ARG error is returned.

3.17 QMI_WMS_SEND_ACK

Sends an ACK to the network for transfer-only routes.

WMS message ID

0x0037

Version introduced

Major - 1, Minor - 1

3.17.1 Request - QMI_WMS_SEND_ACK_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
ACK Information	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	ACK Information
Length	6			2	
Value	→	uint32	transaction_id	4	Transaction ID of the message for which ACK is to be sent.
		enum8	message_protocol	1	WMS message protocol. Values: • 0x00 – MESSAGE_PROTOCOL_CDMA • 0x01 – MESSAGE_PROTOCOL_WCDMA
		boolean	success	1	Indicates whether the MT message processed successfully. Values: • 0x00 – Failure • 0x01 – Success

Optional TLVs

Name	Version introduced	Version last modified
3GPP2 Failure Information*	Unknown	1.1
3GPP Failure Information**	Unknown	1.1
SMS on IMS	1.4	1.9

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	3GPP2 Failure Information*
Length	2			2	
Value	→	enum8	error_class	1	Error class. Values: • 0x02 – ERROR_CLASS_3GPP2_FAILURE_TEMPORARY • 0x03 – ERROR_CLASS_3GPP2_FAILURE_PERMANENT
		enum8	tl_status	1	WMS transport layer status conveying the CDMA cause code per 3GPP2 C.S0015-A Section 3.4.3.6; see Table A-1 for more information.
Type	0x11			1	3GPP Failure Information**
Length	2			2	
Value	→	enum8	rp_cause	1	GW RP cause per 3GPP TS 24.011 Section 8.2.5.4; see Table A-2 for more information.
		enum8	tp_cause	1	GW TP cause per 3GPP TS 23.040 Section 9.2.3.22; see Table A-3 for more information.
Type	0x12			1	SMS on IMS
Length	1			2	
Value	→	boolean	sms_on_ims	1	Indicates whether ACK is to be sent on IMS. Values: • 0x00 – ACK is not to be sent on IMS • 0x01 – ACK is to be sent on IMS • 0x02 to 0xFF – Reserved **Note:** In minor version 9, the implementation was changed in such a way that inclusion of this TLV may affect the SMS routing differently.

3.17.2 Response - QMI_WMS_SEND_ACK_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
ACK Failure Cause	Unknown	1.4

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	ACK Failure Cause
Length	1			2	
Value	→	enum8	failure_cause	1	ACK failure cause. Values: • 0x00 – ACK_FAILURE_NO_ NETWORK_ RESPONSE • 0x01 – ACK_FAILURE_NETWORK_ RELEASED_LINK • 0x02 – ACK_FAILURE_ACK_ NOT_SENT

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_ARG_TOO_LONG	Argument passed in a TLV was larger than the available storage in the device
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value
QMI_ERR_DEVICE_NOT_READY	Device is not ready to send the message
QMI_ERR_NETWORK_NOT_READY	Network is not ready to send the message
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device
QMI_ERR_OP_NETWORK_ UNSUPPORTED	Selected operation is not supported by the network

QMI_ERR_ACK_NOT_SENT	ACK could not be sent
QMI_ERR_INVALID_OPERATION	SMS on IMS TLV is set to TRUE; however, IMS is not registered

3.17.3 Description of QMI_WMS_SEND_ACK REQ/RESP

This command makes a request to send a WMS ACK when an MT message of the transfer-only type of route is received.

If the MT message is not processed successfully, a success value of FALSE must be sent in the mandatory ACK information TLV. Additional failure information must be sent in one of the following TLVs:

- 3GPP2 Failure Information TLV for 3GPP2 devices conveying the error class and the CDMA cause code for the error
- 3GPP Failure Information TLV for 3GPP devices conveying the relay layer and the transfer layer failure causes

If the Result Code TLV indicates failure and the qmi_error field is set to QMI_ERR_ACK_NOT_SENT, the device may return the Ack Failure Cause TLV.

If the SMS on IMS TLV is not included, WMS uses IMS whenever possible, i.e., IMS is the preferred transport. If the TLV is included with value 0x00 (FALSE), WMS does not use IMS as the transport. If the TLV is included with value 0x01 (TRUE) and IMS cannot be used, a QMI_ERR_INVALID_OPERATION error is returned.

The RP cause code for a negative ACK may be altered by WMS before sending it to the network. For example, if the control point indicates that the client memory is exceeded with cause code as RP_CAUSE_MEMORY_CAP_EXCEEDED, and SIM memory is still available, WMS sets the cause code as RP_CAUSE_PROTOCOL_ERROR in the negative ACK to the network.

3.18 QMI_WMS_SET_RETRY_PERIOD

Configures the retry period.

WMS message ID

0x0038

Version introduced

Major - 1, Minor - 1

3.18.1 Request - QMI_WMS_SET_RETRY_PERIOD_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Retry Period	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Retry Period
Length	4			2	
Value	→	uint32	retry_period	4	Retry period in seconds up to which the WMS retries to send a message before giving up; if retry_period is 0 sec, retry is not attempted

Optional TLVs

None

3.18.2 Response - QMI_WMS_SET_RETRY_PERIOD_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Version introduced	Version last modified
Result Code	1.1	1.18

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value

3.18.3 Description of QMI_WMS_SET_RETRY_PERIOD REQ/RESP

This command allows clients to configure the retry period for which the WMS tries to send a message before it stops. The suggested value for the retry period is 60 sec. Attempts to set the retry period value higher than 240 sec elicit a QMI_ERR_INVALID_ARG error.

3.19 QMI_WMS_SET_RETRY_INTERVAL

Configures the retry interval.

WMS message ID

0x0039

Version introduced

Major - 1, Minor - 1

3.19.1 Request - QMI_WMS_SET_RETRY_INTERVAL_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Retry Interval	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Retry Interval
Length	4			2	
Value	→	uint32	retry_interval	4	Retry interval in seconds specifying the interval between WMS retry attempts

Optional TLVs

None

3.19.2 Response - QMI_WMS_SET_RETRY_INTERVAL_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Version introduced	Version last modified
Result Code	1.1	1.18

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value

3.19.3 Description of QMI_WMS_SET_RETRY_INTERVAL REQ/RESP

This command allows clients to configure the retry interval, which specifies the time between the WMS retry attempts. The suggested value for the retry interval is 5 sec.

3.20 QMI_WMS_SET_DC_DISCONNECT_TIMER

Configures the CDMA dedicated channel autodisconnect timer.

WMS message ID

0x003A

Version introduced

Major - 1, Minor - 1

3.20.1 Request - QMI_WMS_SET_DC_DISCONNECT_TIMER_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
DC Auto Disconnect Timer	Unknown	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	DC Auto Disconnect Timer
Length	4			2	
Value	→	uint32	dc_auto_disconn_timer	4	Timeout period in seconds; a value of 0 means that the autodisconnect is disabled

Optional TLVs

None

3.20.2 Response - QMI_WMS_SET_DC_DISCONNECT_TIMER_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response

3.20.3 Description of QMI_WMS_SET_DC_DISCONNECT_TIMER REQ/RESP

This command allows clients to configure the CDMA dedicated channel autodisconnect timer.

The DC Auto Disconnect Timer TLV must be used to specify the timeout period in seconds during which, if no message is sent or received on it, the CDMA dedicated channel is disconnected immediately after the timeout. The suggested value for the DC autodisconnect timer is 20 sec.

3.21 QMI_WMS_SET_MEMORY_STATUS

Indicates whether the client has storage available for new SMS messages.

Note: The client must set itself as the primary client of QMI_WMS in order for this request to be successful. This can be done using the QMI_WMS_SET_PRIMARY_CLIENT request.

WMS message ID

0x003B

Version introduced

Major - 1, Minor - 2

3.21.1 Request - QMI_WMS_SET_MEMORY_STATUS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Memory Status Information	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Memory Status Information
Length	1			2	
Value	→	boolean	memory_available	1	Memory availability. Values: • 0x00 – Memory is not available • 0x01 – Memory is available

Optional TLVs

None

3.21.2 Response - QMI_WMS_SET_MEMORY_STATUS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value

3.21.3 Description of QMI_WMS_SET_MEMORY_STATUS REQ/RESP

This command allows the client to indicate whether it has storage available for new SMS messages.

3.22 QMI_WMS_SET_BROADCAST_ACTIVATION

Enables or disables the reception of broadcast SMS messages.

WMS message ID

0x003C

Version introduced

Major - 1, Minor - 2

3.22.1 Request - QMI_WMS_SET_BROADCAST_ACTIVATION_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Broadcast Activation Information	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Broadcast Activation Information
Length	2			2	
Value	→	enum8	message_mode	1	Message mode. Values: • 0x00 – MESSAGE_MODE_CDMA – CDMA • 0x01 – MESSAGE_MODE_GW – GW
		boolean	bc_activate	1	Broadcast activation. Values: • 0x00 – Disable broadcast • 0x01 – Activate broadcast

Optional TLVs

Name	Version introduced	Version last modified
Broadcast Filtering Information	1.10	1.10

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Broadcast Filtering Information
Length	1			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	boolean	activate_all	1	Indicates whether to accept 3GPP2 broadcast SMS messages for all service categories or to accept 3GPP cell broadcast SMS messages without additional language preference filtering. Values: • 0x00 – Filter 3GPP2 broadcast messages based on service categories and 3GPP cell broadcast messages based on language preferences • 0x01 – Ignore service categories or language preferences

3.22.2 Response - QMI_WMS_SET_BROADCAST_ACTIVATION_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Version introduced	Version last modified
Result Code	1.2	1.18

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device
QMI_ERR_INVALID_OPERATION	Selected operation is not allowed because there are mandatory service IDs in the service table

3.22.3 Description of QMI_WMS_SET_BROADCAST_ACTIVATION REQ/RESP

This command enables or disables the reception of broadcast SMS messages.

When broadcast is activated without the optional Broadcast Filtering Information TLV, the default behavior is to allow only those 3GPP/3GPP2 broadcast SMS messages that match the language preference/service category respectively. If language preferences/service categories must be ignored while filtering 3GPP/3GPP2 broadcast SMS messages, the optional Broadcast Filtering Information TLV must be set to 0x01.

3.23 QMI_WMS_SET_BROADCAST_CONFIG

Sets the broadcast SMS configuration.

WMS message ID

0x003D

Version introduced

Major - 1, Minor - 2

3.23.1 Request - QMI_WMS_SET_BROADCAST_CONFIG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Broadcast Configuration Information	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Broadcast Configuration Information
Length	1			2	
Value	→	enum8	message_mode	1	Message mode. Values: • 0x00 – MESSAGE_MODE_CDMA – CDMA • 0x01 – MESSAGE_MODE_GW – GW

Optional TLVs

Name	Version introduced	Version last modified
3GPP Broadcast Configuration Information**	Unknown	1.2
3GPP2 Broadcast Configuration Information*	Unknown	1.5

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	3GPP Broadcast Configuration Information**
Length	Var			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	uint16	num_instances	2	Number of sets of the following elements: • from_service_id • to_service_id • selected
		uint16	from_service_id	2	Starting point of the range of CBM message identifiers; message IDs are defined in 3GPP TS 23.041 Section 9.4.1.2.2 for GSM and 3GPP TS 23.041 Section 9.4.4.2.2 for UMTS.
		uint16	to_service_id	2	Ending point of the range of CBM message identifiers; message IDs are defined in 3GPP TS 23.041 Section 9.4.1.2.2 for GSM and 3GPP TS 23.041 Section 9.4.4.2.2 for UMTS.
		boolean	selected	1	Range of CBM message identifiers indicated by from_service_id and to_service_id. Values: • 0x00 – Not selected • 0x01 – Selected
Type	0x11			1	3GPP2 Broadcast Configuration Information*
Length	Var			2	
Value	→	uint16	num_instances	2	Number of sets of the following elements: • service_category • language • selected
		enum16	service_category	2	Service category assignments, as defined in 3GPP2 C.R1001-D Section 9.3; see Table A-4 for more information.

Field	Field value	Field type	Parameter	Size (byte)	Description
		enum16	language	2	Language indicator value assignments, as defined in 3GPP2 C.R1001-D Section 9.2. Values: • 0x00 – LANGUAGE_UNKNOWN – Unknown or unspecified • 0x01 – LANGUAGE_ENGLISH – English • 0x02 – LANGUAGE_FRENCH – French • 0x03 – LANGUAGE_SPANISH – Spanish • 0x04 – LANGUAGE_JAPANESE – Japanese • 0x05 – LANGUAGE_KOREAN – Korean • 0x06 – LANGUAGE_CHINESE – Chinese • 0x07 – LANGUAGE_HEBREW – Hebrew
		boolean	selected	1	Specified service_category and language. Values: • 0x00 – Not selected • 0x01 – Selected

3.23.2 Response - QMI_WMS_SET_BROADCAST_CONFIG_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device

3.23.3 Description of QMI_WMS_SET_BROADCAST_CONFIG REQ/RESP

This command configures broadcast SMS.

- If the mode is GW, the 3GPP Broadcast Configuration Information TLV must be sent.
- If the mode is CDMA, the 3GPP2 Broadcast Configuration Information TLV must be sent.

3.24 QMI_WMS_GET_BROADCAST_CONFIG

Gets the current broadcast SMS configuration.

WMS message ID

0x003E

Version introduced

Major - 1, Minor - 2

3.24.1 Request - QMI_WMS_GET_BROADCAST_CONFIG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Broadcast Configuration Information	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Broadcast Configuration Information
Length	1			2	
Value	→	enum8	message_mode	1	Message mode. Values: • 0x00 – MESSAGE_MODE_CDMA – CDMA • 0x01 – MESSAGE_MODE_GW – GW

Optional TLVs

None

3.24.2 Response - QMI_WMS_GET_BROADCAST_CONFIG_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
3GPP Broadcast Configuration Information**	Unknown	1.2
3GPP2 Broadcast Configuration Information*	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	3GPP Broadcast Configuration Information**
Length	Var			2	
Value	→	boolean	activated_ind	1	Broadcast SMS. Values: • 0x00 – Deactivated • 0x01 – Activated
		uint16	num_instances	2	Number of sets of the following elements: • from_service_id • to_service_id • selected
		uint16	from_service_id	2	Starting point of the range of CBM message identifiers; message IDs are defined in 3GPP TS 23.041 Section 9.4.1.2.2 for GSM and 3GPP TS 23.041 Section 9.4.4.2.2 for UMTS.
		uint16	to_service_id	2	Ending point of the range of CBM message identifiers; message IDs are defined in 3GPP TS 23.041 Section 9.4.1.2.2 for GSM and 3GPP TS 23.041 Section 9.4.4.2.2 for UMTS.
		boolean	selected	1	Range of CBM message identifiers indicated by from_service_id and to_service_id. Values: • 0x00 – Not selected • 0x01 – Selected
Type	0x11			1	3GPP2 Broadcast Configuration Information*

Field	Field value	Field type	Parameter	Size (byte)	Description
Length	Var			2	
Value	→	boolean	activated_ind	1	Broadcast SMS. Values: • 0x00 – Deactivated • 0x01 – Activated
		uint16	num_instances	2	Number of sets of the following elements: • service_category • language • selected
		enum16	service_category	2	Service category assignments, as defined in 3GPP2 C.R1001-D Section 9.3; see Table A-4 for more information.
		enum16	language	2	Language indicator value assignments, as defined in 3GPP2 C.R1001-D Section 9.2. Values: • 0x00 – LANGUAGE_UNKNOWN – Unknown or unspecified • 0x01 – LANGUAGE_ENGLISH – English • 0x02 – LANGUAGE_FRENCH – French • 0x03 – LANGUAGE_SPANISH – Spanish • 0x04 – LANGUAGE_JAPANESE – Japanese • 0x05 – LANGUAGE_KOREAN – Korean • 0x06 – LANGUAGE_CHINESE – Chinese • 0x07 – LANGUAGE_HEBREW – Hebrew
		boolean	selected	1	Specified service_category and language. Values: • 0x00 – Not selected • 0x01 – Selected

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device

3.24.3 Description of QMI_WMS_GET_BROADCAST_CONFIG REQ/RESP

This command gets the mobile's broadcast SMS configuration.

If the mode specified in QMI_WMS_GET_BROADCAST_CONFIG_REQ is GW, QMI_WMS_GET_BROADCAST_CONFIG_RESP includes the 3GPP Broadcast Configuration Information TLV.

If the mode specified in QMI_WMS_GET_BROADCAST_CONFIG_REQ is CDMA, QMI_WMS_GET_BROADCAST_CONFIG_RESP includes the 3GPP2 Broadcast Configuration Information TLV.

3.25 QMI_WMS_MEMORY_FULL_IND

Indicates that the SMS storage is full.

WMS message ID

0x003F

Version introduced

Major - 1, Minor - 2

3.25.1 Indication - QMI_WMS_MEMORY_FULL_IND

Message type

Indication

Sender

Service

Indication scope

Unicast (per control point)

Mandatory TLVs

Name	Version introduced	Version last modified
Memory Full Information	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Memory Full Information
Length	2			2	
Value	→	enum8	storage_type	1	Memory storage. Values: • 0x00 – STORAGE_TYPE_UIM • 0x01 – STORAGE_TYPE_NV
		enum8	message_mode	1	Message mode. Values: • 0x00 – MESSAGE_MODE_CDMA – CDMA • 0x01 – MESSAGE_MODE_GW – GW

Optional TLVs

None

3.25.2 Description of QMI_WMS_MEMORY_FULL_IND

This indication signifies that SMS storage is full on the specified memory store.

3.26 QMI_WMS_GET_DOMAIN_PREF

Queries the GW domain preference. (Deprecated)

WMS message ID

0x0040

Version introduced

Major - 1, Minor - 2

3.26.1 Request - QMI_WMS_GET_DOMAIN_PREF_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.26.2 Response - QMI_WMS_GET_DOMAIN_PREF_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response. The following mandatory TLVs are present if the result code is QMI_RESULT_SUCCESS.

Name	Version introduced	Version last modified
Domain Pref	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Domain Pref
Length	1			2	
Value	→	enum8	domain_pref	1	GW domain preference. Values: • 0x00 – DOMAIN_PREF_CS – CS preferred • 0x01 – DOMAIN_PREF_PS – PS preferred • 0x02 – DOMAIN_PREF_CS_ONLY – CS only • 0x03 – DOMAIN_PREF_PS_ONLY – PS only

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value

3.26.3 Description of QMI_WMS_GET_DOMAIN_PREF REQ/RESP

This command queries the GW domain preference.

The GW domain preference is applicable to 3GPP devices only. Attempts to retrieve the GW domain preference from a non-3GPP device elicit a QMI_ERR_OP_DEVICE_UNSUPPORTED error.

This command is deprecated. Use QMI_WMS_GET_DOMAIN_PREF_CONFIG (Section 3.43) to get the GW domain preference.

3.27 QMI_WMS_SET_DOMAIN_PREF

Sets the GW domain preference. (Deprecated)

WMS message ID

0x0041

Version introduced

Major - 1, Minor - 2

3.27.1 Request - QMI_WMS_SET_DOMAIN_PREF_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Domain Pref	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Domain Pref
Length	1			2	
Value	→	enum8	domain_pref	1	GW domain preference. Values: • 0x00 – DOMAIN_PREF_CS – CS preferred • 0x01 – DOMAIN_PREF_PS – PS preferred • 0x02 – DOMAIN_PREF_CS_ONLY – CS only • 0x03 – DOMAIN_PREF_PS_ONLY – PS only

Optional TLVs

None

3.27.2 Response - QMI_WMS_SET_DOMAIN_PREF_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device

3.27.3 Description of QMI_WMS_SET_DOMAIN_PREF REQ/RESP

This command sets the GW domain preference.

The GW domain preference is applicable to 3GPP devices only. Attempts to set the GW domain preference from a non-3GPP device elicit a QMI_ERR_OP_DEVICE_UNSUPPORTED error.

This command is deprecated. Use QMI_WMS_SET_DOMAIN_PREF_CONFIG (Section 3.44) to set the GW domain preference.

3.28 QMI_WMS_SEND_FROM_MEM_STORE

Sends a message from a memory store.

WMS message ID

0x0042

Version introduced

Major - 1, Minor - 2

3.28.1 Request - QMI_WMS_SEND_FROM_MEM_STORE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Message Memory Storage Information	Unknown	1.2

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Message Memory Storage Information
Length	6			2	
Value	→	enum8	storage_type	1	Memory storage. Values: • 0x00 – STORAGE_TYPE_UIM • 0x01 – STORAGE_TYPE_NV
		uint32	storage_index	4	Memory index.
		enum8	message_mode	1	Message mode. Value: • 0x00 – MESSAGE_MODE_CDMA – CDMA • 0x01 – MESSAGE_MODE_GW – GW

Optional TLVs

Name	Version introduced	Version last modified
SMS on IMS	1.4	1.9

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	SMS on IMS
Length	1			2	
Value	→	boolean	sms_on_ims	1	Indicates whether the message is to be sent on IMS. Values: • 0x00 – Message is not to be sent on IMS • 0x01 – Message is to be sent on IMS • 0x02 to 0xFF – Reserved **Note:** In minor version 9, the implementation was changed in such a way that inclusion of this TLV may affect the SMS routing differently.

3.28.2 Response - QMI_WMS_SEND_FROM_MEM_STORE_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
Message ID	Unknown	1.2
Cause Code*	Unknown	1.2
Error Class*	Unknown	1.2
GW Cause Info**	Unknown	1.2
Message Delivery Failure Type	Unknown	1.4

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Message ID
Length	2			2	
Value	→	uint16	message_id	2	WMS message ID.
Type	0x11			1	Cause Code*
Length	2			2	
Value	→	enum16	cause_code	2	WMS cause code per 3GPP2 N.S0005-0 Section 6.5.2.125; see Table A-1 for more information.

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x12			1	Error Class*
Length	1			2	
Value	→	enum8	error_class	1	Error class. Values: • 0x00 – ERROR_CLASS_TEMPORARY • 0x01 – ERROR_CLASS_PERMANENT
Type	0x13			1	GW Cause Info**
Length	3			2	
Value	→	enum16	rp_cause	2	GW RP cause per 3GPP TS 24.011 Section 8.2.5.4; see Table A-2 for more information.
		enum8	tp_cause	1	GW TP cause per 3GPP TS 23.040 Section 9.2.3.22; see Table A-3 for more information.
Type	0x14			1	Message Delivery Failure Type
Length	1			2	
Value	→	enum8	message_delivery_failure_type	1	Message delivery failure type. Values: • 0x00 – WMS_MESSAGE_DELIVERY_FAILURE_TEMPORARY • 0x01 – WMS_MESSAGE_DELIVERY_ FAILURE_PERMANENT

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_ARG_TOO_LONG	Argument passed in a TLV was larger than the available storage in the device
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value
QMI_ERR_CAUSE_CODE	SMS cause code: For CDMA, refer to 3GPP2 N.S0005-0 Section 6.5.2.125; for GW, refer to 3GPP TS 27.005 Section 3.2.5
QMI_ERR_ENCODING	Message is not encoded properly
QMI_ERR_MESSAGE_NOT_SENT	Message could not be sent
QMI_ERR_MESSAGE_DELIVERY_FAILURE	Message could not be delivered
QMI_ERR_DEVICE_NOT_READY	Device is not ready to send the message
QMI_ERR_NETWORK_NOT_READY	Network is not ready to send the message
QMI_ERR_OP_DEVICE_UNSUPPORTED	Selected operation is not supported by the device
QMI_ERR_OP_NETWORK_UNSUPPORTED	Selected operation is not supported by the network

QMI_ERR_MSG_BLOCKED	Message is blocked because the recipient is not on the FDN
QMI_ERR_INVALID_OPERATION	SMS on IMS TLV is set to TRUE; however, IMS is not registered

3.28.3 Description of QMI_WMS_SEND_FROM_MEM_STORE REQ/RESP

This command requests that a message be sent from a memory store.

If the Result Code TLV indicates failure and the qmi_error field is set to QMI_ERR_CAUSE_CODE, 3GPP2 devices return the Cause Code and the Error Class TLVs. 3GPP devices return the GW Cause Information TLV.

If the Result Code TLV indicates failure and the qmi_error field is set to QMI_ERR_MESSAGE_DELIVERY_FAILURE, the mobile may return the Message Delivery Failure Type TLV.

If the SMS on IMS TLV is not included, WMS uses IMS whenever possible, i.e., IMS is the preferred transport. If the TLV is included with value 0x00 (FALSE), WMS does not use IMS as the transport. If the TLV is included with value 0x01 (TRUE) and IMS cannot be used, a QMI_ERR_INVALID_OPERATION error is returned.

3.29 QMI_WMS_GET_MESSAGE_WAITING

Gets the message waiting information.

WMS message ID

0x0043

Version introduced

Major - 1, Minor - 3

3.29.1 Request - QMI_WMS_GET_MESSAGE_WAITING_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.29.2 Response - QMI_WMS_GET_MESSAGE_WAITING_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response. The following mandatory TLVs are present if the result code is QMI_RESULT_SUCCESS.

Name	Version introduced	Version last modified
Message Waiting Information	Unknown	1.3

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Message Waiting Information
Length	Var			2	
Value	→	uint8	num_instances	1	Number of sets of the following elements: • message_type • active_ind • message_count
		enum8	message_type	1	Message type. Values: • 0x00 – MWI_MESSAGE_TYPE_ VOICEMAIL – Voicemail • 0x01 – MWI_MESSAGE_TYPE_ FAX – Fax • 0x02 – MWI_MESSAGE_TYPE_ EMAIL – Email • 0x03 – MWI_MESSAGE_TYPE_ OTHER – Other • 0x04 – MWI_MESSAGE_TYPE_ VIDEOMAIL – Videomail
		boolean	active_ind	1	Indicates whether the indication is active. Values: • 0x00 – Inactive • 0x01 – Active
		uint8	message_count	1	Number of messages.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response

3.29.3 Description of QMI_WMS_GET_MESSAGE_WAITING REQ/RESP

This command gets the message waiting information.

If the indication for a given message_type is active, but the message_count is 0, this means the network has not provided the number of messages.

3.30 QMI_WMS_MESSAGE_WAITING_IND

Indicates a change in the message waiting information.

WMS message ID

0x0044

Version introduced

Major - 1, Minor - 3

3.30.1 Indication - QMI_WMS_MESSAGE_WAITING_IND

Message type

Indication

Sender

Service

Indication scope

Broadcast

Mandatory TLVs

Name	Version introduced	Version last modified
Message Waiting Information	Unknown	1.3

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Message Waiting Information
Length	Var			2	
Value	→	uint8	num_instances	1	Number of sets of the following elements: • message_type • active_ind • message_count

Field	Field value	Field type	Parameter	Size (byte)	Description
		enum8	message_type	1	Message type. Values: • 0x00 – MWI_MESSAGE_TYPE_VOICEMAIL – Voicemail • 0x01 – MWI_MESSAGE_TYPE_FAX – Fax • 0x02 – MWI_MESSAGE_TYPE_EMAIL – Email • 0x03 – MWI_MESSAGE_TYPE_OTHER – Other • 0x04 – MWI_MESSAGE_TYPE_VIDEOMAIL – Videomail
		boolean	active_ind	1	Indicates whether the indication is active. Values: • 0x00 – Inactive • 0x01 – Active
		uint8	message_count	1	Number of messages.

Optional TLVs

None

3.30.2 Description of QMI_WMS_MESSAGE_WAITING_IND

This broadcast indication is sent when the message waiting information changes.

If the indication for a given message_type is active, but the message_count is 0, this means the network has not provided the number of messages.

3.31 QMI_WMS_SET_PRIMARY_CLIENT

Allows the client to set or unset itself as the primary client of QMI_WMS.

WMS message ID

0x0045

Version introduced

Major - 1, Minor - 3

3.31.1 Request - QMI_WMS_SET_PRIMARY_CLIENT_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Primary Client Information	Unknown	1.3

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Primary Client Information
Length	1			2	
Value	→	boolean	primary_client	1	Indicates whether the client is set as the primary client. Values: • 0x00 – FALSE • 0x01 – TRUE

Optional TLVs

None

3.31.2 Response - QMI_WMS_SET_PRIMARY_CLIENT_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value

3.31.3 Description of QMI_WMS_SET_PRIMARY_CLIENT REQ/RESP

This command allows the client to set or unset itself as the primary client of QMI_WMS.

The client must be the primary client of QMI_WMS before it can report its memory status (QMI_WMS_SET_MEMORY_STATUS).

If the client sets itself as the primary client of QMI_WMS, the configuration set by QMI_WMS_SET_ROUTES may not be honored (see Section 3.12 for more information).

If the primary client manages its own memory, a memory full indication is sent to the network when both SIM memory and client memory are full. Otherwise, a memory full indication is sent to the network when both SIM memory and NV memory are full.

3.32 QMI_WMS_SMSC_ADDRESS_IND

Indicates a change in the SMSC address used by QMI_WMS.

WMS message ID

0x0046

Version introduced

Major - 1, Minor - 4

3.32.1 Indication - QMI_WMS_SMSC_ADDRESS_IND

Message type

Indication

Sender

Service

Indication scope

Broadcast

Mandatory TLVs

Name	Version introduced	Version last modified
SMSC Address	Unknown	1.4

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	SMSC Address
Length	Var			2	
Value	→	char	smsc_address_type	3	Type of SMSC address given in ASCII digits (must be three digits long, with leading zeros used as placeholders)
		uint8	smsc_address_length	1	Number of sets of the following elements: • smsc_address_digits
		char	smsc_address_digits	Var	Address of the SMSC given in ASCII digits; can be prefixed with + (maximum 20 digits, not including the +)

Optional TLVs

None

3.32.2 Description of QMI_WMS_SMSC_ADDRESS_IND

This broadcast indication is sent under the following conditions:

- The SMSC address used by QMI_WMS is read for the first time
- The SMSC address used by QMI_WMS is changed

3.33 QMI_WMS_INDICATION_REGISTER

Sets the registration state for different QMI_WMS indications for the requesting control point.

WMS message ID

0x0047

Version introduced

Major - 1, Minor - 4

3.33.1 Request - QMI_WMS_INDICATION_REGISTER_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

Name	Version introduced	Version last modified
Transport Layer Information Events	Unknown	1.4
Transport NW Reg Information Events	Unknown	1.4
Call Status Information Events	Unknown	1.4
Service Ready Events	1.8	1.8
Broadcast Config Events	1.8	1.8
Transport Layer MWI Information Events	1.22	1.22
SIM Ready Information Events	1.24	1.24

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Transport Layer Information Events
Length	1			2	
Value	→	boolean	reg_transport_layer_info_events	1	Values: • 0x00 – Disable • 0x01 – Enable
Type	0x11			1	Transport NW Reg Information Events
Length	1			2	
Value	→	boolean	reg_transport_nw_reg_info_events	1	Values: • 0x00 – Disable • 0x01 – Enable

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x12			1	Call Status Information Events
Length	1			2	
Value	→	boolean	reg_call_status_info_ events	1	Values: • 0x00 – Disable • 0x01 – Enable
Type	0x13			1	Service Ready Events
Length	1			2	
Value	→	boolean	reg_service_ready_events	1	Values: • 0x00 – Disable • 0x01 – Enable
Type	0x14			1	Broadcast Config Events
Length	1			2	
Value	→	boolean	reg_broadcast_config_ events	1	Values: • 0x00 – Disable • 0x01 – Enable
Type	0x15			1	Transport Layer MWI Information Events
Length	1			2	
Value	→	boolean	reg_transport_layer_mwi_ info_events	1	Values: • 0x00 – Disable • 0x01 – Enable
Type	0x16			1	SIM Ready Information Events
Length	1			2	
Value	→	boolean	reg_sim_ready_info_ events	1	Values: • 0x00 – Disable • 0x01 – Enable

3.33.2 Response - QMI_WMS_INDICATION_REGISTER_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response

3.33.3 Description of QMI_WMS_INDICATION_REGISTER REQ/RESP

This command is used by a control point to register/deregister for different QMI_WMS indications. The control point's registration state variables, controlling registration for indications, are modified to reflect the settings indicated in the TLVs that are present in the Request message.

The reg_transport_layer_info_events field in the Transport Layer Information Events TLV must be set to Enable to register a control point for the Transport Layer Information Events and Disable to deregister. After this registration is enabled, the control point learns of Transport Layer Information events via QMI_WMS_TRANSPORT_LAYER_INFO_IND.

The reg_transport_nw_reg_info_events field in the Transport NW Reg Information Events TLV must be set to Enable to register a control point for the Transport NW Reg Information Events and Disable to deregister. After this registration is enabled, the control point learns of Transport NW Reg Information events via QMI_WMS_TRANSPORT_NW_REG_INFO_IND.

The Service Ready Events TLV must be set to Enable to register a control point for the Service Ready Events and to Disable to deregister. After this registration is enabled, the control point learns that the modem is ready to process the 3GPP/3GPP2 SMS requests via QMI_WMS_SERVICE_READY_IND.

The Broadcast Config Events TLV must be set to Enable to register a control point for the Broadcast Config Events and to Disable to deregister. After this registration is enabled, the control point learns when Broadcast Config is updated by the network using SCPT via QMI_WMS_BROADCAST_CONFIG_IND.

The Transport Layer MWI Information Events TLV must be set to Enable to register a control point for the Transport Layer MWI Information Events and to Disable to deregister. After this registration is enabled, the control point learns when MWI information is updated by the network using NOTIFY messages via QMI_WMS_TRANSPORT_LAYER_MWI_IND.

The SIM Ready Information Events TLV must be set to Enable to register a control point for the SIM Ready Events and to Disable to deregister. After this registration is enabled, the control point learns that the modem is ready to process 3GPP/3GPP2 SIM-related SMS requests via QMI_WMS_SERVICE_READY_IND.

3.34 QMI_WMS_GET_TRANSPORT_LAYER_INFO

Gets the transport layer information.

WMS message ID

0x0048

Version introduced

Major - 1, Minor - 4

3.34.1 Request - QMI_WMS_GET_TRANSPORT_LAYER_INFO_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.34.2 Response - QMI_WMS_GET_TRANSPORT_LAYER_INFO_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
Transport Layer Registration Information	Unknown	1.4
Transport Layer Information	Unknown	1.4

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Transport Layer Registration Information
Length	1			2	
Value	→	boolean	registered_ind	1	Indicates whether a transport layer is registered. Values: • 0x00 – Transport layer is not registered • 0x01 – Transport layer is registered
Type	0x11			1	Transport Layer Information
Length	2			2	
Value	→	enum8	transport_type	1	Transport type. Values: • 0x00 – IMS
		enum8	transport_cap	1	Transport capability. Values: • 0x00 – CDMA • 0x01 – GW

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device

3.34.3 Description of QMI_WMS_GET_TRANSPORT_LAYER_INFO REQ/RESP

This command gets the transport layer information.

3.35 QMI_WMS_TRANSPORT_LAYER_INFO_IND

Indicates a change in the transport layer information.

WMS message ID

0x0049

Version introduced

Major - 1, Minor - 4

3.35.1 Indication - QMI_WMS_TRANSPORT_LAYER_INFO_IND

Message type

Indication

Sender

Service

Indication scope

Unicast (per control point)

Mandatory TLVs

Name	Version introduced	Version last modified
Transport Layer Registration Information	Unknown	1.4

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Transport Layer Registration Information
Length	1			2	
Value	→	boolean	registered_ind	1	Indicates whether a transport layer is registered. Values: • 0x00 – Transport layer is not registered • 0x01 – Transport layer is registered

Optional TLVs

Name	Version introduced	Version last modified
Transport Layer Information	Unknown	1.4

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Transport Layer Information
Length	2			2	
Value	→	enum8	transport_type	1	Transport type. Values: • 0x00 – IMS
		enum8	transport_cap	1	Transport capability. Values: • 0x00 – CDMA • 0x01 – GW

3.35.2 Description of QMI_WMS_TRANSPORT_LAYER_INFO_IND

This indication is sent when transport layer information changes.

3.36 QMI_WMS_GET_TRANSPORT_NW_REG_INFO

Gets the transport network registration information.

WMS message ID

0x004A

Version introduced

Major - 1, Minor - 4

3.36.1 Request - QMI_WMS_GET_TRANSPORT_NW_REG_INFO_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.36.2 Response - QMI_WMS_GET_TRANSPORT_NW_REG_INFO_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
Transport Network Registration Information	Unknown	1.4

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Transport Network Registration Information
Length	1			2	
Value	→	enum8	transport_nw_reg_status	1	Transport layer network registration status. Values: • 0x00 – No service • 0x01 – In process • 0x02 – Failed • 0x03 – Limited service • 0x04 – Full service

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device

3.36.3 Description of QMI_WMS_GET_TRANSPORT_NW_REG_INFO REQ/RESP

This command gets the transport network registration information.

3.37 QMI_WMS_TRANSPORT_NW_REG_INFO_IND

Indicates a change in the transport network registration information.

WMS message ID

0x004B

Version introduced

Major - 1, Minor - 4

3.37.1 Indication - QMI_WMS_TRANSPORT_NW_REG_INFO_IND

Message type

Indication

Sender

Service

Indication scope

Unicast (per control point)

Mandatory TLVs

Name	Version introduced	Version last modified
Transport Network Registration Information	Unknown	1.4

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Transport Network Registration Information
Length	1			2	
Value	→	enum8	transport_nw_reg_status	1	Transport layer network registration status. Values: • 0x00 – No service • 0x01 – In process • 0x02 – Failed • 0x03 – Limited service • 0x04 – Full service

Optional TLVs

None

3.37.2 Description of QMI_WMS_TRANSPORT_NW_REG_INFO_IND

This indication is sent when transport network registration information changes.

3.38 QMI_WMS_BIND_SUBSCRIPTION

Binds the current control point to a specific subscription.

WMS message ID

0x004C

Version introduced

Major - 1, Minor - 4

3.38.1 Request - QMI_WMS_BIND_SUBSCRIPTION_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Subscription Type	1.4	1.13

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Subscription Type
Length	1			2	
Value	→	enum8	subs_type	1	Values: • 0x00 – Primary subscription • 0x01 – Secondary subscription • 0x02 – Tertiary subscription • 0x03 to 0xFF – Reserved

Optional TLVs

None

3.38.2 Response - QMI_WMS_BIND_SUBSCRIPTION_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value

3.38.3 Description of QMI_WMS_BIND_SUBSCRIPTION REQ/RESP

This command binds the control point to a specific subscription. By default, the control point is bound to the primary subscription (i.e., has not called QMI_WMS_BIND_SUBSCRIPTION).

3.39 QMI_WMS_GET_INDICATION_REGISTER

Gets the registration state for different QMI_WMS indications for the requesting control point.

WMS message ID

0x004D

Version introduced

Major - 1, Minor - 4

3.39.1 Request - QMI_WMS_GET_INDICATION_REGISTER_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.39.2 Response - QMI_WMS_GET_INDICATION_REGISTER_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
Transport Layer Information Events	Unknown	1.4
Transport NW Reg Information Events	Unknown	1.4
Call Status Information Events	Unknown	1.4
Service Ready Events	1.8	1.8

Name	Version introduced	Version last modified
Broadcast Config Events	1.8	1.8
Transport Layer MWI Information Events	1.22	1.22
SIM Ready Information Events	1.24	1.24

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Transport Layer Information Events
Length	1			2	
Value	→	boolean	reg_transport_layer_info_events	1	Values: • 0x00 – Disable • 0x01 – Enable
Type	0x11			1	Transport NW Reg Information Events
Length	1			2	
Value	→	boolean	reg_transport_nw_reg_info_events	1	Values: • 0x00 – Disable • 0x01 – Enable
Type	0x12			1	Call Status Information Events
Length	1			2	
Value	→	boolean	reg_call_status_info_events	1	Values: • 0x00 – Disable • 0x01 – Enable
Type	0x13			1	Service Ready Events
Length	1			2	
Value	→	boolean	reg_service_ready_events	1	Values: • 0x00 – Disable • 0x01 – Enable
Type	0x14			1	Broadcast Config Events
Length	1			2	
Value	→	boolean	reg_broadcast_config_events	1	Values: • 0x00 – Disable • 0x01 – Enable
Type	0x15			1	Transport Layer MWI Information Events
Length	1			2	
Value	→	boolean	reg_transport_layer_mwi_info_events	1	Values: • 0x00 – Disable • 0x01 – Enable
Type	0x16			1	SIM Ready Information Events
Length	1			2	
Value	→	boolean	reg_sim_ready_events	1	Values: • 0x00 – Disable • 0x01 – Enable

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response

3.39.3 Description of QMI_WMS_GET_INDICATION_REGISTER REQ/RESP

This command queries for which indications the control point is currently registered.

3.40 QMI_WMS_GET_SMS_PARAMETERS

Reads the SMS parameters from EF-SMSP.

WMS message ID

0x004E

Version introduced

Major - 1, Minor - 4

3.40.1 Request - QMI_WMS_GET_SMS_PARAMETERS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Message Mode	Unknown	1.4

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Message Mode
Length	1			2	
Value	→	enum8	message_mode	1	Message mode. Values: • 0x01 – MESSAGE_MODE_GW – GW

Optional TLVs

None

3.40.2 Response - QMI_WMS_GET_SMS_PARAMETERS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
Destination Address	Unknown	1.4
Protocol Identifier Data	Unknown	1.4
Data Coding Scheme	Unknown	1.4
Validity Period	Unknown	1.4

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Destination Address
Length	Var			2	
Value	→	uint8	dest_addr_len	1	Number of sets of the following elements: • dest_addr
		uint8	dest_addr	Var	Destination address as defined in 3GPP TS 23.040 Section 9.2.3.8.
Type	0x11			1	Protocol Identifier Data
Length	1			2	
Value	→	enum8	pid	1	Protocol Identifier Data (PID) per 3GPP TS 23.040 Section 9.2.3.9; see Table A-5 for more information.
Type	0x12			1	Data Coding Scheme
Length	1			2	
Value	→	uint8	dcs	1	SMS data coding scheme as defined in 3GPP TS 23.038 Section 4.
Type	0x13			1	Validity Period
Length	1			2	
Value	→	uint8	validity	1	Relative validity period as defined in 3GPP TS 23.040 Section 9.2.3.12.1.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response

3.40.3 Description of QMI_WMS_GET_SMS_PARAMETERS REQ/RESP

This command reads the SMS parameters from EF-SMSP.

3.41 QMI_WMS_SET_SMS_PARAMETERS

Writes the SMS parameters to EF-SMSP.

WMS message ID

0x004F

Version introduced

Major - 1, Minor - 4

3.41.1 Request - QMI_WMS_SET_SMS_PARAMETERS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Message Mode	Unknown	1.4

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Message Mode
Length	1			2	
Value	→	enum8	message_mode	1	Message mode. Values: • 0x01 – MESSAGE_MODE_GW – GW

Optional TLVs

Name	Version introduced	Version last modified
Destination Address	Unknown	1.4
Protocol Identifier Data	Unknown	1.4
Data Coding Scheme	Unknown	1.4
Validity Period	Unknown	1.4

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Destination Address
Length	Var			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	uint8	dest_addr_len	1	Number of sets of the following elements: • dest_addr
		uint8	dest_addr	Var	Destination address as defined in 3GPP TS 23.040 Section 9.2.3.8.
Type	0x11			1	Protocol Identifier Data
Length	1			2	
Value	→	enum8	pid	1	Protocol Identifier Data (PID) per 3GPP TS 23.040 Section 9.2.3.9; see Table A-5 for more information.
Type	0x12			1	Data Coding Scheme
Length	1			2	
Value	→	uint8	dcs	1	SMS data coding scheme as defined in 3GPP TS 23.038 Section 4.
Type	0x13			1	Validity Period
Length	1			2	
Value	→	uint8	validity	1	Relative validity period as defined in 3GPP TS 23.040 Section 9.2.3.12.1.

3.41.2 Response - QMI_WMS_SET_SMS_PARAMETERS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response

3.41.3 Description of QMI_WMS_SET_SMS_PARAMETERS REQ/RESP

This command writes the SMS parameters to EF-SMSP.

3.42 QMI_WMS_CALL_STATUS_IND

Indicates a change in the SMS call status.

WMS message ID

0x0050

Version introduced

Major - 1, Minor - 4

3.42.1 Indication - QMI_WMS_CALL_STATUS_IND

Message type

Indication

Sender

Service

Indication scope

Unicast (per control point)

Mandatory TLVs

Name	Version introduced	Version last modified
SMS Call Status Information	Unknown	1.4

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	SMS Call Status Information
Length	1			2	
Value	→	enum8	call_status	1	Indicates the status of the SMS call. Values: • 0x00 – Incoming • 0x01 – Connected • 0x02 – Aborted • 0x03 – Disconnected • 0x04 – Connecting

Optional TLVs

None

3.42.2 Description of QMI_WMS_CALL_STATUS_IND

This indication is sent when the call status information changes.

3.43 QMI_WMS_GET_DOMAIN_PREF_CONFIG

Queries the domain preference configuration.

WMS message ID

0x0051

Version introduced

Major - 1, Minor - 5

3.43.1 Request - QMI_WMS_GET_DOMAIN_PREF_CONFIG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.43.2 Response - QMI_WMS_GET_DOMAIN_PREF_CONFIG_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
LTE Domain Preference	Unknown	1.5
GW Domain Preference	Unknown	1.5

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	LTE Domain Preference
Length	1			2	
Value	→	enum8	lte_domain_pref	1	LTE domain preference. Values: • 0x00 – WMS_LTE_DOMAIN_PREF_NONE • 0x01 – WMS_LTE_DOMAIN_PREF_IMS
Type	0x11			1	GW Domain Preference
Length	1			2	
Value	→	enum8	gw_domain_pref	1	GW domain preference. Values: • 0x00 – DOMAIN_PREF_CS – CS preferred • 0x01 – DOMAIN_PREF_PS – PS preferred • 0x02 – DOMAIN_PREF_CS_ONLY – CS only • 0x03 – DOMAIN_PREF_PS_ONLY – PS only

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission

3.43.3 Description of QMI_WMS_GET_DOMAIN_PREF_CONFIG REQ/RESP

This command queries the domain preference configuration.

If an item is not provisioned or not relevant to the device, it is not returned.

3.44 QMI_WMS_SET_DOMAIN_PREF_CONFIG

Sets the domain preference configuration.

WMS message ID

0x0052

Version introduced

Major - 1, Minor - 5

3.44.1 Request - QMI_WMS_SET_DOMAIN_PREF_CONFIG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

Name	Version introduced	Version last modified
LTE Domain Preference	Unknown	1.5
GW Domain Preference	Unknown	1.5

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	LTE Domain Preference
Length	1			2	
Value	→	enum8	lte_domain_pref	1	LTE domain preference. Values: • 0x00 – WMS_LTE_DOMAIN_PREF_NONE • 0x01 – WMS_LTE_DOMAIN_PREF_IMS
Type	0x11			1	GW Domain Preference
Length	1			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	enum8	gw_domain_pref	1	GW domain preference. Values: • 0x00 – DOMAIN_PREF_CS – CS preferred • 0x01 – DOMAIN_PREF_PS – PS preferred • 0x02 – DOMAIN_PREF_CS_ONLY – CS only • 0x03 – DOMAIN_PREF_PS_ONLY – PS only

3.44.2 Response - QMI_WMS_SET_DOMAIN_PREF_CONFIG_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Optional TLVs

Name	Version introduced	Version last modified
LTE Domain Preference Status	Unknown	1.5
GW Domain Preference Status	Unknown	1.5

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	LTE Domain Preference Status
Length	2			2	
Value	→	enum16	lte_domain_pref_outcome	2	Error code; possible error code values are described in the error codes section of each message definition
Type	0x11			1	GW Domain Preference Status
Length	2			2	
Value	→	enum16	gw_domain_pref_outcome	2	Error code; possible error code values are described in the error codes section of each message definition.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_INVALID_ARG	One of the parameters contains an invalid value

3.44.3 Description of QMI_WMS_SET_DOMAIN_PREF_CONFIG REQ/RESP

This command sets the domain preference configuration.

Any invalid value in a request message causes the service point to reject the message without updating any service configuration information.

A QMI_ERR_NONE error is returned if all supported TLVs in the request have been successfully updated. A QMI_ERR_INTERNAL error is returned if any TLV specified in the request cannot be processed successfully.

Additionally, there are optional status TLVs in the response that correspond to each optional TLV in the request. The presence of these optional status TLVs indicates whether the request TLV was processed:

- Present – The corresponding request TLV was processed, and the TLV contains the success or failure information.
- Not present – The corresponding request TLV was not processed.

Note: Only request TLVs supported by the device will be processed, and all other TLVs will be dropped. QMI_WMS_GET_DOMAIN_PREF_CONFIG returns the TLVs that are supported by the device.

3.45 QMI_WMS_GET_RETRY_PERIOD

Queries the retry period.

WMS message ID

0x0053

Version introduced

Major - 1, Minor - 6

3.45.1 Request - QMI_WMS_GET_RETRY_PERIOD_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.45.2 Response - QMI_WMS_GET_RETRY_PERIOD_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Version introduced	Version last modified
Result Code	1.6	1.6

Optional TLVs

Name	Version introduced	Version last modified
Retry Period	1.6	1.6

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Retry Period
Length	4			2	
Value	→	uint32	retry_period	4	WMS attempts to send a message up to the retry period in seconds before giving up. If retry_period is 0 sec, the retry is not attempted.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response

3.45.3 Description of QMI_WMS_GET_RETRY_PERIOD REQ/RESP

This command queries the current value set for the WMS retry period. The value returned is the last value set by QMI_WMS_SET_RETRY_PERIOD, or it is the default value if no specific value has been set.

See QMI_WMS_SET_RETRY_PERIOD (Section 3.18) for more information.

3.46 QMI_WMS_GET_RETRY_INTERVAL

Queries the retry interval.

WMS message ID

0x0054

Version introduced

Major - 1, Minor - 6

3.46.1 Request - QMI_WMS_GET_RETRY_INTERVAL_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.46.2 Response - QMI_WMS_GET_RETRY_INTERVAL_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Version introduced	Version last modified
Result Code	1.6	1.6

Optional TLVs

Name	Version introduced	Version last modified
Retry Interval	1.6	1.6

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Retry Interval
Length	4			2	
Value	→	uint32	retry_interval	4	Retry interval in seconds specifying the interval between WMS retry attempts.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response

3.46.3 Description of QMI_WMS_GET_RETRY_INTERVAL REQ/RESP

This command queries the retry interval that specifies the time between the WMS retry attempts. The value returned is the last value set by QMI_WMS_SET_RETRY_INTERVAL, or it is the default value if no specific value has been set.

See QMI_WMS_SET_RETRY_INTERVAL (Section 3.19) for more information.

3.47 QMI_WMS_GET_DC_DISCONNECT_TIMER

Queries the CDMA dedicated channel autodisconnect timer.

WMS message ID

0x0055

Version introduced

Major - 1, Minor - 6

3.47.1 Request - QMI_WMS_GET_DC_DISCONNECT_TIMER_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.47.2 Response - QMI_WMS_GET_DC_DISCONNECT_TIMER_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Version introduced	Version last modified
Result Code	1.6	1.6

Optional TLVs

Name	Version introduced	Version last modified
DC Auto Disconnect Timer	1.6	1.6

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	DC Auto Disconnect Timer
Length	4			2	
Value	→	uint32	dc_auto_disconn_timer	4	Timeout period in seconds. A value of 0 means that the autodisconnect is disabled.

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response

3.47.3 Description of QMI_WMS_GET_DC_DISCONNECT_TIMER REQ/RESP

This command queries the CDMA dedicated channel autodisconnect timer. The DC Auto Disconnect Timer TLV is used to specify the timeout period in seconds during which the dedicated CDMA channel is disconnected if no message is sent or received.

The value returned is the last value set by QMI_WMS_SET_DC_DISCONNECT_TIMER, or it is the default value if no specific value has been set.

See QMI_WMS_SET_DC_DISCONNECT_TIMER (Section 3.20) for more information.

3.48 QMI_WMS_GET_MEMORY_STATUS

Queries the client-set memory status for new SMS messages.

WMS message ID

0x0056

Version introduced

Major - 1, Minor - 6

3.48.1 Request - QMI_WMS_GET_MEMORY_STATUS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.48.2 Response - QMI_WMS_GET_MEMORY_STATUS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Version introduced	Version last modified
Result Code	1.6	1.6

Optional TLVs

Name	Version introduced	Version last modified
Memory Status Information	1.6	1.6

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Memory Status Information
Length	1			2	
Value	→	boolean	memory_available	1	Memory availability. Values: • 0x00 – Memory is not available • 0x01 – Memory is available

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response

3.48.3 Description of QMI_WMS_GET_MEMORY_STATUS REQ/RESP

This command queries the device memory status to check whether client has storage available for new SMS messages.

See QMI_WMS_SET_MEMORY_STATUS (Section 3.21) for more information.

3.49 QMI_WMS_GET_PRIMARY_CLIENT

Queries whether the client has set itself as the primary client of QMI_WMS.

WMS message ID

0x0057

Version introduced

Major - 1, Minor - 6

3.49.1 Request - QMI_WMS_GET_PRIMARY_CLIENT_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.49.2 Response - QMI_WMS_GET_PRIMARY_CLIENT_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Version introduced	Version last modified
Result Code	1.6	1.6

Optional TLVs

Name	Version introduced	Version last modified
Primary Client Information	1.6	1.6

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Primary Client Information
Length	1			2	
Value	→	boolean	primary_client	1	Indicates whether the client is set as the primary client. Values: • 0x00 – FALSE • 0x01 – TRUE

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response

3.49.3 Description of QMI_WMS_GET_PRIMARY_CLIENT REQ/RESP

This command queries whether the control point is currently set as the primary client of QMI_WMS.

See QMI_WMS_SET_PRIMARY_CLIENT (Section 3.31) for more information.

3.50 QMI_WMS_GET_SUBSCRIPTION_BINDING

Queries the specific subscription to which the control point is bound.

WMS message ID

0x0058

Version introduced

Major - 1, Minor - 6

3.50.1 Request - QMI_WMS_GET_SUBSCRIPTION_BINDING_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.50.2 Response - QMI_WMS_GET_SUBSCRIPTION_BINDING_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Version introduced	Version last modified
Result Code	1.6	1.6

Optional TLVs

Name	Version introduced	Version last modified
Subscription Type	1.6	1.13

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Subscription Type
Length	1			2	
Value	→	enum8	subs_type	1	Subscription type. Values: • 0x00 – Primary subscription • 0x01 – Secondary subscription • 0x02 – Tertiary subscription • 0x03 to 0xFF – Reserved

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response

3.50.3 Description of QMI_WMS_GET_SUBSCRIPTION_BINDING REQ/RESP

This command queries the specific subscription to which the control point is bound.

See QMI_WMS_BIND_SUBSCRIPTION (Section 3.38) for more information.

3.51 QMI_WMS_ASYNC_RAW_SEND

Sends a new message asynchronously in its raw format.

WMS message ID

0x0059

Version introduced

Major - 1, Minor - 7

3.51.1 Request - QMI_WMS_ASYNC_RAW_SEND_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Raw Message Data	1.7	1.7

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Raw Message Data
Length	Var			2	
Value	→	enum8	format	1	Message format. Values: • 0x00 – MESSAGE_FORMAT_CDMA – CDMA • 0x02 to 0x05 – Reserved • 0x06 – MESSAGE_FORMAT_GW_PP – GW_PP
		uint16	len	2	Number of sets of the following elements: • raw_message
		uint8	raw_message	Var	Raw message data.

Optional TLVs

Name	Version introduced	Version last modified
Force on DC*	1.7	1.7
Follow on DC*	1.7	1.7
Link Control**	1.7	1.7
SMS on IMS	1.7	1.9
Retry Message	1.7	1.7
Retry Message ID	1.7	1.7
User Data	1.7	1.7
Link Control Enabling Information**	1.15	1.15

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Force on DC*
Length	2			2	
Value	→	boolean	force_on_dc	1	Force the message to be sent on the CDMA dedicated channel. Values: • 0x00 – Do not care about the channel on which the message is sent • 0x01 – Request to send the message over the dedicated channel
		enum8	so	1	Service option. Values: • 0x00 – SO_AUTO – AUTO (choose the best service option while setting up the DC) • 0x06 – SO_6 – Service option 6 • 0x0E – SO_14 – Service option 14
Type	0x11			1	Follow on DC*
Length	1			2	
Value	→	enum8	follow_on_dc	1	Flag to request not to disconnect the CDMA dedicated channel after the send operation is complete. This TLV can be included if more messages are expected to follow. Values: • 0x01 – FOLLOW_ON_DC_ON – On (do not disconnect the DC after the send operation) Any value other than 0x01 in this field is treated as an absence of this TLV.
Type	0x12			1	Link Control**
Length	1			2	
Value	→	uint8	link_timer	1	Keeps the GW SMS link open for the specified number of seconds. Can be enabled if more messages are expected to follow.
Type	0x13			1	SMS on IMS
Length	1			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	boolean	sms_on_ims	1	Indicates whether the message is to be sent on IMS. Values: • 0x00 – Message is not to be sent on IMS • 0x01 – Message is to be sent on IMS • 0x02 to 0xFF – Reserved **Note:** In minor version 9, the implementation was changed in such a way that inclusion of this TLV may affect the SMS routing differently.
Type	0x14			1	Retry Message
Length	1			2	
Value	→	enum8	retry_message	1	Indicates this message is a retry message. Values: • 0x01 – WMS_MESSAGE_IS_A_RETRY – Message is a retry message **Note:** Any value other than 0x01 in this field is treated as an absence of this TLV.
Type	0x15			1	Retry Message ID
Length	4			2	
Value	→	uint32	retry_message_id	4	Message ID to be used in the retry message. The message ID specified here is used instead of the messsage ID encoded in the raw message. **Note:** This TLV is only meaningful if the Retry Message TLV is specified and set to 0x01.
Type	0x16			1	User Data
Length	4			2	
Value	→	uint32	user_data	4	Enables the control point to associate the request with the corresponding indication. The control point might send numerous requests. This TLV will help the control point to identify the request for which the received indication belongs.
Type	0x17			1	Link Control Enabling Information**
Length	1			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	boolean	link_enable_mode	1	Indicates whether to keep the link control enabled, until the option is modified by the client. Values: • 0x00 – Enable link control once so that the lower layer keeps the link up for a specified time until the next MO SMS is requested or the timer expires • 0x01 – Always enable link control **Note:** This TLV is valid only if the Link Control TLV is specified and is set to a valid timer value..

3.51.2 Response - QMI_WMS_ASYNC_RAW_SEND_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Version introduced	Version last modified
Result Code	1.7	1.7

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_ARG_TOO_LONG	Argument passed in a TLV was larger than the available storage in the device
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device
QMI_ERR_SMSC_ADDR	SMSC address specified is invalid

QMI_ERR_UNKNOWN	Reason is unknown for the error
QMI_ERR_INVALID_OPERATION	SMS on IMS TLV is set to TRUE; however, IMS is not registered

3.51.3 Description of QMI_WMS_ASYNC_RAW_SEND REQ/RESP

This command receives a response indicating whether its request was sent to WMS successfully. The QMI_WMS_ASYNC_RAW_SEND_IND is sent if the error code in the response is SUCCESS. No indication is sent when the status code in the response is FAILURE.

If the SMS on IMS TLV is not included, WMS uses IMS whenever possible, i.e., IMS is the preferred transport. If the TLV is included with value 0x00 (FALSE), WMS does not use IMS as the transport. If the TLV is included with value 0x01 (TRUE) and IMS cannot be used, a QMI_ERR_INVALID_OPERATION error is returned.

3.51.4 Indication - QMI_WMS_ASYNC_RAW_SEND_IND

Message type

Indication

Sender

Service

Indication scope

Unicast (per control point)

Mandatory TLVs

Name	Version introduced	Version last modified
Send Status	1.7	1.7

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Send Status
Length	2			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	enum16	send_status	2	Send status. Values: • QMI_ERR_NONE – No error in the request • QMI_ERR_CAUSE_CODE – SMS cause code: For CDMA, refer to 3GPP2 N.S0005-0 Section 6.5.2.125; for GW, refer to 3GPP TS 27.005 Section 3.2.5 • QMI_ERR_MESSAGE_DELIVERY_FAILURE – Message could not be delivered • QMI_ERR_NO_MEMORY – Device could not allocate memory to formulate a response

Optional TLVs

Name	Version introduced	Version last modified
Message ID	1.7	1.7
Cause Code*	1.7	1.7
Error Class*	1.7	1.7
GW Cause Info**	1.7	1.7
Message Delivery Failure Type	1.7	1.7
Message Delivery Failure Cause	1.7	1.7
Call Control Modified Information	1.7	1.7
User Data	1.7	1.7

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Message ID
Length	2			2	
Value	→	uint16	message_id	2	Unique ID assigned by WMS for non-retry messages.
Type	0x11			1	Cause Code*
Length	2			2	
Value	→	enum16	cause_code	2	WMS cause code per 3GPP2 N.S0005-0 Section 6.5.2.125; see Table A-1 for more information.
Type	0x12			1	Error Class*
Length	1			2	
Value	→	enum8	error_class	1	Error class. Values: • 0x00 – ERROR_CLASS_TEMPORARY • 0x01 – ERROR_CLASS_PERMANENT
Type	0x13			1	GW Cause Info**
Length	3			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	enum16	rp_cause	2	GW RP cause per 3GPP TS 24.011 Section 8.2.5.4; see Table A-2 for more information.
		enum8	tp_cause	1	GW TP cause per 3GPP TS 23.040 Section 9.2.3.22; see Table A-3 for more information.
Type	0x14			1	Message Delivery Failure Type
Length	1			2	
Value	→	enum8	message_delivery_failure_type	1	Message delivery failure type. Values: • 0x00 – WMS_MESSAGE_DELIVERY_FAILURE_TEMPORARY • 0x01 – WMS_MESSAGE_DELIVERY_FAILURE_PERMANENT
Type	0x15			1	Message Delivery Failure Cause
Length	1			2	
Value	→	enum8	message_delivery_failure_cause	1	Message delivery failure cause. Values: • 0x00 – WMS_MESSAGE_BLOCKED_DUE_TO_CALL_CONTROL
Type	0x16			1	Call Control Modified Information
Length	Var			2	
Value	→	uint8	alpha_id_len	1	Number of sets of the following elements: • alpha_id
		uint8	alpha_id	Var	Alpha ID.
Type	0x17			1	User Data
Length	4			2	
Value	→	uint32	user_data	4	Identifies the request associated with this indication.

3.51.5 Description of QMI_WMS_ASYNC_RAW_SEND_IND

This indication requests that a WMS message be sent by the MSM device.

Aynchronous raw send can be used only with transport layer-encoded messages.

- For 3GPP2 devices, transport layer messages are in Layer 3 format (refer to 3GPP2 C.S0015-A). The control point must ensure that the raw message has the following fields encoded (refer to 3GPP2 C.S0015-A Section 3.4.2 for a detailed description of these fields):
  - Teleservice ID
  - Destination Address
  - Bearer Reply Option – Used to configure the setting to get the transport layer acknowledgment (only if the control point is interested in receiving the transport layer acknowledgment)

- For 3GPP devices, transport layer messages are in PDU format (refer to 3GPP TS 27.005). The raw message in PDU format must include the SMSC address length identifier as the first byte of the message. If this byte is set to zero, the SMSC provisioned for the device is used (as specified using QMI_WMS_SET_SMSC_ADDRESS). Otherwise, the first byte indicates the length, in bytes, of the SMSC address that is included after the first byte, but before the start of the actual PDU message. The equivalent AT command for this request is AT+CMGS (refer to 3GPP TS 27.005).

If a raw message is not in transport layer format or includes transport layer parameters that cannot be processed for any reason, the command fails and returns a QMI_ERR_ENCODING error. A successful result value in the response implies that the given message send request is being processed. The message is not stored in memory; it is only sent by the MSM device. To store the message in memory, the QMI_WMS_RAW_WRITE command must be used.

The behaviors of the Force on DC and Follow on DC TLVs are as follows:

- For 3GPP2 devices, the Force on DC TLV can be included in the request, with value TRUE, to send the message over the CDMA dedicated channel. If the service fails to bring up the dedicated channel, a QMI_ERR_CALL_FAILED error is returned in the response.
- If more messages are expected, the Follow on DC TLV can be included in the request.
- If the Follow on DC TLV is absent and the Force on DC TLV is present (with value TRUE or FALSE), the service attempts to tear down the CDMA dedicated channel after the send operation. However, this disconnection is not guaranteed immediately, e.g., if there are pending messages. The service does not wait for the disconnection to send the QMI_WMS_ASYNC_RAW_SEND_IND.
- The Follow on DC TLV is ignored if it is sent in the absence of the Force on DC TLV in the request.

For GW, if more messages are expected, the Link Control TLV in QMI_WMS_ASYNC_RAW_SEND_REQ can be included. The link is kept open for the specified number of seconds and a maximum period of 5 sec. Setting the link timer to a value greater than 5 elicits a QMI_ERR_INVALID_ARG error. The suggested value for the link timer is 5 sec. If multiple messages are expected, the link control can be kept enabled by setting the optional Link Control Enabling Information TLV to 1. If this optional TLV is not present, the default behavior is to keep the link open for the number of seconds specified in the Link Control TLV. The Link Control TLV is required to enable link control; setting the Link Control Enabling Information TLV without the Link Control TLV elicits a QMI_ERR_MISSING_ARG error.

If the Send Status TLV is set to QMI_ERR_CAUSE_CODE, 3GPP2 devices return the Cause Code and the Error Class TLVs. 3GPP devices return the GW Cause Info TLV.

If the Send Status TLV is set to QMI_ERR_MESSAGE_DELIVERY_FAILURE, the mobile may return the Message Delivery Failure Type TLV.

If the message was successfully sent but modified due to call control, the mobile may return the Call Control Modified Information TLV.

The Retry Message TLV may be included to indicate this as a retry message. Sending a message as a retry changes the behavior of the message; a message should be specified as a retry only after the message has been sent once and failed. There are two options for setting the message ID for a retry message:

- Retry Message ID TLV not included – The message ID encoded in the raw message is left unchanged.
- Retry Message ID TLV included – The message ID encoded in the raw message is updated with this specified value.

Messages should be sent one at a time. The client will get the response and can proceed with other requests, but should wait for the indication from the previous message before sending the next message.

3.52 QMI_WMS_ASYNC_SEND_ACK

Sends an ACK asynchronously to the network for transfer-only routes.

WMS message ID

0x005A

Version introduced

Major - 1, Minor - 7

3.52.1 Request - QMI_WMS_ASYNC_SEND_ACK_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
ACK Information	1.7	1.7

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	ACK Information
Length	6			2	
Value	→	uint32	transaction_id	4	Transaction ID of the message for which ACK is to be sent.
		enum8	message_protocol	1	WMS message protocol. Values: • 0x00 – MESSAGE_PROTOCOL_CDMA • 0x01 – MESSAGE_PROTOCOL_WCDMA
		boolean	success	1	Indicates whether the MT message processed successfully. Values: • 0x00 – Failure • 0x01 – Success

Optional TLVs

Name	Version introduced	Version last modified
3GPP2 Failure Information*	1.7	1.7
3GPP Failure Information**	1.7	1.7
SMS on IMS	1.7	1.9
User Data	1.7	1.7

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	3GPP2 Failure Information*
Length	2			2	
Value	→	enum8	error_class	1	Error class. Values: • 0x02 – ERROR_CLASS_3GPP2_FAILURE_TEMPORARY • 0x03 – ERROR_CLASS_3GPP2_FAILURE_PERMANENT
		enum8	tl_status	1	WMS transport layer status conveying the CDMA cause code per 3GPP2 C.S0015-A Section 3.4.3.6; see Table A-1 for more information.
Type	0x11			1	3GPP Failure Information**
Length	2			2	
Value	→	enum8	rp_cause	1	GW RP cause per 3GPP TS 24.011 Section 8.2.5.4; see Table A-2 for more information.
		enum8	tp_cause	1	GW TP cause per 3GPP TS 23.040 Section 9.2.3.22; see Table A-3 for more information.
Type	0x12			1	SMS on IMS
Length	1			2	
Value	→	boolean	sms_on_ims	1	Indicates whether ACK is to be sent on IMS. Values: • 0x00 – ACK is not to be sent on IMS • 0x01 – ACK is to be sent on IMS • 0x02 to 0xFF – Reserved **Note:** In minor version 9, the implementation was changed in such a way that inclusion of this TLV may affect the SMS routing differently.
Type	0x13			1	User Data
Length	4			2	
Value	→	uint32	user_data	4	Enables the control point to associate the ACK request with the corresponding indication. The control point might send numerous requests. This TLV will help the control point identify the request for which the received indication belongs.

3.52.2 Response - QMI_WMS_ASYNC_SEND_ACK_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Version introduced	Version last modified
Result Code	1.7	1.7

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device
QMI_ERR_UNKNOWN	Reason is unknown for the error
QMI_ERR_INVALID_OPERATION	SMS on IMS TLV is set to TRUE; however, IMS is not registered

3.52.3 Description of QMI_WMS_ASYNC_SEND_ACK REQ/RESP

This command makes a request to send a WMS ACK when an MT message of the transfer-only type of route is received.

If the MT message is not processed successfully, a success value of FALSE must be sent in the mandatory ACK Information TLV in the Request message. Additional failure information must be sent in one of the following TLVs:

- 3GPP2 Failure Information TLV for 3GPP2 devices conveying the error class and the CDMA cause code for the error
- 3GPP Failure Information TLV for 3GPP devices conveying the relay layer and the transfer layer failure causes

If the SMS on IMS TLV is not included, WMS uses IMS whenever possible, i.e., IMS is the preferred transport. If the TLV is included with value 0x00 (FALSE), WMS does not use IMS as the transport. If the TLV is included with value 0x01 (TRUE) and IMS cannot be used, a QMI_ERR_INVALID_OPERATION error is returned.

The RP cause code for a negative ACK may be altered by WMS before sending it to the network. For example, if the control point indicates that the client memory is exceeded with cause code as RP_CAUSE_MEMORY_CAP_EXCEEDED, and SIM memory is still available, WMS sets the cause code as RP_CAUSE_PROTOCOL_ERROR in the negative ACK to the network.

3.52.4 Indication - QMI_WMS_ASYNC_SEND_ACK_IND

Message type

Indication

Sender

Service

Indication scope

Unicast (per control point)

Mandatory TLVs

Name	Version introduced	Version last modified
ACK Status	1.7	1.7

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	ACK Status
Length	2			2	
Value	→	enum16	ack_status	2	ACK status. Values: • QMI_ERR_NONE – No error in the request • QMI_ERR_MALFORMED_MSG – Message was not formulated correctly by the control point or the message was corrupted during transmission • QMI_ERR_NO_MEMORY – Device could not allocate memory to formulate a response • QMI_ERR_ACK_NOT_SENT – ACK could not be sent

Optional TLVs

Name	Version introduced	Version last modified
ACK Failure Cause	1.7	1.7
User Data	1.7	1.7

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	ACK Failure Cause
Length	1			2	
Value	→	enum8	failure_cause	1	ACK failure cause. Values: • 0x00 – ACK_FAILURE_NO_NETWORK_RESPONSE • 0x01 – ACK_FAILURE_NETWORK_RELEASED_LINK • 0x02 – ACK_FAILURE_ACK_NOT_SENT
Type	0x11			1	User Data
Length	4			2	
Value	→	uint32	user_data	4	Identifies the ACK request associated with this indication.

3.52.5 Description of QMI_WMS_ASYNC_SEND_ACK_IND

This indication is sent to the control point to indicate whether the ACK request has been processed successfully.

If the ACK Status TLV is set to QMI_ERR_ACK_NOT_SENT, the device may return the ACK Failure Cause TLV.

3.53 QMI_WMS_ASYNC_SEND_FROM_MEM_STORE

Sends a message asynchronously from a memory store.

WMS message ID

0x005B

Version introduced

Major - 1, Minor - 7

3.53.1 Request - QMI_WMS_ASYNC_SEND_FROM_MEM_STORE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Message Memory Storage Information	1.7	1.7

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Message Memory Storage Information
Length	6			2	
Value	→	enum8	storage_type	1	Memory storage. Values: • 0x00 – STORAGE_TYPE_UIM • 0x01 – STORAGE_TYPE_NV
		uint32	storage_index	4	Memory index.
		enum8	message_mode	1	Message mode. Value: • 0x00 – MESSAGE_MODE_CDMA – CDMA • 0x01 – MESSAGE_MODE_GW – GW

Optional TLVs

Name	Version introduced	Version last modified
SMS on IMS	1.7	1.9
User Data	1.7	1.7

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	SMS on IMS
Length	1			2	
Value	→	boolean	sms_on_ims	1	Indicates whether the message is to be sent on IMS. Values: • 0x00 – Message is not to be sent on IMS • 0x01 – Message is to be sent on IMS • 0x02 to 0xFF – Reserved **Note:** In minor version 9, the implementation was changed in such a way that inclusion of this TLV may affect the SMS routing differently.
Type	0x11			1	User Data
Length	4			2	
Value	→	uint32	user_data	4	Enables the control point to associate the send request with the corresponding indication. The control point might send numerous requests. This TLV will help the control point identify the request for which the received indication belongs.

3.53.2 Response - QMI_WMS_ASYNC_SEND_FROM_MEM_STORE_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Version introduced	Version last modified
Result Code	1.7	1.7

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value
QMI_ERR_OP_DEVICE_ UNSUPPORTED	Selected operation is not supported by the device
QMI_ERR_OP_NETWORK_ UNSUPPORTED	Selected operation is not supported by the network
QMI_ERR_INVALID_INDEX	Memory storage index specified in the request is invalid
QMI_ERR_INVALID_OPERATION	SMS on IMS TLV is set to TRUE; however, IMS is not registered

3.53.3 Description of QMI_WMS_ASYNC_SEND_FROM_MEM_STORE REQ/RESP

This command receives a response indicating whether its request was sent to WMS successfully. The QMI_WMS_ASYNC_SEND_FROM_MEM_STORE_IND is sent if the error code in the response is SUCCESS. No indication is sent when the status code in the response is FAILURE.

If the SMS on IMS TLV is not included, WMS uses IMS whenever possible, i.e., IMS is the preferred transport. If the TLV is included with value 0x00 (FALSE), WMS does not use IMS as the transport. If the TLV is included with value 0x01 (TRUE) and IMS cannot be used, a QMI_ERR_INVALID_OPERATION error is returned.

3.53.4 Indication - QMI_WMS_ASYNC_SEND_FROM_MEM_STORE_IND

Message type

Indication

Sender

Service

Indication scope

Unicast (per control point)

Mandatory TLVs

Name	Version introduced	Version last modified
Send Status	1.7	1.7

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Send Status
Length	2			2	
Value	→	enum16	send_status	2	Send status. Values: • QMI_ERR_NONE – No error in the request • QMI_ERR_CAUSE_CODE – SMS cause code: For CDMA, refer to 3GPP2 N.S0005-0 Section 6.5.2.125; for GW, refer to 3GPP TS 27.005 Section 3.2.5 • QMI_ERR_MESSAGE_DELIVERY_FAILURE – Message could not be delivered • QMI_ERR_NO_MEMORY – Device could not allocate memory to formulate a response

Optional TLVs

Name	Version introduced	Version last modified
Message ID	1.7	1.7
Cause Code*	1.7	1.7
Error Class*	1.7	1.7
GW Cause Info**	1.7	1.7
Message Delivery Failure Type	1.7	1.7
Message Delivery Failure Cause	1.7	1.7
Call Control Modified Information	1.7	1.7
User Data	1.7	1.7

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Message ID
Length	2			2	
Value	→	uint16	message_id	2	WMS message ID.
Type	0x11			1	Cause Code*
Length	2			2	
Value	→	enum16	cause_code	2	WMS cause code per 3GPP2 N.S0005-0 Section 6.5.2.125; see Table A-1 for more information.
Type	0x12			1	Error Class*
Length	1			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	enum8	error_class	1	Error class. Values: • 0x00 – ERROR_CLASS_ TEMPORARY • 0x01 – ERROR_CLASS_ PERMANENT
Type	0x13			1	GW Cause Info**
Length	3			2	
Value	→	enum16	rp_cause	2	GW RP cause per 3GPP TS 24.011 Section 8.2.5.4; see Table A-2 for more information.
		enum8	tp_cause	1	GW TP cause per 3GPP TS 23.040 Section 9.2.3.22; see Table A-3 for more information.
Type	0x14			1	Message Delivery Failure Type
Length	1			2	
Value	→	enum8	message_delivery_failure_ type	1	Message delivery failure type. Values: • 0x00 – WMS_MESSAGE_ DELIVERY_FAILURE_ TEMPORARY • 0x01 – WMS_MESSAGE_ DELIVERY_FAILURE_ PERMANENT
Type	0x15			1	Message Delivery Failure Cause
Length	1			2	
Value	→	enum8	message_delivery_failure_ cause	1	Message delivery failure cause. Values: • 0x00 – WMS_MESSAGE_ BLOCKED_DUE_TO_CALL_ CONTROL
Type	0x16			1	Call Control Modified Information
Length	Var			2	
Value	→	uint8	alpha_id_len	1	Number of sets of the following elements: • alpha_id
		uint8	alpha_id	Var	Alpha ID.
Type	0x17			1	User Data
Length	4			2	
Value	→	uint32	user_data	4	Identifies the request associated with this indication.

3.53.5 Description of QMI_WMS_ASYNC_SEND_FROM_MEM_STORE_-IND

This indication is sent if the error code in the QMI_WMS_ASYNC_SEND_FROM_MEM_STORE_RESP message is SUCCESS.

If the Result Code TLV indicates failure and the qmi_error field is set to QMI_ERR_CAUSE_CODE, 3GPP2 devices return the Cause Code and the Error Class TLVs. 3GPP devices return the GW Cause Information TLV.

If the Result Code TLV indicates failure and the qmi_error field is set to QMI_ERR_MESSAGE_DELIVERY_FAILURE, the mobile may return the Message Delivery Failure Type TLV.

3.54 QMI_WMS_GET_SERVICE_READY_STATUS

Gets the service ready status.

WMS message ID

0x005C

Version introduced

Major - 1, Minor - 8

3.54.1 Request - QMI_WMS_GET_SERVICE_READY_STATUS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

None

Optional TLVs

None

3.54.2 Response - QMI_WMS_GET_SERVICE_READY_STATUS_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Version introduced	Version last modified
Result Code	1.8	1.8

Optional TLVs

Name	Version introduced	Version last modified
Service Ready Events Registration Information	1.8	1.8
SMS Service Ready Status Information	1.8	1.8
SIM Ready Events Registration Information	1.24	1.24
SIM Ready Status Information	1.24	1.24

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Service Ready Events Registration Information
Length	1			2	
Value	→	boolean	registered_ind	1	Indicates whether service ready events are registered. Values: • 0x00 – Service ready events are not registered • 0x01 – Service ready events are registered
Type	0x11			1	SMS Service Ready Status Information
Length	4			2	
Value	→	enum	ready_status	4	Indicates whether the service is ready to handle 3GPP/3GPP2 SMS requests. Values: • 0x00 – SMS service is not ready • 0x01 – 3GPP SMS service is ready • 0x02 – 3GPP2 SMS service is ready • 0x03 – Both 3GPP SMS and 3GPP2 SMS services are ready **Note:** All other values are reserved and should be ignored by clients.
Type	0x12			1	SIM Ready Events Registration Information
Length	1			2	
Value	→	boolean	sim_ready_registered_ind	1	Indicates whether SIM ready events are registered. Values: • 0x00 – SIM ready events are not registered • 0x01 – SIM ready events are registered
Type	0x13			1	SIM Ready Status Information
Length	8			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	mask	sim_ready_status	8	Bitmask indicating whether the service is ready to handle 3GPP/3GPP2 SIM-related SMS requests. If a value of 0 is returned, the service is not ready. If a value of 3 is returned, both 3GPP and 3GPP2 SIM-related requests can be processed. Any combination of the following may be returned: • Bit 0 (0x01) – WMS_SIM_READY_3GPP – 3GPP service is ready • Bit 1 (0x02) – WMS_SIM_READY_3GPP2 – 3GPP2 service is ready • All other bits are set to zero

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_OP_DEVICE_UNSUPPORTED	Selected operation is not supported by the device

3.54.3 Description of QMI_WMS_GET_SERVICE_READY_STATUS REQ/RESP

This command gets the service ready status information. The optional SIM Ready Status Information TLV indicates whether the service has read the 3GPP and/or 3GPP2 SIM-related files and is ready to process SIM-related requests.

3.55 QMI_WMS_SERVICE_READY_IND

Indicates whether the SMS service is ready.

WMS message ID

0x005D

Version introduced

Major - 1, Minor - 8

3.55.1 Indication - QMI_WMS_SERVICE_READY_IND

Message type

Indication

Sender

Service

Indication scope

Unicast (per control point)

Mandatory TLVs

Name	Version introduced	Version last modified
SMS Service Ready Status Information	1.8	1.8

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	SMS Service Ready Status Information
Length	4			2	
Value	→	enum	ready_status	4	Indicates which service is ready. Values: • 0x00 – SMS service is not ready • 0x01 – 3GPP SMS service is ready • 0x02 – 3GPP2 SMS service is ready • 0x03 – Both 3GPP SMS and 3GPP2 SMS services are ready **Note:** All other values are reserved and should be ignored by clients.

Optional TLVs

Name	Version introduced	Version last modified
SIM Ready Status Information	1.24	1.24

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	SIM Ready Status Information
Length	8			2	
Value	→	mask	sim_ready_status	8	Bitmask indicating whether the service is ready to handle 3GPP/3GPP2 SIM-related SMS requests. If a value of 0 is returned, the service is not ready. If a value of 3 is returned, both 3GPP and 3GPP2 SIM-related requests can be processed. Any combination of the following may be returned: • Bit 0 (0x01) – WMS_SIM_READY_3GPP – 3GPP service is ready • Bit 1 (0x02) – WMS_SIM_READY_3GPP2 – 3GPP2 service is ready • All other bits are set to zero

3.55.2 Description of QMI_WMS_SERVICE_READY_IND

This indication is sent when a ready status changes. For example, the service is ready to process 3GPP/3GPP2 SMS requests during power-up or the service is unable to process a SMS request during SIM card refresh/hotswap.

The optional SIM Ready Status Information TLV is sent when the service-related SIM initialization status changes.

3.56 QMI_WMS_BROADCAST_CONFIG_IND

Indicates when broadcast configuration has been changed.

WMS message ID

0x005E

Version introduced

Major - 1, Minor - 8

3.56.1 Indication - QMI_WMS_BROADCAST_CONFIG_IND

Message type

Indication

Sender

Service

Indication scope

Unicast (per control point)

Mandatory TLVs

Name	Version introduced	Version last modified
Broadcast Configuration Information	1.8	1.8

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Broadcast Configuration Information
Length	1			2	
Value	→	enum8	message_mode	1	Message mode. Values: • 0x00 – MESSAGE_MODE_CDMA – CDMA • 0x01 – MESSAGE_MODE_GW – GW

Optional TLVs

Name	Version introduced	Version last modified
3GPP Broadcast Configuration Information*	1.8	1.8
3GPP2 Broadcast Configuration Information*	1.8	1.8

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	3GPP Broadcast Configuration Information*
Length	Var			2	
Value	→	boolean	activated_ind	1	Broadcast SMS. Values: • 0x00 – Deactivated • 0x01 – Activated
		uint16	num_instances	2	Number of sets of the following elements: • from_service_id • to_service_id • selected
		uint16	from_service_id	2	Starting point of the range of CBM message identifiers; message IDs are defined in 3GPP TS 23.041 Section 9.4.1.2.2 for GSM and 3GPP TS 23.041 Section 9.4.4.2.2 for UMTS.
		uint16	to_service_id	2	Ending point of the range of CBM message identifiers; message IDs are defined in 3GPP TS 23.041 Section 9.4.1.2.2 for GSM and 3GPP TS 23.041 Section 9.4.4.2.2 for UMTS.
		boolean	selected	1	Range of CBM message identifiers indicated by from_service_id and to_service_id. Values: • 0x00 – Not selected • 0x01 – Selected
Type	0x11			1	3GPP2 Broadcast Configuration Information*
Length	Var			2	
Value	→	boolean	activated_ind	1	Broadcast SMS. Values: • 0x00 – Deactivated • 0x01 – Activated
		uint16	num_instances	2	Number of sets of the following elements: • service_category • language • selected
		enum16	service_category	2	Service category assignments, as defined in 3GPP2 C.R1001-D Section 9.3; see Table A-4 for more information.

Field	Field value	Field type	Parameter	Size (byte)	Description
		enum16	language	2	Language indicator value assignments, as defined in 3GPP2 C.R1001-D Section 9.2. Values: • 0x00 – LANGUAGE_UNKNOWN – Unknown or unspecified • 0x01 – LANGUAGE_ENGLISH – English • 0x02 – LANGUAGE_FRENCH – French • 0x03 – LANGUAGE_SPANISH – Spanish • 0x04 – LANGUAGE_JAPANESE – Japanese • 0x05 – LANGUAGE_KOREAN – Korean • 0x06 – LANGUAGE_CHINESE – Chinese • 0x07 – LANGUAGE_HEBREW – Hebrew
		boolean	selected	1	Specified service_category and language. Values: • 0x00 – Not selected • 0x01 – Selected

3.56.2 Description of QMI_WMS_BROADCAST_CONFIG_IND

This indication is sent when broadcast configuration is updated. All the active broadcast service IDs after the update are present in the indication.

3.57 QMI_WMS_SET_MESSAGE_WAITING

Sets the message waiting information.

WMS message ID

0x005F

Version introduced

Major - 1, Minor - 14

3.57.1 Request - QMI_WMS_SET_MESSAGE_WAITING_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Message Waiting Information	1.14	1.14

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Message Waiting Information
Length	Var			2	
Value	→	uint8	message_waiting_info_len	1	Number of sets of the following elements: • message_type • active_ind • message_count
		enum8	message_type	1	Message type. Values: • 0x00 – MWI_MESSAGE_TYPE_ VOICEMAIL – Voicemail • 0x01 – MWI_MESSAGE_TYPE_ FAX – Fax • 0x02 – MWI_MESSAGE_TYPE_ EMAIL – Email • 0x03 – MWI_MESSAGE_TYPE_ OTHER – Other • 0x04 – MWI_MESSAGE_TYPE_ VIDEOMAIL – Videomail

Field	Field value	Field type	Parameter	Size (byte)	Description
		boolean	active_ind	1	Indicates whether the indication is active. Values: • 0x00 – Inactive • 0x01 – Active
		uint8	message_count	1	Number of messages.

Optional TLVs

None

3.57.2 Response - QMI_WMS_SET_MESSAGE_WAITING_RESP

Message type

Response

Sender

Service

Mandatory TLVs

The Result Code TLV (defined in Section 2.3.1) is always present in the response.

Name	Version introduced	Version last modified
Result Code	1.14	1.14

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_MISSING_ARG	A required TLV was not provided
QMI_ERR_INVALID_ARG	One of the parameters specified contains an invalid value
QMI_ERR_UNKNOWN	Reason is unknown for the error
QMI_ERR_DEVICE_NOT_READY	Device is not ready to perform the operation
QMI_ERR_ACCESS_DENIED	Access to the EF-MWIS file is denied
QMI_ERR_SIM_FILE_NOT_FOUND	EF-MWIS file is not present in the SIM

3.57.3 Description of QMI_WMS_SET_MESSAGE_WAITING REQ/RESP

This command sets the message waiting information.

If the indication for a given message_type is active, but the message_count is 0, this means the number of messages is missing.

3.58 QMI_WMS_TRANSPORT_LAYER_MWI_IND

Indicates changes in the message waiting information.

WMS message ID

0x0060

Version introduced

Major - 1, Minor - 22

3.58.1 Indication - QMI_WMS_TRANSPORT_LAYER_MWI_IND

Message type

Indication

Sender

Service

Indication scope

Unicast (per control point)

Mandatory TLVs

Name	Version introduced	Version last modified
MWI Message Summary	1.22	1.22
Message Account Address	1.22	1.22

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	MWI Message Summary
Length	Var			2	
Value	→	uint8	num_instances	1	Number of sets of the following elements: • message_type • new_msg • old_msg • new_urgent • old_urgent

Field	Field value	Field type	Parameter	Size (byte)	Description
		enum	message_type	4	Message type. Values: • TRANSPORT_MWI_MESSAGE_TYPE_VOICEMAIL (0x00) – Voicemail • TRANSPORT_MWI_MESSAGE_TYPE_VIDEOMAIL (0x01) – Videomail • TRANSPORT_MWI_MESSAGE_TYPE_FAX (0x02) – Fax • TRANSPORT_MWI_MESSAGE_TYPE_PAGER (0x03) – Pager • TRANSPORT_MWI_MESSAGE_TYPE_MULTIMEDIA (0x04) – Multimedia • TRANSPORT_MWI_MESSAGE_TYPE_TEXT (0x05) – Text
		uint16	new_msg	2	Number of new MWI messages.
		uint16	old_msg	2	Number of old MWI messages.
		uint16	new_urgent	2	Number of urgent and new MWI messages.
		uint16	old_urgent	2	Number of urgent and old MWI messages.
Type	0x02			1	Message Account Address
Length	Var			2	
Value	→	string	UE_address	Var	Message account address.

Optional TLVs

Name	Version introduced	Version last modified
MWI Message Details	1.22	1.23

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	MWI Message Details
Length	Var			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	uint16	num_instances	2	Number of sets of the following elements: • message_type • to_address_len • to_address • from_address_len • from_address • subject_len • subject • date_time_len • date_time • priority • message_id_len • message_id
		enum	message_type	4	Message type. Values: • TRANSPORT_MWI_MESSAGE_TYPE_VOICEMAIL (0x00) – Voicemail • TRANSPORT_MWI_MESSAGE_TYPE_VIDEOMAIL (0x01) – Videomail • TRANSPORT_MWI_MESSAGE_TYPE_FAX (0x02) – Fax • TRANSPORT_MWI_MESSAGE_TYPE_PAGER (0x03) – Pager • TRANSPORT_MWI_MESSAGE_TYPE_MULTIMEDIA (0x04) – Multimedia • TRANSPORT_MWI_MESSAGE_TYPE_TEXT (0x05) – Text
		uint8	to_address_len	1	Number of sets of the following elements: • to_address
		string	to_address	Var	Destination address.
		uint8	from_address_len	1	Number of sets of the following elements: • from_address
		string	from_address	Var	Sender's address.
		uint8	subject_len	1	Number of sets of the following elements: • subject
		string	subject	Var	Subject line.
		uint8	date_time_len	1	Number of sets of the following elements: • date_time
		string	date_time	Var	Date and timestamp.

Field	Field value	Field type	Parameter	Size (byte)	Description
		enum	priority	4	Priority. Values: • WMS_UNKNOWN_PRIORITY (0x00) – Unknown • WMS_LOW_PRIORITY (0x01) – Low • WMS_NORMAL_PRIORITY (0x02) – Normal • WMS_URGENT_PRIORITY (0x03) – Urgent
		uint8	message_id_len	1	Number of sets of the following elements: • message_id
		string	message_id	Var	MWI message identifier.

3.58.2 Description of QMI_WMS_TRANSPORT_LAYER_MWI_IND

This indication is sent when the transport layer indicates a change in MWI information. The MWI summary information and the UE address are always provided by the transport layer. The transport layer can optionally pass the detailed information for each MWI message.

A Additional Information

A.1 WMS Cause Codes

Table A-1 lists the WMS cause codes per 3GPP2 N.S0005-0 Section 6.5.2.125.

Table A-1 WMS cause codes

Value	Name	Description
0x00	TL_CAUSE_CODE_ADDR_VACANT	The SMS Destination Address is valid but is not currently allocated to an SMS terminal; the MIN associated with a valid destination address is not known to its HLR
0x01	TL_CAUSE_CODE_ADDR_TRANSLATION_FAILURE	The SMS Destination Address is invalid, e.g.: • The address is not a recognized address type • The address is not for a known or possible SMS functional entity • The MIN associated with a destination MS address does not correspond to its HLR • The ESN associated with a destination MS does not match the expected value • The SMS_DestinationAddress, SMS_OriginalDestinationAddress, destination MIN, or original destination subaddress does not match the address of a destination SME
0x02	TL_CAUSE_CODE_NETWORK_RESOURCE_SHORTAGE	The network transmission failed due to lack of a network resource or link capacity
0x03	TL_CAUSE_CODE_NETWORK_FAILURE	A network node failed, a link failed, or a required operation failed
0x04	TL_CAUSE_CODE_INVALID_TELESERVICE_ID	The SMS_TeleserviceIdentifier is not known, is not supported, or is not authorized by an addressed functional entity
0x05	TL_CAUSE_CODE_NETWORK_OTHER	A network problem other than identified above

Table A-1 WMS cause codes (cont.)

Value	Name	Description
0x20	TL_CAUSE_CODE_NO_PAGE_RESPONSE	The addressed MS-based SME is known, but it does not respond to a page; SMS notification is not pending
0x21	TL_CAUSE_CODE_DEST_BUSY	The destination MS-based SME is SMS capable, but is currently engaged in a call, a service, or a call mode that precludes the use of SMS, or the destination SME is congested. This value can only be used between the MSC and the MC when allowed by bilateral agreement. SMS Notification is not pending.
0x22	TL_CAUSE_CODE_NO_ACK	The destination SME does not acknowledge receipt of the SMS delivery. This value may be used when Terminal Busy and No Page Response are not appropriate. SMS notification is not pending.
0x23	TL_CAUSE_CODE_DEST_RESOURCE_ SHORTAGE	A required terminal resource (memory, etc.) is not available to process this message; SMS notification is not pending
0x24	TL_CAUSE_CODE_SMS_DELIVERY_ POSTPONED	Delivery is not currently possible (e.g., No page response, Destination busy, No acknowledgment, Destination out of service, Other terminal problem), but SMS notification is pending
0x25	TL_CAUSE_CODE_DEST_OUT_OF_SERV	The addressed destination is out of service for an extended period of time (e.g., MS sleep, inactive, power off); SMS notification is not pending
0x26	TL_CAUSE_CODE_DEST_NOT_AT_ADDR	The MS-based SME is no longer at the temporary SMS routing address. The message sender should not reuse the temporary SMS routing address. SMS notification is not pending.
0x27	TL_CAUSE_CODE_DEST_OTHER	A terminal problem other than described above; SMS notification is not pending
0x40	TL_CAUSE_CODE_RADIO_IF_RESOURCE_ SHORTAGE	There is no channel available or there is radio congestion at this time
0x41	TL_CAUSE_CODE_RADIO_IF_ INCOMPATABILITY	The MS for an MS-based SME is operating in a mode that does not support SMS at this time
0x42	TL_CAUSE_CODE_RADIO_IF_OTHER	A radio interface problem to an MS-based SME other than described above

Table A-1 WMS cause codes (cont.)

Value	Name	Description
0x60	TL_CAUSE_CODE_ENCODING	The size of a parameter or field is not what is expected
0x61	TL_CAUSE_CODE_SMS_ORIG_DENIED	The originating MIN is not recognized, the originating address is not allowed for the originating MIN, the ESN does not match the originating MIN, the origination is not authorized, the originating address is not recognized, etc.
0x62	TL_CAUSE_CODE_SMS_TERM_DENIED	The destination is not authorized to receive the SMS message, the MC refused the message, the destination SME refused the message, the destination is not authorized for a required supplementary service, etc.
0x63	TL_CAUSE_CODE_SUPP_SERV_NOT_SUPP	The originating supplementary service is not known or supported, the sender is not authorized for an originating supplementary service, etc.
0x64	TL_CAUSE_CODE_SMS_NOT_SUPP	SMS is not supported by an addressed functional entity
0x65	TL_CAUSE_CODE_MISSING_EXPECTED_ PARAM	An optional parameter that is required for a particular function
0x66	TL_CAUSE_CODE_MISSING_MAND_ PARAM	A parameter is missing that is mandatory for a particular message
0x67	TL_CAUSE_CODE_UNRECOGNIZED_ PARAM_VAL	A known parameter has an unknown or unsupported value
0x68	TL_CAUSE_CODE_UNEXPECTED_ PARAM_VAL	A known parameter has a known but unexpected value
0x69	TL_CAUSE_CODE_USER_DATA_SIZE_ERR	The User Data size is too large for access technology, transport network, or call mode, etc.; the User Data size is not what is expected for the indicated teleservice
0x6A	TL_CAUSE_CODE_GENERAL_OTHER	Other general problems

A.2 GW RP Cause Codes

Table A-2 lists the GW RP causes per 3GPP TS 24.011 Section 8.2.5.4.

Table A-2 GW RP cause codes

Value	Name	Description
0x01	RP_CAUSE_UNASSIGNED_NUMBER	Unassigned (unallocated) number
0x08	RP_CAUSE_OPERATOR_DETERMINED_BARRING	Operator determined barring
0x0A	RP_CAUSE_CALL_BARRED	Call barred
0x0B	RP_CAUSE_RESERVED	Reserved
0x15	RP_CAUSE_SMS_TRANSFER_REJECTED	Short message transfer rejected
0x16	RP_CAUSE_MEMORY_CAP_EXCEEDED	Memory capacity exceeded
0x1B	RP_CAUSE_DESTINATION_OUT_OF_ORDER	Destination out of order
0x1C	RP_CAUSE_UNIDENTIFIED_SUBSCRIBER	Unidentified subscriber
0x1D	RP_CAUSE_FACILITY_REJECTED	Facility rejected
0x1E	RP_CAUSE_UNKNOWN_SUBSCRIBER	Unknown subscriber
0x26	RP_CAUSE_NETWORK_OUT_OF_ORDER	Network out of order
0x29	RP_CAUSE_TEMPORARY_FAILURE	Temporary failure
0x2A	RP_CAUSE_CONGESTION	Congestion
0x2F	RP_CAUSE_RESOURCES_UNAVAILABLE	Resources unavailable, unspecified
0x32	RP_CAUSE_REQUESTED_FACILITY_NOT_SUBSCRIBED	Requested facility not subscribed
0x45	RP_CAUSE_REQUESTED_FACILITY_NOT_IMPLEMENTED	Requested facility not implemented
0x51	RP_CAUSE_INVALID_SMS_TRANSFER_REFERENCE_VALUE	Invalid short message transfer reference value
0x5F	RP_CAUSE_SEMANTICALLY_INCORRECT_MESSAGE	Semantically incorrect message
0x60	RP_CAUSE_INVALID_MANDATORY_INFO	Invalid mandatory information
0x61	RP_CAUSE_MESSAGE_TYPE_NOT_IMPLEMENTED	Message type nonexistent or not implemented
0x62	RP_CAUSE_MESSAGE_NOT_COMPATABLE_WITH_SMS	Message not compatible with short message protocol state
0x63	RP_CAUSE_INFO_ELEMENT_NOT_IMPLEMENTED	Information element nonexistent or not implemented
0x6F	RP_CAUSE_PROTOCOL_ERROR	Protocol error, unspecified
0x7F	RP_CAUSE_INTERWORKING	Interworking, unspecified

A.3 GW TP Cause Codes

Table A-3 lists the GW TP causes per 3GPP TS 23.040 Section 9.2.3.22.

Table A-3 GW TP cause codes

Value	Name	Description
0x80	TP_CAUSE_TELE_INTERWORKING_NOT_ SUPPORTED	Telematic interworking not supported
0x81	TP_CAUSE_SHORT_MESSAGE_TYPE_0_NOT_ SUPPORTED	Short Message Type 0 not supported
0x82	TP_CAUSE_SHORT_MESSAGE_CANNOT_BE_ REPLACED	Cannot replace short message
0x8F	TP_CAUSE_UNSPECIFIED_PID_ERROR	Unspecified TP-PID error
0x90	TP_CAUSE_DCS_NOT_SUPPORTED	Data coding scheme (alphabet) not supported
0x91	TP_CAUSE_MESSAGE_CLASS_NOT_SUPPORTED	Message class not supported
0x9F	TP_CAUSE_UNSPECIFIED_DCS_ERROR	Unspecified TP-DCS error
0xA0	TP_CAUSE_COMMAND_CANNOT_BE_ACTIONED	Command cannot be actioned
0xA1	TP_CAUSE_COMMAND_UNSUPPORTED	Command unsupported
0xAF	TP_CAUSE_UNSPECIFIED_COMMAND_ERROR	Unspecified TP-Command error
0XB0	TP_CAUSE_TPDU_NOT_SUPPORTED	TPDU not supported
0XC0	TP_CAUSE_SC_BUSY	SC busy
0xC1	TP_CAUSE_NO_SC_SUBSCRIPTION	No SC subscription
0xC2	TP_CAUSE_SC_SYS_FAILURE	SC system failure
0xC3	TP_CAUSE_INVALID_SME_ADDRESS	Invalid SME address
0xC4	TP_CAUSE_DESTINATION_SME_BARRED	Destination SME barred
0xC5	TP_CAUSE_SM_REJECTED_OR_DUPLICATE	SM Rejected-Duplicate SM
0xC6	TP_CAUSE_TP_VPF_NOT_SUPPORTED	TP-VPF not supported
0xC7	TP_CAUSE_TP_VP_NOT_SUPPORTED	TP-VP not supported
0xD0	TP_CAUSE_SIM_SMS_STORAGE_FULL	(U)SIM SMS storage full
0xD1	TP_CAUSE_NO_SMS_STORAGE_CAP_IN_SIM	No SMS storage capability in (U)SIM
0xD2	TP_CAUSE_MS_ERROR	Error in MS
0xD3	TP_CAUSE_MEMORY_CAP_EXCEEDED	Memory capacity exceeded
0xD4	TP_CAUSE_SIM_APP_TOOLKIT_BUSY	(U)SIM Application Toolkit busy
0xD5	TP_CAUSE_SIM_DATA_DOWNLOAD_ERROR	(U)SIM data download error
0xFF	TP_CAUSE_UNSPECIFIED_ERROR	Unspecified error cause

A.4 Service Category Assignments

Table A-4 lists the service category assignments per 3GPP2 C.R1001-D Section 9.3.

Table A-4 Service Category assignments

Value	Name	Description
0x00	SERVICE_CAT_UNKNOWN	Unknown or Unspecified
0x01	SERVICE_CAT_EMERGENCY_BROADCAST	Emergency Broadcast
0x02	SERVICE_CAT_ADMINISTRATIVE	Administrative
0x03	SERVICE_CAT_MAINTENANCE	Maintenance
0x04	SERVICE_CAT_GENERAL_NEWS_LOCAL	General News Local
0x05	SERVICE_CAT_GENERAL_NEWS_REGIONAL	General News Regional
0x06	SERVICE_CAT_GENERAL_NEWS_NATIONAL	General News National
0x07	SERVICE_CAT_GENERAL_NEWS_INTERNATIONAL	General News International
0x08	SERVICE_CAT_BUSINESS_NEWS_LOCAL	Business News Local
0x09	SERVICE_CAT_BUSINESS_NEWS_REGIONAL	Business News Regional
0x0A	SERVICE_CAT_BUSINESS_NEWS_NATIONAL	Business News National
0x0B	SERVICE_CAT_BUSINESS_NEWS_INTERNATIONAL	Business News International
0x0C	SERVICE_CAT_SPORTS_NEWS_LOCAL	Sports News Local
0x0D	SERVICE_CAT_SPORTS_NEWS_REGIONAL	Sports News Regional
0x0E	SERVICE_CAT_SPORTS_NEWS_NATIONAL	Sports News National
0x0F	SERVICE_CAT_SPORTS_NEWS_INTERNATIONAL	Sports News International
0x10	SERVICE_CAT_ENTERTAINMENT_NEWS_LOCAL	Entertainment News Local
0x11	SERVICE_CAT_ENTERTAINMENT_NEWS_ REGIONAL	Entertainment News Regional
0x12	SERVICE_CAT_ENTERTAINMENT_NEWS_ NATIONAL	Entertainment News National
0x13	SERVICE_CAT_ENTERTAINMENT_NEWS_ INTERNATIONAL	Entertainment News International
0x14	SERVICE_CAT_LOCAL_WEATHER	Local Weather
0x15	SERVICE_CAT_TRAFFIC_REPORTS	Area Traffic Reports
0x16	SERVICE_CAT_LOCAL_FLIGHT_SCHEDULES	Local Airplane Flight Schedules
0x17	SERVICE_CAT_RESTAURANTS	Restaurants
0x18	SERVICE_CAT_LODGINGS	Lodgings
0x19	SERVICE_CAT_RETAIL_DIRECTORY	Retail Directory
0x1A	SERVICE_CAT_ADVERTISEMENTS	Advertisements
0x1B	SERVICE_CAT_STOCK_QUOTES	Stock Quotes
0x1C	SERVICE_CAT_EMPLOYMENT_OPPORTUNITIES	Employment Opportunities
0x1D	SERVICE_CAT_MEDICAL	Medical/Health/Hospitals
0x1E	SERVICE_CAT_TECHNOLOGY_NEWS	Technology News
0x1F	SERVICE_CAT_MULTI_CAT	Multicategory
0x20	SERVICE_CAT_CATPT	Card Application Toolkit Protocol Teleservice (CATPT)
0x1000	SERVICE_CAT_PRESIDENTIAL_LEVEL_ALERT	Presidential Level Alert
0x1001	SERVICE_CAT_EXTREME_THREAT_TO_LIFE_ AND_PROPERTY	Extreme Threat to Life and Property
0x1002	SERVICE_CAT_SEVERE_THREAT_TO_LIFE_AND_ PROPERTY	Severe Threat to Life and Property

Table A-4 Service Category assignments (cont.)

Value	Name	Description
0x1003	SERVICE_CAT_AMBER_CHILD_ABDUCTION_ EMERGENCY	AMBER (Child Abduction Emergency)
0x1004	SERVICE_CAT_CMAS_TEST_MESSAGE	CMAS Test Message

A.5 Protocol Identifier Data

Table A-5 lists the Protocol Identifier Data per 3GPP TS 23.040 Section 9.2.3.9.

Table A-5 Protocol Identifier Data

Value	Name	Description
0x00	PID_DEFAULT	Default PID
0x20	PID_IMPLICIT	Implicit; device type is specific to this SC, or can be concluded on the basis of the address
0x21	PID_TELEX	Telex (or teletex reduced to telex format)
0x22	PID_G3_FAX	Group 3 telefax
0x23	PID_G4_FAX	Group 4 telefax
0x24	PID_VOICE_PHONE	Voice telephone (i.e., conversion to speech)
0x25	PID_ERMES	ERMES (European Radio Messaging System)
0x26	PID_NAT_PAGING	National Paging system (known to the SC)
0x27	PID_VIDEOTEX	Videotex
0x28	PID_TELETEX_UNSPEC	Teletex, carrier unspecified
0x29	PID_TELETEX_PSPDN	Teletex, in PSPDN
0x2A	PID_TELETEX_CSPDN	Teletex, in CSPDN
0x2B	PID_TELETEX_PSTN	Teletex, in analog PSTN
0x2C	PID_TELETEX_ISDN	Teletex, in digital ISDN
0x2D	PID_UCI	UCI (Universal Computer Interface)
0x30	PID_MSG_HANDLING	A message handling facility (known to the SC)
0x31	PID_X400	Any public X.400-based message handling system
0x32	PID_INTERNET_EMAIL	Internet Electronic Mail
0x38	PID_SC_SPECIFIC_1	Value specific to each SC, usage based on mutual agreement between the SME and the SC
0x39	PID_SC_SPECIFIC_2	Value specific to each SC, usage based on mutual agreement between the SME and the SC
0x3A	PID_SC_SPECIFIC_3	Value specific to each SC, usage based on mutual agreement between the SME and the SC
0x3B	PID_SC_SPECIFIC_4	Value specific to each SC, usage based on mutual agreement between the SME and the SC
0x3C	PID_SC_SPECIFIC_5	Value specific to each SC, usage based on mutual agreement between the SME and the SC
0x3D	PID_SC_SPECIFIC_6	Value specific to each SC, usage based on mutual agreement between the SME and the SC
0x3E	PID_SC_SPECIFIC_7	Value specific to each SC, usage based on mutual agreement between the SME and the SC

Table A-5 Protocol Identifier Data (cont.)

Value	Name	Description
0x3F	PID_GSM_UMTS	A GSM/UMTS mobile station; the SC converts the SM from the received TP Data Coding Scheme to any data coding scheme supported by that MS (e.g., the default)
0x40	PID_SM_TYPE_0	Short Message Type 0
0x41	PID_REPLACE_SM_1	Replace Short Message Type 1
0x42	PID_REPLACE_SM_2	Replace Short Message Type 2
0x43	PID_REPLACE_SM_3	Replace Short Message Type 3
0x44	PID_REPLACE_SM_4	Replace Short Message Type 4
0x45	PID_REPLACE_SM_5	Replace Short Message Type 5
0x46	PID_REPLACE_SM_6	Replace Short Message Type 6
0x47	PID_REPLACE_SM_7	Replace Short Message Type 7
0x5F	PID_RETURN_CALL	Return Call Message
0x7C	PID_ANSI136_R_DATA	ANSI-136 R-DATA
0x7D	PID_ME_DATA_DOWNLOAD	ME Data download
0x7E	PID_ME_DEPERSONALIZE	ME Depersonalization Short Message
0x7F	PID_SIM_DATA_DOWNLOAD	(U)SIM Data download

B Deprecated QMI_WMS Messages

Table B-1 lists the deprecated QMI_WMS messages and their replacements.

Table B-1 Deprecated QMI_WMS messages

Message	Replacement
QMI_WMS_GET_DOMAIN_PREF	QMI_WMS_GET_DOMAIN_PREF_CONFIG – Queries the domain preference configuration.
QMI_WMS_SET_DOMAIN_PREF	QMI_WMS_SET_DOMAIN_PREF_CONFIG – Sets the domain preference configuration.

C References

C.1 Related Documents

Title	Number
Qualcomm Technologies	
QMI Client API Interface Specification	80-N1123-1
QMI Common Service Interface API Interface Specification	80-N1123-2
Qualcomm Messaging Interface (QMI) Architecture	80-VB816-1
Standards	
3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Alphabets and language-specific information (Release 10)	3GPP TS 23.038 v10.0.0
3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Technical realization of the Short Message Service (SMS) (Release 6)	3GPP TS 23.040 v6.5.0
3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Technical realization of Cell Broadcast Service (CBS) (Release 8)	3GPP TS 23.041 v.8.0.0
3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface (Release 8)	3GPP TS 24.011 v8.2.0
3rd Generation Partnership Project; Technical Specification Group Terminals; Use of Data Terminal Equipment – Data Circuit terminating Equipment (DTE – DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS) (Release 6)	3GPP TS 27.005 v6.0.1
Administration of Parameter Value Assignments for cdma2000 Spread Spectrum Standards	3GPP2 C.R1001-D v1.0
Short Message Service (SMS) for Wideband Spread Spectrum Systems	3GPP2 C.S0015-A (TIA/EIA 637-B)
Cellular Radiotelecommunications Intersystem Operations	3GPP2 N.S0005-0 v1.0

C.2 Acronyms and Terms

Acronym or term	Definition
ACK	acknowledgment
AMSS	Advanced Mobile Subscriber Software
AT	access terminal
BC	broadcast
BS	base station

Acronym or term	Definition
CATPT	card application toolkit protocol teleservice
CBS	cell broadcast service
CMAS	Commercial Mobile Alert System
CS	circuit-switched
CSPDN	circuit-switched public data networks
DC	dedicated channel
DCE	data circuit terminating equipment
DCS	data coding scheme
DTE	data terminal equipment
EF	elementary file
EP	endpoint
ERMES	European Radio Messaging System
ESN	electronic serial number
ETWS	Earthquake and Tsunami Warning System
FDN	fixed dialing number
GW	GSM/WCDMA
HLR	home location register
ID	identification
IMS	IP multimedia subsystem
ISDN	Integrated Services Digital Network
MC	message center
MCC	mobile country code
ME	mobile equipment
MIN	mobile identification number
MNC	mobile network code
MO	mobile-originated
MS	mobile station
MSC	mobile switching center
MT	mobile-terminated
MWI	message waiting indicator
NV	nonvolatile
NW	network
PDU	protocol data unit
PID	protocol identifier data
PLMN	public land mobile network
PP	point-to-point
PS	packet-switched
PSPDN	packet-switched private data network
PSTN	public switched telephone network
QMI	Qualcomm messaging interface
R-data	relay data
RP	Relay Protocol
SC	service center
SIM	subscriber identification module
SM	short message
SME	station management entity
SMS	short message service

Acronym or term	Definition
SMSC	short message service center
SMSP	short message service parameters
TE	terminal equipment
TLV	type-length-value
TP	Transport Layer Protocol
TPDU	Transfer Protocol data unit
UCI	universal computer interface
UIM	user identity module
USIM	universal subscriber identity module
VPF	validity period format
WAP	Wireless Access Protocol
WMS	Wireless Message Service