

QMI QCMAP 1.3 for MPSS.DI.1.0

QMI Qualcomm Mobile Access Point Svc Spec

80-ND600-34 A

October 18, 2012

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Revision History

Revision	Date	Description
A	Oct 2012	Initial release. Created from 80-VB816-34 B.
		Updates for this revision include minor version 2 and minor version 3.
		Updated sections 2.3.1 and 3.1.3.
		Added new TLVs:
		SSID2 IP address info
		NAT type info
		Added new messages:
		• QMI_QCMAP_CHANGE_NAT_TYPE (Section 3.35)
		• QMI_QCMAP_GET_NAT_TYPE (Section 3.36)
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1 Introduction

1.1 Purpose

This specification documents Major Version 1 of the Qualcomm Messaging Interface (QMI) for Qualcomm Mobile Access Point Service (QMI_QCMAP).

QMI_QCMAP provides a command set to interface with a wireless mobile station to access mobile AP services.

1.2 Scope

This document is intended for software developers using QMI_QCMAP on a host processor and interacting with a Qualcomm MSMTM device for controlling Qualcomm mobile access point functionality.

This document provides the following details about QMI_QCMAP:

- Theory of operation Chapter 2 provides the theory of operation of QMI_QCMAP. 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_QCMAP specification.
- Additional information Appendix A provides tables for call end reasons and verbose call end reasons.

1.3 Conventions

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

Parameter types are indicated by arrows:

- → Designates an input parameter
- ← Designates an output parameter
- → Designates a parameter used for both input and output

References 1.4

Reference documents are listed in Table 1-1. Reference documents that are no longer applicable are deleted from this table; therefore, reference numbers may not be sequential.

Table 1-1 Reference documents and standards

Ref.	Document						
Qual	Qualcomm Technologies						
Q1	Application Note: Software Glossary for Customers	CL93-V3077-1					
Q2	Qualcomm MSM Interface (QMI) Architecture	80-VB816-1					
Q3	QMI WDS for MPSS.DI.1.0, QMI Wireless Data Svc Spec	80-ND600-5					
Stand	dards						
S1	User Datagram Protocol	RFC 768 (Aug 1980)					
S2	Internet Protocol DARPA Internet Program Protocol	RFC 791 (Sep 1981)					
	Specification						
S3	Internet Control Message Protocol DARPA Internet Program	RFC 792 (Sep 1981)					
	Protocol Specification	1 City					
S4	Transmission Control Protocol DARPA Internet Program	RFC 793 (Sep 1981)					
	Protocol Specification						
S5	Internet Protocol Version 6 (IPv6) Specification	RFC 2460 (Dec 1998)					
S6	Internet Protocol Version 6 (IPv6) Addressing Architecture	RFC 3513 (Apr 2003)					
S7	IP Encapsulating Security Payload (ESP)	RFC 4303 (Dec 2005)					

1.5

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

Acronyms 1.6

For definitions of terms and abbreviations, refer to [Q1]. Table 1-2 lists terms that are specific to this document.

Table 1-2 Acronyms

Acronym	Definition
AP	access point
DMZ	DMZ (sometimes referred to as a perimeter network) is a physical or logical
	subnetwork that contains and exposes an organization's external services to a larger
	untrusted network, usually the Internet. The purpose of a DMZ is to add an additional
	layer of security to an organization's LAN.
DNS	domain name service
ESP	Encapsulating Security Payload Protocol
ICMP	Internet Control Message Protocol
IPSec	Internet Protocol security

Table 1-2 Acronyms (cont.)

Definition							
Layer 2 Tunneling Protocol							
Mobile Internet Protocol							
network address translation							
NAT network address translation PPTP Point-to-Point Tunneling Protocol							
Qualcomm Mobile Access Point Service							
Qualcomm messaging interface							
static NAT							
service set identifier							
station							
Transmission Control Protocol							
terminal equipment							
type-length-value							
type of service							
Hear Datagram Protocol							
JDP User Datagram Protocol VPN virtual private network							
virtual private network							

2 Theory of Operation

2.1 **Generalized QMI Service Compliance**

The QMI_QCMAP 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 [Q2]. Extensions to the generalized QMI service theory of operation are noted in subsequent sections of this chapter.

2.2

QCMAP is assigned QMI service type 0x1E.

2.3

2.3.1

Message Definition Template

Response Message Result TLV

Length-Value (TLV) is pretite Indication me 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	:05	Corresponding	N/A
	,	command's Version	
		introduced	

Field	Field	Field	Parameter	Size	Description	
	value	type		(byte)		
Туре	0x02			1	Result Code	
Length	4			2		
Value	\rightarrow	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_QCMAP Fundamental Concepts

QMI_QCMAP provides a command set to interface with a wireless mobile station to access mobile AP services. The QMI_QCMAP service supports only one client per QMI control channel.

2.5 Service State Variables

2.5.1 Shared State Variables

No QMI_QCMAP state variables are shared across control points.

2.5.2 State Variables Per Control Point

Name	Description	Possible	Default
		values	value
register_indication	WWAN status indication registration per	• FALSE	FALSE
	mobile AP handle	• TRUE	

Table 3-1 QMI_QCMAP messages

Command	ID	Description
QMI_QCMAP_MOBILE_AP_ENABLE	0x0020	Enables the mobile AP functionality via
		a single mobile AP instance on the
		modem.
QMI_QCMAP_MOBILE_AP_DISABLE	0x0021	Disables the mobile AP functionality
		for a mobile AP instance on the modem.
QMI_QCMAP_BRING_UP_WWAN	0x0022	Invokes bringing up the WWAN from
	2 222	the mobile AP.
QMI_QCMAP_BRING_UP_WWAN_IND	0x0022	Indicates the completion of processing a
	indication	QMI_QCMAP_BRING_UP_WWAN_
	0.0000	REQ.
QMI_QCMAP_TEAR_DOWN_WWAN	0x0023	Tears down the WWAN.
QMI_QCMAP_TEAR_DOWN_WWAN_IND	0x0023	Indicates the completion of processing a
QMI_QCMAP_TEAR_DOWN_WWAN_IND	indication	QMI_QCMAP_TEAR_DOWN_
110 08	marcanon	WWAN_REQ.
QMI_QCMAP_GET_WWAN_STATUS	0x0024	Queries the current WWAN status.
QMI_QCMAI_GDI_WWAN_STATOS	0.0024	Queries the current w warv status.
QMI_QCMAP_WWAN_STATUS_IND_REG	0x003A	Registers/deregisters the control point to
20 501		receive QMI_QCMAP_WWAN_
10-		STATUS_IND.
QMI_QCMAP_WWAN_STATUS_IND	0x003E	Indicates a change in the current mobile
		AP WWAN connection status.
QMI_QCMAP_SET_IPSEC_VPN_PASS_	0x0026	Configures the Internet Protocol
THROUGH		security (IPSec) Virtual Private Network
		(VPN) passthrough setting.
QMI_QCMAP_GET_IPSEC_VPN_PASS_	0x0025	Queries the IPSec VPN passthrough
THROUGH		setting.
QMI_QCMAP_SET_PPTP_VPN_PASS_	0x0028	Configures the Point-to-Point Tunneling
THROUGH		Protocol (PPTP) VPN passthrough
		setting.
QMI_QCMAP_GET_PPTP_VPN_PASS_	0x0027	Queries the PPTP VPN passthrough
THROUGH		setting.
QMI_QCMAP_SET_L2TP_VPN_PASS_	0x002A	Configures the Layer 2 Tunneling
THROUGH		Protocol (L2TP) VPN passthrough
		setting.
QMI_QCMAP_GET_L2TP_VPN_PASS_	0x0029	Queries the L2TP VPN passthrough
THROUGH		setting.

Table 3-1 QMI_QCMAP messages (cont.)

Command	ID	Description
QMI_QCMAP_SET_DYNAMIC_NAT_	0x002C	Sets the Network Address Translation
ENTRY_TIMEOUT		(NAT) entry timeout.
QMI_QCMAP_GET_DYNAMIC_NAT_	0x002B	Queries the NAT entry timeout.
ENTRY_TIMEOUT		·
QMI_QCMAP_ADD_STATIC_NAT_ENTRY	0x002D	Adds a static NAT entry.
QMI_QCMAP_DELETE_STATIC_NAT_ ENTRY	0x002E	Deletes a static NAT entry.
QMI_QCMAP_GET_STATIC_NAT_ENTRIES	0x002F	Queries all static NAT entries.
QMI_QCMAP_SET_DMZ	0x0030	Sets the DMZ (perimeter network) IP address for the mobile AP.
QMI_QCMAP_GET_DMZ	0x0032	Queries the DMZ IP address on the mobile AP.
QMI_QCMAP_DELETE_DMZ	0x0031	Deletes the DMZ entry or DMZ IP address.
QMI_QCMAP_GET_WWAN_CONFIG	0x0033	Queries the WWAN IP configuration.
QMI_QCMAP_ENABLE_FIREWALL_ SETTING	0x0034	Enables the firewall setting.
QMI_QCMAP_GET_FIREWALL_SETTING	0x0035	Queries the firewall setting.
QMI_QCMAP_DISABLE_FIREWALL_ SETTING	0x0036	Disables the firewall setting.
QMI_QCMAP_ADD_FIREWALL_CONFIG	0x0037	Adds a firewall configuration rule.
QMI_QCMAP_DELETE_FIREWALL_CONFIG	0x0039	Deletes a firewall configuration rule.
QMI_QCMAP_GET_FIREWALL_CONFIG	0x0038	Queries the firewall configuration rules.
QMI_QCMAP_STATION_MODE_ENABLE	0x003B	Enables Station (STA) mode
		functionality for a mobile AP instance
		on the modem.
QMI_QCMAP_STATION_MODE_DISABLE	0x003C	Disables STA mode functionality for a
		mobile AP instance on the modem.
QMI_QCMAP_GET_STATION_MODE	0x003D	Queries the STA mode functionality for
		a mobile AP instance on the modem.
QMI_QCMAP_ADD_EXTD_FIREWALL_	0x003F	Adds IP filter-based firewall rules
CONFIG		(extended firewall).
QMI_QCMAP_GET_EXTD_FIREWALL_ CONFIG	0x0040	Gets the firewall rules.
QMI_QCMAP_GET_FIREWALL_CONFIG_ HANDLE_LIST	0x0041	Gets the handles of all the firewall rules.
QMI_QCMAP_CHANGE_NAT_TYPE	0x0042	Changes the currently existing NAT type.
QMI_QCMAP_GET_NAT_TYPE	0x0043	Gets the currently enabled NAT type.

3.1 QMI_QCMAP_MOBILE_AP_ENABLE

Enables the mobile AP functionality via a single mobile AP instance on the modem.

QCMAP message ID

0x0020

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_MOBILE_AP_ENABLE_REQ 3.1.1

Mandatory TLVs

orrir moquest	am_aoma		- - - - - - - - - -
Message type		1.	
Request			5
Sender		Secre	
Control point		Trade	
Mandatory TLVs		Contain	
	Name	Version introduced	Version last modified
IP Family		1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	(01,10,000	(byte)	
Туре	0x01		002-02-	1	IP Family
Length	4		250	2	
Value	\rightarrow	enum	ip_family	4	Determines whether mobile AP IPv4 or
					IPv6 must be enabled. Values:
					• 4 – IPv4
					• 6 – IPv6

Optional TLVs

Name	Version introduced	Version last modified
IP Address	1.0	1.0
Network Policy	1.0	1.0
SSID2 IP Address Info	1.2	1.2
NAT Type Info	1.3	1.3

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x10			1	IP Address
Length	28			2	

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Value	\rightarrow	uint32	subnet_mask	4	Subnet mask.
		uint32	nat_ip_addr	4	NAT IP address.
		uint32	nat_dns_addr	4	NAT Domain Name Service (DNS)
					address.
		uint32	usb_rmnet_ip_addr	4	RmNet USB Terminal Equipment (TE)
					address.
		uint32	usb_rmnet_gateway_addr	4	RmNet USB gateway address.
		uint32	apps_rmnet_ip_addr	4	RmNet applications IP address.
		uint32	apps_rmnet_gateway_addr	4	RmNet applications gateway address.
Туре	0x11			1	Network Policy
Length	10			2	
Value	\rightarrow	mask	tech_pref	8	Bitmap indicating the technology
					preference. A single connection is
					attempted using the following specified
					technology preferences:
					• Bit 0 – 3GPP
					• Bit 1 – 3GPP2
					All other bits are reserved and ignored
					even if they are set in the request. If a
				(10×	single value of the technology preference
				ontal	bitmask is set, the device attempts to use
			and and		that technology. If two or more bits in
			Mag	. C	the technology preference bitmask are
			3 33.	rey.	set, the device determines the technology
			ntial os:1	5	to be used from those specified.
		uint8	profile_id_3gpp2	1	CDMA profile ID.
		uint8	profile_id_3gpp	1	UMTS profile ID.
Туре	0x12		201207	1	SSID2 IP Address Info
Length	8		. 25	2	
Value	\rightarrow	uint32	addr	4	IPv4 address as specified in the IPv4
					protocol specification (RFC 791 [S2]).
		uint32	subnet_mask	4	IPv4 subnet mask as specified in the IPv4
					protocol specification (RFC 791 [S2]).
Туре	0x13			1	NAT Type Info
Length	4			2	
Value	\rightarrow	enum	qcmap_nat_type_info	4	NAT type specified during mobile AP
					enable. Values:
					• 0x00 – QCMAP_NAT_TYPE_
					SYMMETRIC – Symmetric NAT
					• 0x01 – QCMAP_NAT_TYPE_PORT_
					RESTRICTED_CONE – Port restricted
					cone NAT

3.1.2 Response - QMI_QCMAP_MOBILE_AP_ENABLE_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
Mobile AP Handle	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x10			10	Mobile AP Handle
Length	4			2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
			MI	×	instance.
			3.3	1ey	The mobile AP handle must be retained
			2000 1 00	5	by the control point and specified in all
			11001-100		mobile AP-specific QCMAP messages.
			(01,5)		For example, QMI_QCMAP_DISABLE,
			20120		QMI_QCMAP_BRING_UP_WWAN,
			: 250		etc.

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	Some TLV was missing
QMI_ERR_NOT_SUPPORTED	Operation is not supported
QMI_ERR_NO_EFFECT	Mobile AP instance is already enabled

3.1.3 Description of QMI_QCMAP_MOBILE_AP_ENABLE REQ/RESP

This command enables the mobile AP functionality at the modem. The control point passes the network policy that is used to bring up the WWAN when QMI_QCMAP_BRING_UP_WWAN is called. After QMI_QCMAP_MOBILE_AP_ENABLE is successfully processed, any subsequent RmNet call using the same network policy is brought up in the Mobile AP mode. If the IP family is QCMAP_IP_V4, the control point must fill in the optional IP Address TLV.

The control point is expected to store the mobile AP handle that is returned and to pass it in all mobile AP-specific messages.

The Network Policy TLV provides the network policy that is used by the mobile AP to select the WWAN network. If this value is not specified, the default WWAN network is selected.

The IP Address TLV is required when the mobile AP IPv4 is enabled. The value is ignored when the mobile AP IPv6 is enabled. If the TLV is not specified when enabling the mobile AP IPv4, a QMI_ERR_MISSING_ARG error is returned.

The SSID2 IP Address Info TLV is required when the mobile AP IPv4 Service Set Identifier 2 (SSID2) is enabled. The value is ignored when the mobile AP IPv6 is enabled. If this TLV is not specified when enabling the mobile AP IPv4, it is assumed that SSID2 is not enabled.

The mobile AP instance enabled by this command remains enabled until the control point or client issues a QMI_QCMAP_MOBILE_AP_DISABLE_REQ request or until the control point disassociates from the service.

3.2 QMI_QCMAP_MOBILE_AP_DISABLE

Disables the mobile AP functionality for a mobile AP instance on the modem.

QCMAP message ID

0x0021

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_MOBILE_AP_DISABLE_REQ 3.2.1

Mandatory TLVs

Message type		1.	
Request		25	
Sender		Secre	
Control point		CO Trade	
Mandatory TLVs		Contain	
	Name	Version introduced	Version last modified
Mobile AP Handle		1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	(01,10,000	(byte)	
Туре	0x01		0021-02-	1	Mobile AP Handle
Length	4		1.250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

None

3.2.2 Response - QMI QCMAP DISABLE 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

Error codes

None Error codes	Secrets
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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NO_EFFECT	WWAN is connected or in a transient state; the control point
fide	must terminate the WWAN connection using
(00,50	QMI_QCMAP_TEAR_DOWN_WWAN_REQ and wait for
207 -5	the final WWAN status before disabling the mobile AP

Description of QMI QCMAP MOBILE AP DISABLE REQ/RESP 3.2.3

This command disables the mobile AP functionality at the modem for a single mobile AP instance. After the request is successfully processed, the ongoing RmNet and WWAN calls (if any) are torn down and subsequent RmNet calls are brought up in the non-Mobile AP mode. If the RmNet call is up in the Mobile AP mode at the time this command is sent, the control point considers that the packet data connection state is unchanged until notified of a state change via QMI_WDS_PKT_SRVC_STATUS_IND (refer to Q3) for the RmNet session. If the WWAN call is active, the mobile AP is not disabled and a QMI ERR NO EFFECT error is returned.

The mobile AP instance associated with the control point can be disabled using either this command or when the control point disconnects from the QMI_QCMAP service. Qualcomm recommends that the client disable the mobile AP instances specifically using this command and then proceed by disconnecting from the service.

All NAT-specific functionalities associated with this mobile AP instance are disabled when the command is used or when the control point disassociates from the QMI QCMAP service. The control point must reactivate or set functionalities such as the DMZ, VPN passthrough, static NAT, and the firewall after enabling the mobile AP again.

QMI_QCMAP_BRING_UP_WWAN 3.3

Invokes bringing up the WWAN from the mobile AP.

QCMAP message ID

0x0022

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_BRING_UP_WWAN_REQ 3.3.1

Mandatory TLVs

•	_	_	_	_	_		
Message type					. 1		
Request					D	×5	
Sender				N	Secr	C .	
Control point			~ O	\ \(\frac{1}{2}\)	ade .		
Mandatory TLVs			Con	ain			
	Name		Ve	rsion in	troduced	Version last	modified
Mobile AP Handle			you Vin	c ^o 1.0)	1.0)
		ntial	28: Ste				

Field	Field	Field	Parameter	Size	Description
	value	type	(01,10,000	(byte)	
Туре	0x01		0021-02-	1	Mobile AP Handle
Length	4		1.250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

None

Response - QMI QCMAP BRING UP WWAN 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

Error codes

None	x5
Error codes	Secree
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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NO_EFFECT	WWAN is already up or a previous request is still in process
Fide	(WWAN is connecting)

Description of QMI_QCMAP_BRING_UP_WWAN REQ/RESP 3.3.3

This command brings up the WWAN connection. The call is established using the stored network policy that enabled the mobile AP via QMI_QCMAP_MOBILE_AP_ENABLE_REQ.

If the response returned is SUCCESS, the corresponding QMI QCMAP BRING UP WWAN IND indication determines that the request has been completely processed by the modem.

The WWAN status can be queried using QMI_QCMAP_GET_WWAN_STATUS or sent as an indication for registered clients. See QMI_QCMAP_WWAN_STATUS_IND_REG (Section 3.6) for information on registration.

If the control point issues multiple requests in short intervals, a QMI ERR NO EFFECT error is returned indicating that the previous request is still in process.

3.3.4 Indication - QMI QCMAP BRING UP WWAN IND

Message type

Indication

Sender

Service

Indication scope

Unicast

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
IP Family	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	<
Туре	0x01			OI S	Mobile AP Handle
Length	4		Yes.	2	~
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
			ia 08:1	rey	instance.
Туре	0x02		1800 27 00	1	IP Family
Length	4		110 11 200	2	
Value	\rightarrow	enum	ip_family	4	Determines whether the mobile AP is
			ip_raining		IPv4 or IPv6. Values:
			.75		• 4 – IPv4
)		• 6 – IPv6

Optional TLVs

None

3.3.5 Description of QMI_QCMAP_BRING_UP_WWAN_IND

This indication communicates the completion of processing a QMI_QCMAP_BRING_UP_WWAN_REQ received from the control point. If the client registered for the QMI_QCMAP_WWAN_STATUS_IND indication, it receives the corresponding event indication that reports the WWAN status. Alternatively, the control point can issue QMI_QCMAP_GET_WWAN_STATUS_REQ to query the current WWAN status.

QMI_QCMAP_TEAR_DOWN_WWAN 3.4

Tears down the WWAN.

QCMAP message ID

0x0023

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_TEAR_DOWN_WWAN_REQ

Mandatory TLVs

- 1		_		
Message type			1	
Request				×5
Sender			Secre	
Control point			CO Trade	
Mandatory TLVs			Contain	
	Name		Version introduced	Version last modified
Mobile AP Handle			0:00 1.0	1.0
		ntial	08: 15key	

Field	Field	Field	Parameter	Size	Description
	value	type	(01,10,000	(byte)	
Туре	0x01		0021-02-	1	Mobile AP Handle
Length	4		1.250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

None

Response - QMI QCMAP TEAR DOWN WWAN 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

Error codes

None	x5
Error codes	Secree
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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NO_EFFECT	WWAN is already down or a previous request is still in process (WWAN is disconnecting)
	process (w war is disconnecting)

Description of QMI_QCMAP_TEAR_DOWN_WWAN REQ/RESP 3.4.3

This command tears down the mobile AP WWAN interface that was brought up via QMI_QCMAP_BRING_UP_WWAN.

If the response returned is SUCCESS, the corresponding QMI QCMAP TEAR DOWN WWAN IND indication determines that the request has been completely processed by the modem.

The WWAN status can be queried using QMI_QCMAP_GET_WWAN_STATUS or sent as an indication for registered clients. See QMI_QCMAP_WWAN_STATUS_IND_REG (Section 3.6) for information on registration.

If the control point issues multiple requests in short intervals, a QMI ERR NO EFFECT error is returned indicating that the previous request is still in process.

3.4.4 Indication - QMI QCMAP TEAR DOWN WWAN IND

Message type

Indication

Sender

Service

Indication scope

Unicast

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
IP Family	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	<
Туре	0x01			OI S	Mobile AP Handle
Length	4		Yes.	2	~
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
			ia 08:1	rey	instance.
Туре	0x02		1800 27 00	1	IP Family
Length	4		110 11 200	2	
Value	\rightarrow	enum	ip_family	4	Determines whether the mobile AP is
			17_1411111		IPv4 or IPv6. Values:
			.75		• 4 – IPv4
)		• 6 – IPv6

Optional TLVs

None

3.4.5 Description of QMI_QCMAP_TEAR_DOWN_WWAN_IND

This indication communicates the completion of processing a

QMI_QCMAP_TEAR_DOWN_WWAN_REQ received from the control point. If the client registered for the QMI_QCMAP_WWAN_STATUS_IND indication, it receives the corresponding event indication that reports the WWAN status. Alternatively, the control point can issue

QMI_QCMAP_GET_WWAN_STATUS_REQ to query the current WWAN status.

QMI_QCMAP_GET_WWAN_STATUS 3.5

Queries the current WWAN status.

QCMAP message ID

0x0024

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_GET_WWAN_STATUS_REQ 3.5.1

Mandatory TLVs

3.3.1 Request - (ZIVII_QCIVIAP_G	EI_WWAN_SIAIUS_RE	EQ .
Message type		1.	
Request		A 35	5
Sender		Secre	
Control point		CO, Liage	
Mandatory TLVs		Contain	
N	lame	Version introduced	Version last modified
Mobile AP Handle		N C 1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	(01, 0, 00,	(byte)	
Туре	0x01		002-02-	1	Mobile AP Handle
Length	4		. 250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

None

Response - QMI_QCMAP_GET_WWAN_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

Name	Version introduced	Version last modified
Call End Reason	1.0	1.0
Verbose Call End Reason	1.0	1.0
Packet Service Status	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x10		Va.	(1)	Call End Reason
Length	4		1 1	2	,
Value	\rightarrow	enum	call_end_reason	Le4	Reason the call ended; see Table A-1 for
			18027 03	0,	the definition of these values.
Type	0x11		110 11 200	1	Verbose Call End Reason
Length	4		000000	2	
Value	\rightarrow	enum	verbose_call_end_reason	4	Reason the call ended (verbose); see
			105		Table A-2 for the definition of these
			,		values.
Type	0x12			1	Packet Service Status
Length	4			2	
Value	\rightarrow	enum	wwan_status	4	If the response is QMI_ERR_NONE,
					this indicates the WWAN status. Values:
					• 1 – Connecting
					• 2 – Connected
					• 3 – Disconnecting
					• 4 – Disconnected

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_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_MISSING_ARG	One or more mandatory TLVs are missing

3.5.3 Description of QMI_QCMAP_GET_WWAN_STATUS REQ/RESP

This command queries the state of the WWAN instantaneously corresponding to the mobile AP handle. The WWAN state could have changed for the following reasons:

- The WWAN state was earlier changed via QMI_QCMAP_BRING_UP_WWAN or QMI_QCMAP_TEAR_DOWN_WWAN
- If the network-initiated call status changes

QMI_QCMAP_WWAN_STATUS_IND_REG 3.6

Registers/deregisters the control point to receive QMI_QCMAP_WWAN_STATUS_IND.

QCMAP message ID

0x003A

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_WWAN_STATUS_IND_REG_REQ 3.6.1

Message type

Mandatory TLVs

Message type			
Request			9
Sender		Secre	
Control point		Le Contrade	
Mandatory TLVs		ontain	
	Name	Version introduced	Version last modified
Mobile AP Handle		1.0	1.0
Register Indication		1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	002	(byte)	
Туре	0x01		. 250	1	Mobile AP Handle
Length	4		70	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.
Туре	0x02			1	Register Indication
Length	1			2	
Value	\rightarrow	boolean	register_indication	1	Specifies the registration. Values:
					• 0 – Do not register or deregister if
					already registered
					• 1 – Register for the indication; ignore if
					already registered

Optional TLVs

None

3.6.2 Response - QMI_QCMAP_WWAN_STATUS_IND_REG_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Optional TLVs

Error codes

The Result Code TLV (defined in Section 2.	3.1) is always present in the response.
Optional TLVs	Secret
None	. ade
Error codes	Contain Ti
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
an'i	or the message was corrupted during transmission
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
Course	is not assigned to the control point
QMI_ERR_NO_MEMORY	Device could not allocate memory to formulate a response
QMI_ERR_MISSING_ARG	One or more of mandatory TLVs are missing

Description of QMI QCMAP WWAN STATUS IND REG REQ/RESP 3.6.3

This command registers/deregisters the control point to receive the QMI_QCMAP_WWAN_STATUS_IND indication.

QMI_QCMAP_WWAN_STATUS_IND

Indicates a change in the current mobile AP WWAN connection status.

QCMAP message ID

0x003E

Version introduced

Major - 1, Minor - 0

Indication - QMI_QCMAP_WWAN_STATUS_IND 3.7.1

3.7.1 Indication - QMI_QCMAP_WW/	AN_STATUS_IND						
Message type	1.						
Indication		5					
Sender	O (tade Secret						
Service	O Trade						
Indication scope	ntain						
Unicast	Co, Ch,						
Unicast Mandatory TLVs							
Name	Version introduced	Version last modified					
Mobile AP Handle	1.0	1.0					
IP Family	1.0	1.0					
Packet Service Status	1.0	1.0					
Reconfiguration Required	1.0	1.0					

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x01			1	Mobile AP Handle
Length	4			2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
Туре	0x02			1	IP Family
Length	4			2	
Value	\rightarrow	enum	ip_family	4	Determines whether the mobile AP is
					IPv4 or IPv6. Value:
					• 4 – IPv4
					• 6 – IPv6
Туре	0x03			1	Packet Service Status
Length	4			2	

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Value	\rightarrow	enum	wwan_status	4	Indicates the WWAN status. Values:
					• 1 – Connecting
					• 2 – Connected
					• 3 – Disconnecting
					• 4 – Disconnected
Туре	0x04			1	Reconfiguration Required
Length	1			2	
Value	\rightarrow	uint8	reconfig_required	1	Indicates whether the IP reconfiguration
					is required by the control point.

Optional TLVs

Name	Version introduced	Version last modified
Call End Reason	1.0	1.0
Verbose Call End Reason	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x10			01	Call End Reason
Length	4			20	^
Value	\rightarrow	enum	call_end_reason	.04	Reason the call ended; see Table A-1 for
			2.7	. ey.	the definition of these values.
Туре	0x11		Atla Oo	1	Verbose Call End Reason
Length	4		: 96, 15, 00,	2	
Value	\rightarrow	enum	verbose_call_end_reason	4	Reason the call ended (verbose); see
					Table A-2 for the definition of these
			2000		values.

3.7.2 Description of QMI_QCMAP_WWAN_STATUS_IND

This indication communicates changes in the WWAN state.

The indication is also sent when the WWAN technology changes after a handoff is performed on the modem. The Reconfiguration Required TLV value will be set to indicate that an IP address reconfiguration is required by the control point.

If the indication is sent due to a WWAN Down state, the optional Call End Reason TLV and optional Verbose Call End Reason TLV are included and will contain the reason the call was terminated. These reasons include network and user-generated reasons. See Table A-1 for the call end reasons. See Table A-2 for the verbose call end reasons.

The Call End Reason TLV has been kept for backward compatibility. All new QMI clients must use the Verbose Call End Reason TLV. Any new call end reason will be added to the Verbose Call End Reason TLV.

QMI QCMAP SET IPSEC VPN PASS THROUGH 3.8

Configures the Internet Protocol security (IPSec) Virtual Private Network (VPN) passthrough setting.

QCMAP message ID

0x0026

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_SET_IPSEC_VPN_PASS_THROUGH_REQ 3.8.1

Message type

Mandatory TLVs

Message type		
Request		5
Sender	Secre	
Control point	O Trade	
Mandatory TLVs	Contain	
Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
VPN Passthrough Value	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	0202	(byte)	
Туре	0x01		. 250.	1	Mobile AP Handle
Length	4		70	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.
Туре	0x02			1	VPN Passthrough Value
Length	1			2	
Value	\rightarrow	boolean	vpn_pass_through_value	1	Indicates whether an IPSec VPN
					passthrough is allowed; boolean value.

Optional TLVs

None

3.8.2 Response - QMI_QCMAP_SET_IPSEC_VPN_PASS_THROUGH_-**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

Error codes

The Result Code 121 (defined in Section 2.5.1) is always present in the response.					
Optional TLVs					
None					
Error codes	19 OJ OLD				
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				
THO	or the message was corrupted during transmission				
QMI_ERR_MISSING_ARG	Some TLV was missing				
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it				
123	is not assigned to the control point				
QMI_ERR_INVALID_ARG	Argument is not correct				
QMI_ERR_NOT_SUPPORTED	Operation is not supported				

3.8.3 Description of QMI_QCMAP_SET_IPSEC_VPN_PASS_THROUGH **REQ/RESP**

This command sets the IPSec VPN passthrough on the device. The command handler overwrites any previously configured value with the current value.

QMI QCMAP GET IPSEC VPN PASS THROUGH 3.9

Queries the IPSec VPN passthrough setting.

QCMAP message ID

0x0025

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_GET_IPSEC_VPN_PASS_THROUGH_REQ

Mandatory TLVs

3.9.1 Request - QIMI_QCIM	9 1 _ 1. 0 _ 9 _ 1 1 1 1 _ 1 1 1 9 9 _	I TROUGH_REQ			
Message type	1.				
Request		5			
Sender	Secre				
Control point	Trade				
Mandatory TLVs					
Mandatory TLVs	Contain				
Mandatory TLVs Name	Version introduced	Version last modified			

Field	Field	Field	Parameter	Size	Description
	value	type	(01, 5.0, 030	(byte)	
Туре	0x01		002-02-	1	Mobile AP Handle
Length	4		: 350	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

None

3.9.2 Response - QMI_QCMAP_GET_IPSEC_VPN_PASS_THROUGH_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
VPN Passthrough Value	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x10			010	VPN Passthrough Value
Length	1		May	2	lu.
Value	\rightarrow	boolean	vpn_pass_through_value	x. 1'.	Indicates whether an IPSec VPN
			tial 08.	Ye,	passthrough is allowed; boolean value.

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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.9.3 Description of QMI_QCMAP_GET_IPSEC_VPN_PASS_THROUGH REQ/RESP

This command queries the IPSec VPN passthrough value on the device.

QMI QCMAP SET PPTP VPN PASS THROUGH 3.10

Configures the Point-to-Point Tunneling Protocol (PPTP) VPN passthrough setting.

QCMAP message ID

0x0028

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_SET_PPTP_VPN_PASS_THROUGH_REQ 3.10.1

Message type

Mandatory TLVs

Message type		
Request		9
Sender	Secre	
Control point	O Trade	
Mandatory TLVs	ontain	
Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
VPN Passthrough Value	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	0202	(byte)	
Туре	0x01		1,250	1	Mobile AP Handle
Length	4		70	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.
Туре	0x02			1	VPN Passthrough Value
Length	1			2	
Value	\rightarrow	boolean	vpn_pass_through_value	1	Indicates whether an IPSec VPN
					passthrough is allowed; boolean value.

Optional TLVs

None

3.10.2 Response - QMI_QCMAP_SET_PPTP_VPN_PASS_THROUGH_-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

	1.0.
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
THO	or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
105	is not assigned to the control point
QMI_ERR_INVALID_ARG	Argument is not correct
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.10.3 Description of QMI_QCMAP_SET_PPTP_VPN_PASS_THROUGH REQ/RESP

This command sets the PPTP VPN passthrough on the device. The command handler overwrites any previously configured value with the current value.

QMI_QCMAP_GET_PPTP_VPN_PASS_THROUGH 3.11

Queries the PPTP VPN passthrough setting.

QCMAP message ID

0x0027

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_GET_PPTP_VPN_PASS_THROUGH_REQ 3.11.1

Mandatory TLVs

J. I I I I I I I I I I I I I I I I I I I	t - Givii_GCi	WAF_GET_FFTF_VFN_FA55_	_IIIIIOOGII_IILQ
Message type		1	
Request			5
Sender		Secre	
Control point		A O Trade	
Mandatory TLVs		Contain	
	Name	Version introduced	Version last modified
Mobile AP Handle		1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	(01,10,000	(byte)	
Туре	0x01		0021-02-	1	Mobile AP Handle
Length	4		1.250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

3.11.2 Response - QMI_QCMAP_GET_PPTP_VPN_PASS_THROUGH_-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
VPN Passthrough Value	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x10			010	VPN Passthrough Value
Length	1		May	2	lu.
Value	\rightarrow	boolean	vpn_pass_through_value	x. 1'.	Indicates whether an IPSec VPN
			tial 08.	Ye,	passthrough is allowed; boolean value.

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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.11.3 Description of QMI_QCMAP_GET_PPTP_VPN_PASS_THROUGH REQ/RESP

This command queries the PPTP VPN passthrough value on the device.

QMI_QCMAP_SET_L2TP_VPN_PASS_THROUGH

Configures the Layer 2 Tunneling Protocol (L2TP) VPN passthrough setting.

QCMAP message ID

0x002A

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_SET_L2TP_VPN_PASS_THROUGH_REQ 3.12.1

Message type

Mandatory TLVs

Message type		
Request		5
Sender	Secre	
Control point	O Trade	
Mandatory TLVs	Ontain	
Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
VPN Passthrough Value	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	002	(byte)	
Туре	0x01		1,250	1	Mobile AP Handle
Length	4		100	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.
Туре	0x02			1	VPN Passthrough Value
Length	1			2	
Value	\rightarrow	boolean	vpn_pass_through_value	1	Indicates whether an IPSec VPN
					passthrough is allowed; boolean value.

Optional TLVs

None

3.12.2 Response - QMI_QCMAP_SET_L2TP_VPN_PASS_THROUGH_-**RESP**

Message type

Response

Sender

Service

Mandatory TLVs

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

Error codes

(() () () () () ()	Se
Optional TLVs	ade
None	ain Ti
Error codes	18 Course
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
THOO	or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
105	is not assigned to the control point
QMI_ERR_INVALID_ARG	Argument is not correct
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.12.3 Description of QMI_QCMAP_SET_L2TP_VPN_PASS_THROUGH **REQ/RESP**

This command sets the L2TP VPN passthrough on the device. The command handler overwrites any previously configured value with the current value.

QMI_QCMAP_GET_L2TP_VPN_PASS_THROUGH 3.13

Queries the L2TP VPN passthrough setting.

QCMAP message ID

0x0029

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_GET_L2TP_VPN_PASS_THROUGH_REQ 3.13.1

Mandatory TLVs

J. 13.1 Hequest - V	WII_QOWAI_GEI_EZII	VFN_FA35_IIIIIOUGII_NEQ
Message type		
Request		3,15
Sender		Secre
Control point	.,0	Trade
Mandatory TLVs	Contr	air
Na	ne Vers	sion introduced Version last modified
Mobile AP Handle		

Field	Field	Field	Parameter	Size	Description
	value	type	(01,10,000	(byte)	
Туре	0x01		0021-02-	1	Mobile AP Handle
Length	4		1.250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

3.13.2 Response - QMI QCMAP GET L2TP VPN PASS THROUGH -**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
VPN Passthrough Value	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x10			010	VPN Passthrough Value
Length	1		May	2	lu.
Value	\rightarrow	boolean	vpn_pass_through_value	x. 1'.	Indicates whether an IPSec VPN
			tial 08.	Ye,	passthrough is allowed; boolean value.

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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.13.3 Description of QMI_QCMAP_GET_L2TP_VPN_PASS_THROUGH **REQ/RESP**

This command queries the L2TP VPN passthrough value on the device.

QMI QCMAP SET DYNAMIC NAT ENTRY TIMEOUT 3.14

Sets the Network Address Translation (NAT) entry timeout.

QCMAP message ID

0x002C

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_SET_DYNAMIC_NAT_ENTRY_TIMEOUT_-3.14.1 **REQ**

Mandatory TLVs

IILG			
Message type		N	
Request		Cecret	
Sender		(ade)	
Control point		tain	
Mandatory TLVs	(O), av	Cou. Chy,	
	Name	Version introduced	Version last modified
Mobile AP Handle	412, 08.	1.0	1.0
Timeout	1 yel 2 60	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	105	(byte)	
Туре	0x01		,	1	Mobile AP Handle
Length	4			2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.
Туре	0x02			1	Timeout
Length	2			2	
Value	\rightarrow	uint16	timeout	2	NAT entry timeout.

Optional TLVs

None

3.14.2 Response - QMI_QCMAP_SET_DYNAMIC_NAT_ENTRY_-**TIMEOUT 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

Error codes

The Result Code 12.7 (defined in Section 2.	
Optional TLVs	ade s
None	ain in
Error codes	13 Coulent
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
THO	or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
105	is not assigned to the control point
QMI_ERR_INVALID_ARG	Argument is not correct
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.14.3 Description of QMI_QCMAP_SET_DYNAMIC_NAT_ENTRY_-**TIMEOUT REQ/RESP**

This command sets the NAT entry timeout on the device.

QMI QCMAP GET DYNAMIC NAT ENTRY TIMEOUT 3.15

Queries the NAT entry timeout.

QCMAP message ID

0x002B

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_GET_DYNAMIC_NAT_ENTRY_TIMEOUT_-3.15.1 **REQ**

Mandatory TLVs

Message type			N	6
Request			Gecreit	7
Sender			Olyade	
Control point		7//	atain	
Mandatory TLVs		O)	Cou. Chy.	
	Name	1 1	Version introduced	Version last modified
Mobile AP Handle		1/3/ OS.	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	30, 30,	(byte)	
Туре	0x01		.05	1	Mobile AP Handle
Length	4		,	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

3.15.2 Response - QMI_QCMAP_GET_DYNAMIC_NAT_ENTRY_TIMEOUT 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
Timeout	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x10			C 16	Timeout
Length	2		May	2	CC.
Value	\rightarrow	uint16	timeout	2	Dynamic NAT entry timeout.

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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.15.3 Description of QMI_QCMAP_GET_DYNAMIC_NAT_ENTRY_-TIMEOUT REQ/RESP

This command queries the NAT entry timeout on the device.

QMI_QCMAP_ADD_STATIC_NAT_ENTRY 3.16

Adds a static NAT entry.

QCMAP message ID

0x002D

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_ADD_STATIC_NAT_ENTRY_REQ 3.16.1

Mandatory TLVs

Message type	1	
Request		9
Sender	Secre	
Control point	O Trade	
Mandatory TLVs	Ontain	
Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
SNAT Entry Configuration	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	0202	(byte)	
Туре	0x01		250	1	Mobile AP Handle
Length	4		100	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.
Туре	0x02			1	SNAT Entry Configuration
Length	9			2	
Value	\rightarrow	uint32	private_ip_addr	4	Private IP address.
		uint16	private_port	2	Private port.
		uint16	global_port	2	Global port.
		uint8	protocol	1	Protocol.

Optional TLVs

None

3.16.2 Response - QMI_QCMAP_ADD_STATIC_NAT_ENTRY_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Optional TLVs

Error codes

The Result Code TLV (defined in Section 2.3.1) is always present in the response.			
Optional TLVs	ade Secrets		
None	CO Trade		
Error codes	Contain		
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		
an'i	or the message was corrupted during transmission		
QMI_ERR_MISSING_ARG	Some TLV was missing		
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it		
20100	is not assigned to the control point		
QMI_ERR_INVALID_ARG	Argument is not correct		
QMI_ERR_NOT_SUPPORTED	Operation is not supported		
QMI_ERR_MAX_LIMIT_REACHED	Maximum limit was reached for the static NAT entry		
QMI_ERR_DUPLICATE_ENTRY	Entry already exists		

Description of QMI_QCMAP_ADD_STATIC_NAT_ENTRY REQ/RESP 3.16.3

This command adds a static NAT entry.

QMI_QCMAP_DELETE_STATIC_NAT_ENTRY 3.17

Deletes a static NAT entry.

QCMAP message ID

0x002E

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_DELETE_STATIC_NAT_ENTRY_REQ 3.17.1

Message type

Mandatory TLVs

Message type		
Request		9
Sender	Secre	
Control point	O Trade	
Mandatory TLVs	Contain	
Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
SNAT Entry Configuration	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	0202	(byte)	
Туре	0x01		250	1	Mobile AP Handle
Length	4		100	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.
Туре	0x02			1	SNAT Entry Configuration
Length	9			2	
Value	\rightarrow	uint32	private_ip_addr	4	Private IP address.
		uint16	private_port	2	Private port.
		uint16	global_port	2	Global port.
		uint8	protocol	1	Protocol.

Optional TLVs

None

3.17.2 Response - QMI_QCMAP_DELETE_STATIC_NAT_ENTRY_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

Error codes

The Result Code TLV (defined in Section 2.3.1) is always present in the response.			
Optional TLVs	Secret		
None	CO Trade		
Error codes	Contain		
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		
an'i	or the message was corrupted during transmission		
QMI_ERR_MISSING_ARG	Some TLV was missing		
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it		
20100	is not assigned to the control point		
QMI_ERR_INVALID_ARG	Argument is not correct		
QMI_ERR_NOT_SUPPORTED	Operation is not supported		
QMI_ERR_NO_ENTRY	Entry was not found		

Description of QMI_QCMAP_DELETE_STATIC_NAT_ENTRY 3.17.3 **REQ/RESP**

This command deletes a static NAT entry.

QMI_QCMAP_GET_STATIC_NAT_ENTRIES 3.18

Queries all static NAT entries.

QCMAP message ID

0x002F

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_GET_STATIC_NAT_ENTRIES_REQ 3.18.1

Mandatory TLVs

Message type			
Request			
Sender		Secre	
Control point		Trade	
Mandatory TLVs		Contain	
	Name	Version introduced	Version last modified
Mobile AP Handle		1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	(01,10,000	(byte)	
Туре	0x01		0021-02-	1	Mobile AP Handle
Length	4		1.250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

3.18.2 Response - QMI_QCMAP_GET_STATIC_NAT_ENTRIES_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
SNAT Configuration	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	7
Туре	0x10			10	SNAT Configuration
Length	Var			02	
Value	\rightarrow	uint8	snat_config_len	01	Number of sets of the following
			No. 1	×	elements:
			3 nfidential 08:1	rey	• private_ip_addr
			18/11/27 03	5	• private_port
			£1007.100		• global_port
			(01,57.0)		• protocol
		uint32	private_ip_addr	4	Private IP address.
		uint16	private_port	2	Private port.
		uint16	global_port	2	Global port.
		uint8	protocol	1	Protocol.

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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_INVALID_ARG	Argument is not correct
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.18.3 Description of QMI_QCMAP_GET_STATIC_NAT_ENTRIES REQ/RESP

This command queries all static NAT entries. The response message contains the number of entries followed by the value of these entries sequentially.



3.19 QMI_QCMAP_SET_DMZ

Sets the DMZ (perimeter network) IP address for the mobile AP.

QCMAP message ID

0x0030

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_SET_DMZ_REQ 3.19.1

Mandatory TLVs

3.19.1 Request - Will_QCIMAP_SET_		
Message type	1.	
Request		5
Sender	Secre	
Control point	O Trade	
Mandatory TLVs	Contain	
Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
DMZ IP Address	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	0202	(byte)	
Туре	0x01		: 250.	1	Mobile AP Handle
Length	4		3	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.
Туре	0x02			1	DMZ IP Address
Length	4			2	
Value	\rightarrow	uint32	dmz_ip_addr	4	DMZ IP address.

Optional TLVs

Response - QMI_QCMAP_SET_DMZ_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

Error codes

Optional TEVS	
None	*5
Error codes	Secree
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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_INVALID_ARG	Argument is not correct
QMI_ERR_NOT_SUPPORTED	Operation is not supported

Description of QMI_QCMAP_SET_DMZ REQ/RESP 3.19.3

This command sets the DMZ IP address for the mobile AP.

3.20 QMI_QCMAP_GET_DMZ

Queries the DMZ IP address on the mobile AP.

QCMAP message ID

0x0032

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_GET_DMZ_REQ 3.20.1

Mandatory TLVs

•	_			
Message type			1.	
Request				5
Sender			Secre	
Control point			O, Lisqe	
Mandatory TLVs			Contain	
	Name		Version introduced	Version last modified
Mobile AP Handle		Mis	1.0	1.0
		Milal 08	aster	

Field	Field	Field	Parameter	Size	Description
	value	type	(01, 0, 00,	(byte)	
Туре	0x01		002-02-	1	Mobile AP Handle
Length	4		. 250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

3.20.2 Response - QMI QCMAP GET DMZ 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
DMZ IP Address	1.0	1.0

Field	Field	Field	Parameter		Size	Description
	value	type			(byte)	
Туре	0x10				10	DMZ IP Address
Length	4				02	
Value	\rightarrow	uint32	dmz_ip_addr	Kas	4	DMZ IP address.

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
100	or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_INVALID_ARG	Argument is not correct
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.20.3 Description of QMI_QCMAP_GET_DMZ REQ/RESP

This command queries the DMZ entry that was previously set via QMI_QCMAP_SET_DMZ.

If no DMZ is set at the modem, an IP address of 0.0.0.0 is returned.

3.21 QMI_QCMAP_DELETE_DMZ

Deletes the DMZ entry or DMZ IP address.

QCMAP message ID

0x0031

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_DELETE_DMZ_REQ 3.21.1

Mandatory TLVs

Message type	_			
Request			N.	5
Sender			Secret	
Control point		0	Trade	
Mandatory TLVs		Cont	air	
	Name	Ver	sion introduced	Version last modified
Mobile AP Handle		My Vin	1.0	1.0
		ntial os: skey		

Field	Field	Field	Parameter	Size	Description
	value	type	(01, 5.0, 030	(byte)	
Туре	0x01		002-02-	1	Mobile AP Handle
Length	4		. 250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

Response - QMI QCMAP DELETE DMZ 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

Error codes

Optional TEVS	
None	*5
Error codes	Secree
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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_INVALID_ARG	Argument is not correct
QMI_ERR_NOT_SUPPORTED	Operation is not supported

Description of QMI_QCMAP_DELETE_DMZ REQ/RESP 3.21.3

This command deletes the DMZ entry that was previously set via QMI_QCMAP_SET_DMZ.

QMI_QCMAP_GET_WWAN_CONFIG

Queries the WWAN IP configuration.

QCMAP message ID

0x0033

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_GET_WWAN_CONFIG_REQ 3.22.1

Mandatory TLVs

Message type			1	
Request				5
Sender			Secre	
Control point		30	Trade	
Mandatory TLVs			Ontain	
	Name	J	Version introduced	Version last modified
Mobile AP Handle		Pilo	1.0	1.0
Address Type		:3 36.	1.0	1.0

Field	Field	Field	Parameter	Size	Description	
	value	type	0202	(byte)		
Туре	0x01		1250	1	Mobile AP Handle	
Length	4		75	2		
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call	
					instance.	
					The value must be the handle previously	
					returned by QMI_QCMAP_MOBILE_	
					AP_ENABLE_REQ.	
Туре	0x02			1	Address Type	
Length	8			2		
Value	\rightarrow	mask	addr_type_op	8	WWAN configuration mask values:	
					• 1 – IPv4 address	
					• 2 – IPv6 address	
					• 4 – IPv4 DNS address	
					• 8 – IPv6 DNS address	

Optional TLVs

None

3.22.2 Response - QMI_QCMAP_GET_WWAN_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
IPv4 Address	1.0	1.0
IPv6 Address	1.0	1.0
IPv4 Primary DNS Address	1.0	1.0
IPv4 Secondary DNS Address	0.10	1.0
IPv6 Primary DNS Address	1.0	1.0
IPv6 Secondary DNS Address	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	30,000	(byte)	
Туре	0x10		. (0.5)	1	IPv4 Address
Length	4)	2	
Value	\rightarrow	uint32	v4_addr	4	IPv4 address.
Туре	0x11			1	IPv6 Address
Length	16			2	
Value	\rightarrow	uint8	v6_addr	16	IPv6 address.
Туре	0x12			1	IPv4 Primary DNS Address
Length	4			2	
Value	\rightarrow	uint32	v4_prim_dns_addr	4	IPv4 primary DNS address.
Туре	0x13			1	IPv4 Secondary DNS Address
Length	4			2	
Value	\rightarrow	uint32	v4_sec_dns_addr	4	IPv4 secondary DNS address.
Туре	0x14			1	IPv6 Primary DNS Address
Length	16			2	
Value	\rightarrow	uint8	v6_prim_dns_addr	16	IPv6 primary DNS address.
Туре	0x15			1	IPv6 Secondary DNS Address
Length	16			2	
Value	\rightarrow	uint8	v6_sec_dns_addr	16	IPv6 secondary DNS address.

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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_INVALID_ARG	Argument is not correct
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.22.3 Description of QMI_QCMAP_GET_WWAN_CONFIG REQ/RESP

This command queries the WWAN IP configuration for the mobile AP. The command must be issued by the control point after QCMAP_WWAN_STATUS_IND has indicated a successful WWAN bringup, otherwise a QMI_ERR_INTERNAL error is returned.

QMI_QCMAP_ENABLE_FIREWALL_SETTING 3.23

Enables the firewall setting.

QCMAP message ID

0x0034

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_ENABLE_FIREWALL_SETTING_REQ 3.23.1

Message type

Mandatory TLVs

Message type			
Request		N	ax's
Sender		Sec	
Control point		CO, Liage	
Mandatory TLVs		Contain	
	Name	Version introduced	Version last modified
Mobile AP Handle		1.0	1.0
Packets Allowed		1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	002-02-	(byte)	
Туре	0x01		: 250.	1	Mobile AP Handle
Length	4		3	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.
Туре	0x02			1	Packets Allowed
Length	1			2	
Value	\rightarrow	boolean	pkts_allowed	1	Packets allowed operation. Values:
					• TRUE – Packets matching the firewall
					rule are allowed
					• FALSE – Packets matching the firewall
					rule are dropped

Optional TLVs

None

3.23.2 Response - QMI_QCMAP_ENABLE_FIREWALL_SETTING_RESP

Message type

Response

Sender

Service

Mandatory TLVs

Optional TLVs

Error codes

The Result Code TLV (defined in Section 2.3.1) is always present in the response.			
Optional TLVs	Secret		
None	Trade		
Error codes	Contain		
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		
S chi	or the message was corrupted during transmission		
QMI_ERR_MISSING_ARG	Some TLV was missing		
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it		
20200	is not assigned to the control point		
QMI_ERR_INVALID_ARG	Argument is not correct		
QMI_ERR_NOT_SUPPORTED	Operation is not supported		

3.23.3 Description of QMI_QCMAP_ENABLE_FIREWALL_SETTING **REQ/RESP**

This command enables the firewall and sets the condition whether the packets matching the firewall rule are to be allowed or dropped.

QMI_QCMAP_GET_FIREWALL_SETTING 3.24

Queries the firewall setting.

QCMAP message ID

0x0035

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_GET_FIREWALL_SETTING_REQ 3.24.1

Mandatory TLVs

0.2oquoot	<u> </u>		
Message type		1	
Request			5
Sender		Secre	
Control point		1 CO Trade	
Mandatory TLVs		Contain	
N	Name	Version introduced	Version last modified
Mobile AP Handle		1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	(01,10,000	(byte)	
Туре	0x01		0021-02-	1	Mobile AP Handle
Length	4		1.250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
				The value must be the handle previously	
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

3.24.2 Response - QMI_QCMAP_GET_FIREWALL_SETTING_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
Firewall Enabled	1.0	1.0
Packets Allowed	1.0	1.0

Fackets Allowed					1.0
				6)	Liade
Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	<
Туре	0x10			010	Firewall Enabled
Length	1		Va.	2	The state of the s
Value	\rightarrow	boolean	firewall_enabled	× 1 0	Whether the firewall is enabled; boolean
			1.13 08:1	rey	value.
Туре	0x11		18477 03	1	Packets Allowed
Length	1		11001100	2	
Value	\rightarrow	boolean	pkts_allowed	1	Whether packets are allowed; boolean
			30,000		value.

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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.24.3 Description of QMI_QCMAP_GET_FIREWALL_SETTING REQ/RESP

This command queries the firewall setting.



QMI_QCMAP_DISABLE_FIREWALL_SETTING 3.25

Disables the firewall setting.

QCMAP message ID

0x0036

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_DISABLE_FIREWALL_SETTING_REQ 3.25.1

Mandatory TLVs

J.ZJ.1 Heques	t - Givii_GOi	WAI _DIOADEE_I IIIEWAEE_O	LITHING_HEQ
Message type			
Request			5
Sender		Secre	
Control point		Trade	
Mandatory TLVs		Contain	
	Name	Version introduced	Version last modified
Mobile AP Handle		1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	(01,10,000	(byte)	
Туре	0x01		002.02	1	Mobile AP Handle
Length	4		1.250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

Response - QMI_QCMAP_DISABLE_FIREWALL_SETTING_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

Error codes

None	ets
Error codes	egect
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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NOT_SUPPORTED	Operation is not supported

Description of QMI_QCMAP_DISABLE_FIREWALL_SETTING 3.25.3 **REQ/RESP**

This command disables the firewall setting.

QMI_QCMAP_ADD_FIREWALL_CONFIG 3.26

Adds a firewall configuration rule.

QCMAP message ID

0x0037

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_ADD_FIREWALL_CONFIG_REQ 3.26.1

Mandatory TLVs

Message type		
Request		5
Sender	Secre	
Control point	O, Liage	
Mandatory TLVs	Ontain	
Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
Firewall Configuration	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	0202	(byte)	
Туре	0x01		250	1	Mobile AP Handle
Length	4		70	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call instance.
					The value must be the handle previously returned by QMI_QCMAP_MOBILE_AP_ENABLE_REQ.
Туре	0x02			1	Firewall Configuration
Length	5			2	
Value	\rightarrow	uint16	start_dest_port	2	Start value of the destination port range.
		uint16	end_dest_port	2	End value of the destination port range.
		uint8	protocol	1	Protocol value.

Optional TLVs

None

Response - QMI_QCMAP_ADD_FIREWALL_CONFIG_RESP 3.26.2

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
Firewall Handle	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	N W	(byte)	P*
Туре	0x10		13 08:	ver.	Firewall Handle
Length	4		1800 27 00	2	
Value	\rightarrow	uint32	firewall_handle	4	Handle identifying the firewall rule.

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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_INVALID_ARG	Argument is not correct
QMI_ERR_NOT_SUPPORTED	Operation is not supported
QMI_ERR_NO_MEMORY	Maximum number of supported firewall rules was exceeded;
	cannot add any more firewall rules

3.26.3 Description of QMI_QCMAP_ADD_FIREWALL_CONFIG REQ/RESP

This command adds a firewall configuration rule.



QMI_QCMAP_DELETE_FIREWALL_CONFIG 3.27

Deletes a firewall configuration rule.

QCMAP message ID

0x0039

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_DELETE_FIREWALL_CONFIG_REQ 3.27.1

Message type

Mandatory TLVs

Message type		,
Request		5
Sender	Secre	
Control point	- O Trade	
Mandatory TLVs	CONTAIN	
Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
Firewall Handle	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	002-02-	(byte)	
Туре	0x01		. 250	1	Mobile AP Handle
Length	4		7	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.
Туре	0x02			1	Firewall Handle
Length	4			2	
Value	\rightarrow	uint32	firewall_handle	4	Handle identifying the firewall entry.
					The value must be the handle previously
					returned by QMI_QCMAP_ADD_
					FIREWALL_CONFIG_RESP or
					QMI_QCMAP_GET_FIREWALL_
					CONFIG_RESP.

Optional TLVs

None

3.27.2 Response - QMI_QCMAP_DELETE_FIREWALL_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.

Error codes

The Result Code TLV (defined in Section 2.	3.1) is always present in the response.
Optional TLVs	Secret
None	CO Trade
Error codes	Contain
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
an'i	or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
20200	is not assigned to the control point
QMI_ERR_INVALID_ARG	Argument is not correct
QMI_ERR_NOT_SUPPORTED	Operation is not supported

Description of QMI_QCMAP_DELETE_FIREWALL_CONFIG 3.27.3 **REQ/RESP**

This command deletes a firewall rule.

3.28 QMI_QCMAP_GET_FIREWALL_CONFIG

Queries the firewall configuration rules.

QCMAP message ID

0x0038

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_GET_FIREWALL_CONFIG_REQ 3.28.1

Mandatory TLVs

J.ZU.1 Heques	t - Qivii_QOi	WAI _GET_I INEWALE_GOTTI	IG_IIEG
Message type		1	
Request			5
Sender		Secre	
Control point		Trade	
Mandatory TLVs		Contain	
	Name	Version introduced	Version last modified
Mobile AP Handle		1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	(01,10,000	(byte)	
Туре	0x01		0021-02-	1	Mobile AP Handle
Length	4		1.250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

None

Response - QMI_QCMAP_GET_FIREWALL_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
Firewall Configuration	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	7
Туре	0x10			10	Firewall Configuration
Length	Var			02	
Value	\rightarrow	uint8	firewall_config_len	(1)	Number of sets of the following
			MICH	, C	elements:
			:: (2) 08:2	Tey.	• firewall_handle
			18/1/22 03	5	• start_dest_port
			FIDE 7. 100		end_dest_port
			(0), 2.0, 0,0		• protocol
		uint32	firewall_handle	4	Handle identifying the firewall rule.
		uint16	start_dest_port	2	Start value of the destination port range.
		uint16	end_dest_port	2	End value of the destination port range.
		uint8	protocol	1	Protocol value.

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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.28.3 Description of QMI_QCMAP_GET_FIREWALL_CONFIG REQ/RESP

This command queries all the firewall entries. The response message contains the number of entries followed by the value of these entries sequentially.



3.29 QMI_QCMAP_STATION_MODE_ENABLE

Enables Station (STA) mode functionality for a mobile AP instance on the modem.

QCMAP message ID

0x003B

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_STATION_MODE_ENABLE_REQ 3.29.1

Mandatory TLVs

Message type			
Request			5
Sender		Secre	
Control point		Trade	
Mandatory TLVs		Contain	
	Name	Version introduced	Version last modified
Mobile AP Handle		1.0	1.0
	(3)	antial 08: askey	

Field	Field	Field	Parameter	Size	Description
	value	type	(01,10,000	(byte)	
Туре	0x01		0021-02-	1	Mobile AP Handle
Length	4		1.250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

None

Response - QMI QCMAP STATION MODE ENABLE RESP 3.29.2

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

Error codes

None	x5
Error codes	Secree
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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NOT_SUPPORTED	Operation is not supported

Description of QMI QCMAP STATION MODE ENABLE REQ/RESP 3.29.3

This command enables STA mode functionality at the modem for a single mobile AP instance.

After this request is successfully processed, all packet connectivity to an outside network occurs through the WLAN station. The modem routing engine appropriately handles the packet routing into and out of the modem.

QMI_QCMAP_STATION_MODE_DISABLE 3.30

Disables STA mode functionality for a mobile AP instance on the modem.

QCMAP message ID

0x003C

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_STATION_MODE_DISABLE_REQ 3.30.1

Mandatory TLVs

Message type			
Request			5
Sender		Secre	
Control point		A CO Trade	
Mandatory TLVs		Contain	
	Name	Version introduced	Version last modified
Mobile AP Handle		1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type	(01, 0, 00,	(byte)	
Туре	0x01		002-02-	1	Mobile AP Handle
Length	4		. 250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

None

Response - QMI_QCMAP_STATION_MODE_DISABLE_RESP 3.30.2

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

Error codes

None Error codes	Secrets
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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NOT_SUPPORTED	Operation is not supported

Description of QMI_QCMAP_STATION_MODE_DISABLE 3.30.3 **REQ/RESP**

This command disables STA mode functionality at the modem for a single mobile AP instance. When this request has been successfully processed, the control point invokes bringing up the WWAN from the mobile AP.

3.31 QMI_QCMAP_GET_STATION_MODE

Queries the STA mode functionality for a mobile AP instance on the modem.

QCMAP message ID

0x003D

Version introduced

Major - 1, Minor - 0

Request - QMI_QCMAP_GET_STATION_MODE_REQ 3.31.1

Mandatory TLVs

Message type	_		
Request			5
Sender		Secre	
Control point		Trade	
Mandatory TLVs		Contain	
	Name	Version introduced	Version last modified
Mobile AP Handle		1.0	1.0
		ontial 08: askey	

Field	Field	Field	Parameter	Size	Description
	value	type	(01, 0, 00,	(byte)	
Туре	0x01		002-02-	1	Mobile AP Handle
Length	4		. 250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

None

Response - QMI QCMAP GET STATION MODE 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
Station Mode	1.0	1.0

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x10			10	Station Mode
Length	1			023	
Value	\rightarrow	boolean	station_mode	4 01	Whether STA mode has been enabled;
			MIC	VD: C	boolean value.
Error codes					
OMIT	DD M	NIE	0 -0 - 1 NTo	min the me	

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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.31.3 Description of QMI QCMAP GET STATION MODE REQ/RESP

This command queries the STA mode functionality at the modem for a single mobile AP instance.

QMI QCMAP ADD EXTD FIREWALL CONFIG 3.32

Adds IP filter-based firewall rules (extended firewall).

QCMAP message ID

0x003F

Version introduced

Major - 1, Minor - 1

Request - QMI_QCMAP_ADD_EXTD_FIREWALL_CONFIG_REQ 3.32.1

Mandatory TLVs

Message type		
Request	No. of the	5
Sender	Secre	
Control point	O, Liage	
Mandatory TLVs	Contain	
Name	Version introduced	Version last modified
Mobile AP Handle	N. C. 1.1	1.1
Next Header Protocol	1.1	1.1

Field	Field	Field	Parameter	Size	Description
	value	type	002	(byte)	
Туре	0x01		: 250	1	Mobile AP Handle
Length	4		/5	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call instance. The value must be the handle previously returned by QMI_QCMAP_MOBILE_AP_ENABLE_REQ.
Туре	0x02			1	Next Header Protocol
Length	4			2	

Field	Field	Field	Parameter	Size	D	escription
	value	type		(byte)		
Value	\rightarrow	enum	next_hdr_prot	4	IPv4/IPv6 next h	neader protocol after the
					IP header. Value	es:
					• 0x01 – QCMA	P_EXTD_FIREWALL_
					PROTO_TCP -	Transmission Control
					Protocol	
					• 0x02 – QCMA	P_EXTD_FIREWALL_
					PROTO_UDP -	User Datagram Protocol
					• 0x03 – QCMA	P_EXTD_FIREWALL_
					PROTO_ICMP	 Internet Control
					Message Protoco	ol
					• 0x04 – QCMA	P_EXTD_FIREWALL_
					PROTO_ICMP6	6 – Internet Control
					Message Protoco	ol version 6
					• 0x05 – QCMA	P_EXTD_FIREWALL_
					PROTO_ESP -	Encapsulating Security
					Payload Protoco	
					• 0x06 – QCMA	P_EXTD_FIREWALL_
				- () '	PROTO_TCP_U	JDP – Transmission
					Control Protoco	l/User Datagram
				×311	Protocol	
	Congini					
Optiona	I TLVs		7	S.JV.OJ.C.	ne.	
		N	ame		n introduced	Version last modified

Optional TLVs

Name	Version introduced	Version last modified
TCP/UDP Source	1.1	1.1
TCP/UDP Destination	1.1	1.1
ICMP Type	1.1	1.1
ICMP Code	1.1	1.1
ESP Security Parameters Index	1.1	1.1
IPv4 Source Address	1.1	1.1
IPv4 Destination Address	1.1	1.1
IPv4 TOS	1.1	1.1
IPv6 Source Address	1.1	1.1
IPv6 Destination Address	1.1	1.1
IPv6 Traffic Class	1.1	1.1

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x10			1	TCP/UDP Source
Length	4			2	
Value	\rightarrow	uint16	port	2	TCP/UDP port as specified in the
					TCP/UDP protocol (RFC 793 [S4] and
					RFC 768 [S1]).
		uint16	range	2	TCP/UDP port range as specified in the
					TCP/UDP protocol (RFC 793 [S4] and
					RFC 768 [S1]).

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Type	0x11			1	TCP/UDP Destination
Length	4			2	
Value	\rightarrow	uint16	port	2	TCP/UDP port as specified in the
					TCP/UDP protocol (RFC 793 [S4] and
					RFC 768 [S1]).
		uint16	range	2	TCP/UDP port range as specified in the
					TCP/UDP protocol (RFC 793 [S4] and
					RFC 768 [S1]).
Туре	0x12			1	ICMP Type
Length	1			2	
Value	\rightarrow	uint8	icmp_type	1	ICMP type as specified in the ICMP
					specification (RFC 792 [S3]).
Туре	0x13			1	ICMP Code
Length	1			2	
Value	\rightarrow	uint8	icmp_code	1	ICMP code as specified in the ICMP
					specification (RFC 792 [S3]).
Туре	0x14			1	ESP Security Parameters Index
Length	4			2	1400
Value	\rightarrow	uint32	esp_spi	4 .	Security parameters index as specified in
				(Cal	the ESP protocol (RFC 4303 [S7]).
Туре	0x15			,01 <u>.</u>	IPv4 Source Address
Length	8		Yes.	2	The state of the s
Value	\rightarrow	uint32	addr	4 0	IPv4 address as specified in the IPv4
			::31 08:5	rey	protocol specification (RFC 791 [S2]).
		uint32	subnet_mask	4	IPv4 subnet mask as specified in the IPv4
			subnet_mask		protocol specification (RFC 791 [S2]).
Туре	0x16		(0) 22 , 90	1	IPv4 Destination Address
Length	8		30, 30,	2	
Value	\rightarrow	uint32	addr	4	IPv4 address as specified in the IPv4
			`		protocol specification (RFC 791 [S2]).
		uint32	subnet_mask	4	IPv4 subnet mask as specified in the IPv4
					protocol specification (RFC 791 [S2]).
Type	0x17			1	IPv4 TOS
Length	2			2	
Value	\rightarrow	uint8	value	1	TOS value as specified in the IPv4
					protocol specification (RFC 791 [S2]).
		uint8	mask	1	IPv4 TOS mask.
Туре	0x18			1	IPv6 Source Address
Length	17			2	
Value	\rightarrow	uint8	addr	16	IPv6 address as specified in the IPv6
					protocol specification (RFC 2460 [S5]).
		uint8	prefix_len	1	IPv6 prefix length as specified in the
					IPv6 protocol addressing architecture
					specification (RFC 3513 [S6]).
Туре	0x19			1	IPv6 Destination Address
Length	17			2	

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Value	\rightarrow	uint8	addr	16	IPv6 address as specified in the IPv6
					protocol specification (RFC 2460 [S5]).
		uint8	prefix_len	1	IPv6 prefix length as specified in the
					IPv6 protocol addressing architecture
					specification (RFC 3513 [S6]).
Туре	0x1A			1	IPv6 Traffic Class
Length	2			2	
Value	\rightarrow	uint8	value	1	IPv6 traffic class value as specified in the
					IPv6 protocol specification (RFC 2460
					[S5]).
		uint8	mask	1	IPv6 traffic class mask.

3.32.2 Response - QMI_QCMAP_ADD_EXTD_FIREWALL_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
Firewall handle	1.1	1.1

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x10			1	Firewall handle
Length	4			2	
Value	\rightarrow	uint32	firewall_handle	4	Handle identifying the added firewall
					rule.

Error codes

QMI_ERR_NONE	No error in 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	Some TLV was missing

QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_INVALID_ARG	Argument is not correct
QMI_ERR_NOT_SUPPORTED	Operation is not supported
QMI_ERR_NO_MEMORY	Maximum number of supported firewall rules was exceeded;
	cannot add any more firewall rules

3.32.3 Description of QMI_QCMAP_ADD_EXTD_FIREWALL_CONFIG REQ/RESP

This command adds a single IP filter-based firewall rule. The control point must specify the source/destination port and range when the value of the Next Header Protocol TLV is TCP/UDP. Otherwise, a QMI_ERR_MISSING_ARG error is returned.

QMI_QCMAP_GET_EXTD_FIREWALL_CONFIG 3.33

Gets the firewall rules.

QCMAP message ID

0x0040

Version introduced

Major - 1, Minor - 1

Request - QMI_QCMAP_GET_EXTD_FIREWALL_CONFIG_REQ 3.33.1

Mandatory TLVs

Message type		1.0	
Request			
Sender		Secre	
Control point		Trade	
Mandatory TLVs		Contain	
	Name	Version introduced	Version last modified
Firewall Handle		1.1	1.1

Field	Field	Field	Parameter	Size	Description
	value	type	COLLISO, OSC	(byte)	
Туре	0x01		002-02-	1	Mobile AP handle
Length	4		. 250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.
Туре	0x02			1	Firewall Handle
Length	4			2	
Value	\rightarrow	uint32	firewall_handle	4	Handle identifying the firewall entry.
					The value must be the handle previously
					returned by one of the following:
					• QMI_QCMAP_ADD_FIREWALL_
					CONFIG_RESP
					• QMI_QCMAP_GET_FIREWALL_
					CONFIG_RESP
					• QMI_QCMAP_ADD_EXTD_
					FIREWALL_CONFIG_RESP
					• QMI_QCMAP_GET_FIREWALL_
					CONFIG_HANDLE_LIST_RESP

Optional TLVs

None

Response - QMI_QCMAP_GET_EXTD_FIREWALL_CONFIG_RESP 3.33.2

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
Next Header Protocol	1.1	1.1
TCP/UDP Source	1.1	1.1
TCP/UDP Destination	Co. Co. 1.1	1.1
ICMP Type	1.0° o'\lambda.1	1.1
ICMP Code	1.1	1.1
ESP Security Parameters Index	1.1	1.1
IPv4 Source Address	1.1	1.1
IPv4 Destination Address	1.1	1.1
IPv4 TOS	1.1	1.1
IPv6 Source Address	1.1	1.1
IPv6 Destination Address	1.1	1.1
IPv6 Traffic Class	1.1	1.1

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x10			1	Next Header Protocol
Length	4			2	

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	•
Value	\rightarrow	enum	next_hdr_prot	4	IPv4/IPv6 next header protocol after the
			,		IP header. Values:
					• 0x01 – QCMAP_EXTD_FIREWALL_
					PROTO_TCP – Transmission Control
					Protocol
					• 0x02 – QCMAP_EXTD_FIREWALL_
					PROTO_UDP – User Datagram Protocol
					• 0x03 – QCMAP_EXTD_FIREWALL_
					PROTO_ICMP – Internet Control
					Message Protocol
					• 0x04 – QCMAP_EXTD_FIREWALL_
					PROTO ICMP6 – Internet Control
					Message Protocol for IPv6
					• 0x05 – QCMAP_EXTD_FIREWALL_
					PROTO_ESP – Encapsulating Security
					Payload Protocol
					• 0x06 – QCMAP_EXTD_FIREWALL_
					PROTO_TCP_UDP – Transmission
					Control Protocol/User Datagram
				N AN	Protocol
Туре	0x11			200	TCP/UDP Source
Length	4			20	Terrebr source
Value	\rightarrow	uint16	port	.02	TCP/UDP port as specified in the
Value	,	unitio	port	x. 7.0	TCP/UDP protocol (RFC 793 [S4] and
			ntial 08:1	ye,	RFC 768 [S1]).
		uint16	range	2	TCP/UDP port range as specified in the
		will o	17th 01 1200	_	TCP/UDP protocol (RFC 793 [S4] and
			00 22 23		RFC 768 [S1]).
Туре	0x12		20,000	1	TCP/UDP Destination
Length	4		. 103	2	Terrebr bestimmen
Value	\rightarrow	uint16	port	2	TCP/UDP port as specified in the
raido	,	umito	port	_	TCP/UDP protocol (RFC 793 [S4] and
					RFC 768 [S1]).
		uint16	range	2	TCP/UDP port range as specified in the
		umito	runge		TCP/UDP protocol (RFC 793 [S4] and
					RFC 768 [S1]).
Туре	0x13			1	ICMP Type
Length	1			2	
Value	\rightarrow	uint8	icmp_type	1	ICMP type as specified in the ICMP
		GIIICO	P=-JP-	1	specification (RFC 792 [S3]).
Туре	0x14			1	ICMP Code
Length	1			2	
Value	\rightarrow	uint8	icmp_code	1	ICMP code as specified in the ICMP
value		umo	iomp_code	1	specification (RFC 792 [S3]).
Type	0x15			1	ESP Security Parameters Index
Type	4			2	Est security ratameters fluex
Length	4				

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Value	\rightarrow	uint32	esp_spi	4	Security parameters index as specified in
					the ESP protocol (RFC 4303 [S7]).
Туре	0x16			1	IPv4 Source Address
Length	8			2	
Value	\rightarrow	uint32	addr	4	IPv4 address as specified in the IPv4
					protocol specification (RFC 791 [S2]).
		uint32	subnet_mask	4	IPv4 subnet mask as specified in the IPv4
					protocol specification (RFC 791 [S2]).
Туре	0x17			1	IPv4 Destination Address
Length	8			2	
Value	\rightarrow	uint32	addr	4	IPv4 address as specified in the IPv4
					protocol specification (RFC 791 [S2]).
		uint32	subnet_mask	4	IPv4 subnet mask as specified in the IPv4
					protocol specification (RFC 791 [S2]).
Туре	0x18			1	IPv4 TOS
Length	2			2	L ec
Value	\rightarrow	uint8	value	1	TOS value as specified in the IPv4
					protocol specification (RFC 791 [S2]).
		uint8	mask	1	IPv4 TOS mask.
Туре	0x19			10	IPv6 Source Address
Length	17			02	
Value	\rightarrow	uint8	addr	16	IPv6 address as specified in the IPv6
			MIN	, C	protocol specification (RFC 2460 [S5]).
		uint8	prefix_len	ren	IPv6 prefix length as specified in the
			1845 27 03	5	IPv6 protocol addressing architecture
			5100 1.100		specification (RFC 3513 [S6]).
Туре	0x1A		prefix_len	1	IPv6 Destination Address
Length	17		30, 30,	2	
Value	\rightarrow	uint8	addr	16	IPv6 address as specified in the IPv6
					protocol specification (RFC 2460 [S5]).
		uint8	prefix_len	1	IPv6 prefix length as specified in the
					IPv6 protocol addressing architecture
					specification (RFC 3513 [S6]).
Туре	0x1B			1	IPv6 Traffic Class
Length	2			2	
Value	\rightarrow	uint8	value	1	IPv6 traffic class value as specified in the
					IPv6 protocol specification (RFC 2460
					[S5]).
		uint8	mask	1	IPv6 traffic class mask.

Error codes

QMI_ERR_NONE	No error in 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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.33.3 Description of QMI_QCMAP_GET_EXTD_FIREWALL_CONFIG REQ/RESP

This command gets a firewall rule associated with a single firewall handle.

QMI QCMAP GET FIREWALL CONFIG HANDLE LIST 3.34

Gets the handles of all the firewall rules.

QCMAP message ID

0x0041

Version introduced

Major - 1, Minor - 1

Request - QMI_QCMAP_GET_FIREWALL_CONFIG_HANDLE_-3.34.1 LIST REQ

Mandatory TLVs

LIST_R		AP_GET_FIREWALL_CONFI	IG_HANDLE
Message type		N	
Request		acres.	7
Sender		C (ade 3	
Control point		, ain in	
Mandatory TLVs		Courting	
	Name	Version introduced	Version last modified
Mobile AP handle		1.1	1.1

Field	Field	Field	Parameter	Size	Description
	value	type	30, 30,	(byte)	
Туре	0x01		.05	1	Mobile AP handle
Length	4		,	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

None

3.34.2 Response - QMI_QCMAP_GET_FIREWALL_CONFIG_HANDLE_-LIST_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
Firewall Handle List	1.1 50	1.1

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	K
Туре	0x10			216	Firewall Handle List
Length	Var		Na.	.02	CC.
Value	\rightarrow	uint8	firewall_handle_list_len	x. 1'c.	Number of sets of the following
			tia, 08.	Ye,	elements:
			16 57 60		firewall_handle_list
		uint32	firewall_handle_list	Var	Firewall handle list.

Error codes

QMI_ERR_NONE	No error in 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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.34.3 Description of QMI_QCMAP_GET_FIREWALL_CONFIG_-HANDLE LIST REQ/RESP

This command gets all the firewall handles associated with a single mobile AP instance.



3.35 QMI_QCMAP_CHANGE_NAT_TYPE

Changes the currently existing NAT type.

QCMAP message ID

0x0042

Version introduced

Major - 1, Minor - 3

Request - QMI_QCMAP_CHANGE_NAT_TYPE_REQ 3.35.1

Mandatory TLVs

Message type		7.	
Request			5
Sender		Secre	
Control point		LO Liage	
Mandatory TLVs		Contain	
	Name	Version introduced	Version last modified
Mobile AP handle		1.3	1.3

Field	Field	Field	Parameter	Size	Description
	value	type	(01,10,000	(byte)	
Туре	0x01		002-02/	1	Mobile AP handle
Length	4		. 250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

Name	Version introduced	Version last modified
NAT Type Option	1.3	1.3

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x10			1	NAT Type Option
Length	4			2	

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Value	\rightarrow	enum	nat_type_option	4	NAT type specified for the NAT type
					change. Values:
					• 0x00 – QCMAP_NAT_TYPE_
					SYMMETRIC – Symmetric NAT
					• 0x01 – QCMAP_NAT_TYPE_PORT_
					RESTRICTED_CONE – Port restricted
					cone NAT

3.35.2 Response - QMI_QCMAP_CHANGE_NAT_TYPE_RESP

Message type

Response

Sender

Service

Mandatory TLVs

On Trade Secrets 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 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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NOT_SUPPORTED	Operation is not supported

Description of QMI_QCMAP_CHANGE_NAT_TYPE REQ/RESP 3.35.3

This command changes the NAT type associated with a mobile AP instance. When the NAT type is changed, the old NAT table data is cleaned and all existing connections are lost. If an IPv6 handle is passed, a QMI_ERR_INVALID_HANDLE error is returned.

3.36 QMI_QCMAP_GET_NAT_TYPE

Gets the currently enabled NAT type.

QCMAP message ID

0x0043

Version introduced

Major - 1, Minor - 3

Request - QMI_QCMAP_GET_NAT_TYPE_REQ 3.36.1

Mandatory TLVs

Message type	_		
Request			9
Sender		Secre	
Control point		LO Liage	
Mandatory TLVs		Contain	
	Name	Version introduced	Version last modified
Mobile AP handle		1.3	1.3
		ntial 08: Exer	

Field	Field	Field	Parameter	Size	Description
	value	type	(01,10,000	(byte)	
Туре	0x01		0021-02-	1	Mobile AP handle
Length	4		1.250	2	
Value	\rightarrow	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call
					instance.
					The value must be the handle previously
					returned by QMI_QCMAP_MOBILE_
					AP_ENABLE_REQ.

Optional TLVs

None

3.36.2 Response - QMI_QCMAP_GET_NAT_TYPE_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
Current NAT Type	1.3	1.3

Field	Field	Field	Parameter	Size	Description
	value	type		(byte)	
Туре	0x10			10	Current NAT Type
Length	4			02	
Value	\rightarrow	enum	nat_type_option	4	NAT type currently on the modem.
			MICH	, C	Values:
			::(2) 08:2	Tey.	• 0x00 – QCMAP_NAT_TYPE_
			1800 1 03	5	SYMMETRIC – Symmetric NAT
			11007.100		• 0x01 – QCMAP_NAT_TYPE_PORT_
			(0) 2.0 98		RESTRICTED_CONE – Port restricted
			301 005		cone NAT

Error codes

QMI_ERR_NONE	No error in 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	Some TLV was missing
QMI_ERR_INVALID_HANDLE	Mobile AP handle provided in the request is not valid, i.e., it
	is not assigned to the control point
QMI_ERR_NOT_SUPPORTED	Operation is not supported

3.36.3 Description of QMI_QCMAP_GET_NAT_TYPE REQ/RESP

This command gets the currently enabled NAT type associated with a mobile AP instance. If an IPv6 handle is passed, a QMI ERR INVALID HANDLE is returned.



A Call End Reasons

A.1 Call End Reasons

Table A-1 lists the call end reasons.

Table A-1 Call end reasons

Value	Name
1	QCMAP_CER_UNSPECIFIED
2	QCMAP_CER_CLIENT_END
3	QCMAP_CER_NO_SRV
4	QCMAP_CER_FADE
5	QCMAP_CER_REL_NORMAL
6	QCMAP_CER_ACC_IN_PROG
7	QCMAP_CER_ACC_FAIL
8	QCMAP_CER_REDIR_OR_HANDOFF
9	QCMAP_CER_CLOSE_IN_PROGRESS
10	QCMAP_CER_AUTH_FAILED
11	QCMAP_CER_INTERNAL_CALL_END
500	QCMAP_CER_CDMA_LOCK
501	QCMAP_CER_INTERCEPT
502	QCMAP_CER_REORDER
503	QCMAP_CER_REL_SO_REJ
504	QCMAP_CER_INCOM_CALL
505	QCMAP_CER_ALERT_STOP
506	QCMAP_CER_ACTIVATION
507	QCMAP_CER_MAX_ACCESS_PROBE
508	QCMAP_CER_CCS_NOT_SUPP_BY_BS
509	QCMAP_CER_NO_RESPONSE_FROM_BS
510	QCMAP_CER_REJECTED_BY_BS
511	QCMAP_CER_INCOMPATIBLE
512	QCMAP_CER_ALREADY_IN_TC
513	QCMAP_CER_USER_CALL_ORIG_DURING_GPS
514	QCMAP_CER_USER_CALL_ORIG_DURING_SMS
515	QCMAP_CER_NO_CDMA_SRV
1000	QCMAP_CER_CONF_FAILED
1001	QCMAP_CER_INCOM_REJ
1002	QCMAP_CER_NO_GW_SRV
1003	QCMAP_CER_NETWORK_END
1004	QCMAP_CER_LLC_SNDCP_FAILURE
1005	QCMAP_CER_INSUFFICIENT_RESOURCES

Table A-1 Call end reasons (cont.)

Value	Name
1006	QCMAP_CER_OPTION_TEMP_OOO
1007	QCMAP_CER_NSAPI_ALREADY_USED
1008	QCMAP_CER_REGULAR_DEACTIVATION
1009	QCMAP_CER_NETWORK_FAILURE
1010	QCMAP_CER_UMTS_REATTACH_REQ
1011	QCMAP_CER_PROTOCOL_ERROR
1012	QCMAP_CER_OPERATOR_DETERMINED_BARRING x
1013	QCMAP_CER_UNKNOWN_APN
1014	QCMAP_CER_UNKNOWN_PDP
1015	QCMAP_CER_GGSN_REJECT
1016	QCMAP_CER_ACTIVATION_REJECT
1017	QCMAP_CER_OPTION_NOT_SUPP
1018	QCMAP_CER_OPTION_UNSUBSCRIBED
1019	QCMAP_CER_QOS_NOT_ACCEPTED
1020	QCMAP_CER_TFT_SEMANTIC_ERROR
1021	QCMAP_CER_TFT_SYNTAX_ERROR
1022	QCMAP_CER_UNKNOWN_PDP_CONTEXT
1023	QCMAP_CER_FILTER_SEMANTIC_ERROR
1024	QCMAP_CER_FILTER_SYNTAX_ERROR
1025	QCMAP_CER_PDP_WITHOUT_ACTIVE_TFT
1026	QCMAP_CER_INVALID_TRANSACTION_ID
1027	QCMAP_CER_MESSAGE_INCORRECT_SEMANTIC
1028	QCMAP_CER_INVALID_MANDATORY_INFO
1029	QCMAP_CER_MESSAGE_TYPE_UNSUPPORTED
1030	QCMAP_CER_MSG_TYPE_NONCOMPATIBLE_STATE
1031	QCMAP_CER_UNKNOWN_INFO_ELEMENT
1032	QCMAP_CER_CONDITIONAL_IE_ERROR
1033	QCMAP_CER_MSG_AND_PROTOCOL_STATE_UNCOMPATIBLE
1034	QCMAP_CER_APN_TYPE_CONFLICT
1035	QCMAP_CER_NO_GPRS_CONTEXT
1036	QCMAP_CER_FEATURE_NOT_SUPPORTED
1500	QCMAP_CER_CD_GEN_OR_BUSY
1501	QCMAP_CER_CD_BILL_OR_AUTH
1502	QCMAP_CER_CHG_HDR
1503	QCMAP_CER_EXIT_HDR
1504	QCMAP_CER_HDR_NO_SESSION
1505	QCMAP_CER_HDR_ORIG_DURING_GPS_FIX
1506	QCMAP_CER_HDR_CS_TIMEOUT
1507	QCMAP_CER_HDR_RELEASED_BY_CM

A.2 Verbose Call End Reasons

Table A-2 lists the verbose call end reasons.

Table A-2 Verbose call end reasons

Value	Name
0	QCMAP_VCER_UNSPECIFIED
MIP	
65600	QCMAP_VCER_MIP_FA_REASON_UNSPECIFIED
65601	QCMAP_VCER_MIP_FA_ADMIN_PROHIBITED
65602	QCMAP_VCER_MIP_FA_INSUFFICIENT_RESOURCES
65603	QCMAP_VCER_MIP_FA_MOBILE_NODE_AUTH_FAILURE
65604	QCMAP_VCER_MIP_FA_HA_AUTH_FAILURE
65605	QCMAP_VCER_MIP_FA_REQ_LIFETIME_TOO_LONG
65606	QCMAP_VCER_MIP_FA_MALFORMED_REQUEST
65607	QCMAP_VCER_MIP_FA_MALFOMED_REPLY
65608	QCMAP_VCER_MIP_FA_ENCAPSULATION_UNAVAILABLE
65609	QCMAP_VCER_MIP_FA_VJHC_UNAVAILABLE
65610	QCMAP_VCER_MIP_FA_REV_TUNNEL_UNAVAILABLE
65611	QCMAP_VCER_MIP_FA_REV_TUNNEL_IS_MAND_AND_T_BIT_NOT_SET
65615	QCMAP_VCER_MIP_FA_DELIVERY_STYLE_NOT_SUPP
65633	QCMAP_VCER_MIP_FA_MISSING_NAI
65634	QCMAP_VCER_MIP_FA_MISSING_HA
65635	QCMAP_VCER_MIP_FA_MISSING_HOME_ADDR
65640	QCMAP_VCER_MIP_FA_UNKNOWN_CHALLENGE
65641	QCMAP_VCER_MIP_FA_MISSING_CHALLENGE
65642	QCMAP_VCER_MIP_FA_STALE_CHALLENGE
65664	QCMAP_VCER_MIP_HA_REASON_UNSPECIFIED
65665	QCMAP_VCER_MIP_HA_ADMIN_PROHIBITED
65666	QCMAP_VCER_MIP_HA_INSUFFICIENT_RESOURCES
65667	QCMAP_VCER_MIP_HA_MOBILE_NODE_AUTH_FAILURE
65668	QCMAP_VCER_MIP_HA_FA_AUTH_FAILURE
65669	QCMAP_VCER_MIP_HA_REGISTRATION_ID_MISMATCH
65670	QCMAP_VCER_MIP_HA_MALFORMED_REQUEST
65672	QCMAP_VCER_MIP_HA_UNKNOWN_HA_ADDR
65673	QCMAP_VCER_MIP_HA_REV_TUNNEL_UNAVAILABLE
65674	QCMAP_VCER_MIP_HA_REV_TUNNEL_IS_MAND_AND_T_BIT_NOT_SET
65675	QCMAP_VCER_MIP_HA_ENCAPSULATION_UNAVAILABLE
131071	QCMAP_VCER_MIP_HA_REASON_UNKNOWN
Internal	
131273	QCMAP_VCER_INTERNAL_INTERNAL_ERROR
131274	QCMAP_VCER_INTERNAL_CALL_ENDED
131275	QCMAP_VCER_INTERNAL_INTERNAL_UNKNOWN_CAUSE_CODE
131276	QCMAP_VCER_INTERNAL_UNKNOWN_CAUSE_CODE
131277	QCMAP_VCER_INTERNAL_CLOSE_IN_PROGRESS
131278	QCMAP_VCER_INTERNAL_NW_INITIATED_TERMINATION
131279	QCMAP_VCER_INTERNAL_APP_PREEMPTED

Table A-2 Verbose call end reasons (cont.)

Value	Name
Call manage	r
197108	QCMAP_VCER_CM_CDMA_LOCK
197109	QCMAP_VCER_CM_INTERCEPT
197110	QCMAP_VCER_CM_REORDER
197111	QCMAP_VCER_CM_REL_SO_REJ
197112	QCMAP_VCER_CM_INCOM_CALL
197113	QCMAP_VCER_CM_ALERT_STOP
197114	QCMAP_VCER_CM_ACTIVATION
197115	QCMAP_VCER_CM_MAX_ACCESS_PROBE
197116	QCMAP_VCER_CM_CCS_NOT_SUPP_BY_BS
197117	QCMAP_VCER_CM_NO_RESPONSE_FROM_BS
197118	QCMAP_VCER_CM_REJECTED_BY_BS
197119	QCMAP_VCER_CM_INCOMPATIBLE
197120	QCMAP_VCER_CM_ALREADY_IN_TC
197121	QCMAP_VCER_CM_USER_CALL_ORIG_DURING_GPS
197122	QCMAP_VCER_CM_USER_CALL_ORIG_DURING_SMS
197123	QCMAP_VCER_CM_NO_CDMA_SRV
197127	QCMAP_VCER_CM_RETRY_ORDER
197608	QCMAP_VCER_CM_CONF_FAILED
197609	QCMAP_VCER_CM_INCOM_REJ
197616	QCMAP_VCER_CM_NO_GW_SERV
197617	QCMAP_VCER_CM_NO_GPRS_CONTEXT
197618	QCMAP_VCER_CM_ILLEGAL_MS
197619	QCMAP_VCER_CM_ILLEGAL_ME
197620	QCMAP_VCER_CM_GPRS_SERV_AND_NON_GPRS_SERV_NOT_ALLOWED
197621	QCMAP_VCER_CM_GPRS_SERV_NOT_ALLOWED
197622	QCMAP_VCER_CM_MS_IDENTITY_CANNOT_BE_DERIVED_BY_THE_
	NETWORK
197623	QCMAP_VCER_CM_IMPLICITLY_DETACHED
197624	QCMAP_VCER_CM_PLMN_NOT_ALLOWED
197625	QCMAP_VCER_CM_LA_NOT_ALLOWED
197626	QCMAP_VCER_CM_GPRS_SERV_NOT_ALLOWED_IN_THIS_PLMN
197627	QCMAP_VCER_CM_PDP_DUPLICATE
197628	QCMAP_VCER_CM_UE_RAT_CHANGE
197629	QCMAP_VCER_CM_CONGESTION
197630	QCMAP_VCER_CM_NO_PDP_CONTEXT_ACTIVATED
197631	QCMAP_VCER_CM_ACCESS_CLASS_DSAC_REJECTION
198108	QCMAP_VCER_CM_CD_GEN_OR_BUSY
198109	QCMAP_VCER_CM_CD_BILL_OR_AUTH
198110	QCMAP_VCER_CM_CHG_HDR
198111	QCMAP_VCER_CM_EXIT_HDR
198112	QCMAP_VCER_CM_HDR_NO_SESSION
198113	QCMAP_VCER_CM_HDR_ORIG_DURING_GPS_FIX
198114	QCMAP_VCER_CM_HDR_CS_TIMEOUT
198115	QCMAP_VCER_CM_HDR_RELEASED_BY_CM
198118	QCMAP_VCER_CM_NO_HYBR_HDR_SRV

Table A-2 Verbose call end reasons (cont.)

Value	Name	
198608	QCMAP_VCER_CM_CLIENT_END	
198609	QCMAP_VCER_CM_NO_SRV	
198610	QCMAP_VCER_CM_FADE	
198611	QCMAP_VCER_CM_REL_NORMAL	
198612	QCMAP_VCER_CM_ACC_IN_PROG	
198613	QCMAP_VCER_CM_ACC_FAIL	
198614	QCMAP_VCER_CM_REDIR_OR_HANDOFF	
3GPP specification		
393224	QCMAP_VCER_3GPP_OPERATOR_DETERMINED_BARRING	
393241	QCMAP_VCER_3GPP_LLC_SNDCP_FAILURE	
393242	QCMAP_VCER_3GPP_INSUFFICIENT_RESOURCES	
393243	QCMAP_VCER_3GPP_UNKNOWN_APN	
393244	QCMAP_VCER_3GPP_UNKNOWN_PDP	
393245	QCMAP_VCER_3GPP_AUTH_FAILED	
393246	QCMAP_VCER_3GPP_GGSN_REJECT	
393247	QCMAP_VCER_3GPP_ACTIVATION_REJECT	
393248	QCMAP_VCER_3GPP_OPTION_NOT_SUPPORTED	
393249	QCMAP_VCER_3GPP_OPTION_UNSUBSCRIBED	
393250	QCMAP_VCER_3GPP_OPTION_TEMP_OOO	
393251	QCMAP_VCER_3GPP_NSAPI_ALREADY_USED	
393252	QCMAP_VCER_3GPP_REGULAR_DEACTIVATION	
393253	QCMAP_VCER_3GPP_QOS_NOT_ACCEPTED	
393254	QCMAP_VCER_3GPP_NETWORK_FAILURE	
393255	QCMAP_VCER_3GPP_UMTS_REACTIVATION_REQ	
393256	QCMAP_VCER_3GPP_FEATURE_NOT_SUPP	
393257	QCMAP_VCER_3GPP_TFT_SEMANTIC_ERROR	
393258	QCMAP_VCER_3GPP_TFT_SYTAX_ERROR	
393259	QCMAP_VCER_3GPP_UNKNOWN_PDP_CONTEXT	
393260	QCMAP_VCER_3GPP_FILTER_SEMANTIC_ERROR	
393261	QCMAP_VCER_3GPP_FILTER_SYTAX_ERROR	
393262	QCMAP_VCER_3GPP_PDP_WITHOUT_ACTIVE_TFT	
393297	QCMAP_VCER_3GPP_INVALID_TRANSACTION_ID	
393311	QCMAP_VCER_3GPP_MESSAGE_INCORRECT_SEMANTIC	
393312	QCMAP_VCER_3GPP_INVALID_MANDATORY_INFO	
393313	QCMAP_VCER_3GPP_MESSAGE_TYPE_UNSUPPORTED	
393314	QCMAP_VCER_3GPP_MSG_TYPE_NONCOMPATIBLE_STATE	
393315	QCMAP_VCER_3GPP_UNKNOWN_INFO_ELEMENT	
393316	QCMAP_VCER_3GPP_CONDITIONAL_IE_ERROR	
393317	QCMAP_VCER_3GPP_MSG_AND_PROTOCOL_STATE_UNCOMPATIBLE	
393327	QCMAP_VCER_3GPP_PROTOCOL_ERROR	
393328	QCMAP_VCER_3GPP_APN_TYPE_CONFLICT	

Table A-2 Verbose call end reasons (cont.)

Value	Name	
Point-to-Point Protocol		
458753	QCMAP_VCER_PPP_TIMEOUT	
458754	QCMAP_VCER_PPP_AUTH_FAILURE	
458755	QCMAP_VCER_PPP_OPTION_MISMATCH	
458783	QCMAP_VCER_PPP_PAP_FAILURE	
458784	QCMAP_VCER_PPP_CHAP_FAILURE	
524287	QCMAP_VCER_PPP_UNKNOWN	
eHRPD		
524289	QCMAP_VCER_EHRPD_SUBS_LIMITED_TO_V4	
524290	QCMAP_VCER_EHRPD_SUBS_LIMITED_TO_V6	
524292	QCMAP_VCER_EHRPD_VSNCP_TIMEOUT	
524293	QCMAP_VCER_EHRPD_VSNCP_FAILURE	
524294	QCMAP_VCER_EHRPD_VSNCP_3GPP2I_GEN_ERROR	
524295	QCMAP_VCER_EHRPD_VSNCP_3GPP2I_UNAUTH_APN	
524296	QCMAP_VCER_EHRPD_VSNCP_3GPP2I_PDN_LIMIT_EXCEED	
524297	QCMAP_VCER_EHRPD_VSNCP_3GPP2I_NO_PDN_GW	
524298	QCMAP_VCER_EHRPD_VSNCP_3GPP2I_PDN_GW_UNREACH	
524299	QCMAP_VCER_EHRPD_VSNCP_3GPP2I_PDN_GW_REJ	
524300	QCMAP_VCER_EHRPD_VSNCP_3GPP2I_INSUFF_PARAM	
524301	QCMAP_VCER_EHRPD_VSNCP_3GPP2I_RESOURCE_UNAVAIL	
524302	QCMAP_VCER_EHRPD_VSNCP_3GPP2I_ADMIN_PROHIBIT	
524303	QCMAP_VCER_EHRPD_VSNCP_3GPP2I_PDN_ID_IN_USE	
524304	QCMAP_VCER_EHRPD_VSNCP_3GPP2I_SUBSCR_LIMITATION	
524305	QCMAP_VCER_EHRPD_VSNCP_3GPP2I_PDN_EXISTS_FOR_THIS_APN	
IPv6		
589825	QCMAP_VCER_IPV6_PREFIX_UNAVAILABLE	