QMI QCMAP 1.3 for MPSS.NI.5.0.x

QMI Qualcomm Mobile Access Point Svc Spec

80-ND591-34 A

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Revision History

Revision	Date	Description
A	Feb 2013	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)

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 MSM™ 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

1.4 References

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 Reference documents that are no longer applicable are deleted from this table; therefore, reference numbers might not be sequential.

Table 1-1 Reference documents and standards

Ref.	Document	
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.NI.5.0.x, QMI Wireless Data Svc Spec*	80-ND591-5
Standards		
S1	*User Datagram Protocol*	RFC 768 (Aug 1980)
S2	*Internet Protocol DARPA Internet Program Protocol Specification*	RFC 791 (Sep 1981)
S3	*Internet Control Message Protocol DARPA Internet Program Protocol Specification*	RFC 792 (Sep 1981)
S4	*Transmission Control Protocol DARPA Internet Program Protocol Specification*	RFC 793 (Sep 1981)
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 Technical Assistance

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

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

1.6 Acronyms

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.)

Acronym	Definition
L2TP	Layer 2 Tunneling Protocol
MIP	Mobile Internet Protocol
NAT	network address translation
PPTP	Point-to-Point Tunneling Protocol
QCMAP	Qualcomm Mobile Access Point Service
QMI	Qualcomm messaging interface
SNAT	static NAT
SSID	service set identifier
STA	station
TCP	Transmission Control Protocol
TE	terminal equipment
TLV	type-length-value
TOS	type of service
UDP	User Datagram Protocol
VPN	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 Service Type

QCMAP is assigned QMI service type 0x1E.

2.3 Message Definition Template

2.3.1 Response Message Result TLV

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

Name	Version introduced	Version last modified
Result Code	Corresponding command's *Version introduced*	N/A

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

2.4 QMI_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 values	Default value
register_indication	WWAN status indication registration per mobile AP handle	• FALSE • TRUE	FALSE

3 QMI_QCMAP Messages

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 the mobile AP.
QMI_QCMAP_BRING_UP_WWAN_IND	0x0022 indication	Indicates the completion of processing a QMI_QCMAP_BRING_UP_WWAN_ REQ.
QMI_QCMAP_TEAR_DOWN_WWAN	0x0023	Tears down the WWAN.
QMI_QCMAP_TEAR_DOWN_WWAN_IND	0x0023 indication	Indicates the completion of processing a QMI_QCMAP_TEAR_DOWN_ WWAN_REQ.
QMI_QCMAP_GET_WWAN_STATUS	0x0024	Queries the current WWAN status.
QMI_QCMAP_WWAN_STATUS_IND_REG	0x003A	Registers/deregisters the control point to receive QMI_QCMAP_WWAN_ 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_ THROUGH	0x0026	Configures the Internet Protocol security (IPSec) Virtual Private Network (VPN) passthrough setting.
QMI_QCMAP_GET_IPSEC_VPN_PASS_ THROUGH	0x0025	Queries the IPSec VPN passthrough setting.
QMI_QCMAP_SET_PPTP_VPN_PASS_ THROUGH	0x0028	Configures the Point-to-Point Tunneling Protocol (PPTP) VPN passthrough setting.
QMI_QCMAP_GET_PPTP_VPN_PASS_ THROUGH	0x0027	Queries the PPTP VPN passthrough setting.
QMI_QCMAP_SET_L2TP_VPN_PASS_ THROUGH	0x002A	Configures the Layer 2 Tunneling Protocol (L2TP) VPN passthrough setting.
QMI_QCMAP_GET_L2TP_VPN_PASS_ THROUGH	0x0029	Queries the L2TP VPN passthrough setting.

Table 3-1 QMI_QCMAP messages (cont.)

Command	ID	Description
QMI_QCMAP_SET_DYNAMIC_NAT_ ENTRY_TIMEOUT	0x002C	Sets the Network Address Translation (NAT) entry timeout.
QMI_QCMAP_GET_DYNAMIC_NAT_ ENTRY_TIMEOUT	0x002B	Queries the NAT 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_ CONFIG	0x003F	Adds IP filter-based firewall rules (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

3.1.1 Request - QMI_QCMAP_MOBILE_AP_ENABLE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
IP Family	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	IP Family
Length	4			2	
Value	→	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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	IP Address
Length	28			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	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.
Type	0x11			1	Network Policy
Length	10			2	
Value	→	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 single value of the technology preference bitmask is set, the device attempts to use that technology. If two or more bits in the technology preference bitmask are set, the device determines the technology to be used from those specified.
		uint8	profile_id_3gpp2	1	CDMA profile ID.
		uint8	profile_id_3gpp	1	UMTS profile ID.
Type	0x12			1	SSID2 IP Address Info
Length	8			2	
Value	→	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	0x13			1	NAT Type Info
Length	4			2	
Value	→	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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Mobile AP Handle
Length	4			2	
Value	→	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call instance. The mobile AP handle must be retained by the control point and specified in all mobile AP-specific QCMAP messages. For example, QMI_QCMAP_DISABLE, QMI_QCMAP_BRING_UP_WWAN, 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

3.2.1 Request - QMI_QCMAP_MOBILE_AP_DISABLE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	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 must terminate the WWAN connection using QMI_QCMAP_TEAR_DOWN_WWAN_REQ and wait for the final WWAN status before disabling the mobile AP

3.2.3 Description of QMI_QCMAP_MOBILE_AP_DISABLE REQ/RESP

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.

3.3 QMI_QCMAP_BRING_UP_WWAN

Invokes bringing up the WWAN from the mobile AP.

QCMAP message ID

0x0022

Version introduced

Major - 1, Minor - 0

3.3.1 Request - QMI_QCMAP_BRING_UP_WWAN_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.3.2 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

None

Error codes

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

3.3.3 Description of QMI_QCMAP_BRING_UP_WWAN REQ/RESP

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 value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call instance.
Type	0x02			1	IP Family
Length	4			2	
Value	→	enum	ip_family	4	Determines whether the mobile AP is IPv4 or IPv6. Values: • 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.

3.4 QMI_QCMAP_TEAR_DOWN_WWAN

Tears down the WWAN.

QCMAP message ID

0x0023

Version introduced

Major - 1, Minor - 0

3.4.1 Request - QMI_QCMAP_TEAR_DOWN_WWAN_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.4.2 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

None

Error codes

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

3.4.3 Description of QMI_QCMAP_TEAR_DOWN_WWAN REQ/RESP

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 value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	uint32	mobile_ap_handle	4	Handle identifying the mobile AP call instance.
Type	0x02			1	IP Family
Length	4			2	
Value	→	enum	ip_family	4	Determines whether the mobile AP is IPv4 or IPv6. Values: • 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.

3.5 QMI_QCMAP_GET_WWAN_STATUS

Queries the current WWAN status.

QCMAP message ID

0x0024

Version introduced

Major - 1, Minor - 0

3.5.1 Request - QMI_QCMAP_GET_WWAN_STATUS_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.5.2 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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Call End Reason
Length	4			2	
Value	→	enum	call_end_reason	4	Reason the call ended; see Table A-1 for the definition of these values.
Type	0x11			1	Verbose Call End Reason
Length	4			2	
Value	→	enum	verbose_call_end_reason	4	Reason the call ended (verbose); see Table A-2 for the definition of these values.
Type	0x12			1	Packet Service Status
Length	4			2	
Value	→	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

3.6 QMI_QCMAP_WWAN_STATUS_IND_REG

Registers/deregisters the control point to receive QMI_QCMAP_WWAN_STATUS_IND.

QCMAP message ID

0x003A

Version introduced

Major - 1, Minor - 0

3.6.1 Request - QMI_QCMAP_WWAN_STATUS_IND_REG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
Register Indication	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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.
Type	0x02			1	Register Indication
Length	1			2	
Value	→	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

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

Optional TLVs

None

Error codes

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

3.6.3 Description of QMI_QCMAP_WWAN_STATUS_IND_REG REQ/RESP

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

3.7 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

3.7.1 Indication - QMI_QCMAP_WWAN_STATUS_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
Packet Service Status	1.0	1.0
Reconfiguration Required	1.0	1.0

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

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	enum	wwan_status	4	Indicates the WWAN status. Values: • 1 – Connecting • 2 – Connected • 3 – Disconnecting • 4 – Disconnected
Type	0x04			1	Reconfiguration Required
Length	1			2	
Value	→	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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Call End Reason
Length	4			2	
Value	→	enum	call_end_reason	4	Reason the call ended; see Table A-1 for the definition of these values.
Type	0x11			1	Verbose Call End Reason
Length	4			2	
Value	→	enum	verbose_call_end_reason	4	Reason the call ended (verbose); see Table A-2 for the definition of these 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.

3.8 QMI_QCMAP_SET_IPSEC_VPN_PASS_THROUGH

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

QCMAP message ID

0x0026

Version introduced

Major - 1, Minor - 0

3.8.1 Request - QMI_QCMAP_SET_IPSEC_VPN_PASS_THROUGH_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
VPN Passthrough Value	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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.
Type	0x02			1	VPN Passthrough Value
Length	1			2	
Value	→	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

None

Error codes

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

3.8.3 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.

3.9 QMI_QCMAP_GET_IPSEC_VPN_PASS_THROUGH

Queries the IPSec VPN passthrough setting.

QCMAP message ID

0x0025

Version introduced

Major - 1, Minor - 0

3.9.1 Request - QMI_QCMAP_GET_IPSEC_VPN_PASS_THROUGH_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	VPN Passthrough Value
Length	1			2	
Value	→	boolean	vpn_pass_through_value	1	Indicates whether an IPSec VPN 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.

3.10 QMI_QCMAP_SET_PPTP_VPN_PASS_THROUGH

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

QCMAP message ID

0x0028

Version introduced

Major - 1, Minor - 0

3.10.1 Request - QMI_QCMAP_SET_PPTP_VPN_PASS_THROUGH_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
VPN Passthrough Value	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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.
Type	0x02			1	VPN Passthrough Value
Length	1			2	
Value	→	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

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

3.10.3 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.

3.11 QMI_QCMAP_GET_PPTP_VPN_PASS_THROUGH

Queries the PPTP VPN passthrough setting.

QCMAP message ID

0x0027

Version introduced

Major - 1, Minor - 0

3.11.1 Request - QMI_QCMAP_GET_PPTP_VPN_PASS_THROUGH_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.11.2 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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	VPN Passthrough Value
Length	1			2	
Value	→	boolean	vpn_pass_through_value	1	Indicates whether an IPSec VPN 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.

3.12 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

3.12.1 Request - QMI_QCMAP_SET_L2TP_VPN_PASS_THROUGH_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
VPN Passthrough Value	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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.
Type	0x02			1	VPN Passthrough Value
Length	1			2	
Value	→	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.

Optional TLVs

None

Error codes

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

3.12.3 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.

3.13 QMI_QCMAP_GET_L2TP_VPN_PASS_THROUGH

Queries the L2TP VPN passthrough setting.

QCMAP message ID

0x0029

Version introduced

Major - 1, Minor - 0

3.13.1 Request - QMI_QCMAP_GET_L2TP_VPN_PASS_THROUGH_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.13.2 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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	VPN Passthrough Value
Length	1			2	
Value	→	boolean	vpn_pass_through_value	1	Indicates whether an IPSec VPN 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.

3.14 QMI_QCMAP_SET_DYNAMIC_NAT_ENTRY_TIMEOUT

Sets the Network Address Translation (NAT) entry timeout.

QCMAP message ID

0x002C

Version introduced

Major - 1, Minor - 0

3.14.1 Request - QMI_QCMAP_SET_DYNAMIC_NAT_ENTRY_TIMEOUT_-REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
Timeout	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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.
Type	0x02			1	Timeout
Length	2			2	
Value	→	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

None

Error codes

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

3.14.3 Description of QMI_QCMAP_SET_DYNAMIC_NAT_ENTRY_-TIMEOUT REQ/RESP

This command sets the NAT entry timeout on the device.

3.15 QMI_QCMAP_GET_DYNAMIC_NAT_ENTRY_TIMEOUT

Queries the NAT entry timeout.

QCMAP message ID

0x002B

Version introduced

Major - 1, Minor - 0

3.15.1 Request - QMI_QCMAP_GET_DYNAMIC_NAT_ENTRY_TIMEOUT_-REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.15.2 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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Timeout
Length	2			2	
Value	→	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.

3.16 QMI_QCMAP_ADD_STATIC_NAT_ENTRY

Adds a static NAT entry.

QCMAP message ID

0x002D

Version introduced

Major - 1, Minor - 0

3.16.1 Request - QMI_QCMAP_ADD_STATIC_NAT_ENTRY_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
SNAT Entry Configuration	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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.
Type	0x02			1	SNAT Entry Configuration
Length	9			2	
Value	→	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

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

Optional TLVs

None

Error codes

QMI_ERR_NONE	No error in the request
QMI_ERR_INTERNAL	Unexpected error occurred during processing
QMI_ERR_MALFORMED_MSG	Message was not formulated correctly by the control point or the message was corrupted during transmission
QMI_ERR_MISSING_ARG	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_MAX_LIMIT_REACHED	Maximum limit was reached for the static NAT entry
QMI_ERR_DUPLICATE_ENTRY	Entry already exists

3.16.3 Description of QMI_QCMAP_ADD_STATIC_NAT_ENTRY REQ/RESP

This command adds a static NAT entry.

3.17 QMI_QCMAP_DELETE_STATIC_NAT_ENTRY

Deletes a static NAT entry.

QCMAP message ID

0x002E

Version introduced

Major - 1, Minor - 0

3.17.1 Request - QMI_QCMAP_DELETE_STATIC_NAT_ENTRY_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
SNAT Entry Configuration	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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.
Type	0x02			1	SNAT Entry Configuration
Length	9			2	
Value	→	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

None

Error codes

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

3.17.3 Description of QMI_QCMAP_DELETE_STATIC_NAT_ENTRY REQ/RESP

This command deletes a static NAT entry.

3.18 QMI_QCMAP_GET_STATIC_NAT_ENTRIES

Queries all static NAT entries.

QCMAP message ID

0x002F

Version introduced

Major - 1, Minor - 0

3.18.1 Request - QMI_QCMAP_GET_STATIC_NAT_ENTRIES_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.18.2 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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	SNAT Configuration
Length	Var			2	
Value	→	uint8	snat_config_len	1	Number of sets of the following elements: • private_ip_addr • private_port • global_port • 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

3.19.1 Request - QMI_QCMAP_SET_DMZ_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
DMZ IP Address	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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.
Type	0x02			1	DMZ IP Address
Length	4			2	
Value	→	uint32	dmz_ip_addr	4	DMZ IP address.

Optional TLVs

None

3.19.2 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

None

Error codes

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

3.19.3 Description of QMI_QCMAP_SET_DMZ REQ/RESP

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

3.20.1 Request - QMI_QCMAP_GET_DMZ_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.20.2 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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	DMZ IP Address
Length	4			2	
Value	→	uint32	dmz_ip_addr	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 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

3.21.1 Request - QMI_QCMAP_DELETE_DMZ_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.21.2 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

None

Error codes

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

3.21.3 Description of QMI_QCMAP_DELETE_DMZ REQ/RESP

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

3.22 QMI_QCMAP_GET_WWAN_CONFIG

Queries the WWAN IP configuration.

QCMAP message ID

0x0033

Version introduced

Major - 1, Minor - 0

3.22.1 Request - QMI_QCMAP_GET_WWAN_CONFIG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
Address Type	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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.
Type	0x02			1	Address Type
Length	8			2	
Value	→	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	1.0	1.0
IPv6 Primary DNS Address	1.0	1.0
IPv6 Secondary DNS Address	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	IPv4 Address
Length	4			2	
Value	→	uint32	v4_addr	4	IPv4 address.
Type	0x11			1	IPv6 Address
Length	16			2	
Value	→	uint8	v6_addr	16	IPv6 address.
Type	0x12			1	IPv4 Primary DNS Address
Length	4			2	
Value	→	uint32	v4_prim_dns_addr	4	IPv4 primary DNS address.
Type	0x13			1	IPv4 Secondary DNS Address
Length	4			2	
Value	→	uint32	v4_sec_dns_addr	4	IPv4 secondary DNS address.
Type	0x14			1	IPv6 Primary DNS Address
Length	16			2	
Value	→	uint8	v6_prim_dns_addr	16	IPv6 primary DNS address.
Type	0x15			1	IPv6 Secondary DNS Address
Length	16			2	
Value	→	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.

3.23 QMI_QCMAP_ENABLE_FIREWALL_SETTING

Enables the firewall setting.

QCMAP message ID

0x0034

Version introduced

Major - 1, Minor - 0

3.23.1 Request - QMI_QCMAP_ENABLE_FIREWALL_SETTING_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
Packets Allowed	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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.
Type	0x02			1	Packets Allowed
Length	1			2	
Value	→	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

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

Optional TLVs

None

Error codes

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

3.23.3 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.

3.24 QMI_QCMAP_GET_FIREWALL_SETTING

Queries the firewall setting.

QCMAP message ID

0x0035

Version introduced

Major - 1, Minor - 0

3.24.1 Request - QMI_QCMAP_GET_FIREWALL_SETTING_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.24.2 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

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Firewall Enabled
Length	1			2	
Value	→	boolean	firewall_enabled	1	Whether the firewall is enabled; boolean value.
Type	0x11			1	Packets Allowed
Length	1			2	
Value	→	boolean	pkts_allowed	1	Whether packets are 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

3.24.3 Description of QMI_QCMAP_GET_FIREWALL_SETTING REQ/RESP

This command queries the firewall setting.

3.25 QMI_QCMAP_DISABLE_FIREWALL_SETTING

Disables the firewall setting.

QCMAP message ID

0x0036

Version introduced

Major - 1, Minor - 0

3.25.1 Request - QMI_QCMAP_DISABLE_FIREWALL_SETTING_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.25.2 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

None

Error codes

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

3.25.3 Description of QMI_QCMAP_DISABLE_FIREWALL_SETTING REQ/RESP

This command disables the firewall setting.

3.26 QMI_QCMAP_ADD_FIREWALL_CONFIG

Adds a firewall configuration rule.

QCMAP message ID

0x0037

Version introduced

Major - 1, Minor - 0

3.26.1 Request - QMI_QCMAP_ADD_FIREWALL_CONFIG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
Firewall Configuration	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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.
Type	0x02			1	Firewall Configuration
Length	5			2	
Value	→	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

3.26.2 Response - QMI_QCMAP_ADD_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	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Firewall Handle
Length	4			2	
Value	→	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.

3.27 QMI_QCMAP_DELETE_FIREWALL_CONFIG

Deletes a firewall configuration rule.

QCMAP message ID

0x0039

Version introduced

Major - 1, Minor - 0

3.27.1 Request - QMI_QCMAP_DELETE_FIREWALL_CONFIG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0
Firewall Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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.
Type	0x02			1	Firewall Handle
Length	4			2	
Value	→	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.

Optional TLVs

None

Error codes

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

3.27.3 Description of QMI_QCMAP_DELETE_FIREWALL_CONFIG 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

3.28.1 Request - QMI_QCMAP_GET_FIREWALL_CONFIG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.28.2 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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Firewall Configuration
Length	Var			2	
Value	→	uint8	firewall_config_len	1	Number of sets of the following elements: • firewall_handle • start_dest_port • end_dest_port • 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

3.29.1 Request - QMI_QCMAP_STATION_MODE_ENABLE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.29.2 Response - QMI_QCMAP_STATION_MODE_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

None

Error codes

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

3.29.3 Description of QMI_QCMAP_STATION_MODE_ENABLE REQ/RESP

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.

3.30 QMI_QCMAP_STATION_MODE_DISABLE

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

QCMAP message ID

0x003C

Version introduced

Major - 1, Minor - 0

3.30.1 Request - QMI_QCMAP_STATION_MODE_DISABLE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.30.2 Response - QMI_QCMAP_STATION_MODE_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

None

Error codes

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

3.30.3 Description of QMI_QCMAP_STATION_MODE_DISABLE 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

3.31.1 Request - QMI_QCMAP_GET_STATION_MODE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.0	1.0

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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

3.31.2 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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Station Mode
Length	1			2	
Value	→	boolean	station_mode	1	Whether STA mode has been enabled; 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

3.31.3 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.

3.32 QMI_QCMAP_ADD_EXTD_FIREWALL_CONFIG

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

QCMAP message ID

0x003F

Version introduced

Major - 1, Minor - 1

3.32.1 Request - QMI_QCMAP_ADD_EXTD_FIREWALL_CONFIG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP Handle	1.1	1.1
Next Header Protocol	1.1	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP Handle
Length	4			2	
Value	→	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.
Type	0x02			1	Next Header Protocol
Length	4			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	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 version 6 • 0x05 – QCMAP_EXTD_FIREWALL_PROTO_ESP – Encapsulating Security Payload Protocol • 0x06 – QCMAP_EXTD_FIREWALL_PROTO_TCP_UDP – Transmission Control Protocol/User Datagram Protocol

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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	TCP/UDP Source
Length	4			2	
Value	→	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 value	Field type	Parameter	Size (byte)	Description
Type	0x11			1	TCP/UDP Destination
Length	4			2	
Value	→	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]).
Type	0x12			1	ICMP Type
Length	1			2	
Value	→	uint8	icmp_type	1	ICMP type as specified in the ICMP specification (RFC 792 [S3]).
Type	0x13			1	ICMP Code
Length	1			2	
Value	→	uint8	icmp_code	1	ICMP code as specified in the ICMP specification (RFC 792 [S3]).
Type	0x14			1	ESP Security Parameters Index
Length	4			2	
Value	→	uint32	esp_spi	4	Security parameters index as specified in the ESP protocol (RFC 4303 [S7]).
Type	0x15			1	IPv4 Source Address
Length	8			2	
Value	→	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	0x16			1	IPv4 Destination Address
Length	8			2	
Value	→	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	→	uint8	value	1	TOS value as specified in the IPv4 protocol specification (RFC 791 [S2]).
		uint8	mask	1	IPv4 TOS mask.
Type	0x18			1	IPv6 Source Address
Length	17			2	
Value	→	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]).
Type	0x19			1	IPv6 Destination Address
Length	17			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	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]).
Type	0x1A			1	IPv6 Traffic Class
Length	2			2	
Value	→	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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Firewall handle
Length	4			2	
Value	→	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.

3.33 QMI_QCMAP_GET_EXTD_FIREWALL_CONFIG

Gets the firewall rules.

QCMAP message ID

0x0040

Version introduced

Major - 1, Minor - 1

3.33.1 Request - QMI_QCMAP_GET_EXTD_FIREWALL_CONFIG_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Firewall Handle	1.1	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP handle
Length	4			2	
Value	→	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.
Type	0x02			1	Firewall Handle
Length	4			2	
Value	→	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

3.33.2 Response - QMI_QCMAP_GET_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
Next Header Protocol	1.1	1.1
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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Next Header Protocol
Length	4			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	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 Protocol
Type	0x11			1	TCP/UDP Source
Length	4			2	
Value	→	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]).
Type	0x12			1	TCP/UDP Destination
Length	4			2	
Value	→	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]).
Type	0x13			1	ICMP Type
Length	1			2	
Value	→	uint8	icmp_type	1	ICMP type as specified in the ICMP specification (RFC 792 [S3]).
Type	0x14			1	ICMP Code
Length	1			2	
Value	→	uint8	icmp_code	1	ICMP code as specified in the ICMP specification (RFC 792 [S3]).
Type	0x15			1	ESP Security Parameters Index
Length	4			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	uint32	esp_spi	4	Security parameters index as specified in the ESP protocol (RFC 4303 [S7]).
Type	0x16			1	IPv4 Source Address
Length	8			2	
Value	→	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 Destination Address
Length	8			2	
Value	→	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	0x18			1	IPv4 TOS
Length	2			2	
Value	→	uint8	value	1	TOS value as specified in the IPv4 protocol specification (RFC 791 [S2]).
		uint8	mask	1	IPv4 TOS mask.
Type	0x19			1	IPv6 Source Address
Length	17			2	
Value	→	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]).
Type	0x1A			1	IPv6 Destination Address
Length	17			2	
Value	→	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]).
Type	0x1B			1	IPv6 Traffic Class
Length	2			2	
Value	→	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.

3.34 QMI_QCMAP_GET_FIREWALL_CONFIG_HANDLE_LIST

Gets the handles of all the firewall rules.

QCMAP message ID

0x0041

Version introduced

Major - 1, Minor - 1

3.34.1 Request - QMI_QCMAP_GET_FIREWALL_CONFIG_HANDLE_-LIST_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP handle	1.1	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP handle
Length	4			2	
Value	→	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	1.1

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Firewall Handle List
Length	Var			2	
Value	→	uint8	firewall_handle_list_len	1	Number of sets of the following elements: • 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

3.35.1 Request - QMI_QCMAP_CHANGE_NAT_TYPE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP handle	1.3	1.3

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP handle
Length	4			2	
Value	→	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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	NAT Type Option
Length	4			2	

Field	Field value	Field type	Parameter	Size (byte)	Description
Value	→	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

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

3.35.3 Description of QMI_QCMAP_CHANGE_NAT_TYPE REQ/RESP

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 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

3.36.1 Request - QMI_QCMAP_GET_NAT_TYPE_REQ

Message type

Request

Sender

Control point

Mandatory TLVs

Name	Version introduced	Version last modified
Mobile AP handle	1.3	1.3

Field	Field value	Field type	Parameter	Size (byte)	Description
Type	0x01			1	Mobile AP handle
Length	4			2	
Value	→	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 value	Field type	Parameter	Size (byte)	Description
Type	0x10			1	Current NAT Type
Length	4			2	
Value	→	enum	nat_type_option	4	NAT type currently on the modem. Values: • 0x00 – QCMAP_NAT_TYPE_SYMMETRIC – Symmetric NAT • 0x01 – QCMAP_NAT_TYPE_PORT_RESTRICTED_CONE – Port restricted 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 manager	
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