NXP Semiconductors
Reference Manual

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Kinetis Thread Host Control Interface

Reference Manual

1 About This Document

This document provides a detailed description for the Thread Network Stack use of the Thread Host Control Interface (THCI) module which can be deployed from a PC tool or a host processor to perform control and monitoring of a Thread stack instance running on a Kinetis wireless microcontroller.

1.1 Audience

This document is for software developers who create tools and multichip partitioned systems using a serial interface to a Thread *black box* firmware running on the Kinetis microcontroller.

Contents

2 Thread THCI Overview

The Thread Host Control Interface (THCI) module supports building an interface between the IP stack and a host or a PC tool using a serial communication line.

THCI can be deployed using PC tools, such as the NXP Test Tool PC application for Connectivity Products.

The tool can use an XML file (“ThreadIP.xml”, located at \tools\wireless\xml_fsci subfolder in the Connectivity Stack software package), which contains detailed meta-descriptors for serial commands and events.

To use the XML in Test Tool 12 for Connectivity products, copy the file to the Test Tool XML folder (for example, C:\NXP\Test Tool 12\Xml\)

3 Thread Management Messages

3.1 THR_CommissioningDiagnostic.Indication

Description

Commissioning diagnostic messages.

Parameters

Table 1 - THR_CommissioningDiagnostic.Indication Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x4E
Length	2	Length in bytes of the following parameters
Direction	1	Possible values: 0x00: OUT (Sent packet) 0x01: IN (Received packet)
Type	1	Possible values: 0x00: JOIN_FIN_REQ (JOIN_FIN.REQ) 0x01: JOIN_FIN_RSP (JOIN_FIN.RSP) 0x02: JOIN_ENT_REQ (JOIN_ENT.REQ) 0x03: JOIN_ENT_RSP (JOIN_ENT.RSP) 0x04: DTLS_CLOSE_NOTIFY
EUI	8	
TlvsLength	1	Total size of the following TLVs
TlvsBytes	TlvsLength	The actual TLVs

3.2 THR_CpuReset.Request

Description

Request to reset the device.

Parameters

Table 2 THR_CpuReset.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x21
Length	2	Length in bytes of the following parameters
TimeoutMs	4	the time in milliseconds after that the device will enter in the reset state.

3.3 THR_CpuReset.Confirm

Description

Confirmation of the device reset.

Parameters

Table 3 THR_CpuReset.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x21
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0xFF: Theselectedconfigurationisnotvalid

3.4 THR_CpuReset.Indication

Description

THR_CPUReset indication.

Parameters

Table 4 THR_CpuReset.Indication Parameters

Parameter		Size (bytes)	Comments
OpGroup		1	0xCF
OpCode		1	0x22
Length		2	Length in bytes of the following parameters
Status		1	Possible values: 0x00: ResetCpuSuccess 0x01: ResetCpuPending
ResetCpuPayload		Variable	Reset CPU Payload "Union" type parameter. Its structure is based on the value of parameter Status. See detailed table below for parameter structure.

Table 5 ResetCpuPayload Parameter Structure

Status	Structure Parameter	Size (bytes)	Comments
0x00	ResetCpuSuccess	Variable	Reset Cpu success payload Structure type parameter. See detailed table below for parameter structure.
0x01	ResetCpuPending	Variable	Reset Cpu pending payload Structure type parameter. See detailed table below for parameter structure.

Table 6 ResetCpuSuccess Parameter Structure

Structure Parameter	Size (bytes)	Comments
BoardNameLen	1	Board Name Length
BoardName	BoardNameLen	
UniqueMcuId	16	Unique Mcu Identifier
StackVersionStruct	6	Stack Version Structure type parameter. See detailed table

		below for parameter structure.
SwVersionLen	1	Software Version Length
SwVersion	SwVersionLen	

Table 7 ResetCpuPending Parameter Structure

Structure Parameter	Size (bytes)	Comments
TimeoutMs	4	Timeout in milliseconds

Table 8 StackVersionStruct Parameter Structure

Structure Parameter	Size (bytes)	Comments
StackVendorOUI	3	Stack Vendor OUI (registered at IEEE) Possbile values: 0x006037: NXP
StackVersion	3	Bit array representing the stack version in compressed mode Structure type parameter. See detailed table below for parameter structure.

Table 9 StackVersion Parameter Structure

Structure Parameter	Size (bits)	Comments
MajorNo	4	Major Version Number
MinorNo	4	Minor Version Number
RevNo	4	Revision Number
BuildNo	12	Build Number (incognito)

3.5 THR_CreateNwk.Request

Description

Create thread network. Should be run after setting the configuration parameters.

Parameters

Table 10 THR_CreateNwk.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x1B

Length	2	Length in bytes of the following parameters
InstanceID	1	Thread Instance Id

3.6 THR_CreateNwk.Confirm

Description

Confirmation of the create network request.

Parameters

Table 11 THR_CreateNwk.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x1B
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0x0A: AlreadyConnected 0x02: Invalidinstance 0xFF: Theselectedconfigurationisnotvalid

3.7 THR_DiagTestGet.Request

Description

Large Network Diagnostic Get request.

Parameters

Table 12 - THR_DiagTestGet.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x67
Length	2	Length in bytes of the following parameters

InstanceId	1	Thread instance Id
DestIpAddrLength	1	
DestIpAddr	DestIpAddrLength	Destination Ip Address
PayloadSize	1	Size of payload - enter manually
TlvId	1	Possible values: 0xB0: ColdFactoryReset (Factory reset the node) 0xB1: WarmCPUReset (CPU reset the node) 0xB2: Data (Large Network Data) 0xB3: Results (Large Network Results)
AttributeValue	Variable	Attribute Value "Union" type parameter. Its structure is based on the value of parameter TlvId. See detailed table below for parameter structure.

Table 13 - AttributeValue Parameter Structure

TlvId	Structure Parameter	Size (bytes)	Comments
0xB0	Cold/Factory Reset	1	Factory reset the node
0xB1	Warm/CPU Reset	1	CPU reset the node
0xB2	Data	Variable	Large Network Data Structure type parameter. See detailed table below for parameter structure.
0xB3	Results	1	Large Network Results

Table 14 - Data Parameter Structure

Structure Parameter	Size (bytes)	Comments
SequenceNumber	1	Sequence Number
Payload	PayloadSize	Payload to be transmited OTA

3.8 THR_DiagTestGet.Confirm

Description

The confirmation to network diagnostic get request.

Parameters

Table 15 - THR_DiagTestGet.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x67
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x03: InvalidParameter 0x04: NotPermitted 0xFF: Error
CoapMsgId	2	Coap over the air message id - used for syncronization btw Req-Rsp

3.9 THR_DiagTestGetRsp.Indication

Description

The response to large network diagnostic get request.

Parameters

Table 16 - THR_DiagTestGetRsp.Indication Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x68
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success

		0x01: FailedNotsupported
CoapMsgId	2	Coap over the air message id - used for syncronization btw Req-Rsp
DataLen	2	Data length
Payload	Variable	Packet Payload Structure type parameter. See detailed table below for parameter structure.

Table 17 - Payload Parameter Structure

Structure Parameter	Size (bytes)	Comments
TlvId	1	TLV identifier Possible values: 0xB0: ColdFactoryReset (Factory reset the node) 0xB1: WarmCPUReset (CPU reset the node) 0xB2: Data (Large Network Data) 0xB3: Results (Large Network Results)
TLVPayload	Variable	TLV Payload "Union" type parameter. Its structure is based on the value of parameter TlvId. See detailed table below for parameter structure.

Table 18 - TLVPayload Parameter Structure

TlvId	Structure Parameter	Size (bytes)	Comments
0xB0	Cold/Factory Reset	2	Factory reset the node
0xB1	Warm/CPU Reset	2	
0xB2	Data	Variable	Large Network Data Structure type parameter. See detailed table below for parameter structure.
0xB3	Results	Variable	Large Network Results Structure type parameter. See detailed table below for parameter structure.

Table 19 - Data Parameter Structure

Structure Parameter	Size (bytes)	Comments
ReqLatency	4	Request Latency

RspLatency	4	Response Latency
Offset	4	Calculated offset
SequenceNumber	1	Sequence Number
PayloadSize	1	Payload Size
Payload	PayloadSize	OTA transmited payload

Table 20 - Results Parameter Structure

Structure Parameter	Size (bytes)	Comments
ReqLatency	4	Request Latency
RspLatency	4	Response Latency
Offset	4	Calculated offset
SequenceNumber	1	Sequence Number

3.10 THR_Disconnect.Request

Description

Network disconnect.

Parameters

Table 21 THR_Disconnect.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x1D
Length	2	Length in bytes of the following parameters
InstanceID	1	Thread Instance Id

3.11 THR_Disconnect.Confirm

Description

Confirmation of the THR_Disconnect.Request.

Parameters

Table 22 THR_Disconnect.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x1D
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0x02: Invalidinstance 0x04: Operationnotpermiteddevicealreadydisconnected 0xFF: Theselectedconfigurationisnotvalid

3.12 THR_EventGeneral.Confirm

Description

Confirmation of the network join event.

Parameters

Table 23 THR_EventGeneral.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x54
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread Instance Id
EventStatus	2	Event status Possible values: 0x0001: Disconnected 0x0002: Connected 0x0003: Resettofactorydefault 0x0004: Instancerestorestarted 0x0005: RouterSynced

		0x0006: EndDeviceSynced 0x0007: Connectingstarted 0x0008: Connectingfailed 0x0009: Connectingdeffered 0x000A: DeviceisLeader 0x000B: DeviceisRouter 0x000C: DeviceisREED 0x000D: DeviceisFullEndDevice 0x000E: DeviceisSleepyEndDevice 0x000F: RequestingGlobalAddress 0x0010: GlobalAddressassigned 0x0011: RequestingRouterId 0x0012: RouterIdassigned 0x0013: RouterIdassignedfailed 0x0014: Allowdevicetosleep 0x0015: Disallowdevicetosleep 0x0016: ChildIdassigned 0x0017: DeviceisMinimalEndDevice
DataSize	2	The number of payload bytes
Data	DataSize	

3.13 THR_EventNwkCommissioning.Indication

Description

Commissioning Events.

Parameters

Table 24 THR_EventNwkCommissioning.Indication Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x55
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread Instance Id
EventStatus	2	Event status

		Possible values: 0x0001: JoinerDiscoveryStarted (Joiner has started discovery) 0x0002: JoinerDiscoveryFailedNoBeacon (No Thread networks/routers found) 0x0003: JoinerDiscoveryFailedFiltered (Joiner Routers found, but device is filtered) 0x0004: JoinerDiscoverySuccess (Network selected) 0x0005: JoinerDtlsSessionStarted (Started DTLS session to Commissioner (sent Hello)) 0x0006: JoinerDtlsError (DTLS session error - all DTLS errors, e.g.: incorrect PSKd) 0x0007: JoinerError (All other non-DTLS errors (e.g.: Joiner Router failed to send credentials)) 0x0008: JoinerAccepted (Joiner has received credentials) 0x0009: CommissionerPetitionStarted (Petitioning has started) 0x000A: CommissionerPetitionAccepted (Petition success) 0x000B: CommissionerPetitionRejected (Petition rejected) 0x000C: CommissionerPetitionError (Other errors in petitioning (did not get PET response)) 0x000D: CommissionerKeepAliveSent (Keep Alive was sent) 0x000E: CommissionerError (Errors during generating Keep ALive or other errors on the Commissioner session) 0x000F: CommissionerJoinerDtlsSessionStarted (A Joiner sent Hello) 0x0010: CommissionerJoinerDtlsError (DTLS session error - all DTLS errors, e.g.: incorrect PSKd) 0x0011: CommissionerJoinerAccepted (Joiner accepted) 0x0012: CommissionerNwkDataSynced (The Commissioner changed the Nwk data) 0x0013: CommissionerBrDtlsSessionStarted (Started DTLS session to BR (sent Hello)) 0x0014: CommissionerBrDtlsError (DTLS session error - all DTLS errors, e.g.: incorrect PSKc) 0x0015: CommissionerBrError (All Other errors non-DTLS errors when communicating with the BR) 0x0016: CommissionerBrAccepted (BR session established)

		0x0017: BrCommissionerDtlsSessionStarted (Commissioner sent Hello) 0x0018: BrCommissionerDtlsError (DTLS session error - all DTLS errors, e.g.: incorrect PSKc) 0x0019: BrCommissionerAccepted (BR session established) 0x001A: BrCommissionerDataRelayedInbound (Relay sent from BR to Thread) 0x001B: BrCommissionerDataRelayedOutbound (Relay sent to BR from Thread) 0x001C: JoinerrouterJoinerDataRelayedInbound (Relay sent from Joiner to Commissioner) 0x001D: JoinerrouterJoinerDataRelayedOutbound (Relay sent to Joiner from Commissioner) 0x001E: JoinerrouterJoinerAccepted (Providing the security material to the Joiner) 0x001F: StartVendorProvisioning (Start Vendor Provisioning)

3.14 THR_EventNwkCreate.Confirm

Description

Confirmation of the network create event.

Parameters

Table 25 - THR_EventNwkCreate.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x51
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread Instance Id
EventStatus	2	Event status Possible values: 0x0001: Success 0x0002: Failed 0x0003: SelectBestChannel 0x0004: GeneratePSKc

DataSize	2	The number of payload bytes
Data	DataSize	

3.15 THR_EventNwkJoin.Confirm

Description

Confirmation of the network join event.

Parameters

Table 26 - THR_EventNwkJoin.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x52
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread Instance Id
EventStatus	2	Event status Possible values: 0x0001: Attaching 0x0002: JoinSuccess 0x0003: JoinFailed
DataSize	2	The number of payload bytes
Data	DataSize	

3.16 THR_EventNwkJoinSelectParents.Confirm

Description

Confirmation of the network join event.

Parameters

Table 27 - THR_EventNwkJoinSelectParents.Confirm Parameters

Parameter	Size (bytes)	Comments

OpGroup	1	0xCF
OpCode	1	0x53
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread Instance Id
EventStatus	2	Event status Possible values: 0x0001: ScanStarted 0x0002: ReceivedBeacon 0x0003: ScanEnded
DataSize	2	The number of payload bytes
Data	DataSize	

3.17 THR_EventNwkScan.Confirm

Description

Confirmation of the network scan event.

Parameters

Table 28 - THR_EventNwkScan.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x50
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread Instance Id
EventStatus	2	Event status Possible values: 0x0001: ScanResult
DataSize	2	The number of payload bytes
ScanChannelMask	4	
ScanType	1	Possible values:

		0x01: EnergyDetect 0x02: ActiveScan 0x03: EnergyDetectAndActiveScan
ScanDuration	1	
maxThrNwkToDiscover	2	
Data	Variable	"Union" type parameter. Its structure is based on the value of parameter ScanType. See detailed table below for parameter structure.

Table 29 - Data Parameter Structure

ScanType	Structure Parameter	Size (bytes)	Comments
0x01	EnergyDetect	Variable	Active Scan Structure type parameter. See detailed table below for parameter structure.
0x02	ActiveScan	Variable	Active Scan Structure type parameter. See detailed table below for parameter structure.
0x03	EnergyDetectAndActiveScan	Variable	Structure type parameter. See detailed table below for parameter structure.

Table 30 - EnergyDetect Parameter Structure

Structure Parameter	Size (bytes)	Comments
EnergyDetectEntries	1	Number of Energy Detect Entries
EnergyDetectList	EnergyDetectEntries	Energy Detect List

Table 31 - ActiveScan Parameter Structure

Structure Parameter	Size (bytes)	Comments
NwkDiscoveryEntries	1	Number of network discovery Entries
NwkDiscoveryList	Variable	Nwk Discovery List Structure type parameter. See detailed table below for parameter structure.

Table 32 - EnergyDetectAndActiveScan Parameter Structure

Structure Parameter	Size (bytes)	Comments
EnergyDetectEntries	1	Number of Energy Detect Entries
EnergyDetectList	EnergyDetectEntries	Energy Detect List

NwkDiscoveryEntries	1	Number of network discovery Entries
NwkDiscoveryList	Variable	Nwk Discovery List Structure type parameter. See detailed table below for parameter structure.

Table 33 - NwkDiscoveryList Parameter Structure

Structure Parameter	Size (bytes)	Comments
NumOfRcvdBeacons	2	
PanId	2	
Channel	1	
Reserved	1	

Table 34 - NwkDiscoveryList Parameter Structure

Structure Parameter	Size (bytes)	Comments
NumOfRcvdBeacons	2	
PanId	2	
Channel	1	
Reserved	1	

3.18 THR_FactoryReset.Request

Description

Reset the device to factory default.

Parameters

Table 35 THR_FactoryReset.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x1F
Length	2	0x00 - This message does not have any parameters

3.19 THR_FactoryReset.Confirm

Description

Reset the device to factory default.

Parameters

Table 36 THR_FactoryReset.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x1F
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0xFF: Theselectedconfigurationisnotvalid

3.20 THR_Join.Request

Description

Join the network. Depending on the attributes configuration it can perform the following actions:

- join as an end node using commissioning (devIsCommissioned attribute is FALSE).
- direct attach to a thread network (devIsCommissioned attribute is TRUE).

Parameters

Table 37 THR_Join.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x1C
Length	2	Length in bytes of the following parameters
InstanceID	1	thread instance id
discoveryMethod	1	discovery method Possible values:

		0x00: gUseMACBeacon_c 0x01: gUseThreadDiscovery_c

3.21 THR_Join.Confirm

Description

Confirmation of the join network request.

Parameters

Table 38 THR_Join.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x1C
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0x02: Invalidinstance 0xFF: Theselectedconfigurationisnotvalid

3.22 THR_MgmtDiagnosticDiagTestEvent.Indication

Description

The event generated by a multicast large network diagnostic get request.

Parameters

Table 39 - THR_MgmtDiagnosticDiagTestEvent.Indication Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x6B
Length	2	Length in bytes of the following parameters
Data	Variable	Large Network Data

		Structure type parameter. See detailed table below for parameter structure.

Table 40 - Data Parameter Structure

Structure Parameter	Size (bytes)	Comments
ReqLatency	4	Request Latency
SequenceNumber	1	Sequence Number

3.23 THR_MgmtDiagnosticGet.Request

Description

Management Network Diagnostic Get request.

Parameters

Table 41 THR_MgmtDiagnosticGet.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x61
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
DestIpAddrLength	1	
DestIpAddr	DestIpAddrLength	Destination Ip Address
NumberOfTlvIds	1	Number of TLV Ids
TlvIds	Variable	Structure type parameter. See detailed table below for parameter structure.

Table 42 TlvIds Parameter Structure

Structure Parameter	Size (bytes)	Comments
TlvId	1	Possible values: 0x00: SourceAddr (Source Address TLV (EUI64)) 0x01: ShortAddr (Short Address TLV) 0x02: Mode (Mode TLV) 0x03: Timeout (Timeout - Sleepy polling rate) 0x04: LinkQuality (Link Quality)

		0x05: RoutingTable (Routing table Tlv) 0x06: LeaderData (Leader Data) 0x07: NwkData (Network Data) 0x08: Ip6AddrList (List of all Ipv6 addresses registered by the device) 0x09: MacCounters (Mac Counters) 0x0E: BatteryLevel (Battery Level) 0x0F: SupplyVoltage (Supply Voltage) 0x10: ChildTable (Structure containing information on all children) 0x11: ChannelPages (Supported IEEE 802.15.4 Channel Pages) 0xA0: Fsl_Mac6lowPanNvmDataCount (MAC, 6lowpan (Mac Filtering, 6LowPan) NVM data save count) 0xA1: Fsl_NetworkNvmDataCount_c (Network (IP, DHCP, Leader Id Assignment, Trickle, MPL, ND) NVM data save count) 0xA2: Fsl_SecurityNvmDataCount_c (Security NVM data save count) 0xA3: Fsl_FunctionalNvmDataCount_c (Attributes, events NVM data save count) 0xA4: Fsl_BoardName_c (Board name) 0xA5: Fsl_UniqueMcuId_c (Unique MCU identifier) 0xA6: Fsl_StackVersion_c (Attribute, stack version) 0xA7: Fsl_SoftwareVersion_c (Attribute, software version)

3.24 THR_MgmtDiagnosticGet.Confirm

Description

The confirmation to network diagnostic get request.

Parameters

Table 43 THR_MgmtDiagnosticGet.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x61

Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x03: InvalidParameter 0x04: NotPermitted 0x06: NoMemory 0xFF: Error
CoapMsgId	2	Coap over the air message id - used for syncronization btw Req-Rsp

3.25 THR_MgmtDiagnosticGetRsp.Indication

Description

The response to nwk diagnostic get request.

Parameters

Table 44 THR_MgmtDiagnosticGetRsp.Indication Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x63
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: FailedNotsupported
CoapMsgId	2	Coap over the air message id - used for syncronization btw Req-Rsp
DataLen	2	Data length
Payload	Variable	Structure type parameter. See detailed table below for parameter structure.

Table 45 Payload Parameter Structure

Structure Parameter	Size (bytes)	Comments
TlvId	1	TLV identifier

		Possible values: 0x00: SourceAddr (Source Address TLV (EUI64)) 0x01: ShortAddr (Short Address TLV) 0x02: Mode (Mode TLV) 0x03: Timeout (Timeout - Sleepy polling rate) 0x04: LinkQuality (Link Quality) 0x05: RoutingTable (Routing table Tlv) 0x06: LeaderData (Leader Data) 0x07: NwkData (Network Data) 0x08: Ip6AddrList (List of all Ipv6 addresses registered by the device) 0x09: MacCounters (Mac Counters) 0x0E: BatteryLevel (Battery Level) 0x0F: SupplyVoltage (Supply Voltage) 0x10: ChildTable (Structure containing information on all children) 0x11: ChannelPages (Supported IEEE 802.15.4 24 Channel Pages) 0xA0: Fsl_Mac6lowPanNvmDataCount (MAC, 6lowpan (Mac Filtering, 6LowPan) NVM data save count) 0xA1: Fsl_NetworkNvmDataCount_c (Network (IP, DHCP, Leader Id Assignment, Trickle, MPL, ND) NVM data save count) 0xA2: Fsl_SecurityNvmDataCount_c (Security NVM data save count) 0xA3: Fsl_FunctionalNvmDataCount_c (Attributes, events NVM data save count) 0xA4: Fsl_BoardName_c (Board name) 0xA5: Fsl_UniqueMcuId_c (Unique MCU identifier) 0xA6: Fsl_StackVersion_c (Attribute, stack version) 0xA7: Fsl_SoftwareVersion_c (Attribute, software version)
TlvLength	1	TLV Length
TlvData	Variable	TLV data "Union" type parameter. Its structure is based on the value of parameter TlvId. See detailed table below for parameter structure.

Table 46 TlvData Parameter Structure

TlvId	Structure Parameter	Size (bytes)	Comments
0x00	SourceAddr	8	Source Addr- EUI 64
0x01	ShortAddr	2	Short Address
0x02	Mode	1	Mode TLV
0x03	Timeout	2	Timeout - Sleepy polling rate
0x04	LinkQuality	Variable	Link Quality Structure type parameter. See detailed table below for parameter structure.
0x05	RoutingTable	TlvLength	
0x06	LeaderData	Variable	Structure type parameter. See detailed table below for parameter structure.
0x07	NwkData	TlvLength	
0x08	Ip6AddrList	TlvLength	
0x09	MacCounters	Variable	Mac Counters Structure type parameter. See detailed table below for parameter structure.
0x0E	BatteryLevel	1	Battery Level
0x0F	SupplyVoltage	2	Supply Voltage
0x10	ChildTable	TlvLength	
0x11	ChannelPages	1	
0xA0	Fsl_Mac6lowPanNvmDataCount	Variable	MAC, 6lowpan (Mac Filtering, 6LowPan) NVM data save count Structure type parameter. See detailed table below for parameter structure.
0xA1	Fsl_NetworkNvmDataCount_c	TlvLength	Network (IP, DHCP, Leader Id Assignment, Trickle, MPL, ND) NVM data save count
0xA2	Fsl_SecurityNvmDataCount_c	Variable	Security NVM data save count Structure type parameter. See detailed table below for parameter structure.
0xA3	Fsl_FunctionalNvmDataCount_c	Variable	Attributes, events NVM data save count Structure type parameter. See detailed table below for parameter structure.
0xA4	Fsl_BoardName_c	TlvLength	Board name
0xA5	Fsl_UniqueMcuId_c	16	Unique MCU identifier

0xA6	Fsl_StackVersion_c	6	Attribute, stack version. Same format as StackVersionStruct. See Table 8 and Table 9 for more information.
0xA7	Fsl_SoftwareVersion_c	TlvLength	Attribute, software version

Table 47 LinkQuality Parameter Structure

Structure Parameter	Size (bytes)	Comments
MaxChildCount	1	
ChildCount	1	
cLinkQuality3	1	
cLinkQuality2	1	
cLinkQuality1	1	
LeaderCost	1	
IdSequence	1	

Table 48 LeaderData Parameter Structure

Structure Parameter	Size (bytes)	Comments
PartitionId	4	
Weighting	1	
DataVersion	1	
StableVersion	1	
LeaderId	1	

Table 49 MacCounters Parameter Structure

Structure Parameter	Size (bytes)	Comments
ifInUnknownProtos	4	ifInUnknownProtos Counter
ifInErrors	4	ifInErrors Counter
ifOutErrors	4	ifOutErrors Counter
ifInUcastPkts	4	ifInUcastPkts Counter
ifInBroadcastPkts	4	ifInBroadcastPkts Counter
ifInDiscards	4	ifInDiscards Counter
ifOutUcastPkts	4	ifOutUcastPkts Counter

ifOutBroadcastPkts	4	ifOutBroadcastPkts Counter
ifOutDiscards	4	ifOutDiscards Counter

Table 50 Fsl_Mac6lowPanNvmDataCount Parameter Structure

Structure Parameter	Size (bytes)	Comments
NvmDataSetId	2	Possible values: 0x0000: NvmId_SlwpStruct 0x0001: NvmId_ContextTable 0x000B: NvmId_macFilteringTable
DataSetCount	2	

Table 51 Fsl_SecurityNvmDataCount_c Parameter Structure

Structure Parameter	Size (bytes)	Comments
NvmDataSetId	2	Possible values: 0x0012: NvmId_MleSecInfo 0x0013: NvmId_MleActiveKeyIndex 0x0014: NvmId_MacOutSecFrameCounter
DataSetCount	2	

Table 52 Fsl_FunctionalNvmDataCount_c Parameter Structure

Structure Parameter	Size (bytes)	Comments
NvmDataSetId	2	Possible values: 0x0010: NvmId_ThrAttr 0x0011: NvmId_EventsTbl 0x0018: NvmId_ThrStringAttr 0x0019: NvmId_BrPrefixSetAttr
DataSetCount	2	

Table 53 - Fsl_StackVersion_c Parameter Structure

Structure Parameter	Size (bytes)	Comments
StackVendorOUI	3	Stack Vendor OUI Possible values: 0x006037: NXP

StackVersion	3	Stack Version

3.26 THR_MgmtDiagnosticReset.Request

Description

Management Network Diagnostic Reset request.

Parameters

Table 54 THR_MgmtDiagnosticReset.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x62
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
DestIpAddrLength	1	
DestIpAddr	DestIpAddrLength	Destination Ip Address
NumberOfTlvIds	1	Number of TLV Ids
TlvIds	Variable	Structure type parameter. See detailed table below for parameter structure.

Table 55 TlvIds Parameter Structure

Structure Parameter	Size (bytes)	Comments
TlvId	1	Possible values: 0x00: SourceAddr (Source Address TLV (EUI64)) 0x01: ShortAddr (Short Address TLV) 0x02: Mode (Mode TLV) 0x03: Timeout (Timeout - Sleepy polling rate) 0x04: LinkQuality (Link Quality) 0x05: RoutingTable (Routing table Tlv) 0x06: LeaderData (Leader Data) 0x07: NwkData (Network Data) 0x08: Ip6AddrList (List of all Ipv6 addresses registered by the device) 0x09: MacCounters (Mac Counters)

		0x0E: BatteryLevel (Battery Level) 0x0F: SupplyVoltage (Supply Voltage) 0x10: ChildTable (Structure containing information on all children) 0x11: ChannelPages (Supported IEEE 802.15.4 Channel Pages) 0xA0: Fsl_Mac6lowPanNvmDataCount (MAC, 6lowpan (Mac Filtering, 6LowPan) NVM data save count) 0xA1: Fsl_NetworkNvmDataCount_c (Network (IP, DHCP, Leader Id Assignment, Trickle, MPL, ND) NVM data save count) 0xA2: Fsl_SecurityNvmDataCount_c (Security NVM data save count) 0xA3: Fsl_FunctionalNvmDataCount_c (Attributes, events NVM data save count) 0xA4: Fsl_BoardName_c (Board name) 0xA5: Fsl_UniqueMcuId_c (Unique MCU identifier) 0xA6: Fsl_StackVersion_c (Attribute, stack version) 0xA7: Fsl_SoftwareVersion_c (Attribute, software version)

3.27 THR_MgmtDiagnosticReset.Confirm

Description

The confirmation to network diagnostic reset request.

Parameters

Table 56 THR_MgmtDiagnosticReset.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x62
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x03: InvalidParameter 0x04: NotPermitted

		0xFF: Error
CoapMsgId	2	Coap over the air message id - used for syncronization btw Req-Rsp

3.28 THR_MgmtDiagnosticResetRsp.Indication

Description

The response to Network diagnostic reset request.

Parameters

Table 57 THR_MgmtDiagnosticResetRsp.Indication Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x64
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: FailedNotallowed
CoapMsgId	2	Coap over the air message id - used for syncronization btw Req-Rsp

3.29 THR_MgmtReadMemory.Request

Description

Reads 'Length' octets from the given memory address.

Parameters

Table 58 - THR_MgmtReadMemory.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x65

Length	2	Length in bytes of the following parameters
Address	4	Memory address
Length	1	

3.30 THR_MgmtReadMemory.Confirm

Description

Memory content corresponding to the THR_MgmtReadMemory.Request.

Parameters

Table 59 - THR_MgmtReadMemory.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x65
Length	2	Length in bytes of the following parameters
Memory	PayloadLength	Memory content

3.31 THR_MgmtWriteMemory.Request

Description

Writes 'Length' octets to the given memory address.

Parameters

Table 60 - THR_MgmtWriteMemory.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x66
Length	2	Length in bytes of the following parameters
Address	4	Memory address
Length	1	
Value	Length	

3.32 THR_MgmtWriteMemory.Confirm

Description

Confirm of the THR_MgmtWriteMemory.Request command. Is always success.

Parameters

Table 61 - THR_MgmtWriteMemory.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x66
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success

3.33 THR_NwkDiscovery.Request

Description

This function starts the Thread Discovery Procedure.

Parameters

Table 62 THR_NwkDiscovery.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0xC0
Length	2	Length in bytes of the following parameters
InstanceID	1	Thread instance id

3.34 THR_NwkDiscovery.Confirm

Description

Confirmation of the nwk discovery request.

Parameters

Table 63 THR_NwkDiscovery.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0xC0
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0x02: Invalidinstance 0xFF: Theselectedconfigurationisnotvalid

3.35 THR_NwkDiscoveryStop.Request

Description

This function stops the Thread Discovery Procedure.

Parameters

Table 64 THR_NwkDiscoveryStop.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0xC1
Length	2	Length in bytes of the following parameters
InstanceID	1	Thread instance id

3.36 THR_NwkDiscoveryStop.Confirm

Description

Confirmation of the nwk discovery stop request.

Parameters

Table 65 THR_NwkDiscoveryStop.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0xC1
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0x02: Invalidinstance 0xFF: Theselectedconfigurationisnotvalid

3.37 THR_NwkScan.Request

Description

Start a network scan request.

Parameters

Table 66 THR_NwkScan.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x1A
Length	2	Length in bytes of the following parameters
InstanceID	1	
ScanChannelMask	4	Channel mask
ScanType	1	Scan type Possible values: 0x01: EnergyDetect 0x02: ActiveScan 0x03: EnergyDetectAndActiveScan
ScanDuration	1	Scan Duration. Exponential scale, as seen in the 802.15.4 specification (Range:1 - 14)
maxThrNwkToDiscover	2	maximum thread network to be discovered

3.38 THR_NwkScan.Confirm

Description

Confirmation of the scan network request.

Parameters

Table 67 THR_NwkScan.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x1A
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x02: Invalidinstance 0x03: InvalidParam 0x06: Nomemory 0xFF: Theselectedconfigurationisnotvalid

3.39 THR_PromoteAsRouter.Request

Description

Promotes device as router for the given reason.

Parameters

Table 68 - THR_PromoteAsRouter.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x94
Length	2	Length in bytes of the following parameters
InstanceID	1	
Reason	1	Promoting reason Possible values:

		0x02: TooFewRouters (Too Few Routers) 0x03: HaveChildIdRequest (Have Child Id Request) 0x04: ParentPartitionChange (Parent Partition Change)

3.40 THR_PromoteAsRouter.Confirm

Description

Confirmation of the THR_PromoteAsRouter.Request.

Parameters

Table 69 - THR_PromoteAsRouter.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x94
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK

3.41 THR_Reattach.Request

Description

Attaches to Thread network using the configured attributes: channel, panId, network key.

Parameters

Table 70 - THR_Reattach.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x80
Length	2	Length in bytes of the following parameters
InstanceID	1	

3.42 THR_Reattach.Confirm

Description

Confirmation of the THR_Attach.Request.

Parameters

Table 71 - THR_Reattach.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x80
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0x02: Invalidinstance 0xFF: Theselectedconfigurationisnotvalid

3.43 THR_SearchNwkWithAnounce.Request

Description

This function starts the Thread Discovery Procedure.

Parameters

Table 72 THR_SearchNwkWithAnounce.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0xC2
Length	2	Length in bytes of the following parameters
InstanceID	1	Thread instance id

3.44 THR_SearchNwkWithAnounce.Confirm

Description

Confirmation of the search for nwk with announce.

Parameters

Table 73 THR_SearchNwkWithAnounce.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0xC2
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0x02: Invalidinstance 0xFF: Theselectedconfigurationisnotvalid

3.45 THR_SendProactiveAddrNotif.Confirm

Description

THR_SendProactiveAddrNotif confirmation.

Parameters

Table 74 - THR_SendProactiveAddrNotif.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x76
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0x02: InvalidInstance 0x05: NotStarted

3.46 THR_SetDeviceConfig.Request

Description

Overwrites the default settings with the minimum data needed to start a node.

Parameters

Table 75 THR_SetDeviceConfig.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x16
Length	2	Length in bytes of the following parameters
ThrInstanceID	1	Thread instance ID
OutOfBandPreconfigured	1	
outOfBandChannel	1	
PanId	2	
ScanChannels	4	
ExtPanIdValueLength	1	
ExtendedPanId	ExtPanIdValueLength	Extended PAN ID
NwkNameSize	1	Network Name Size
NwkName	NwkNameSize	Network Name
PrefixValueLength	1	
MLPrefix	PrefixValueLength	
MLprefixSizeInBits	1	ML Prefix Size
MasterKey	16	Master Key

3.47 THR_SetDeviceConfig.Confirm

Description

Set device configuration confirm.

Parameters

Table 76 THR_SetDeviceConfig.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x16
Length	2	Length in bytes of the following parameters
Status	1	Attribute Status Possible values: 0x00: Success 0x02: Invalidinstance 0x03: Invalidparameter 0x04: Notpermitted 0x07: UnsupportedAttribute 0x08: EmptyEntry 0x09: InvalidValue

3.48 THR_SetManualSlaacIID.Confirm

Description

Confirmation of the THR_SetManualSlaacIID.Request.

Parameters

Table 77 THR_SetManualSlaacIID.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x75
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK

4 Thread Utility Messages

4.1 NWKU_EidToRlocMap.Request

Description

Displays the cache table that contains EID to RLOC mapping.

Parameters

Table 78 - NWKU_EidToRlocMap.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x6A
Length	2	0x00 - This message does not have any parameters

4.2 NWKU_EidToRlocMap.Response

Description

Response to EidToRlocMap request.

Parameters

Table 79 - NWKU_EidToRlocMap.Response Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x6A
Length	2	Length in bytes of the following parameters
NumberOfEntries	1	Number of cache entries
CacheEntry	Variable	Structure type parameter. See detailed table below for parameter structure.

Table 80 - CacheEntry Parameter Structure

Structure Parameter	Size (bytes)	Comments
EID	16	Destination

RLOC	2	NextHop

4.3 THR_BrPrefixAddEntry.Request

Description

Add prefix entry to border router attribute table.

Parameters

Table 81 THR_BrPrefixAddEntry.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x29
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
prefixLength	1	Prefix Length in bits
PrefixValue	16	Prefix value
PrefixFlagsReserved	1	
PrefixFlags	1	
prefixLifetime	4	
prefixAdvertised	1	
ExternalRouteFlags	1	
ExternalRouteLifetime	4	
ExternalRouteAdvertised	1	

4.4 THR_BrPrefixAddEntry.Confirm

Description

Confirmation of THR_BrPrefixAddEntry request.

Parameters

Table 82 THR_BrPrefixAddEntry.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x29
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x02: Invalidinstance 0x04: Notpermited 0x06: Nomemory 0xFF: Theselectedconfigurationisnotvalid

4.5 THR_BrPrefixGetTable.Request

Description

Get border router prefix table.

Parameters

Table 83 THR_BrPrefixGetTable.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x2A
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
StartIndex	1	Start Index
NoOfElements	1	No of elements to print

4.6 THR_BrPrefixGetTable.Confirm

Description

THR_BrPrefixGetTable response.

Parameters

Table 84 THR_BrPrefixGetTable.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x2A
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
NoOfElements	1	No Of Elements
BrPrefixEntry	Variable	Border router prefix entry Structure type parameter. See detailed table below for parameter structure.

Table 85 BrPrefixEntry Parameter Structure

Structure Parameter	Size (bytes)	Comments
prefixLength	1	Prefix Length in bits
PrefixValueLength	1	
PrefixValue	PrefixValueLength	Prefix value
PrefixFlagsReserved	1	Prefix Flags reserved
PrefixFlags	1	
prefixLifetime	4	
prefixAdvertised	1	
ExternalRouteFlags	1	
ExternalRouteLifetime	4	
ExternalRouteAdvertised	1	

4.7 THR_BrPrefixRemoveAll.Request

Description

Used to remove all Border Router prefix attributes.

Parameters

Table 86 THR_BrPrefixRemoveAll.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x2D
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id

4.8 THR_BrPrefixRemoveAll.Confirm

Description

Confirmation of THR_BrPrefixRemoveAll request.

Parameters

Table 87 THR_BrPrefixRemoveAll.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x2D
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x02: Invalidinstance 0x03: InvalidParameter 0x04: Notpermitted 0x06: Nomemory 0xFF: Theselectedconfigurationisnotvalid

4.9 THR_BrPrefixRemoveEntry.Request

Description

Remove a BrPrefix entry.

Parameters

Table 88 THR_BrPrefixRemoveEntry.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x2B
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
prefixLength	1	Prefix Length in bits
PrefixValue	16	Prefix value

4.10 THR_BrPrefixRemoveEntry.Confirm

Description

Confirmation of THR_BrPrefixRemoveEntry request.

Parameters

Table 89 THR_BrPrefixRemoveEntry.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x2B
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x02: Invalidinstance 0x03: InvalidParameter 0x06: Nomemory 0xFF: Theselectedconfigurationisnotvalid

4.11 THR_BrPrefixSync.Request

Description

Used to syncronize Border Router prefix attributes with the global network data information. This is also propagating the network data over the air.

Parameters

Table 90 THR_BrPrefixSync.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x2C
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id

4.12 THR_BrPrefixSync.Confirm

Description

Confirmation of THR_BrPrefixSync request.

Parameters

Table 91 THR_BrPrefixSync.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x2C
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x02: Invalidinstance 0x03: InvalidParameter 0x04: Notpermitted 0x06: Nomemory 0xFF: Theselectedconfigurationisnotvalid

4.13 THR_BrServiceAddEntry.Request

Description

Add a Service entry.

Parameters

Table 92 THR_BrServiceAddEntry.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x85
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
ServiceName	9	
ServerAddress	16	ServerIPAddress

4.14 THR_BrServiceAddEntry.Confirm

Description

Confirmation of THR_BrServiceAddEntry request.

Parameters

Table 93 THR_BrServiceAddEntry.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x85
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x02: Invalidinstance 0x03: InvalidParameter 0x03: NotPermitted 0x06: Nomemory 0xFF: Theselectedconfigurationisnotvalid

4.15 THR_BrServiceRemoveEntry.Request

Description

Remove a Service entry.

Parameters

Table 94 THR_BrServiceRemoveEntry.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x86
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
ServiceName	9	
ServerAddress	16	ServerIPAddress

4.16 THR_BrServiceRemoveEntry.Confirm

Description

Confirmation of THR_BrServiceRemoveEntry request.

Parameters

Table 95 THR_BrServiceRemoveEntry.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x86
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x02: Invalidinstance 0x03: InvalidParameter 0x06: Nomemory 0xFF: Theselectedconfigurationisnotvalid

4.17 THR_ChildUpdateToParent.Request

Description

Notifies parent of updated child parameters (sends Child Update request to the parent node).

Parameters

Table 96 THR_ChildUpdateToParent.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x2F
Length	2	Length in bytes of the following parameters
InstanceID	1	

4.18 THR_ChildUpdateToParent.Confirm

Description

Confirmation of the THR_ChildUpdateToParent.Request.

Parameters

Table 97 THR_ChildUpdateToParent.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x2F
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0x02: Invalidinstance 0x04: NotPermitted

4.19 THR_GenerateAllKeys.Request

Description

This will generate 3 keys: previous key associated with thrKeySeqNum-1, the current key associated with thrKeySeqNum and the next key associated with thrKeySeqNum+1.

Parameters

Table 98 THR_GenerateAllKeys.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x28
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
KeySequenceCounter	4	Key sequence counter

4.20 THR_GenerateAllKeys.Confirm

Description

Confirmation of THR_GenerateAllKeys.Request.

Parameters

Table 99 THR_GenerateAllKeys.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x28
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0x02: Invalidinstance 0xFF: Theselectedconfigurationisnotvalid

4.21 THR_GetAttr.Request

Description

Get Attribute.

Parameters

Table 100 THR_GetAttr.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x17
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
AttributeId	1	Possible values: 0x00: RandomExtendedAddr (Random MAC address used for communication inside the Thread nwk) 0x01: ShortAddress (Short Address) 0x02: ScanChannelMask (Scan channel mask) 0x03: ScanDuration (Scan duration) 0x04: Channel (802.15.4 channel) 0x05: ShortPanId (Short Pan Id) 0x06: ExtendedPanId (Extended Pan Id) 0x07: PermitJoin (Permit Join) 0x08: RxOnIdle (Rx on idle status) 0x09: SedPollInterval (The polling interval for the sleepy end device (SED)[milliseconds]) 0x0A: UniqueExtendedAddress (Unique Extended Address Enabled or disabled) 0x0B: VendorName (Vendor Name) 0x0C: ModelName (Model Name) 0x0D: SwVersion (Software version) 0x0E: StackVersion (Stack version) 0x0F: NwkCapabilities (Network Capabilities) 0x10: NwkName (Network Name) 0x11: DeviceType (Device type) 0x12: IsDevConnected (Is Device Connected?) 0x13: IsDevCommissioned (Is Device Commissioned?)

		0x14: PartitionId (Partition Identifier) 0x15: DeviceRole (Device role) 0x16: Security_NwkMasterKey (Network Master Key) 0x17: Security_NwkKeySeq (Network Key Sequence) 0x18: Security_PSKc (PSKc) 0x19: Security_PSKd (PSKd) 0x1A: VendorData (Vendor Data) 0x1C: MLPrefix (Mesh local prefix) 0x1D: MacFilteringEntry (Mac Filtering Entry) 0x20: Security_KeyRotationInterval (KeyRotationInterval) 0x21: ChildAddrMask (Child address mask) 0x22: ChildSEDTimeout (The timeout period included in the Child ID Request sent to the parent) 0x1B: ChildEDTimeout (The timeout period included in the Child ID Request sent to the parent) 0x23: EndDevice_ChildEDReqFullNwkData (If it is set TRUE The child End device should request the Full network data) 0x24: EndDevice_IsFastPollEnabled (IsFastPollEnabled) 0x25: SleepyEndDevice_FastPollInterval (FastPollInterval) 0x26: JoinLqiThreshold 0x27: ProvisioningURL (A URL for the Joiner to communicate to the user which Commissioning application is best to use to properly provision it to the appropriate service) 0x28: SelectBestChannelEDThreshold (The energy channel threshold to select the best channel when more channels are scan to form the network) 0x29: CommissionerMode (Select Commissioner mode) 0x30: BorderRouter_BrPrefixEntry (Border Router prefix entry) 0x31: SteeringData (Steering data) 0x33: Security_KeySwitchGuardTime (The thread Key switch guard time to prevent inadvertent key switching) 0x34: ParentHoldTime (Hold time on parent device in seconds) 0x35: Security_Policy (SecurityPolicy, O and N

		bits without the rotation times) 0x36: NVM_RestoreAutoStart (Stack starts automatically with NVM restore after reset) 0x37: NVM_Restore (Restore from NVM) 0x38: SlaacPolicy (Slaac IID generation policy) 0x39: IeeeExtendedAddr (IEEE extended mac address) 0x3A: LeaderWeight (Leader Weight) 0x40: HashIeeeAddr (SHA256 generated MAC address used during commissioning phase) 0x50: BorderRouter_BrGlobalOnMeshPrefix (Global /64 on-Mesh Prefix on Border Router) 0x51: BorderRouter_BrDefaultRouteOnMeshPrefix (Default Route of the /64 on-mesh prefix) 0x52: BorderRouter_BrExternalIfPrefix (Global /64 external interface prefix) 0x60: ActiveTimestamp (Active timestamp) 0x61: PendingChannel (Pending Channel) 0x62: PendingChannelMask (Pending Channel Mask) 0x63: PendingXpanId (Pending Extended PanId) 0x64: PendingMLprefix (Pending MeshLocal prefix) 0x65: PendingNwkMasterKey (Pending Master Key) 0x66: PendingNwkName (Pending Network Name) 0x67: PendingPanId (Pending Pan ID) 0x68: PendingPSK (Pending PSKc) 0x69: PendingSecurityPolicy (Pending Security Policy bits) 0x6A: PendingNwkKeyRotationInterval (Pending Key Rotation Interval [sec]) 0x6B: PendingDelayTimer (Pending Delay Timer [msec]) 0x6C: PendingActiveTimestamp (Pending Active Timestamp) 0x6D: PendingTimestamp (Pending Timestamp) 0x6E: CommissionerId (Commissioner string) 0x6F: JoinerPort (Joiner UDP Port) 0x70: CommissionerUdpPort (Commissioner UDP Port) 0x71: DiscoveryReqMacTxOptions (The default discovery request Mac Tx options)

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4.22 THR_GetAttr.Confirm

Description

Get attribute response.

Parameters

Table 101 THR_GetAttr.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x17
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
AttributeId	1	Possible values: 0x00: RandomExtendedAddr (Random MAC address used for communication inside the Thread nwk) 0x01: ShortAddress (Short Address) 0x02: ScanChannelMask (Scan channel mask) 0x03: ScanDuration (Scan duration) 0x04: Channel (802.15.4 channel) 0x05: ShortPanId (Short Pan Id) 0x06: ExtendedPanId (Extended Pan Id) 0x07: PermitJoin (Permit Join) 0x08: RxOnIdle (Rx on idle status) 0x09: SedPollInterval (The polling interval for SED (sleepy end device) [miliseconds]) 0x0A: UniqueExtendedAddress (Unique Extended Address Enabled or disabled) 0x0B: VendorName (Vendor Name) 0x0C: ModelName (Model Name) 0x0D: SwVersion (Software version) 0x0E: StackVersion (Stack version) 0x0F: NwkCapabilities (Network Capabilities)

		0x10: NwkName (Network Name) 0x11: DeviceType (Device type) 0x12: IsDevConnected (Is Device Connected?) 0x13: IsDevCommissioned (Is Device Commissioned?) 0x14: PartitionId (Partition Identifier) 0x15: DeviceRole (Device role) 0x16: Security_NwkMasterKey (Network Master Key) 0x17: Security_NwkKeySeq (Network Key Sequence) 0x18: Security_PSKc (PSKc) 0x19: Security_PSKd (PSKd) 0x1A: VendorData (Vendor Data) 0x1C: MLPrefix (Mesh local prefix) 0x1D: MacFilteringEntry (Mac Filtering Entry) 0x20: Security_KeyRotationInterval (KeyRotationInterval) 0x21: ChildAddrMask (Child address mask) 0x22: ChildSEDTimeout (The timeout period included in the Child ID Request sent to the parent) 0x1B: ChildEDTimeout (The timeout period included in the Child ID Request sent to the parent) 0x23: EndDevice_ChildEDReqFullNwkData (If it is set TRUE The child End device should request the Full network data) 0x24: EndDevice_IsFastPollEnabled (IsFastPollEnabled) 0x25: SleepyEndDevice_FastPollInterval (FastPollInterval) 0x26: JoinLqiThreshold 0x27: ProvisioningURL (A URL for the Joiner to communicate to the user which Commissioning application is best to use to properly provision it to the appropriate service) 0x28: SelectBestChannelEDThreshold (The energy channel threshold to select the best channel when more channels are scan to form the network) 0x29: CommissionerMode (Select Commissioner mode) 0x30: BorderRouter_BrPrefixEntry (Border Router prefix entry) 0x31: SteeringData (Steering data) 0x33: Security_KeySwitchGuardTime (The thread

		Key switch guard time to prevent inadvertent key switching) 0x34: ParentHoldTime (Hold time on parent device in seconds) 0x35: Security_Policy (SecurityPolicy, O and N bits without the rotation times) 0x36: NVM_RestoreAutoStart (Stack starts automatically with NVM restore after reset) 0x37: NVM_Restore (Restore from NVM) 0x38: SlaacPolicy (Slaac IID generation policy) 0x39: IeeeExtendedAddr (IEEE extended mac address) 0x3A: LeaderWeight (Leader Weight) 0x40: HashIeeeAddr (SHA256 generated MAC address used during commissioning phase) 0x50: BorderRouter_BrGlobalOnMeshPrefix (Global /64 on-Mesh Prefix on Border Router) 0x51: BorderRouter_BrDefaultRouteOnMeshPrefix (Default Route of the /64 on-mesh prefix) 0x52: BorderRouter_BrExternalIfPrefix (Global /64 external interface prefix) 0x60: ActiveTimestamp (Active timestamp) 0x61: PendingChannel (Pending Channel) 0x62: PendingChannelMask (Pending Channel Mask) 0x63: PendingXpanId (Pending Extended PanId) 0x64: PendingMLprefix (Pending MeshLocal prefix) 0x65: PendingNwkMasterKey (Pending Master Key) 0x66: PendingNwkName (Pending Network Name) 0x67: PendingPanId (Pending Pan ID) 0x68: PendingPSK (Pending PSKc) 0x69: PendingSecurityPolicy (Pending Security Policy bits) 0x6A: PendingNwkKeyRotationInterval (Pending Key Rotation Interval [sec]) 0x6B: PendingDelayTimer (Pending Delay Timer [msec]) 0x6C: PendingActiveTimestamp (Pending Active Timestamp) 0x6D: PendingTimestamp (Pending Timestamp) 0x6E: CommissionerId (Commissioner string)

		0x6F: JoinerPort (Joiner UDP Port) 0x70: CommissionerUdpPort (Commissioner UDP Port) 0x71: DiscoveryReqMacTxOptions (The default discovery request Mac Tx options)
Index	1	Index in table if required
Status	1	Attribute Status Possible values: 0x00: Success 0x02: Invalidinstance 0x03: Invalidparameter 0x04: Notpermitted 0x07: UnsupportedAttribute 0x08: EmptyEntry
AttrSize	1	Attribute size
AttributeValue	Variable	Attribute Value "Union" type parameter. Its structure is based on the value of parameter AttributeId. See detailed table below for parameter structure.

Table 102 AttributeValue Parameter Structure

AttributeId	Structure Parameter	Size (bytes)	Comments
0x00	RandomExtendedAddr	8	Random MAC address used for communication inside the Thread nwk
0x01	ShortAddress	2	Short Address
0x02	ScanChannelMask	4	Scan Channel mask
0x03	ScanDuration	4	Scan Duration
0x04	Channel	1	
0x05	ShortPanId	2	Short PanId
0x06	ExtendedPanId	AttrSize	Extended PanId
0x07	PermitJoin	1	Permit Join
0x08	RxOnIdle	1	
0x09	SedPollInterval	4	The polling interval for the sleepy end device

			(SED)[milliseconds]]
0x0A	UniqueExtendedAddress	1	Use unique extended address
0x0B	VendorName	AttrSize	Vendor Name
0x0C	ModelName	AttrSize	Model Name
0x0D	SwVersion	AttrSize	Software version
0x0E	StackVersionStruct	Variable	Stack Version Structure Structure type parameter. See detailed table below for parameter structure.
0x0F	NwkCapabilities	1	Network Capabilities
0x10	NwkName	AttrSize	Network Name
0x11	DeviceType	1	Device Type Possible values: 0x00: EndNode 0x01: Combo (Combo (Leader/Router/EndDevice/SleepyEndDevice))
0x12	IsDevConnected	1	Is Device Connected?
0x13	IsDevCommissioned	1	Is Device Commissioned?
0x14	PartitionId	4	Partition Identifier
0x15	DeviceRole	1	Device Role Possible values: 0x00: Disconnected 0x01: SleepyEndDevice 0x02: MinimalEndDevice 0x03: FullEndDevice 0x04: RouterEligibleEndDevice 0x05: Router 0x06: Leader
0x16	Security_NwkMasterKey	AttrSize	Network Master Key
0x17	Security_NwkKeySeq	4	Network key sequence
0x18	Security_PSKc	AttrSize	PSKc

0x19	Security_PSKd	AttrSize	PSKd
0x1A	VendorData	AttrSize	Vendor Data
0x1C	MLPrefix	Variable	ML Prefix Structure type parameter. See detailed table below for parameter structure.
0x1D	MacFilteringEntry	Variable	Mac Filtering Entry Structure type parameter. See detailed table below for parameter structure.
0x20	Security_KeyRotationInterval	4	key rotation interval
0x21	ChildAddrMask	AttrSize	
0x22	ChildSEDTimeout	4	The timeout period included in the Child ID Request sent to the parent
0x1B	ChildEDTimeout	4	The timeout period included in the Child ID Request sent to the parent
0x23	EndDevice_ChildEDReqFullNwkData	1	If it is set TRUE The child End device should request the Full network data
0x24	EndDevice_IsFastPollEnabled	1	IsFastPollEnabled
0x25	SleepyEndDevice_FastPollInterval	4	FastPollInterval
0x26	JoinLqiThreshold	1	
0x27	ProvisioningURL	AttrSize	
0x28	SelectBestChannelEDThreshold	1	
0x29	CommissionerMode	1	The device is a thread native commissioner Possible values: 0x00: Disabled (Disable Commissioner on this device) 0x01: Collapsed (Enable Collapsed Commissioner) 0x02: Native (Enable Native Commissioner) 0x04: Ethernet (Enable Ethernet Commissioner) 0x08: OnMesh (Enable OnMesh Commissioner)
0x30	BorderRouter_BrPrefixEntry	Variable	Border router prefix attribute entry Structure type parameter. See detailed table below for parameter structure.

0x31	SteeringData	AttrSize	Steering Data
0x33	Security_KeySwitchGuardTime	4	The thread Key switch guard time to prevent inadvertent key switching
0x34	ParentHoldTime	2	Hold Time on parent in seconds
0x35	Security_Policy	1	SecurityPolicy, O and N bits without the rotation times
0x36	NVM_RestoreAutoStart	1	Stack starts automatically with NVM restore after reset
0x37	NVM_Restore	1	Restore from NVM
0x38	SlaacPolicy	1	Slaac Policy Possible values: 0x00: SlaacRandom (Slaac IID is constructed random) 0x01: SlaacManual (Slaac IID is constructed by the application) 0x02: SlaacMlIid (Slaac IID is constructed using the ML-EID IID)
0x39	IeeeExtendedAddr	8	IEEE extended mac address
0x3A	LeaderWeight	1	Leader Weight
0x40	HashIeeeAddr	8	IEEE extended mac address
0x50	BorderRouter_BrGlobalOnMeshPrefix	Variable	Global /64 on-Mesh Prefix on Border Router Structure type parameter. See detailed table below for parameter structure.
0x51	BorderRouter_BrDefaultRouteOnMeshPrefix	1	Default Route of the /64 on-mesh prefix
0x52	BorderRouter_BrExternalIfPrefix	Variable	Global /64 external interface prefix Structure type parameter. See detailed table below for parameter structure.
0x60	ActiveTimestamp	Variable	Active timestamp Structure type parameter. See detailed table below for parameter structure.
0x61	CommissionerID	AttrSize	
0x62	JoinerPort	2	Joiner Port
0x63	CommissionerUdpPort	2	Commissioner UDP Port

Table 103 MLPrefix Parameter Structure

Structure Parameter	Size (bytes)	Comments
PrefixValueLength	1	
PrefixData	PrefixValueLength	Prefix Data
PrefixLength	1	Prefix length in bits

Table 104 MacFilteringEntry Parameter Structure

Structure Parameter	Size (bytes)	Comments
ExtendedAddress	8	Extended Address
ShortAddress	2	Short Address
LinkIndicator	1	The neighbor Quality Link Indicator: Good Link: 20 - 255 Medium Link: 11 - 20 Bad Link: 3 - 10
BlockNeighbor	1	Add this neighbor to blacklist

Table 105 BorderRouter_BrPrefixEntry Parameter Structure

Structure Parameter	Size (bytes)	Comments
prefixLength	1	Prefix Length in bits
PrefixValueLength	1	
PrefixValue	PrefixValueLength	Prefix value
PrefixFlagsReserved	1	
PrefixFlags	1	
prefixLifetime	4	
prefixAdvertised	1	
ExternalRouteFlags	1	
ExternalRouteLifetime	4	
ExternalRouteAdvertised	1	

Table 106 BorderRouter_BrGlobalOnMeshPrefix Parameter Structure

Structure Parameter	Size (bytes)	Comments
PrefixValueLength	1	
PrefixData	PrefixValueLength	Prefix Data
PrefixLength	1	Prefix length in bits

Table 107 BorderRouter_BrExternalIfPrefix Parameter Structure

Structure Parameter	Size (bytes)	Comments
PrefixValueLength	1	
PrefixData	PrefixValueLength	Prefix Data
PrefixLength	1	Prefix length in bits

Table 108 ActiveTimestamp Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttributeSize_6	1	Attribute size
AttributeSize_2	1	Attribute size
ActiveSeconds	AttributeSize_6	Active seconds
ActiveTicks	AttributeSize_2	Active ticks

4.23 THR_GetChildrenTable.Request

Description

Get the children table.

Parameters

Table 109 THR_GetChildrenTable.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x23
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
StartIndex	1	Start Index
NoOfElements	1	No of elements to print

4.24 THR_GetChildrenTable.Confirm

Description

Get neighbor table response.

Parameters

Table 110 THR_GetChildrenTable.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x23
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
NoOfElements	1	No Of Elements
NeighborEntry	Variable	Neighbor Table Entry Structure type parameter. See detailed table below for parameter structure.

Table 111 NeighborEntry Parameter Structure

Structure Parameter	Size (bytes)	Comments
ExtendedAddress	8	Extended Address
ShortAddress	2	Short Address
LastCommTime	4	Last Communication Time
LastRSSI	1	
Timeout	4	

4.25 THR_GetNeighborInfo.Request

Description

Get detailed info about a neighbor.

Parameters

Table 112 THR_GetNeighborInfo.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x10
Length	2	Length in bytes of the following parameters

InstanceId	1	Instance Id
ShortAddress	2	Short Address of the neighbor

4.26 THR_GetNeighborInfo.Confirm

Description

Get detailed info about neighbor response.

Parameters

Table 113 THR_GetNeighborInfo.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x10
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Neighbornotfound
NeighborInfo	Variable	Neighbor Info "Union" type parameter. Its structure is based on the value of parameter Status. See detailed table below for parameter structure.

Table 114 - NeighborInfo Parameter Structure

Status	Structure Parameter	Size (bytes)	Comments
0x00	Success	Variable	Structure type parameter. See detailed table below for parameter structure.
0x01	NeighborNotFound	1	

Table 115 - Success Parameter Structure

Structure Parameter	Size (bytes)	Comments
ExtendedAddress	8	
ShortAddress	2	
LastCommTime	4	

InRSSI	1	
Timeout(sec)	4	Timeout in seconds

4.27 THR_GetNeighborTable.Request

Description

Get the neighbor table.

Parameters

Table 116 THR_GetNeighborTable.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x24
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
StartIndex	1	Start Index
NoOfElements	1	No of elements to print

4.28 THR_GetNeighborTable.Confirm

Description

Get neighbor table response.

Parameters

Table 117 THR_GetNeighborTable.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x24
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
NoOfElements	1	No Of Elements

NeighborEntry	Variable	Neighbor Table Entry Structure type parameter. See detailed table below for parameter structure.

Table 118 NeighborEntry Parameter Structure

Structure Parameter	Size (bytes)	Comments
ExtendedAddress	8	Extended Address
ShortAddress	2	Short Address
LastCommTime	4	Last Communication Time
LastRSSI	1	

4.29 THR_GetParent.Request

Description

Get parent request.

Parameters

Table 119 THR_GetParent.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x1E
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id

4.30 THR_GetParent.Confirm

Description

Get parent confirm.

Parameters

Table 120 THR_GetParent.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF

OpCode	1	0x1E
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0x02: InvalidInstance 0xFF: Error
InstanceId	1	Instance Id
ShortAddress	2	Short Address
ExtendedAddress	8	Extended address

4.31 THR_GetRoutingTable.Request

Description

Get the routing table.

Parameters

Table 121 THR_GetRoutingTable.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x25
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
StartIndex	1	Start Index
NoOfElements	1	No of elements to print

4.32 THR_GetRoutingTable.Confirm

Description

Get routing table response.

Parameters

Table 122 THR_GetRoutingTable.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x25
Length	2	Length in bytes of the following parameters
NoOfElements	1	No Of Elements
IdSequenceNb	1	Id Sequence Number
RouterIDMask	8	Router ID Mask
RoutingEntry	Variable	Routing Entry Structure type parameter. See detailed table below for parameter structure.

Table 123 RoutingEntry Parameter Structure

Structure Parameter	Size (bytes)	Comments
RouterID	1	Router ID
ShortAddress	2	Short Address
NextHop	2	Next Hop
Cost	1	Route Cost
nIn	1	Incoming LQI
nOut	1	Outgoing LQI

4.33 THR_GetThreadIpAddr.Request

Description

Get thread Ip address.

Parameters

Table 124 THR_GetThreadIpAddr.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE

OpCode	1	0x19
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
AddressType	1	Address type Possible values: 0x00: Link_Local_64 0x01: MLEID 0x02: RLOC 0x03: Global 0x04: Anycast
Data	Variable	"Union" type parameter. Its structure is based on the value of parameter AddressType. See detailed table below for parameter structure.

Table 125 - Data Parameter Structure

AddressType	Structure Parameter	Size (bytes)	Comments
0x00	Link_Local_64	1	
0x01	Link_Local_16	1	
0x02	Mesh_Local_64	1	
0x03	Mesh_Local_16	1	
0x04	Global	Variable	Global Addresses Structure type parameter. See detailed table below for parameter structure.

Table 126 - Global Parameter Structure

Structure Parameter	Size (bytes)	Comments
StartIndex	1	Start Index
NoOfElements	1	Number of elements

Table 127 - Anycast Parameter Structure

Structure Parameter	Size (bytes)	Comments
StartIndex	1	Start Index
NoOfElements	1	Number of elements

4.34 THR_GetThreadIpAddr.Confirm

Description

Get thread IP addr confirm.

Parameters

Table 128 THR_GetThreadIpAddr.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x19
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
Status	1	Possible values: 0x00: Success 0x01: Failed 0x02: InvalidInstance 0xFF: Error
AddressType	1	
NoOfIpAddr	1	Number of Ip Addresses
AddressList	16 x NoOfIpAddr	

4.35 THR_Identify.Request

Description

Send command to identify board by its LEDs.

Parameters

Table 129 THR_LeaderRemoveRouterId.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x69

Length	2	0x00 - This message does not have any parameters

4.36 THR_Identify.Confirm

Description

Confirmation of the board identification command.

Parameters

Table 130 THR_LeaderRemoveRouterId.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x69
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success

4.37 THR_LeaderRemoveRouterId.Request

Description

Remove router id. Available only for Leader.

Parameters

Table 131 THR_LeaderRemoveRouterId.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x26
Length	2	Length in bytes of the following parameters
InstanceId	1	
RouterShortAddr	2	Router short address.

4.38 THR_LeaderRemoveRouterId.Confirm

Description

Confirmation of remove router id request.

Parameters

Table 132 THR_LeaderRemoveRouterId.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x26
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0x02: Invalidinstance 0xFF: Theselectedconfigurationisnotvalid

4.39 THR_SendProactiveAddrNotif.Request

Description

Send ADDR_NTF.ntf - Proactive Address Notification.

Parameters

Table 133 - THR_SendProactiveAddrNotif.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x76
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
DestinationIPAddress	16	

4.40 THR_SetAttr.Request

Description

Set attribute request .

Parameters

Table 134 THR_SetAttr.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x18
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
AttributeId	1	Possible values: 0x00: RandomExtendedAddr (Random MAC address used for communication inside the Thread nwk) 0x02: ScanChannelMask (Scan channel mask) 0x03: ScanDuration (Scan duration) 0x04: Channel (802.15.4 channel) 0x05: ShortPanId (Short Pan Id) 0x06: ExtendedPanId (Extended Pan Id) 0x08: RxOnIdle (Rx on idle status) 0x09: SedPollInterval (The polling interval for the sleepy end device (SED)[milliseconds]) 0x0A: UniqueExtendedAddress (Unique Extended Address Enabled or disabled) 0x0B: VendorName (Vendor Name) 0x0C: ModelName (Model Name) 0x0D: SwVersion (Software version) 0x0F: NwkCapabilities (Network Capabilities) 0x10: NwkName (Network Name) 0x12: IsDevConnected (Is Device Connected?) 0x13: IsDevCommissioned (Is Device Commissioned?) 0x14: PartitionId (Partition Identifier) 0x15: DeviceRole (Device role) 0x16: Security_NwkMasterKey (Network Master Key) 0x17: Security_NwkKeySeq (Network Key

		Sequence) 0x18: Security_PSKc (PSKc - network password) 0x19: Security_PSKd (PSKd - device password) 0x1A: VendorData (Vendor Data) 0x1C: MLPrefix (Mesh local prefix) 0x20: Security_KeyRotationInterval (Key rotation interval) 0x22: ChildSEDTimeout (The timeout period included in the Child ID Request sent to the parent) 0x23: EndDevice_ChildEDReqFullNwkData (If it is set TRUE The child End device should request the Full network data) 0x24: EndDevice_IsFastPollEnabled (Is Fast Poll Interval?) 0x25: SleepyEndDevice_FastPollInterval (Fast Poll Interval) 0x26: JoinLqiThreshold (Join Lqi threshold) 0x27: ProvisioningURL (A URL for the Joiner to communicate to the user which Commissioning application is best to use to properly provision it to the appropriate service) 0x28: SelectBestChannelEDThreshold (The energy channel threshold to select the best channel when more channels are scan to form the network) 0x30: BorderRouter_BrPrefixEntry (Border Router prefix entry) 0x33: Security_KeySwitchGuardTime (the thread Key switch guard time to prevent inadvertent key switching) 0x34: ParentHoldTime (The hoold time period in seconds used by the parent to hold the packets for SED devices) 0x35: Security_Policy (Security Policy, O and N bits without the rotation time) 0x36: NVM_RestoreAutoStart (Stack starts automatically with NVM restore after reset) 0x37: NVM_Restore (Restore from NVM) 0x38: SlaacPolicy (Specifies the policy for generating the IID of an address configured using SLAAC) 0x39: IeeeExtendedAddr (IEEE extended mac address) 0x3A: LeaderWeight (Leader Weight)

		0x41: DoNotGeneratePartitionId (Avoid generation of a random partition ID) 0x50: BorderRouter_BrGlobalOnMeshPrefix (Global /64 on-Mesh Prefix on Border Router) 0x51: BorderRouter_BrDefaultRouteOnMeshPrefix (Default Route of the /64 on-mesh prefix) 0x52: BorderRouter_BrExternalIfPrefix (Global /64 external interface prefix) 0x60: ActiveTimestamp (Active timestamp) 0x6F: JoinerPort (Joiner Port)
Index	1	Index in table if required
AttributeValue	Variable	Attribute Value "Union" type parameter. Its structure is based on the value of parameter AttributeId. See detailed table below for parameter structure.

Table 135 - AttributeValue Parameter Structure

AttributeId	Structure Parameter	Size (bytes)	Comments
0x00	RandomExtendedAddr	Variable	Random Extended Address Structure type parameter. See detailed table below for parameter structure.
0x02	ScanChannelMask	Variable	Scan Channel mask Structure type parameter. See detailed table below for parameter structure.
0x03	ScanDuration	Variable	Scan duration in seconds (per channel) Structure type parameter. See detailed table below for parameter structure.
0x04	Channel	Variable	Structure type parameter. See detailed table below for parameter structure.
0x05	ShortPanId	Variable	Short PanId Structure type parameter. See detailed table below for parameter structure.
0x06	ExtendedPanId	Variable	Extended PanId Structure type parameter. See detailed table below for parameter structure.
0x08	PermitJoin	Variable	Permit Join Structure type parameter. See detailed table below for parameter structure.

0x09	RxOnIdle	Variable	Structure type parameter. See detailed table below for parameter structure.
0x0A	SedPollInterval	Variable	The polling interval for the sleepy end device (SED) [miliseconds] Structure type parameter. See detailed table below for parameter structure.
0x0B	UniqueExtendedAddress	Variable	Unique Extended Address Enabled or disabled Structure type parameter. See detailed table below for parameter structure.
0x0C	VendorName	Variable	Vendor Name Structure type parameter. See detailed table below for parameter structure.
0x0D	ModelName	Variable	Model Name Structure type parameter. See detailed table below for parameter structure.
0x0F	SwVersion	Variable	Software version Structure type parameter. See detailed table below for parameter structure.
0x10	NwkCapabilities	Variable	Network Capabilities Structure type parameter. See detailed table below for parameter structure.
0x12	NwkName	Variable	Network Name Structure type parameter. See detailed table below for parameter structure.
0x13	DeviceType	Variable	Device Type Structure type parameter. See detailed table below for parameter structure.
0x14	IsDevConnected	Variable	Is Device Connected? Structure type parameter. See detailed table below for parameter structure.
0x15	IsDevCommissioned	Variable	Is Device Commissioned? Structure type parameter. See detailed table below for parameter structure.
0x16	PartitionId	Variable	Partition Identifier Structure type parameter. See detailed table below for parameter structure.
0x17	DeviceRole	Variable	Device Role Structure type parameter. See detailed table

			below for parameter structure.
0x18	Security_NwkMasterKey	Variable	Network Master Key Structure type parameter. See detailed table below for parameter structure.
0x19	Security_NwkKeySeq	Variable	Network key sequence Structure type parameter. See detailed table below for parameter structure.
0x1A	Security_PSKc	Variable	PSKc - network password Structure type parameter. See detailed table below for parameter structure.
0x1C	Security_PSKd	Variable	PSKd - device password Structure type parameter. See detailed table below for parameter structure.
0x20	VendorData	Variable	Vendor Data Structure type parameter. See detailed table below for parameter structure.
0x22	MLPrefix	Variable	Mesh Local Prefix Structure type parameter. See detailed table below for parameter structure.
0x23	Security_KeyRotationInterval	Variable	Key Rotation Interval Structure type parameter. See detailed table below for parameter structure.
0x24	ChildSEDTimeout	Variable	The timeout period included in the Child ID Request sent to the parent Structure type parameter. See detailed table below for parameter structure.
0x25	ChildEDTimeout	Variable	The timeout period included in the Child ID Request sent to the parent Structure type parameter. See detailed table below for parameter structure.
0x26	EndDevice_ChildEDReqFullNwkData	Variable	If it is set TRUE The child End device should request the Full network data Structure type parameter. See detailed table below for parameter structure.
0x27	EndDevice_IsFastPollEnabled	Variable	Is Fast Poll Interval enabled? Structure type parameter. See detailed table below for parameter structure.
0x28	SleepyEndDevice_FastPollInterval	Variable	Fast Poll Interval Structure type parameter. See detailed table below for parameter structure.

0x30	JoinLqiThreshold	Variable	Structure type parameter. See detailed table below for parameter structure.
0x33	ProvisioningURL	Variable	Structure type parameter. See detailed table below for parameter structure.
0x34	SelectBestChannelEDThreshold	Variable	The energy channel threshold to select the best channel when more channels are scan to form the network Structure type parameter. See detailed table below for parameter structure.
0x35	CommissionerMode	Variable	The device is a thread native commissioner Structure type parameter. See detailed table below for parameter structure.
0x36	BorderRouter_BrPrefixEntry	Variable	Border router prefix attribute entry Structure type parameter. See detailed table below for parameter structure.
0x37	Security_KeySwitchGuardTime	Variable	The thread Key switch guard time to prevent inadvertent key switching Structure type parameter. See detailed table below for parameter structure.
0x38	ParentHoldTime	Variable	Hold time on parent in seconds Structure type parameter. See detailed table below for parameter structure.
0x39	Security_Policy	Variable	Security Policy, O and N bits without the rotation time Structure type parameter. See detailed table below for parameter structure.
0x3A	NVM_RestoreAutoStart	Variable	Stack starts automatically with NVM restore after reset Structure type parameter. See detailed table below for parameter structure.
0x41	NVM_Restore	Variable	Restore from NVM Structure type parameter. See detailed table below for parameter structure.
0x50	SlaacPolicy	Variable	Structure type parameter. See detailed table below for parameter structure.
0x51	LeaderWeight	Variable	Leader Weight Structure type parameter. See detailed table below for parameter structure.
0x52	IeeeExtendedAddr	Variable	Ieee Extended Address Structure type parameter. See detailed table

			below for parameter structure.
0x60	DoNotGeneratePartitionId	Variable	Avoid generation of a random partition ID Structure type parameter. See detailed table below for parameter structure.
0x6F	BorderRouter_BrGlobalOnMeshPrefix	Variable	Global /64 on-Mesh Prefix on Border Router Structure type parameter. See detailed table below for parameter structure.

Table 136 - RandomExtendedAddr Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	8	

Table 137 - ScanChannelMask Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	4	

Table 138 - ScanDuration Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 139 - Channel Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 140 - ShortPanId Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	2	

Table 141 - ExtendedPanId Parameter Structure

Structure Parameter	Size (bytes)	Comments

AttrSize	1	Attribute size
Value	AttrSize	

Table 142 - PermitJoin Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 143 - RxOnIdle Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 144 - SedPollInterval Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	4	

Table 145 - UniqueExtendedAddress Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 146 - VendorName Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	AttrSize	

Table 147 - ModelName Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	AttrSize	

Table 148 - SwVersion Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	AttrSize	

Table 149 - NwkCapabilities Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 150 - NwkName Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	AttrSize	

Table 151 - DeviceType Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	Possible values: 0x00: EndNode 0x01: Combo (Combo (Leader/Router/EndDevice/SleepyEndDevice))

Table 152 - IsDevConnected Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 153 - IsDevCommissioned Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table -78 - PartitionId Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	4	

Table 154 - DeviceRole Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	Possible values: 0x00: Disconnected 0x01: SleepyEndDevice 0x02: MinimalEndDevice 0x03: FullEndDevice 0x04: RouterEligibleEndDevice 0x05: Router 0x06: Leader

Table 155 - Security_NwkMasterKey Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	AttrSize	

Table 156 - Security_NwkKeySeq Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	4	

Table 157 - Security_PSKc Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	AttrSize	

Table 158 - Security_PSKd Parameter Structure

Structure Parameter	Size (bytes)	Comments

AttrSize	1	Attribute size
Value	AttrSize	

Table 159 - VendorData Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	AttrSize	

Table 160 - MLPrefix Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	Variable	Structure type parameter. See detailed table below for parameter structure.

Table 161 - Security_KeyRotationInterval Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	4	

Table 162 - ChildSEDTimeout Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	4	

Table 163 - ChildEDTimeout Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	4	

Table 164 - EndDevice_ChildEDReqFullNwkData Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 165 - EndDevice_IsFastPollEnabled Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 166 - SleepyEndDevice_FastPollInterval Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	4	

Table 167 - JoinLqiThreshold Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 168 - ProvisioningURL Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	AttrSize	

Table 169 - SelectBestChannelEDThreshold Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 170 - CommissionerMode Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	Possible values: 0x00: Disabled (Disable Commissioner on this device) 0x01: Collapsed (Enable Collapsed Commissioner) 0x02: Native (Enable Native Commissioner) 0x04: Ethernet (Enable Ethernet Commissioner)

		0x08: OnMesh (Enable OnMesh Commissioner)

Table 171 - BorderRouter_BrPrefixEntry Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	Variable	Structure type parameter. See detailed table below for parameter structure.

Table 172 - Security_KeySwitchGuardTime Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	4	

Table 173 - ParentHoldTime Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	2	

Table 174 - Security_Policy Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 175 - NVM_RestoreAutoStart Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 176 - NVM_Restore Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 177 - SlaacPolicy Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	Possible values: 0x00: SlaacRandom (Slaac IID is constructed random) 0x01: SlaacManual (Slaac IID is constructed by the application) 0x02: SlaacMlIid (Slaac IID is constructed using the ML-EID IID)

Table 178 - LeaderWeight Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 179 - IeeeExtendedAddr Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	8	

Table 180 - DoNotGeneratePartitionId Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	1	

Table 181 - BorderRouter_BrGlobalOnMeshPrefix Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	Variable	Structure type parameter. See detailed table below for parameter structure.

Table 182 - BorderRouter_BrDefaultRouteOnMeshPrefix Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size

Value	1	

Table 183 - BorderRouter_BrExternalIfPrefix Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	Variable	Structure type parameter. See detailed table below for parameter structure.

Table 184 - ActiveTimestamp Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
ActiveSeconds	6	Attribute size
ActiveTicks	2	Attribute size

Table 185 - JoinerPort Parameter Structure

Structure Parameter	Size (bytes)	Comments
AttrSize	1	Attribute size
Value	2	

Table 186 - Value Parameter Structure

Structure Parameter	Size (bytes)	Comments
PrefixValueLength	1	
PrefixData	PrefixValueLength	Prefix Data
PrefixLength	1	Prefix length in bits

Table 187 - Value Parameter Structure

Structure Parameter	Size (bytes)	Comments
prefixLength	1	Prefix Length in bits
PrefixValueLength	1	
PrefixValue	PrefixValueLength	Prefix value
PrefixFlagsReserved	1	
PrefixFlags	1	
prefixLifetime	4	

prefixAdvertised	1	
ExternalRouteFlags	1	
ExternalRouteLifetime	4	
ExternalRouteAdvertised	1	

Table 188 - Value Parameter Structure

Structure Parameter	Size (bytes)	Comments
PrefixValueLength	1	
PrefixData	PrefixValueLength	Prefix Data
PrefixLength	1	Prefix length in bits

Table 189 - Value Parameter Structure

Structure Parameter	Size (bytes)	Comments
PrefixValueLength	1	
PrefixData	PrefixValueLength	Prefix Data
PrefixLength	1	Prefix length in bits

4.41 THR_SetAttr.Confirm

Description

Set attribute confirm.

Parameters

Table 190 THR_SetAttr.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x18
Length	2	Length in bytes of the following parameters
Status	1	Attribute Status Possible values: 0x00: Success 0x02: Invalidinstance

		0x03: Invalidparameter 0x04: Notpermitted 0x07: UnsupportedAttribute 0x08: EmptyEntry 0x09: InvalidValue

4.42 THR_SetManualSlaacIID.Request

Description

Sets the IID.

Parameters

Table 191 THR_SetManualSlaacIID.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x75
Length	2	Length in bytes of the following parameters
IID	8	

4.43 THR_SetNwkIdTimeout.Request

Description

Set network ID timeout in seconds.

Parameters

Table 192 THR_SetNwkIdTimeout.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x2E
Length	2	Length in bytes of the following parameters
TimeoutInSeconds	4	

4.44 THR_SetNwkIdTimeout.Confirm

Description

Set network ID timeout confirm.

Parameters

Table 193 THR_SetNwkIdTimeout.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x2E
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x04: Notpermitted

4.45 THR_SetThreshold.Request

Description

Set thread threshold.

Parameters

Table 194 THR_SetThreshold.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x20
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
ThresholdType	1	Threshold type Possible values: 0x00: RouterUpgradeThreshold (The number of active routers on the Thread network below which a REED may device to become a Router) 0x01: RouterDowngradeThreshold (The number

		of active Routers on the Thread Network above which an active Router may decide to become a Child) 0x02: MinDowngradeNeighbors (The minimum number of neighbours with link quality 2 or better that a Router must have to downgrade to a REED) 0x03: MaxAllowedRouters (The maximum number of Routers that a Thread Network may contain) 0x04: ContextReuseDelay (The maximum time a context can be used for decompression after the Prefix has been removed.)
Value	1	

4.46 THR_SetThreshold.Confirm

Description

Thread set threshold confirm.

Parameters

Table 195 THR_SetThreshold.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x20
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x03: InvalidParameter

4.47 THR_SwitchKey.Request

Description

Switch the active key sequence (which is specified by nwkKeySeq attribute) with the KeySequenceCounter. Note that the key for KeySequenceCounter should be already generated using THR_GenerateAllKeys.Request.

Parameters

Table 196 THR_SwitchKey.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x27
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
KeySequenceCounter	4	Key sequence counter

4.48 THR_SwitchKey.Confirm

Description

Confirmation of ThrSwitchKey request.

Parameters

Table 197 THR_SwitchKey.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x27
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0x02: Invalidinstance 0xFF: Theselectedconfigurationisnotvalid

5 Mesh Commissioning Protocol Messages

5.1 MESHCOP_AddExpectedJoiner.Request

Description

Add an expected Joiner in the Commissioner's list.

Parameters

Table 198 MESHCOP_AddExpectedJoiner.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x42
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
Selected	1	Allow this device?
EuiType	1	The type of the EUI Possible values: 0x00: ShortEUI (Add a short EUI) 0x01: LongEUI (Add a long EUI)
EUI	Variable	"Union" type parameter. Its structure is based on the value of parameter EuiType. See detailed table below for parameter structure.
PSKdSize	1	The size of the PSKd
PSKd	PSKdSize	

Table 199 EUI Parameter Structure

EuiType	Structure Parameter	Size (bytes)	Comments
0x00	ShortEUI	4	
0x01	LongEUI	8	

5.2 MESHCOP_AddExpectedJoiner.Confirm

Description

Confirmation for adding a Joiner in the Commissioner list.

Parameters

Table 200 MESHCOP_AddExpectedJoiner.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x42
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error

5.3 MESHCOP_GetExpectedJoiner.Request

Description

Get an expected Joiner from the Commissioner's list.

Parameters

Table 201 MESHCOP_GetExpectedJoiner.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x43
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
EuiType	1	The type of the EUI Possible values: 0x00: ShortEUI (Add a short EUI) 0x01: LongEUI (Add a long EUI)

EUI	Variable	"Union" type parameter. Its structure is based on the value of parameter EuiType. See detailed table below for parameter structure.

Table 202 EUI Parameter Structure

EuiType	Structure Parameter	Size (bytes)	Comments
0x00	ShortEUI	4	
0x01	LongEUI	8	

5.4 MESHCOP_GetExpectedJoiner.Confirm

Description

Confirmation for getting information about Joiner from the Commissioner list.

Parameters

Table 203 MESHCOP_GetExpectedJoiner.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x43
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error
Selected	1	Possible values: 0x00: FALSE 0x01: TRUE
PSKdSize	1	Length of PSKd
PSKd	PSKdSize	

5.5 MESHCOP_MgmNwkForm.Request

Description

Sets the network start parameters.

Parameters

Table 204 MESHCOP_MgmNwkForm.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x47
Length	2	Length in bytes of the following parameters
IP Address	16	The IPv6 address of the device added to network
NwkNameSize	1	Network Name Size
NwkName	NwkNameSize	Network Name
Network Master Key	16	
PSKcSize	1	Length of PSKc
PSKc	PSKcSize	
Channel	1	
InstanceId	1	Thread instance Id

5.6 MESHCOP_MgmNwkForm.Confirm

Description

Network form confirmation message.

Parameters

Table 205 MESHCOP_MgmNwkForm.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x47
Length	2	Length in bytes of the following parameters

Status	1	Possible values: 0x00: Success 0x04: Notpermitted

5.7 MESHCOP_MgmtActiveGet.Request

Description

Management Active Get Request.

Parameters

Table 206 MESHCOP_MgmtActiveGet.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0xA2
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
IP Address	16	The IPv6 address
NumberOfTlvIds	1	Number of TLV Ids
TlvIds	Variable	Structure type parameter. See detailed table below for parameter structure.

Table 207 TlvIds Parameter Structure

Structure Parameter	Size (bytes)	Comments
TlvId	1	Possible values: 0x00: Channel (Network Channel) 0x35: ChannelMask (Network Channel Mask) 0x02: XpanId (Network Extended Pan ID) 0x07: MeshLocalUla (Network Mesh Local ULA prefix) 0x05: MasterKey (Network Master Key) 0x03: NetworkName (Network Name) 0x01: PanId (Network Pan ID) 0x04: PSKc (Network PSKc) 0x0C: SecurityPolicy (Network Security Policy)

		0x0E: ActiveTimestamp (Active Commissioner Dataset Timestamp) 0x38: ScanDuration (Scan Duration (not allowed - for certification purposes)) 0x39: EnergyList (Energy List (not allowed - for certification purposes))

5.8 MESHCOP_MgmtActiveGet.Confirm

Description

Confirmation for the Management Active Get request.

Parameters

Table 208 MESHCOP_MgmtActiveGet.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0xA2
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error
Length	4	Length of the next field
TLVs	Length	

5.9 MESHCOP_MgmtActiveSet.Request

Description

Management Active Set Request.

Parameters

Table 209 MESHCOP_MgmtActiveSet.Request Parameters

Parameter	Size (bytes)	Comments

OpGroup	1	0xCE
OpCode	1	0xA3
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
SessionIdEnable	1	
SessionId	2 x SessionIdEnable	
BorderRouterLocatorEnable	1	
BorderRouterLocator	2 x BorderRouterLocatorEnable	Border Router Locator
NewSesswionIdEnable	1	
NewSesswionId	2 x NewSesswionIdEnable	Send new session ID
SteeringDataEnable	1	
SteeringDataSize	SteeringDataEnable	The size of the Steering Data
SteeringData	SteeringDataSize	
ChannelEnable	1	
Channel	ChannelEnable	
ChannelMaskEnable	1	
ChannelPage	ChannelEnable	
ChannelMaskLength	ChannelMaskEnable	
ChannelMask	ChannelMaskLength	
XpanIdEnable	1	
XpanId	8 x XpanIdEnable	
MLPrefixEnable	1	
MLPrefix	Variable	ML Prefix Structure type parameter. See detailed table below for parameter structure.
MasterKeyEnable	1	
MasterKey	16 x MasterKeyEnable	
NwkNameEnable	1	

NwkNameSize	NwkNameEnable	Network Name Size
NwkName	NwkNameSize	Network Name
PanIdEnable	1	
PanId	2 x PanIdEnable	
PSKcEnable	1	
PskcSize	PSKcEnable	
PSKc	PskcSize	
PolicyEnable	1	
RotationInterval	2 x PolicyEnable	
Policy	PolicyEnable	
ActiveTimestampEnable	1	Will be applied after Delay Timer expires
ActiveSeconds	6 x ActiveTimestampEnable	Active timestamp seconds
ActiveTicks	2 x ActiveTimestampEnable	Active timestamp ticks
PendingTimestampEnable	1	Used to compare multiple Pending Set requests
PendingSeconds	6 x PendingTimestampEnable	Pending timestamp Seconds
PendingTicks	2 x PendingTimestampEnable	Pending timestamp ticks
DelayTimerEnable	1	
Timeout	4 x DelayTimerEnable	Timeout(ms)
FutureTlvEnable	1	Future Tlv Enable - for certification purposes
FutureTlv	Variable	Future TLV Structure - for certification purposes Structure type parameter. See detailed table below for parameter structure.

Table 210 MLPrefix Parameter Structure

Structure Parameter	Size (bytes)	Comments
PrefixValueLength	1	
PrefixData	PrefixValueLength	Prefix Data
PrefixLength	1	Prefix length in bits

Table 211 - FutureTlv Parameter Structure

Structure Parameter	Size (bytes)	Comments
FutureTlvSize	1	Future Tlv Size - for certification purposes
FutureTlvValue		Future Tlv Value - for certification purposes

5.10 MESHCOP_MgmtActiveSet.Confirm

Description

Confirmation for the MESHCOP_MgmtActiveSet.Request.

Parameters

Table 212 MESHCOP_MgmtActiveSet.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0xA3
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error

5.11 MESHCOP_MgmtCommissionerGet.Request

Description

Management Commissioner Get Request.

Parameters

Table 213 MESHCOP_MgmtCommissionerGet.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0xA0
Length	2	Length in bytes of the following parameters

InstanceId	1	Thread instance Id
IP Address	16	The IPv6 address
NumberOfTlvIds	1	Number of TLV Ids
TlvIds	Variable	Structure type parameter. See detailed table below for parameter structure.

Table 214 TlvIds Parameter Structure

Structure Parameter	Size (bytes)	Comments
TlvId	1	Possible values: 0x09: BorderRouterLocator (Border Router Locator) 0x0B: CommissionerSessionId (Commissioner Session ID) 0x08: SteeringData (Steering Data) 0x00: Channel (Network Channel) 0x35: ChannelMask (Network Channel Mask) 0x02: XpanId (Network Extended Pan ID) 0x07: MeshLocalUla (Network Mesh Local ULA prefix) 0x05: MasterKey (Network Master Key) 0x03: NetworkName (Network Name) 0x01: PanId (Network Pan ID) 0x04: PSKc (Network PSKc) 0x0C: SecurityPolicy (Network Security Policy) 0x0E: ActiveTimestamp (Active Commissioner Dataset Timestamp)

5.12 MESHCOP_MgmtCommissionerGet.Confirm

Description

Confirmation for the Management Commissioner Get request.

Parameters

Table 215 MESHCOP_MgmtCommissionerGet.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF

OpCode	1	0xA0
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error
Length	4	Length of the next field
TLVs	Length	

5.13 MESHCOP_MgmtCommissionerSet.Request

Description

Management Commissioner Set Request.

Parameters

Table 216 - MESHCOP_MgmtCommissionerSet.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0xA1
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
IP Address	16	The IPv6 address
SessionIdEnable	1	
SessionId	2 x SessionIdEnable	
BorderRouterLocatorEnable	1	
BorderRouterLocator	2 x BorderRouterLocatorEnable	Border Router Locator
NewSessionIdEnable	1	
NewSessionId	2 x NewSessionIdEnable	Send new session ID
SteeringDataEnable	1	

SteeringDataSize	SteeringDataEnable	The size of the Steering Data
SteeringData	SteeringDataSize	
ChannelEnable	1	
Channel	ChannelEnable	
ChannelMaskEnable	1	
ChannelPage	ChannelMaskEnable	
ChannelMaskLength	ChannelMaskEnable	
ChannelMask	ChannelMaskLength	
XpanIdEnable	1	
XpanId	8 x XpanIdEnable	
MLPrefixEnable	1	
MLPrefix	Variable	ML Prefix Structure type parameter. See detailed table below for parameter structure.
MasterKeyEnable	1	
MasterKey	16 x MasterKeyEnable	
NwkNameEnable	1	
NwkNameSize	NwkNameEnable	Network Name Size
NwkName	NwkNameSize	Network Name
PanIdEnable	1	
PanId	2 x PanIdEnable	
PSKcEnable	1	
PskcSize	PSKcEnable	
PSKc	PskcSize	
PolicyEnable	1	
RotationInterval	2 x PolicyEnable	
Policy	PolicyEnable	
ActiveTimestampEnable	1	Will be applied after Delay Timer expires

ActiveSeconds	6 x ActiveTimestampEnable	Active timestamp seconds
ActiveTicks	2 x ActiveTimestampEnable	Active timestamp ticks
PendingTimestampEnable	1	Used to compare multiple Pending Set requests
PendingSeconds	6 x PendingTimestampEnable	Pending timestamp Seconds
PendingTicks	2 x PendingTimestampEnable	Pending timestamp ticks
DelayTimerEnable	1	
Timeout	4 x DelayTimerEnable	Timeout(ms)
FutureTlvEnable	1	Future Tlv Enable - for certification purposes
FutureTlv	Variable	Future TLV Structure - for certification purposes Structure type parameter. See detailed table below for parameter structure.

Table 217 - MLPrefix Parameter Structure

Structure Parameter	Size (bytes)	Comments
PrefixValueLength	1	
PrefixData	PrefixValueLength	Prefix Data
PrefixLength	1	Prefix length in bits

Table 218 - FutureTlv Parameter Structure

Structure Parameter	Size (bytes)	Comments
FutureTlvSize	1	Future Tlv Size - for certification purposes
FutureTlvValue		Future Tlv Value - for certification purposes

5.14 MESHCOP_MgmtCommissionerSet.Confirm

Description

Confirmation for the MESHCOP_MgmtCommissionerSet.Request.

Parameters

Table 219 MESHCOP_MgmtCommissionerSet.Confirm Parameters

Parameter	Size (bytes)	Comments

OpGroup	1	0xCF
OpCode	1	0xA1
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error

5.15 MESHCOP_MgmtEdReport.Confirm

Description

Energy detect report.

Parameters

Table 220 MESHCOP_MgmtEdReport.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0xAB
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error
ScanChannelMask	4	Channel mask
Length	1	
EnergyList	Length	

5.16 MESHCOP_MgmtGet.Request

Description

Management Get request.

Parameters

Table 221 MESHCOP_MgmtGet.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x4C
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
NumberOfTlvIds	1	Number of TLV Ids
TlvIds	Variable	Structure type parameter. See detailed table below for parameter structure.

Table 222 TlvIds Parameter Structure

Structure Parameter	Size (bytes)	Comments
TlvId	1	Possible values: 0x04: PSKc (Network PSKc) 0x00: Channel (Network Channel) 0x01: PanId (Network Pan ID) 0x02: XpanId (Network Extended Pan ID) 0x03: NetworkName (Network Name) 0x05: MasterKey (Network Master Key) 0x06: KeySequence (Network Key Sequence) 0x07: MeshLocalUla (Network Mesh Local ULA prefix) 0x08: SteeringData (Network Steering Data) 0x09: BorderRouterLocator (Network Border Router Locator) 0x0A: CommissionerID (Network Commissioner ID) 0x0B: CommissionerSessionID (Network Commissioner Session ID) 0x0C: SecurityPolicy (Network Security Policy) 0x0E: ActiveTimestamp (Network Commissioner Dataset Timestamp)

5.17 MESHCOP_MgmtGet.Confirm

Description

Confirmation for the Management Get request.

Parameters

Table 223 MESHCOP_MgmtGet.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x4C
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error
Type	1	Possible values: 0x00: Channel (Network Channel) 0x35: ChannelMask (Network Channel Mask) 0x01: PanId (Network Pan ID) 0x02: XpanId (Network Extended Pan ID) 0x03: NetworkName (Network Name) 0x04: PSKc (Network PSKc) 0x05: MasterKey (Network Master Key) 0x06: KeySequence (Network Key Sequence) 0x07: MeshLocalUla (Network Mesh Local ULA prefix) 0x08: SteeringData (Network Steering Data) 0x09: BorderRouterLocator (Network Border Router Locator) 0x0A: CommissionerID (Network Commissioner ID) 0x0B: CommissionerSessionID (Network Commissioner Session ID) 0x0C: SecurityPolicy (Network Security Policy)

		0x34: DelayTimer (Delay Timer) 0x0E: ActiveTimestamp (Active Commissioner Dataset Timestamp) 0x33: PendingTimestamp (Pending Commissioner Dataset Timestamp)
Length	1	Length of the next field
Value	Variable	"Union" type parameter. Its structure is based on the value of parameter Type. See detailed table below for parameter structure.

Table 224 Value Parameter Structure

Type	Structure Parameter	Size (bytes)	Comments
0x00	Channel	1	
0x35	ChannelMask	Length	
0x01	PanId	Length	
0x02	XpanId	Length	
0x03	NetworkName	Length	
0x04	PSKc	Length	
0x05	MasterKey	Length	
0x06	KeySequence	Length	
0x07	MeshLocalUla	Length	
0x08	SteeringData	Length	
0x09	BorderRouterLocator	Length	
0x0A	CommissionerID	Length	
0x0B	CommissionerSessionID	Length	
0x0C	SecurityPolicy	Length	
0x34	DatasetTimestamp	Length	

5.18 MESHCOP_MgmtPanIdConflict.Confirm

Description

Pan ID conflict detected.

Parameters

Table 225 MESHCOP_MgmtPanIdConflict.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0xA9
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error
ScanChannelMask	4	Channel mask
PanId	2	

5.19 MESHCOP_MgmtPendingGet.Request

Description

Management Pending Get Request.

Parameters

Table 226 MESHCOP_MgmtPendingGet.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0xA4
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
IP Address	16	The IPv6 address
NumberOfTlvIds	1	Number of TLV Ids
TlvIds	Variable	Structure type parameter. See detailed table below for parameter structure.

Table 227 TlvIds Parameter Structure

Structure Parameter	Size (bytes)	Comments
TlvId	1	Possible values: 0x00: Channel (Network Channel) 0x35: ChannelMask (Network Channel Mask) 0x02: XpanId (Network Extended Pan ID) 0x07: MeshLocalUla (Network Mesh Local ULA prefix) 0x05: MasterKey (Network Master Key) 0x03: NetworkName (Network Name) 0x01: PanId (Network Pan ID) 0x04: PSKc (Network PSKc) 0x0C: SecurityPolicy (Network Security Policy) 0x34: DelayTimer (Delay Timer) 0x0E: ActiveTimestamp (Active Commissioner Dataset Timestamp) 0x33: PendingTimestamp (Pending Commissioner Dataset Timestamp)

5.20 MESHCOP_MgmtPendingGet.Confirm

Description

Confirmation for the Management Pending Get request.

Parameters

Table 228 MESHCOP_MgmtPendingGet.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0xA4
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error
Length	4	Length of the next field

TLVs	Length	

5.21 MESHCOP_MgmtPendingSet.Request

Description

Management Pending Set Request.

Parameters

Table 229 MESHCOP_MgmtPendingSet.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0xA5
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
IP Address	16	The IPv6 address
SessionIdEnable	1	
SessionId	2 x SessionIdEnable	
BorderRouterLocatorEnable	1	
BorderRouterLocator	2 x BorderRouterLocatorEnable	Border Router Locator
NewSesswionIdEnable	1	
NewSesswionId	2 x NewSesswionIdEnable	Send new session ID
SteeringDataEnable	1	
SteeringDataSize	SteeringDataEnable	The size of the Steering Data
SteeringData	SteeringDataSize	
ChannelEnable	1	
Channel	ChannelEnable	
ChannelMaskEnable	1	
ChannelPage	ChannelMaskEnable	
ChannelMaskLength	ChannelMaskEnable	

ChannelMask	ChannelMaskLength	
XpanIdEnable	1	
XpanId	8 x XpanIdEnable	
MLPrefixEnable	1	
MLPrefix	Variable	ML Prefix Structure type parameter. See detailed table below for parameter structure.
MasterKeyEnable	1	
MasterKey	16 x MasterKeyEnable	
NwkNameEnable	1	
NwkNameSize	NwkNameEnable	Network Name Size
NwkName	NwkNameSize	Network Name
PanIdEnable	1	
PanId	2 x PanIdEnable	
PSKcEnable	1	
PskcSize	PSKcEnable	
PSKc	PskcSize	
PolicyEnable	1	
RotationInterval	2 x PolicyEnable	
Policy	PolicyEnable	
ActiveTimestampEnable	1	Will be applied after Delay Timer expires
ActiveSeconds	6 x ActiveTimestampEnable	Active timestamp seconds
ActiveTicks	2 x ActiveTimestampEnable	Active timestamp ticks
PendingTimestampEnable	1	Used to compare multiple Pending Set requests
PendingSeconds	6 x PendingTimestampEnable	Pending timestamp Seconds
PendingTicks	2 x PendingTimestampEnable	Pending timestamp ticks
DelayTimerEnable	1	
Timeout	4 x DelayTimerEnable	Timeout(ms)

FutureTlvEnable	1	Future Tlv Enable - for certification purposes
FutureTlv	Variable	Future TLV Structure - for certification purposes Structure type parameter. See detailed table below for parameter structure.

Table 230 MLPrefix Parameter Structure

Structure Parameter	Size (bytes)	Comments
PrefixValueLength	1	
PrefixData	PrefixValueLength	Prefix Data
PrefixLength	1	Prefix length in bits

Table 231 - FutureTlv Parameter Structure

Structure Parameter	Size (bytes)	Comments
FutureTlvSize	1	Future Tlv Size - for certification purposes
FutureTlvValue		Future Tlv Value - for certification purposes

5.22 MESHCOP_MgmtPendingSet.Confirm

Description

Confirmation for the MESHCOP_MgmtPendingSet.Request.

Parameters

Table 232 MESHCOP_MgmtPendingSet.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0xA5
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error

5.23 MESHCOP_MgmtSendAnnounceBegin.Request

Description

Request to send a MGMT_ANNOUNCE_BEGIN.ntf.

Parameters

Table 233 MESHCOP_MgmtSendAnnounceBegin.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0xA7
Length	2	Length in bytes of the following parameters
ThrInstanceID	1	Thread instance ID
CommissionerSessionID	2	Commissioner Session ID. Set to 0 to use the current value on the device.
ChannelMask	4	Channel mask
Count	1	The number of MGMT_ANNOUNCE.ntf that the destination device should send.
Period	2	The period between successive MGMT_ANNOUNCE.ntf frames
IP Address	16	The IPv6 address of the destination. Unicast or multicast.

5.24 MESHCOP_MgmtSendAnnounceBegin.Confirm

Description

Confirmation for the MESHCOP_MgmtSendAnnounceBegin.Request.

Parameters

Table 234 MESHCOP_MgmtSendAnnounceBegin.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0xA7
Length	2	Length in bytes of the following parameters

Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error

5.25 MESHCOP_MgmtSendEdScan.Request

Description

Search for Pan ID conflict.

Parameters

Table 235 MESHCOP_MgmtSendEdScan.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0xAA
Length	2	Length in bytes of the following parameters
ThrInstanceID	1	Thread instance ID
ScanChannelMask	4	Channel mask
Count	1	The number of IEEE 802.15.4 ED Scans per channel
Period	2	The period between successive IEEE 802.15.4 ED Scans
ScanDuration	2	The IEEE 802.15.4 ScanDuration to use when performing an IEEE 802.15.4 ED Scan
IP Address	16	The IPv6 address of the device added to network

5.26 MESHCOP_MgmtSendEdScan.Confirm

Description

Confirmation for the ED scan.

Parameters

Table 236 MESHCOP_MgmtSendEdScan.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0xAA
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error

5.27 MESHCOP_MgmtSendPanIdQuery.Request

Description

Search for Pan ID conflict.

Parameters

Table 237 MESHCOP_MgmtSendPanIdQuery.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0xA8
Length	2	Length in bytes of the following parameters
ThrInstanceID	1	Thread instance ID
ScanChannelMask	4	Channel mask
PanId	2	
IP Address	16	The IPv6 address of the device added to network

5.28 MESHCOP_MgmtSendPanIdQuery.Confirm

Description

Confirmation for the Pan ID query.

Parameters

Table 238 MESHCOP_MgmtSendPanIdQuery.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0xA8
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error

5.29 MESHCOP_MgmtSet.Request

Description

Management Set request.

Parameters

Table 239 MESHCOP_MgmtSet.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x4B
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
PSKcEnable	1	
PSKcSize	PSKcEnable	PSKc size
PSKc	PSKcSize	
NetworkNameEnable	1	
NetworkNameSize	NetworkNameEnable	Network Name Size
NetworkName	NetworkNameSize	Network Name

PolicyEnable	1	
Policy	PolicyEnable	
KeyRotationInterval	2 x PolicyEnable	
TimestampEnable	1	
Seconds	6 x TimestampEnable	
Ticks	2 x TimestampEnable	

5.30 MESHCOP_MgmtSet.Confirm

Description

Confirmation for the Management Set request.

Parameters

Table 240 MESHCOP_MgmtSet.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x4B
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error

5.31 MESHCOP_RemoveAllExpectedJoiners.Request

Description

Remove all expected joiners from the Commissioner's list

Parameters

Table 241 - MESHCOP_RemoveAllExpectedJoiners Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x45
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id

5.32 MESHCOP_RemoveAllExpectedJoiners.Confirm

Description

Confirmation for removing all Joiners from the Commissioner's list.

Parameters

Table 242 MESHCOP_RemoveAllExpectedJoiners.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x45
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error

5.33 MESHCOP_RemoveExpectedJoiner.Request

Description

Remove an expected joiner from the Commissioner's list.

Parameters

Table 243 MESHCOP_RemoveExpectedJoiner.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE

OpCode	1	0x44
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
EuiType	1	The type of the EUI Possible values: 0x00: ShortEUI (Add a short EUI) 0x01: LongEUI (Add a long EUI)
EUI	Variable	"Union" type parameter. Its structure is based on the value of parameter EuiType. See detailed table below for parameter structure.

Table 244 EUI Parameter Structure

EuiType	Structure Parameter	Size (bytes)	Comments
0x00	ShortEUI	4	
0x01	LongEUI	8	

5.34 MESHCOP_RemoveExpectedJoiner.Confirm

Description

Confirmation for removing a Joiner from the Commissioner list.

Parameters

Table 245 MESHCOP_RemoveExpectedJoiner.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x44
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error

5.35 MESHCOP_SetCommissionerCredential.Request

Description

Setup the commissioner credential to connect to a network.

Parameters

Table 246 MESHCOP_SetCommissionerCredential.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x4D
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
PSKcSize	1	PSKc size
PSKc	PSKcSize	
XpanIdSize	1	
XpanId	XpanIdSize	Extended Pan Id
NetworkNameSize	1	Network Name Size
NetworkName	NetworkNameSize	Network Name

5.36 MESHCOP_SetCommissionerCredential.Confirm

Description

Confirmation for setting up a Native Commissioner credential.

Parameters

Table 247 MESHCOP_SetCommissionerCredential.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x4D
Length	2	Length in bytes of the following parameters
Status	1	Possible values:

		0x00: Success 0x01: Failed 0xFF: Error

5.37 MESHCOP_StartCommissioner.Request

Description

Start Commissioner request.

Parameters

Table 248 MESHCOP_StartCommissioner.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x40
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id

5.38 MESHCOP_StartCommissioner.Confirm

Description

Confirmation for starting a Commissioner.

Parameters

Table 249 MESHCOP_StartCommissioner.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x40
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error

5.39 MESHCOP_StartNativeCommissioner.Request

Description

Start Native Commissioner request.

Parameters

Table 250 MESHCOP_StartNativeCommissioner.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x4F
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id

5.40 MESHCOP_StartNativeCommissioner.Confirm

Description

Confirmation for starting a Native Commissioner.

Parameters

Table 251 MESHCOP_StartNativeCommissioner.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x4F
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error

5.41 MESHCOP_StopCommissioner.Request

Description

Stop Commissioner request.

Parameters

Table 252 MESHCOP_StopCommissioner.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x41
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id

5.42 MESHCOP_StopCommissioner.Confirm

Description

Confirmation for stopping a Commissioner.

Parameters

Table 253 MESHCOP_StopCommissioner.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x41
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x01: Failed 0xFF: Error

5.43 MESHCOP_SyncSteeringData.Request

Description

Sync steering data request on the network with the expected joiners.

Parameters

Table 254 MESHCOP_SyncSteeringData.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x46
Length	2	Length in bytes of the following parameters
InstanceId	1	Thread instance Id
EuiMask	1	The EUI mask Possible values: 0x00: AllZeroes (All zeroes(joining is disabled)) 0x01: AllFFs (Allow all devices are allowed) 0x02: ExpectedJoiners (Allow only expected Joiners)

5.44 MESHCOP_SyncSteeringData.Confirm

Description

Confirmation for syncing the steering data.

Parameters

Table 255 MESHCOP_SyncSteeringData.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x46
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success

		0x01: Failed 0xFF: Error

6 IP Tunnel Messages

6.1 SerialTun_IPPacketSend.Request

Description

Send an IP packet over serial TUN interface.

Parameters

Table 256 SerialTun_IPPacketSend.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0xF2
Length	2	Length in bytes of the following parameters
Size	2	The number of payload bytes
Data	Size	

6.2 SerialTun_IPPacketReceived.Confirm

Description

Received an IP packet from the VTUN interface.

Parameters

Table 257 SerialTun_IPPacketReceived.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0xF3
Length	2	Length in bytes of the following parameters
IPpayload	1	IP payload

6.3 SerialTun_LinkIndication.Request

Description

Inform the black-box of TUN/TAP link changes.

Parameters

Table 258 - SerialTun_LinkIndication.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0xF1
Length	2	Length in bytes of the following parameters
State	1	State of the TUN/TAP link Possible values: 0x00: Down 0x01: Up

6.4 SerialTun_LinkIndication.Confirm

Description

Inform the black-box of TUN/TAP link changes.

Parameters

Table 259 - SerialTun_LinkIndication.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0xF1
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0xFF: ERROR

7 Socket Messages

7.1 Socket-Accept.Request

Description

Accept a connection from a client.

Parameters

Table 258 Socket-Accept.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x09
Length	2	Length in bytes of the following parameters
Socket Index	1	The socket index.

7.2 Socket-Accept.Confirm

Description

Confirmation of the socket accept request.

Parameters

Table 259 Socket-Accept.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x09
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0xFF: ERROR
Connected Socket Index	1	The connected socket index.

7.3 Socket-Bind.Request

Description

Sets the local information for a socket.

Parameters

Table 260 Socket-Bind.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x02
Length	2	Length in bytes of the following parameters
Socket Index	1	The socket index.
Local Ip Address	16	The local IP address.
Local Port	2	The local port.
Socket Domain	1	Possible values: 0x0A: AF_INET6 0x02: AF_INET

7.4 Socket-Bind.Confirm

Description

Confirmation of the socket bind request.

Parameters

Table 261 Socket-Bind.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x02
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK

		0xFF: ERROR

7.5 Socket-Connect.Request

Description

Connect the socket to a remote socket (in case of UDP, just set the remote information).

Parameters

Table 262 Socket-Connect.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x07
Length	2	Length in bytes of the following parameters
Socket Index	1	The socket index.
Remote Ip Address	16	The remote IP address.
Remote Port	2	The remote port.
Socket Domain	1	Possible values: 0x0A: AF_INET6 0x02: AF_INET

7.6 Socket-Connect.Confirm

Description

Confirmation of the socket connect request.

Parameters

Table 263 Socket-Connect.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x07

Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0xFF: ERROR

7.7 Socket-Create.Request

Description

Creates a new socket in the IP stack.

Parameters

Table 264 Socket-Create.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x00
Length	2	Length in bytes of the following parameters
Socket Domain	1	Possible values: 0x0A: AF_INET6 0x02: AF_INET
Socket Type	1	Possible values: 0x00: Datagram 0x01: Stream
Socket Protocol	1	Possible values: 0x11: UDP 0x06: TCP

7.8 Socket-Create.Confirm

Description

Confirmation of the socket create request.

Parameters

Table 265 Socket-Create.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x00
Length	2	Length in bytes of the following parameters
Socket Index	1	The socket index.

7.9 Socket-GetOption.Request

Description

Get socket option.

Parameters

Table 266 Socket-GetOption.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x0B
Length	2	Length in bytes of the following parameters
Socket Index	1	The socket index.
Socket Level	1	Possible values: 0x00: SOL_SOCKET 0x01: SOL_IP 0x02: SOL_UDP 0x03: SOL_TCP
Socket Option	2	Possible values: 0x0000: SO_TYPE 0x1002: SO_RCVBUF

7.10 Socket-GetOption.Confirm

Description

Get socket option.

Parameters

Table 267 Socket-GetOption.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x0B
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0xFF: ERROR
Option Value	4	

7.11 Socket-Listen.Request

Description

Prepare a socket for accepting a connection.

Parameters

Table 268 Socket-Listen.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x08
Length	2	Length in bytes of the following parameters
Socket Index	1	The socket index.
Backlog	1	

7.12 Socket-Listen.Confirm

Description

Confirmation of the socket listen request.

Parameters

Table 269 Socket-Listen.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x08
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0xFF: ERROR

7.13 Socket-Receive.Request

Description

Get data received on a connected socket (usually used for sockets over TCP).

Parameters

Table 270 Socket-Receive.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x05
Length	2	Length in bytes of the following parameters
Socket Index	1	The socket index.
Data Size	2	
Flags	1	Possible values: 0x40: MSG_DONTWAIT

7.14 Socket-Receive.Confirm

Description

Confirmation of the socket receive request.

Parameters

Table 271 Socket-Receive.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x05
Length	2	Length in bytes of the following parameters
Size	2	The number of payload bytes
Data	Size	

7.15 Socket-ReceiveFrom.Request

Description

Get data received on a connected socket (usually used for sockets over UDP).

Parameters

Table 272 Socket-ReceiveFrom.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x06
Length	2	Length in bytes of the following parameters
Socket Index	1	The socket index.
Data Size	2	
Flags	1	Possible values: 0x40: MSG_DONTWAIT

7.16 Socket-ReceiveFrom.Confirm

Description

Confirmation of the socket receive request.

Parameters

Table 273 Socket-ReceiveFrom.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x06
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0xFF: ERROR
RemoteIpAddress	16	The remote IP address.
RemotePort	2	The remote port.
Size	2	The number of payload bytes
Data	Size	

7.17 Socket-Send.Request

Description

Sends data using a connected socket (usually used for sockets over TCP).

Parameters

Table 274 Socket-Send.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x03
Length	2	Length in bytes of the following parameters

Socket Index	1	The socket index.
Flags	1	Possible values: 0x40: MSG_DONTWAIT
Size	2	The number of payload bytes
Data	Size	

7.18 Socket-Send.Confirm

Description

Confirmation of the socket send request.

Parameters

Table 275 Socket-Send.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x03
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0xFF: ERROR

7.19 Socket-SendTo.Request

Description

Sends data using a connected socket (usually used for sockets over UDP).

Parameters

Table 276 Socket-SendTo.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE

OpCode	1	0x04
Length	2	Length in bytes of the following parameters
Socket Index	1	The socket index.
Flags	1	Possible values: 0x40: MSG_DONTWAIT
Size	2	The number of payload bytes
RemotePort	2	The remote port.
RemoteIpAddress	16	The remote IP address.
Data	Size	

7.20 Socket-SendTo.Confirm

Description

Confirmation of the socket send request.

Parameters

Table 277 Socket-SendTo.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x04
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0xFF: ERROR

7.21 Socket-SetOption.Request

Description

Set socket options.

Parameters

Table 278 Socket-SetOption.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x0A
Length	2	Length in bytes of the following parameters
Socket Index	1	The socket index.
Socket Level	1	Possible values: 0x00: SOL_SOCKET 0x01: SOL_IP 0x02: SOL_UDP 0x03: SOL_TCP
Socket Option	2	Possible values: 0x0000: SO_TYPE 0x0019: SO_BINDTODEVICE 0x0004: SO_REUSEADDR 0x0012: IPV6_MULTICAST_HOPS 0x0010: IPV6_UNICAST_HOPS 0x0014: IPV6_JOIN_GROUP 0x0021: IP_MULTICAST_TTL 0x0023: IP_ADD_MEMBERSHIP 0x0024: IP_DROP_MEMBERSHIP
Socket Option Value	4	

7.22 Socket-SetOption.Confirm

Description

Confirmation of the socket set option request.

Parameters

Table 279 Socket-SetOption.Confirm Parameters

Parameter	Size (bytes)	Comments

OpGroup	1	0xCF
OpCode	1	0x0A
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0xFF: ERROR

7.23 Socket-Shutdown.Request

Description

Closes a connection for a socket and clears any data that it uses.

Parameters

Table 280 Socket-Shutdown.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x01
Length	2	Length in bytes of the following parameters
Socket Index	1	The socket index.

7.24 Socket-Shutdown.Confirm

Description

Confirmation of the socket shutdown request.

Parameters

Table 281 Socket-Shutdown.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x01

Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: OK 0xFF: ERROR

8 Platform and Radio Messages

8.1 AspGetPowerLevel.Request

Description

AspGetPowerLevel.Request description.

Parameters

Table 282 AspGetPowerLevel.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0x95
OpCode	1	0x1F
Length	2	0x00 - This message does not have any parameters

8.2 AspGetPowerLevel.Confirm

Description

AspGetPowerLevel.Confirm description.

Parameters

Table 283 AspGetPowerLevel.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0x94
OpCode	1	0x1F
Length	2	Length in bytes of the following parameters
Value	1	The Value of Power Level

8.3 AspSetPowerLevel.Request

Description

AspSetPowerLevel.Request description.

Parameters

Table 284 AspSetPowerLevel.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0x95
OpCode	1	0x0F
Length	2	Length in bytes of the following parameters
powerLevel	1	Power Level

8.4 AspSetPowerLevel.Confirm

Description

AspSetPowerLevel.Confirm description.

Parameters

Table 285 AspSetPowerLevel.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0x94
OpCode	1	0x0F
Length	2	Length in bytes of the following parameters
Status	1	The status of the Set Power Level request Possible values: 0x00: SUCCESS (Request successfully performed) 0xE8: INVALID_PARAMETER (A parameter is invalid or the primitive is not allowed at the moment)

8.5 FSCI-EnterBootloader.Request

Description

Enable MSD Bootloader.

Parameters

Table 286 FSCI-EnterBootloader.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xA3
OpCode	1	0xCF
Length	2	0x00 - This message does not have any parameters

9 Other Utility Messages

9.1 MAC_MacFilteringAddEntry.Request

Description

Add in Mac Filtering Table.

Parameters

Table 287 MAC_MacFilteringAddEntry.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x12
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
ExtendedAddress	8	Extended Address
ShortAddress	2	Short Address
LinkIndicator	1	The neighbor Quality Link Indicator: Good Link: 20 - 255 Medium Link: 11 - 20 Bad Link: 3 - 10.
BlockNeighbor	1	Add this neighbor to blacklist

9.2 MAC_MacFilteringAddEntry.Confirm

Description

Confirmation of the addition of a new entry in the Mac filtering List table.

Parameters

Table 288 MAC_MacFilteringAddEntry.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x12
Length	2	Length in bytes of the following parameters

Status	1	Possible values: 0x00: Success 0x04: Notpermitted 0x06: Nomemory

9.3 MAC_MacFilteringEnable.Request

Description

Enable or disable mac filtering.

Parameters

Table 289 MAC_MacFilteringEnable.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x14
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
MacFiltering	1	Enable or disable mac filtering Possible values: 0x00: Disable 0x01: EnableDefaultPolicyReject 0x02: EnableDefaultPolicyAccept

9.4 MAC_MacFilteringEnable.Confirm

Description

Enable Mac filtering list table confirmation.

Parameters

Table 290 MAC_MacFilteringEnable.Confirm Parameters

Parameter	Size (bytes)	Comments

OpGroup	1	0xCF
OpCode	1	0x14
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x04: Notpermitted

9.5 MAC_MacFilteringGetTable.Request

Description

Get the current mac filtering table.

Parameters

Table 291 MAC_MacFilteringGetTable.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x15
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
StartIndex	1	Start Index
NoOfElements	1	No of elements to print

9.6 MAC_MacFilteringGetTable.Confirm

Description

Get Mac filtering list table response.

Parameters

Table 292 MAC_MacFilteringGetTable.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF

OpCode	1	0x15
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
NoOfElements	1	No Of Elements
MacFilteringEntry	Variable	Mac Filtering Entry Structure type parameter. See detailed table below for parameter structure.

Table 293 MacFilteringEntry Parameter Structure

Structure Parameter	Size (bytes)	Comments
ExtendedAddress	8	Extended Address
ShortAddress	2	Short Address
LinkIndicator	1	Link Indicator
BlockedNeighbor	1	This neighbor is blacklisted

9.7 MAC_MacFilteringRemoveEntry.Request

Description

Remove entry from mac filtering table.

Parameters

Table 294 MAC_MacFilteringRemoveEntry.Request Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCE
OpCode	1	0x13
Length	2	Length in bytes of the following parameters
InstanceId	1	Instance Id
ExtendedAddress	8	Extended Address

9.8 MAC_MacFilteringRemoveEntry.Confirm

Description

Remove Mac filtering list entry confirmation.

Parameters

Table 295 MAC_MacFilteringRemoveEntry.Confirm Parameters

Parameter	Size (bytes)	Comments
OpGroup	1	0xCF
OpCode	1	0x13
Length	2	Length in bytes of the following parameters
Status	1	Possible values: 0x00: Success 0x04: Notpermitted

10 Revision History

This table summarizes revisions to this document.

Table 296 Revision history

Revision number	Date	Substantive changes
0	10/2015	Initial release
1	03/2016	Preview 5 release
2	06/2016	Updates for multicast group commands
3	09/2016	Updated for KW41Z
4	03/2017	Updates for KW41 MCUX release
5	01/2018	Updates for KW41 Maintenance release

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