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| --- |
| Controller Message Protocol |
| Version 0.15.10.23 |
| 2015.10.23 |

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# Introduction

## Overview

Controller Message Protocol (CMP)主要提供前端與後端做為一個快速溝通與訊息傳遞的通訊協定，Device端透過CMP可以傳送與接收Server端送來的指令與服務。

specification.emf

## Glossary

|  |  |
| --- | --- |
| API | Application Programming Interface |
| MSB | Most Significant Bit |
| CMP | Control Message Protocol |
| CMPS | Control Message Protocol Server |
| PDU | Protocol Data Unit |
| HEADER | Leading portion of the CMP message, common to all CMP PDUs |
| SPS | Smart Power Station |
| MDM | Mobile Device Manager |
| SER | Social Event Radar |

# Controller Message Protocol

The Controller Message Protocol (CMP) is designed to provide a flexible data communications interface for transfer of message data between a server and client.

CMP is based on the exchange of request and response protocol data units (PDUs) between the client and the server over an underlying TCP/IP network connection.

## CMP PDU Type and Format Definitions

|  |  |
| --- | --- |
| **Integer** | An unsigned value with the defined number of octets.  The octets will always be transmitted MSB first (Big Endian). |
| **C-Octet String** | A series of ASCII characters terminated with the NULL character. |
| **C-Octet String**  **(Decimal)** | A series of ASCII characters, each character representing a decimal digit (0 - 9) and terminated with the NULL character. |
| **C-Octet String**  **(Hex)** | A series of ASCII characters, each character representing a  Hexadecimal digit (0 - F) and terminated with the NULL character. |
| **Octet String** | A series of octets, not necessarily NULL terminated. |
| **Octet String**  **(Decimal)** | A series of ASCII characters, each character representing a decimal digit (0 - 9) and not necessarily NULL terminated. |

## CMP PDU Format

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PDU Header (Mandatory) | | | | PDU Body (Optional) |
| Command  Length | Command  Id | Command  Status | Sequence  Number | PDU Body |
| 4 octets | Length = (Command Length value - 4) Octets | | | |

## CMP PDU Layout

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| H  E  A  D  E  R | CMP PDU Field | Size Octets | Type | Description |
| command length | 4 | Integer | The command length field defines the total octet length of the CMP PDU packet including the length field. |
| command id | 4 | Integer | The command id field identifies the particular CMP PDU.  A unique command identifier is allocated to each CMP request PDU in the range:  0x00000000 to 0x000000 FF  A unique command identifier is also allocated to each CMP response PDU in the range:  0x80000000 to 0x800000FF  The complete list of CMP command codes is defined in |
| command status | 4 | Integer | The command status field indicates the success or failure of a CMP request.  It is relevant only in the CMP response PDU and it must contain a NULL value in a CMP request PDU.  The complete list of CMP Error codes is defined in |
| sequence number | 4 | Integer | This field contains a sequence number which allows CMP requests and responses to be associated for correlation purposes. The use of sequence numbers for message correlation allows CMP PDUs to be exchanged asynchronously.  The sequence number should be increased monotonically for each request PDU and must be preserved in the associated CMP response PDU.  The sequence number may range from:  0x00000001 to 0x7FFFFFFF. |
| B  O  D  Y | Mandatory Parameters | Var. | mixed | A list of mandatory parameters corresponding to that CMP PDU defined in the command id field. |
| Optional Parameters | Var. | mixed | A list of Optional Parameters corresponding to that CMP PDU defined in the command id field. |

## CMP Session Description

A CMP session between a server and a client is initiated by the client first establishing a network connection with the server and then issuing a CMP Bind request to open a CMP session.

session.emf

CMP Client and CMP Server entire communication process, mainly divided into Bind, Commands, Unbind three parts.

## CMP PDU Definition

### Bind request syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to the binding request. |  |
| command status | 4 | Integer | Set to STATUS\_ROK |  |
| sequence number | 4 | Integer | Set to a unique sequence number.  The associated bind response PDU will echo the same sequence number. |  |
| B  O  D  Y | Id | Var. | C-Octet String | Mandatory Parameter.  Set to a unique ID. |  |

### Bind response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to the binding response. |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the sequence number of original bind request. |  |
| B  O  D  Y |  |  |  |  |  |
|  |  |  |  |  |

### Initial request syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to overall length of PDU |  |
| command id | 4 | Integer | Value corresponding to initial request |  |
| command status | 4 | Integer | Set to STATUS\_ROK |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated initial response PDU should echo the same sequence number. |  |
| B  O  D  Y | Service Type | 4 | Integer | Mandatory Parameter.  Reference Service type. | 3.2.1 |
|  |  |  |  |  |

### Initial response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | Value corresponding to initial response |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original initial requests PDU |  |
| B  O  D  Y | Initial Data | Var. | C-Octet String | Mandatory Parameter.  Information of initial. | 3.2.2 |
|  |  |  |  |  |

### Sign up request syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to overall length of PDU |  |
| command id | 4 | Integer | Value corresponding to sign up request |  |
| command status | 4 | Integer | Set to STATUS\_ROK |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated sign up response PDU should echo the same sequence number. |  |
| B  O  D  Y | Service Type | 4 | Integer | Mandatory Parameter.  Reference Service type. | 3.2.1 |
| Sign up Data | Var. | C-Octet String | Mandatory Parameter.  JSON Data of sign up. |  |

### Sign up response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | Value corresponding to sign up response |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original sign up requests PDU |  |
| B  O  D  Y |  |  |  |  |  |
|  |  |  |  |  |

### Authentication request syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | Value corresponding to authentication request |  |
| command status | 4 | Integer | Set to STATUS\_ROK |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated authentication response PDU will echo this sequence number. |  |
| B  O  D  Y | Service Type | 4 | Integer | Mandatory Parameter.  Reference Service type. |  |
| Authentication Data | Var. | C-Octet String | Mandatory Parameter.  Information of authentication. |  |

### Authentication response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | Value corresponding to authentication response |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the sequence number of original authentication request PDU. |  |
| B  O  D  Y |  |  |  |  |  |
|  |  |  |  |  |

### Access log request syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to overall length of PDU |  |
| command id | 4 | Integer | Value corresponding to access logs request |  |
| command status | 4 | Integer | Set to STATUS\_ROK |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated access log response PDU should echo the same sequence number. |  |
| B  O  D  Y | Service Type | 4 | Integer | Mandatory Parameter.  Reference Service type. | 3.2.1 |
| Access log Data | Var. | C-Octet String | Mandatory Parameter. | 3.2.5 |

### Access log response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | Value corresponding to access log response |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original access logs requests PDU |  |
| B  O  D  Y |  |  |  |  |  |
|  |  |  |  |  |

### Enquire link request syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to enquire link request. |  |
| command status | 4 | Integer | Set to STATUS\_ROK. |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated enquire link response PDU should echo the same sequence number. |  |
| B  O  D  Y |  |  |  |  |  |
|  |  |  |  |  |

### Enquire link response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to enquire link response. |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original inquiry link requests PDU. |  |
| B  O  D  Y |  |  |  |  |  |
|  |  |  |  |  |

### Unbind request syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to unbind request. |  |
| command status | 4 | Integer | Set to STATUS\_ROK |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated unbind response PDU should echo the same sequence number. |  |
| B  O  D  Y |  |  |  |  |  |
|  |  |  |  |  |

### Unbind response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to overall length of PDU |  |
| command id | 4 | Integer | Value corresponding to unbind response |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original unbinds request PDU. |  |
| B  O  D  Y |  |  |  |  |  |
|  |  |  |  |  |

### Update request syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to update request. |  |
| command status | 4 | Integer | Set to STATUS\_ROK. |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated update response PDU should echo the same sequence number. |  |
| B  O  D  Y |  |  |  |  |  |
|  |  |  |  |  |

### Update response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to update response. |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original update request PDU. |  |
| B  O  D  Y |  |  |  |  |  |
|  |  |  |  |  |

### Reboot request syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to reboot request. |  |
| command status | 4 | Integer | Set to STATUS\_ROK. |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated reboot response PDU should echo the same sequence number. |  |
| B  O  D  Y |  |  |  |  |  |
|  |  |  |  |  |

### Reboot response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to reboot response. |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original reboot request PDU. |  |
| B  O  D  Y |  |  |  |  |  |
|  |  |  |  |  |

### Configuration request syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | Value corresponding to configuration request. |  |
| command status | 4 | Integer | Set to STATUS\_ROK. |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated configuration response PDU should echo the same sequence number. |  |
| B  O  D  Y | Configuration item | Var. | C-Octet  String | Mandatory Parameter.  Item of Configuration. |  |
| Configuration value | Var. | C-Octet  String | Mandatory Parameter.  The value of Configuration. | 3.2.6 |

### Configuration response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | Value corresponding to configuration response. |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of the original configuration request PDU. |  |
| B  O  D  Y | Configuration result | 1 | Octet  String | Mandatory Parameter.  “Y”：success  “N”：fail |  |
|  |  |  |  |  |

### Power port setting request syntax

This syntax is defined for smart charge station.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to power port setting request. |  |
| command status | 4 | Integer | Set to STATUS\_ROK. |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated configuration response PDU should echo the same sequence number. |  |
| B  O  D  Y | Wire number | 4 | Integer | Mandatory Parameter. | 3.2.8 |
| Port number | 4 | Integer | Mandatory Parameter. | 3.2.9 |
| Power State | 1 | Octet String  (Decimal) | Mandatory Parameter.  ‘0’：Power Off  ‘1’：Power On | 3.2.10 |
| Controller ID | Var. | C-Octet String | Optional Parameter.  Set to a unique recognition ID. |  |

### Power port setting response syntax

This syntax is defined for smart charge station.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to power port setting response. |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original power port setting request PDU. |  |
| B  O  D  Y |  |  |  |  |  |
|  |  |  |  |  |

### Power port state requests syntax

This syntax is defined for smart charge station.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to power port status request. |  |
| command status | 4 | Integer | Set to STATUS\_ROK. |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated configuration response PDU should echo the same sequence number. |  |
| B  O  D  Y | Wire number | 4 | Integer | Mandatory Parameter. | 3.2.8 |
| Controller ID | Var. | C-Octet String | Optional Parameter.  Set to a unique recognition ID. |  |

### Power port state response syntax

This syntax is defined for smart charge station.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to power port status response. |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original power port setting request PDU. |  |
| B  O  D  Y | Power port status | Var. | C-Octet  String | Mandatory Parameter. | 3.2.11 |
|  |  |  |  |  |

### SER API Sign in requests syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to ser api sign in request. |  |
| command status | 4 | Integer | Set to STATUS\_ROK. |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated configuration response PDU should echo the same sequence number. |  |
| B  O  D  Y | Account | Var. | C-Octet String | Mandatory Parameter. |  |
| Password | Var. | C-Octet String | Mandatory Parameter. |  |

### SER API Sign in response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to ser api sign in response. |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original ser api sign in request PDU. |  |
| B  O  D  Y | Token | Var. | C-Octet  String | Mandatory Parameter. |  |
| App ID | Var. | C-Octet  String | Mandatory Parameter. |  |

### RDM Login requests syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to SER MDM Login request. |  |
| command status | 4 | Integer | Set to STATUS\_ROK. |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated configuration response PDU should echo the same sequence number. |  |
| B  O  D  Y | Login Data | Var. | C-Octet  String | Mandatory Parameter.  JSON Data Format.  Collection：  (name/value data type)  account/string  password/string  id/string  device/integer (Ref.3.2.4)  gcmid/string  model/string  Example：  {"account":"akado",  "password\":"oxymoron",  "id":"000c29d0013c",  "device":0,  "gcmid":"xxxxxx",  "model":"HM2LTU84P"} |  |
|  |  |  |  |  |

### RDM Login response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to SER MDM Login response. |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original SER MDM Login request PDU. |  |
| B  O  D  Y | Login Result | Var. | C-Octet  String | Mandatory Parameter.  JSON Data Format.  Collection：  (name/value data type)  result/integer  Example：  {"result":0} | 3.2.3 |
|  |  |  |  |  |

### RDM Logout requests syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to SER MDM Login request. |  |
| command status | 4 | Integer | Set to STATUS\_ROK. |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated configuration response PDU should echo the same sequence number. |  |
| B  O  D  Y | Login Data | Var. | C-Octet  String | Mandatory Parameter.  JSON Data Format.  Collection：  (name/value data type)  id/string  Example：  {  "id":"000c29d0013c"  } |  |
|  |  |  |  |  |

### RDM Logout response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to SER MDM Login response. |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original SER MDM Login request PDU. |  |
| B  O  D  Y |  |  |  |  |  |
|  |  |  |  |  |

### RDM Operate requests syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to SER MDM Operate request. |  |
| command status | 4 | Integer | Set to STATUS\_ROK. |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated configuration response PDU should echo the same sequence number. |  |
| B  O  D  Y | id | Var. | C-Octet  String | Mandatory Parameter.  JSON Data Format.  Collection：  (name/value data type)  id/string  Example：  {  "id":"000c29d0013c"  } |  |

### RDM Operate response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to SER MDM Operate response. |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original SER MDM Operate request PDU. |  |
| B  O  D  Y | RDM Operation | Var. | C-Octet  String | Mandatory Parameter.  JSON Data Format.  Collection：  (name/value data type)  result/integer (Ref.3.2.3)  control/(JSON Object)  list/integer (array under control)  control：  count/integer (list count)  list (JSON Array)  list：  type/integer(control type)    Example：  {  "result": 0,  "control": {  "count": 2,  "list": [{  "type": 0,  "value": 0  }, {  "type": 1,  "value": 1,  "ssid": "xxxx"  }]  }  } |  |

### RDM State requests syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to RDM State request. |  |
| command status | 4 | Integer | Set to STATUS\_ROK. |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated configuration response PDU should echo the same sequence number. |  |
| B  O  D  Y | id | Var. | C-Octet  String | Mandatory Parameter.  JSON Data Format.  Collection：  (name/value data type)  count/integer (list count)  list/ (JSON Array)  list：  type/integer(control type)    Example：  {  "id": "000c29d0013c",  "count": 2,  "list": [{  "type": 0,  "??": 0  }, {  "type": 1,  "??": 1,  "??": "xxxx"  }]  } |  |

### RDM State response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to RDM State response. |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original SER MDM Operate request PDU. |  |
| B  O  D  Y |  |  |  |  |  |

### Semantic requests syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to SER MDM Operate request. |  |
| command status | 4 | Integer | Set to STATUS\_ROK. |  |
| sequence number | 4 | Integer | Set to a unique sequence number. The associated configuration response PDU should echo the same sequence number. |  |
| B  O  D  Y | Text | Var. | C-Octet  String | Mandatory Parameter.  JSON Data Format.  Collection：  (name/value data type)  type/integer value  0：not defined  1：會話  2：指令  text/string value  local/integer value  0：not defined  1：英文  2：中文  Example：  {  "type": 0  "local": 0  "text": "Ivy Hello"  } |  |

### Semantic response syntax

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| H  E  A  D  E  R | Field Name | Size  octets | Type | Description | Ref. |
| command length | 4 | Integer | Set to the overall length of PDU. |  |
| command id | 4 | Integer | The value corresponding to Semantic response. |  |
| command status | 4 | Integer | Indicates the status of the original request. |  |
| sequence number | 4 | Integer | Set to the same sequence number of original Semantic request PDU. |  |
| B  O  D  Y | Semantic | Var. | C-Octet  String | Mandatory Parameter.  JSON Data Format.  Collection：  (name/value data type)  result/string value  type/integer value  0：not defined  1：會話  2：指令  Example：  {  "type": 0  "result": "Hello man"  } |  |

# CMP Parameter Definition

This section describes the parameters which can be specified in a CMP command.

## Command Header Parameters

### Command length

The command length parameter indicates the length in octets of the CMP message. The CMP message header (including the command length field itself), the mandatory parameters and the optional parameters are all considered.

### Command id

The command id field identifies the type of message the CMP PDU represents, for example, bind request, bind response etc.

#### CMP Command set

The complete set of Packet Command IDs and their associated values are defined in the following table.

|  |  |
| --- | --- |
| Command ID | Value |
| Generic nack | 0x80000000 |
| Bind request | 0x00000001 |
| Bind response | 0x80000001 |
| Authentication request | 0x00000002 |
| Authentication response | 0x80000002 |
| Access log request | 0x00000003 |
| Access log response | 0x80000003 |
| Initial request | 0x00000004 |
| Initial response | 0x80000004 |
| Sign up request | 0x00000005 |
| Sign up response | 0x80000005 |
| Enquire link request | 0x00000015 |
| Enquire link response | 0x80000015 |
| Unbind request | 0x00000006 |
| Unbind response | 0x80000006 |
| Update request | 0x00000007 |
| Update response | 0x80000007 |
| Reboot request | 0x00000010 |
| Reboot response | 0x80000010 |
| Configuration request | 0x00000011 |
| Configuration response | 0x80000011 |
| Power port setting request | 0x00000012 |
| Power port setting response | 0x80000012 |
| Power port state request | 0x00000013 |
| Power port state response | 0x80000013 |
| SER API Sign in request | 0x00000014 |
| SER API Sign in response | 0x80000014 |
| RDM Login request | 0x00000016 |
| RDM Login response | 0x80000016 |
| RDM Operate request | 0x00000017 |
| RDM Operate response | 0x80000017 |
| RDM Logout request | 0x00000018 |
| RDM Logout response | 0x80000018 |
| RDM State request | 0x00000019 |
| RDM State response | 0x80000019 |
| Semantic request | 0x00000030 |
| Semantic response | 0x80000030 |

### Command status

The command status field of a CMP message response indicates the success or failure of a CMP request.

It is relevant only in the CMP response message and should be set to NULL in CMP request messages.

The complete set of CMP Error Codes and their associated values are defined in the following table.

|  |  |  |
| --- | --- | --- |
| Error Code | Value | Description |
| STATUS\_ROK | 0x00000000 | No Error |
| STATUS\_RINVMSGLEN | 0x00000001 | Message Length is invalid |
| STATUS\_RINVCMDLEN | 0x00000002 | Command Length is invalid |
| STATUS\_RINVCMDID | 0x00000003 | Invalid Command ID |
| STATUS\_RINVBNDSTS | 0x00000004 | Incorrect BIND Status for given command |
| STATUS\_RALYBND | 0x00000005 | Already in Bound State |
| Reserved | 0x00000007 | Reserved |
| STATUS\_RSYSERR | 0x00000008 | System Error |
| Reserved | 0x00000009 ~  0x0000000F | Reserved |
| STATUS\_RBINDFAIL | 0x00000010 | Bind Failed |
| STATUS\_RINVBODY | 0x00000040 | Invalid Packet Body Data |
| STATUS\_RINVCTRLID | 0x00000041 | Invalid Controller ID |
| STATUS\_RINVJSON | 0x00000042 | Invalid JSON Data |

### Sequence number

A sequence number allows a response PDU to be correlated with a request PDU.

The associated CMP response PDU must preserve this field.

The allowed sequence number range is from 0x00000001 to 0x7FFFFFFF.

## Mandatory CMP Parameters

### Service Type

|  |  |
| --- | --- |
| **Type** | **Service** |
| 1 | Mobile Device Tracker |
| 2 | Smart Charging Station |
| 3 | MORE SDK Service |
| 4 | Tracker Service |
| 5 | Appliance Tracker |
| 6 | Toy Tracker |
| 7 | IOT Tracker |

### Initial Data

|  |  |
| --- | --- |
| **Type** | **Data Format (JSON)** |
| 1 | {  "server": [{  "id": 0,  "name": "startTrack",  "ip": "54.199.198.94",  "port": 6607  }, {  "id": 1,  "name": "tracker",  "ip": "54.199.198.94",  "port": 6607  }]  } |
| 2 |  |

### Result Table

|  |  |
| --- | --- |
| **Result** | **Description** |
| 0 | Success |
| 1 | Fail，System Exception |
| 2 | Fail，Invalid Parameter |
| 3 | Fail，System Busy |
| 4 | Fail，Unknown Error |
| 5 | Fail，Invalid Authorization |

### Device Type Table

|  |  |
| --- | --- |
| **Result** | **Description** |
| 0 | Android |
| 1 | IOS |
| 2 | 家電 |
| 3 | 玩具 |
| 4 | 物聯網 |

## Optional Parameter

Optional Parameters are fields, which may be optionally included in a CMP packet.

Optional Parameters must always appear at the end of a packet.

### MDM Operation

A JSON format data that is defined for MDM operation response.

|  |  |
| --- | --- |
| **Tag** | **Description** |
| operate | MDM operation, A JSON array tag |
| type | MDM operation type. |
| lock | Device lock or unlock, value is true or false. |
| passwd | For lock password. |
| apk | Apk URL for install. |
| package | Apk package name for uninstall |
| content | Content URL |

MDM operation Type

|  |  |
| --- | --- |
| **Type** | **Description** |
| 1 | Camera |
| 2 | Screen |
| 3 | Install |
| 4 | Uninstall |
| 5 | App information |
| 6 | Mobile Content |

Ext：

{

" operate ": [

{

"type": 1

"lock":true

},

{

"type": 2

"lock":true

"passwd":"xxxxxxx"

},

{

"type": 3

"apk":"http://xxxx.xxx.xx/x.apk"

},

{

"type": 4

" package ":"xxx.xxx.xxx"

},

{

"type": 6

" content ":"http://xxx.xxx.xxx"

}

]

}

# Notes