



# Device Management Connectivity Management Object Requirements

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# 1. Scope

**(Informative)**

This document defines the requirements for Device Management Connectivity Management Object, which is based on OMA DM v1.1.2 [OMA-DM] specifications and makes use of the functionalities provided by OMA DM v1.1.2 specifications to define standardized Management Object for connectivity parameter settings.

## 2. References

### 2.1 Normative References

- [OMA-DM]            *OMA Device Management, Version 1.1.2*, Open Mobile Alliance™,  
URL:<http://www.openmobilealliance.org/>
- [RFC2119]           *Key words for use in RFCs to Indicate Requirement Levels*, S. Bradner, March 1997,  
URL:<http://www.ietf.org/rfc/rfc2119.txt>

### 2.2 Informative References

## 3. Terminology and Conventions

### 3.1 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope” and “Introduction”, are normative, unless they are explicitly indicated to be informative.

### 3.2 Definitions

**Management Object** A schema for configuration settings that an OMA DM client exposes to OMA DM servers for management operations defined in the OMA DM Enabler [OMA-DM]

**Device Management Authority** Any legal entity authorized, either directly or through delegation, to perform management operations on a terminal using the OMA Device Management protocol through a set of management objects.

### 3.3 Abbreviations

<b>OMA</b>	Open Mobile Alliance
<b>DM</b>	Device Management
<b>MO</b>	Management Object or Management Objects

## 4. Introduction

**(Informative)**

This document defines requirements for a set of managed objects which offer a standardized way to represent data network connectivity settings in a Devices's OMA Device Management tree.

While these objects are optional for any OMA DM implementation, their widespread use will simplify the management of basic connectivity parameters in OMA DM enabled Devices.

## 5. Use Cases (Informative)

### 5.1 Use Case—Configuration and Maintenance of Standard Data Connectivity parameters

#### 5.1.1 Short Description

Operator A has provisioned end-user devices with connectivity information, but wishes to subsequently manage these settings (e.g. modify, add or delete) via the OMA Device Management protocol. The operator wishes to do this in a standardised manner in order to consistently manage different devices from different vendors and distinguish vendor-specific extensions.

#### 5.1.2 Actors

- **User**
- **Device**
- **Device Management Server**
- **Device Management Authority**

##### 5.1.2.1 Actor Specific Issues

- **User:** User-specific preferences are not altered.
- **Device Management Authority:** The Device Management Authority is authorised to provision the configuration data and settings in the Device

##### 5.1.2.2 Actor Specific Benefits

- **User:** User is able to access network data services.
- **Device Management Authority:** The Device Management Authority is able to reliably and efficiently manage device connectivity settings, allowing them to adapt to changing network service needs.

#### 5.1.3 Pre-conditions

- Device is in a state where it's not able to connect to one or more network data services.
- Device is capable of connecting to the Device Management Server.

#### 5.1.4 Post-conditions

Device is configured with effective data network access parameters required to access the network data services.

#### 5.1.5 Normal Flow

1. Device Management Authority issues a request to the Device Management Server to provision or manage data connectivity parameters in one or more devices.
2. The Device Management Server sends a Server Initiated Notification to Device.
3. Device Management Client establishes a session with the Device Management Server.
4. Device Management Server queries Device for current settings (including any device-specific extensions) and sends DM Protocol commands to adjust the Device configuration to conform to requirements established by the Device Management Authority.
5. Device Management Client and Device Management Server end their management session.



6. Device is able to access network data services using the configured connectivity parameters.

### 5.1.6 Alternative Flow

N/A

### 5.1.7 Operational and Quality of Experience Requirements

N/A

## 6. Requirements (Normative)

### 6.1 High-Level Functional Requirements

Label	Description	Release
HFR-01	The Connectivity MO MUST enable DM server to add and maintain network access point parameters	1.0
HFR-02	The Connectivity MO MUST enable DM server to add and maintain proxy parameters	1.0
HFR-03	The Connectivity MO MUST support configuring a network access point for WAP Proxy	1.0
HFR-04	The Connectivity MO SHOULD support configuring other network access proxy types	1.0
HFR-05	The Connectivity MO MUST support configuring 3GPP Circuit Switched Data Bearer parameters	1.0
HFR-06	The Connectivity MO MUST support configuring 3GPP Packet Switch Data Bearer parameters	1.0
HFR-07	The Connectivity MO MUST support configuring 3GPP2 CDMA Data Bearer parameters	1.0
HFR-08	The Connectivity MO MUST support configuring Wireless Local Area Network (WLAN) Data Bearer parameters	1.0

**Table 1: High-Level Functional Requirements**

#### 6.1.1 Security

No additional security requirements beyond the ones defined in [OMA-DM].

#### 6.1.2 Charging

No additional charging requirements beyond the ones defined in [OMA-DM].

#### 6.1.3 Administration and Configuration

The purpose of the document is administration and configuration of connectivity management. No additional requirements beyond defined in [OMA-DM].

#### 6.1.4 Usability

No additional usability requirements beyond the ones defined in [OMA-DM].

#### 6.1.5 Interoperability

No additional interoperability requirements beyond the ones defined in [OMA-DM].

#### 6.1.6 Privacy

No additional privacy requirements beyond the ones defined in [OMA-DM].

## 6.2 Overall System Requirements

Label	Description	Release
OSR-01	The Connectivity MO MUST specify interfaces that are access technology neutral	All
OSR-02	The Connectivity MO MUST be specified in a way that bearer dependant parts can be specified independently of bearer neutral part.	All
OSR-03	The Connectivity MO MUST be specified in a way that allows vendor specific extensions	All
OSR-04	The Connectivity MO SHOULD NOT rely on OMA DM features released after Approval of the DM 1.1.2 release of [OMA-DM].	All
OSR-05	The Connectivity MO MUST be specified in a way that it is possible to add new bearer specific parts without revising existing bearer specific parts	All

**Table 2: Overall System Requirements**

## Appendix A. Change History (Informative)

### A.1 Approved Version History

Reference	Date	Description
n/a	n/a	No prior version

### A.2 Draft/Candidate Version 1.0 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-DM-2005-0823-Connectivity-MO-RD	23 Aug 2005	All	Initial draft
	20 Sept 2005	All	Revised to incorporate comments from Montreal working group meeting; Derived requirements added
Candidate Version: OMA-RD-ConnMO-V1_0	06 Dec 2005	n/a	TP Approval: OMA-TP-2005-0368-ConnMO-RD-For-ReviewAndApproval
Draft Version OMA-RD-ConnMO-V1_0	14 Apr 2008	6	Updated with agreed CR: OMA-DM-ConnMo-2008-0001R01
	01 Jun 2008	All	Updated with agreed CR OMA-DM-ConnMO-0012
Candidate Version: OMA-RD-ConnMO-V1_0	12 Aug 2008	n/a	Status changed to Candidate by TP TP ref#: OMA-TP-2008-0286- INP_Connectivity_Management_Objects_V1_0_RRP_for_Can didate_Approval