OMA Mobile Codes Enabler Management Object

Approved Version 1.0 – 11 Jun 2013

Open Mobile Alliance

OMA-TS-MC_MO-V1_0-20130611-A

Contents

Figures

1. Scope (Informative)

This document defines the OMA Mobile Codes Enabler Management Object that manages Mobile Code Client installation, provisioning and updating.

2. References

2.1 Normative References

[DMSTDOBJ] "OMA Device Management Standardized Objects, Version 1.2", Open Mobile Alliance™ OMA-TS-DM-StdObj-V1_2, URL:http://www.openmobilealliance.org

[DM-TND-V1-2] "OMA Device Management Tree and Description, Version 1.2", Open Mobile Alliance™ OMA-TS-DM_TND-V1_2, URL:http://www. openmobilealliance.org

[DMBOOT] "OMA Device Management Bootstrap, Version 1.2". Open Mobile Alliance™ OMA-TS-DM_Bootstrap-V1_2, URL:http://www.openmobilealliance.org

[DMPRO] "OMA Device Management protocol specifications, Version 1.2", Open Mobile Alliance™ OMA-TS-DM_Protocol-V1_2, URL:http://www.openmobilealliance.org

[DMTNDS] "OMA Device Management Tree and Description Serialization Specification, Version 1.2", Open Mobile Alliance™ OMA-TS-DM_TNDS-V1_2, URL:http://www.openmobilealliance.org

[MC-TS] "OMA Mobile Codes, Version 1.0", Open Mobile Alliance™ OMA-TS-MC-V1_0, URL:http://www.openmobilealliance.org

[SCRRULES] "OMA Static Conformance Requirement Rules and Procedures, Version 1.0", Open Mobile Alliance™ OMA-ORG-SCR_Rules_and_Procedures-V1_0, URL:http://www.openmobilealliance.org

2.2 Informative References

None.

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

See the [MC-TS] document for definitions of terms related to the Mobile Codes Enabler.

See the DM Tree and Description [DM-TND-V1-2] document for definitions of terms related to the management tree.

3.3 Abbreviations

CMP	Code Management Platform
DDF	Device Description Framework
DM	Device Management
DTD	Document Type Definition
HTTP	Hypertext Transfer Protocol
MC	Mobile Codes (Enabler)
MCC	Mobile Code Client
OMA	Open Mobile Alliance
MO	Management Object
URL	Uniform Resource Locator
URN	Uniform Resource Name
XML	Extensive Markup Language

4. Introduction (Informative)

DM group has defined Management Objects (MO) where parameters can be easily managed and used by applications. Use of DM Enabler to install, provision and update the Mobile Code Client (MCC) is optional.

This document describes the OMA MC Enabler MO syntax that supports existing DM Enablers to manage MCC installation, provisioning and updating. The MC MO is applicable to the configuration of the MCC after it has been installed on the device. Details of the particular DM Enabler used to install the MCC on the device is considered out-of-scope of this specification.

4.1 Version 1.0

This document supports configuration of MCC parameters as specified in [MC-TS].

5. Standardized Management Objects

5.1 Introduction to Management Objects (Informative)

Management objects are the entities that can be manipulated by management actions carried over the OMA DM protocol. A Management Object can be as small as an integer or large and complex like a background picture, screen saver, or security certificate. The OMA DM protocol is neutral about the contents, or values, of the Management Objects and treats the node values as opaque data.

5.1.1 Definition and description of Management Objects

OMA DM Management Objects are defined using the OMA DM Device Description Framework [DMTNDS], or DDF. The use of this description framework produces detailed information about the device in question. However, due to the high level of detail in these descriptions, they are sometimes difficult to comprehend; and it can be a time consuming task to get an overview of a particular object's structure.

In order to make it easier to quickly get an overview of how a Management Object is organized and its intended use, a simplified graphical notation in the shape of a block diagram is used in this document. Even though the notation is graphical, it still uses some printable characters (e.g., to denote the number of occurrences of a node). These are mainly borrowed from the syntax of DTDs for XML. The characters and their meaning are defined in the following table.

Character	Meaning
+	one or many occurrences
*	zero or more occurrences
?	zero or one occurrences

If none of these characters is used, the default occurrence is exactly once.

There is one more feature of the DDF that needs to have a corresponding graphical notation, i.e., the un-named block. These are blocks that act as placeholders in the description and are instantiated with information when the nodes are used at run-time. Un-named blocks in the description are represented by a lower case character in italics, e.g., '*x*'.

Each block in the graphical notation corresponds to a described node, and the text is the name of the node. If a block contains an '*x*', it means that the name is not known in the description and that it will be assigned at run-time. The names of all ancestral nodes are used to construct the URI for each node in the Management Object. It is not possible to see the actual parameters, or data, stored in the nodes by looking at the graphical notation of a Management Object.

For a further introduction to this graphical notation, see [DMSTDOBJ].

5.2 DDF compliance

The Management Object descriptions in this document are normative. However, the descriptions also contain a number of informative aspects that could be included to enhance readability or serve as examples. Other informative aspects are, for instance, the ZeroOrMore and OneOrMore elements, where implementations may introduce restrictions. All these exceptions are listed here:

- All XML comments, e.g. "<!–some text -->", are informative.
- The descriptions do not contain an RTProperties element, or any of its child elements, but a description of an actual implementation of this object MAY include these.
- If a default value for a leaf node is specified in a description, by the DefaultValue element, an implementation SHALL supply its own appropriate value for this element. If the DefaultValue element is present in the description of a node, it SHALL be present in the implementation, but MAY have a different value.

- The value of all Man, Mod, Description and DFTitle elements are informative and included only as examples.
- Below the interior nodes Ext and BearerParams, an implementation may add further nodes at will.
- The contents of the AccessType element MAY be extended by an implementation.
- If any of the following AccessType values are specified, they SHALL NOT be removed in an implementation: Copy, Delete, Exec, Get, and Replace.
- If the AccessType value Add is specified it MAY be removed in an implementation if the implementation only supports a fixed number of child nodes.
- An implementation MAY replace the ZeroOrMore or OneOrMore elements with ZeroOrN or OneOrN respectively. An appropriate value for *N* must also be given with the …*OrN* elements.

5.2.1 Conformance Definitions

The status definition in the node definitions indicates if the client supports that node or not. If the status is “Required” then the client SHALL support that node in the case the client supports the parent node.

6. Mobile Codes (MC) Management Object

The MC MO is an object for OMA MC Enabler that defines rules for acceptance of DM messages for purposes of configuring the MCC. Once the MCC is configured, normal actions of the MCC can take place; subsequent updates to the configuration of the MCC may also be performed.

If the MC MO is provisioned together with other management object(s) during bootstrap, then [DMTNDS] and [DMBOOT] SHALL be used.

The OMA MC Management Object consists of relevant parameters required by the MC Enabler. It is compatible with OMA Device Management protocol specifications, version 1.2, and is defined using the OMA DM Device Description Framework as described in [DM-TND-V1-2] and [**Error! Reference source not found.**].

The Management Object Identifier is: urn:oma:mo:oma-MC:1.0

The Management Objects associated with OMA MCC management are assembled under an unnamed interior node *x*, dynamically or statically created.

Protocol Compatibility: This object is compatible with OMA Device Management protocol specifications, version 1.2 [DMPRO].

6.1 Figure of the Management Object (Informative)

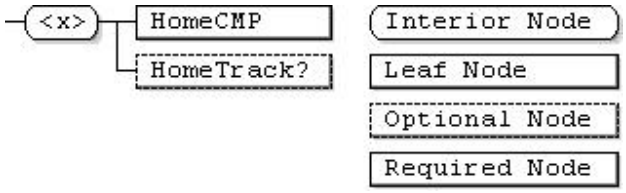

Figure 1: MC Management Object

6.2 MC Management Object Parameters

If the MCC supports resolution of Indirect Codes, the device has OMA DM and DM is used to configure the MCC, this MO SHALL be supported.

…/<x>

Status	Tree Occurrence	Format	Min. Access Types
Required	One	node	Get

This interior node groups together the parameters of an MC Management Object. Identifier for the Mobile Codes MO SHALL be: “urn:oma:mo:oma-mc:1.0”.

<x>/HomeCMP

Status	Tree Occurrence	Format	Min. Access Types
Required	One	chr	Get, Replace

The network address (i.e., HTTP URL) of the Home CMP (or Split-CMP-Parent, where applicable) SHALL be configured in the MCC.

<x>/HomeTrack

Status	Tree Occurrence	Format	Min. Access Types
Optional	ZeroOrOne	chr	Get, Replace

The network address (i.e., HTTP URL) of the tracking server at the Home CMP (or Split-CMP-Parent, where applicable) MAY be configured in the MCC.

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
Approved Version OMA-TS-MC_MO-V1_0	11 Jun 2013	Status changed to Approved by TP: TP ref#: OMA-TP-2013-0182-INP_MC_V1_0_for_final_Approval

Appendix B. Static Conformance Requirements

The notation used in this appendix is specified in [SCRRULES].

B.1 SCR for Mobile Code Client

Item	Function	Reference	Requirement
MC-C-001-O	Device supports resolution of Indirect Codes and OMA DM	Section 6.2	MC-C-002-O AND MC-C-003-O AND MC-C-004-O
MC-C-002-O	Support for the MC MO	Section 6.2	
MC-C-003-O	Allows retrieval of MC nodes	Section 6.2	
MC-C-004-O	Allows writing of MC nodes	Section 6.2	

B.2 SCR for Mobile Code Server

Item	Function	Reference	Requirement
MC-S-001-O	Server supports OMA DM and OMA MC	Section 6.2	MC-S-002-O AND MC-S-003-O
MC-S-002-O	Retrieves the MC nodes using Get command	Section 6.2	
MC-S-003-O	Write to the MC nodes using Replace command	Section 6.2	