Client Profile of OMA Device Management v1.3

Version 1.0 – 03 April 2013

Open Mobile Alliance
OMA-PD-DM_Client_Profile-V1_3-20130403-D

Contents

1. Scope

This specification provides the Client profile of OMA Device Management.

The Client Profile of OMA Device Management specifies a subset of the existing OMA Device Management v1.3 specifications. This profile document contains tables with information on what features are mandated in the profile that MUST be implemented in order for a Device Client to claim conformance with the profile.

This specification is addressing deployment and operational considerations for constraint devices, and is re-using a subset of the OMA Device Management v1.3 functionality for this. It aims to reduce the effort and time needed to create Device Clients that could be used with existing OMA Device Management servers in all kind of environments including M2M.

2. References

2.1   Normative References

[DMBOOT]   "OMA Device Management Bootstrap, Version 1.3". Open Mobile Alliance™. OMA-TS-DM_Bootstrap-
                           V1_3.
                           URL:http://www.openmobilealliance.org/

[DMDICT]   "OMA Device Management Dictionary, Version 1.0". Open Mobile Alliance™.
                           OMA-SUP-DM_Dictionary-v1_0.
                           URL:http://www.openmobilealliance.org/

[DMNOTI]   "OMA Device Management Notification Initiated Session, Version 1.3". Open Mobile Alliance™. OMA-
                           DM_Notification-V1_3.
                            URL:http://www.openmobilealliance.org/

[DMPRO]   "OMA Device Management Protocol, Version 1.3". Open Mobile Alliance™.
                           OMA-TS-DM_Protocol-V1_3**.**
                           URL:http://www.openmobilealliance.org/

[DMREPU]   "OMA Device Management Representation Protocol, Version 1.3".
                           Open Mobile Alliance™. OMA-TS-DM_RepPro-V1_3.
                           URL:http://www.openmobilealliance.org

[DMSEC]   "OMA Device Management Security, Version 1.3". Open Mobile Alliance™.
                           OMA-TS-DM_Security-V1_3.
                           URL:http://www.openmobilealliance.org/

[DMSESSREP]   "OMA Device Management Sessionless Reporting, Version 1.3", Open Mobile Alliance™. OMA-TS-
                           DM_Sessionless_Reporting-V1_3.
                           URL:http://www.openmobilealliance.org/

[DMSTDOBJ]   "OMA Device Management Standardized Objects, Version 1.3". Open Mobile Alliance™. OMA-TS-
                           DM_StdObj-V1_3.
                           URL:http://www.openmobilealliance.org/

[DMTND]   "OMA Device Management Tree and Description, Version 1.3". Open Mobile Alliance™. OMA-TS-
                           DM_TND-V1_3.
                           URL:http://www.openmobilealliance.org/

[DMTNDS]   "OMA Device Management Tree and Description Serialization, Version 1.3". Open Mobile Alliance™.
                           OMA-TS-DM_TNDS-V1_3.
                           URL:http://www.openmobilealliance.org/

[HTTPBinding]   "OMA Device Management HTTP Binding Specification", Open Mobile Alliance™,
                           OMA-TS-DM_HTTPBinding-V1_3,
                           URL:http://www.openmobilealliance.org/

[Meta]   "OMA Device Management Meta Information", Open Mobile Alliance™, OMA-TS-DM_DM_MetaInfo-
                           V1_3,
                           URL:http://www.openmobilealliance.org/

[PushBinding]   "OMA Device Management Push Binding Specification", Open Mobile Alliance™,
                           OMA-TS-DM_PushBinding-V1_3,
                           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

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

Kindly consult [DMDICT] for all definitions used in this document.

3.3 Abbreviations

Kindly consult [DMDICT] for all abbreviations used in this document.

4. Introduction

The Client Profile of OMA Device Management v1.3 defines a subset of the features that must be supported by any device client conforming to the profile. This profile does not change the individual features themselves in any way. This Client profile is a light version of the OMA Device Management 1.3 Client specification that could be used with existing OMA Device Management servers in all kind of environments including M2M.

4.1   Version 1.0

Version 1.0 of the Client Profile of OMA Device Management v1.3 defines a subset of the following specifications:

Doc Ref	Description
[DMBOOT]	OMA Device Management Bootstrap
[DMNOTI]	OMA Device Management Notification Initiated Session
[DMPRO]	OMA Device Management Protocol
[DMREPU]	OMA Device Management Representation Protocol
[DMSEC]	OMA Device Management Security
[DMSESSREP]	OMA Device Management Sessionless Reporting
[DMSTDOBJ]	OMA Device Management Standardized Objects
[DMTND]	OMA Device Management Tree and Description
[DMTNDS]	OMA Device Management Tree and Description Serialization
[HTTPBinding]	OMA Device Management HTTP Binding
[Meta]	OMA Device Management Meta Information
[PushBinding]	OMA Device Management Push Binding

as specified in the following chapter.

5. Client Profile of OMA Device Management

This section gives an overview in a form of tables of all DM features and their relations to the DM specifications.

The section numbers in the column "Section" refer to sections in the DM specifications where more details about client features can be found. The column "Comments" gives some clarifications to the related client features.

The Client Profile for OMA Device Management Protocol defines a subset of the DM v1.3 features as listed below. The features can be mandatory or optional as per DM v1.3 specifications. However, this table shows only features that are mandatory to implement in the client for conformance with the profile. All features from DM v1.3 specifications deemed to be optional for this profile, have been removed.

Specification and Chapter reference	Function	comment
OMA Device Management Protocol, Version 1.3	[DMPRO]	
Section 6	Support of Session Setup Phase	
Section 6.1	Support of Session Abort	
Section 7	Support of Multiple Messages	
Section 6	Support of Management Phase	
Section 5	Support for executing Management Commands	
Section 6.5	Support for sending Status and Result after receiving Management Operations	
Section 5	Support for standard command Format and Status and Result reporting	
Section 6.3	Support for sending asynchronous data via client initiated Alerts	
Section 6.7	Sending Generic Alert	
Section 5	Support Server Notification	
Section 6.3	Sending Client Initiation and Device Info (Package #1) including Final element	
Section 6.3	Sending Alert in the management session with data being either Client-Initiated 1201 or Server-Initiated 1200	
Section 6.3	Sending Device Info in Replace Command in Package #1	
Section 6.1	Sending Session Abort Alert	
Section 6.1	Receiving Session Abort Alert	
Section 6.1.2	Include Final in Message	
Section 6.1.1	Sender of Abort discards the response if response is received	
Section 7.2	Last message within multiple messages must contain Final	

Specification and Chapter reference	Function	comment
Section 7.2	If message that is not the last one within Multiple Messages then the Next Message or Abort Alert must be sent	
Section 10.2	Order of the Items MUST be used in the same order as in the DM message	
Section 6.7	The Generic Alert has a relation to a Management Object	
Section 6.7	The Generic Alert does not have a relation to a Management Object	
Section 6.7	LocURI must reference the address to the corresponding Management Object	
Section 6.7.1.6	Type must be included and it is RECOMMENDED to include URN or registered MIME-type as Type	
OMA Device Management Representation Protocol, Version 1.3	[DMREPU]	
Section 7.1.2	Support for 'Chal'	
Section 7.1.3	Support for 'Cmd'	
Section 7.1.4	Support for 'CmdId'	
Section 7.1.5	Support for 'CmdRef'	
Section 7.1.6	Support for 'Cred'	
Section 7.1.10	Support for 'Final'	
Section 7.1.12	Support for 'LocName'	
Section 7.1.13	Support for 'LocURI'	
Section 7.1.15	Support for 'MsgID'	
Section 7.1.16	Support for 'MsgRef'	
Section 7.1.21	Support for receiving 'RespURI'	

Specification and Chapter reference	Function	comment
Section 7.1.22	Support for 'SessionID'	
Section 7.1.24	Support for 'Source'	
Section 7.1.26	Support for 'SourceRef'	
Section 7.1.27	Support for 'Target'	
Section 7.1.29	Support for 'TargetRef'	
Section 7.4	Support for 'Format'	
Section 7.4	Support for sending 'MaxMsgSize'	
Section 7.4	Support for receiving 'MaxMsgSize'	
Section 7.4	Support for 'MetInf'	
Section 7.4	Support for 'NextNonce'	
Section 7.4	Support for 'Size'	
Section 7.4	Support for 'Type'	
Section 7.1	Support for 'Data' element.	
Section 7.2	Support for 'Item' element.	
Section 7.3	Support for 'Meta' element.	
Section 7.6.2	Support for sending 'Alert'	
Section 7.6.12	Support for 'Replace'	
Section 7.6.1	Support for receiving 'Add'	
Section 7.6.3	Support for receiving 'Atomic'	
Section 7.6.5	Support for receiving 'Delete'	
Section 7.6.6	Support for receiving 'Exec'	
Section 7.6.7	Support for receiving 'Get'	
Section 7.6.15	Support for receiving 'Sequence'	

Specification and Chapter reference	Function	comment
Section 7.6.13	Support for sending 'Results'	
Section 7.6.2	Sending Client Event Alert	
Section 6.2	Support for receiving WBXML 1.3	
Section 6.2	Support for sending WBXML 1.1 or 1.2 or 1.3	This profile uses WBXML 1.3. The support of other versions of WBXML is not required.
Section 5.3	Support for namespace usage	
Section 5.4	Support for MIME type for DM Message	
Section 6.1	Support for "application/vnd.syncml.dm+xml" MIME-type for DM Message.	
Section 6.1	Support for "application/vnd.syncml.dm+wbxml" MIME-type for DM Message3	
Section 5.5	Support for Identifiers, such as URI, URN and textualnames	
Section 7.2	Support for SyncML.	
Section 7.2	Support for SyncHdr.	
Section 7.2	Support for SyncBody.	
Section 7.5	Support for 'Status' element.	
OMA Device Management Security, Version 1.3	[DMSEC]	
Section 5.4	Client MUST authenticate itself to a Server	
Section 5.4	Client MUST authenticate a Server	
Section 5.3	Support for transport layer authentication	
Section 5.4	Send credentials to Server	
Section 5.4	Challenge Server	
Section 5.3	Support for application layer authentication	

Specification and Chapter reference	Function	comment
Section 5.4	Support for OMA DM syncml:auth-md5 type authentication	
Section 5.6	Integrity checking using HMAC- SHA256	
Section 5.10.2.1	Bootstrap Security for Bootstrap via DM Profile	
Section 5.10.2.3	Transport neutral security for Bootstrap via DM Profile	
Section 5.10.2.1	Transport layer security for Bootstrap via DM Profile	
Section 5.10.2.3.1	Support of NETWORKID method in Bootstrap via DM Profile	
OMA Device Management Tree and Description, Version 1.3	[DMTND]	
Section 8.2	Support for the ACL property	
Section 8.2	Support for the Format property	
Section 8.2	Support for the Name property	
Section 8.2	No support for the Size property in Interior Nodes	
Section 8.2	Support for the Type property	
Section 9.1	Support Get?list=StructData	
Section 9.1	Support Get?list=MORoot	
Section 9.1	Support Get?list=MORootData	
Section 7.2	Support Relative URI Addressing Mechanism	
OMA Device Management Tree and Description Serialization, Version 1.3	[DMTNDS]	
Section 5.3	Support of Encoding a TNDS object	
Section 5.3	Support of Decoding a TNDS object	
OMA Device Management Standardized Objects, Version 1.3	[DMSTDOBJ]	
Section 5.3.2	Support of DevInfo object	

Specification and Chapter reference	Function	comment
Section 5.3.3	Support of DevDetail Object	
Section 5.3.1	Support of DM Account Object	
Section 5.3.4	Support of Inbox Object	
OMA Device Management Bootstrap, Version 1.3	[DMBOOT]	
Section 5.3	Support for OMA Device Management Profile	
Section 5.5.6	DM Client is capable of detecting, retrieving, and processing DM Profile bootstrap data from the Smartcard	Only if the device supports the smartcard
Section 5.5.6	Smartcard bootstrap function is enabled by DM client and the smartcard has not been rejected by the device	Only if the device supports the smartcard
Section 5.5.6	Device retrieves bootstrap data from the Smartcard and applies it to the device configuration	Only if the device supports the smartcard
Section 5.5	Support for embedded WBXML encoded TNDS objects and normal TNDS objects	
Section 5.5	Support for Inbox	
Section 5.5.7	Device supports SCWS and HTTPS	
Section 5.5.7	Device retrieves Bootstrap Message from Smartcard URL using HTTPS Get	
Section 5.5	Support for WBXML encoded DM Bootstrap Messages	
Section 6.3	Use of appropriate Management Object identifier	
Section 6.3	Support for Required nodes under root node	
Section 6.3	Support a smartcard to retrieve the Bootstrap Server URL from the smartcard.	Only if the device supports the smartcard
Section 6.3	Support for the Bootstrap Config Management Object	

Specification and Chapter reference	Function	comment
OMA Device Management Meta Information	[Meta]	
Section 5.2.4	Support for Format element	
Section 5.2.9	Support for MaxMsgSize element	
Section 5.2.12	Support for MetInf element	
Section 5.2.14	Support for NextNonce element	
Section 5.2.16	Support for Size element	
Section 5.2.17	Support for Type element	
OMA Device Management Notification Initiated Session, Version 1.3	[DMNOTI]	
Section 5	Support of Server-Alerted Management Session	
Section 6	Receiving Notification message	
Section 6	Support DM 1.3 format Notification message	
Section 6.1	Support of Message headers	
Section 6.4.1	VER value for this version of notification is 0x01	
Section 6.4.9	Usage of SESSIONID while connecting to the DM Server	
Section 6.4.10	Ignore notification message older than the number of days specified in TIMEOUT	
Section 7.1	Support WAP Push	

Specification and Chapter reference	Function	comment
Section 7.4	Support HTTP Push	
OMA Device Management Sessionless Reporting, Version 1.3	[DMSESSREP]	
Section 5.1	Support for OMA Sessionless Reporting.	
Section 5.1	Alert Code MUST be 1230.	
Section 5.1	Alert MUST contain only one Item.	
Section 5.1	Data MUST be CDATA escaped in Item/Data element.	
Section 5.1	Meta, Type and Format MUST be specified.	
Section 5.1	Sessionless Report Message body MUST contain only Sessionless Report Alerts.	
OMA Device Management HTTP Binding Specification	[HTTPBinding]	
Section 4	Support for HTTP Client	
Section 5.3.1	Support for POST Method	
Section 5.3.2	Support for Cache-Control General Header	
Section 5.3.2	Support for Transfer-Encoding General Header	
Section 5.3.3	Support for Accept Request Header	
Section 5.3.3	Support for Accept-Charset Request Header	
Section 5.3.3	Support for Authorization Request Header	
Section 5.3.3	Support for User-Agent Request Header	

Specification and Chapter reference	Function	comment
Section 5.3.4	Support for Authentication-Info Response Header	
Section 5.3.4	Support for WWW-Authenticate Response Header	
Section 5.4	Support HTTP	
Section 5.4	Support for TLS1.1	As TLS1.1 is chosen
OMA Device Management Push Binding Specification	[PushBinding]	
Section 4 Section 5	Support for Push Client	
Section 5.1	Support for Secure Push Protocol over WSP	
Section 5.3	Support for Push Protocol over HTTP	
Section 5.3	Support for HTTP security	

Appendix A.   Change History   (Informative)

A.1   Approved Version History

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

A.2   Draft Version 1.0 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-PD-DM_Client_Profile-V1_0	13 Feb 2013	all	First draft baseline
	15 Feb 2013	all	Axel and Bipin comments as listed in appendix C. Changed table format, added SCR colums, removed colors.
	8 Mar 2013	All	Comments from March 07 OIG conference call and subsequent emails. Removed unused specifications. Cleaned references in all document. References only point to the reference section no more to actual document links on the OMA public documents.
	13 Mar 2013	All	Comments from March 13 OIG conference call. Removed internal comments. Tentative proposal to remove push binding.
	03 April 2013	All	Last modifications following the OMA DM R&A and OIG members feedback.