



Standard Browser Management Object

Candidate Version 1.0 – 24 Nov 2009

Open Mobile Alliance

OMA-DDS-BMO-V1_1-20091124-C

Use of this document is subject to all of the terms and conditions of the Use Agreement located at <http://www.openmobilealliance.org/UseAgreement.html>.

Unless this document is clearly designated as an approved specification, this document is a work in process, is not an approved Open Mobile Alliance™ specification, and is subject to revision or removal without notice.

You may use this document or any part of the document for internal or educational purposes only, provided you do not modify, edit or take out of context the information in this document in any manner. Information contained in this document may be used, at your sole risk, for any purposes. You may not use this document in any other manner without the prior written permission of the Open Mobile Alliance. The Open Mobile Alliance authorizes you to copy this document, provided that you retain all copyright and other proprietary notices contained in the original materials on any copies of the materials and that you comply strictly with these terms. This copyright permission does not constitute an endorsement of the products or services. The Open Mobile Alliance assumes no responsibility for errors or omissions in this document.

Each Open Mobile Alliance member has agreed to use reasonable endeavors to inform the Open Mobile Alliance in a timely manner of Essential IPR as it becomes aware that the Essential IPR is related to the prepared or published specification. However, the members do not have an obligation to conduct IPR searches. The declared Essential IPR is publicly available to members and non-members of the Open Mobile Alliance and may be found on the “OMA IPR Declarations” list at <http://www.openmobilealliance.org/ipr.html>. The Open Mobile Alliance has not conducted an independent IPR review of this document and the information contained herein, and makes no representations or warranties regarding third party IPR, including without limitation patents, copyrights or trade secret rights. This document may contain inventions for which you must obtain licenses from third parties before making, using or selling the inventions. Defined terms above are set forth in the schedule to the Open Mobile Alliance Application Form.

NO REPRESENTATIONS OR WARRANTIES (WHETHER EXPRESS OR IMPLIED) ARE MADE BY THE OPEN MOBILE ALLIANCE OR ANY OPEN MOBILE ALLIANCE MEMBER OR ITS AFFILIATES REGARDING ANY OF THE IPR'S REPRESENTED ON THE “OMA IPR DECLARATIONS” LIST, INCLUDING, BUT NOT LIMITED TO THE ACCURACY, COMPLETENESS, VALIDITY OR RELEVANCE OF THE INFORMATION OR WHETHER OR NOT SUCH RIGHTS ARE ESSENTIAL OR NON-ESSENTIAL.

THE OPEN MOBILE ALLIANCE IS NOT LIABLE FOR AND HEREBY DISCLAIMS ANY DIRECT, INDIRECT, PUNITIVE, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE USE OF DOCUMENTS AND THE INFORMATION CONTAINED IN THE DOCUMENTS.

© 2009 Open Mobile Alliance Ltd. All Rights Reserved.

Used with the permission of the Open Mobile Alliance Ltd. under the terms set forth above.

Contents

- 1. SCOPE.....4
- 2. REFERENCES5
 - 2.1 NORMATIVE REFERENCES5
 - 2.2 INFORMATIVE REFERENCES5
- 3. TERMINOLOGY AND CONVENTIONS.....6
 - 3.1 CONVENTIONS6
 - 3.2 DEFINITIONS.....6
 - 3.3 ABBREVIATIONS6
- 4. INTRODUCTION7
- 5. JUSTIFICATION8
- 6. STANDARDIZED BROWSER MANAGEMENT OBJECT9
 - 6.1 INTRODUCTION TO MANAGEMENT OBJECTS (INFORMATIVE).....9
 - 6.1.1 Definition and description of management objects.....9
 - 6.2 DDF COMPLIANCE9
 - 6.2.1 Conformance Definitions10
 - 6.3 THE BROWSER MANAGEMENT OBJECT.....10
 - 6.3.1 Introduction.....10
 - 6.3.2 Node Descriptions.....11
- 7. OPERATIONAL CONSIDERATIONS16
- APPENDIX A. CHANGE HISTORY (INFORMATIVE).....17
 - A.1 APPROVED VERSION HISTORY17
 - A.2 DRAFT/CANDIDATE VERSION 1.0 HISTORY17

Figures

- Figure 1: Browser Management Object (Informative).....11

Tables

- Table 1: Valid Authentication Type.....14

1. Scope

This specification defines a Management Object to describe browser favorites for mobile terminals. It is based firmly on the previously released OMA Client Provisioning Application Characteristic, “w2” [OMAW2]. No additional configuration elements are introduced into this new management object over what was provided in w2: The primary purpose of this release is to provide a schema for use with OMA DM 1.2 which is compatible with OMA CP w2.

The present specification defines a data schema only and does not define any behavioral requirements.

2. References

2.1 Normative References

- [ConnMO] “OMA Connectivity Enabler”, Version 1.0, Open Mobile Alliance™
OMA-ERELD-ConnMO-V1_0,
[URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [OMADM] “OMA Device Management Enabler”, Version 1.2, Open Mobile Alliance™
OMA-ERELD-DM-V1_2,
[URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [RFC1738] “Uniform Resource Locators (URL)”, IETF Network Working Group, December 1994,
[URL:http://www.ietf.org/rfc/rfc1738.txt](http://www.ietf.org/rfc/rfc1738.txt)
- [RFC2119] “Key words for use in RFCs to Indicate Requirement Levels”, S. Bradner, March 1997,
[URL:http://www.ietf.org/rfc/rfc2119.txt](http://www.ietf.org/rfc/rfc2119.txt)
- [RFC2617] “HTTP Authentication: Basic and Digest Access Authentication”, J. Franks, etc., June 1999,
[URL:http://www.ietf.org/rfc/rfc2617.txt](http://www.ietf.org/rfc/rfc2617.txt)

2.2 Informative References

- [OMADICT] “Dictionary for OMA Specifications”, Version 2.7, Open Mobile Alliance™,
OMA-ORG-Dictionary-V2_7, [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [OMAW2] “w2: AC for the Browsing Enabler”, ac_w2_browsing-v1.0, October 2003,
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [DMTND] “OMA Device Management Tree and Description”, Version 1.2, Open Mobile Alliance™
OMA-TS-DM-DMTND-V1_2, [URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [DMStdObj] “OMA Device Management Standardized Objects”, Version 1.2, Open Mobile Alliance™
OMA-TS-DM-DMStdObj-V1_2,
[URL: http://www.openmobilealliance.org](http://www.openmobilealliance.org)

3. Terminology and Conventions

3.1 Conventions

This is an informative document, which is not intended to provide testable requirements to implementations.

3.2 Definitions

Please refer to [OMADICT].

3.3 Abbreviations

BMO	Browser Management Object
CP	Client Provisioning
DDF	Device Description Framework
DM	Device Management
OMA	Open Mobile Alliance

4. Introduction

The main objective of this data definition specification is to provide a means for specifying browser favorites and homepage in an OMA DM management environment. These settings can also be specified using the *w2* application characteristic [OMAW2] in an OMA CP provisioning environment. It is anticipated that this data definition specification can be used together with *w2* in an environment that utilizes both OMA DM and OMA CP enablers.

5. Justification

The main objective is to ensure that browser favorites and homepage settings can be specified in an OMA DM environment.

6. Standardized Browser Management Object

6.1 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.

6.1.1 Definition and description of management objects

OMA DM management objects are defined using the OMA DM Device Description Framework [DMTND], 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 hard for humans to digest 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, the un-named blocks. 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 name within less than and greater than character, 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 defined 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, please refer to [DMStdObj].

6.2 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 **MUST** supply its own appropriate value for this element. If the DefaultValue element is present in the description of a node, it **MUST** 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 **MUST 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.

6.2.1 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 **MUST** support that node in the case the client supports the parent node. In other case the node **MAY** be supported by the client.

6.3 The Browser Management Object

6.3.1 Introduction

The Browser Management Object facilitates management of Browser parameters.

The HomePage node is a special bookmark, in that the browser will automatically go the URL defined for the HomePage/URL. The Favorites are the top-level bookmarks for the browser - similar to toolbars on many modern browsers. The Folders node may contain more bookmarks and folders, but is not required to exist if folders are not supported. OMA DM [OMADM] protocol compatibility for the BMO is version 1.2 or any later compatibility version.

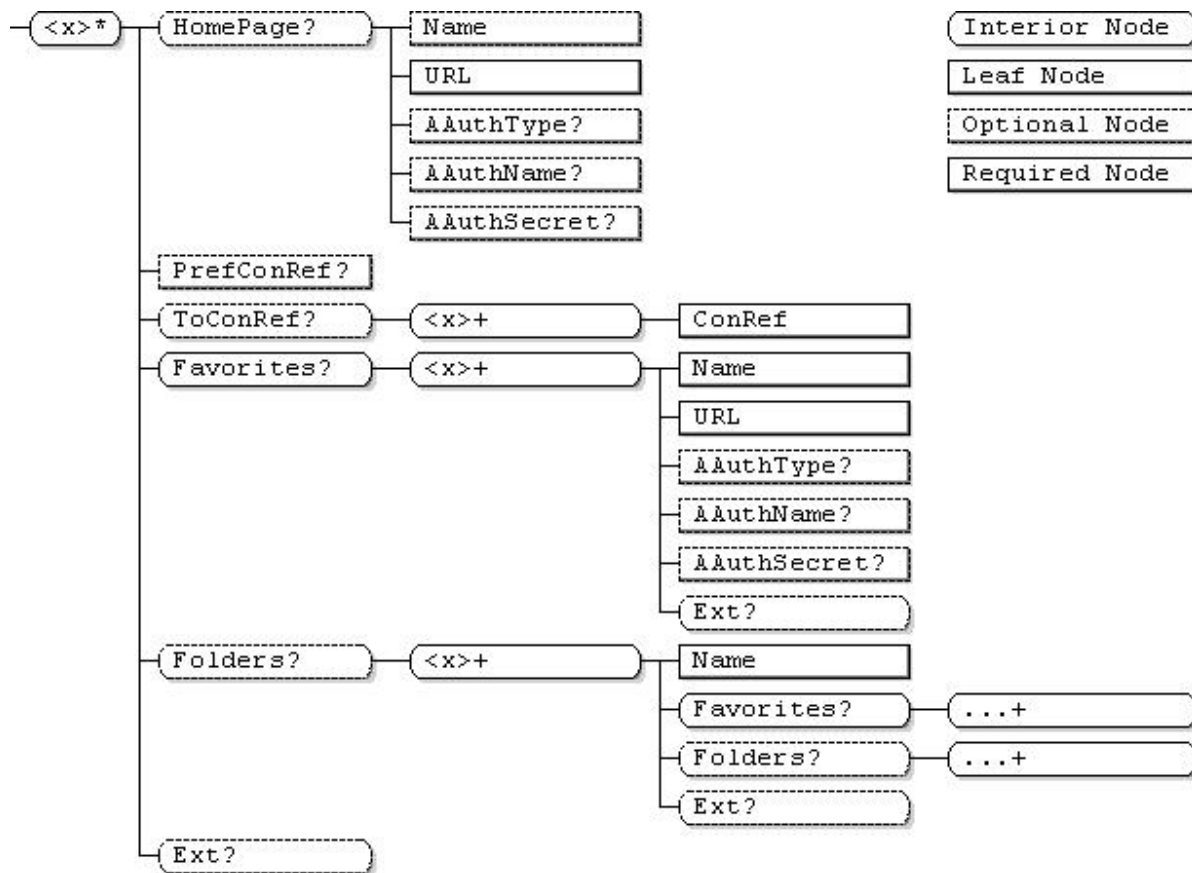


Figure 1: Browser Management Object (Informative)

6.3.2 Node Descriptions

.../<x>

Status	Occurrence	Format	Min. Access Types
Required	ZeroOrMore	node	Get

This interior node specifies the unique object id of a *Browser Management Object*, or BMO. The purpose of this interior node is to group together the parameters of a single BMO object. The ancestor elements of this node define the position in the management tree of the BMO object. The structure of the DM tree and hence positions in the tree of management objects is out of scope of this specification.

Management Object Identifier for the BMO MO MUST be: “urn:oma:mo:oma_bmo:1.0”.

HomePage

Status	Occurrence	Format	Min. Access Types
Optional	ZeroOrOne	node	Get

This interior node is the parent node for the homepage.

HomePage/Name

Status	Occurrence	Format	Min. Access Types
Optional	One	chr	Get

This leaf node contains a name of the homepage.

HomePage/URL

Status	Occurrence	Format	Min. Access Types
Required	One	chr	Get

This leaf node contains the URL of the favorites. The node Favorites/<x>/URL defines the content of this node.

HomePage/AAuthType

Status	Occurrence	Format	Min. Access Types
Optional	ZeroOrOne	chr	Get

This leaf node contains the authentication type for the homepage. The node Favorites/<x>/AAuthType defines the content of this node.

HomePage/AAuthName

Status	Occurrence	Format	Min. Access Types
Optional	ZeroOrOne	chr	Get

This leaf node contains the username for the homepage. The node Favorites/<x>/AAuthName defines the content of this node.

HomePage/AAuthSecret

Status	Occurrence	Format	Min. Access Types
Optional	ZeroOrOne	chr	NO Get

This leaf node contains the password for the homepage. The node Favorites/<x>/AAuthSecret defines the content of this node.

PrefConRef

Status	Occurrence	Format	Min. Access Types
Optional	ZeroOrOne	chr	Get

This node specifies a reference to preferred connectivity. It is expected that either a Proxy MO or NAP MO [ConnMO] is specified, but other, implementation-specific connections may be referenced.

ToConRef

Status	Occurrence	Format	Min. Access Types
Optional	ZeroOrOne	node	Get

This interior node groups together network access points (or other connection objects) used by this management object to reach a network.

ToConRef/<x>

Status	Occurrence	Format	Min. Access Types
Required	OneOrMore	node	Get

This interior node distinguishes the connection object identifier nodes. There must be exactly one ConRef node for each of these interior nodes.

ToConRef/<x>/ConRef

Status	Occurrence	Format	Min. Access Types
Required	One	chr	Get

This node specifies a reference to the connectivity. It is expected that either a Proxy MO or NAP MO [ConnMO] is specified, but other, implementation-specific connections may be referenced.

Favorites

Status	Occurrence	Format	Min. Access Types
Required	ZeroOrOne	node	Get

This is the parent node for all favorites.

Favorites/<x>

Status	Occurrence	Format	Min. Access Types
Required	OneOrMore	node	Get

This interior node distinguishes the different favorites. Management Object Identifier for this sub-tree MUST be: "urn:oma:mo:oma_bmo_favorite:1.0".

Favorites/<x>/Name

Status	Occurrence	Format	Min. Access Types
Required	One	chr	Get

This leaf node contains a name of the favorites.

Favorites/<x>/URL

Status	Occurrence	Format	Min. Access Types
Required	One	chr	Get

This leaf node contains the absolute URL for the favorites. The format is specified in [RFC1738].

Favorites/<x>/AAAuthType

Status	Occurrence	Format	Min. Access Types
Optional	ZeroOrOne	chr	Get

This leaf node contains the authentication type if that is needed for the favorites.

Value	Description
HTTP-BASIC	HTTP basic authentication type according to [RFC2617]
HTTP-DIGEST	HTTP digest authentication type according to [RFC2617]

Table 1: Valid Authentication Type

Favorites/<x>/AAAuthName

Status	Occurrence	Format	Min. Access Types
Optional	ZeroOrOne	chr	Get

This leaf node contains the username.

Favorites/<x>/AAAuthSecret

Status	Occurrence	Format	Min. Access Types
Optional	ZeroOrOne	chr	NO Get

This leaf node contains the password.

Folders

Status	Occurrence	Format	Min. Access Types
Optional	ZeroOrOne	node	Get

This interior node is the parent node for sub-folders of favorites.

Folders/<x>

Status	Occurrence	Format	Min. Access Types
Required	OneOrMore	node	Get

This interior node is the parent node for the folder tree. Management Object Identifier for this sub-tree MUST be: "urn:oma:mo:oma_bmo_folder:1.0".

Folders/<x>/Name

Status	Occurrence	Format	Min. Access Types
Required	One	chr	Get

This leaf node contains the name of the sub-folder.

Folders/<x>/Favorites

Status	Occurrence	Format	Min. Access Types
Required	ZeroOrOne	node	Get

This interior node is the parent node for all favorites in this folder. See the definition for the /Favorites node above.

Folders/<x>/Favorites/...

Status	Occurrence	Format	Min. Access Types
Required	OneOrMore	node	Get

This is only to show that there is a sub-tree at this location but it is not defined in this part of the spec.

Folders/<x>/Folders

Status	Occurrence	Format	Min. Access Types
Optional	ZeroOrOne	node	Get

This interior node is the parent node for all sub-folders at this location. See the definition for the /Folders node above. The client implementation decides how many recursively folders levels are supported.

Folders/<x>/Folders/...

Status	Occurrence	Format	Min. Access Types
Required	OneOrMore	node	Get

This is only to show that there is a sub-tree at this location but it is not defined in this part of the spec.

Ext**Favorites/<x>/Ext****Folders/<x>/Ext**

Status	Occurrence	Format	Min. Access Types
Optional	ZeroOrOne	node	Get

This optional interior node designates the single top-level branch of this management object tree into which vendor extensions MAY be supported, permanently or dynamically. Ext sub trees, such as this one, are included at various places in the management objects to provide flexible points of extension for implementation-specific parameters. However, vendor extensions MUST NOT be defined outside of one of these Ext sub-trees.

7. Operational Considerations

BMO is normatively dependent on the DM 1.2 specifications. However, this normative dependency should not be seen as restricting these MO definitions only to DM clients implementing that version of the DM enabler.

For example, a management authority may exchange BMO data-files using means not specifically defined in the DM 1.2 enabler.

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-DDS-DM-BMO-V1_0	16 Dec 2008	All	First draft
	13 Apr 2009	2	Incorporated CR: OMA-DM-BMO-2009-0001-CR_References.
	20 Jul 2009	6.3	Incorporated CR: OMA-DM-BMO-2009-0002-CR_BugFix_FolderSupport
	27 Jul 2009	All	Editorial update after closure review Editorial update from the mailing list
	02 Nov 2009	6.3.2	Correct the MO Identifier for BMO
	03 Nov 2009	6.3.2	Correct the MO Identifier for Favorite and Folder MO
Candidate Version OMA-DDS-DM-BMO-V1_0	24 Nov 2009	N/A	Status changed by TP TP ref# OMA-TP-2009-0506R01- INP_BMO_RRP_for_Candidate_Approval