

OMA DM: Management Object for SNAP

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OMA Device Management

NOKIA

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Change history

March 10, 2008	Version 1.0	Initial document release
May 20, 2009	Version 1.1	Description of “Hidden” leaf object added (Section 2.2.6).

1 Introduction

Service Network Access Point (SNAP), also known as the Network Destination on the device UI, is a new concept that represents a set of hosts or services—for example, internet, corporate intranet, or operator services. SNAP groups together a set of Internet Access Points (IAPs) that can be used to reach those hosts and services, and is associated with a policy to select the best among the IAPs.

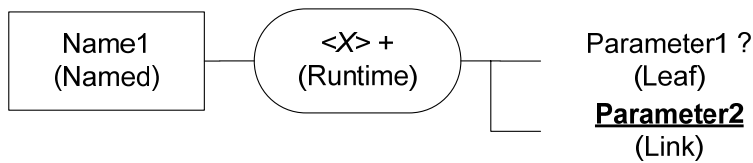
This document defines the SNAP Management Object v1.0 settings format for Open Mobile Alliance (OMA) Device Management (DM) usage. The definition of the parameter settings formats consists of tree structure, instance identifiers, and a detailed description of the management tree.

The document is a Nokia interpretation of the OMA DM specification; it explains the organisation of the parameters associated with this functionality.

SNAP Management Object v1.0 is supported from S60 3rd Edition, Feature Pack 2 onwards.

1.1 Notation

In this document the following notation is used to describe the DM Management Object tree model and parameters:



Named parent object

The name of the parent object is fixed. If the parent object's occurrence is One, the object's scope is permanent and cannot be deleted. If the parent object's occurrence is ZeroOrOne, the object's scope is dynamic and can be created and deleted at run time by the Management Server.

Runtime object

Runtime objects can be created and deleted at run time by the Management Server. The runtime object's scope is dynamic. Runtime objects in the text are represented by an <X> notation, where <X> represents the node's Instance Identifier that will be generated dynamically and can have any alphanumeric characters as a value.

Leaf object

Management objects without any children are called leaf objects. The Description Framework Type for leaf objects in this document is *text/plain*.

Link object

A link object is a type of leaf object that has an absolute URI value pointing to another object in the management tree of the same device, that is, always starting from the root node.

The following characters are used in the management object tree diagram to indicate how many instances of a specific node the Management Authority is able to configure in the management object tree:

Character	Meaning
+	One or Many occurrences; that is, at least one instance of the parameter needs to exist and is configured.
*	Zero or More occurrences.
?	Zero or One occurrence.
(None)	Occurrence is One; that is, the parameter needs to exist and is configured.

More information about the management tree, object descriptions, and property elements (Occurrence, Scope, Access type, and Format) can be found in the *OMA Device Management Tree and Description* document [1].

2 SNAP Management Object v1.0 description

This chapter defines the management object structure and identifiers needed when managing SNAPs using OMA DM.

The Management Object identifier for SNAP Management Object v1.0 is “com.s60/1.0/BearerManagementSNAP”.

2.1 Graphical representation

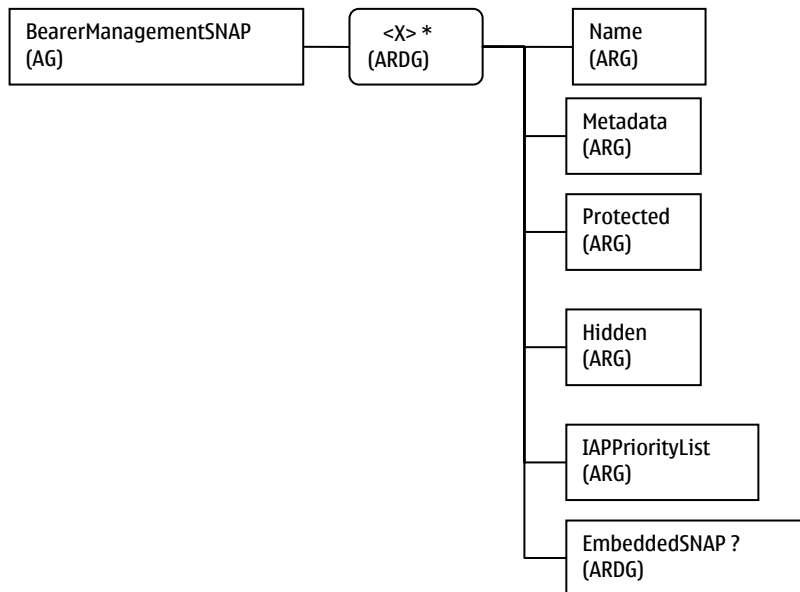


Figure 1: Graphical representation of SNAP Management Object

2.2 Node descriptions

2.2.1 ./ BearerManagementSNAP

Occurrence	Format	Access type
One	Chr	Add, Get

Root node for data mobility settings.

2.2.2 ./ BearerManagementSNAP/<X>/

Occurrence	Format	Access type
ZeroOrMore	Chr	Add, Replace, Delete, Get

Dynamic node representing SNAP.

2.2.3 ./BearerManagementSNAP/<X>/Name

Occurrence	Format	Access type
One	Chr	Add, Replace, Get

Name of SNAP.

2.2.4 ./BearerManagementSNAP/<X>/Metadata

Occurrence	Format	Access type
One	Integer	Add, Replace, Get

Metadata for SNAP. This setting value defines the properties (Highlight, HiddenAgent) and purpose (for example, internet) of the SNAP. The BM adapter accepts the data in decimal form, and a combination of property and purpose may be used. Currently the following settings are defined, but new settings may be added in the future:

Values	Description
2	Highlight. Whether SNAP is highlighted in the Agent dialog.
4	HiddenAgent. Whether SNAP is hidden from the Agent dialog.
256	Internet SNAP. This can be defined for only one SNAP.
512	Operator SNAP. This can be defined for only one SNAP.
768	MMS SNAP. This can be defined for only one SNAP.
1024	Intranet SNAP. This can be defined for only one SNAP.

The value is a combination of the properties and purpose, for example, Internet 256, Internet&Highlight 258, etc.

2.2.5 ./BearerManagementSNAP/<X>/Protected

Occurrence	Format	Access type
One	Chr	Add, Replace, Get

Indicates the protection attributes of the SNAP in the device. The following values are used:

Values	Description
0	No protection.
1	SNAP and its contents. User is not able to modify SNAP settings or add/move IAPs.
2	SNAP Name Protected. SNAP cannot be renamed or deleted by the user.

2.2.6 ./BearerManagementSNAP/<X>/Hidden

Occurrence	Format	Access type
ZeroOrOne	Bool	Add, Replace, Get

Defines if SNAP is hidden from the Connection Selection dialog or not. If this value is not set, SNAP is visible in the dialog. The following values are possible:

Values	Description
True	SNAP is hidden from the Connection Selection dialog but is visible in the Network Destinations menu.
False	SNAP is visible in the Connection Selection dialog.

2.2.7 `./BearerManagementSNAP/<X>/IAPPriorityList`

Occurrence	Format	Access type
One	Chr	Add, Replace, Get

List of IAPs that can be used to reach this SNAP. The list contains URIs of the IAPs in priority order, separated with “,”. Virtual IAPs that use underlying SNAP for connectivity will automatically receive wildcard priority, for example, “./AP/APIId001,./AP/APIId003”.

2.2.8 `./BearerManagementSNAP/<X>/EmbeddedSNAP`

Occurrence	Format	Access type
ZeroOrOne	Chr	Add, Replace, Delete, Get

URI of the embedded SNAP, for example, “./BearerManagementSNAP/SNAP1”.

3 Terms and abbreviations

Term or Abbreviation	Meaning
AP	Access point
DDF	Device description framework
DM	Device management
DMAcc	Device management account
DS	Data synchronization
DSAcc	Data synchronization account
IAP	Internet access point
MMS	Multimedia messaging service
NAP	Network access point
OMA	Open Mobile Alliance
SNAP	Service Network Access Point. Target network (IP level) of the services the application wants to use. It is defined as a group of IAPs.
SMS	Short message service
SyncML	Synchronization markup language
WAP	Wireless Application Protocol

4 References

- [1] *OMA Device Management Tree and Description*, version 1.1.2
Open Mobile Alliance Ltd. <http://www.openmobilealliance.com/>

5 Further reading

SyncML Device Management Standardized Objects, Version 1.1.2
Open Mobile Alliance Ltd. <http://www.openmobilealliance.com/>

Uniform Resource Identifiers (URI), [RFC2396]
The Internet Engineering Task Force (IETF) <http://www.ietf.org/>

OMA Device Management DDF for AP
Forum Nokia <http://www.forum.nokia.com/>

Internet Assigned Numbers Authority, [IANA]
IANA <http://www.iana.org/>

Standard for the Format of Arpa Internet Text Messages, [RFC822]
The Internet Engineering Task Force (IETF) <http://www.ietf.org/>

The TLS Protocol, Version 1.0, [RFC2246]
The Internet Engineering Task Force (IETF) <http://www.ietf.org/>

Using TLS with IMAP, POP3, and ACAP, [RFC2595]
The Internet Engineering Task Force (IETF) <http://www.ietf.org/>

Provisioning Content Specification, Version 1.1
Open Mobile Alliance Ltd. <http://www.openmobilealliance.com/>

Uniform Resource Identifiers (URI), [RFC2396]
The Internet Engineering Task Force (IETF) <http://www.ietf.org/>