

Introduction to Device Management



Concepts

This table explain briefly the concepts around Device Management Enabler (or service) its protocol and how device functions are exposed (via a management tree) to the remote server

Concept	Description	Diagram
Device Management, (DM) Enabler	The <i>OMA DM Client</i> exposes the device internal data to the <i>OMA DM Server</i> in the form of a hierarchic tree known as the “ DM Tree ”: it is made up of different building blocks (or sub-trees) called Management Objects providing specific functionality in the management of devices. In other words, the management of a device feature consists of the management of the DM Tree, which virtualizes the device features and functionalities.	The diagram illustrates the architecture of Device Management. On the left, a mobile phone icon represents the Device Management Enabler. It is connected to a box labeled Resources (Parameters or any type of objects, executables, trap). This box is connected via a Device specific interface to a DM Tree. The DM Tree is depicted as a dashed box containing several blue squares, one of which is labeled MO (Management Object). The DM Tree is connected to a DM server (represented by a blue box) through a DM interface (DM Protocols). Below this interface, a double-headed arrow indicates the types of operations supported: Add, get, replace, exec, copy, result, status, etc.

Device Management Protocol	Protocol Commands: • Get: Retrieves the value associated with the target node in the Management Tree • Replace: Sets the value associated with the target node, overwriting the previous value of the node • Add: Creates a new node at the specified location in the Management Tree. The new node can be a leaf node or the root node for a management object • Delete: Deletes a node, and the entire sub-tree beneath that node, if one exists • Exec: Executes a predefined function, that is statically bound to the target node, on the device. Examples include initiating software download, running a diagnostic test etc. • Copy: Replicates the structure and the node values associated with a sub-tree at one location to a different location within the Management Tree.
Device Management Tree	The OMA DM protocol supports the notion of Management Objects (MOs). These are abstract representations of remotely manageable capabilities exposed by the device. All the available MOs pertaining to a device are organized in a hierarchical tree structure known as the Management Tree. The Management Tree may be looked upon as the complete management view of a device's configuration and operational status. Different DM Servers may "see" different trees, depending upon their access rights to different portions of the Management Tree.