Introduction to Device Management

**Concepts**

This table explains 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.

<table>
<thead>
<tr>
<th>Concept</th>
<th>Description</th>
<th>Diagram</th>
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<tr>
<td><strong>Device Management, (DM) Enabler</strong></td>
<td>The <em>OMA DM Client</em> exposes the device internal data to the <em>OMA DM Server</em> in the form of a hierarchic tree known as the &quot;DM Tree&quot;: it is made up of different building blocks (or sub-trees) called <em>Management Objects</em> 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.</td>
<td><img src="resources.png" alt="Diagram" /></td>
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| **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. | ![Diagram](resources.png) |
| **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. | ![Diagram](resources.png) |