

**OMA LwM2M V1.1 Test Results - Virtual SVE-40, 15 - 21 Nov 2023**

Client V1.1 Teams: 4 Client implementations.

Server V1.1 Teams: **Cumulocity**

[OMA-ETS-LightweightM2M-V1\\_1-20190912-D.pdf](#)

	Pass	Fail	Inconclusive	Not Applicable	Out of Time	Totals
<b>Bootstrap Interface: [0-99]</b>						
LightweightM2M-1.1-int-0 – Client Initiated Bootstrap	2	0	0	2	0	4
LightweightM2M-1.1-int-1 – Client Initiated Bootstrap Full (PSK)	3	0	0	1	0	4
LightweightM2M-1.1-int-2 – Client Initiated Bootstrap Full (Cert)	2	0	0	2	0	4
LightweightM2M-1.1-int-3 – Simple Bootstrap from Smartcard	0	0	0	4	0	4
LightweightM2M-1.1-int-4 – Bootstrap Delete	3	0	0	1	0	4
LightweightM2M-1.1-int-5 – Server Initiated Bootstrap - FAILURE IS NOT RELATED TO THE SERVER	2	1*	0	1	0	4
LightweightM2M-1.1-int-6 – Bootstrap Sequence	1	0	0	3	0	4
LightweightM2M-1.1-int-7 – Fallback to bootstrap	1	0	0	1	2	4
LightweightM2M-1.1-int-8 – Bootstrap Read	2	0	0	1	1	4
LightweightM2M-1.1-int-9 – Bootstrap and Configuration Consistency	0	0	0	4	0	4
LightweightM2M-1.1-int-10 -- Client Initiated Bootstrap Full (EST)	0	0	0	4	0	4
<b>Registration Interface [100-199]</b>						
LightweightM2M-1.1-int-101 – Initial Registration	4	0	0	0	0	4
LightweightM2M-1.1-int-102 – Registration Update	4	0	0	0	0	4
LightweightM2M-1.1-int-103 – Deregistration	3	0	0	1	0	4
LightweightM2M-1.1-int-104 – Registration Update Trigger	4	0	0	0	0	4
LightweightM2M-1.1-int-105 – Discarded Register Update	4	0	0	0	0	4
LightweightM2M-1.1-int-106 – TCP Binding	0	0	0	3	1	4
LightweightM2M-1.1-int-107 – Extending the lifetime of a registration	4	0	0	0	0	4
LightweightM2M-1.1-int-108 – Turn on Queue Mode	2	0	0	1	1	4
LightweightM2M-1.1-int-109 – Behavior in Queue Mode	1	0	0	1	2	4
<b>Device management &amp; Service Enablement Interface [200-299]</b>						
LightweightM2M-1.1-int-201 – Querying basic information in Plain Text format	3	0	0	0	1	4
LightweightM2M-1.1-int-203 – Querying basic information in TLV format	4	0	0	0	0	4
LightweightM2M-1.1-int-204 – Querying basic information in JSON format	3	0	0	1	0	4
LightweightM2M-1.1-int-205 – Setting basic information in Plain Text format	3	0	0	0	0	3
LightweightM2M-1.1-int-211 – Querying basic information in CBOR format	3	0	0	1	0	4
LightweightM2M-1.1-int-212 – Setting basic information in CBOR format	3	0	0	1	0	4
LightweightM2M-1.1-int-215 – Setting basic information in TLV format - FAILURE IS NOT RELATED TO THE SERVER	3	1*	0	0	0	4
LightweightM2M-1.1-int-220 – Setting basic information in JSON format	1	0	0	3	0	4
LightweightM2M-1.1-int-221 – Attempt to perform operations on Security Object (ID: 0)	3	0	0	0	0	3
LightweightM2M-1.1-int-222 – Read on Object	4	0	0	0	0	4
LightweightM2M-1.1-int-223 – Read on Object Instance	4	0	0	0	0	4
LightweightM2M-1.1-int-224 – Read on Resource	4	0	0	0	0	4
LightweightM2M-1.1-int-225 – Read on Resource Instance	3	0	0	1	0	4
LightweightM2M-1.1-int-226 – Write (Partial Update) on Object Instance	2	1	0	0	1	4
LightweightM2M-1.1-int-227 – Write (replace) on Resource	4	0	0	0	0	4
LightweightM2M-1.1-int-228 – Write on Resource Instance	2	0	0	2	0	4
LightweightM2M-1.1-int-229 – Read-Composite Operation	3	0	0	1	0	4
LightweightM2M-1.1-int-230 – Write-Composite Operation	3	0	0	1	0	4
LightweightM2M-1.1-int-231 – Querying basic information in SenML JSON format	2	0	0	1	0	3
LightweightM2M-1.1-int-232 – Querying basic information in SenML CBOR format	3	0	0	1	0	4
LightweightM2M-1.1-int-233 – Setting basic information in SenML CBOR format	3	0	0	1	0	4
LightweightM2M-1.1-int-234 – Setting basic information in SenML JSON format	2	0	0	2	0	4
LightweightM2M-1.1-int-235 – Read-Composite Operation on root path	2	0	0	1	0	3
LightweightM2M-1.1-int-236 – Read-Composite - Partial Presence	2	0	0	1	0	3
LightweightM2M-1.1-int-237 – Read on Object without specifying Content-Type	3	0	0	0	0	3
LightweightM2M-1.1-int-241 – Executable Resource: Rebooting the device	4	0	0	0	0	4
LightweightM2M-1.1-int-256 – Write Operation Failure	3	0	0	0	0	3
LightweightM2M-1.1-int-257 – Write-Composite Operation	2	0	0	1	0	3
LightweightM2M-1.1-int-260 – Discover Command	2	0	0	1	0	3

LightweightM2M-1.1-int-261 – Write-Attribute Operation on a multiple resource	1	0	0	2	0	3
LightweightM2M-1.1-int-280 – Successful Read-Composite Operation	2	0	0	1	0	3
LightweightM2M-1.1-int-281 – Partially Successful Read-Composite Operation	2	0	0	1	0	3
<b>Information Reporting Interface [300-399]</b>						
LightweightM2M-1.1-int-301 – Observation and Notification of parameter values	4	0	0	0	0	4
LightweightM2M-1.1-int-302 – Cancel Observations using Reset Operation	4	0	0	0	0	4
LightweightM2M-1.1-int-303 – Cancel observations using Observe with Cancel parameter	4	0	0	0	0	4
LightweightM2M-1.1-int-304 – Observe-Composite Operation	2	0	0	1	1	4
LightweightM2M-1.1-int-305 – Cancel Observation-Composite Operation	2	0	0	1	1	4
LightweightM2M-1.1-int-306 – Send Operation	3	0	0	1	0	4
LightweightM2M-1.1-int-307 – Muting Send	3	0	0	1	0	4
LightweightM2M-1.1-int-308 – Observe-Composite and Creating Object Instance	2	0	0	1	1	4
LightweightM2M-1.1-int-309 – Observe-Composite and Deleting Object Instance	2	0	0	1	1	4
LightweightM2M-1.1-int-310 – Observe-Composite and modification of parameter values	2	0	0	1	1	4
LightweightM2M-1.1-int-311 – Send command	3	0	0	1	0	4
<b>Security [400-499]</b>						
LightweightM2M-1.1-int-401 – UDP Channel Security – Pre-shared Key Mode	4	0	0	0	0	4
LightweightM2M-1.1-int-402 – UDP Channel Security – Certificate Mode - FAILURE IS NOT RELATED TO THE SERVER	1	1*	0	2	0	4
LightweightM2M-1.1-int-403 – UDP Channel Security – Certified Mode (Server Identify Verification Failure) - FAILURE IS NOT RELATED TO THE SERVER	1	1*	0	2	0	4
LightweightM2M-1.1-int-404 – TCP Channel Security – Certificate Mode	0	0	0	4	0	4
LightweightM2M-1.1-int-405 – OSCORE Security	0	0	0	4	0	4
LightweightM2M-1.1-int-406 -- TCP Channel Security -- Pre-shared Key Mode	0	0	0	4	0	4
<b>LwM2M Device Object (ID 3) [650-699]</b>						
LightweightM2M-1.1-int-651 – Check Access to the Resources	2	2	0	0	0	4
LightweightM2M-1.1-int-652 – Querying the firmware version from the client	4	0	0	0	0	4
LightweightM2M-1.1-int-680 – Create Object Instance	3	0	0	0	1	4
LightweightM2M-1.1-int-685 – Delete Object Instance	3	0	0	0	1	4
<b>LwM2M Connectivity Monitoring (ID:4) [700-749].</b>						
LightweightM2M-1.1-int-701 – Querying the readable resources of object	3	0	1	0	0	4
LightweightM2M-1.1-int-710 – Basic Observation and notification on Connectivity Monitoring Object Resources	3	0	1	0	0	4
<b>Firmware Update Object (ID 5) [750-799]</b>						
LightweightM2M-1.1-int-751 – Querying the readable resources	4	0	0	0	0	4
LightweightM2M-1.1-int-755 – Setting the writable Resource Package	1	0	1	2	0	4
LightweightM2M-1.1-int-756 – Setting the writable Resource Package URI	3	0	0	1	0	4
LightweightM2M-1.1-int-760 –Basic Observation and notification on Firmware Update Object Resources	3	0	0	1	0	4
LightweightM2M-1.1-int-770 – Successful Firmware update (via COAP)	3	0	0	1	0	4
LightweightM2M-1.1-int-771 – Successful Firmware update (via alternative mechanism)	2	0	0	1	1	4
LightweightM2M-1.1-int-772 – Error Case 1: firmware installation without downloaded package	2	0	0	1	1	4
LightweightM2M-1.1-int-773 – Error Case 2: shortage of storage memory	1	0	0	2	1	4
LightweightM2M-1.1-int-774 – Error Case 3: out of memory	1	0	0	2	1	4
LightweightM2M-1.1-int-775 – Error Case 4: Connection lost during download (package URI)	1	0	0	2	1	4
LightweightM2M-1.1-int-776 – Error Case 5: Package Integrity check failure - FAILURE IS NOT RELATED TO THE SERVER	1	1*	0	1	1	4
LightweightM2M-1.1-int-777 – Error Case 6: unsupported package type - FAILURE IS NOT RELATED TO THE SERVER	1	1*	0	1	1	4
LightweightM2M-1.1-int-778 – Error Case 7: invalid URI (package URI) - FAILURE IS NOT RELATED TO THE SERVER	1	1*	0	1	1	4
LightweightM2M-1.1-int-779 – Error Case 8: Unsuccessful Firmware Update - FAILURE IS NOT RELATED TO THE SERVER	1	1*	0	1	1	4
<b>LwM2M Location Object (ID:6) [800-849]</b>						
LightweightM2M-1.1-int-801 – Querying the readable resources of object	4	0	0	0	0	4
LightweightM2M-1.1-int-810 – Basic Observation and notification on Location Object Instance	4	0	0	0	0	4
<b>Connectivity Statistics (ID 7) [900-949]</b>						
LightweightM2M-1.1-int-901 – Querying a Data Collection from Connectivity Object Instance	3	0	0	1	0	4
LightweightM2M-1.1-int-905 – Setting the writable resources	3	0	0	1	0	4
LightweightM2M-1.1-int-910 – Basic Observation and notification on Connectivity Monitoring Object Instance	3	0	0	1	0	4
<b>MULTI-SERVERS CONTEXT [950-999]</b>						
LightweightM2M-1.1-int-950 – Multi-Servers Registration	2	0	0	2	0	4
LightweightM2M-1.1-int-951 – Multi-Servers & Attributes	2	0	0	2	0	4
<b>Cellular Network Connectivity ID:10 [1200-1249]</b>						
LightweightM2M-1.1-int-1200 – Querying the readable resources of Object ID:10	2	0	0	2	0	4

LightweightM2M-1.1-int-1201 – Querying the readable resources of Object ID:10 in version 1.1	2	0	0	2	0	4
LightweightM2M-1.1-int-1202 – Setting the Power Saving Mode Resources of Object ID:10	1	0	0	3	0	4
LightweightM2M-1.1-int-1203 – Observation and notification on Object ID:10 related to Power Saving Mode Resources (version 1.1 only)	1	0	0	3	0	4
LightweightM2M-1.1-int-1204 – Observation and notification on Object ID: 10 related to timers	2	0	0	2	0	4
<b>APN connection profile ID:11 [1250-1299]</b>						
LightweightM2M-CONMGMT-1.1-int-1250 – APN configuration	1	0	1	2	0	4
<b>Bearer Selection ID:13 [1350-1399]</b>						
LightweightM2M-CONMGMT-1.1-int-1350 — Bearer Selection	0	0	0	4	0	4
<b>Portfolio Object (ID 16) [1600-1699]</b>						
LightweightM2M-1.1-int-1630 — Create Portfolio Object Instance	2	0	0	2	0	4
LightweightM2M-1.1-int-1635 — Delete Portfolio Object Instance	2	0	0	2	0	4
<b>BinaryAppDataContainer Object (ID 19) [1900-1999]</b>						
LightweightM2M-1.1-int-1900 — Observation and notification on Object ID: 19	2	0	0	2	0	4
LightweightM2M-1.1-int-1901 — Setting the writable Resource Data	1	1	0	2	0	4
<b>Event Log Object (ID 20) [2000-2099]</b>						
LightweightM2M-1.1-int-2000 — Control the Log Function	0	0	1	3	0	4
LightweightM2M-1.1-int-2001 — Querying the readable resources	1	0	0	3	0	4
<b>Totals:</b>	<b>248</b>	<b>12</b>	<b>5</b>	<b>134</b>	<b>25</b>	<b>424</b>

**Comments collected from Test Sessions participants:**

2 - Certificate Usage mismatch, cannot be easily addressed 3 - not supported by client 8-10 - not supported by server  
3: No smartcard available 9: not supported by server 10: not supported by server  
215, 226: device failed to parse POST from server 225: N/A for device  
test 204, 225, 228,231,234,235,237, 260, : not supported by server test 212: server sends incorrect path to resource test 220: not supported by both client and sever  
220 - not supported by either side 221 - not supported by server 226 - out of time, need to re-test later 256 - not supported by server  
220: not supported by client 261: not supported by server  
device: no composite support  
test 302: not supported by server test 305: server failed to send cancel observation-composite message test 309: not supported by server, can't delete the instance, need to delete the whole object  
Test 301 : Resource 3/0/6 3/0/7 3/0/8 are not exposed to the server.  
investigate on device to manage the certificate payload credentials  
device: just psk/udp support  
incompatible dtls ciphers  
come back check to update resource 3/0/13  
651: device issue parsing POST tlv  
test 685: not allowed by server  
resource /4/0/9: actual smnc range cannot be represented as an integer.  
- device seem not reply correctly when write 1 bit on resource 0 (to investigate) - device seem to manage fwu error ( with wrong package type, same than integrity test case, wrong URI pack )  
Server doesnt manage Firmware Update  
optional resouce 13 14 seem to no be provide on device  
1350 - not supported by client  
Device doesnt haveBinaryAppDataContainer object implemented  
Device doesnt have Event Log Object implemented  
2000: Test procedure is not in line with Object definition

**Explanation of Test Cases Results**

**PASS:** Both teams agree that they Pass – Criteria has been met  
**FAIL:** Both teams agree that they Fail – Criteria has not been met  
**INCONCLUSIVE:** Teams are not in agreement of the Test result  
**NOT APPLICABLE:** Test cannot be performed due to lack of support by either of the implementations  
**OUT OF TIME:** There was not enough time to test the Test Case