# OMA Device Management Sessionless Reporting

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**Open Mobile Alliance**

OMA-TS-DM_Sessionless_Reporting-V1_3-20160524-A

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# 1. Scope

This document defines how an OMA DM Client can send a report (e.g. periodic measurement report) to a DM Server, outside the context of a DM session.

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# 2. References

## 2.1 Normative References


**[DMDICT]** "OMA Device Management Dictionary", Draft Version 1.0, Open Mobile Alliance™, URL:http://www.openmobilealliance.org/

**[DMMETA]** "OMA Device Management Meta Information", Open Mobile Alliance™, OMA-TS-DM_DM_MetaInfo-V1_3, URL:http://www.openmobilealliance.org/

**[DMPROTO]** "OMA Device Management Protocol, Version 1.3". Open Mobile Alliance™. OMA-TS-DM_Protocol-V1_3 URL:http://www.openmobilealliance.org

**[DMREPPRO]** "OMA Device Management Representation Protocol, Version 1.3". Open Mobile Alliance™. OMA-TS-DM_RepPro-V1_3, URL:http://www.openmobilealliance.org

**[DMSEC]** "OMA Device Management Security, Version 1.3". Open Mobile Alliance™. OMA-TS-DM_Security-V1_3. URL:http://www.openmobilealliance.org/

**[DMStdObj]** "OMA Device Management Representation Protocol, Version 1.3". Open Mobile Alliance™, OMA-TS-DM_StdObj-V1_3, URL:http://www.openmobilealliance.org

**[RFC2119]** "Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997, URL:http://www.ietf.org/rfc/rfc2119.txt

**[SCRRULES]** "SCR Rules and Procedures", Open Mobile Alliance™, OMA-ORG-SCR_Rules_and_Procedures, URL:http://www.openmobilealliance.org/


## 2.2 Informative References

None.

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# 3. Terminology and Conventions

## 3.1 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope” and “Introduction”, are normative, unless they are explicitly indicated to be informative.

## 3.2 Definitions

Kindly consult [DMDICT] for all definitions used in this document.

## 3.3 Abbreviations

Kindly consult [DMDICT] for all abbreviations used in this document.

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# 4. Introduction

The OMA-DM [DMPROTO] transaction model is a secure request/response protocol between a DM Server and a DM Client that runs within the context of a DM session. Once a session is established, the DM Server alternately sends commands to the Client and receives responses from the Client. The Client also informs the Server about events that have occurred on the device, via unsolicited alerts. All the reporting of alerts from the DM Client to the DM Server is normally done within the context of a DM Session, in either Package 1 or Package 3.

This specification describes a sessionless reporting mechanism, that can be employed by an OMA-DM Client, to send information such as periodic measurement results etc. to a previously bootstrapped DM Server, outside the context of a DM session.

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# 5. Sessionless Reporting Feature

## 5.1 Sessionless Report Alert

Sessionless reporting by the DM Client is performed via a specially formatted alert, known as the Sessionless Report Alert. This alert conforms to the DTD for the SyncML element *Alert*, as defined in [DMREPPRO], with the following additional constraints:

1. The *Data* element immediately under the *Alert* element MUST be set to value 1230, which is the reserved value for the Sessionless Report Alert, as per [DMREPPRO].
2. Precisely one *Item* element MUST be present under the Alert element.
3. All the data associated with the Sessionless report MUST be CDATA escaped within the <*Item*>/<*Data*> block.
4. The *Meta* element MUST be specified.
5. The *Type* and *Format* meta tags MUST be present and their allowed values are as per the Generic Alert definition in [DMPROTO].
6. The *Mark* meta tag MAY be present and its allowed values are as per the Generic Alert definition in [DMPROTO].

## 5.2 Sessionless Report Message

Sessionless Report Alerts are sent from the DM Client to the DM Server in a Sessionless Report Message. This message conforms to the DTD for the SyncML elements *SyncHdr* and *SyncBody*, as defined in [DMREPPRO], with the following additional constraints.

1. The body of the Sessionless Report Message MUST NOT include anything other than Sessionless Report Alerts. In other words, the Sessionless Report Message MUST NOT be used to send Generic Alerts or DevInfo.
2. The header of the Sessionless Report Message MUST include the *Cred* element and the *SessionID* element MUST be set to zero (0).

### 5.2.1 Authentication Credentials

When the transport to send the Sessionless Report Message is unable to provide authentication and integrity, HMAC-SHA256 authentication mechanism, which is defined in [DMSEC], MUST be used as transport neutral integrity. If the DM Server receives a Sessionless Report Message that the DM Server cannot authenticate, the DM Server MUST silently ignore the message.

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## 5.3 Illustrative Example (Informative)

The following is an example of a Sessionless Report Message that includes two Sessionless Report Alerts.

```
<SyncML xmlns='SYNCML:SYNCML1.2'>
  <SyncHdr>
    <VerDTD>1.2</VerDTD>
    <VerProto> DM/1.3</VerProto>
    <SessionID>0</SessionID>
    <MsgID>1</MsgID>
    <Target>
      <LocURI>http://www.syncml.org/mgmt-server</LocURI>
    </Target>
    <Source>
      <LocURI>IMEI:493005100592800</LocURI>
    </Source>
    </Cred>
  </SyncHdr>
  <SyncBody>
    <Alert>  <!-- First Sessionless Report Alert  -->
      <CmdID>1001</CmdID>
      <Data>1230</Data>      <!-- Sessionless Report Alert code -->
      <Item>
        <Source><LocURI>./MOA/ExtA</LocURI></Source>
        <Meta>
          <Mark xmlns='syncml:metinf'>informational</Mark>
          <Type xmlns='syncml:metinf'>urn:oma:mo:samplealert1:1.0
                                <!-- Sessionless Report Alert identifier -->
          </Type>
          <Format xmlns='syncml:metinf'>xml</Format>
        </Meta>
        <Data>
<![CDATA[
<!-- Sessionless Report Alert data goes here -->
]]>
        </Data>
      </Item>
    </Alert>
    <Alert>  <!-- Second Sessionless Report Alert -->
      <CmdID>1002</CmdID>
      <Data>1230</Data>      <!-- Sessionless Report Alert code -->
      <Item>
        <Source><LocURI>./MOB/ExtB</LocURI></Source>
        <Meta>
          <Mark xmlns='syncml:metinf'>critical</Mark>
          <Type xmlns='syncml:metinf'>urn:oma:mo:samplealert2:1.0
                                <!-- Sessionless Report Alert identifier -->
          </Type>
          <Format xmlns='syncml:metinf'>xml</Format>
        </Meta>
        <Data>
<![CDATA[
<!-- Sessionless Report Alert data goes here -->
]]>
        </Data>
      </Item>
    </Alert>
  </SyncBody>
</SyncML>
```

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## 5.4 Report Size Restriction

The Sessionless Report MUST NOT exceed the maximum message size, as specified by the *MaxMsgSize* [DMMETA] meta information element. In other words, the entire Sessionless Report MUST fit entirely within one DM message and it MUST NOT use the Large Object [DMPROTO] feature.

## 5.5 Best Practices (Informative)

Sessionless Reporting is an optional feature for both DM Server and DM Client.

From the point of view of DM Server, SessionlessRpt node under DevDetail MO (see [DMStdObj]) can be read in order to verify if the DM Client supports this feature.

From the DM Client point of view, it is RECOMMENDED that the MO requiring this feature will provide a placeholder which can be used by DM Server to enable the feature and configure the necessary parameters (for example, target DM Server URL).

## 5.6 Message Flow (Informative)

The following message flow illustrates the sessionless reporting feature. As shown in Figure 1, a DM Client issues two Sessionless Report Alerts at time instants $t_1$ and $t_2$. The DM Client does not expect any acknowledgement from the DM Server.

**Figure 1: DM Client issuing Sessionless Report Alerts**

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# Appendix A. Change History (Informative)

## A.1 Approved Version History

| Reference | Date | Description |
|---|---|---|
| OMA-TS-DM_Sessionless_Reporting-V1_3-20160524-A | 24 May 2016 | Status changed to Approved by TP<br>TP Ref # OMA-TP-2016-0041R01-INP_DM_V1_3_ERP_for_final_Approval |

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# Appendix B. Static Conformance Requirements (Normative)

The notation used in this appendix is specified in [SCRRULES].

## B.1 SCR for DM Client

| Item | Function | Reference | Requirement |
|---|---|---|---|
| DM-SR-C-001-M | Support for OMA Sessionless Reporting. | Section 5.1 | |
| DM-SR-C-002-M | Alert Code MUST be 1230. | Section 5.1 | |
| DM-SR-C-003-M | Alert MUST contain only one Item. | Section 5.1 | |
| DM-SR-C-004-M | Data MUST be CDATA escaped in Item/Data element. | Section 5.1 | |
| DM-SR-C-005-M | Meta, Type and Format MUST be specified. | Section 5.1 | |
| DM-SR-C-006-M | Sessionless Report Message MUST include Cred element. | Section 5.1 | |
| DM-SR-C-007-M | Sessionless Report Message body MUST contain only Sessionless Report Alerts. | Section 5.1 | |
| DM-SR-C-008-M | If authentication scheme requires a nonce, the last nonce used with the DM Server MUST be used. | Section 5.1 | |

## B.2 SCR for DM Server

| Item | Function | Reference | Requirement |
|---|---|---|---|
| DM-SR-S-001-M | Support for OMA Sessionless Reporting. | Section 5.1 | |
| DM-SR-S-003-M | If server is not able to authenticate Sessionless Reporting Message, it MUST ignore the message silently. | Section 5.2 | |

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