SDP Attributes for OMA BCAST Service and Content Protection
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Abstract

This document provides descriptions of SDP attributes used by the Open Mobile Alliance’s Broadcast Service and Content Protection specification.
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1. Introduction

The Open Mobile Alliance (OMA)’s Broadcast (BCAST) group is specifying service and content protection mechanisms for broadcast services over wireless networks. As part of that specification, several new SDP attributes are necessary to allow the broadcast server to signal the service and content protection parameters to clients.

Section 8.2.4 of RFC 4566 [1] requires that new SDP attributes are registered through IANA with name, contact information and description (and other similar parameters). A standards track specification is RECOMMENDED if the new attribute(s) will have widespread use and interoperability considerations.

OMA BCAST specifications are expected to be used by 3GPP MBMS, 3GPP2 BCMCS and DVB-H based broadcast wireless systems. Whereas that might qualify as widespread use, all of the networks compliant to those specifications will use the OMA specification as the point of reference for interoperability and inter-operation. Thus, it may be sufficient to simply document the attributes and the context in which they are used.

This document provides descriptions of the SDP attributes used in the OMA BCAST Service and Content Protection specification.

2. Terminology

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 RFC 2119 [2].

3. New SDP Attributes

The following new SDP attributes have been specified:

a=bcastversion:<major>.<minor>

This field specifies the OMA BCAST version "bcastversion" Value in the format x.y. The Value field is of XML data type Decimal.

This is a session-level attribute and is not dependent on charset.
Each stream declared in the SDP will be uniquely numbered. Only non-zero positive integers are acceptable. While it is recommended that streams are numbered in increasing order, this is NOT mandatory. Duplicate streamids SHALL be ignored, i.e. only the first one SHALL be used.

This field specifies the kmsversion Value in the format x.y. The Value field is of XML data type Decimal.

This is a session-level attribute and is not dependent on charset.

The type of the value is String and it can take the values:

* oma-bcast-drm-pki
* oma-bcast-gba_u-mbms
* oma-bcast-gba_me-mbms
* oma-bcast-prov-bcmcs

This is a session level attribute. This field is not dependent on charset.

This field specifies the type of keystream as a string. The valid values are "stkm" and "ltkm" for short and long term key messages.

This is a session or a media-level attribute and is not dependent on charset.

The stkmstream attribute specifies mapping Short Term Key Message (STKM) streams to media streams in the SDP.

The attribute can be at session level, in which case it applies to all media streams, or it can be at media level, in which case it only applies to the specified media and would overwrite possible session level attribute.
Each session or media stream can have multiple stkmstream attributes. Using this attribute, the terminal can lookup the corresponding STKM stream announcements and figure out which one to listen to and process. We note that this attribute is optional and hence would not be there for unencrypted media streams.

This field is not dependent on charset.

a=encryptedstreamid:<id of the stkm stream>

This field refers to the encrypted stream id and takes a non-zero positive integer. This is a session or a media-level attribute and is not dependent on charset.

4. Security Considerations

In addition to the notes in Section 7 of RFC 4566 [1], the following considerations may be applicable:

Some of the new SDP parameters indicate the version, type of the key management system used for service or content protection of broadcast content. Others provide references to relevant key management traffic streams so that receivers can map the media streams to key streams and retrieve the necessary keys to decrypt media.

Modification of references to key streams will result in DoS attacks, but nothing more. However, if the kmsversion parameter is sent unprotected, there may be possibilities for downgrade attacks.

5. IANA Considerations

This specification requests registration of the following SDP attributes:

- a=bcastversion:<major>.<minor>
- a=control:streamid:<stream identification>
- a=kmsversion:<major>.<minor>
- a=kmstype:<Type of the Key Management System>
- a=keystreamtype:<Type of Keystream>
- a=stkmstream:<id of the stkm stream>
o  a=encryptedstreamid:<id of the stkm stream>

6. Acknowledgments

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7. References

7.1. Normative References


7.2. Informative References


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