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Conformance Test Specification for Marlin Adaptive Streaming Specification - Simple Profile

Version 1.0.1
Final

Source Marlin Developer Community
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77 Contents

78	1 INTRODUCTION.....	4
79	1.1 Document Organization.....	4
80	1.2 Overview	4
81	1.3 Conformance Conventions.....	4
82	1.4 References.....	4
83	1.4.1 Normative references.....	4
84	1.4.2 Informative references	5
85	1.5 Terms and Definitions.....	5
86	2 CONFORMANCE TEST ITEMS FOR BASELINE MODE	6
87	2.1 Media Presentation Description Mapping	6
88	2.1.1 With Marlin BB	6
89	2.1.2 With MS3	7
90	2.2 Media Format Mapping	7
91	2.2.1 Extensions to MP4 Common Encryption Format	7
92	2.2.2 MPEG-2 Transport.....	7
93	3 CONFORMANCE TEST ITEMS FOR HTTP LIVE STREAMING	8
94	3.1 Usage with MS3.....	8
95	3.2 Usage with Marlin BB.....	8
96		

97 1 Introduction

98 This document describes Conformance Test Specification for Marlin Adaptive
99 Streaming.

100 1.1 Document Organization

101 This document is organized as follows:

- 102 • (This) introduction, including abbreviations, definitions and references.
- 103 • Conformance Test Items for Baseline Mode
- 104 • Conformance Test Items for HTTP Live Streaming

105 1.2 Overview

106 This document describes Conformance Test Specification for client and service
107 implementations of the Marlin Adaptive Streaming Specification [MAS]. The goal for
108 this specification is to help ensure interoperability between independent
109 implementations of clients and services supporting Marlin Adaptive Streaming
110 Specification by testing functions specified in [MAS]. In other words, this
111 Conformance Test Specification does not ensure 100% coverage of the specification.
112 It is expected that the tests are expanded upon as implementers verify
113 interoperability with each other.

114 1.3 Conformance Conventions

115 The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”,
116 “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this
117 specification are to be interpreted as described in IETF RFC 2119 [RFC2119].

118
119 These capitalized key words are used to unambiguously specify requirements and
120 behavior that affect the interoperability and security of implementations. When these
121 key words are not capitalized they are meant in their natural-language sense.

122
123 All Elements of this specification are considered **Normative** unless specifically
124 marked **Informative**. All Normative Elements are **Mandatory** to implement, except
125 where such an element is specifically marked **OPTIONAL**. Finally, where **Normative**
126 elements are described as **OPTIONAL**, they MAY be omitted from an implementation,
127 but when implemented, they MUST be implemented as described.

128 1.4 References

129 1.4.1 Normative references

[8pus]	Octopus DRM Technology Platform Specifications, Version 1.0
[BBTS]	Marlin Broadband Transport Stream Specification, Version 1.1
[DASH]	ISO/IEC 23001-6, Information technology - MPEG systems technologies — Part 6: Dynamic adaptive streaming over HTTP (DASH)
[HLS]	IETF Internet Draft draft-pantos-http-live-streaming-05
[MAS]	Marlin Adaptive Streaming Specification - Simple Profile, Version 1.0

[MBB]	Marlin Broadband Delivery System Specification, Version 1.2
[MCS]	Marlin – Core System Specification, Version 1.3
[MP4CENC]	ISO/IEC 23001-7 Information technology -- MPEG systems technologies -- Part 7: Common encryption in ISO base media file format files
[MS3]	Marlin – Simple Secure Streaming Specification, Version 1.0
[MURIT]	URI Templates for Marlin, Version 1.0
[OMADCF]	Open Mobile Alliance DRM Content Format Approved Version 2.1 – 14 Oct 2008 OMA-TS-DRM-DCF-V2_1-20081014-A
[OMArlin]	OMArlin Specification, Version 1.0
[RFC2119]	S. Bradner, Key words for use in RFCs to Indicate Requirement Levels, IETF RFC 2119, March 1997. http://www.ietf.org/rfc/rfc2119.txt .
[Schema]	XML Schema Part 1: Structures. W3C Recommendation. D. Beech, M. Maloney, N. Mendelsohn, H. Thompson. May 2001. http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/

130

131 1.4.2 Informative references

Marlin	http://www.marlin-community.com/
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133

134 1.5 Terms and Definitions

Marlin Content ID	As defined in [8pus] §2.2, the ID that uniquely identifies a Marlin content object
Marlin Content Key	As defined in [MCS] §1.5, the symmetric key that encrypts the payload of the Marlin content.
Marlin License	As defined in [8pus] §2.2, the consolidated form of content governance objects that are used to protect the content and associate usage rules to the protected content.

135

136

137

138 2 Conformance Test Items for Baseline Mode

139 This section describes REQUIRED functions of Marlin BB DRM Client, MS3 Client,
140 MPD packager, and content packager supporting Baseline Mode.
141

142 2.1 Media Presentation Description Mapping

143 The following SHALL be tested for Marlin BB DRM Client and MS3 Client supporting
144 the Baseline Mode:

- 145 • From §2.2.1 of [MAS], when MPD includes the <ContentProtection> element
146 with the @schemeIdUri attribute equal to urn:uuid:5E629AF5-38DA-4063-
147 8977-97FFBD9902D4, a client MUST be capable of handling
148 <MarlinContentIds> and <MarlinContentId> elements to get Marlin Content ID.
- 149 • From §2.2.1 of [MAS], when the <ContentProtection> element has child
150 elements not defined in this version of specification, a client MUST be
151 capable to ignore such elements.

152 The Conformance Test SHALL confirm the specification above for the client.

153

154 The following SHALL be tested for an MPD packager supporting the Baseline Mode:

- 155 • From §2.2.1 of [MAS], MPD MUST include the <ContentProtection> element
156 with the @schemeIdUri attribute equal to urn:uuid:5E629AF5-38DA-4063-
157 8977-97FFBD9902D4 with <MarlinContentIds> and <MarlinContentId>
158 elements to indicate Marlin Content ID.
- 159 • From §2.2.1 of [MAS], MPD MAY include the <FormatVersion> element. When
160 the MPD includes the <FormatVersion> element, it MUST have attributes
161 @major equals to 1 and @minor equals to 0.

162 The Conformance Test SHALL confirm the specification above for the MPD packager.

163 2.1.1 With Marlin BB

164 The following SHALL be tested for Marlin BB DRM Client supporting the Baseline
165 Mode:

- 166 • From §2.2.1.1 of [MAS], when the <MarlinBroadband> element includes the
167 <SilentRightsUrl> element, Marlin BB DRM Client MUST be capable of
168 handling the <SilentRightsUrl> element according to [OMArLin] §4.2.1.
- 169 • From §2.2.1.1 of [MAS], when the <MarlinBroadband> element includes the
170 <PreviewRightsUrl> element, Marlin BB DRM Client MUST be capable of
171 handling the <PreviewRightsUrl> element according to [OMArLin] §4.2.2.
- 172 • From §2.2.1.1 of [MAS], when the <MarlinBroadband> element includes the
173 <RightsIssuerUrl> element, Marlin BB DRM Client MUST be capable of
174 handling the <RightsIssuerUrl> element according to [OMADCF] §5.2.1.9.

175 The Conformance Test SHALL confirm the specification above for the client.

176

177 The following SHALL be tested for an MPD packager supporting the Baseline Mode
178 for Marlin BB:

- 179 • From §2.2.1.1 of [MAS], when indicating the silent rights url, the MPD MUST
180 include the <SilentRightsUrl> element in the <MarlinBroadband> element and
181 set the value according to [OMArLin] §4.2.1.
- 182 • From §2.2.1.1 of [MAS], when indicating the preview rights url, the MPD MUST
183 include the <PreviewRightsUrl> element in the <MarlinBroadband> element
184 and set the value according to [OMArLin] §4.2.2.

コメント [Sony1]: Better to have the case
of second edition's MPD where Marlin
pssh is included?

- 185 • From §2.2.1.1 of [MAS], when indicating the rights issuer url, the MPD MUST
186 include the <RightsIssuerUrl> element in the <MarlinBroadband> element
187 and set the value according to [OMADCF] §5.2.1.9.
188 The Conformance Test SHALL confirm the specification above for the MPD packager.

189 **2.1.2 With MS3**

190 The following SHALL be tested for MS3 Client supporting the Baseline Mode:

- 191 • From §2.2.1.2 of [MAS], when the <URIsAreTemplated> element has True
192 value, a client SHALL be capable to resolve the URIs referenced in the MPD
193 using URI Template [MURIT].

194 The Conformance Test SHALL confirm the specification above for the client.

195

196 The following SHALL be tested for an MPD packager supporting the Baseline Mode
197 for MS3:

- 198 • From §2.2.1.2 of [MAS], when URIs referenced in a MPD use URI Template
199 [MURIT], the MPD MUST include the <URIsAreTemplated> element with
200 True value.

201 The Conformance Test SHALL confirm the specification above for the MPD packager.

202 **2.2 Media Format Mapping**

203 **2.2.1 Extensions to MP4 Common Encryption Format**

204 The following SHALL be tested for Marlin BB DRM Client and MS3 Client supporting
205 MP4 for the Baseline Mode:

- 206 • From §2.1 of [MAS], a client MUST support the Common Encryption scheme
207 ([MP4CENC]) for the media segments.
208 • From §2.3.1 of [MAS], a client MUST support the implicit Content ID mapping
209 mode to derive Marlin Content ID.
210 • From §2.3.2 of [MAS], a client MUST support the explicit Content ID mapping
211 mode to associate KIDs and Marlin Content IDs.

212 The Conformance Test SHALL confirm the specification above for the client.

213

214 The following SHALL be tested for a content packager supporting MP4 (ISO/IEC
215 14496-12) for the Baseline Mode:

- 216 • From §2.1 of [MAS], a content packager MUST use the Common Encryption
217 scheme ([MP4CENC]) for the media segments.
218 • From §2.3.1 of [MAS], when using the implicit mapping mode, the content
219 packager MUST follow the Marlin Content ID derivation from KID.
220 • From §2.3.1 of [MAS], when using the explicit mapping mode, the content
221 packager MUST include MarlinKidMappingTableBox('mkid') as child of a
222 Protection System Specific Header box ('pssh') and set the value according to
223 §2.3.2 of [MAS].

224 The Conformance Test SHALL confirm the specification above for the content
225 packager.

226

227 **2.2.2 MPEG-2 Transport**

228 The following SHALL be tested for Marlin BB DRM Client and MS3 Client supporting
229 MPEG-2 Transport (ISO/IEC 13818-2) for the Baseline Mode:

- 230 • From §2.1 of [MAS], a client MUST support the Marlin Broadband Transport
231 Stream [BBTS] format for the media segments.

232 The Conformance Test SHALL confirm the specification above for the client.

233

234 The following SHALL be tested for a content packager supporting MPEG-2 Transport
235 (ISO/IEC 13818-2) for the Baseline Mode:
236 • From §2.1 of [MAS], a content packager MUST use the Marlin Broadband
237 Transport Stream [BBTS] format for the media segments.
238 The Conformance Test SHALL confirm the specification above for the content
239 packager.

240 **3 Conformance Test Items for HTTP Live Streaming**

241 This section describes REQUIRED functions of Marlin BB DRM Client, MS3 Client,
242 and Playlist packager supporting HTTP Live Streaming for Marlin.

243
244 The following SHALL be tested for Marlin BB DRM Client and MS3 Client supporting
245 HTTP Live Streaming for Marlin:

- 246 • From §3.1 of [MAS], a client MUST support the Bulk Encryption with EXT-X-
247 KEY parameters defined in §3.1.
- 248 • From §3.2 of [MAS], a client MUST support the Packet Encryption with EXT-X-
249 KEY parameters defined in §3.2.

250 The Conformance Test SHALL confirm the specification above for the client.

251

252 The following SHALL be tested for a Playlist packager for Marlin:

- 253 • From §3.1 of [MAS], when using the Bulk Encryption, the Playlist MUST include
254 EXT-X-KEY parameters according to §3.1.
- 255 • From §3.2 of [MAS], when using the Packet Encryption, the Playlist MUST
256 include EXT-X-KEY parameters according to §3.2.

257 The Conformance Test SHALL confirm the specification above for the Playlist
258 packager.

259 **3.1 Usage with MS3**

260 The following SHALL be tested for MS3 Client supporting HTTP Live Streaming for
261 Marlin:

- 262 • From §3.3 of [MAS], when a URIS-ARE-TEMPLATED is added as EXT-X-KEY
263 parameter, a client SHALL be capable to resolve the URIs referenced in the
264 Playlist (and child playlist) using URI Template [MURIT].

265 The Conformance Test SHALL confirm the specification above for the client.

266

267 The following SHALL be tested for a Playlist packager for MS3:

- 268 • From §3.3 of [MAS], when URIs referenced in a Playlist (and child play list) use
269 URI Template [MURIT], the Playlist MUST include a URIS-ARE-TEMPLATED
270 as EXT-X-KEY parameter with TRUE value according to §3.3.

271 The Conformance Test SHALL confirm the specification above for the Playlist
272 packager.

273 **3.2 Usage with Marlin BB**

274 The following SHALL be tested for Marlin BB DRM Client supporting HTTP Live
275 Streaming for Marlin:

- 276 • From §3.4 of [MAS], when the SILENT-RIGHTS-URL is added as EXT-X-KEY
277 parameter, a client MUST be capable of handling the Url according to
278 [OMArin] §4.2.1.
- 279 • From §3.4 of [MAS], when the PREVIEW-RIGHTS-URL is added as EXT-X-
280 KEY parameter, a client MUST be capable of handling the Url according to
281 [OMArin] §4.2.2.

282 • From §3.4 of [MAS], when the RIGHTS-ISSUER-URL is added as EXT-X-KEY
283 parameter, a client MUST be capable of handling the Url according to
284 [OMADCF] §5.2.1.9.

285 The Conformance Test SHALL confirm the specification above for the client.

286

287 The following SHALL be tested for a Playlist packager for Marlin BB:

288 • From §3.4 of [MAS], when indicating the silent rights url, the Playlist MUST
289 include the SILENT-RIGHTS-URL as EXT-X-KEY parameter according to
290 §3.4.

291 • From §3.4 of [MAS], when indicating the preview rights url, the Playlist MUST
292 include the PREVIEW-RIGHTS-URL as EXT-X-KEY parameter according to
293 §3.4.

294 • From §3.4 of [MAS], when indicating the rights issuer url, the Playlist MUST
295 include the RIGHTS-ISSUER-URL as EXT-X-KEY parameter according to
296 §3.4.

297 The Conformance Test SHALL confirm the specification above for the Playlist
298 packager.