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ISO/IEC 23009-4

Second edition
2018-10

Information technology — Dynamic adaptive streaming over HTTP (DASH) —

Part 4: Segment encryption and authentication

Technologies de l'information — Diffusion en flux adaptatif dynamique sur HTTP (DASH) —

Partie 4: Cryptage et authentification des segments

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

This second edition cancels and replaces the first edition (ISO/IEC 23009-4:2013), which has been technically revised.

The main changes compared to the previous edition are as follows:

— support for ISO/IEC 23001-7 has been added as an additional encryption system;

— support for service protection orthogonal to content protection has been added;

— interoperable reporting of authenticity tags has been enabled.

A list of all parts in the ISO/IEC 23009 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Dynamic adaptive streaming over HTTP (DASH) enables media-streaming model for delivery of media content in which control lies exclusively with the client. Clients may request data using the HTTP protocol from standard web servers that have no DASH-specific capabilities. Consequently, the ISO/IEC 23009 series focuses not on client or server procedures but on the data formats used to provide a DASH Media Presentation.

This document provides methods and interfaces for segment encryption and verification of segment integrity and authenticity.

Information technology — Dynamic adaptive streaming over HTTP (DASH) —

Part 4: Segment encryption and authentication

1 Scope

This document specifies:

— Format-independent segment encryption and signalling mechanisms for use with any media segment format used in DASH (ISO/IEC 23009-1).

— Mechanisms to ensure segment integrity and authenticity for use with any segment used in DASH (ISO/IEC 23009-1).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 23009-1:2014, *Information technology — Dynamic adaptive streaming over HTTP (DASH) — Part 1: Media presentation description and segment formats*

STANDARD A.E. Federal Information Processing Standards Publication 197, FIPS-197, http://www.nist.gov/

STANDARD S.H. Federal Information Processing Standards Publication 180, FIPS 180-3, http://www.nist.gov/

Recommendation of Block Cipher Modes of Operation, NIST, NIST Special Publication 800-38A, http://www.nist.gov/

Recommendation for Block Cipher Modes of Operation: Galois/Counter Mode (GCM) and GMAC, NIST, NIST Special Publication 800-38D, http://www.nist.gov/

RFC 2104, *HMAC: Keyed-Hashing for Message Authentication, H. Krawczyk, M. Bellare, R. Canetti, February 1997*

RFC 7230, *Hypertext Transfer Protocol — HTTP/1.1, June 2014*

RFC 3986, *Uniform Resource Identifier (URI): Generic Syntax, January 2005*

RFC 5652/STD 70, *Cryptographic Message Syntax (CMS), R. Housley, September 2009*