

[MS-EME]:

Microsoft Edge Encrypted Media Extensions Standards Support Document

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Revision Summary

Date	Revision History	Revision Class	Comments
3/5/2018	1.0	New	Released new document.
3/23/2018	1.0	None	No changes to the meaning, language, or formatting of the technical content.

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1 Introduction

This document describes the level of support provided by Microsoft Edge for the Encrypted Media Extensions W3C Recommendation, [\[W3C-EME\]](#), published September 2017.

The recommendation extends the [HTMLMediaElement](#) interface specified in [\[W3C-HTML51\]](#). It defines an API to control playback of encrypted content, supporting use cases ranging from simple clear key decryption to high value video (given an appropriate user agent implementation). License/key exchange is controlled by the application, facilitating the development of robust playback applications that support a variety of content decryption and protection technologies.

1.1 Glossary

MAY, SHOULD, MUST, SHOULD NOT, MUST NOT: These terms (in all caps) are used as defined in [\[RFC2119\]](#). All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

1.2 References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the [Errata](#).

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, <http://www.rfc-editor.org/rfc/rfc2119.txt>

[W3C-EME] World Wide Web Consortium, "Encrypted Media Extensions", W3C Recommendation 18 September 2017, <https://www.w3.org/TR/encrypted-media/>

[W3C-HTML51] World Wide Web Consortium, "HTML 5.1", W3C Recommendation 1 November 2016, <https://www.w3.org/TR/2016/REC-html51-20161101/>

1.2.2 Informative References

None.

1.3 Microsoft Implementations

The following Microsoft web browsers implement some portion of the [\[W3C-EME\]](#) specification:

- Microsoft Edge

Each browser version may implement multiple document rendering modes. The modes vary from one to another in support of the standard. The following table lists the document modes supported by each browser version.

Browser Version	Document Modes Supported
Microsoft Edge	EdgeHTML Mode

For each variation presented in this document there is a list of the document modes and browser versions that exhibit the behavior described by the variation. All combinations of modes and versions that are not listed conform to the specification. For example, the following list for a variation indicates that the variation exists in three document modes in all browser versions that support these modes:
Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)

1.4 Standards Support Requirements

To conform to [\[W3C-EME\]](#), a user agent must implement all required portions of the specification. Any optional portions that have been implemented must also be implemented as described by the specification. Normative language is usually used to define both required and optional portions. (For more information, see [\[RFC2119\]](#).)

The following table lists the sections of [\[W3C-EME\]](#) and whether they are considered normative or informative.

Sections	Normative/Informative
1-2	Informative
3-12	Normative
13-14, A	Informative

1.5 Notation

The following notations are used in this document to differentiate between notes of clarification, variation from the specification, and points of extensibility.

Notation	Explanation
C####	This identifies a clarification of ambiguity in the target specification. This includes imprecise statements, omitted information, discrepancies, and errata. This does not include data formatting clarifications.
V####	This identifies an intended point of variability in the target specification such as the use of MAY, SHOULD, or RECOMMENDED. (See [RFC2119] .) This does not include extensibility points.
E####	Because the use of extensibility points (such as optional implementation-specific data) can impair interoperability, this profile identifies such points in the target specification.

For document mode and browser version notation, see also section [1.3](#).

2 Standards Support Statements

This section contains all variations, clarifications, and extensions for the Microsoft implementation of [\[W3C-EME\]](#).

- Section [2.1](#) describes normative variations from the MUST requirements of the specification.
- Section [2.2](#) describes clarifications of the MAY and SHOULD requirements.
- Section [2.3](#) describes extensions to the requirements.
- Section [2.4](#) considers error handling aspects of the implementation.
- Section [2.5](#) considers security aspects of the implementation.

2.1 Normative Variations

The following subsections describe normative variations from the MUST requirements of [\[W3C-EME\]](#).

2.1.1 [MS-EME] Section 3.2 MediaKeySystemConfiguration dictionary

V0001: The label and sessionTypes types are not supported

The specification states:

```
3.2 MediaKeySystemConfiguration dictionary
...
WebIDL

dictionary MediaKeySystemConfiguration {
    DOMString          label = "";
    ...
    sequence<DOMString> sessionTypes;
};
```

All document modes (All versions)

The label and sessionTypes types are not supported.

2.1.2 [MS-EME] Section 5. MediaKeys Interface

V0002: The setServerCertificate method does not return a Promise<boolean>

The specification states:

```
5. MediaKeys Interface

The MediaKeys object represents a set of keys that an associated HTMLMediaElement can use
for decryption of media data during playback. It also represents a CDM instance.
...
WebIDL

[SecureContext]
interface MediaKeys {
    MediaKeySession  createSession(optional MediaKeySessionType
    sessionType = "temporary");
    Promise<boolean> setServerCertificate(BufferSource serverCertificate);
```

```
};
```

All document modes (All versions)

The `setServerCertificate` method does not return a `Promise<boolean>`; instead it returns a `Promise<void>`.

2.1.3 [MS-EME] Section 5.2 Storage and Persistence

V0003: Persistence is not supported

The specification states:

```
5.2 Storage and Persistence
```

```
This section describes general requirements related to storage and persistence.
```

All document modes (All versions)

Persistence is not supported.

2.1.4 [MS-EME] Section 6. MediaKeySession Interface

V0004: The `onkeystatuschange` and `onmessage` events are not supported

The specification states:

```
6. MediaKeySession Interface
```

```
The MediaKeySession object represents a key session.
```

```
...  
WebIDL  
[SecureContext]  
interface MediaKeySession : EventTarget {  
  ...  
  readonly attribute MediaKeyStatusMap keyStatuses;  
  attribute EventHandler onkeystatuschange;  
  attribute EventHandler onmessage;  
  ...  
};
```

All document modes (All versions)

The `onkeystatuschange` and `onmessage` events are not supported.

2.1.5 [MS-EME] Section 6.4.2 Update Key Statuses

V0005: The `keystatuschange` event is not supported

The specification states:

6.4.2 Update Key Statuses

The Update Key Statuses algorithm updates the set of known keys for a MediaKeySession or the status of one or more of the keys. Requests to run this algorithm include a target MediaKeySession object and a sequence of key ID and associated MediaKeyStatus pairs.

...

The following steps are run:

...

5. Queue a task to fire a simple event named `keystatuseschange` at the session.

All document modes (All versions)

The `keystatuseschange` event is not supported.

2.1.6 [MS-EME] Section 7. HTMLMediaElement Extensions

V0006: The `onwaitingforkey` event is not supported

The specification states:

7. HTMLMediaElement Extensions

This section specifies additions to and modifications of the HTMLMediaElement [HTML51] when the Encrypted Media Extensions are supported.

...

WebIDL

```
partial interface HTMLMediaElement {
    [SecureContext]
    readonly attribute MediaKeys? mediaKeys;
    ...
    attribute EventHandler onwaitingforkey;
    ...
};
```

All document modes (All versions)

The `onwaitingforkey` event is not supported.

2.2 Clarifications

There are no clarifications of the MAY and SHOULD requirements of [\[W3C-EME\]](#).

2.3 Extensions

The following subsections describe extensions to the requirements of [\[W3C-EME\]](#).

2.4 Error Handling

There are no additional error handling considerations.

2.5 Security

There are no additional security considerations.

3 Change Tracking

No table of changes is available. The document is either new or has had no changes since its last release.

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