

IANA Media Types

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What are Media Types?

- Media types are used for indicating the format of content transmitted over Internet protocols.
- Consist of a top-level type and a subtype.
 - May have parameters.
- Example:

```
text/html; charset=UTF-8
```

History

- Originally, media types were introduced for email messaging.
 - Ned Freed, Nathaniel S. Borenstein. [Multipurpose Internet Mail Extensions \(MIME\) Part Two: Media Types](#). RFC 2046, November 1996.
- Media types were used as values for the Content-Type MIME header and were called MIME types.

Usage

- Standards:
 - HTML
 - HTTP
 - Multipurpose Internet Mail Extensions (MIME)
 - ...
- Applications:
 - Email clients
 - Web browsers
 - Search engines
 - ...

Registration Procedure

- IANA (Internet Assigned Numbers Authority) is the organization responsible for administration of the media types.
 - Website: <https://www.iana.org/>
- Media types can be registered for media formats.
- The procedure for the specification and registration of media types:
 - Ned Freed, John C. Klensin, Tony Hansen. [Media Type Specifications and Registration Procedures](#). RFC 6838, January 2013.
- All media types:
<https://www.iana.org/assignments/media-types/media-types.xhtml>

Top-level Type and Subtype Names

Both top-level type and subtype names are case-insensitive.

Parameters (1)

- Parameter names are case-insensitive.
- Parameters may appear in any order.
- It is an error for a specific parameter to be specified more than once.
- There is no defined syntax for parameter values.
- The names, values, and meanings of any parameters must be fully specified the registration.

Parameters (2)

Parameter examples:

- Content-Type: text/html; charset=UTF-8
- Content-Type: audio/ogg; codecs=vorbis
- Content-Type: video/ogg; codecs="theora, vorbis"
- Content-Type: multipart/form-data; boundary=AaB03x
- Content-Type: text/csv; charset=ISO-8859-1;
header=present

Top-level Types

- **application**: Types for discrete data that do not fit under any of the other type names, and particularly for data to be processed by some type of application program.
- **audio**
- **font**
- **image**
- **message, multipart**: Composite types; that is, they provide a means of encapsulating zero or more objects, each one a separate media type.
- **model**: Electronically exchangeable behavioral or physical representations within a given domain (for example, 3D models).
- **text**: Many subtypes of text define a charset parameter.
- **video**

Subtypes

- Each subtype is registered into a specific registration tree.
- The name of the subtype carries information about the tree it belongs to.
- Subtype names that begin with a *tree.* prefix belong to that tree.

Registration Trees

- Standards tree
- Vendor tree
- Personal or vanity tree
- Unregistered x. tree

Registration Trees (1): Standards Tree

- Intended for types of general interest to the Internet community.
- Subtype names in this tree do not contain a prefix.
- Examples: application/gzip, application/xml, audio/mp4, image/jpeg, multipart/mixed, text/csv, video/ogg

Registration Trees (2): Vendor Tree

- The vendor tree is used for media types associated with publicly available products.
- Subtype names in this tree begin with the `vnd.` prefix that may be followed by the name of the vendor and the product.
- Examples: `application/vnd.ms-excel`,
`image/vnd.adobe.photoshop`

Registration Trees (3): Personal or Vanity Tree

- Subtype names beginning with the `prs.` prefix may be used for products that are not distributed commercially or are experimental.
- Example: `audio/prs.sid`

Example (4): Unregistered x. Tree

- Subtype names beginning with x. may be used for types intended exclusively for use in private, local environments.
- Types in this tree cannot be registered and are intended for use only with the active agreement of the parties exchanging them.
- Use of types in this tree is strongly discouraged, types in the vendor and personal trees should be used instead.

Structured Syntax Suffix

- The remaining part of the subtype name after the '+' character (if present).
- Specifies the underlying structure (for example, JSON or XML) of that media type.
- Structured syntax suffixes are registered by IANA.
- The list of currently available suffixes: +ber, +cbor, +cbor-seq, +der, +fastinfoset, +gzip, +json, +json-seq, +jwt, +sqlite3, +tlv, +wbxml, +zip, +zstd, +xml, +yaml
- See:
 - [Structured Syntax Suffix Registry](#)
 - Tony Hansen, Alexey Melnikov. [Additional Media Type Structured Syntax Suffixes](#). RFC 6839, January 2013.
- Examples of use: application/calendar+json, application/calendar+xml, application/xhtml+xml

Registration Requirements

- Media type registrations can specify how applications should interpret fragment identifiers.
- Structured syntax suffix registration can specify how applications should interpret fragment identifiers for media media types that use that structured syntax.

Notable Media Types (1)

application top-level type:

Media Type	Format	Further Information
application/gzip	GZIP	RFC 1952
application/javascript	ECMAScript	https://262.ecma-international.org/
application/json	JSON	https://www.json.org/
application/octet-stream	Arbitrary binary data	
application/xhtml+xml	XHTML	https://html.spec.whatwg.org/multipage/xhtml.html#the-xhtml-syntax
application/xml	XML	https://www.w3.org/XML/
application/zip	ZIP	https://pkware.cachefly.net/webdocs/casestudies/APPNOTE.TXT

Notable Media Types (2)

audio top-level type:

Media Type	Format	Further Information
audio/flac	FLAC (Free Lossless Audio Codec)	https://xiph.org/flac/
audio/mp4	MP4 files that don't contain video streams	ISO/IEC 14496-14:2020
audio/ogg	Ogg files predominantly containing audio data	https://xiph.org/ogg/ http://xiph.org/vorbis/
audio/webm (unregistered)	WebM files that don't contain any video data	https://www.webmproject.org/

Notable Media Types (3)

font top-level type:

Media Type	Format	Further Information
font/ttf	TrueType	https://developer.apple.com/fonts/TrueType-Reference-Manual/
font/woff	WOFF 1.0	https://www.w3.org/TR/WOFF/
font/woff2	WOFF 2.0	https://www.w3.org/TR/WOFF2/

Notable Media Types (4)

image top-level type:

Media Type	Format	Further Information
image/jpeg ⁴	JPEG	https://jpeg.org/
image/png	PNG	https://www.w3.org/Graphics/PNG/
image/svg+xml	SVG	https://www.w3.org/Graphics/SVG/
image/webp	WebP	https://developers.google.com/speed/webp/

Notable Media Types (5)

message top-level type:

Media Type	Format	Further Information
message/http	HTTP message	RFC 9112

Notable Media Types (6)

model top-level type:

Media Type	Format	Further Information
model/x3d-vrml	X3D	https://www.web3d.org/
model/x3d+fastinfoset		
model/x3d+xml		

Notable Media Types (7)

multipart top-level type:

Media Type	Format	Further Information
multipart/byteranges	Byte-ranges (as part of responses for partial HTTP requests)	RFC 9110
multipart/form-data	Form data	RFC 7578

Notable Media Types (8)

text top-level type:

Media Type	Format	Further Information
text/css	CSS	https://www.w3.org/Style/CSS/
text/csv	CSV	RFC 4180
text/html	HTML	https://html.spec.whatwg.org/
text/markdown	Markdown	RFC 7763
text/plain	Plain text	
text/xml	The same as application/xml	

Notable Media Types (9)

video top-level type:

Media Type	Format	Further Information
video/mp4	MP4 files containing video streams	ISO/IEC 14496-14:2020
video/ogg	Ogg files containing material that requires a visual interface	https://xiph.org/ogg/ https://www.theora.org/
video/webm (unregistered)	WebM files containing video data	https://www.webmproject.org/