

(registered 2020-02-13, last updated 2022-09-20)

Media type name: model

Media subtype name: obj

Required parameters: N/A

Optional parameters: N/A

Encoding considerations: 8bit

Security considerations: This media type does not allow for any kind of executable content. As such, the data elements currently defined in the OBJ specification alone do not create security risks beyond the information disclosed.

This format does not itself provided any form of integrity or confidentiality protection, so if such protection is needed it must be done externally, e.g., with HTTPs.

Interoperability considerations: The OBJ file format is well-established and well-adopted data format for exchange of 3D models between different software systems. OBJ expands beyond other file formats by including color/texture information.

OBJ is commonly utilized by modern software systems for 3D modeling, animation, 3D printing, and extended reality platforms.

Published specification: Wavefront Technologies. 1992. Object Files (.obj), Advanced Visualizer.

The US Library of Congress hosts a digital normative reference at <https://www.loc.gov/preservation/digital/formats/fdd/fdd000507.shtml>

Applications which use this media: This media type is used to exchange 3D models intended for visualization, 3D printing, and extended reality applications. The data consists of sets of adjacent triangles that together define a tessellated geometric surface.

The applications that use (or would use) the media type model/obj are those that display, create, edit, import, or export 3D model content using the OBJ standard. A short list of the applications include:

Blender (Open source, runs on Windows, Macintosh, Linux)
Cura (Ultimate BV, runs on Windows, Macintosh, Linux)
Geomagic Wrap (3DSystems, runs on Windows)
GrabCAD (browser-based)
*Instant Reality (Fraunhofer, runs on Windows, Macintosh, Linux)
Maya (Autodesk, runs on Windows, Macintosh)
Mimics (Materialise, runs on Windows)
3D Slicer (Open source, runs on Windows, Macintosh, Linux)
Simplify3D (Simplify3D, runs on Windows, Macintosh, Linux)

Fragment identifier considerations: Fragment identifiers must be encoded in utf-8.

Restrictions on usage: N/A

Additional information:

1. Deprecated alias names for this type: N/A
2. Magic number(s): N/A
3. File extension(s): obj

4. Macintosh file type code: N/A
5. Object Identifiers: N/A

General Comments: This media type is intended to be referenced in Supplement 208 (DICOM Encapsulation of OBJ Models for 3D Manufacturing and Virtual Reality) of the DICOM standard. The intent is for this supplement is to be published in the January 2020 update of the standard.

References: DICOM Standards Committee, "Digital Imaging and Communications in Medicine (DICOM)",
<https://www.dicomstandard.org/current/>

NOTE: The DICOM Standards Committee is an IESG recognized organization.
<https://www.iana.org/assignments/iesg-recognized-organizations>

See Also: Library of Congress Sustainability of Digital Formats:
<https://www.loc.gov/preservation/digital/formats/fdd/fdd000507.shtml>

Person to contact for further information:

Name: Carolyn Hull
Email: dicom@dicomstandard.org

Name: Working Group 17 Chairs
Email: wg17chairs@dicomstandard.org

Intended usage: Common

Author/Change controller:

DICOM Standard Committee
dicom@dicomstandard.org