

DICOM Correction Proposal

STATUS	Letter Ballot
Date of Last Update	2023/03/23
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Correction Number	CP-2204
Log Summary:	Restore singlepart for all resources and clarify range requests
Name of Standard	PS3.18
Rationale for Correction:	<p>The original Part 18 bulkdata URI retrieve required multipart in the accept value. The redocumentation wording was such that it appeared to require single part for retrieving a single bulkdata URI, for example in "10.4.3.3.5 Bulkdata Resource Payload</p> <p>The payload for a Bulkdata Resource (see Section 10.4.1.1.5) shall contain all the bulkdata for the resource. <i>When the resource is a single Bulkdata URI, the payload will contain the single corresponding element.</i> "</p> <p>It suggests that this is singlepart, without actually stating it either way. In the new redocumentation there is no statement that specifically says whether or not it has to be, maybe or must be single or multipart. This change will explicitly specify that both formats are acceptable.</p>
Correction Wording:	

Update Table 10.4.4-1

Table 10.4.4-1. Default, Required, and Optional Media Types

Target Resource	Media Type	Usage	Section
Instance Resources	multipart/related; type="application/dicom"	Default	Section 8.7.3.1
	multipart/related; type="application/octet-stream" (See Note 2)	Required	Section 8.7.3.3.1
	application/dicom (See Note 3)	Optional	Section 8.7.3.1
	Compressed Bulkdata Media Types (See Note 3)	Optional	Section 8.7.3.3.2
Metadata Resources	application/dicom+json (See Note 1)	Default	Section 8.7.3.2

Target Resource	Media Type	Usage	Section
	multipart/related; type="application/dicom+xml"	Required	Section 8.7.3.2
Bulkdata Resources and Pixel Data Resources	multipart/related; type="application/octet-stream"	Required	Section 8.7.3.3.1
	<u>application/octet-stream</u> (See Note 3)	<u>Optional</u>	<u>Section 8.7.3.3.3</u>
	multipart/related; type= a Compressed Bulkdata Media Type	Optional	Section 8.7.3.3.2
	<u>Compressed Bulkdata Media Types</u> (See Note 3)	<u>Optional</u>	<u>Section 8.7.3.3.2</u>
Rendered Resources	multipart/related; type= a Compressed Bulkdata Media Type	Optional	Section 8.7.4
	Compressed Bulkdata Media Types (See Note 3)	Optional	Section 8.7.3.3.2

Note

1. The media type for application/dicom+json does not include "multipart/related" because, per Section F.2.1, JSON metadata for multiple instances is encoded in a single top-level array of JSON objects, rather than multiple parts with top-level arrays containing single JSON objects. This is also true when the media type compresses the JSON in a zip container.
2. Requesting Instance Resources (Study, Series, or Instance) with a Media Type of multipart/related; type="application/octet-stream" is retained for historical reasons. Such a request is equivalent to requesting the corresponding Bulkdata Resource (Study, Series, Instance).
3. The use of a single part Media Type is permitted for **resources which are a single response item. Rendered Instance Resource that is a single frame instance and for a Rendered Frames Resource that is an individual frame in a multi-frame instance.** The origin server is expected to ignore single part Media Types for other resources and if that means no Media Types remain, it will return a 406 (Not Acceptable) error, per Section 8.7.8.1. E.g., if a user agent requests a Rendered Study resource and only lists single part Media Types in the Accept header, it should expect an error, even if the study happens to only contain one single frame instance.

Update 8.6.1

8.6.1 Payload Structure

Payloads contain representations. Payloads may be single part or multipart.

The message Content-Type header field contains a media type that includes multipart/related when the payload is multipart, otherwise the payload is single part.

8.6.1.1 Single Part Payload

A message with a single part payload contains one representation that is described by the Content Representation Header Fields (see Section 8.4.3) contained in the message header.

A message with a single part payload shall have a Content-Type header field with a single part media-type (see Section 8.7.3).

Single part payloads may be requested with an HTTP Range request. If supported by the server, the response shall be according to the HTTP standard Range response.

Note:

A single part payload is only applicable for requests which return exactly one item. Such responses may also be encoded as a multipart payload with a single item in them, as determined by Table 10.4.1-1.

8.6.1.2 Multipart Payload

A message with a multipart payload contains ~~one~~ **zero** or more representations. Each representation goes in a separate part.

A message with a multipart payload shall have a Content-Type header field with a multipart media-type.

The media type of the root representation (see [RFC2387]) may be specified by the Content-Type header field of the message. If no root parameter is specified, then the root representation is the first representation in the payload.

Each part in a multipart payload shall start with a boundary string, followed by a Content-Type header field with a single part media type (see Section 8.7.3), followed by other fields as specified in Table 8.6.1-1. See also Figure 8.6-1. Other header fields may be included.

Note

1. Understanding the nature of an encoded Bulkdata resource may depend on the corresponding Metadata reference to the bulkdataURI and is not necessarily implicit in the Content-Type header field.

2. An HTTP Range request may be used with Multipart payloads, but the range applies to the entire response, INCLUDING the multipart markers. In order for the response to be valid across requests, the ordering of items and the choice of multipart separator must remain the same.