

Network Working Group
Request for Comments: 3302
Obsoletes: 2302
Category: Standards Track

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Tag Image File Format (TIFF) - image/tiff
MIME Sub-type Registration

Status of this Memo

This document specifies an Internet standards track protocol for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "Internet Official Protocol Standards" (STD 1) for the standardization state and status of this protocol. Distribution of this memo is unlimited.

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Abstract

This document describes the registration of the MIME sub-type image/tiff. This document refines an earlier sub-type registration in RFC 1528.

This document obsoletes RFC 2302.

1. Conventions used in this document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119 [REQ].

2. Overview

This document describes the registration of the MIME sub-type image/tiff. The baseline encoding of TIFF (Tag Image File Format) is defined by [TIFF].

3. Internet Fax Working Group

This document is a product of the IETF Internet Fax Working Group. All comments on this document should be forwarded to the email distribution list at <ietf-fax@imc.org>.

4. TIFF Definition

TIFF (Tag Image File Format) Revision 6.0 is defined in detail by Adobe in [TIFF]. The documentation can be obtained from Adobe at:

Adobe Developers Association
Adobe Systems Incorporated
345 Park Avenue
San Jose, CA 95110-2704

Phone: +1-408-536-6000
Fax: +1-408-537-6000

A copy of this specification can also be found in:
<http://partners.adobe.com/asn/developer/PDFS/TN/TIFF6.pdf>

While a brief scope and feature description is provided in this section as background information, the reader is directed to the original TIFF specification [TIFF] to obtain complete feature and technical details.

4.1 TIFF Scope

TIFF describes image data that typically comes from scanners, frame grabbers, and paint- and photo-retouching programs. TIFF is not a printer language or page description language. The purpose of TIFF is to describe and store raster image data. A primary goal of TIFF is to provide a rich environment within which applications can exchange image data. This richness is required to take advantage of the varying capabilities of scanners and other imaging devices. Though TIFF is a rich format, it can easily be used for simple scanners and applications as well because the number of required fields is small.

4.2 TIFF Features

Some of the features of TIFF (from [TIFF]) are:

- TIFF is capable of describing bilevel, grayscale, palette-color, and full-color image data in several color spaces.
- TIFF includes a number of compression schemes that allow developers to choose the best space or time tradeoff for their applications.
- TIFF is designed to be extensible and to evolve gracefully as new needs arise.

- TIFF allows the inclusion of an unlimited amount of private or special-purpose information.

5. MIME Definition

5.1 image/tiff

The image/tiff content-type was previously defined in RFC 1528 as containing TIFF 6.0 encoded image data, with specific reference made to a subset known as TIFF Class F. This document redefines the original image/tiff definition to refer to TIFF 6.0 [TIFF] encoded image data, consistent with existing practice for TIFF aware Internet applications. This definition is further enhanced by introducing the new "application parameter" (section 6.2) to enable identification of a specific subset of TIFF and TIFF extensions for the encoded image data.

5.2 Application parameter

There are cases where it may be useful to identify the application applicable to the content of an image/tiff body. Typically, this would be used to assist the recipient in dispatching a suitable rendering package to handle the display or processing of the image file. As a result, an optional "application" parameter is defined for image/tiff to identify a particular application's subset of TIFF and TIFF extensions for the encoded image data, if it is known. No values are defined in this document.

Example:

```
Content-type: image/tiff; application=foo
```

There is no default value for application, as the absence of the application parameter indicates that the encoded TIFF image is Baseline TIFF or that it is not necessary to identify the application. It is up to the recipient's implementation to determine the application (if necessary) and render the image to the user.

New values for the image/tiff application parameter must be approved by the IESG prior to registration. As a result, the publication of a description of parameter values in an RFC is required.

Guidelines on writing IANA considerations for RFCs can be found in RFC 2434.

An application parameter is a hint to the receiver. It MUST NOT be used as a blind request to execute some arbitrary program.

Instead, it should be viewed rather as an indication of what sort of application would be able to handle the content most appropriately.

6. IANA Registration

To: ietf-types@iana.org
Subject: Registration of Standard MIME media type image/tiff

MIME media type name: image

MIME subtype name: tiff

Required parameters: none

Optional parameters: application

There is no format specified for the value of this parameter in addition to that specified by [MIME1]. Various applications of TIFF may define values as required as hints to the receiver. There is no default value for application, as the absence of the application parameter indicates that the encoded TIFF image is Baseline TIFF or that it is not necessary to identify the application. It is up to the implementation to determine the application (if necessary) and render the image to the user.

Encoding considerations:

This media type consists of binary data. The base64 encoding should be used on transports that cannot accommodate binary data directly.

Security considerations:

TIFF utilizes a structure which can store image data and attributes of this image data. The fields defined in the TIFF specification are of a descriptive nature and provide information that is useful to facilitate the viewing and rendering of images by a recipient. As such, the fields currently defined in the TIFF specification do not in themselves create additional security risks, since the fields are not used to induce any particular behavior by the recipient application.

TIFF has an extensible structure, so that it is theoretically possible that fields could be defined in the future which could be used to induce particular actions on the part of the recipient, thus presenting additional security risks, but

this type of capability is not supported in the referenced TIFF specification. Indeed, the definition of fields which would include such processing instructions is inconsistent with the goals and spirit of the TIFF specification as defined to date.

Interoperability considerations:

The ability of implementations to handle all the defined applications (or profiles within applications) of TIFF may not be ubiquitous. As a result, implementations may decode and attempt to display the encoded TIFF image data only to determine that the image cannot be rendered. The presence of the application parameter may aid in allowing this determination before dispatching for rendering. However, it should be noted that the parameter value is not intended to convey levels of capabilities for a particular application.

Published specification:

TIFF (Tag Image File Format) is defined in:
TIFF (TM) Revision 6.0 - Final June 3, 1992

Adobe Developers Association
Adobe Systems Incorporated
345 Park Avenue
San Jose, CA 95110-2704

Phone: +1-408-536-6000
Fax: +1-408-537-6000

A copy of this specification can be found in:
<http://partners.adobe.com/asn/developer/pdfs/tn/TIFF6.pdf>

Applications which use this media type:

Imaging, fax, messaging and multi-media

Additional information:

Magic number(s):
II (little-endian): 49 49 2A 00 hex
MM (big-endian): 4D 4D 00 2A hex
File extension(s): .TIF
Macintosh File Type Code(s): TIFF

Person & email address to contact for further information:

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James Rafferty
jraff@brooktrout.com

Intended usage: COMMON

Change controller: James Rafferty

6. Security Considerations

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TIFF has an extensible structure, so that it is theoretically possible that fields could be defined in the future which could be used to induce particular actions on the part of the recipient, thus presenting additional security risks, but this type of capability is not supported in the referenced TIFF specification. Indeed, the definition of fields which would include such processing instructions is inconsistent with the goals and spirit of the TIFF specification as defined to date.

7. Changes from RFC 2302

- * Correction of magic number
- * Improvements of the security considerations
- * Change of change controller
- * Various editorials to improve clarity

8. References

8.1 Normative References

- [REQ] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

- [MIME1] Freed, N. and N. Borenstein, "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies", RFC 2045, November 1996.
- [MIME4] Freed, N. and N. Borenstein, "Multipurpose Internet Mail Extensions (MIME) Part Four: Registration Procedures", BCP 13, RFC 2048, November 1996.
- [TIFF] Adobe Developers Association, TIFF (TM) Revision 6.0 - Final, June 3, 1992.

8.2 Non-Normative References

- [TIFFREG] Parsons, G., Rafferty, J. and S. Zilles, "Tag Image File Format (TIFF) -image/tiff MIME Sub-type Registration", RFC 2302, March 1998.
- [TPC.INT] Malamud, C. and M. Rose, "Principles of Operation for the TPC.INT Subdomain: Remote Printing -- Technical Procedures", RFC 1528, October 1993.

9. Authors' Addresses

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