

Network Working Group  
Internet-Draft  
Intended status: Standards Track  
Expires: September 8, 2009

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March 7, 2009

Conversion parameters for IMAP CONVERT  
draft-melnikov-lemonade-convert-params-03.txt

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## Abstract

This is a companion document to the IMAP CONVERT ([RFC 5259](#)) extension defined by the Lemonade Working Group. It defines additional conversion parameters for conversions of images, audio, video and textual body parts. It also demonstrates additional CONVERT usage scenarios.

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## 1. Requirements notation

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 [[RFC2119](#)].

In examples, "C:" and "S:" indicate lines sent by the client and server respectively. If a single "C:" or "S:" label applies to multiple lines, then the line breaks between those lines are for editorial clarity only and are not part of the actual protocol exchange. The five characters [...] means that something has been elided.

[[anchor2: Editorial comments and questions are marked like this.]]

## 2. Additional conversion parameters applicable to multiple MIME types

The sizeLimit defines the maximum size (in bytes) of the converted body part. It can be used with any conversion (including the "default conversion").

## 3. Additional conversion parameters for image and video conversions

Width and height of the resulting image can be specified using the PIX-X and PIX-Y parameters defined in [[DISPLAY-FEATURES](#)]. If only one of the parameters is specified, the aspect ratio of the resulting image MUST be maintained.

Number of different colors per image pixel (depth) can be controlled by the "color-levels" conversion parameter [[DISPLAY-FEATURES](#)]. This would typically be combined with the "color" conversion parameter [[DISPLAY-FEATURES](#)], which controls color encoding scheme, such as Mapped (palette or otherwise mapped color), Grey (grey-scale only) or Full (full continuous-tone color)

#### 4. Additional conversion parameters for conversions to text

The FORMAT conversion parameter can be used when converting a body part to TEXT/PLAIN. It can contain one of two values: "FLOWED" or "FIXED". When this parameter is not specified the default is "FIXED". This parameter is the most useful when converting from TEXT/HTML. See [[RFC3676](#)] for more details on the exact meaning of this conversion parameter.

The ExifData conversion parameter can be used when extracting Exif

information in textual format, i.e. when converting a JPEG image to TEXT/PLAIN. It can contain one of two values: "TRUE" or "FALSE". When this parameter is not specified the default value is "FALSE". The resulting TEXT/PLAIN body part is similar in format to the header field section of an email message [[RFC5322](#)]. Each header field name is as defined in [section 4.6](#) (4.6.4 D and 4.6.6) of [[EXIF](#)] and each value is UTF-8 representation of the corresponding value.

#### 5. Additional conversion parameters for audio and video conversions

A conversion may change codec bitrate by specifying the "bitrate" conversion parameter, which is a non-negative integer specifying bits per second. The "encoding-method" conversion parameter can control whether fixed bitrate or variable bitrate encoding is used. It might have one of the two values: "FBR" (for fixed bit rate) or "VBR" (for variable bit rate). For variable bit rate encodings the "min-bit-rate" parameter can also be specified. Its value is a non-negative integer specifying the minimum bits per second.

The "frameRate" conversion parameter can specify the maximum frame rate in frames per second, expressed as a rational (>0) number, for example "49/2".

#### 6. IANA Considerations

IANA is requested to add the following registrations to the registry established by [[MEDIAFEAT-REG](#)].

To: "Media feature tags mailing list"  
<media-feature-tags@apps.ietf.org>  
Subject: Registration of media feature tag sizeLimit

Media feature tag name:  
sizeLimit

ASN.1 identifier associated with feature tag:  
New assignment by IANA

Summary of the media feature indicated by this feature tag:  
The sizeLimit defines the maximum size (in bytes) of the converted body part. It allows a client to control resulting size of a body part conversion using IMAP CONVERT [[CONVERT](#)].  
This feature tag can be used with any conversion (including the "default conversion" [[CONVERT](#)]).

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Values appropriate for use with this feature tag:  
Signed Integer (only positive values are allowed)

The feature tag is intended primarily for use in the following applications, protocols, services, or negotiation mechanisms:  
IMAP CONVERT extension [[CONVERT](#)]

Examples of typical use:  
C: b001 CONVERT 2 BINARY[3 ("image/jpeg" ("sizeLimit"  
"16384"))]

Related standards or documents:  
[[CONVERT](#)]

Considerations particular to use in individual applications, protocols, services, or negotiation mechanisms:  
None

Interoperability considerations: None

Security considerations: None

Additional information: None

Name(s) & email address(es) of person(s) to contact for further information:

Alexey Melnikov <alexey.melnikov@isode.com>

Intended usage:

COMMON

Author/Change controller:

IETF

Requested IANA publication delay:

None

Other information:

None

To: "Media feature tags mailing list"

<media-feature-tags@apps.ietf.org>

Subject: Registration of media feature tag FORMAT

Media feature tag name:

FORMAT

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ASN.1 identifier associated with feature tag:

New assignment by IANA

Summary of the media feature indicated by this feature tag:

The FORMAT media feature can be used when converting a body part to TEXT/PLAIN media type.

See [[RFC3676](#)] for more details on the exact meaning of this media feature.

Values appropriate for use with this feature tag:

Token (It can contain one of two values: "FLOWED" or "FIXED". When this parameter is not specified the default is "FIXED".)

The feature tag is intended primarily for use in the following

applications, protocols, services, or negotiation mechanisms:  
IMAP CONVERT extension [[CONVERT](#)]

Examples of typical use:

```
C: b001 CONVERT 2 BINARY[3 ("text/plain" ("format"
    "flowed"))]
```

Related standards or documents:  
[[CONVERT](#)]

Considerations particular to use in individual applications,  
protocols, services, or negotiation mechanisms:  
None

Interoperability considerations: None

Security considerations: None

Additional information: None

Name(s) & email address(es) of person(s) to contact for further  
information:  
Alexey Melnikov <[alexey.melnikov@isode.com](mailto:alexey.melnikov@isode.com)>

Intended usage:  
COMMON

Author/Change controller:  
IETF

Requested IANA publication delay:  
None

Other information:

This parameter is the most useful when converting from  
TEXT/HTML.

To: "Media feature tags mailing list"  
<[media-feature-tags@apps.ietf.org](mailto:media-feature-tags@apps.ietf.org)>  
Subject: Registration of media feature tag ExifData

Media feature tag name:  
ExifData

ASN.1 identifier associated with feature tag:  
New assignment by IANA

Summary of the media feature indicated by this feature tag:  
The ExifData media feature can be used for extracting Exif information in textual format, i.e. when converting a JPEG image to TEXT/PLAIN.  
The resulting TEXT/PLAIN body part is similar in format to the header field section of an email message [[RFC5322](#)].  
Each header field name is as defined in [section 4.6](#) (4.6.4 D and 4.6.6) of [[EXIF](#)] and each value is UTF-8 representation of the corresponding value.

Values appropriate for use with this feature tag:  
Boolean (When this parameter is not specified the default value is "FALSE".)

The feature tag is intended primarily for use in the following applications, protocols, services, or negotiation mechanisms:  
IMAP CONVERT extension [[CONVERT](#)]

Examples of typical use:  
C: b001 CONVERT 2 BINARY[3 ("text/plain" ("ExifData" "TRUE"))]

Related standards or documents:  
[[CONVERT](#)]

Considerations particular to use in individual applications, protocols, services, or negotiation mechanisms:  
None

Interoperability considerations: None

Security considerations: None



Name(s) & email address(es) of person(s) to contact for further information:

Alexey Melnikov <alexey.melnikov@isode.com>

Intended usage:

COMMON

Author/Change controller:

IETF

Requested IANA publication delay:

None

Other information:

None

To: "Media feature tags mailing list"

<media-feature-tags@apps.ietf.org>

Subject: Registration of media feature tag bitrate

Media feature tag name:

bitrate

ASN.1 identifier associated with feature tag:

New assignment by IANA

Summary of the media feature indicated by this feature tag:

An IMAP CONVERT conversion may change codec bitrate by specifying the "bitrate" conversion parameter, which is a non-negative integer specifying bits per second.

Values appropriate for use with this feature tag:

Signed Integer (only positive values are allowed)

The feature tag is intended primarily for use in the following applications, protocols, services, or negotiation mechanisms:

IMAP CONVERT extension [[CONVERT](#)]

Examples of typical use:

C: b001 CONVERT 2 BINARY[3 ("AUDIO/G719" ("bitrate" "32768"))]

Related standards or documents:

[[CONVERT](#)]

Considerations particular to use in individual applications,  
protocols, services, or negotiation mechanisms:

None

Interoperability considerations: None

Security considerations: None

Additional information: None

Name(s) & email address(es) of person(s) to contact for further  
information:

Alexey Melnikov <alexey.melnikov@isode.com>

Intended usage:

COMMON

Author/Change controller:

IETF

Requested IANA publication delay:

None

Other information:

None

To: "Media feature tags mailing list"

<media-feature-tags@apps.ietf.org>

Subject: Registration of media feature tag encoding-method

Media feature tag name:

encoding-method

ASN.1 identifier associated with feature tag:

New assignment by IANA

Summary of the media feature indicated by this feature tag:

The "encoding-method" media feature can control  
whether fixed bitrate or variable bitrate encoding is used.

Values appropriate for use with this feature tag:

Token ("FBR" (for fixed bit rate) or "VBR" (for variable  
bit rate)).

The feature tag is intended primarily for use in the following

applications, protocols, services, or negotiation mechanisms:  
IMAP CONVERT extension [[CONVERT](#)]

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Examples of typical use:

Related standards or documents:

[\[CONVERT\]](#)

Considerations particular to use in individual applications,  
protocols, services, or negotiation mechanisms:

None

Interoperability considerations: None

Security considerations: None

Additional information: None

Name(s) & email address(es) of person(s) to contact for further  
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Alexey Melnikov <[alexey.melnikov@isode.com](mailto:alexey.melnikov@isode.com)>

Intended usage:

COMMON

Author/Change controller:

IETF

Requested IANA publication delay:

None

Other information:

None

To: "Media feature tags mailing list"

<[media-feature-tags@apps.ietf.org](mailto:media-feature-tags@apps.ietf.org)>

Subject: Registration of media feature tag min-bit-rate

Media feature tag name:

min-bit-rate

ASN.1 identifier associated with feature tag:  
New assignment by IANA

Summary of the media feature indicated by this feature tag:  
For variable bit rate encodings The "min-bit-rate"  
media feature can be specified when "encoding-method"  
has value "VBR". It is a positive integer  
specifying bits per second.

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Values appropriate for use with this feature tag:  
Signed Integer (only positive values are allowed)

The feature tag is intended primarily for use in the following  
applications, protocols, services, or negotiation mechanisms:  
IMAP CONVERT extension [[CONVERT](#)]

Examples of typical use:

Related standards or documents:  
[[CONVERT](#)]

Considerations particular to use in individual applications,  
protocols, services, or negotiation mechanisms:  
None

Interoperability considerations: None

Security considerations: None

Additional information: None

Name(s) & email address(es) of person(s) to contact for further  
information:  
Alexey Melnikov <[alexey.melnikov@isode.com](mailto:alexey.melnikov@isode.com)>

Intended usage:  
COMMON

Author/Change controller:  
IETF

Requested IANA publication delay:

None

Other information:

None

To: "Media feature tags mailing list"

<media-feature-tags@apps.ietf.org>

Subject: Registration of media feature tag frameRate

Media feature tag name:

frameRate

ASN.1 identifier associated with feature tag:

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Summary of the media feature indicated by this feature tag:

The "frameRate" media feature can specify the maximum frame rate in frames per second, expressed as a rational (>0) number, for example "49/2".

Values appropriate for use with this feature tag:

Rational number

The feature tag is intended primarily for use in the following applications, protocols, services, or negotiation mechanisms:

IMAP CONVERT extension [[CONVERT](#)]

Examples of typical use:

C: b001 CONVERT 2 BINARY[3 ("VIDEO/MP4" ("frameRate" "49/2"))]

Related standards or documents:

[[CONVERT](#)]

Considerations particular to use in individual applications, protocols, services, or negotiation mechanisms:

None

Interoperability considerations: None

Security considerations: None

Additional information: None

Name(s) & email address(es) of person(s) to contact for further information:

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Intended usage:

COMMON

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Requested IANA publication delay:

None

Other information:

None

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## [7.](#) Security Considerations

[[anchor9: TBD]]

## [8.](#) Acknowledgments

This document was reviewed and discussed in the Lemonade WG. Special thanks to Zoltan Ordogh for comments on this document.

## [9.](#) References

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November 1996.

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