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Media Feature Tag Registration Procedure

Status of this Memo

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ABSTRACT

Recent Internet applications, such as the World Wide Web, tie together a great diversity in data formats, client and server platforms, and communities. This has created a need for media feature descriptions and negotiation mechanisms in order to identify and reconcile the form of information to the capabilities and preferences of the parties involved.

Extensible media feature identification and negotiation mechanisms require a common vocabulary in order to positively identify media features. A registration process and authority for media features is defined with the intent of sharing this vocabulary between communicating parties. In addition, a URI tree is defined to enable sharing of media feature definitions without registration.

This document defines a registration procedure which uses the Internet Assigned Numbers Authority (IANA) as a central registry for the media feature vocabulary.

Please send comments to the CONNEG working group at <ietf-medfree@imc.org>. Discussions of the working group are archived at <URL: http://www.imc.org/ietf-medfree/>.

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1 Introduction

Recent Internet applications, such as the World Wide Web, tie together a great diversity in data formats, client and server platforms, and communities. This has created a need for media feature descriptions and negotiation mechanisms in order to identify and reconcile the form of information to the capabilities and preferences of the parties involved.

Extensible media feature identification and negotiation mechanisms require a common vocabulary in order to positively identify media features. A registration process and authority for media features is defined with the intent of sharing this vocabulary between communicating parties. In addition, a URI tree is defined to enable sharing of media feature definitions without registration.

This document defines a registration procedure which uses the Internet Assigned Numbers Authority (IANA) as a central registry for the media feature vocabulary.

This document uses the terms MUST, MUST NOT, SHOULD, SHOULD NOT and MAY according to usage described in [8].

2 Media feature tag definitions

2.1 Media feature tag purpose

Media feature tags represent individual and simple characteristics related to media capabilities or properties associated with the resource to which they are applied. Examples of such features are:

* the color depth of the screen on which something is to be displayed
* the type of paper available in a printer
* the support of the ‘floating 5 dimensional tables’ feature
* the fonts which are available to the recipient
* the capability to display graphical content

Each media feature tag identifies a single characteristic. Values associated with a specific tag must use the data type defined for that tag. The list of allowed data types is presented below, in section 2.3.

Examples of media feature tags with values are:

* the width of a display in pixels per centimeter represented as an integer value.
* a font available to a recipient, selected from an enumerated list.
* the version of a protocol composed of integers "i.j.k", defined as either a value in an enumerated list or with a defined mapping to make the value isomorphic to a subset of integers (e.g. i*100 + j*10 +k, assuming j<=9 and k<=9).

Further examples of media feature tags are defined in detail elsewhere [4].

Feature collections may be composed using a number of individual feature tags [2]. Composition of feature collections is described elsewhere [2]. Examples of feature collections requiring multiple media feature tags are:

* the set of all fonts used by a document
* the width and height of a display
* the combination of color depth and resolution a display can support

This registry presumes the availability of the MIME media type registry, and MIME media types MUST NOT be re-registered as media feature tags. Media feature tags which are currently in use by individual protocols or applications MAY be registered with this registry if they might be applied outside of their current domain.

The media feature tag namespace is not bound to a particular transport protocol or capability exchange mechanism. The registry is limited, however, to feature tags which express a capability or preference related to how content is presented. Feature tags related to other axes of negotiation are not appropriate for this registry. Capability exchange mechanisms may, of course, be used to express a variety of capabilities or preferences.

2.2 Media feature tag syntax

A media feature tag is a string consisting of one or more of the following US-ASCII characters: uppercase letters, lowercase letters, digits, colon (":"), slash ("/"), dot (".") percent ("%"), and dash ("-"). Feature tags are case-insensitive. Dots are understood to potentially imply hierarchy; a feature can be subtyped by describing it as tree.feature.subfeature and by indicating this in the registration. Tags should begin with an alphabetic character.

In ABNF [6], this may be represented as:

```
Feature-tag = ALPHA *( ALPHA / DIGIT / ":" / "/" / "." / "-" /"%" )
```

Registrants should take care to avoid creating tags which might conflict with the creation of new registration trees; in general this means avoiding tags which begin with an alphabetic character followed by a dot. The current registration trees are described in section 3 below.

2.3 Media feature tag values

The registry will initially support the use of the following data types as tag values:

- signed integers
- rational numbers
- tokens, with equality relationship
- tokens, with defined ordering relationship
- strings, with standard (octet-by-octet) equality relationship
- strings, with defined equality and/or comparison relationship

"Token" here means the token data type as defined by [7], which may be summarized as:

```
token          = 1*<any CHAR except CTLs or tspecials>

tspecials      = "(" / ")" / "<" / ">" / "@"
                 / "," / ";" / ":" / "\" / <">
                 / "/" / "[" / "]" / "?" / "="
                 / "{" / "}" / SP / HT
```

At the time of registration, each tag must be associated with a single data type. If that data type implies a defined comparison or an ordering, the registrant must define the ordering or comparison. For ordered tokens, this may be by full enumeration of the tokens and their order or by reference to an ordering mechanism. For defined comparisons, a full description of the rules for comparison must be provided or included by reference.

Media feature tags related to spatial or temporal characteristics must be registered with a single canonical unit. It is strongly preferred that units be in the SI system; where current practice has defined units in other systems (such as pixels per inch), a conversion method to SI units must be provided. Conversion methods should include a defined rounding practice.

2.4 ASN.1 identifiers for media feature tags

Certain protocols use ASN.1 identifiers rather than human-readable representations for capability exchange. In order to allow both systems to interoperate, registrants may provide an ASN.1 identifier or ask that IANA assign an ASN.1 identifier during registration. These identifiers are not required for registration, but may provide assistance to those building gateways or other cross-protocol systems. Note that ASN.1 identifiers assigned by IANA will be treated as tokens, not as elements from which sub-delegated identifiers may be created or derived.

3 Media feature tag registration

Media feature tags can be registered in several different registration trees, with different requirements as discussed below. The vocabulary for these requirements is taken from [5]. In general, a feature tag registration proposal is circulated and reviewed in a fashion appropriate to the tree involved. The feature tag is then registered if the proposal is accepted.

Review of a feature tag in the URI tree is not required.

3.1 Registration trees

The following subsections define registration "trees", distinguished by the use of faceted names (e.g., names of the form "tree.feature-name").

3.1.1 IETF tree

The IETF tree is intended for media feature tags of general interest to the Internet Community, and proposals for these tags must meet the "IETF Consensus" policies described in [5].

Registration in the IETF tree requires approval by the IESG and publication of the feature tag specification as an RFC. Submissions for feature tag registration in the IETF tree can originate in any WG of the IETF or as an individual submission to the IESG.

Feature tags in the IETF tree normally have names that are not explicitly faceted, i.e., do not contain period (".", full stop) characters.

3.1.2 Global tree

Tags in the global tree will be distinguished by the leading facet "g.". An organization may propose either a designation indicative of the feature, (e.g., "g.blinktags") or a faceted designation including the organization name (e.g., "g.organization.blinktags"). Organizations which have registered media types under the MIME vendor tree should use the same organizational name for media feature tags if they propose a faceted designation. The acceptance of the proposed designation is at the discretion of the IANA. If the IANA believes that a designation needs clarification it may request a new proposal from the proposing organization or otherwise coordinate the development of an appropriate designation.

Registrations of feature tags in the global tree must meet the "Expert Review" policies described in [5]. In this case, a designated area expert will review the proposed tag, consulting with the members of a related mailing list. A registration may be proposed for the global tree by anyone who has the need to allow for communication on a particular capability or preference.

3.1.3 URI tree

A feature tag may be defined as a URI using the restricted character set defined above. Feature tags in the URI tree are identified by the leading facet "u.". The leading facet u. is followed by a URI [9] which conforms to the character limitations specified in this

document. The author of the URI is assumed to be registration authority regarding features defined and described by the content of the URI. These tags are considered unregistered for the purpose of this document.

3.1.4 Additional registration trees

From time to time and as required by the community, the IANA may, with the advice and consent of the IESG, create new top-level registration trees. These trees may be created for external registration and management by (for example) well-known permanent bodies, such as scientific societies for media feature types specific to the sciences they cover. Establishment of these new trees will be announced through RFC publication approved by the IESG.

3.2 Location of registered feature tag list

Feature tag registrations will be posted in the anonymous FTP directory: "ftp://ftp.isi.edu/in-notes/iana/assignments/media-feature-tags/" and all registered feature tags will be listed in the periodically issued "Assigned Numbers" RFC [currently STD 2, RFC-1700]. The feature tag description and other supporting material may also be published as an Informational RFC by sending it to "rfc-editor@rfc-editor.org".

3.3 IANA procedures for registering feature tags

The IANA will only register feature tags in the IETF tree in response to a communication from the IESG stating that a given registration has been approved.

Global tags will be registered by the IANA after review by a designated expert. That review will serve to ensure that the tag meets the technical requirements of this specification.

3.4 Registration template

To: media-feature-tags@apps.ietf.org (Media feature tags mailing list)
Subject: Registration of media feature tag XXXX

| Instructions are preceded by '|'. Some fields are optional.

Media feature tag name:

ASN.1 identifier associated with feature tag: [optional]

| To have IANA assign an ASN.1 identifier,
| use the value "New assignment by IANA" here.

Summary of the media feature indicated by this feature tag:

| Include a short (no longer than 4 lines) description or summary
| Examples:
| ‘Use of the xyzzy feature is indicated by ...’
| ‘Support of color display is indicated by ...’
| ‘Number of colors in a palette which can be defined ...’

Values appropriate for use with this feature tag:

[ ] 1. The feature tag is Boolean and may have values of TRUE or FALSE. A value of TRUE indicates an available capability. A value of FALSE indicates the capability is not available.

| If you wish to indicate two mutually exclusive possibilities
| that cannot be expressed as the availability or lack of a
| capability, use a two-token list, rather than a Boolean value.

[ ] 2. The feature has an associated numeric or enumerated value.

For case 2: Indicate the data type of the value:

[ ] 2a. Signed Integer
[ ] 2b. Rational number
[ ] 2c. Token (equality relationship)
[ ] 2d. Token (ordered)
[ ] 2e. String (equality relationship)
[ ] 2f. String (defined comparison)

|IMPORTANT: You may only chose one of the above data types.

(Only for case 2) Detailed description of the feature value meaning, and of the format and meaning of the feature tag values for the alternative results.

| If you have selected 2d you must provide the ordering mechanism
| or a full and ordered enumeration of possible values. If you
| have selected 2f, you must provide a definition of the comparison.
| Definitions by included reference must be to stable and readily
| available specifications:
|
| If the number of alternative results is small, you may
| enumerate the identifiers of the different results and describe
| their meaning.
|
| If there is a limited useful numeric range of result (2b, 2c),

| indicate the range.
|
| The identifiers of the alternative results could also be
| described by referring to another IANA registry, for example
| the paper sizes enumerated by the Printer MIB.

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

| For applications, also specify the number of the first version
| which will use the tag, if applicable.

Examples of typical use: [optional]

Related standards or documents: [optional]

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

Interoperability considerations: [optional]

Security considerations:

Privacy concerns, related to exposure of personal information:

Denial of service concerns related to consequences of specifying incorrect values:

Other:

Additional information: [optional]

Keywords: [optional]

Related feature tags: [optional]

Related media types or data formats: [optional]

Related markup tags: [optional]

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

Intended usage:

| one of COMMON, LIMITED USE or OBSOLETE

Author/Change controller:

Requested IANA publication delay: [optional]

| A delay may only be requested for final placement in the global
| or IETF trees, with a maximum of two months. Organizations
| requesting a registration with a publication delay should note
| that this delays only the official publication of the tag
| and does not prevent information on it from being disseminated
| by the members of the relevant mailing list.

Other information: [optional]

| Any other information that the author deems interesting may be
| added here.

4 Security Considerations

Negotiation mechanisms reveal information about one party to other parties. This may raise privacy concerns, and may allow a malicious party to make better guesses about the presence of specific security holes.

5 Acknowledgments

The details of the registration procedure in this document were directly adapted from [1]. Much of the text in section 3 was directly copied from this source.

The idea of creating a vocabulary of areas of media features, maintained in a central open registry, is due to discussions on extensible negotiation mechanisms [3] in the IETF HTTP working group.

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