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Registration Procedures for URL Scheme Names

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Abstract

This document defines the process by which new URL scheme names are registered.

1.0 Introduction

A Uniform Resource Locator (URL) is a compact string representation of the location for a resource that is available via the Internet. RFC 2396 [1] defines the general syntax and semantics of URIs, and, by inclusion, URLs. URLs are designated by including a "<scheme>:" and then a "<scheme-specific-part>". Many URL schemes are already defined, however, new schemes may need to be defined in the future in order to accommodate new Internet protocols and/or procedures.

A registration process is needed to ensure that the names of all such new schemes are guaranteed not to collide. Further, the registration process ensures that URL schemes intended for wide spread, public use are developed in an orderly, well-specified, and public manner.

This document defines the registration procedures to be followed when new URL schemes are created. A separate document, RFC 2718, Guidelines for URL Schemes [2], provides guidelines for the creation of new URL schemes. The primary focus of this document is on the <scheme> portion of new URL schemes, referred to as the "scheme name" throughout this document.

1.1 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 RFC 2119.

2.0 URL Scheme Name Registration Trees

2.1 General

In order to increase the efficiency and flexibility of the URL scheme name registration process, the need is recognized for multiple registration "trees". The registration requirements and specific registration procedures for each tree differ, allowing the overall registration procedure to accommodate the different natural requirements for URL schemes. For example, a scheme that will be recommended for wide support and implementation by the Internet community requires a more complete review than a scheme intended to be used for resources associated with proprietary software.

The first step in registering a new URL scheme name is to determine which registration tree the scheme should be registered in. Determination of the proper registration tree is based on the intended use for the new scheme and the desired syntax for the scheme name.

This document will discuss in detail the tree that reflects current practice, under IETF ownership and control. It will also set forth an outline to assist authors in creating new trees to address differing needs for wide acceptance and interoperability, ease of creation and use, and type and "strength" of ownership.

2.2 The IETF Tree

The IETF tree is intended for URL schemes of general interest to the Internet community. The tree exists for URL schemes that require a substantive review and approval process. It is expected that applicability statements for particular applications will be published from time to time that recommend implementation of, and support for, URL schemes that have proven particularly useful in those contexts.

2.3 Additional Registration Trees

From time to time and as required by the community, the IESG may create new top-level registration trees. These trees may require significant, little or no registration, and may allow change control to rest in the hands of individuals or groups other than IETF. A new tree should only be created if no existing tree can be shown to address the set of needs of some sector of the community.

3.0 Requirements for Scheme Name Registration

3.1 General Requirements

All new URL schemes, regardless of registration tree, MUST conform to the generic syntax for URLs as specified in RFC 2396.

3.2 The IETF Tree

Registration in the IETF tree requires publication of the URL scheme syntax and semantics in either an Informational or Standards Track RFC. In general, the creation of a new URL scheme requires a Standards Track RFC. An Informational RFC may be employed for registration only in the case of a URL scheme which is already in wide usage and meets other standards set forth in RFC 2718, such as "demonstrated utility" within the Internet Architecture; the IESG shall have broad discretion in determining whether an Informational RFC is suitable in any given case, and may either recommend changes to such document prior to publication, or reject it for publication. An Informational RFC purporting to describe a URL scheme shall not be published without IESG approval. This is a departure from practice for Informational RFCs as set forth in RFC 2026, for the purpose of ensuring that the registration of URL schemes shall serve the best interests of the Internet community.

The NAMES of schemes registered in the IETF tree MUST NOT contain the dash (also known as the hyphen and minus sign) character ('-') USASCII value 2Dh. Use of this character can cause confusion with schemes registered in alternative trees (see section 3.3).

An analysis of the security issues inherent in the new URL scheme is REQUIRED. (This is in accordance with the basic requirements for all IETF protocols.) URL schemes registered in the IETF tree should not introduce additional security risks into the Internet Architecture. For example, URLs should not embed information which should remain confidential, such as passwords, nor should new schemes subvert the security of existing schemes or protocols (i.e. by layering or tunneling).

The "owner" of a URL scheme name registered in the IETF tree is assumed to be the IETF itself. Modification or alteration of the specification requires the same level of processing (e.g. Informational or Standards Track RFC) as used for the initial registration. Schemes originally defined via an Informational RFC may, however, be replaced with Standards Track documents.

3.3 Alternative Trees

While public exposure and review of a URL scheme created in an alternative tree is not required, using the IETF Internet-Draft mechanism for peer review is strongly encouraged to improve the quality of the specification. RFC publication of alternative tree URL schemes is encouraged but not required. Material may be published as an Informational RFC by sending it to the RFC Editor (please follow the instructions to RFC authors, RFC 2223 [3]).

The defining document for an alternative tree may require public exposure and/or review for schemes defined in that tree via a mechanism other than the IETF Internet-Draft mechanism.

URL schemes created in an alternative tree must conform to the generic URL syntax, RFC 2396. The tree's defining document may set forth additional syntax and semantics requirements above and beyond those specified in RFC 2396.

All new URL schemes SHOULD follow the Guidelines for URL Schemes, set forth in RFC 2718 [2].

An analysis of the security issues inherent in the new URL scheme is encouraged. Regardless of what security analysis is or is not performed, all descriptions of security issues must be as accurate as possible. In particular, a statement that there are "no security issues associated with this scheme" must not be confused with "the security issues associates with this scheme have not been assessed" or "the security issues associated with this scheme cannot be predicted because of <reason>".

There is absolutely no requirement that URL schemes created in an alternative tree be secure or completely free from risks. Nevertheless, the tree's defining document must set forth the standard for security considerations, and in any event all known security risks SHOULD be identified.

Change control must be defined for a new tree. Change control may be vested in the IETF, or in an individual, group or other entity. The change control standard for the tree must be approved by the IESG.

The syntax for alternative trees shall be as follows: each tree will be identified by a unique prefix, which must be established in the same fashion as a URL scheme name in the IETF tree, except that the prefix must be defined by a Standards Track document. Scheme names in the new tree are then constructed by prepending the prefix to an identifier unique to each scheme in that tree, as prescribed by that tree's identifying document:

<prefix>'-'<tree-specific identifier>

For instance, the "foo" tree would allow creation of scheme names of the form: "foo-blahblah:" and "foo-bar:", where the tree prescribes an arbitrary USASCII string following the tree's unique prefix.

4.0 Registration Procedures

4.1 The IETF Tree

The first step in registering a new URL scheme in the IETF tree is to publish an IETF Internet-Draft detailing the syntax and semantics of the proposed scheme. The draft must, minimally, address all of the items covered by the template provided in section 6 of this document.

After all issues raised during a review period of no less than 4 weeks have been addressed, submit the draft to the IESG for review.

The IESG will review the proposed new scheme and either refer the scheme to a working group (existing or new) or directly present the scheme to the IESG for a last call. In the former case, the working group is responsible for submitting a final version of the draft to the IESG for approval at such time as it has received adequate review and deliberation.

4.2 Alternative Trees

Registration of URL schemes created in an alternative tree may be formal, through IETF documents, IANA registration, or other acknowledged organization; informal, through a mailing list or other publication mechanism; or nonexistent. The registration mechanism must be documented for each alternative tree, and must be consistent for all URL scheme names created in that tree.

It is the responsibility of the creator of the tree's registration requirements to establish that the registration mechanism is workable as described; it is within the discretion of the IESG to reject the document describing a tree if it determines the registration mechanism is impractical or creates an undue burden on a party who

will not accept it. (For instance, if an IANA registration mechanism is proposed, IESG might reject the tree if its mechanism would create undue liability on the part of IANA.)

While the template in section 6 of this document is intended to apply to URL scheme names in the IETF tree, it is also offered as a guideline for those documenting alternative trees.

5.0 Change Control

5.1 Schemes in the IETF Tree

URL schemes created in the IETF tree are "owned" by the IETF itself and may be changed, as needed, by updating the RFC that describes them. Schemes described by Standards Track RFC but be replaced with new Standards Track RFCs. Informational RFCs may be replaced by new Informational RFCs or Standards Track RFCs.

5.2 Schemes in Alternative Trees

URL schemes in an alternative tree that are undocumented (as allowed by that tree's rules) may be changed by their owner at any time without notifying the IETF.

URL schemes created in an alternative tree that have been documented by an Informational RFC, may be changed at any time by the owner, however, an updated Informational RFC which details the changes made, must be submitted to the IESG.

The owner of a URL scheme registered in an alternative tree and documented by an Informational RFC may pass responsibility for the registration to another person or agency by informing the IESG.

The IESG may reassign responsibility for a URL scheme registered in an alternative tree and documented by an Informational RFC. The most common case of this will be to enable changes to be made to schemes where the scheme name is privately owned by the rules of its tree, and the owner of the scheme name has died, moved out of contact or is otherwise unable to make changes that are important to the community.

The IESG may reclassify a URL scheme created in an alternative tree and documented via an Informational RFC as "historic" if it determines that the scheme is no longer in use.

6.0 Registration Template

The following issues should be addressed when documenting a new URL scheme:

URL scheme name.

URL scheme syntax. This should be expressed in a clear and concise manner. The use of ABNF is encouraged. Please refer to RFC 2718 for guidance on designing and explaining your scheme's syntax.

Character encoding considerations. It is important to identify what your scheme supports in this regard. It is obvious that for interoperability, it is best if there is a means to support character sets beyond USASCII, but especially for private schemes, this may not be the case.

Intended usage. What sort of resource is being identified? If this is not a 'resource' type of URL (e.g. mailto:), explain the action that should be initiated by the consumer of the URL. If there is a MIME type associated with this resource, please identify it.

Applications and/or protocols which use this URL scheme name. Including references to documentation which defines the applications and/or protocols cited is especially useful.

Interoperability considerations. If you are aware of any details regarding your scheme which might impact interoperability, please identify them here. For example: proprietary or uncommon encoding method; inability to support multibyte character sets; incompatibility with types or versions of underlying protocol (if scheme is tunneled over another protocol).

Security considerations.

Relevant publications.

Person & email address to contact for further information.

Author/Change controller.

Applications and/or protocols which use this URL scheme name.

7.0 Security Considerations

Information that creates or updates a registration needs to be authenticated.

Information concerning possible security vulnerabilities of a protocol may change over time. Consequently, claims as to the security properties of a registered URL scheme may change as well. As new vulnerabilities are discovered, information about such vulnerabilities may need to be attached to existing documentation, so that users are not misled as to the true security properties of a registered URL scheme.

If the IESG agrees to delegate the registration and change control functions of an alternative tree to a group or individual outside of the IETF, that group or individual should have sufficient security procedures in place to authenticate registration changes.

8.0 References

[1] Berners-Lee, T., Fielding, R. and L. Masinter, "Uniform Resource Identifiers (URI): Generic Syntax", RFC 2396, August 1998.

[2] Masinter, L., Alvestrand, H., Zigmond, D. and R. Petke, "Guidelines for new URL Schemes", RFC 2718, November 1999.

[3] Postel, J. and J. Reynolds, "Instructions to RFC Authors", RFC 2223, October 1997.

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