

The 'dns' Media Type Registration Tree
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Abstract

This document specifies the 'dns' media subtype registration tree, which is intended to ease the deployment of new Internet applications and their associated media types without the need for coordination with a central registry.

[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](#)].

[2](#). Introduction

The registration procedures for Internet media types [[RFC2048](#)] allow for the specification of media type trees, which allow for faceted names to be described in order to increase the efficiency and flexibility of the registration process. They also allows for the creation of new registration trees, with the advice and consent of the IESG.

This specification describes one such tree.

[3.](#) Motivation

The Internet media type system was designed to encourage certain properties, and arguably has been quite successful because of its approach. In particular, IANA acts as a central registry to bring coordination and convenience, and various levels of community review are required before a media type may be registered, to assure some level of quality in and appropriate application of media types.

However, the arrival of the Web, and in particular XML, has changed the conditions under which formats are created and used. XML allows the creation of business-specific document and protocol formats by end users. Often, these parties are unfamiliar with IETF and IANA process for registration of media types, and do not have a requirement for recognition by a centralized registry. As such, the cost of media type registration is not justified in the view of some parties that are minting new formats.

As a result, many formats are created without corresponding media types (often under the umbrella of 'text/xml' or 'application/xml'). Such formats are not first-class citizens on the Internet or the Web; one cannot content negotiate for them, for example, and one cannot use existing software dispatch mechanisms in MIME software to accommodate them.

It should be noted that these undesirable effects disproportionately affect those who wish to use a format in ways that may not have been foreseen by its creators. As such, the registration system indirectly discourages the wide use of those mechanisms that leverage media types.

Current registration procedures do allow for some flexibility to accommodate vendor-specific formats (the .vnd tree), "vanity" formats

(the .prs tree) and ad hoc, experimental formats (the x. tree and its predecessor, the 'x-' convention). Unfortunately, these mechanisms do not address the problems described here; the x- convention is too brittle for most uses (and indeed its use has been discouraged for some time), and the .vnd and .prs trees are still based on a centralized registry.

This specification proposes that the widely recognized DNS infrastructure be leveraged to act as a distributed registry, to avoid the possibility of collision, whilst removing the need for an additional centralized registry. The approach is similar to URI schemes that also leverage the DNS to provide locally-managed name spaces.

[4.](#) The 'dns' Tree

The 'dns' media subtype tree is intended to be used to identify proprietary, ad hoc, experimental, or limited deployment formats.

It follows the conventions of faceted name trees as specified by [\[RFC2048\]](#), and is distinguished by the leading facet 'dns.'. This facet MUST be followed by one or more dot-delimited facets that are derived from a domain name, in reverse order. Finally, those facets MUST be followed by one or more facets that indicate the format's identity within that name space.

Media types using this tree MUST be minted with the knowledge and permission of the authority responsible for the corresponding Internet domain name. The domain name used MUST be registered in the Internet Registry, as delegated by IANA (see [\[RFC1591\]](#)).

For example, if the entity responsible for example.com wished to register a textual media type with the name 'foo' in this fashion, its media type might be:

text/dns.com.example.foo

XML-based formats SHOULD be conformant with [\[RFC3023\]](#), e.g.:

application/dns.com.example.foo+xml

If example.com were a multinational concern, it may wish to delegate

authority for minting new types to regional departments. It could do so by mandating an additional facet; an application media type minted by the Australian division might be:

`application/dns.com.example.au.bar`

whilst a completely separate application format, also identified as 'bar' and minted by the U.S. division might be distinguished as:

`application/dns.com.example.us.bar`

[4.1](#) The 'doc' Attribute

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Media types in the dns tree MAY use the 'doc' attribute, which indicates a URL [[RFC2396](#)] that can be used to locate documentation of the identified format.

For example:

`application/dns.com.example.foo; doc="http://www.example.com/formats/foo.html"`

The 'doc' attribute is only informative, and MUST NOT be interpreted to alter the nature of the format identified; i.e., a media type with a 'doc' attribute of "foo" MUST be considered equivalent to the same media type with a 'doc' attribute of "bar", or one without a 'doc' attribute.

[4.2](#) Format-Specific Attributes

Formats using this dns tree MAY designate their own attributes, which SHOULD be documented at or referenced from the URL specified in the 'doc' attribute, if present.

[5.](#) IANA Considerations

Implementation of the dns tree does not require IANA coordination. Any media type conformant with this specification is considered to be registered with IANA.

[6.](#) Security Considerations

[6.1](#) Change of Ownership

Over time, domain names may change ownership. Without proper care, media types created by a domain name's previous owner might collide with those created by the new owner.

As a result, when domains which have been used in the registration of media types in the dns tree change hands, the previous owner SHOULD take care to communicate existing media types to the new owner, and the new owner SHOULD take care to avoid collisions. Previous owners MAY publish a transition plan to a new domain, if doing so is judged to cause minimal disruption.

[6.2](#) Unauthorized Registration

Media types using the dns tree have no enforced relationship to the domain names that they are based upon; the use of domain names is only a convention to assure proper name spacing. Implementations SHOULD NOT make any assumptions about this relationship, especially

regarding security issues.

References

- [RFC1591] Postel, J., "Domain Name System Structure and Delegation", [RFC 1591](#), March 1994.
- [RFC2048] Freed, N., Klensin, J. and J. Postel, "Multipurpose Internet Mail Extensions (MIME) Part Four: Registration Procedures", [BCP 13](#), [RFC 2048](#), November 1996.
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- [RFC2396] Berners-Lee, T., Fielding, R. and L. Masinter, "Uniform Resource Identifiers (URI): Generic Syntax", [RFC 2396](#), August 1998.
- [RFC3023] Murata, M., St. Laurent, S. and D. Kohn, "XML Media Types", [RFC 3023](#), January 2001.

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[Appendix A](#). Acknowledgements

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