Defining Well-Known URIs
draft-nottingham-site-meta-02

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Abstract

This memo defines a path prefix for "well-known locations" in URIs.
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1. Introduction

It is increasingly common for Web-based protocols to require the discovery of policy or metadata before making a request. For example, the Robots Exclusion Protocol specifies a way for automated processes to obtain permission to access resources; likewise, the Platform for Privacy Preferences [W3C.REC-P3P-20020416] tells user-agents how to discover privacy policy beforehand.

While there are several ways to access per-resource metadata (e.g., HTTP headers, WebDAV’s PROPFIND [RFC4918]), the perceived overhead associated with them often precludes their use in these scenarios.

When this happens, it is common to designate a "well-known location" for such metadata, so that it can be easily located. However, this approach has the drawback of risking collisions, both with other such designated "well-known locations" and with pre-existing resources.

To address this, this memo defines a path prefix for these "well-known locations", "/.well-known/". Future specifications that need to define a resource for such site-wide metadata can register their use to avoid collisions and minimise impingement upon sites’ URI space.

Please discuss this draft on the apps-discuss@ietf.org [1] mailing list.

2. Notational Conventions

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 [RFC2119].

3. Well-Known URIs

A well-known URI is a URI [RFC3986] whose path component begins with the characters "/.well-known/*".

Applications that wish to mint new well-known URIs MUST register them, following the procedures in Section 5.1.

For example, if an application registers the value ‘example’, the corresponding well-known URI on ‘http://www.example.com/’ would be ‘http://www.example.com/.well-known/example’.

Note that this specification defines neither how to determine the
authority to use for a particular context, nor the scope of the
metadata discovered by dereferencing the well-known URI; both should
be defined by the application itself.

Typically, a registration will reference a specification that defines
the format and associated media type to be obtained by dereferencing
the well-known URI.

It MAY also contain additional information, such as the syntax of URI
query strings or additional path components to be appended to the
well-known URI, or protocol-specific details (e.g., HTTP [RFC2616]
method handling).

4. Security Considerations

This memo does not specify the scope of applicability of metadata or
policy obtained from a well-known URI, and does not specify how to
discover a well-known URI for a particular application. Individual
applications using this mechanism must define both aspects.

An attacker with certain types of limited access to a server may be
able to affect how well-known URIs are served; for example, they may
be able to upload a file at that location, or they may be able to
cause a server to redirect a well-known URI to a URI that they
control.

Because most URI schemes rely on DNS to resolve names, they are
vulnerable to "DNS rebinding" attacks, whereby a request can be
directed to a server under the control of an attacker.

5. IANA Considerations

5.1. The Well-Known URI Registry

This document establishes the well-known URI registry as the name
space of URIs that have a path beginning with "/.well-known/".

Well-known URIs are registered on the advice of a Designated Expert
(appointed by the IESG or their delegate), with a Specification
Required (using terminology from [RFC5226]).

Registration requests consist of the completed registration template
(see Section 5.1.1), typically published in an RFC or Open Standard
(in the sense described by [RFC2026], section 7). However, to allow
for the allocation of values prior to publication, the Designated
Expert may approve registration once they are satisfied that an RFC
Upon receiving a registration request (usually via IANA), the
Designated Expert should request review and comment from the apps-
discuss mailing list (or a successor designated by the APPS Area
Directors). Before a period of 30 days has passed, the Designated
Expert will either approve or deny the registration request,
communicating this decision both to the review list and to IANA.
Denials should include an explanation and, if applicable, suggestions
as to how to make the request successful.

5.1.1. Registration Template

URI suffix: The name requested for the well-known URI, relative to
"/.well-known/"; e.g., "example". MUST conform to the segment-nz
production in [RFC3986].
Change controller: For RFCs, state "IETF". For other open
standards, give the name of the publishing body (e.g., ANSI, ISO,
ITU, W3C, etc.). A postal address, home page URI, telephone and
fax numbers may also be included.
Specification document(s): Reference to document that specifies the
field, preferably including a URI that can be used to retrieve a
copy of the document. An indication of the relevant sections may
also be included, but is not required.
Related information: Optionally, citations to additional documents
containing further relevant information.

6. References

6.1. Normative References

[RFC2026] Bradner, S., "The Internet Standards Process -- Revision
3", BCP 9, RFC 2026, October 1996.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate

Resource Identifier (URI): Generic Syntax", STD 66,

[RFC5226] Narten, T. and H. Alvestrand, "Guidelines for Writing an
IANA Considerations Section in RFCs", BCP 26, RFC 5226,
May 2008.
6.2. Informative References


URIs


Appendix A. Acknowledgements

We would like to acknowledge the contributions of everyone who provided feedback and use cases for this draft; in particular, Phil Archer, Dirk Balfanz, Adam Barth, Tim Bray, Brian Eaton, Brad Fitzpatrick, Paul Hoffman, Barry Leiba, Ashok Malhotra, Breno de Medeiros, John Panzer, and Drummond Reed. However, they are not responsible for errors and omissions.

Appendix B. Frequently Asked Questions

B.1. Aren’t well-known locations bad for the Web?

They are, but for various reasons -- both technical and social -- they are commonly used, and their use is increasing. This memo defines a "sandbox" for them, to reduce the risks of collision and to minimise the impact upon pre-existing URIs on sites.

B.2. Why /.well-known?

It’s short, descriptive and according to search indices, not widely used.

B.3. Is this just for HTTP URIs?

No; although HTTP is the most typical use case, applications can define well-known URIs for any URI scheme that allows path segments.
B.4. What impact does this have on existing mechanisms, such as P3P and robots.txt?

None, until they choose to use this mechanism.

B.5. Why aren’t per-directory well-known locations defined?

Allowing every URI path segment to have a well-known location (e.g., "/images/.well-known") would increase the risks of colliding with a pre-existing URI on a site, and generally these solutions are found not to scale well, because they’re too "chatty".

Appendix C. Document History

[[RFC Editor: please remove this section before publication.]]

-02
* Rewrote to just define a namespace for well-known URIs.
* Changed discussion forum to apps-discuss.

-01
* Changed "site-meta" to "host-meta" after feedback.
* Changed from XML to text-based header-like format.
* Remove capability for generic inline content.
* Added registry for host-meta fields.
* Clarified scope of metadata application.
* Added security consideration about HTTP vs. HTTPS, expanding scope.

Authors’ Addresses

Mark Nottingham
Email: mnot@mnot.net
URI: http://www.mnot.net/

Eran Hammer-Lahav
Email: eran@hueniverse.com
URI: http://hueniverse.com/