Defining Well-Known Uniform Resource Identifiers (URIs)

## Abstract

This memo defines a path prefix for "well-known locations",
"/.well-known/", in selected Uniform Resource Identifier (URI)
schemes.

## Status of This Memo

This is an Internet Standards Track document.

This document is a product of the Internet Engineering Task Force
(IETF).  It represents the consensus of the IETF community.  It has
received public review and has been approved for publication by the
Internet Engineering Steering Group (IESG).  Further information on
Internet Standards is available in Section 2 of RFC 5741.

Information about the current status of this document, any errata,
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1.  Introduction

   It is increasingly common for Web-based protocols to require the
   discovery of policy or other information about a host ("site-wide
   metadata") before making a request.  For example, the Robots
   Exclusion Protocol <http://www.robotstxt.org/> 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
   (either in terms of client-perceived latency and/or deployment
   difficulties) associated with them often precludes their use in these
   scenarios.

   When this happens, it is common to designate a "well-known location"
   for such data, 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 in HTTP(S) URIs 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.

## 1.1.  Appropriate Use of Well-Known URIs

   There are a number of possible ways that applications could use Well-
   known URIs.  However, in keeping with the Architecture of the World-
   Wide Web [W3C.REC-webarch-20041215], well-known URIs are not intended
   for general information retrieval or establishment of large URI
   namespaces on the Web.  Rather, they are designed to facilitate
   discovery of information on a site when it isn't practical to use
   other mechanisms; for example, when discovering policy that needs to
   be evaluated before a resource is accessed, or when using multiple
   round-trips is judged detrimental to performance.

   As such, the well-known URI space was created with the expectation
   that it will be used to make site-wide policy information and other
   metadata available directly (if sufficiently concise), or provide
   references to other URIs that provide such metadata.

## 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/", and whose scheme is "HTTP", "HTTPS",
   or another scheme that has explicitly been specified to use well-
   known URIs.

   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 name 'example', the
   corresponding well-known URI on 'http://www.example.com/' would be
   'http://www.example.com/.well-known/example'.

   Registered names MUST conform to the segment-nz production in
   [RFC3986].

   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 additional path components, query strings and/or fragment identifiers to be appended to the well-known URI, or protocol-specific details (e.g., HTTP [RFC2616] method handling).

Note that this specification does not define a format or media-type for the resource located at "/.well-known/" and clients should not expect a resource to exist at that location.

## 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.

Applications minting new well-known URIs, as well as administrators deploying them, will need to consider several security-related issues, including (but not limited to) exposure of sensitive data, denial-of-service attacks (in addition to normal load issues), server and client authentication, vulnerability to DNS rebinding attacks, and attacks where limited access to a server grants the ability to affect how well-known URIs are served.

## 5.  IANA Considerations

## 5.1.  The Well-Known URI Registry

This document establishes the well-known URI registry.

Well-known URIs are registered on the advice of one or more Designated Experts (appointed by the IESG or their delegate), with a Specification Required (using terminology from [RFC5226]).  However, to allow for the allocation of values prior to publication, the Designated Expert(s) may approve registration once they are satisfied that such a specification will be published.

Registration requests should be sent to the wellknown-uri-review@ietf.org mailing list for review and comment, with an appropriate subject (e.g., "Request for well-known URI: example").

Before a period of 14 days has passed, the Designated Expert(s) 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.  Registration requests that are undetermined for
a period longer than 21 days can be brought to the IESG's attention
(using the iesg@iesg.org mailing list) for resolution.

## 5.1.1.  Registration Template

URI suffix:  The name requested for the well-known URI, relative to
"/.well-known/"; e.g., "example".

Change controller:  For Standards-Track RFCs, state "IETF".  For
others, give the name of the responsible party.  Other details
(e.g., postal address, e-mail address, home page URI) may also be
included.

Specification document(s):  Reference to the 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

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          Requirement Levels", BCP 14, RFC 2119, March 1997.

[RFC3986] Berners-Lee, T., Fielding, R., and L.  Masinter, "Uniform
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[RFC5226] Narten, T. and H. Alvestrand, "Guidelines for Writing an
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## 6.2.  Informative References

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          L., Leach, P., and T. Berners-Lee, "Hypertext Transfer
          Protocol -- HTTP/1.1", RFC 2616, June 1999.

[RFC4918] Dusseault, L., "HTTP Extensions for Web Distributed
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              Recommendation REC- webarch-20041215, December 2004,
              <http:// www.w3.org/TR/2004/REC-webarch-20041215>.

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Appendix B.  Frequently Asked Questions

   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.

   2. Why /.well-known?

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

   3. What impact does this have on existing mechanisms, such as P3P and
      robots.txt?

      None, until they choose to use this mechanism.

   4. 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".

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