            IANA Registration of Enumservices for Internet Calendaring

Abstract

   This document registers Enumservices for Internet calendaring.
   Specifically, this document focuses on Enumservices for scheduling
   with iMIP (iCalendar Message-Based Interoperability Protocol) and for
   accessing Internet calendaring information with CalDAV (Calendaring
   Extensions to WebDAV).

Status of This Memo

   This document specifies an Internet standards track protocol for the
   Internet community, and requests discussion and suggestions for
   improvements. Please refer to the current edition of the "Internet
   Official Protocol Standards" (STD 1) for the standardization state
   and status of this protocol. Distribution of this memo is unlimited.

not be created outside the IETF Standards Process, except to format
it for publication as an RFC or to translate it into languages other
than English.

1. Introduction

   ENUM (E.164 Number Mapping, RFC 3761 [1]) is a system that uses DNS
   (Domain Name System, RFC 1034 [2]) to translate telephone numbers,
   such as '+12025550100', into URIs (Uniform Resource Identifiers, RFC
   3986 [3]), such as 'mailto:user@example.com'. ENUM exists primarily
   to facilitate the interconnection of systems that rely on telephone
   numbers with those that use URIs to identify resources. The ENUM
   registration here could be used to allow phones, for example, to
   check the free/busy status of a user in their address book or propose
   a meeting with him or her from the user's phone number.

   The Guide to Internet Calendaring [10] describes the relationship
   between various Internet calendaring specifications like this:
   "iCalendar [4] is the language used to describe calendar objects.
   iTIP [5] [iCalendar Transport-Independent Interoperability Protocol]
   describes a way to use the iCalendar language to do scheduling. iMIP
   [6] [iCalendar Message-Based Interoperability Protocol] describes how
   to do iTIP scheduling via e-mail".

   Recently, another Standards Track protocol for calendar and
   scheduling access has appeared. CalDAV (Calendaring Extensions to
   WebDAV) [7] is a WebDAV (Web-based Distributed Authoring and
   Versioning) [8] based mechanism for manipulating Internet calendars,
   viewing free/busy lists, and via a planned scheduling extension [15],
   could be used for proposing calendar events as well in the future.

   The existing 'mailto:' URI scheme (defined in RFC 3986 [3]) is
   already used to address iMIP compatible Calendar Services. Likewise,
   the existing 'http:' and 'https:' URI schemes (defined in RFC 2616
   [11] and RFC 2818 [12]) are already used to address CalDAV compatible
   Calendar Services.

   This document registers Enumservices for scheduling and accessing
   Internet calendaring information associated with an E.164 number.

2. Enumservice Registrations

   As defined in RFC 3761 [1], the following templates cover the
   information needed for the registration of the Enumservices specified
   in this document:

   Enumservice Name:
      "ical-sched"
   Enumservice Type:
      "ical-sched"
   Enumservice Subtypes:
      "mailto"
   URI scheme(s):
      'mailto:'
   Functional Specification:
      This Enumservice indicates that the resource identified can be
      addressed by the associated URI used for scheduling using Internet
      calendaring via Internet mail with the iMIP [6] protocol.
   Security considerations:
      See Section 4.
   Intended usage:
      COMMON
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   Enumservice Name:
      "ical-access"
   Enumservice Type:
      "ical-access"
   Enumservice Subtypes:
      "http"
   URI scheme(s):
      'http:'
   Functional Specification:
      This Enumservice indicates that the resource identified can be
      addressed by the associated URI in order to access a user's
      calendar (for example free/busy status) using the CalDAV [7]
      protocol for Internet calendaring.
   Security considerations:
      See Section 4.
   Intended usage:
      COMMON
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      Enumservice Name:
         "ical-access"
      Enumservice Type:
         "ical-access"
      Enumservice Subtypes:
         "https"
      URI scheme(s):
         'https:'
      Functional Specification:
         This Enumservice indicates that the resource identified can be
         addressed by the associated URI in order to access a user's
         calendar (for example free/busy status) using the CalDAV [7]
         protocol for Internet calendaring.
      Security considerations:
         See Section 4.
      Intended usage:
         COMMON
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      Note: These Enumservices use a dash "-" in the Type strings. To
      allow for hierarchical concepts (as required in this case), some kind
      of boundary needs to be in place. Neither RFC 3761 [1] nor its
      intended successor [17] foresee the concept of sub-subtyping. The
      natural solution to address this requirement is the usage of dash "-"
      in Type strings, which is slightly contradictory to RFC 3761 [1].
      However, its intended successors [16] [17] clearly allow a dash "-"
      in Type strings, so that using "-" is seen as a practical way
      forward.

3. Examples

      $ORIGIN 3.2.1.0.5.5.5.2.1.2.1.e164.arpa.
      @ NAPTR 10 100 "u" "E2U+ical-access:https" \
         "!^.*$!https://cal.example.com/home/alice/calendars/!" .

      $ORIGIN 3.2.1.0.5.5.5.2.1.2.1.e164.arpa.
      @ NAPTR 20 100 "u" "E2U+ical-sched:mailto" \
         "!^.*$!mailto:alice@example.com!" .

4. Security Considerations

      The Domain Name System (DNS) does not make policy decisions about
      which records it provides to a DNS resolver. All DNS records must be
      assumed to be available to all inquirers at all times. The
      information provided within an ENUM record set must therefore be
      considered open to the public -- which is a cause for some privacy
      considerations.

Revealing a calendaring URI by itself is unlikely to introduce many
privacy concerns, although, depending on the structure of the URI, it
might reveal the full name or employer of the target. The use of
anonymous URIs mitigates this risk.

As ENUM uses DNS, which in its current form is an insecure protocol,
there is no mechanism for ensuring that the answer returned to a
query is authentic. An analysis of threats specific to the
dependence of ENUM on the DNS is provided in RFC 3761 [1], and a
thorough analysis of threats to the DNS itself is covered in RFC 3833
[14]. Many of these problems are prevented when the resolver
verifies the authenticity of answers to its ENUM queries via DNSSEC
(DNS Security, RFC 4035 [9]) in zones where it is available.

More serious security concerns are associated with potential attacks
against an underlying calendaring system (for example, unauthorized
modification or viewing). For this reason, iTIP discusses a number
of security requirements (detailed in RFC 2446 [5]) that call for
authentication, integrity and confidentiality properties, and similar
measures to prevent such attacks. Any calendaring protocol used in
conjunction with a URI scheme currently meets these requirements.
The use of CalDAV with the 'https:' scheme makes use of TLS
(Transport Layer Security, RFC 5246 [13]) to provide server
authentication, confidentiality, and message integrity.

Unlike a traditional telephone number, the resource identified by an
calendaring URI is often already guessable, and it often requires
that users provide cryptographic credentials for authentication and
authorization before calendar data can be exchanged. Despite the
public availability of ENUM records, the use of this information to
reveal an unprotected calendaring resource is unlikely in practice.

5. IANA Considerations

   This document requests registration of the "ical-sched" and "ical-
   access" Enumservices according to the definitions in Section 2 of
   this document and RFC 3761 [1].

6. References

6.1. Normative References

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6.2. Informative References

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Appendix A. Acknowledgments

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