                 Telephone Number Mapping (ENUM) Service
                    Registration for Presence Services

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Abstract

   This document registers a Telephone Number Mapping (ENUM) service for
   presence. Specifically, this document focuses on provisioning pres
   URIs in ENUM.

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1. Introduction

   ENUM (E.164 Number Mapping, RFC 3761 [1]) is a system that uses DNS
   (Domain Name Service, RFC 1034 [8]) to translate telephone numbers,
   such as +12025332600, into URIs (Uniform Resource Identifiers, RFC
   2396 [9]), such as pres:user@host.com. ENUM exists primarily to
   facilitate the interconnection of systems that rely on telephone
   numbers with those that use URIs to identify resources.

   Presence is a service defined in RFC 2778 [2] that allows users of a
   communications service to monitor one another's availability and
   disposition in order to make decisions about communicating. Presence
   information is highly dynamic and generally characterizes whether a
   user is online or offline, busy or idle, away from communications
   devices or nearby, and the like.

   The IETF has defined a generic URI used to identify a presence
   service for a particular resource: the 'pres' URI scheme (defined in
   CPP [4]). This document describes an enumservice for advertising
   presence information associated with an E.164 number.

2. ENUM Service Registration

   As defined in [1], the following is a template covering information
   needed for the registration of the enumservice specified in this
   document:

      Service name: "E2U+pres"

      URI scheme(s): "pres:"

      Functional Specification: See section 4.

      Security considerations: See section 6.

      Intended usage: COMMON

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      Any other information that the author deems interesting: See
      section 3.

3. Presence for E.164 Numbers

   This document specifies an enumservice field that allows presence
   information to be provided for an E.164 number. This may include
   presence states associated with telephones, or presence of non-
   telephony communications services advertised by ENUM.

Endpoints that participate in a presence architecture are known
(following the framework in RFC 2778 [2]) as watchers and
presentities. Watchers subscribe to the presence of presentities and
are notified when the presence of a presentity changes. Watchers
generally monitor the presence of a group of presentities with whom
they have an ongoing association. As an example, consider how this
might apply to a telephony service. Most cellular telephones today
have an address book-like feature, a small database of names and
telephone numbers. Such a telephone might act as a watcher,
subscribing to the presence of some or all of the telephone numbers
in its address book. The display of the telephone might then show
its user, when a presence-enabled telephone number is selected, the
availability of the destination. With this information, the user
might change their calling habits to correspond better to the
availability of his or her associates.

The presence information that is shared varies by communications
service. The IETF has defined a Presence Information Data Format (or
PIDF [6]) for describing the presence data associated with a
presentity. The baseline PIDF specification declares only two
presence states: OPEN and CLOSED (these terms are defined in RFC 2778
[2]); the former suggests that the destination resource is able to
accept communication requests, the latter that it is not. These two
states provide useful but rudimentary insight into the communications
status of a presentity. For that reason, PIDF is an extensible
format, and new sorts of statuses can be defined for specific
communications services. For example, a telephony-based presence
service might define a status corresponding to 'busy'. Extending
PIDF for telephony services is, however, outside the scope of this
document.

4. The 'E2U+pres' Enumservice

Traditionally, the services field of an NAPTR record (as defined in
[10]) contains a string composed of two subfields: a 'protocol'
subfield and a 'resolution service' subfield. ENUM in particular
defines an 'E2U' (E.164 to URI) resolution service. This document
defines an 'E2U+pres' enumservice for presence.

The scheme of the URI that will appear in the regexp field of an
NAPTR record using the 'E2U+pres' enumservice SHOULD be the 'pres'
URI scheme. Other URI schemes appropriate to presence services MAY
be used; however, the use of the 'pres' URI scheme ensures a greater
level of compatibility than would the use of any URI specific to a
particular presence protocol. The purpose of a pres URI is to
provide a generic way to locate a presence service. Techniques for
dereferencing the pres URI to locate a presence service are given in
[5].

The 'pres' URI scheme does not identify any particular protocol that
will be used to handle presence operations (such as subscriptions and
notifications). Rather, the mechanism in [5] details a way to
discover whether the presence protocol(s) supported by the watcher
is/are also supported by the presentity. SIP [7] is one protocol
that can be used to convey presence information and manage
subscriptions/notifications.

5. Example of E2U+pres enumservice

   The following is an example of the use of the enumservice registered
   by this document in an NAPTR resource record.

$ORIGIN 3.8.0.0.6.9.2.3.6.1.4.4.e164.arpa.
   IN NAPTR 100 10 "u" "E2U+pres" "!^.*$!pres:jon.peterson@example.net!"

6. Security Considerations

   DNS does not make policy decisions about the records it shares with
   an inquirer. 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 pres URI in and of 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. More serious privacy concerns
   are associated with the unauthorized distribution of presence
   information. For this reason, presence protocols have a number of
   security requirements (detailed in RFC 2779 [3]) that call for
   authentication of watchers, integrity and confidentiality properties,
   and similar measures to prevent abuse of presence information. Any
   presence protocol used in conjunction with the 'pres' URI scheme is
   required to meet these requirements.

   Unlike a traditional telephone number, the resource identified by a
   pres URI may require that callers provide cryptographic credentials
   for authentication and authorization before presence information is
   returned. In concert with presence protocols, ENUM can actually
   provide far greater protection from unwanted callers than does the
   existing PSTN, despite the public availability of ENUM records.

7. IANA Considerations

   This document registers the 'E2U+pres' enumservice under the
   enumservice registry described in the IANA considerations in RFC
   3761. Details of the registration are given in section 2.

8. References

8.1. Normative References

   [1] Faltstrom, P. and M. Mealling, "The E.164 to Uniform Resource
        Identifiers (URI) Dynamic Delegation Discovery System (DDDS)
        Application", RFC 3761, April 2004.

   [2] Day, M., Rosenberg, J., and H. Sugano, "A Model for Presence and
        Instant Messaging", RFC 2778, February 2000.

   [3] Day, M., Aggarwal, S., Mohr, G., and J. Vincent, "Instant
        Messaging / Presence Protocol Requirements", RFC 2779, February
        2000.

   [4] Peterson, J., "Common Profile for Presence (CPP)", RFC 3859,
        August 2004.

   [5] Peterson, J., "Address Resolution for Instant Messaging and
        Presence", RFC 3861, August 2004.

8.2. Informative References

   [6] Sugano, H., Fujimoto, S., Klyne, G., Bateman, A., Carr, W., and
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        3863, August 2004.

   [7] Rosenberg, J., Schulzrinne, H., Camarillo, G., Johnston, A.,
        Peterson, J., Sparks, R., Handley, M., and E. Schooler, "SIP:
        Session Initiation Protocol", RFC 3261, June 2002.

   [8] Mockapetris, P., "Domain Names - Concepts and Facilities", STD
        13, RFC 1034, November 1987.

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

   [10] Mealling, M., "Dynamic Delegation Discovery System (DDDS) Part
        Three: The Domain Name System (DNS) Database", RFC 3403, October
        2002.

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