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**Enumservice Registration for Presence Services
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Abstract

This document registers an 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, [RFC3761](#) [1]) is a system that uses DNS (Domain Name Service, [RFC1034](#) [8]) to translate telephone numbers, like '+12025332600', into URIs (Uniform Resource Identifiers, [RFC2396](#) [9]), like '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 [RFC2778](#) [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 not 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 [RFC2778 \[2\]](#)) 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 a way that this might apply 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, user might change their calling habits to correspond better to the availability of their 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 [RFC2778 \[2\]](#)); 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 status 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 a NAPTR record (as defined in [\[12\]](#)) contains a string that is 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 a 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 the use of any URI specific to a particular presence protocol. The purpose of a pres URI is to provide a generic way of locating a presence service. Techniques for

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dereferencing the pres URI scheme 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 or not 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 a NAPTR resource record.

```
$ORIGIN 0.0.6.2.3.3.5.2.0.2.1.e164.arpa.  
  IN NAPTR 100 10 "u" "E2U+pres" "!.^.*$!  
pres:jon.peterson@neustar.biz!" .
```

6. Security Considerations

DNS does not make policy decisions about the records that 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 to be open to the public - which is a cause for some privacy considerations.

However, 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 that risk. There are more serious privacy concerns associated with the unauthorized distribution of presence information. For that reason, presence protocols have a number of security requirements (detailed in [RFC2779](#) [3]) that call for authentication of watchers, integrity and confidentiality properties, and similar measures to prevent abuse of presence information. Any presence protocol that is 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 this respect, ENUM in concert with presence protocols can actually provide far greater protection from unwanted callers than 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 [RFC3761](#). Details of the registration are given in [Section 2](#).

8. IPR Considerations

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Normative References

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