

Network Working Group  
Request for Comments: 4143  
Category: Standards Track

K. Toyoda  
PCC  
D. Crocker  
Brandenburg  
November 2005

## Facsimile Using Internet Mail (IFAX) Service of ENUM

### 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.

### Copyright Notice

Copyright (C) The Internet Society (2005).

### Abstract

This document describes the functional specification and definition of the ENUM Naming Authority Pointer (NAPTR) record for IFax service. IFax is "facsimile using Internet mail". For this use, the Domain Name System (DNS) returns the email address of the referenced IFax system. This mechanism allows email-based fax communication to use telephone numbers instead of requiring the sender to already know the recipient email address.

### 1. Functional Specification

An IFax client makes a [ENUMbis] DNS query, using the target system's telephone number. The returned NAPTR record specifies an email address to be used for reaching the target system. The email address is then used in accordance with Simple Mode of Facsimile using Internet Mail [RFC3965], Extended Facsimile using Internet Mail [RFC2532], or Full Mode Fax Profile for Internet Mail [FFPIM] is applied.

The key words "MUST", "MUST NOT", "SHOULD", "SHOULD NOT", and "MAY" in this document are to be interpreted as defined in "Key words for use in RFCs to Indicate Requirement Levels" [KEYWORDS].

## 2. IFax Service Registration

Service Name : "E2U+ifax"

Type: "ifax"

Subtype: "mailto"

URI Scheme: "mailto"

The URI Scheme is "mailto" because facsimile is a profile of standard Internet mail and uses standard Internet mail addressing.

Functional Specification: See section 1

Security Considerations: See section 3

Intended usage: COMMON

Author: Kiyoshi Toyoda (toyoda.kiyoshi@jp.panasonic.com)  
Dave Crocker (dcrocker@bbiw.net)

## 3. Security Considerations

DNS, as used by ENUM, is a globally distributed database. Thus, any information stored in it is visible to anyone anonymously. Although this is not qualitatively different from publication in a telephone directory, it does expose the data subject to automatic data collection without any indication that this has been done or by whom.

Data harvesting by third parties is often used to generate lists of targets for unrequested information; in short, the lists are used to address "spam". The publication of a telephone number in ENUM, especially when it is an associated Internet fax service, may be used to send "junk faxes", for example.

In the case of electronic mail, users subscribed to mailing lists can have "sacrificial" email accounts. These special-purpose addresses help the user filter out unrequested email. This is not so easy with published telephone numbers. The PSTN E.164 number assignment process is much more involved and less flexible; usually a single E.164 number (or a fixed range of numbers) is associated with each PSTN access. Thus, it is not possible to use a "sacrificial" phone number.

Due to the implications of publishing data in a globally accessible database, as a principle, the data subject MUST give explicit informed consent to data being published in ENUM.

Internet Fax is based on existing use of Internet mail. Developers and users should also consider the Security Consideration sections in [RFC3965] and [RFC2532].

In addition to the specific security considerations given above, the Security Considerations section of [ENUMbis] applies to this document.

#### 4. Example

The following is an example of the use of IFax service in a NAPTR record.

```
$ORIGIN 4.3.2.1.6.7.9.8.6.4.e164.arpa
IN NAPTR 10 10 "u" "E2U+ifax:mailto"
"!^.*$!mailto:toyo@example.com!"
```

#### 5. IANA Considerations

This specification creates a DNS NAPTR registration, according to the terms specified in [ENUMbis].

The registration details are contained in section 2, Fax Service Registration.

#### 6. References

##### 6.1. Normative References

- [KEYWORDS] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.
- [ENUMbis] Faltstrom, P. and M. Mealling, "The E.164 to Uniform Resource Identifiers (URI) Dynamic Delegation Discovery System (DDDS) Application (ENUM)", RFC 3761, April 2004.
- [RFC3965] Toyoda, K., Ohno, H., Murai, J., and D. Wing, "A Simple Mode of Facsimile Using Internet Mail", RFC 3965, December 2004.
- [RFC2532] Masinter, L. and D. Wing, "Extended Facsimile Using Internet Mail", RFC 2532, March 1999.
- [FFPIM] Crocker, D. and G. Klyne, "Full-mode Fax Profile for Internet Mail (FFPIM)", RFC 4142, November 2005.

## Authors' Addresses

Kiyoshi Toyoda  
Research and Development Laboratory  
Panasonic Communications Co., Ltd.  
4-1-62 Minoshima Hakata-ku, Fukuoka 812-8531 Japan

Phone: +81-50-3380-5181  
EMail: toyoda.kiyoshi@jp.panasonic.com

Dave Crocker  
Brandenburg InternetWorking  
675 Spruce Drive  
Sunnyvale, CA 94086 USA

Phone: +1.408.246.8253  
EMail: dcrocker@bbiw.net

## Full Copyright Statement

Copyright (C) The Internet Society (2005).

This document is subject to the rights, licenses and restrictions contained in BCP 78, and except as set forth therein, the authors retain all their rights.

This document and the information contained herein are provided on an "AS IS" basis and THE CONTRIBUTOR, THE ORGANIZATION HE/SHE REPRESENTS OR IS SPONSORED BY (IF ANY), THE INTERNET SOCIETY AND THE INTERNET ENGINEERING TASK FORCE DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

## Intellectual Property

The IETF takes no position regarding the validity or scope of any Intellectual Property Rights or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; nor does it represent that it has made any independent effort to identify any such rights. Information on the procedures with respect to rights in RFC documents can be found in BCP 78 and BCP 79.

Copies of IPR disclosures made to the IETF Secretariat and any assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementers or users of this specification can be obtained from the IETF on-line IPR repository at <http://www.ietf.org/ipr>.

The IETF invites any interested party to bring to its attention any copyrights, patents or patent applications, or other proprietary rights that may cover technology that may be required to implement this standard. Please address the information to the IETF at [ietf-ipr@ietf.org](mailto:ietf-ipr@ietf.org).

## Acknowledgement

Funding for the RFC Editor function is currently provided by the Internet Society.

