

Voice Profile for Internet Mail (VPIM) Addressing

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.

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Abstract

This document lists the various Voice Profile for Internet Mail (VPIM) email address formats that are currently in common use and defines several new address formats for special case usage. Requirements are imposed on the formats of addresses used in VPIM submission mode.

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1. Introduction

This document lists the various VPIM email address formats that are currently in common use and defines several new address formats for special case usage. Requirements are imposed on the formats of addresses used in VPIM submission mode

[VPIM2] does not place any restrictions on the email address format. However, it does recommend the use of a numeric LHS since many legacy voice mail systems only use digits to identify mailboxes. Further, it recommends a structure to handle private, international and extensions. The private format has become deployed in most existing VPIM v2 systems, further some systems will only accept messages from addresses with a numeric LHS.

[IVM] does not describe addressing at all. The LHS format is left to the discretion of the mailbox owner. However, it is useful in some cases (like submission or tunneling) to specify a LHS format. A format based on GSTN addressing [GSTN] is presented.

This document defines the various recipient (i.e., TO) addresses for VPIM and IVM messages.

2. Conventions used in this Document

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].

"LHS" as used in this document is to be interpreted as the left side of the "@" in an email address. It is defined as "local-part" in RFC-2822.

"RHS" as used in this document is to be interpreted as the right side of the "@" in an email address. It is defined as "domain" in RFC-2822.

3. VPIM v2 Addressing

This is defined in section 4.1.1 of [VPIM2] and [VPIMV2R2]. Of the four groups of addresses defined, the mailbox number format is the most commonly used in VPIM v2 systems.

Example: 6137637582@nortelnetworks.com

4. VPIM Addressing

VPIM places no restrictions on the form of the Internet address. VPIM systems must be capable of receiving an arbitrary email address and generating a reply to that address. No inferences about the structure of the local part (LHS) should be necessary.

Recipients email addresses must be created in a form compatible with the recipients system and consistent with the address entry capabilities of a telephone user interface.

The following sections use formal syntax compliant with RFC 2234, "Augmented BNF for Syntax Specifications: ABNF".

4.1. VPIM Gateways

A gateway translates between dissimilar environments. For VPIM, a gateway connects between the VPIM profile of Internet mail and other voice mail networking protocols (including voice call answer and delivery). These may be proprietary or standard (like AMIS [AMIS-A]). VPIM gateways typically service multiple voice mail users or, in the case of call answer, service only one. In the former case, they serve as a classic "mail transfer agent" (MTA) and in the latter as a classic "mail user agent" (UA).

An onramp is a gateway which connects from another voice mail networking protocol to VPIM. An offramp is a gateway which connects from VPIM to another voice mail networking protocol. Behavior of onramps and offramps is out of scope for this specification.

This specification describes the VPIM service portion of onramp and offramp addressing.

4.2. VPIM Submission LHS

Limited capability voice mail machines may send messages by default to an external message submission gateway. These gateways will convert the unresolved telephone number of the recipient into a

legitimate email address. Messages requiring address resolution must be sent to a submission system which will convert the submitted address into the route-able email address.

Additionally, limited capability email systems may send messages to a VPIM onramp system indicated on the RHS. The LHS would indicate that the message is to be sent as a VPIM message to the telephone number indicated. In this case, address and message translation is performed by the gateway.

Telephone numbers sent in a VPIM submission mode MUST be sent in one of the following forms.

This is based on the format defined in [GSTN-ADDR] and extensions in [GSTN].

4.2.1. The VPIM address

For voice messages that are intended to be sent as VPIM messages the service-selector element is defined to be:

```
vpim-service-selector = "VPIM"
```

The resultant vpim-address and vpim-mbox are formally

```
vpim-address = vpim-mbox
               [ pstn-recipient ]
```

```
vpim-mbox = [ "VPIM=" ] ( global-phone / local-phone )
             [ sub-addr-spec ext-addr-spec dl-addr-spec]
```

```
dl-addr-spec = "/DL=" sub-addr
               ;note that "/DL=" is case INSENSITIVE
```

```
ext-addr-spec = [ ext-sep sub-addr ]
```

```
ext-sep = ( "/EXT=" / "+" )
           ; note that "/EXT=" is case INSENSITIVE
           ; "+" is used for compatibility with current
           ; VPIM v2 addressing
```

For clarity, here is an example of a very simple vpim-mbox:

```
VPIM=6137637582
```

The extension syntax, that is a phone number followed by "/EXT=" defining the extension, would be used where the mailbox does not have a direct dial number associated with it (e.g., typically behind a non-ISDN PBX). For example:

VPIM=7035255550/EXT=227

The distribution list syntax, that is a phone number followed by "/DL=" defining the list, would be used to refer to a distribution list associated with the phone number (with or without an extension). For example:

VPIM=+14165977230/DL=93

4.2.2. The Voice address

For voice messages that are intended to be sent as a voice outdialing at the destination system, the service-selector element is defined to be:

voice-service-selector = "VOICE"

The resultant voice-address and voice-mbox are formally

voice-address = voice-mbox
[pstn-recipient]

voice-mbox = "VOICE=" (global-phone / local-phone)
[sub-addr-spec] [post-sep post-dial]

For more clarity, here is an example of a very simple voice-mbox:

VOICE=+3940226338

4.2.3. The AMIS address

For voice messages that are intended to be sent as AMIS (Audio Messaging Interchange Specification) voice mail messages (as defined in [AMIS-A] and [AMIS-D]), the service-selector element is defined to be:

amis-service-selector = "AMIS"

The resultant amis-address and amis-mbox are formally

amis-address = amis-mbox

amis-mbox = "AMIS=" amis-mailbox
["/SYSNUM=" amis-sysnum]
; note that "/SYSNUM=" is case INSENSITIVE

amis-mailbox = (amis-a / amis-d)

amis-a = amis-a-number

amis-d = [amis-mailbox-numberplan]["+"] amis-mailbox-id
 ["+"] [amis-mailbox-extension]
 ; The "+" separators are used to be compatible
 ; the X.400 AMIS-D mailbox definition --
 ; if more than one element is present, both
 ; "+" must appear. Note also that the total
 ; length of this field is restricted to 32
 ; characters by AMIS-D.

amis-mailbox-numberplan = 1*VCHAR

amis-mailbox-id = 1*16(VCHAR)

amis-mailbox-extension = 1*VCHAR

amis-sysnum = amis-a-number

amis-a-number = (amis-PSTN-number / amis-private-number)

amis-PSTN-number = int-country-code "+"
 area-code "+"
 local-number "+"
 ; This is in agreement with ITU [E.164]
 ; specification and per [AMIS-A] - the
 ; maximum length is 15 numeric digits.
 ; The "+" separators are used to be
 ; compatible with the X.400 AMIS-D
 ; mailbox definition and replace the '#'
 ; separators of AMIS-A

amis-private-number = "0++" local-number "+"
 ; [AMIS-A] indicates that maximum permitted
 ; length of the private number is 14
 ; digits

int-country-code = 1*4(DIGIT)

area-code = 1*(DIGIT)

local-number = 1*(DIGIT)

For more clarity, here is an example of a simple AMIS-A amis-mbox:

AMIS=+1/401+3278144+/SYSNUM=1+401+3279542+

4.2.4. The fax address

Fax addresses used in VPIM are formatted as defined in [FAX-ADDR], section 2.

4.3. VPIM Submission Addresses

Based on [GSTN-ADDR], these are the resultant email addresses for the LHS presented above. VPIM and IVM systems that support submission MUST accept, translate (if necessary), and forward messages sent to these addresses.

4.3.1. The vpim-email

The vpim-email element is a specific version of pstn-email for VPIM over the Internet e-mail transport system, where the service-selector distinction is set to "VPIM".

vpim-email = ["/"] vpim-address ["/"] "@" mta-I-pstn

In this case the mta-I-pstn will usually point to a VPIM capable messaging system where the attached message will be delivered properly.

4.3.2. The voice-email

The voice-email element is a specific version of pstn-email for the voice outdialing over the Internet e-mail transport system, where the service-selector distinction is set to "VOICE".

voice-email = ["/"] voice-address ["/"] "@" mta-I-pstn

In this case the mta-I-pstn will usually point to a device that will perform an outdial, that is for example, make a telephone call to the specified number and play a voice attachment.

4.3.3. The amis-email

The amis-email element is a specific version of pstn-email for the AMIS over the Internet e-mail transport system, where the service-selector distinction is set to "AMIS".

amis-email = ["/"] amis-address ["/"] "@" mta-I-pstn

In this case the mta-I-pstn will usually point to a device that acts as a gateway to an AMIS network where the attached voice message will be delivered properly.

4.3.4. The fax-email

Fax email addresses used in VPIM are formatted as defined in [FAX-ADDR], section 4.

5. Security Considerations

Most security considerations are already identified in [VPIM2] and [IVM].

An additional concern would be that the sender must trust and also be aware of the policies of the submission MTA to which the message is submitted. This is because, that MTA will make the determination of where the final destination is and how it will be delivered based on the VPIM submission LHS.

Submission MTAs should take care to not blindly place outdial calls to any number submitted (e.g., international numbers or "1-900" numbers). Ideally, senders should be authenticated to confirm their outdialing privileges.

6. IANA Considerations

6.1. IANA Registration form for new value of GSTN address service-selector "VPIM"

To: IANA@iana.org

Subject: Registration of new values for the GSTN address service-selector specifier "VPIM"

service-selector name:

VPIM

Description of Use:

VPIM - specify that the GSTN address refers to a voice mailbox that is intended to accept a VPIM message.

For a complete description refer to "Voice Profile for Internet Mail (VPIM) Addressing", RFC 3804.

Security Considerations:

See the Security Consideration section of "Voice Profile for Internet Mail (VPIM) Addressing", RFC 3804.

Person & email address to contact for further information:

Glenn W. Parsons
Nortel Networks
P.O. Box 3511 Station C
Ottawa, On K1Y 4H7
Canada
Phone: +1-613-763-7582
Fax : +1-613-763-2697
Email: gparsons@nortelnetworks.com

6.2. IANA Registration form for new value of GSTN address
service-selector "VOICE"

To: IANA@iana.org

Subject: Registration of new values for the GSTN address
service-selector specifier "VOICE"

service-selector name:

VOICE

Description of Use:

VOICE - specify that the GSTN address refers to a voice
device that is intended to be sent a voice message via an
'outdialing'.

For a complete description refer to "Voice Profile for Internet Mail
(VPIM) Addressing", RFC 3804.

Security Considerations:

See the Security Consideration section of "Voice Profile for Internet
Mail (VPIM) Addressing", RFC 3804.

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6.3. IANA Registration form for new value of GSTN address service-selector "AMIS"

To: IANA@iana.org

Subject: Registration of new values for the GSTN address service-selector specifier "AMIS"

service-selector name:

AMIS

Description of Use:

AMIS - specify that the GSTN address refers to a voice mailbox that is intended to be sent an AMIS (Audio Messaging Interchange Specification) voice mail message.

For a complete description refer to "Voice Profile for Internet Mail (VPIM) Addressing", RFC 3804.

Security Considerations:

See the Security Consideration section of "Voice Profile for Internet Mail (VPIM) Addressing", RFC 3804.

Person & email address to contact for further information:

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Email: gparsons@nortelnetworks.com

6.4. IANA Registration form for new value of GSTN address qualif-type1 keyword and value "SYSNUM"

To: IANA@iana.org

Subject: Registration of new values for the GSTN address qualif-type1 element "sysnum"

qualif-type1 "keyword" name:

sysnum

qualif-type1 "value" ABNF definition:

sysnum = 1*(DIGIT / "+")

Description of Use:

sysnum is used to specify the numeric optional AMIS sub-address element as described in "Voice Profile for Internet Mail (VPIM) Addressing", RFC 3804.

Use Restriction:

The use of "SYSNUM" is restricted to "AMIS" service-selector, is it has no meaning outside the AMIS service.

Security Considerations:

See the Security Consideration section of "Voice Profile for Internet Mail (VPIM) Addressing", RFC 3804.

Person & email address to contact for further information:

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6.5. IANA Registration form for new value of GSTN address qualif-type1 keyword and value "EXT"

To: IANA@iana.org

Subject: Registration of new values for the GSTN address
qualif-type1 element "EXT"

qualif-type1 "keyword" name:

ext

qualif-type1 "value" ABNF definition:

ext = 1*(DIGIT)

Description of Use:

EXT is used to specify the numeric optional extension That identifies a particular VPIM mailbox as described in "Voice Profile for Internet Mail (VPIM) Addressing", RFC 3804.

Use Restriction:

The use of "EXT" is intended for the "VPIM" service-selector, however it may have meaning and be used outside the VPIM service.

Security Considerations:

See the Security Consideration section of "Voice Profile for Internet Mail (VPIM) Addressing", RFC 3804.

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6.6. IANA Registration form for new value of GSTN address qualif-type1 keyword and value "DL"

To: IANA@iana.org

Subject: Registration of new values for the GSTN address qualif-type1 element "DL"

qualif-type1 "keyword" name:

dl

qualif-type1 "value" ABNF definition:

dl = 1*(DIGIT)

Description of Use:

DL is used to specify the numeric optional personal

Distribution list for a particular VPIM mailbox as described in "Voice Profile for Internet Mail (VPIM) Addressing", RFC 3804.

Use Restriction:

The use of "DL" is intended for the "VPIM" service-selector, however it may have meaning and be used outside the VPIM service.

Security Considerations:

See the Security Consideration section of "Voice Profile for Internet Mail (VPIM) Addressing", RFC 3804.

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7. References

7.1. Normative References

- [GSTN] Allocchio, C., "GSTN Address Element Extensions in e-mail Services", RFC 2846, June 2000.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.
- [RFC2822] Resnick, P., "Internet Message Format", RFC 2822, April 2001.
- [VPIM2] Vaudreuil, G. and G. Parsons, "Voice Profile for Internet Mail, Version 2", RFC 2421, September 1998.
- [VPIMV2R2] Vaudreuil, G. and G. Parsons, "Voice Profile for Internet Mail - version 2 (VPIMv2)", RFC 3801, June 2004.
- [FAX-ADDR] Allocchio, C., "Minimal FAX address format in Internet Mail", RFC 3192, October 2001.

[GSTN-ADDR] Allocchio, C., "Minimal GSTN address format in Internet Mail", RFC 3191, October 2001.

7.2. Informative References

- [AMIS-A] Audio Messaging Interchange Specifications (AMIS) - Analog Protocol Version 1, Issue 2, February 1992.
- [AMIS-D] Audio Messaging Interchange Specifications (AMIS) - Digital Protocol Version 1, Issue 3, August 1993.
- [E.164] CCITT Recommendation E.164 (1991), Telephone Network and ISDN Operation, Numbering, Routing and Mobile Service - Numbering Plan for the ISDN Era.
- [IVM] McRae, S. and G. Parsons, "Internet Voice Mail", Work in Progress.

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