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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].

2. Table of Contents

3. Need for a MIME Directory Type

For purposes of this document, a directory is a special-purpose database that contains typed information. A directory usually supports both read and search of the information it contains, and can support creation and modification of the information as w vals e vv.....
tvvNeetes

4. Overview

The scheme defined here for representing directory information in a MIME Content-Type has two parts. First, the text/directory Content-Type is defined for use in holding directory information within a single body part, for example name, title, or email address. In its simplest form, the format uses a "type:value" approach, which should be easily parseable by existing MIME implementations and understandable by users. More complicated situations can be represented also. This document defines the general form the

5.2. MIME subtype name

MIME subtype name: directory

5.3. Required parameters

Required parameters: charset

The "charset" parameter is as defined in [RFC-2046] for other body

5.6. Security considerations

Directory information can be public or it can be protected from unauthorized access by the directory service in which it resides. Once the information leaves its native service, there can be no guarantee that the same care will be taken by all services handling the information. Furthermore, this specification defines no access control mechanism by which information can be protected, or by which access control information can be conveyed. Note that the integrity and privacy of a text/directory body part can be protected by enclosing it within an appropriate MIME-based security mechanism.

5.7. Interoperability considerations

In order to make sense of directory information, applications must share a common understanding of the types of information contained within the Content-Type (the directory schema). This schema information is not defined in this document, but rather in companion documents (e.g., [MIME-VCARD]) that follow the requirements specified in this document, or in bilateral agreements between communderatn comM) j 0fa itstn tr

```
DESCRIPTION:This is a long description
  that exists on a long line.
```

It could also be represented as:

```
DESCRIPTION:This is a long descrip
 tion that exists o
 n a long line.
```

The process of moving from this folded multiple-line representation of a type definition to its single line representation is called unfolding. Unfolding is accomplished by regarding CRLF immediately followed by a white space character (namely HTAB ASCII decimal 9 or SPACE ASCII decimal 32) as equivalent to no characters at all (i.e., the CRLF and single white space character are removed).

5.8.2. ABNF content-type definition

The following ABNF uses the notation of RFC 2234, which also defines CRLF, WSP, DQUOTE, VCHAR, ALPHA, and DIGIT. After the unfolding of any folded lines as described above, the syntax for a line of this content type is as follows:

The "language" type parameter is used to identify data in multiple languages. There is no concept of "default" language, except as specified by any "Content-Language" MIME header parameter that is present. The value of the "language" type parameter is a language

```
   date-month = 2 DIGIT     ;01-12

   date-mday = 2 DIGIT      ;01-28, 01-29, 01-30, 01-31
                            ;based on month/year

   time = time-hour [":"] time-minute [":"] time-second [time-secfrac]
          [time-zone]

   time-hour = 2 DIGIT      ;00-23

   time-minute = 2 DIGIT    ;00-59

   time-second = 2 DIGIT    ;00-60 (leap second)

   time-secfrac = "," 1*DIGIT

   time-zone = "Z" / time-numzone

   time-numzome = sign time-hour [":"] time-minute

   iana-valuespec = <a publicly-defined valuetype format, registered
                     with IANA, as defined in section 15 of this
                     document>
```

8.4. Example 4

The final example illustrates the use of the multipart/related Content-Type to include non-textual directory data via the "uri" encoding to refer to other body parts within the same message, or to external values. Note that no "profile" parameter is given, so an application may not know what kind of directory entity the information applies to. Note also the use of both hypothetical official and bilaterally agreed upon types.

```
Content-Type: multipart/related;
        boundary=woof;
        type="text/directory";
        start="<id5@host.com>"
Content-ID: <id4@host.com>

--woof
Content-Type: text/directory; charset="iso-8859-1"
Content-ID: <id5@host.com>
Content-Transfer-Encoding: Quoted-Printable

source:ldap://cn=Bjorn%20Jensen,o=University%20of%20Michigan,c=US
cn:Bj=F8rn Jensen
sn:Jensen
email:bjorn@umich.edu
image;value=uri:cid:id6@host.com
image;value=uri;format=jpeg:ftp://some.host/some/path.jpg
sound;value=uri:cid:id7@host.com
phone:+1 313 747-4454

--woof
Content-Type: image/jpeg
Content-ID: <id6@host.com>

<...image data...>

--woof
Content-Type: message/external-body;
        name="myvoice.au";
        site="myhost.com";
        access-type=ANON-FTP;
        directory="pub/myname";
        mode="image"

Content-Type: audio/basic
Content-ID: <id7@host.com>

--woof--
```

9. Registration of new profiles

This section defines procedures by which new profiles are registered with the IANA and made available to the Internet community. Note that non-IANA profiles can be used by bilateral agreement, provided the associated profile names follow the "X-" convention defined above.

The procedures defined here are designed to allow public comment and review of new profiles, while posing only a small impediment to the definition of new profiles.

Registration of a new profile is accomplished by the following steps.

9.1. Define the profile

A profile is defined by completing the following template.

```
To: ietf-mime-direct@imc.org
Subject: Registration of text/directory MIME profile XXX

Profile name:

Profile purpose:

Profile types:

Profile special notes (optional):

Intended usage: (one of COMMON, LIMITED USE or OBSOLETE)
```

The explanation of what goes in each field in the template follows.

Profile name: The name of the profile as it will appear in the text/directory MIME Content-Type "profile" header parameter, or the predefined "profile" type name.

Profile purpose: The purpose of the profile (e.g., to represent information about people, printers, documents, etc.). Give a short but clear description.

Profile types: The list of types associated with the profile. This list of types is to be expected but not required in the profile,

Profile special notes: Any special notes about the profile, how it is

Note that the original author or any other interested party can propose a change to an existing profile, but that such changes should only be proposed when there are serious omissions or errors in the published specification. The Profile Reviewer can object to a change if it is not backwards compatible, but is not required to do so.

Profile definitions can never be deleted from the IANA registry, but profiles which are no longer believed to be useful can be declared OBSOLETE by a change to their "intended use" field.

11. Registration of new types

This section defines procedures by which new types are registered with the IANA. Note that non-IANA types can be used by bilateral agreement, provided the associated types names follow the "X-" convention defined above.

The procedures defined here are designed to allow public comment and

Type purpose: The purpose of the type (e.g., to represent a name, postal address, IP address, etc.). Give a short but clear description.

Type encoding: The default encoding a value of the type must have in the body of a text/directory MIME Content-Type.

Type valuetype: The format a value of the type must have in the body of a text/directory MIME Content-Type. This description must be precise and must not violate the general encoding rules defined in section 5 of this document.

Type special notes: Any special notes about the type, how it is to be used, etc.

11.2. Post the type definition

The type description must be posted to the new type discussion list, ietf-mime-direct@imc.org

12. Type Change Control

Existing types can be changed using the same process by which they were registered.

Define the change

Post the change

Allow a comment period

Submit the type for approval

Note that the original author or any other interested party can propose a change to an existing type, but that such changes should only be proposed when there are serious omissions or errors in the published specification. The Profile Reviewer can object to a change if it is not backwards compatible, but is not required to do so.

Type definitions can never be deleted from the IANA registry, but types which are nolonger believed to be useful can be declared OBSOLETE by a change to their "intended use" field.

13. Registration of new parameters

This section defines procedures by which new parameters are registered with the IANA and made available to the Internet community. Note that non-IANA parameters can be used by bilateral agreement, provided the associated parameters names follow the "X-" convention defined above.

The procedures defined here are designed to allow public comment and

Parameter values:

Parameter special notes (optional):

Intended usage: (one of COMMON, LIMITED USE or OBSOLETE)

value type name:

value type purpose:

value type format:

value type special notes (optional):

Intended usage: (one of COMMON, LIMITED USE or OBSOLETE)

The explanation of what goes in each field in the template follows.

value type name: The name of the value type as it will appear in the text/directory MIME Content-Type.

value type purpose: The purpose of the value type. Give a short but clear description.

value type format: The definition of the format for the value, usually using ABNF grammar.

value type special notes: Any special notes about the value type, how it is to be used, etc.

15.2. Post the value type definition

The value type description must be posted to the new value type discussion list, ietf-mime-direct@imc.org

profile can be appealed by the proposer to the IESG, or the objections raised can be addressed by the proposer and the value type registration resubmitted.

16. Security Considerations

Internet mail is subject to many well known security attacks, including monitoring, replay, and forgery. Care should be taken by any directory service in allowing information to leave the scope of the service itself, where any access controls can no longer be guaranteed. Applications should also take care to display directory data in a "safe" environment (e.g., PostScript-valued types).

17. Acknowledgements

The registration procedures defined here were shamelessly lifted from the MIME registration RFC.

The many valuable comments contributed by members of the IETF ASID working group are gratefully acknowledged, as are the contributions of the Versit Consortium. Chris Newman was especially helpful in navigating the intricacies of ABNF lore.

18. References

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