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Calendar attributes for vCard and LDAP

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Status of this Memo

Abstract

When scheduling a calendar entity, such as an event, it is a prerequisite that an organizer has the calendar address of each attendee that will be invited to the event. Additionally, access to an attendee's current "busy time" provides an a priori indication of whether the attendee will be free to participate in the event.

In order to meet these challenges, a calendar user agent (CUA) needs a mechanism to locate (URI) individual user's calendar and free/busy time.

This draft defines three mechanisms for obtaining a URI to a user's calendar and free/busy time. These include:

- Manual transfer of the information;

- Personal data exchange using the vCard format; and

- Directory lookup using the LDAP protocol.

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1. Calendaring and Scheduling URIs

This draft defines four classes of URIs. URIs are more useful if it is understood what the URIs point to. Here is a brief description:

1.1 Free/Busy URI (FBURL)

The free/busy URI is defined to be a transport independent location where a client can obtain information about when a user is busy. At the present time, this URI only points to busy time data. Future revisions of this specification may provide for the extended capability of publishing free time data.

If a calendaring and scheduling client (i.e., CUA) were to retrieve data from this location using FTP or HTTP, it would get back an iCalendar object [4] containing one or more "VFREEBUSY" calendar components. If a MIME transport is being used, the response will be contained within a "text/calendar" MIME body part as specified in the iCalendar specification [4]. For example:

```
BEGIN:VCALENDAR
VERSION:2.0
PRODID:-//hacksw/handcal//NONSGML v1.0//EN
METHOD:PUBLISH
BEGIN:VFREEBUSY
ATTENDEE:MAILTO:jane_doe@host1.com
DTSTART:19971013T050000Z
DTEND:19971124T050000Z
DTSTAMP:19970901T083000Z
FREEBUSY:19971015T133000Z/19971015T180000Z
FREEBUSY:19971015T190000Z/19971015T220000Z
FBURL:http://www.host.com/calendar/busy/jdoe.ifb
END:VFREEBUSY
END:VCALENDAR
```

The amount of busy time data pointed to by the FBURL will generally be pre-determined; for example one month of free/busy inforation. As a guideline, it is recommended that the previous six weeks of busy time data be published at the location associated with the FBURL. If this URI points to a file resource, it is recommended that the file extension be "ifb" to distinguish it from an arbitrary iCalendar object (e.g., with the "ics" file extension).

1.2 Calendar Address URI (CALADRURI)

The calendar address URI is defined to be a transport independent communication end-point for a user. The organizer's calendaring and scheduling client (ie. CUA) would use this URI to determine where to send an event request when organizing a meeting with a particular attendee.

If the user prefers to receive event requests via iMIP, then the user would provide a "mailto" URI containing the user's e-mail address. [5] For example:

"mailto:user@host1.com"

The URI for an iRIP user is yet to be defined, but that is another possible URI value in this property. [6]

1.3 Calendar Access URI (CAPURI)

The Calendar Access URI is defined to be a protocol independent location from which a calendaring and scheduling client (i.e., CUA) can communicate with a user's entire calendar.

The semantics for using this URI as an access protocol locator are yet to be defined by the IETF CALSCH Working Group. This will be addressed in the "Calendar Access Protocol" specification.

1.4 Calendar URI (CALURI)

The Calendar URI is defined to be a protocol independent location from which a calendaring and scheduling client (ie. CUA) can retrieve an entire copy of a user's calendar. Retrieving data from this URI obtains a published "snapshot" of the user's calendar.

HTTP URI -- If the URI is an HTTP URI, then the content returned with a GET should be a "text/calendar" MIME body part containing one or more iCalendar object.

FTP URI -- If the URI is an FTP URI, then the resource pointed to should be a file with an "ics" file extension containing one or more iCalendar objects.

1.5 Default URIs

There are many cases where a user may have more than one calendar. In these cases, a user may have multiple URIs, each URI pointing to a calendar or free/busy data.

To make the case of multiple calendars simpler for clients, the concept of the "default" calendar is introduced. A "default" calendar is one that the user has designated as the calendar that other users should look at when accessing the user's calendar, or retrieving the user's free/busy time.

The default calendar may, in fact, include rolled-up information from all the user's other calendars. The other calendars may only exist for organizational purposes.

2. Distribution

These four URIs provide valuable pointers to calendaring and scheduling data that other users need in order to know when to schedule meetings, etc. There are several possibilities on how users can communicate these URIs to other users. The following section outlines how these URIs can be distributed to other users.

2.1 Manual Transfer

The simplest way to obtain these URIs is for a user to communicate the URIs using some out-of-band mechanism such as verbally, or in an e-mail message, or by printing these URIs on a paper business card.

When using this mechanism, the user obtains these URIs using an out-of-band mechanism and then enters these URIs into their calendaring software manually.

2.2 Personal Data Exchange Using a vCard

A more sophisticated way to obtain these URIs is for users to publish vCards containing these URIs. The vCard object can be transferred between one another. Since many e-mail clients allow a user to automatically include a vCard with every message that the user sends, this provides a simple, transparent way for a user to distribute their calendaring and scheduling URIs.

On the receiving end, an e-mail client that provides an integrated vCard database can provide a way to lookup calendaring URIs for users whose vCards are stored locally.

2.3 vCard Schema Extensions

Since the vCard [3] specification doesn't specify how to encode calendaring URIs in a vCard, this section is provided as an extension to vCard which specifies how to encode calendaring URIs within a vCard.

Inside a vCard object, four new properties are defined: "CALURI", "CAPURI", "CALADRURI", and "FBURL", as defined above.

Any vCard can have one or more of these properties, each representing a calendar or free/busy time that is associated with the user.

One of these properties can be designated as the "default" by adding the "PREF" parameter.

Here is a simple example of a vCard containing a "FBURL" and a "CALURI".

```
BEGIN:VCARD
VERSION:3.0
N:Dun;Alec
FN:Alec Dun
ORG:Microsoft Corporation
ADR;WORK;POSTAL;PARCEL:;;One Microsoft Way;
 Redmond;WA;98052-6399;USA
TEL;WORK;MSG:+1-206-936-4544
TEL;WORK;FAX:+1-206-936-7329
EMAIL;INTERNET:user@host1.com
CALADRURI;PREF:mailto:user@host1.com
CALURI;PREF:http://cal.host1.com/user/cal.ics
FBURL;PREF:http://cal.host1.com/user/fb.ifb
CALURI:http://cal.company.com/projectA/pjtA.ics
FBURL:http://cal.company.com/projectA/pjtAfb.ifb
END:VCARD
```

2.3.1 FBURL Property IANA Registration

To: ietf-mime-directory@imc.org

Subject: Registration of FBURL type for text/directory MIME type vCard profile.

Type name: FBURL

Type purpose: To specify the URI for a user's busy time in a vCard object.

Type encoding: 8bit

Type value: A single URI value.

Type special notes: Where multiple FBURL properties are specified, the default FBURL property is indicated with the PREF parameter. The FTP or HTTP type of URI points to an iCalendar object associated with a snapshot of the last six weeks of the user's busy time data. If the iCalendar object is represented as a file or document, it's file type should be "ifb".

Intended usage: Refer to section 1.1.

Type examples:

```
FBURL;PREF:http://www.host1.com/busy/janedoe
FBURL:FTP://ftp.host.com/busy/project-a.ifb
```

2.3.2 CALADRURI Property IANA Registration

To: ietf-mime-directory@imc.org

Subject: Registration of CALADRURI type for application/directory MIME type vCard profile.

Type name: CALADRURI

Type purpose: To specify the location to which an event request should be sent for the user.

Type encoding: 8bit

Type value: A single URI value.

Type special notes: Where multiple CALADRURI properties are specified, the default CALADRURI property is indicated with the PREF parameter.

Intended usage: Refer to section 1.2.

Type examples:

```
   CALADRURI;PREF:mailto:janedoe@host.com
```


2.3.3 CAPURI Property IANA Registration

To: ietf-mime-directory@imc.org

Subject: Registration of CAPURI type for application/directory MIME type vCard profile.

Type name: CAPURI

Type purpose: To specify a protocol independent location from which a calendaring and scheduling client (i.e., CUA) can communicate with a user's entire calendar.

Type encoding: 8bit

Type value: A single URI value.

Type special notes: Where multiple CAPURI properties are specified, the default CAPURI property is indicated with the PREF parameter.

Intended usage: Refer to section 1.3.

2.3.4 CALURI Property IANA Registration

To: ietf-mime-directory@imc.org

Subject: Registration of CALURI type for text/directory MIME type vCard profile.

Type name: CALURI

Type purpose: To specify the URI for a user's calendar in a vCard object.

Type encoding: 8bit

Type valuetype: A single URI value.

Type special notes: Where multiple CALURI properties are specified, the

default CALURI property is indicated with the PREF parameter. The property should contain a URI pointing to an iCalendar object associated with a snapshot of the user's calendar store. If the iCalendar object is represented as a file or document, it's file type should be "ics".

Intended usage: Refer to section 1.4.

Type examples:

```
CALURI;PREF:http://cal.host1.com/calA
CALURI:ftp://ftp.host1.com/calA.ics
```

2.4 Directory Lookup Using The LDAP v3 Protocol

Another way to obtain these URIs is to look them up in a directory using the LDAP protocol [1].

If a user's URIs can be found using directory lookup (i.e., searching for one of the LDAP schema extensions defined below), they should, in general, be considered "more up-to-date" than URIs in any vCards that are stored locally.

2.4.1 LDAP Schema Extensions

In order to encode the calendaring URIs in the directory, the following are defined:

- One object class:
  - calEntry
- Eight attributes:
  - calCalURI
  - calFBURL
  - calCAPURI
  - calCalAdrURI
  - calOtherCalURIs
  - calOtherFBURLs

- calOtherCAPURIs

- calOtherCalAdrURIs

The calCalURI contains the URI to a snapshot of the user's entire default calendar. The calFBURL contains the URI to the user's default busy time data. The calCAPURI represents contains a URI that can be used

to communicate with the user's calendar. The calCalAdrURI contains a URI that points to the location to which event requests should be sent for that user.

The calOtherCalURIs is a multi-valued property containing URIs to snapshots of other calendars that the user may have. The calOtherFBURLs is a multi-valued property containing URIs to other free/busy data that the user may have. The calOtherCAPURIs attribute is a multi-valued property containing URIs to other calendars that the user may have. The calOtherCalAdrURIs attribute is a multi-valued property containing URIs to other locations that a user may want event requests sent to.

There is no predetermined order to the values in either multi-valued property.

2.4.2 Notation

The notation used in this document is the same as that used in [2].

2.4.3 Object Definitions

2.4.3.1 calEntry

The Calendar Entry is a class derived from "TOP" [2], which contains the four calendaring attributes.

```
(1.2.840.113556.1.5.87
  NAME 'calEntry'
  TOP
  AUXILIARY
  MAY (calCalURI calFBURL calOtherCalURIs calOtherFBURLs calCAPURI
  calOtherCAPURLs)
)
```

2.4.4 Attribute Definitions

2.4.4.1 calCalURI

```
(1.2.840.113556.1.4.478
  NAME 'calCalURI'
  EQUALITY caseIgnoreMatch
  SUBSTRING caseIgnoreMatch
  SYNTAX 'IA5String'
  USAGE userApplications
```



```
)
```

2.4.4.2 calFBURL

```
(1.2.840.113556.1.4.479
  NAME 'calFBURL'
  EQUALITY caseIgnoreMatch
  SUBSTRING caseIgnoreMatch
  SYNTAX 'IA5String'
  USAGE userApplications
)
```

2.4.4.3 calCAPURI

```
(1.2.840.113556.1.4.480
  NAME 'calCAPURI'
  EQUALITY caseIgnoreMatch
  SUBSTRING caseIgnoreMatch
  SYNTAX 'IA5String'
  USAGE userApplications
)
```

2.4.4.4 calCalAdrURI

```
(1.2.840.113556.1.4.481
  NAME 'calCalAdrURI'
  EQUALITY caseIgnoreMatch
  SUBSTRING caseIgnoreMatch
  SYNTAX 'IA5String'
  USAGE userApplications
)
```

2.4.4.5 calOtherCalURIs

```
(1.2.840.113556.1.4.482
NAME 'calOtherCalURIs'
EQUALITY caseIgnoreMatch
SUBSTRING caseIgnoreMatch
SYNTAX 'IA5String'
MULTI-VALUE
USAGE userApplications
)
```


2.4.4.6 calOtherFBURLs

```
(1.2.840.113556.1.4.483
NAME 'calOtherFBURLs'
EQUALITY caseIgnoreMatch
SUBSTRING caseIgnoreMatch
SYNTAX 'IA5String'
MULTI-VALUE
USAGE userApplications
)
```

2.4.4.7 calOtherCAPURIs

```
(1.2.840.113556.1.4.484
NAME 'calOtherCAPURIs'
EQUALITY caseIgnoreMatch
SUBSTRING caseIgnoreMatch
SYNTAX 'IA5String'
MULTI-VALUE
USAGE userApplications
)
```

2.4.4.8 calOtherCalAdrURIs

```
(1.2.840.113556.1.4.485
NAME 'calOtherCalAdrURIs'
EQUALITY caseIgnoreMatch
SUBSTRING caseIgnoreMatch
SYNTAX 'IA5String'
```

```
    MULTI-VALUE
    USAGE userApplications
  )
```

3. Authors's Addresses

The following address information is provided in a vCard v3.0 [3], Electronic Business Card, format.

```
  BEGIN:VCARD
  VERSION:3.0
  N:Small;Tony
  FN:Tony Small
```



```
  ORG:Microsoft Corporation
  ADR;WORK;POSTAL;PARCEL:;;One Microsoft Way;
   Redmond;WA;98052-6399;USA
  TEL;WORK;MSG:+1-425-703-2190
  TEL;WORK;FAX:+1-206-936-7329
  EMAIL;INTERNET:tonysm@Microsoft.com
  CALADRURI:MAILTO:tonysm@Microsoft.com
  END:VCARD

  BEGIN:VCARD
  VERSION:3.0
  N:Hennessy;Denis
  FN:Denis Hennessy
  ORG:ISOCOR
  ADR;WORK;POSTAL;PARCEL:;;42-47 Lower Mount St;
   Dublin 2;Ireland
  TEL;WORK;MSG:+353-1-676-0366
  TEL;WORK;FAX:+353-1-676-0856
  EMAIL;INTERNET:denis.hennessy@isocor.com
  CALADRURI:MAILTO:denis.hennessy@isocor.com
  END:VCARD

  BEGIN:VCARD
  VERSION:3.0
  N:Dawson;Frank
  FN:Frank Dawson
  ORG:Lotus Development Corporation
  ADR;WORK;POSTAL;PARCEL:;;6544 Battleford Drive;
```

```
 Raleigh;NC;27613-3502;USA
TEL;WORK;PREF:+1-617-693-8728
TEL;WORK;MSG:+1-919-676-9515
EMAIL;INTERNET;PREF:Frank_Dawson@Lotus.com
EMAIL;INTERNET:fdawson@earthlink.net
CALADRURI;PREF:MAILTO:Frank_Dawson@Lotus.com
CALADRURI:MAILTO:fdawson@earthlink.net
URI:http://home.earthlink.net/~fdawson
END:VCARD
```

This memo is a result of the work of the Internet Engineering Task Force Calendaring and scheduling Working Group. The chairmen of that working group are:

```
BEGIN:VCARD
VERSION:3.0
```



```
N:Ganguly;Anik
FN:Anik Ganguly
ORG:OnTime, Inc.
ADR;WORK;POSTAL;PARCEL:10 Floor;;21700 Northwestern
 Highway;Southfield;MI;48075;USA
TEL;WORK;MSG:+1-810-559-5955
TEL;WORK;FAX:+1-810-559-5034
EMAIL;INTERNET:anik@ontime.com
END:VCARD
```

```
BEGIN:VCARD
VERSION:3.0
N:Moskowitz;Robert
FN:Robert Moskowitz
EMAIL;INTERNET:rgm-ietf@htt-consult.com
END:VCARD
```

4. Bibliography

[1] M. Wahl, T. Howes, S. Kille, 'Lightweight Directory Access Protocol (v3)', RFC 2251, December 1997, <URL:ftp://ds.internic.net/rfc/rfc2251.txt>

[2] M. Wahl, A. Coulbeck, T. Howes, S. Kille, 'Lightweight Directory Access Protocol (v3): Attribute Syntax Definitions', RFC 2252, December 1997, <URL:ftp://ds.internic.net/rfc/rfc2252.txt>

[3] F. Dawson, T. Howes, 'vCard MIME Directory Profile', RFC 2426, September 1998, <URL:ftp://ds.internic.net/rfc/rfc2426.txt>

[4] F. Dawson, D. Stenerson 'Internet Calendaring and Scheduling Core Ojbect Specification (iCalendar)', RFC xxxx, To be published

[5] F. Dawson, S. Mansour `iCalendar Message-Based Interopability Protocal (iMIP)', RFC xxxx, To be published

[6] A. Courtemanche, S. Mansour, P. O'Leary `iCalendar Real-Time Interopability Protocol (iRIP)', August 1998, <URL: ftp://www.ietf.org/internet-drafts/draft-ietf-calsch-irip-01.txt>

5. Full Copyright Statements