

Network Working Group  
Internet-Draft  
Intended status: Standards Track  
Expires: August 30, 2010

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February 26, 2010

**New Properties for iCalendar  
draft-daboo-icalendar-extensions-00**

**Abstract**

This document defines a set of new properties for iCalendar data.

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## **1. Introduction**

The iCalendar [[RFC5545](#)] data format is used to represent calendar data and is used with iTIP [[RFC5546](#)] to handle scheduling operations between calendar users. iCalendar is in widespread use, and in accordance with provisions in that specification, extension elements have been added by various vendors to the data format in order to support and enhance capabilities. This specification collates a number of these ad-hoc extensions and uses the new IANA registry capability defined in [[RFC5545](#)] to register standard variants with clearly defined definitions and semantics. In addition, some new elements are introduced for features that vendors have been requesting recently.

## **2. Conventions Used in This Document**

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [[RFC2119](#)].

The notation used in this memo is the ABNF notation of [[RFC5234](#)] as used by iCalendar [[RFC5545](#)]. Any syntax elements shown below that are not explicitly defined in this specification come from iCalendar [[RFC5545](#)].

## **3. Modifications to Calendar Components**

The following changes to the syntax defined in iCalendar [[RFC5545](#)] are made here. New elements are defined in subsequent sections.



```
calprops /= *(  
    ;  
    ; The following are OPTIONAL,  
    ; but MUST NOT occur more than once.  
    ;  
    calname / caldescription /  
    caluid / calurl / caltzid /  
    calrefresh / calcolor /  
    ;  
    ; The following are OPTIONAL,  
    ; and MAY occur more than once.  
    ;  
    calimg  
    ;  
    )
```

```
eventprop /= *(  
    ;  
    ; The following are OPTIONAL,  
    ; and MAY occur more than once.  
    ;  
    image  
    ;  
    )
```

```
todoprop /= *(  
    ;  
    ; The following are OPTIONAL,  
    ; and MAY occur more than once.  
    ;  
    image  
    ;  
    )
```

```
jourprop /= *(  
    ;  
    ; The following are OPTIONAL,  
    ; and MAY occur more than once.  
    ;  
    image  
    ;  
    )
```

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## **4. Calendar Properties**

### **4.1. CALENDAR-NAME Property**

Property Name: CALENDAR-NAME

Purpose: This property specifies the name of the calendar.

Value Type: TEXT

Property Parameters: IANA, non-standard, alternate text representation, and language property parameters can be specified on this property.

Conformance: This property can be specified once in an iCalendar object.

Description: This property is used to specify a name (a short, one-line description) of the iCalendar object that can be used by calendar user agents when presenting the calendar data to a user.

Format Definition: This property is defined by the following notation:

```
calname          = "CALENDAR-NAME" calnameparam ":" text CRLF
calnameparam     = *(
                    ;
                    ; The following are OPTIONAL,
                    ; but MUST NOT occur more than once.
                    ;
                    (";" altrepparam) / (";" languageparam) /
                    ;
                    ; The following is OPTIONAL,
                    ; and MAY occur more than once.
                    ;
                    (";" other-param)
                    ;
                    )
```

Example: The following is an example of this property:

```
CALENDAR-NAME:Company Vacation Days
```





#### **4.2. CALENDAR-DESCRIPTION Property**

Property Name: CALENDAR-DESCRIPTION

Purpose: This property specifies the description of the calendar.

Value Type: TEXT

Property Parameters: IANA, non-standard, alternate text representation, and language property parameters can be specified on this property.

Conformance: This property can be specified once in an iCalendar object.

Description: This property is used to specify a lengthy textual description of the iCalendar object that can be used by calendar user agents when describing the nature of the calendar data to a user.

Format Definition: This property is defined by the following notation:

```
caldesc          = "CALENDAR-DESCRIPTION" caldescparam ":" text
                  CRLF

caldescparam     = *(
                    ;
                    ; The following are OPTIONAL,
                    ; but MUST NOT occur more than once.
                    ;
                    (";" altrepparam) / (";" languageparam) /
                    ;
                    ; The following is OPTIONAL,
                    ; and MAY occur more than once.
                    ;
                    (";" other-param)
                    ;
                    )
```

Example: The following is an example of this property:

```
CALENDAR-DESCRIPTION:This calendar contains all the \
official vacation days of our company.\nThese repre\
sent paid time-off - make sure you have fun, we'll \
be working you hard on the other days!
```

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### **4.3. CALENDAR-UID Property**

Property Name: CALENDAR-UID

Purpose: This property specifies the persistent, globally unique identifier for the calendar.

Value Type: TEXT

Property Parameters: IANA and non-standard property parameters can be specified on this property.

Conformance: This property can be specified once in an iCalendar object.

Description: The value of this property MUST be a globally unique identifier. The generator of the property MUST guarantee that the value is unique. This can be done following the recommendations in [Section 3.8.4.7 of \[RFC5545\]](#). Implementations MUST be able to receive and persist values of at least 255 octets for this property, but they MUST NOT truncate values in the middle of a UTF-8 multi-octet sequence.

Format Definition: This property is defined by the following notation:

```
caluid      = "CALENDAR-UID" caluidparam ":" text CRLF
```

```
caluidparam = *(";" other-param)
```

Example: The following is an example of this property:

```
CALENDAR-UID:19960401T080045Z-4000F192713-0052@example.com
```

### **4.4. CALENDAR-URL Property**

Property Name: CALENDAR-URL

Purpose: This property specifies a URL from where the calendar data was retrieved or where it can be refreshed.

Value Type: URI

Property Parameters: IANA and non-standard property parameters can be specified on this property.



Conformance: This property can be specified once in an iCalendar object.

Description: This property specifies a URL identifying the source of the calendar data and a location from where updates can be retrieved.

Format Definition: This property is defined by the following notation:

```
calurl      = "CALENDAR-URL" calurlparam ":" url CRLF
```

```
calurlparam = *(";" other-param)
```

Example: The following is an example of this property:

```
CALENDAR-URL:http://calendars.example.com/holidays/canada.ics
```

#### **4.5. CALENDAR-TZID Property**

Property Name: CALENDAR-TZID

Purpose: This property specifies the default time zone identifier for the calendar.

Value Type: TEXT

Property Parameters: IANA and non-standard property parameters can be specified on this property.

Conformance: This property can be specified once in an iCalendar object.

Description: This property specifies a time zone identifier that represents the default timezone for which floating time or all-day events in the iCalendar object can be assumed to be relative to. It can also be used to choose an initial time zone for use when creating new components in the iCalendar object. A "VTIMEZONE" component having a "TZID" property matching the value specified in this property MUST be present in the iCalendar object.

Format Definition: This property is defined by the following notation:

```
caltzid      = "CALENDAR-TZID" caltzidparam ":" [tzidprefix]  
              text CRLF
```

```
caltzidparam = *(";" other-param)
```



Example: The following is an example of this property:

```
CALENDAR-TZID:America/New_York
```

#### **4.6. CALENDAR-REFRESH-INTERVAL Property**

Property Name: CALENDAR-REFRESH-INTERVAL

Purpose: This property specifies a suggested interval for polling for changes of the calendar data from the original source of that data.

Value Type: DURATION

Property Parameters: IANA and non-standard property parameters can be specified on this property.

Conformance: This property can be specified once in an iCalendar object.

Description: This property specifies a positive duration that gives a suggested polling interval for checking for updates to the calendar data. The value of this property SHOULD be used by calendar user agents as the polling interval for calendar data updates.

Format Definition: This property is defined by the following notation:

```
calrefresh      = "CALENDAR-REFRESH-INTERVAL" calrefreshparam
                  ":" dur-value CRLF
                  ;consisting of a positive duration of time.

calrefreshparam = *(";" other-param)
```

Example: The following is an example of this property:

```
CALENDAR-REFRESH-INTERVAL:P1W
```

#### **4.7. CALENDAR-COLOR Property**

Property Name: CALENDAR-COLOR

Purpose: This property specifies a color used for displaying the calendar data.





Value Type: INTEGER. The value MUST be three SEMICOLON-separated INTEGER values.

Property Parameters: IANA and non-standard property parameters can be specified on this property.

Conformance: This property can be specified once in an iCalendar object.

Description: This property specifies a color that client MAY use when presenting the calendar data to a user. Typically this would appear as the "background" color of events or tasks. The value MUST be an RGB value with integer value components in the range 0..255

Format Definition: This property is defined by the following notation:

```
calcolor          = "CALENDAR-COLOR" calcolorparam ":"
                    calcolorvalue CRLF

calcolorparam     = *(";" other-param)

calcolorvalue     = integer ";" integer ";" integer
                    ; Red, green, and blue values in the range
                    ; 0 - 255.
```

Example: The following is an example of this property:

```
CALENDAR-COLOR:255;0;255
```

#### **4.8. CALENDAR-IMAGE Property**

Property Name: CALENDAR-IMAGE

Purpose: This property specifies an image associated with the calendar.

Value Type: The default value type for this property is URI. The value type can also be set to BINARY to indicate inline binary encoded content information. The value MUST refer to or be data with a media type of "image".

Property Parameters: IANA, non-standard, display, inline encoding, and value data type property parameters can be specified on this property. The format type parameter can be specified on this property and is RECOMMENDED for inline binary encoded content information.

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Conformance: This property can be specified multiple times in an iCalendar object.

Description: This property specifies an image for an iCalendar object via a uri or directly with inline data that can be used by calendar user agents when presenting the calendar data to a user. Multiple properties MAY be used to specify alternative sets of images with, for example, varying media subtypes, resolutions or sizes. When multiple properties are present, calendar user agents SHOULD display only one of them, picking one that provides the most appropriate image quality, or display none. The "DISPLAY" parameter is used to indicate the intended display mode for the image.

Format Definition: This property is defined by the following notation:

```
calimg      = "CALENDAR-IMAGE" calimgparam ( ":" uri ) /
              (
                ";" "ENCODING" "=" "BASE64"
                ";" "VALUE" "=" "BINARY"
                ":" binary
              )
              CRLF

calimgparam = *(
              ;
              ; The following is OPTIONAL for a URI value,
              ; RECOMMENDED for a BINARY value,
              ; and MUST NOT occur more than once.
              ;
              (";" fmttypeparam) /
              ;
              ; The following is OPTIONAL,
              ; and MUST NOT occur more than once.
              ;
              (";" displayparam)
              ;
              ; The following is OPTIONAL,
              ; and MAY occur more than once.
              ;
              (";" other-param)
              ;
            )
```

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Example: The following is an example of this property:

```
CALENDAR-IMAGE;DISPLAY=BADGE;FMPTYPE=image/png:http://example.com/images/holiday.png
```

## **5. Component Properties**

### **5.1. IMAGE Property**

Property Name: IMAGE

Purpose: This property specifies an image associated with the calendar.

Value Type: The default value type for this property is URI. The value type can also be set to BINARY to indicate inline binary encoded content information. The value MUST refer to or be data with a media type of "image".

Property Parameters: IANA, non-standard, display, inline encoding, and value data type property parameters can be specified on this property. The format type parameter can be specified on this property and is RECOMMENDED for inline binary encoded content information.

Conformance: This property can be specified multiple times in a "VEVENT", "VTODO", or "VJOURNAL" calendar component.

Description: This property specifies an image for a calendar component via a uri or directly with inline data that can be used by calendar user agents when presenting the calendar data to a user. Multiple properties MAY be used to specify alternative sets of images with, for example, varying media subtypes, resolutions or sizes. When multiple properties are present, calendar user agents SHOULD display only one of them, picking one that provides the most appropriate image quality, or display none. The "DISPLAY" parameter is used to indicate the intended display mode for the image.

Format Definition: This property is defined by the following notation:



```
image      = "IMAGE" imageparam ( ":" uri ) /  
            (  
              ";" "ENCODING" "=" "BASE64"  
              ";" "VALUE" "=" "BINARY"  
              ":" binary  
            )  
            CRLF  
  
imageparam = *(  
              ;  
              ; The following is OPTIONAL for a URI value,  
              ; RECOMMENDED for a BINARY value,  
              ; and MUST NOT occur more than once.  
              ;  
              (";" fmttypeparam) /  
              ;  
              ; The following is OPTIONAL,  
              ; and MUST NOT occur more than once.  
              ;  
              (";" displayparam)  
              ;  
              ; The following is OPTIONAL,  
              ; and MAY occur more than once.  
              ;  
              (";" other-param)  
              ;  
            )
```

Example: The following is an example of this property:

```
IMAGE;DISPLAY=BACKGROUND;FMTTYPE=image/png:http://example.com/images/party.png
```

## **6. Property Parameters**

### **6.1. DISPLAY Property Parameter**

Parameter Name: DISPLAY

Purpose: To specify different ways in which an image for a calendar or component can be displayed.

Format Definition: This property parameter is defined by the following notation:



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```
displayparam = "DISPLAY" "="
    ("BADGE" /           ; A small "badge" image
     "BACKGROUND" /     ; Use as a background image
     "OVERLAY" /        ; Use as an overlay image
     "BANNER" /         ; Use as a "banner" across the top
     x-name /           ; Experimental type
     iana-token)        ; Other IANA registered type
                        ;
                        ; Default is BADGE
```

Description: This property parameter MAY be specified on "CALENDAR-IMAGE" or "IMAGE" properties. In the absence of this parameter, the value "BADGE" MUST be used for the default behavior. The value determines how a client ought to present an image supplied in iCalendar data to the user.

Servers and clients MUST treat x-name and iana-token values they don't recognize the same way as they would the "NONE" value.

Example:

```
IMAGE;DISPLAY=BANNER;FMPTYPE=image/png:http://example.com/images/weather-cloudy.png
```

## **7. Security Considerations**

TODO:Perhaps discuss issues with image processing related buffer overflows, accessing external URLs (privacy), etc.

## **8. IANA Considerations**

### **8.1. Property Registrations**

This documents defines the following new iCalendar properties to be added to the registry defined in [Section 8.2.3 of \[RFC5545\]](#):



Property	Status	Reference
CALENDAR-NAME	Current	RFCXXXX, <a href="#">Section 4.1</a>
CALENDAR-DESCRIPTION	Current	RFCXXXX, <a href="#">Section 4.2</a>
CALENDAR-UID	Current	RFCXXXX, <a href="#">Section 4.3</a>
CALENDAR-URL	Current	RFCXXXX, <a href="#">Section 4.4</a>
CALENDAR-TZID	Current	RFCXXXX, <a href="#">Section 4.5</a>
CALENDAR-REFRESH-INTERVAL	Current	RFCXXXX, <a href="#">Section 4.6</a>
CALENDAR-COLOR	Current	RFCXXXX, <a href="#">Section 4.7</a>
CALENDAR-IMAGE	Current	RFCXXXX, <a href="#">Section 4.8</a>
IMAGE	Current	RFCXXXX, <a href="#">Section 5.1</a>

## 8.2. Paramater Registrations

This documents defines the following new iCalendar properties to be added to the registry defined in [Section 8.2.3 of \[RFC5545\]](#):

Property Parameter	Status	Reference
DISPLAY	Current	RFCXXXX, <a href="#">Section 6.1</a>

## 9. Acknowledgments

This specification came about via discussions at the Calendaring and Scheduling Consortium.

## 10. References

### 10.1. Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [RFC5234] Crocker, D. and P. Overell, "Augmented BNF for Syntax Specifications: ABNF", STD 68, [RFC 5234](#), January 2008.
- [RFC5545] Desruisseaux, B., "Internet Calendaring and Scheduling Core Object Specification (iCalendar)", [RFC 5545](#), September 2009.



## **10.2. Informative References**

[RFC5546] Daboo, C., "iCalendar Transport-Independent Interoperability Protocol (iTIP)", [RFC 5546](#), December 2009.

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