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**New Properties for iCalendar  
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**Abstract**

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

**Status of this Memo**

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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 recently requesting.

## **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.
    ;
    caluid / calurl / caltzid /
    calrefresh / calcolor /
    ;
    ; The following are OPTIONAL,
    ; and MAY occur more than once.
    ;
    calname / caldescription / 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
    ;
)
```

#### [4.](#) Calendar Properties

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#### **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 multiple times in an iCalendar object. However, each property MUST represent the name of the calendar in a different language.

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. Whilst a calendar only has a single name, multiple language variants can be specified by including this property multiple times with different "LANGUAGE" parameter values on each.

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
```



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#### **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 multiple times in an iCalendar object. However, each property MUST represent the description of the calendar in a different language.

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. Whilst a calendar only has a single description, multiple language variants can be specified by including this property multiple times with different "LANGUAGE" parameter values on each.

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 \
```

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be working you hard on the other days!

#### **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.

**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)  
    ;  
    )
```

Example: The following is an example of this property:

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

## 5. Component Properties

### 5.1. IMAGE Property

Property Name: IMAGE

Purpose: This property specifies an image associated with a calendar component.

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".

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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.

Values for this parameter are registered with IANA as per [Section 8.3](#). New values can be added to this registry following the procedure outlined in [Section 8.2.1 of \[RFC5545\]](#).

Servers and clients MUST handle x-name and iana-token values they don't recognize by not displaying any image at all.

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 document 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. Parameter Registrations

This document defines the following new iCalendar property parameters to be added to the registry defined in [Section 8.2.4 of \[RFC5545\]](#):

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

## 8.3. Display Types Registry

This document defines the following new iCalendar value registry as per [Section 8.2.6 of \[RFC5545\]](#):

Display Type	Status	Reference
BADGE	Current	RFCXXXX, <a href="#">Section 6.1</a>
BACKGROUND	Current	RFCXXXX, <a href="#">Section 6.1</a>
OVERLAY	Current	RFCXXXX, <a href="#">Section 6.1</a>
BANNER	Current	RFCXXXX, <a href="#">Section 6.1</a>

## 9. Acknowledgments

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

## 10. References

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### **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.

### **Appendix A. Change History (To be removed by RFC Editor before publication)**

Changes in -01:

1. Fixed DISPLAY parameter handling of x- and iana tokens to state that clients ignore the image if the token is not recognized.
2. Allow language variants for CALENDAR-NAME and CALENDAR-DESCRIPTION.
3. Added registry for DISPLAY values.

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