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JSCalendar: Converting from and to iCalendar
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Abstract

This document provides an informational guideline for converting JSCalendar from and to iCalendar.

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1. Introduction

1.1. Motivation

The JSCalendar [draft-ietf-calext-jscalendar] data format is used to represent calendar data, and is meant as an alternative to the widely deployed iCalendar [RFC5545] data format.

While new calendaring services and applications might use JSCalendar as their main data format to exchange calendaring data, they are likely to interoperate with services and clients that just support iCalendar. Similarly, existing calendaring data is stored in iCalendar format in databases and other calendar stores, and providers and users might want to represent this data also in JSCalendar. Lastly, some implementations might want to preserve custom iCalendar properties, that have no equivalent in JSCalendar when converting between these formats.

To facilitate these use cases, this document provides an informational guide how to convert JSCalendar data from and to iCalendar.

1.2. Scope and caveats

JSCalendar and iCalendar have a lot of semantics in common, but they are not interchangeable formats:

- JSCalendar contains a richer data model to express calendar information such as event locations and participants; while future iCalendar extensions may allow a direct mapping, for now there may be no representation directly in iCalendar of some properties and these have been marked as implementation specific for mapping.

- iCalendar may contain arbitrary, non-standardised data with custom properties/attributes. Translating these into JSCalendar is implementation specific.

- iCalendar has some obsolete features that have been removed from JSCalendar due to not being useful and/or supported in the real world (e.g. custom email alerts to send to random people). Translating these may lose some of the original fidelity.

- Implementations may use a custom property to store data that could not be mapped directly in either direction in the original or a custom format, however this is not interoperable.

Accordingly, this document does not standardize a canonical translation between iCalendar and JSCalendar, and implementations MUST NOT make any assumptions how iCalendar data is represented in JSCalendar by other systems.

1.3. Notational Conventions

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 [RFC2119].

2. JSEvent

A _JSEvent_ maps to the the iCalendar VEVENT component type [RFC5545]. The following tables maps the JSEvent-specific properties to iCalendar:

Property	iCalendar counterpart
duration	DURATION property. If the VEVENT contains a DTEND property, the this maps to the _duration_ property as the time span between DTSTART and DTEND when converting the respective time points to the UTC time zone.

Table 1: Mapping JSEvent properties

3. JSTask

A _JSTask_ object maps to the iCalendar VTODO component type [RFC5545]. The following tables maps the JSTask-specific properties to iCalendar:

Property	iCalendar counterpart
due	DUE property
estimatedDuration	ESTIMATED-DURATION property in the RFC draft [draft-apthorp-ical-tasks], or the DURATION property otherwise.
statusUpdatedAt	COMPLETED property. The JSTask status property MUST have value "completed".
progress	PARTSTAT and COMPLETED properties, including the definitions in the RFC draft [draft-apthorp-ical-tasks].
status	STATUS property, including the definitions in the RFC draft [draft-apthorp-ical-tasks].

Table 2: Mapping JSTask properties

4. JSGroup

A JSGroup maps to a iCalendar VCALENDAR containing VEVENT or VTODO components.

Property	iCalendar counterpart
entries	VEVENT and VTODO components embedded in a VCALENDAR component.
source	SOURCE property.

Table 3: Mapping JSGroup properties

5. Common properties

This section contains recommendations how to map JSCalendar from and to iCalendar. It lists all common JSCalendar object properties in alphabetical order.

Property	iCalendar counterpart
@type	Determined by the iCalendar component type: "jsevent" for VEVENT, "jstask" for VTODO, "jsgroup" for VCALENDAR.
alerts	Each entry maps to a VALARM component. The ACTION property maps to _action_, where both "DISPLAY" and "AUDIO" values map to the "display" action. An EMAIL value maps to a JSCalendar "email" action. _relativeTo_ and _offset_ map to the TRIGGER property.
categories	CONCEPT property, defined in [draft-ietf-calext-ical-relations].
color	COLOR property, as specified in [RFC7986].
created	CREATED property.
description	DESCRIPTION property.
descriptionContentType	Implementation-specific.
excluded	EXDATE property.
freeBusyStatus	TRANSP property.

isAllDay	See Section 5.1.
keywords	CATEGORIES property, as specified in [RFC7986].
links	ATTACH ([RFC5545]), URL or IMAGE ([RFC7986]) properties with URI value types map to the the Link _href_. The FMTTYPE parameter maps to _type_, the SIZE parameter to _size_. Mapping other properties is implementation-specific.
locale	LANGUAGE parameter of the SUMMARY or DESCRIPTION property.
localizations	Implementation-specific.
locations	See Section 5.2.
method	METHOD property of the embedding VCALENDAR.
participants	See Section 5.3.
priority	PRIORITY property.
privacy	CLASS property.
prodId	PRODID property.
recurrenceOverrides	RDATE and EXDATE properties, and any VEVENT or VTODO instances with a recurrence-id and same UID as the mapped main object.
recurrenceRule	RRULE property. For all-day calendar objects, map the _until_ property value to an iCalendar DATE (effectively removing the time component). To convert a DATE-typed UNTIL from iCalendar, set the time components of the LocalDate value to "23:59:59". If the iCalendar UNTIL value is a UTC date time, convert it to the local time in the JSCalendar calendar object time zone.
relatedTo	RELATED-TO property.

replyTo	An iCalendar ORGANIZER with a mailto: URI mapped to the "imip" method, or any other URI mapped to the "other" method. Mapping multiple methods is implementation-specific.
sequence	SEQUENCE property.
start	See Section 5.1.
status	STATUS property.
timeZone	See Section 5.1.
timeZones	Each entry in the property maps to a VTIMEZONE in the embedding VCALENDAR component.
title	SUMMARY property.
uid	UID property.
updated	DTSTAMP and LAST-MODIFIED properties.
useDefaultAlerts	Implementation-specific.
virtualLocations	See Section 5.2.

Table 4: Translation between JSCalendar and iCalendar

5.1. Time

JSEvent and JSTask objects share the _start_, _timeZone_ and _isAllDay_ properties to express their occurrence in time. The following table defines how to map these properties:

Property	iCalendar counterpart
start and non-null timeZone	The _start_ property value maps to an iCalendar DTSTART of type local DATE-TIME and the _timeZone_ value to its TZID parameter. If the time zone is "Etc/UTC", then the start time may alternatively map to an iCalendar UTC DATE-TIME without a TZID parameter.
start and isAllDay is true	The _start_ property value maps to an iCalendar DTSTART property value of type DATE. When mapping from iCalendar, the time component of the _start_ property value is zero.
start and null timeZone and isAllDay is false	The _start_ property value maps to an iCalendar DTSTART of type local DATE-TIME and no TZID parameter.

Table 5: Mapping common time properties

5.2. Locations

The iCalendar counterpart for JSCalendar Location objects is the iCalendar [RFC5545] LOCATION property, or implementation-specific.

Property	iCalendar counterpart
coordinates	GEO property.
description	Implementation-specific.
linkIds	Implementation-specific.
name	LOCATION property value.
rel	Implementation-specific.
timeZone	Implementation-specific.
uri	The LOCATION ALTREP parameter.

Table 6: Mapping Location properties

The iCalendar counterpart for JSCalendar VirtualLocation objects is the iCalendar [RFC7986] CONFERENCE property.

Property	iCalendar counterpart
description	Implementation-specific.
name	LABEL parameter.
uri	CONFERENCE property value.

Table 7: Mapping virtualLocation properties

5.3. Participants

The following table outlines translation of JSCalendar participants. An iCalendar ORGANIZER maps to _replyTo_ and a participant with role "owner". If an ATTENDEE with the same CAL-ADDRESS value exists, then it maps to the same participant as the ORGANIZER participant. Other participants map to ATTENDEEs.

Property	iCalendar counterpart
attendance	ROLE parameter values REQ-PARTICIPANT, OPT-PARTICIPANT and NON-PARTICIPANT.
delegatedFrom	DELEGATED-FROM parameter
delegatedTo	DELEGATED-TO parameter
email	EMAIL parameter, if defined. Otherwise the CAL-ADDRESS property value, if it is a mailto: URI.
expectReply	RSVP parameter
kind	CUTYPE parameter
linkIds	Implementation-specific.
locationId	Implementation-specific.
memberOf	MEMBER parameter
name	CN parameter
participationStatus	PARTSTAT parameter
roles	ROLE parameter.
scheduleSequence	SEQUENCE property of the participant's latest iMIP message
scheduleUpdated	DTSTAMP property of the participant's latest iMIP message
sendTo	A CAL-ADDRESS with a mailto: URI maps to the JSCalendar "imip" method, any other URI to the "other" method. Mapping multiple methods is implementation-specific.

Table 8: Mapping Participant properties

6. Custom properties

Mapping custom or unknown properties between JSCalendar and iCalendar is implementation-specific. Implementations might use vendor-extension properties, which could also serve as basis for discussion for a JSCalendar standard extension. Alternatively, an implementation could preserve iCalendar properties and components in JSCalendar by use of a vendor-extension property formatted as jCal [RFC7265] data.

7. Security Considerations

The same security considerations as for [draft-ietf-calext-jscalendar] apply.

8. IANA Considerations

None.

9. Acknowledgments

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10. References

10.1. Normative References

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, DOI 10.17487/RFC2119, March 1997, <https://www.rfc-editor.org/info/rfc2119>.

[RFC5545] Desruisseaux, B., Ed., "Internet Calendaring and Scheduling Core Object Specification (iCalendar)", RFC 5545, DOI 10.17487/RFC5545, September 2009, <https://www.rfc-editor.org/info/rfc5545>.

[RFC7265] Kewisch, P., Daboo, C., and M. Douglass, "jCal: The JSON Format for iCalendar", RFC 7265, DOI 10.17487/RFC7265, May 2014, <https://www.rfc-editor.org/info/rfc7265>.

[RFC7986] Daboo, C., "New Properties for iCalendar", RFC 7986, DOI 10.17487/RFC7986, October 2016, <https://www.rfc-editor.org/info/rfc7986>.

10.2. Informative References

[draft-apthorp-ical-tasks]
"Task Extensions to iCalendar",
<https://tools.ietf.org/html/draft-apthorp-ical-tasks>.

[draft-ietf-calext-ical-relations]
"Support for iCalendar Relationships",
<https://tools.ietf.org/html/
draft-ietf-calext-ical-relations>.

[draft-ietf-calext-jscalendar]
"Task Extensions to iCalendar",
<https://tools.ietf.org/html/
draft-ietf-calext-jscalendar>.

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