

# [MS-STANXICAL]: Exchange iCalendar Standards Compliance - RFC 2445, 2446, 2447

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| Revision Summary      |                  |         |                                      |
|-----------------------|------------------|---------|--------------------------------------|
| Author                | Date             | Version | Comments                             |
| Microsoft Corporation | October 1, 2008  | 1.0     | Initial Release.                     |
| Microsoft Corporation | December 3, 2008 | 1.01    | Updated IP notice.                   |
| Microsoft Corporation | April 10, 2009   | 2.0     | Updated applicable product releases. |

**Product:** Microsoft Exchange Server 2010  
**Component:** iCalendar  
**Standards:** [RFC2445], [RFC2446], [RFC2447]

## 1 Overview

This document specifies the level of support provided by the Exchange iCalendar component for the Internet iCalendar Protocol (iCalendar), the iCalendar Transport-Independent Interoperability Protocol (iTIP), and the iCalendar Message-Based Interoperability Protocol (iMIP). The Exchange iCalendar component is used by clients that implement the iCalendar, iTIP, and iMIP protocols to store and retrieve calendar data on the server.

## 2 Support Details

The use of the words “Required,” “Recommended,” and “Optional” in the titles of the sections below are to be interpreted as described in RFC 2119.

### 2.1 *Required Portions*

#### 2.1.1 [RFC2445] Required Portions

The Exchange iCalendar component implements all required portions of [RFC2445].

#### 2.1.2 [RFC2446] Required Portions

The Exchange iCalendar component implements all required portions of [RFC2446].

#### 2.1.3 [RFC2447] Required Portions

The Exchange iCalendar component implements all required portions of [RFC2447].

### 2.2 *Recommended Portions*

#### 2.2.1 [RFC2445] Recommended Portions

The Exchange iCalendar component implements all recommended portions of [RFC2445].

#### 2.2.2 [RFC2446] Recommended Portions

The Exchange iCalendar component implements all recommended portions of [RFC2446].

#### 2.2.3 [RFC2447] Recommended Portions

The Exchange iCalendar component implements all recommended portions of [RFC2447].

## **2.3 *Optional Portions***

### **2.3.1 [RFC2445] Optional Portions**

The Exchange iCalendar component implements all optional portions of [RFC2445], except for deviations shown in the following subsections.

#### **2.3.1.1 RFC Section: 4.2.1. Alternate Text Representation**

The ALTREP parameter is supported only for LOCATION and CONTACT properties. ALTREP is ignored in all other properties.

#### **2.3.1.2 RFC Section: 4.2.3. Calendar User Type**

Exchange deviates from CUTYPE by supporting a different set of attendee types: "required," "optional," and "resource." On inbound, Exchange maps CUTYPEs "RESOURCE" or "ROOM" to the Exchange "resource" type. Exchange does not do the reverse mapping on outbound conversion.

#### **2.3.1.3 RFC Section: 4.2.4. Delegators**

The *DELEGATED-FROM* parameter is not supported.

#### **2.3.1.4 RFC Section: 4.2.5. Delegates**

The *DELEGATED-TO* parameter is not supported.

#### **2.3.1.5 RFC Section: 4.2.6. Directory Entry Reference**

The *DIR* parameter is not supported.

#### **2.3.1.6 RFC Section: 4.2.7. Inline Encoding**

The *ENCODING* parameter is not supported.

#### **2.3.1.7 RFC Section: 4.2.8. Format Type**

The *FMTYPE* parameter is not supported.

#### **2.3.1.8 RFC Section: 4.2.9. Free/Busy Time Type**

The *FBTYPE* parameter is not supported.

#### **2.3.1.9 RFC Section: 4.2.10. Language**

The *LANGUAGE* parameter is not supported.

### **2.3.1.10 RFC Section: 4.2.11. Group or List Membership**

The *MEMBER* parameter is not supported.

### **2.3.1.11 RFC Section: 4.2.12. Participation Status**

In the *PARTSTAT* parameter, Exchange supports NEEDS-ACTION, ACCEPTED, TENTATIVE, and DECLINED. Exchange does not support DELEGATED, COMPLETED or IN-PROCESS. Non supported values are lost.

### **2.3.1.12 RFC Section: 4.2.13. Recurrence Identifier Range**

The *RANGE* parameter is not supported.

### **2.3.1.13 RFC Section: 4.2.14. Alarm Trigger Relationship**

The *RELATED* parameter is not supported.

### **2.3.1.14 RFC Section: 4.2.15. Relationship Type**

The *RELTYPE* parameter is not supported.

### **2.3.1.15 RFC Section: 4.2.16. Participation Role**

The *ROLE* parameter value of "CHAIR" is not supported. *ROLE* values of REQ-PARTICIPANT, OPT-PARTICIPANT, and NON-PARTICIPANT are supported.

### **2.3.1.16 RFC Section: 4.2.17. RSVP Expectation**

The *RSVP* parameter is supported on a per-message basis, not per-recipient.

### **2.3.1.17 RFC Section: 4.2.18. Sent By**

The *SEND-BY* parameter is supported for the organizer only.

### **2.3.1.18 RFC Section: 4.2.13. Recurrence Identifier Range**

The *RANGE* parameter MUST NOT be present.

### **2.3.1.19 RFC Section: 4.3.5. Date-Time**

The DATE-TIME type is not supported for floating time ("DATE WITH LOCAL TIME"). Exchange binds floating times to the time zone of the event's start time.

### **2.3.1.20 RFC Section: 4.3.10. Recurrence Rule**

The RECUR value type uses keywords. Keywords that deviate from the protocol are presented in the following table.

| <b>Keyword</b> | <b>Deviation</b>   |
|----------------|--|
| BYEARDAY       | MUST NOT be present.   |
| BYWEEKNO       | MUST NOT be present.   |
| seconds        | Must be set to "0".  |
| weekdaynum     | When repeated in a BYDAY list, ordwk MUST NOT be present.  |
| yeardaynum     | MUST be a positive number or "-1".   |
| SECONDLY       | MUST NOT be present.   |
| MINUTELY       | MUST NOT be present.   |
| HOURLY         | MUST NOT be present.   |
| DAILY          | BYMONTH, BYMONTHDAY, and BYSETPOS MUST NOT be present for DAILY recurrences.   |
| WEEKLY         | BYMONTH, BYMONTHDAY, and BYSETPOS MUST NOT be present for WEEKLY recurrences.<br><br>If BYDAY is present, and BYDAY has repeated values, then day values (such as MO, TU, etc.) MUST NOT have ordwk.   |
| MONTHLY        | BYMONTH MUST NOT be present for MONTHLY recurrences.<br><br>If BYDAY is present, then: <ul style="list-style-type: none"> <li>• If BYDAY has repeated values, then day values (MO, TU, etc) MUST NOT have ordwk.</li> <li>• BYMONTHDAY MUST NOT be present.</li> <li>• weekdaynum MUST have an ordwk or BYSETPOS, but not both.</li> <li>• BYSETPOS, if present, MUST be one of {-1, 1, 2, 3, 4}.</li> </ul> |
| YEARLY         | If BYDAY is present, then BYMONTHDAY MUST NOT be present, and weekdaynum MUST have ordwk or BYSETPOS, but not both.  |

### 2.3.1.21 RFC Section: 4.6.1. Event Component

In the event component, VEVENT, the following optional eventprops deviate from the standard in the following ways:

- attach is partially supported. This property is generated in outbound iCalendar objects, but it is not promoted from inbound received messages.
- exrule MUST NOT be present.
- rdate MUST NOT be present.
- rrule MUST NOT occur more than one time

### **2.3.1.22 RFC Section: 4.6.2. To-do Component**

The to-do component, VTODO, is not supported.

### **2.3.1.23 RFC Section: 4.6.3. Journal Component**

The journal component, VJOURNAL, is not supported.

### **2.3.1.24 RFC Section: 4.6.4. Free/Busy Component**

The free/busy component, VFREEBUSY, is not supported.

### **2.3.1.25 RFC Section: 4.6.5. Time Zone Component**

The time zone component, VTIMEZONE, deviates from the standard in the following ways:

- standardc MUST occur exactly once.
- daylightc MUST occur once or not at all.
- rdate is not supported and is ignored.
- rrule MUST occur once or not at all.

### **2.3.1.26 RFC Section: 4.6.6. Alarm Component**

The alarm component, VALARM, deviates from the standard in the following ways:

- The audioprop values of action, duration, repeat, and attach are ignored.
- The dispprop values of action, description, duration, and repeat are ignored.
- The emailprop values of action, description, summary, attendee, duration, repeat, and attach are ignored.
- The propprop values of action, attach, duration, and repeat are ignored.

### **2.3.1.27 RFC Section: 4.8.1.1. Attachment**

The descriptive component property name, ATTACH, is partially supported; its value is ignored during the inbound content conversion, but it is generated during the outbound content conversion.

### **2.3.1.28 RFC Section: 4.8.1.6. Geographic Position**

The GEO property is not supported.

### **2.3.1.29 RFC Section: 4.8.1.7. Location**

The LOCATION property is supported with the deviation that the value's maximum length is 255 characters.

### **2.3.1.30 RFC Section: 4.8.1.8. Percent Complete**

The **PERCENT-COMPLETE** property is not supported.

### **2.3.1.31 RFC Section: 4.8.1.12. Summary**

The **SUMMARY** property is supported with the deviation that the value's maximum length is 255 characters.

### **2.3.1.32 RFC Section: 4.8.2.1. Date/Time Completed**

The **COMPLETED** property is not supported.

### **2.3.1.33 RFC Section: 4.8.2.3. Date/Time Due**

The **DUE** property is not supported.

### **2.3.1.34 RFC Section: 4.8.2.6. Free/Busy Time**

The **FREEBUSY** property is not supported.

### **2.3.1.35 RFC Section: 4.8.3.2. Time Zone Name**

The **TZNAME** property is not supported.

### **2.3.1.36 RFC Section: 4.8.3.5. Time Zone URL**

The **TZURL** property is not supported.

### **2.3.1.37 RFC Section: 4.8.4.3. Organizer**

The relationship component property name, **ORGANIZER**, is included in an iCalendar object that defines calendar entities that are not group scheduled entities, but are entities only on a single user's calendar.

### **2.3.1.38 RFC Section: 4.8.4.5. Related To**

The **RELATED-TO** property is not supported.

### **2.3.1.39 RFC Section: 4.8.4.6. Uniform Resource Locator**

The **URL** property is not supported.

### **2.3.1.40 RFC Section: 4.8.5.2. Exception Rule**

The recurrence component property name, **EXRULE**, **MUST NOT** be present.



#### **2.3.1.41 RFC Section: 4.8.5.3. Recurrent Date/Times**

The recurrence component property name, **RDATE**, MUST NOT be present.

#### **2.3.1.42 RFC Section: 4.8.6.1. Action**

The alarm component property name, **ACTION**, is ignored.

#### **2.3.1.43 RFC Section: 4.8.6.2. Repeat Count**

The alarm component property name, **REPEAT**, is ignored.

#### **2.3.1.44 RFC Section: 4.8.6.3. Trigger**

The **TRIGGER** property is always relative to the start of a calendar item. **TRIGGER** can be rescheduled but not repeated.

#### **2.3.1.45 RFC Section: 4.8.7.1. Date/Time Created**

The **CREATED** property is not supported.

#### **2.3.1.46 RFC Section: 4.8.7.3. Last Modified**

The **LAST-MODIFIED** property is not supported.

#### **2.3.1.47 RFC Section: 4.8.8.2. Request Status**

The **REQUEST-STATUS** property is not supported.

### **2.3.2 [RFC2446] Optional Portions**

The Exchange iCalendar component implements all optional portions of [RFC2446], except for deviations shown in the following subsections.

#### **2.3.2.1 RFC Section: 3.2.1. PUBLISH**

The **PUBLISH** method deviates from the standard in the following ways:

- Client logic doesn't provide a way to publish appointments via email: Inbound is treated as a **REQUEST**; Outbound is used only for attached calendar items.
- There is no support for more than one **VEVENT** in a single iCalendar document. Modified exceptions to a recurring series are supported by sending multiple messages.
- The **CONTACT** property is partially supported; email addresses and URLs are promoted inbound.

#### **2.3.2.2 RFC Section: 3.2.2. REQUEST**

Multiple **VEVENT**s are not supported for single instance events.

### **2.3.2.3 RFC Section: 3.2.2.1. Rescheduling an Event**

Multiple VEVENTs are not supported for single instance events.

### **2.3.2.4 RFC Section: 3.2.2.2. Updating or Reconfirmation of an Event.**

Multiple VEVENTs are not supported for single instance events.

### **2.3.2.5 RFC Section: 3.2.2.3. Delegating an Event to another CU**

Delegating the role of attendee to another calendar user (CU) is not supported.

### **2.3.2.6 RFC Section: 3.2.2.4. Changing the Organizer**

Changing the role of Organizer to another CU is not supported.

### **2.3.2.7 RFC Section: 3.2.2.5 Sending on Behalf of the Organizer**

The delegation of organizer is supported, but not by using the *sent-by* parameter; rather, the MIM from/sender headers are used to indicate delegation.

### **2.3.2.8 RFC Section: 3.2.2.6. Forwarding to An Uninvited CU**

The organizer who receives notification of a forwarded request does not have the option to decline to add the uninvited CU.

### **2.3.2.9 RFC Section: 3.2.2.7. Updating Attendee Status**

A request to update attendee status is not supported.

### **2.3.2.10 RFC Section: 3.2.3. REPLY**

The REPLY method deviates from the standard in the following ways:

- Delegation response is not supported.
- Accepting/rejecting uninvited attendees is not supported.

### **2.3.2.11 RFC Section: 3.2.4. ADD**

The ADD method is not supported.

### **2.3.2.12 RFC Section: 3.2.5. CANCEL**

The CANCEL method deviates from the standard in the following ways:

- Cancellation by RANGE is not supported.
- Multiple VEVENTs are not supported for single instance events.

### **2.3.2.13 RFC Section: 3.2.6. REFRESH**

The **REFRESH** method is not supported.

### **2.3.2.14 RFC Section: 3.2.7. COUNTER**

The **COUNTER** method deviates from the standard in the following ways:

- Only **DTSTART**, **DTEND**, and **DESCRIPTION** or **COMMENT** are promoted to the counterproposal.
- Changes to other properties are ignored.

### **2.3.2.15 RFC Section: 3.2.8. DECLINECOUNTER**

The **DECLINECOUNTER** method is not supported.

### **2.3.2.16 RFC Section: 3.3. Methods for VFREEBUSY Components**

**VFREEBUSY** components are not supported.

### **2.3.2.17 RFC Section: 3.4. Methods for VTODO Components**

**VTODO** components are not supported.

### **2.3.2.18 RFC Section: 3.5. Methods for VJOURNAL Components**

**VJOURNAL** components are not supported.

### **2.3.2.19 RFC Section: 3.6. Status Replies**

Status replies and the **REQUEST-STATUS** property are not supported..

## **2.3.3 [RFC2447] Optional Portions**

The Exchange iCalendar component implements all optional portions of [RFC2447], except for deviations shown in the following subsections.

### **2.3.3.1 RFC Section: 2.1. MIME MEDIA TYPE**

- Calendar data may be transported in an application/MS-tnef body part.
- Formatted text is transported in a text/html body part.

### **2.3.3.2 RFC Section: 2.2.1. Authorization**

- The organizer and organizers delegate can modify or cancel entries on the organizer's calendar.
- The iCal organizer, attendee, or sent-by data in the iCal document are not matched to the sender.

### **2.3.3.3 RFC Section: 2.2.2. Authentication**

The use of signed messages, as specified in RFC 1847, is not supported.

### **2.3.3.4 RFC Section: 2.2.3 Confidentiality**

The use of encrypted messages, as specified in RFC 1847, is not supported.

### **2.3.3.5 RFC Section: 2.4. CONTENT TYPE**

The optional *component* parameter is not written to the text/calendar content-type header.

### **2.3.3.6 RFC Section: 2.5. CONTENT-TRANSFER-ENCODING**

The default character set and content-transfer-encoding used for text/calendar body parts are utf-8 and base64, respectively.

### **2.3.3.7 RFC Section: 2.6. CONTENT-DISPOSITION**

A content-disposition header MAY be added to text/calendar body parts..

### **2.3.3.8 RFC Section: 3. SECURITY CONSIDERATIONS**

The use of RFC 1847 to authenticate senders of calendar messages is not supported.

## **3 Extensions**

iCalendar component extensions to RFC 2445, RFC 2446, and RFC 2447 are as specified in [MS-OXICAL].

## **4 Related Standards**

[MS-OXCMAIL] Microsoft Corporation, "RFC2822 and MIME to E-mail Object Conversion Protocol Specification", June 2008.

[MS-OXICAL] Microsoft Corporation, "iCalendar to Appointment Object Conversion Protocol Specification", June 2008.

[MS-OXOCAL] Microsoft Corporation, "Appointment and Meeting Object Protocol Specification", June 2008.

[MS-OXCMSG] Microsoft Corporation, "Message and Attachment Object Protocol Specification", June 2008.

[MS-OXOMSG] Microsoft Corporation, "E-mail Object Protocol Specification", June 2008.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, <http://www.ietf.org/rfc/rfc2119.txt>.

[RFC2445] Dawson, F. and Stenerson, D., "Internet Calendaring and Scheduling Core Object Specification (iCalendar)", RFC 2445, November 1998, <http://www.ietf.org/rfc/rfc2445.txt>.

[RFC2446] Dawson, F., Hopson, R., Mansour, S., and Silverberg, S., "iCalendar Transport-Independent Interoperability Protocol (iTIP)", RFC 2446, November 1998, <http://www.ietf.org/rfc/rfc2446.txt>.

[RFC2447] Dawson, F., Mansour, S., and Silverberg, S., "iCalendar Message-Based Interoperability Protocol (iMIP)", RFC 2447, November 1998, <http://www.ietf.org/rfc/rfc2447.txt>.