[MS-OXOCAL]: Appointment and Meeting Object Protocol Specification

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Revision Summary			
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Microsoft Corporation	April 4, 2008	0.1	Initial Availability.
Microsoft Corporation	April 25, 2008	0.2	Revised and updated property names and other technical content.
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Microsoft Corporation	August 6, 2008	1.01	Revised and edited technical content.
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1 Introduction

The concept of calendaring involves enabling users to manage their schedules electronically. Users can create events on their calendars and optionally request others to attend. The events can be made to recur at specific intervals. Upon receiving an invitation to a calendar event, users can accept, decline, or propose a different date and/or time for the event. Delegation enables one user to manage the calendar of another user.

The Appointment and Meeting Object protocol specifies how to extend the [MS-OXCMSG] protocol for use with calendaring. This document also specifies the following:

- The format for storing events as **Calendar objects**.
- A process for retrieval of those objects by a client or server.
- A process for scheduling other users.
- A process for allowing another user to manage the calendar.
- A process for scheduling commonly shared resources.

1.1 Glossary

The following terms are defined in [MS-OXGLOS]:

Address Book object
appointment
Appointment object
Attachment object
Bcc recipient
binary large object (BLOB)
Boolean
Calendar folder
Calendar object
Coordinated Universal Time (UTC)
delegate
Delegate Information object
Delegator
EntryID
exception
Embedded Message object
Exception Attachment object
Exception Embedded Message object
Exception object
GUID
handle

informational update
little-endian
meeting
Meeting object
Meeting Cancellation object
meeting-related object
Meeting Request object
Meeting Response object
Meeting Update object
Meeting Workspace
Message object
Out of Office (OOF)
property
public folder
Recurring Calendar object
resource
Rich Text Format (RTF)
Sent Mail folder
signal time
special folder
store
Task object
Unicode

The following data types are defined in [MS-DTYP]:
BYTE
DWORD
LONG
SYSTEMTIME
ULONG

The following terms are specific to this document:

attendee: A person who is invited to attend a meeting.

Calendar special folder: A **Calendar folder** in a user's mailbox that meetings will be created in by default. For details about **special folders**, see [MS-OXOSFLD].

counter proposal: A request from an **attendee** to the **organizer** to change the date and/or time of a **meeting**.

floating appointment: An **appointment** that starts and ends at the same local time regardless of any time zone considerations.

full update: A **Meeting Update object** that includes a change to the date and/or time, or **recurrence pattern**, and which requires a response from **attendees**.

instance: A single occurrence of an **Appointment object** or **Meeting object** that has a **recurring series** specified.

Meeting Cancellation object: A **Message object** that is sent to **attendees** when the **organizer** of a **meeting** cancels a previously scheduled event.

Meeting Forward Notification object: A **Message object** sent to an **organizer** when an **attendee** forwards a **meeting request**.

meeting request: An **instance** of a **Meeting Request object**.

meeting update: An **instance** of a **Meeting Update object**.

optional attendee: An **attendee** of an event whom the **organizer** lists as an optional participant.

orphan instance: An **instance** of a **recurring series** that is in a **Calendar folder** without the **recurring series**. For all practical purposes, this is a **single instance**.

organizer: The owner of a **meeting**.

recurring series: An event that repeats, at specific intervals of time, according to a **recurrence pattern**.

recurrence pattern: Information about a repeating event, such as the start and end time, the number of occurrences and how occurrences are spaced (daily, weekly, monthly, and so on).

replace time: The original start date and time of an **instance**, according to the **recurrence pattern**, to be replaced by the start date and time of the **exception**.

required attendee: An **attendee** of an event whom the **organizer** lists as a mandatory participant.

sendable attendee: An **attendee** to whom a **meeting request** or **meeting update** will be sent. A **sendable attendee** can be a **required** or **optional attendee**, or a **resource**.

sequence number: The revision number of a **Meeting object**. The **sequence number** is used to determine the most recent **meeting update** that was sent by the **organizer**.

series: See **recurring series**.

significant change: A change made by an **organizer** to a **Meeting object** that requires a **Meeting Update object** to be sent.

single instance: An **Appointment object**, **Meeting object**, or **Task object** that occurs only once.

time zone update: Any change to a time zone that occurs when a time zone changes the dates in which it observes Daylight Saving Time (DST) or changes its offset from UTC.

unsendable attendee: An **attendee** to whom **meeting-related objects** will not be sent.

MAY, SHOULD, MUST, SHOULD NOT, MUST NOT: These terms (in all caps) are used as described in [RFC2119]. All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

1.2 References

1.2.1 Normative References

[MS-DTYP] Microsoft Corporation, "Windows Data Types", March 2007, http://go.microsoft.com/fwlink/?LinkId=111558.

[MS-MEETS] Microsoft Corporation, "Meetings Web Services Protocol Specification", April 2008, http://msdn.microsoft.com/en-us/library/cc313057.aspx.

[MS-OXBBODY] Microsoft Corporation, "Best Body Retrieval Protocol Specification", June 2008.

[MS-OXCFOLD] Microsoft Corporation, "Folder Object Protocol Specification", June 2008.

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

[MS-OXCSTOR] Microsoft Corporation, "Store Object Protocol Specification", June 2008.

[MS-OXGLOS] Microsoft Corporation, "Exchange Server Protocols Master Glossary", June 2008.

[MS-OXOCFG] Microsoft Corporation, "Configuration Information Protocol Specification", June 2008.

[MS-OXODLGT] Microsoft Corporation, "Delegate Access Configuration Protocol Specification", June 2008.

[MS-OXORMDR] Microsoft Corporation, "Reminder Settings Protocol Specification", June 2008.

[MS-OXOSFLD] Microsoft Corporation, "Special Folders Protocol Specification", June 2008.

[MS-OXPROPS] Microsoft Corporation, "Exchange Server Protocols Master Property List 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.

1.2.2 Informative References

None.

1.3 Protocol Overview

The Appointment and Meeting Object protocol specifies the following:

- The **Message objects** that are required for working with a user's electronic schedule, as reflected in the contents of a **Calendar folder**.
- How scheduled events are communicated among users, including the **organizer** and **attendees**.
- The interaction between a **delegate** and the **delegator's** calendar.

1.3.1 Protocol Objects

The **Message objects** that are specified by the Appointment and Meeting Object protocol can be classified as one of the following two types of objects:

- **Calendar objects**, which are objects that are created and reside in a **Calendar folder**. The two Calendar object types are **Appointment objects** and **Meeting objects**.
- **Meeting-related objects**, which are objects that relay **Meeting object** information from **organizer** to **attendees** and vice versa. These include **Meeting Request objects**, **Meeting Update objects**, **Meeting Cancellation objects**, **Meeting Response objects**, and **Meeting Forward Notification objects**.

1.3.1.1 Appointment Object

The **Appointment object** contains details of an event, such as a description, notes, date and time, reminder date and time, status, and more. The event that is specified by the Appointment object can be a **single instance** or a recurring event with or without **exceptions**.

1.3.1.1.1 Exceptions

An **exception** represents a modified **instance** of a recurring event. This could be as simple as extra data in the body, or it could be more complicated, such as a change in date/time or location. An exception is defined by an **Exception Attachment object** and an **Exception Embedded Message object**.

1.3.1.2 Meeting Object

A **Meeting object** extends the **Appointment object** to contain **attendees** in addition to the **organizer**. The **Meeting object** is created, owned, and managed by an organizer.

1.3.1.2.1 Attendees

Attendees are people or resources that are invited by the **organizer** to an event. **Attendees** can be of three types: required, optional, and resource. Attendees, of any type, can be further categorized as sendable or unsendable. **Meeting requests** are sent to **sendable attendees** but not to **unsendable attendees**.

1.3.1.3 Meeting Request Object

The **organizer** invites one or more users to attend a meeting by sending a **Meeting Request object**. This object is sent to each **sendable attendee** to communicate the event details.

1.3.1.4 Meeting Response Object

When an **attendee** receives a **meeting request**, he or she can accept, tentatively accept, or decline the invitation. The attendee sends a **Meeting Response object** back to the **organizer** that indicates their response choice. With the response, the attendee can propose a new date and/or time that works better for the attendee.

1.3.1.5 Meeting Update Object

If the **organizer** decides to make changes to a previously scheduled meeting, the organizer sends a special type of **Meeting Request object**, referred to as the **Meeting Update object**, to communicate these changes. If a change occurs to the date and/or time or **recurrence pattern**, it is considered a **full update** and **attendees** are required to re-respond. Other changes, such as additional agenda details, are considered **informational updates** and do not require a new response.

1.3.1.6 Meeting Cancellation Object

The **organizer** sends a **Meeting Cancellation object** to notify **attendees** that a previously scheduled event will not take place.

1.3.1.7 Meeting Forward Notification Object

When an **attendee** forwards a **Meeting Request object** to new attendees, the **organizer** is notified of the new attendees through a **Meeting Forward Notification object**.

1.4 Relationship to Other Protocols

The Appointment and Meeting Object protocol extends the [MS-OXCMSG] protocol for use with **Calendar objects** and relies on [MS-OXOMSG] for message transport and delivery.

1.5 Prerequisites/Preconditions

The Appointment and Meeting Object protocol assumes that the client has previously acquired a **handle** to the object on which it intends to operate. It also assumes that the client has acquired a handle to the **Calendar folder** to access **Calendar objects** when required. It relies on an understanding of how to work with folders, messages, recipients, and tables. For more details, see [MS-OXCPRPT], [MS-OXCMSG], and [MS-OXCFOLD].

1.6 Applicability Statement

The Appointment and Meeting Object protocol is appropriate for clients and servers that manage user **appointments** and **meetings** and their associated **resources**.

1.7 Versioning and Capability Negotiation

None.

1.8 Vendor-Extensible Fields

This protocol does not provides any vendor extensibility beyond what is already specified in [MS-OXCMSG].

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

The Appointment and Meeting Object protocol uses the protocols specified in [MS-OXCPRPT] and [MS-OXCMSG] as its primary transport mechanism.

2.2 Message Syntax

Calendar objects and **meeting-related objects** can be created and modified by clients and servers. This section defines the constraints under which both clients and servers operate.

Clients operate on Calendar objects and meeting-related objects by using the Message and Attachment Object protocol, as specified in [MS-OXCMSG]. How servers operate on these objects is implementation-dependent, but the results of any such operations MUST be exposed to clients as specified by the Appointment and Meeting Object protocol.

Unless otherwise specified, Calendar objects and meeting-related objects MUST adhere to all **property** constraints specified in [MS-OXPROPS] and all property constraints specified in [MS-OXCMSG]. An object can contain other properties, as specified in [MS-OXPROPS], but these properties do not have any impact on the Appointment and Meeting Object protocol <1><2><3>.

When a property is referred to as "read-only for the client", it means that a client SHOULD NOT attempt to change the value of this property and a server returns an error and ignores any request to change the value of this property.

2.2.1 Common Properties

Unless otherwise noted, the objects specified in the Appointment and Meeting Object protocol include the common **properties**, as specified in [MS-OXCPRPT]. The objects also include the common properties, as specified in [MS-OXCMSG]. The objects SHOULD also set the common properties, as specified in [MS-OXOMSG].

This section describes the properties that are common to all object types in the Appointment and Meeting Object protocol. Unless otherwise specified, the properties listed in this section exist on all **Calendar objects** and **meeting-related objects**.

2.2.1.1 PidLidAppointmentSequence

Type: **PtypInteger32**, unsigned
Specifies the **sequence number** of a **Meeting object**. A Meeting object begins with the sequence number set to 0 (zero) and is incremented each time the **organizer** sends out a **Meeting Update object**. The sequence number is copied onto the **Meeting Response object** so that the client or server knows which version of the **meeting** is being responded to. For more details about when and how a client increments the sequence number, see section 3.1.5.4.

2.2.1.2 PidLidBusyStatus

Type: **PtypInteger32**

Specifies the availability of a user for the event described by the object and MUST be one of the values specified in the following table.

Status	Value	Description
olFree	0x00000000	The user is available.
olTentative	0x00000001	The user has a tentative event scheduled.
olBusy	0x00000002	The user is busy.
olOutOfOffice	0x00000003	The user is **Out of Office (OOF)**.

2.2.1.3 PidLidAppointmentAuxiliaryFlags

Type: **PtypInteger32**
Specifies a bit field that describes the auxiliary state of the object. This **property** is not required. The following are the individual flags that can be set.

C (auxApptFlagCopied, 0x00000001): This flag indicates that the **Calendar object** was copied from another **Calendar folder**. <4>

R (auxApptFlagForceMtgResponse, 0x00000002): This flag on a **Meeting Request object** indicates that the client or server can require that a **Meeting Response object** be sent to the **organizer** when a response is chosen.

F (auxApptFlagForwarded, 0x00000004): This flag on a Meeting Request object indicates that it was forwarded by the organizer or another recipient, rather than sent directly from the organizer.

2.2.1.4 PidLidLocation

Type: **PtypString**
Specifies the location of the event. This **property** is not required.

2.2.1.5 PidLidAppointmentStartWhole

Type: **PtypTime**
Specifies the start date and time of the event in **UTC** and MUST be less than the value of the **PidLidAppointmentEndWhole property**. For a **recurring series**, this property is the start date and time of the first **instance** according to the **recurrence pattern**. Note that for some appointments, the value of this time property is not interpreted strictly as a UTC time. See section 3.1.5.5 for more information.

2.2.1.6 PidLidAppointmentEndWhole

Type: **PtypTime**
Specifies the end date and time for the event in **UTC** and MUST be greater than the value of the **PidLidAppointmentStartWhole property**. For a **recurring series**, this property is the

end date and time of the first **instance** according to the **recurrence pattern**. Note that for some appointments, the value of this time property is not interpreted strictly as a UTC time. See section 3.1.5.5 for more information.

2.2.1.7 PidLidAppointmentDuration

Type: **PtypInteger32**
Specifies the length of the event, in minutes. This **property** is not required. If set, the value MUST be the number of minutes between the value of the **PidLidAppointmentStartWhole** and **PidLidAppointmentEndWhole** properties.<5>

2.2.1.8 PidLidAppointmentColor

Type: **PtypInteger32**
Specifies the color to be used when displaying the **Calendar object**. A client or server SHOULD set this value for backward compatibility with older clients; however, it can instead display the Calendar object based on the value of the **PidNameKeywords property**, as specified in [MS-OXCMSG]. When set, this property MUST have one of the values specified in the following table.

Value	Color
0x00000000	None
0x00000001	Red
0x00000002	Blue
0x00000003	Green
0x00000004	Grey
0x00000005	Orange
0x00000006	Cyan
0x00000007	Olive
0x00000008	Purple
0x00000009	Teal
0x0000000A	Yellow

2.2.1.9 PidLidAppointmentSubType

Type: **PtypBoolean**
Specifies whether the event is an all-day event, as specified by the user. A value of TRUE indicates that the event is an all-day event, in which case the start time and end time MUST be midnight so that the duration is a multiple of 24 hours and is at least 24 hours. A value of FALSE or the absence of this **property** indicates that the event is not an all-day event. The client or server can not infer the value as TRUE when a user happens to create an event that is 24 hours long, even if the event starts and ends at midnight.

2.2.1.10 PidLidAppointmentStateFlags

Type: **PtypInteger32**
Specifies a bit field that describes the state of the object. This **property** is not required. The following are the individual flags that can be set.

M (asfMeeting, 0x00000001): This flag indicates that the object is a **Meeting object** or a **meeting-related object**.

R (asfReceived, 0x00000002): This flag indicates that the represented object was received from someone else.

C (asfCanceled, 0x00000004): This flag indicates that the Meeting object that is represented by the object has been canceled.

2.2.1.11 PidLidResponseStatus

Type: **PtypInteger32**
Specifies the response status of an attendee, and MUST be one of the values listed in the following table.

Response status	Value	Description
respNone	0x00000000	No response is required for this object. This is the case for **Appointment objects** and **Meeting Response objects**.
respOrganized	0x00000001	This Meeting object belongs to the **organizer**.
respTentative	0x00000002	This value on the **attendee's** Meeting object indicates that the attendee has tentatively accepted the **Meeting Request object**.
respAccepted	0x00000003	This value on the attendee's Meeting object indicates that the attendee has accepted the Meeting Request object.
respDeclined	0x00000004	This value on the attendee's Meeting object indicates that the attendee has declined the Meeting Request object.
respNotResponded	0x00000005	This value on the attendee's Meeting object indicates that the attendee has not yet responded. This value is on the Meeting Request object, **Meeting Update object**, and **Meeting Cancellation object**.

2.2.1.12 PidLidRecurring

Type: **PtypBoolean**

Specifies whether the object represents a **recurring series**. A value of TRUE indicates that the object represents a recurring series. A value of FALSE, or the absence of this **property**, indicates that the object represents either a **single instance** or an **exception** (including an **orphan instance**). Note the difference between this property and the property **PidLidIsRecurring**.

2.2.1.13 PidLidIsRecurring

Type: **PtypBoolean**
Specifies whether the object is associated with a **recurring series**. A value of TRUE indicates that the object represents either a recurring series or an **exception** (including an **orphan instance**). A value of FALSE, or the absence of this **property**<6>, indicates that the object represents a **single instance**. Note the difference between this property and the property **PidLidRecurring**.

2.2.1.14 PidLidClipStart

Type: **PtypTime**
For **single instance Calendar objects**, this **property** specifies the start date and time of the event in **UTC**. For a **recurring series**, this property specifies midnight on the date of the first **instance**, in UTC.

2.2.1.15 PidLidClipEnd

Type: **PtypTime**
For **single instance Calendar objects**, the **property** specifies the end date and time of the event in **UTC**. For a **recurring series**, this property specifies midnight on the date of the last **instance** of the recurring series in UTC, unless the recurring series has no end, in which case the value MUST be 31 August 4500, 11:59 P.M.

2.2.1.16 PidLidAllAttendeesString

Type: **PtypString**
Specifies a list of all the **attendees** except for the **organizer**, including **resources** and **unsendable attendees**. The value for each **attendee** is the attendee's display name. Separate entries are delimited by a semicolon followed by a space. This **property** is not required.

2.2.1.17 PidLidToAttendeesString

Type: **PtypString**
This **property** contains a list of all the **sendable attendees** who are also **required attendees**. The value for each **attendee** is the **PidTagDisplayName** property of the attendee's **Address Book object**. Separate entries are delimited by a semicolon followed by a space. This property is not required.

2.2.1.18 PidLidCcAttendeesString

Type: **PtypString**
This **property** contains a list of all the **sendable attendees** who are also **pptional attendees**. The value for each **attendee** is the **PidTagDisplayName** property of the attendee's **Address Book object**. Separate entries are delimited by a semicolon followed by a space. This property is not required.

2.2.1.19 PidLidNonSendableTo

Type: **PtypString**
This **property** contains a list of all the **unsendable attendees** who are also **required attendees**. The value for each **attendee** is the **PidTagDisplayName** property of the attendee's **Address Book object**. Separate entries are delimited by a semicolon followed by a space. This property is not required.

2.2.1.20 PidLidNonSendableCc

Type: **PtypString**
This **property** contains a list of all the **unsendable attendees** who are also **ptional attendees**. The value for each **attendee** is the **PidTagDisplayName** property of the attendee's **Address Book object**. Separate entries are delimited by a semicolon followed by a space. This property is not required.

2.2.1.21 PidLidNonSendableBcc

Type: **PtypString**
This **property** contains a list of all the **unsendable attendees** who are also **resources**. The value for each **attendee** is the **PidTagDisplayName** property of the attendee's **Address Book object**. Separate entries are delimited by a semicolon followed by a space. This property is not required.

2.2.1.22 PidLidNonSendToTrackStatus

Type: **PtypMultipleInteger32**
This **property** contains the value from the response table (see section 2.2.1.11) for each **attendee** listed in the **PidLidNonSendableTo** property. This property is required only when the **PidLidNonSendableTo** property is set. The number of values in this property MUST equal the number of values in the **PidLidNonSendableTo** property. Each **PtypInteger32** value in this property corresponds to the attendee in the **PidLidNonSendableTo** property at the same index. This property is not required.

2.2.1.23 PidLidNonSendCcTrackStatus

Type: **PtypMultipleInteger32**
This **property** contains the value from the response table (see section 2.2.1.11) for each **attendee** listed in the **PidLidNonSendableCc** property. This property is required only when

the **PidLidNonSendableCc** property is set. The number of values in this property MUST equal the number of values in the **PidLidNonSendableCc** property. Each **PtypInteger32** value in this property corresponds to the attendee in the **PidLidNonSendableCc** property at the same index. This property is not required.

2.2.1.24 PidLidNonSendBccTrackStatus

Type: **PtypMultipleInteger32**
This **property** contains the value from the response table (see section 2.2.1.11) for each **attendee** listed in the **PidLidNonSendableBcc** property. This property is required only when the **PidLidNonSendableBcc** property is set. The number of values in this property MUST equal the number of values in the **PidLidNonSendableBcc** property. Each **PtypInteger32** value in this property corresponds to the attendee in the **PidLidNonSendableBcc** property at the same index. This property is not required.

2.2.1.25 PidLidAppointmentUnsendableRecipients

Type: **PtypBinary**
This **property** contains a list of **unsendable attendees**. This property is not required, but SHOULD be set. <7> It has the following format;

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RowCount																															
RecipientRow[1..RowCount]																															

RowCount: The count of *RecipientRow*.

RecipientRow: A list recipient of table rows. Fore details, see [MS-OXOCMSG]. See also the additional properties in section 2.2.3.9 that can be set on *RecipientRows* for **Calendar objects** and **meeting-related objects**.

2.2.1.26 PidLidAppointmentNotAllowPropose

Type: **PtypBoolean**
A value of TRUE for this **property** indicates that **attendees** are not allowed to propose a new date and/or time for the **meeting**. A value of FALSE or the absence of this property indicates that the attendees are allowed to propose a new date and/or time. This property is only meaningful on **Meeting objects**, **Meeting Request objects**, and **Meeting Update objects**.

2.2.1.27 PidLidGlobalObjectId

Type: **PtypBinary**

Specifies the unique identifier of the **Calendar object**. After it is set for a Calendar object, the value of this **property** MUST NOT change. The fields in this **BLOB** are specified in the following table. All fields have **little-endian** byte order.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Byte Array ID																															
…																															
…																															
…																															
YH								YL								M								D							
Creation Time																															
…																															
X																															
…																															
Size																															
Data (Variable)																															

Byte Array ID: An array of 16 bytes identifying this BLOB as a Global Object ID. The byte array MUST be as follows: 0x04, 0x00, 0x00, 0x00, 0x82, 0x00, 0xE0, 0x00, 0x74, 0xC5, 0xB7, 0x10, 0x1A, 0x82, 0xE0, 0x08.

YH: The high-ordered byte of the 2-byte Year from the **PidLidExceptionReplaceTime** property if the object represents an **exception**; otherwise, zero.

YL: The low-ordered byte of the 2-byte Year from the **PidLidExceptionReplaceTime** property if the object represents an exception; otherwise, zero.

M: The Month from the **PidLidExceptionReplaceTime** property if the object represents an exception; otherwise, zero. If it represents an exception, the value MUST be one of those listed in the following table.

Value	Month
0x01	January

Value	Month
0x02	February
0x03	March
0x04	April
0x05	May
0x06	June
0x07	July
0x08	August
0x09	September
0x0A	October
0x0B	November
0x0C	December

D: The Day of the month from the **PidLidExceptionReplaceTime** property if the object represents an exception; otherwise, zero.

Creation Time: The date and time that this Global Object ID was generated, as a [MS-DTYP]:**FILETIME**. This component can be all zeros.

X: Reserved, MUST be all zeroes.

Size: A **LONG** value that defines the size of the Data component.

Data: An array of bytes that ensures the uniqueness of the Global Object ID among all Calendar objects in all mailboxes.

2.2.1.28 PidLidCleanGlobalObjectId

Type: **PtypBinary**
The format of this **property** is the same as that of **PidLidGlobalObjectId**. The value of this property MUST be equal to the value of **PidLidGlobalObjectId**, except the YH, YL, M, and D fields MUST all be zero. All objects that refer to an **instance** of a **recurring series** (including an **orphan instance**), as well as the recurring series itself, will have the same value for this property.

2.2.1.29 PidTagOwnerAppointmentId

Type: **PtypInteger32**
Specifies a quasi-unique value among all **Calendar objects** in a user's mailbox. The value of this **property** can assist a client or server in finding a Calendar object, but is not guaranteed to be unique among all objects.<8> This property is not required on objects.

2.2.1.30 PidTagStartDate

Type: **PtypTime**
For backward compatibility with older clients, this **property** SHOULD be set, and when set, it MUST be equal to the value of the **PidLidAppointmentStartWhole property**.

2.2.1.31 PidTagEndDate

Type: **PtypTime**
For backward compatibility with older clients, this **property** SHOULD be set, and when set, it MUST be equal to the value of the **PidLidAppointmentEndWhole property**.

2.2.1.32 PidLidCommonStart

Type: **PtypTime**
The value of this **property** MUST be equal to the value of the **PidLidAppointmentStartWhole** property.

2.2.1.33 PidLidCommonEnd

Type: **PtypTime**
The value of this **property** MUST be equal to the value of the **PidLidAppointmentEndWhole** property.

2.2.1.34 PidLidOwnerCriticalChange

Type: **PtypTime**
Specifies the date and time at which a **Meeting Request object** was sent by the **organizer**. The value is specified in **UTC**.

2.2.1.35 PidLidIsException

Type: **PtypBoolean**
A value of TRUE for this **property** indicates that the object represents an **exception** (including an **orphan instance**). A value of FALSE indicates that the object represents a **recurring series** or a **single instance**. The absence of this property for any object indicates a value of FALSE except for the **Exception Embedded Message object**, which assumes a value of TRUE.

2.2.1.36 PidTagResponseRequested

Type: **PtypBoolean**
When the value of this **property** is FALSE, **Meeting Response objects** are not sent to the **organizer**. When the value of this property is TRUE, and the client or server automatically responds (see sections 2.2.11.2-2.2.11.4), a Meeting Response object is sent to the organizer. Otherwise, when the value is TRUE, the client or server can<9> send a Meeting Response object.

2.2.1.37 PidTagReplyRequested

Type: **PtypBoolean**
This **property** MUST have the same value as **PidTagResponseRequested** for **Calendar objects**.

2.2.1.38 Best Body Properties

These properties contain the contents of the **Calendar objects** or **meeting-related objects**. The contents SHOULD use the **RTF** properties [MS-OXRTFCP] for objects that are specified by the Appointment and Meeting Object protocol. When stored and retrieved, best body guidance, as specified in [MS-OXBBODY], is to be followed.

2.2.1.39 PidLidTimeZoneStruct

Type: **PtypBinary**
This **property** is set on a **recurring series** to specify time zone information. This property specifies how to convert time fields between local time and **UTC**. The fields in this **BLOB** are encoded in little-endian byte order.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
lBias																															
lStandardBias																															
lDaylightBias																															
wStandardYear																				stStandardDate											
…																															
…																															
…																															
…																				wDaylightYear											
stDaylightDate																															
…																															
…																															
…																															

lBias: The time zone's offset in minutes from UTC.

lStandardBias: The offset in minutes from **lBias** during standard time.

lDaylightBias: The offset in minutes from **lBias** during daylight saving time.

wStandardYear: This field matches the **stStandardDate's** wYear member.

stStandardDate: **SYSTEMTIME** structure as specified in [MS-DTYP]. This field contains the date and local time that indicate when to begin using the **lStandardBias**.

If the time zone does not support daylight saving time, the **wMonth** member in the **SYSTEMTIME** structure MUST be 0 (zero). If the **wYear** member is not 0 (zero), the date is interpreted as an absolute date that only occurs once. If the **wYear** member is 0 (zero), the date is interpreted as a relative date that occurs yearly. The **wHour** and **wMinute** members are set to the transition time; the **wDayOfWeek** member is set to the appropriate weekday, and the **wDay** member is set to indicate the occurrence of the day of the week within the month (1 to 5, where 5 indicates the final occurrence during the month if that day of the week does not occur 5 times).

wDaylightYear: This field matches the **stDaylightDate**'s **wYear** field.

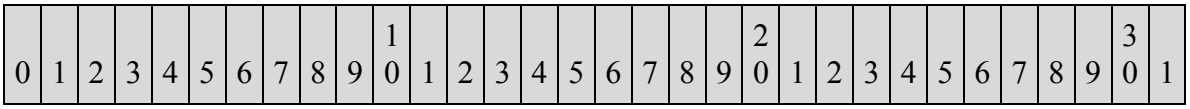
stDaylightDate: **SYSTEMTIME** structure as specified in [MS-DTYP]. This field contains the date and local time that indicate when to begin using the **lDaylightBias**. This field has the same format and constraints as the **stStandardDate** field.

2.2.1.40 PidLidTimeZoneDescription

Type: **PtypString**
Specifies a human-readable description of the time zone that is represented by the data in the **PidLidTimeZoneStruct property**.

2.2.1.41 PidLidAppointmentTimeZoneDefinitionRecur

Type: **PtypBinary**
Specifies time zone information that describes how to convert the meeting date and time on a **recurring series** to and from **UTC**. If this **property** is set, but it has data that is inconsistent with the data that is represented by **PidLidTimeZoneStruct**, then the client uses **PidLidTimeZoneStruct** instead of this property<10>. If this property is not set, **PidLidTimeZoneStruct** will be used instead <11>. The fields in this **BLOB** are encoded in **little-endian** byte order.



Major Version	Minor Version	cbHeader
Reserved		cchKeyName
KeyName (variable)		
cRules		TZRules [1..cRules]

Major Version: This field is set to 0x02.

Minor Version: This field is set to 0x01.

cbHeader: The count of bytes contained in **Reserved**, **cchKeyName**, **KeyName**, and **cRules**.

Reserved: This **Word** field MUST be set to 0x0002.

cchKeyName: This **Word** field represents the count of characters in the **KeyName** field that follows.

KeyName: **Unicode** string that identifies the associated time zone. The string is not localized but instead is set to the unique name of the desired time zone <12>. This string has a maximum length of 260 characters, and it is not null terminated.

cRules: This **WORD** property represents the count of **TZRules**. Minimum count is 1; the maximum count is 1024.

TZRules: Each **TZRule** contains information that describes a time zone, including the time zone's offset from UTC and when and how it observes daylight saving time. If more than one **TZRule** is specified, rules are sorted in ascending order by the **wYear** field. **TZRules** are not aligned to 32-bit boundaries. Each **TZRule** starts at the next byte after the previous **TZRule** ends. Section 2.2.1.41.1 shows the structure of **TZRule**, represented in little-endian byte order.

2.2.1.41.1 TZRule

Type: **PtypBinary**
Each **TZRule** is represented in the following way:

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Major Version								Minor Version								Reserved															

TZRule Flags	wYear
X	
…	
…	
…	lBias
…	lStandardBias
…	lDaylightBias
…	stStandardDate
…	
…	
…	
…	stDaylightDate
…	
…	
…	
…	

Major version: This field is set to 0x02.

Minor version: This field is set to 0x01.

Reserved: This field MUST be set to0x003E.

TZRule Flags: This field contains individual bit flags that specify information about this **TZRule**, represented here in **little-endian** byte order.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	0	0	0	0	0	E	R	0	0	0	0	0	0	0	0

R (TZRULE_FLAG_RECUR_CURRENT_TZREG, 0x0001): This flag indicates that this rule is associated with a **recurring series**.

E (TZRULE_FLAG_EFFECTIVE_TZREG, 0x0002): This flag indicates that this rule is the effective rule.

If this rule represents the time zone rule that will be used to convert to and from **UTC**, both of these flags are set (for example, the value is 0x0003). If this is not the active time zone rule, neither of these flags are set. These flags are set on exactly one **TZRule** that is contained in this **property**, and the flags for all other rules MUST be set to 0.

wYear: **WORD** property that represents the year in which this rule is scheduled to take effect. A rule will remain in effect from January 1 of its **wYear** until January 1 of the next rule's **wYear**. If no rules exist for subsequent years, this rule will remain in effect indefinitely.

X: Unused, MUST be all zeros.

lBias: **LONG** property that represents the time zone's offset in minutes from UTC.

lStandardBias: **LONG** property that represents the offset in minutes from **lBias** during standard time.

lDaylightBias: **LONG** property that represents the offset in minutes from **lBias** during daylight saving time.

stStandardDate: **SYSTEMTIME** structure as specified in [MS-DTYP]. This field contains the date and local time that indicate when to begin using the **lStandardBias**.

If the time zone does not support daylight saving time, the **wMonth** member in the **SYSTEMTIME** structure MUST be zero. If the **wYear** member is not zero, the date is interpreted as an absolute date that only occurs once. If the **wYear** member is zero, the date is interpreted as a relative date that occurs yearly. The **wHour** and **wMinute** members are set to the transition time, the **wDayOfWeek** member is set to the appropriate weekday, and the **wDay** member is set to indicate the occurrence of the day of the week within the month (1 to 5, where 5 indicates the final occurrence during the month if that day of the week does not occur 5 times).

stDaylightDate: **SYSTEMTIME** structure as specified in [MS-DTYP]. This field contains the date and local time that indicate when to begin using the **lDaylightBias**. This **property** has the same format and constraints as the **stStandardDate** field.

2.2.1.42 PidLidAppointmentTimeZoneDefinitionStartDisplay

Type: **PtypBinary**
Specifies time zone information that indicates the time zone of the **PidLidAppointmentStartWhole property**. The value of this property is used to convert the start date and time from **UTC** to this time zone for display purposes. The fields in this **BLOB** are encoded exactly as specified in 2.2.1.41, with one **exception**. For each **TZRule** specified by this property, the R flag in the **TZRule Flags** field is not set (for example, if the **TZRule** is the effective rule, the value of the field **TZRule Flags** MUST be 0x0002; otherwise, it MUST be 0x0000).

2.2.1.43 PidLidAppointmentTimeZoneDefinitionEndDisplay

Type: **PtypBinary**
Specifies time zone information that indicates the time zone of the **PidLidAppointmentEndWhole property**. The format, constraints, and computation of this property are the same as specified in the **PidLidAppointmentTimeZoneDefinitionStartDisplay** property.

2.2.1.44 PidLidAppointmentRecur

Type: **PtypBinary**
Specifies the dates and times when a **recurring series** occurs by using one of the **recurrence patterns** and ranges specified in this section. The value of this **property** also contains information about both modified and deleted **exceptions** and information such as dates, subject, location, and other properties of exceptions. The binary data in this property for **Recurring Calendar objects** is stored as the **AppointmentRecurrencePattern** structure specified in section 2.2.1.44.2. This property MUST NOT exist on **single instance Calendar objects**.

The following are some limitations of recurrences:

- Multiple **instances** can not start on the same day.
- Occurrences can not overlap – specifically, an exception that modifies the start date of an instance in the recurring series can occur only on a date that is sometime after the end of the prior instance and the start of the next instance in the recurring series. The same is true if the prior or next instance in the recurring series are exceptions.<13>

The schedule of a recurring series is determined by its recurrence pattern and range. This section describes the types of recurrence ranges and recurrence patterns that are supported by this protocol.

Recurrence Range
The recurrence range identifies how long the event will continue. This protocol supports the following three ranges:

- Ends after a specific number of occurrences
- Ends by a given date
- Continues indefinitely

Recurrence Pattern
The recurrence pattern determines the frequency of the event. The **RecurrencePattern** structure is also used to define recurring tasks, as specified in [MS-OXOTASK].

The following table lists the types of recurrences that are supported by this protocol.

Recurrence type	Description	Example
Daily recurrence	Schedules events according to one of the following patterns: • Every *n* number of days. • Every weekday.	An event that repeats every three days, starting on Monday April 30, 2007, and continuing through Friday June 8, 2007.
Weekly recurrence	Schedules events according to the following pattern: • Every *n* weeks on one or more particular days of the week.	An event repeats every two weeks, on Tuesdays, starting on Monday April 30, 2007, and ending after five occurrences.
Monthly recurrence	Schedules events according to one of the following patterns: • On the *n* day of every month. • On a specific day of the week on the first, second, third, fourth, or last week of every month. For example, the first Tuesday of the month.	An event that repeats on the fourth of every month, effective Monday April 30, 2007, without an end date.
Every *n* months recurrence	A combination of the monthly and weekly patterns. An every *n* months pattern can schedule events according to one of the following patterns:	An event that occurs on the last Thursday of every two months, effective March 12, 2007, with an end date of December 31, 2007.

	• On the *m*th day every *n* months. • On any day of the week on the first, second, third, fourth, or last week every *n* months. For example, the third Thursday of the month.	
Month end recurrence	Schedules events to repeat on the last day of every *n* months.	An event that repeats on the last day of every month, effective Monday April 30, 2007, without an end date.
Yearly recurrence	Schedules events according to one of the following patterns: • On the *m*th day of the *n*th month, of every year. • On any day of the week on the first, second, third, fourth, or last week of the *n*th month, of every year. The yearly recurrence pattern is based on a 12-month interval, and therefore uses the monthly recurrence parameters to represent all the yearly recurrences.	A birthday that occurs every June 22, and is an all-day event.

2.2.1.44.1 RecurrencePattern Structure

This structure specifies a **recurrence pattern**. The fields of this structure are stored in **little-endian** byte order.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

ReaderVersion	WriterVersion
RecurFrequency	PatternType
CalendarType	FirstDateTime
…	Period
…	SlidingFlag
…	PatternTypeSpecific(Variable)
EndType	
OccurrenceCount	
FirstDOW	
DeletedInstanceCount	
DeletedInstanceDates[1..DeletedInstanceCount]	
ModifiedInstanceCount	
ModifiedInstanceDates[1...ModifiedInstanceCount]	
StartDate	
EndDate	

ReaderVersion: This field MUST be set to 0x3004.

WriterVersion: This field MUST be set to 0x3004.

RecurFrequency: The **RecurFrequency** field defines the frequency of the **recurring series**. Valid values are listed in the following table.

RecurFrequency	Value
Daily	0x200A
Weekly	0x200B
Monthly	0x200C
Yearly	0x200D

PatternType: This field defines the type of recurrence pattern. The following table lists the valid recurrence pattern types.<14>

Name	Value	Description
Day	0x0000	The event has a daily recurrence.
Week	0x0001	The event has a weekly recurrence.
Month	0x0002	The event has a monthly recurrence.
MonthNth	0x0003	The event has an every *n*th month pattern.
HjMonthNth	0x000B	The event has an every *n*th month pattern in the Hijri calendar. For this PatternType, the CalendarType MUST be set to 0x0000.
HjMonthEnd	0x000C	The event has a month end recurrence in the Hijri calendar. For this PatternType, the CalendarType MUST be set to 0x0000.

CalendarType: This field defines the type of calendar that is used. The following table lists the acceptable values for the calendar type.<15>

Name	Value	Description
Default	0x0000	The default value for the calendar type is Gregorian. If the PatternType is HjMonth, HjMonthNth, or HjMonthEnd, and the CalendarType is Default, this recurrence uses the Hijri calendar.
CAL_GREGORIAN	0x0001	Gregorian (localized) calendar
CAL_GREGORIAN_US	0x0002	Gregorian (U.S.) calendar
CAL_JAPAN	0x0003	Japanese Emperor Era calendar
CAL_TAIWAN	0x0004	Taiwan calendar
CAL_KOREA	0x0005	Korean Tangun Era calendar
CAL_HIJRI	0x0006	Hijri (Arabic Lunar) calendar
CAL_THAI	0x0007	Thai calendar
CAL_HEBREW	0x0008	Hebrew lunar calendar
CAL_GREGORIAN_ME_FRENCH	0x0009	Gregorian Middle East French calendar
CAL_GREGORIAN_ARABIC	0x000A	Gregorian Arabic calendar
CAL_GREGORIAN_XLIT_ENGLISH	0x000B	Gregorian transliterated English calendar
CAL_GREGORIAN_XLIT_FRENCH	0x000C	Gregorian transliterated French calendar
CAL_LUNAR_JAPANESE	0x000E	Japanese lunar calendar

Name	Value	Description
CAL_CHINESE_LUNAR	0x000F	Chinese lunar calendar
CAL_SAKA	0x0010	Saka Era calendar
CAL_LUNAR_KOREAN	0x0014	Korean lunar calendar

FirstDateTime: This field has a different value, depending on the **RecurFrequency** field. The following table shows how the value of this field is computed, for each recurrence type.

Recurrence type	How calculated
Daily Recurrence<16>	The value of the **FirstDateTime** field is a numerical value of *StartDate* modulo *Period*.
Weekly Recurrence<17>	This value is calculated as follows: Find the first *FirstDOW* before **StartDate**. Calculate the number of minutes between midnight that day and midnight, January 1, 1601. Compute the value of **Period** multiplied by 10080, which is the number of minutes in a week. Take the value computed in step 2 modulo the value computed in step 3.
Monthly or Yearly Recurrence<18>	This value is calculated as follows: Find the first day of the month of **StartDate**. Determine **MinimumDate**. For Gregorian calendars, this is midnight, January 1, 1601.For non-Gregorian calendars, this is the first day of the calendar's year that falls in the Gregorian year of 1601. For example, if the **CalendarType** is CAL_HEBREW, the first day of that calendar's year that falls in the Gregorian year of 1601 is 1/1/5362, which is the Gregorian date of 9/27/1601. Calculate the number of calendar months between midnight of the days calculated in step 1 and step 2. Take that value modulo **Period**. Add that number of months to the **MinimumDate**, as determined in step 2. Calculate the number of minutes between midnight that day and midnight, January 1, 1601.

Period: This field is the interval at which the meeting pattern specified in **PatternTypeSpecific** field repeats. The **Period** value MUST be between 0 (zero) and the **MaximumRecurrenceInterval**, which is 999 days for daily recurrences, 99 weeks for

weekly recurrences, and 99 months for monthly recurrences. The following table lists the values for this field based on recurrence type.

Recurrence type	Value
Daily recurrence	The period is stored as the minutes in whole number of days. For example, to define a recurrence that occurs every two days, the **Period** field is set to 0x00000B40, which equates to 2880 minutes, or two days.
Weekly recurrence	The period is stored in weeks. For example, if the **Period** field is set to 0x00000002, the meeting occurs every two weeks.
Monthly or yearly recurrence	The period is stored in months. If the recurrence is a yearly recurrence, **Period** MUST be set to 12.

SlidingFlag: This field is only used for scheduling tasks; otherwise the value MUST be 0 (zero). For more details about sliding tasks, see [MS-OXOTASK].

PatternTypeSpecific: Specifies the details of the recurrence type and has a different structure, depending on the **PatternType**. The structure of this field varies based on the recurrence pattern as follows:

For a Daily recurrence pattern (**PatternType** 0x0000), **PatternTypeSpecific** has no value and is 0 (zero) bytes. In other words, **PatternTypeSpecific** is not included in the **BLOB** when **PatternType** is 0x0000.

For a Weekly recurrence pattern (**PatternType** 0x0001), the structure of **PatternTypeSpecific** is as follows:

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
	Sa	F	Th	W	Tu	M	Su																								

Su (0x00000001): The event occurs on Sunday.

M (0x00000002): The event occurs on Monday.

Tu (0x00000004): The event occurs on Tuesday.

W (0x00000008): The event occurs on Wednesday.

Th (0x00000010): The event occurs on Thursday.

F (0x00000020): The event occurs on Friday.

Sa (0x00000040): The event occurs on Saturday.

For the Month, MonthEnd, HjMonth, or HjMonthEnd recurrence pattern (**PatternType** 0x0002, 0x0004, 0x000A, or 0x000C, respectively), the structure of **PatternTypeSpecific** is as follows:

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
Day																															

Day: The day of the month on which the recurrence falls.

For the MonthNth or HjMonthNth recurrence pattern (**PatternType** 0x0003 or 0x000B, respectively), the structure of **PatternTypeSpecific** is as follows:

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
	Sa	F	Th	W	Tu	M	Su																								
N																															

Su (0x00000001): The event occurs on Sunday.

M (0x00000002): The event occurs on Monday.

Tu (0x00000004): The event occurs on Tuesday.

W (0x00000008): The event occurs on Wednesday.

Th (0x00000010): The event occurs on Thursday.

F (0x00000020): The event occurs on Friday.

Sa (0x00000040): The event occurs on Saturday.

> If the event occurs on a weekday, the bits M, Tu, W, Th, F, and Sa are set.
> If the event occurs on a weekend, the bits Sa and Su are set.

N: The occurrence of the recurrence's days in each month in which the recurrence falls. It can take one of the values listed in the following table.

Name	Value	Description
First	0x00000001	The recurrence falls on the first occurrence of the days specified in every month.
Second	0x00000002	The recurrence falls on the second occurrence of the days specified in every month.
Third	0x00000003	The recurrence falls on the third occurrence of the days specified in every month.
Fourth	0x00000004	The recurrence falls on the fourth occurrence of the days specified in every month.
Last	0x00000005	The recurrence falls on the last occurrence of the days specified in every month.

For example:

- If an event occurs on the last weekday of every two months, the two fields of the **PatternTypeSpecific** field are set to 0x0000003E and 0x00000005.
- If an event occurs on the first weekday of every two months, the two fields of the **PatternTypeSpecific** field are set to 0x0000003E and 0x00000001.
- If an event occurs on the last weekend day of every one month, the two fields of the **PatternTypeSpecific** field are set to 0x00000041and 0x00000005.
- If an event occurs on the first weekend day of every one month, the two fields of the **PatternTypeSpecific** field are set to 0x00000041 and 0x00000001.

EndType: The ending type for the recurrence. This field MUST be set to one of the values listed in the following table.

Recurrence range type	Value
End after date	0x00002021
End after *N* occurrences	0x00002022

Never end	SHOULD be 0x00002023 but can be 0xFFFFFFFF

OccurrenceCount: The number of occurrences in a recurrence.

When the **EndType** of the pattern is "End after date", this value always has to be computed. Although the value of this field is always set, its value has no meaning on a recurring series that has no end date.<19>

FirstDOW: The first day of the calendar week. The default value is Sunday (0x00000000). This field MUST be set to one of the values listed in the following table.

Day	Value
Sunday	0x00000000
Monday	0x00000001
Tuesday	0x00000002
Wednesday	0x00000003
Thursday	0x00000004
Friday	0x00000005
Saturday	0x00000006

DeletedInstanceCount: This field specifies the number of deleted **instances** in this recurrence. It is the count of the array of **DeletedInstanceDates**.

DeletedInstanceDates: This field is the array of the original instance date of deleted instances. There is exactly one element for each deleted instance and every deleted instance is represented in this array. Every modified instance also has to have an entry in this array. Deleted instances for which there is no corresponding ***ModifiedInstanceDate*** imply that they have been completely removed from the pattern.

The count of these instances MUST be equal to the **DeletedInstanceCount** field. Each **DeletedInstanceDate** is stored as the number of minutes between midnight of the specified day and midnight, January 1, 1601, in the time zone specified by **PidLidTimeZoneStruct**. The values in this list are ordered from earliest to latest. There SHOULD NOT<20> be duplicate entries in this list.

ModifiedInstanceCount: This field specifies the number of positive **exceptions** for this recurrence. It is the count of the array of **ModifiedInstanceDates**. The value of this field MUST be less than or equal to **DeletedInstanceCount**.

ModifiedInstanceDates: This field is the array of the dates of the modified instances. There is exactly one element for each modified instance and every modified instance has to be represented in this array. Every modified instance has to also have an entry in the array of **DeletedInstanceDates** of the original instance dates.

The count of the array MUST be equal to the **ModifiedInstanceCount** field. Each **ModifiedInstanceDate** is stored as the number of minutes between midnight of the specified day and midnight, January 1, 1601, in the time zone specified by **PidLidTimeZoneStruct**. The values in this list are ordered from earliest to latest. There SHOULD NOT<21> be duplicate entries in this list.

StartDate: The date of the first occurrence. It is stored as the number of minutes between midnight of the specified day and midnight, January 1, 1601.

EndDate: The ending date for the recurrence. It is stored as the number of minutes between midnight of the specified day and midnight, January 1, 1601. When the recurrence range type is "End after *N* occurrences", this value is calculated as the end date.

If the recurrence does not have an end date, **EndDate** MUST be set to 0x5AE980DF.

2.2.1.44.2 ExceptionInfo Structure

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
StartDateTime																															
EndDateTime																															
OriginalStartDate																															
OverrideFlags																				SubjectLength*											
SubjectLength2*																				Subject(Variable)*											
MeetingType*																															
ReminderDelta*																															

ReminderSet*	
LocationLength*	LocationLength2*
Location(Variable)*	
BusyStatus*	
Attachment*	
SubType*	
AppointmentColor*	

* = The presence of this field is conditional based on the value of the **OverrideFlags** field. For more information, see **OverrideFlags** later in this section.

StartDateTime: The start time of the exception in local time in minutes since midnight, January 1, 1601.

EndDateTime: The end time of the exception in local time in minutes since midnight, January 1, 1601.

OriginalStartDate: The original starting time of the exception in local time in minutes since midnight, January 1, 1601.

OverrideFlags: A bit field that specifies what data is present in the **PropertyData** field, which indicates that the exception has a different value than the **recurring series**. The following table summarizes the valid flags for this field.

Flag	Value	Comments
ARO_SUBJECT	0x0001	Indicates that the **Subject**, **SubjectLength**, and **SubjectLength2** fields are present.
ARO_MEETINGTYPE	0x0002	Indicates that the **MeetingType** field is present.
ARO_REMINDERDELTA	0x0004	Indicates that the **ReminderDelta** field is present.

Flag	Value	Comments
ARO_REMINDER	0x0008	Indicates that the **ReminderSet** field is present.
ARO_LOCATION	0x0010	Indicates that the **Location**, **LocationLength**, and **LocationLength2** fields are present.
ARO_BUSYSTATUS	0x0020	Indicates that the **BusyStatus** field is present.
ARO_ATTACHMENT	0x0040	Indicates that the **Attachment** field is valid.
ARO_SUBTYPE	0x0080	Indicates that the **SubType** field is present.
ARO_APPTCOLOR<**22**>	0x0100	This flag is reserved and MUST NOT be set.
ARO_EXCEPTIONAL_BODY	0x0200	Indicates that the **Exception Embedded Message object** has the **PidTagRtfCompressed property** set on it. See[MS-OXCMSG] section 2.2.1.20.3 for more details about **PidTagRtfCompressed**.

SubjectLength: The number of bytes of the **Subject** field plus 1.
This field is only present if the ARO_SUBJECT flag is set in the **OverrideFlags** field.

SubjectLength2: The number of bytes of the **Subject** field.
This field is only present if the ARO_SUBJECT flag is set in the **OverrideFlags** field.

Subject: A non-null-terminated, non-**Unicode** string that is the value of the **PidTagNormalizedSubject** property in the Exception Embedded Message object.
This field is only present if the ARO_SUBJECT flag is set in the **OverrideFlags** field.

MeetingType: The value of the **PidLidAppointmentStateFlags** property in the Exception Embedded Message object. For possible values, see **section** 2.2.1.10. This field is only present if the ARO_MEETINGTYPE flag is set in the **OverrideFlags** field.

ReminderDelta: The value for the **PidLidReminderDelta** property (as specified in [MS-OXORMDR]) in the Exception Embedded Message object. This field is only present if the ARO_REMINDERDELTA flag is set in the **OverrideFlags** field.

ReminderSet: The value for the **PidLidReminderSet** property (as specified in [MS-OXORMDR]) in the Exception Embedded Message object. This field is only present if the ARO_REMINDER flag is set in the **OverrideFlags** field.

LocationLength: The number of bytes of the **Location** field plus 1.
This field is only present if the ARO_LOCATION flag is set in the **OverrideFlags** field.

LocationLength2: The number of bytes of the **Location** field. This field is only present if the ARO_LOCATION flag is set in the **OverrideFlags** field.

Location: A non-Unicode string that is the value of the **PidLidLocation** property in the Exception Embedded Message object. This field is only present if the ARO_LOCATION flag is set in the **OverrideFlags** field.

BusyStatus: The value for the **PidLidBusyStatus** property in the Exception Embedded Message object. For possible values, see section 2.2.1.2.This field is only present if the ARO_BUSYSTATUS flag is set in the **OverrideFlags** field.

Attachment: This value specifies whether or not the Exception Embedded Message object contains attachments. The value will be 0x00000001 if attachments are present, and 0x00000000 otherwise. This field is only present if the ARO_ATTACHMENTS flag is set in the **OverrideFlags** field.

SubType: The value for the **PidLidAppointmentSubType** property in the Exception Embedded Message object. For possible values, see section 2.2.1.9. This field is only present if the ARO_SUBTYPE flag is set in the **OverrideFlags** field.

AppointmentColor: Reserved. This field MUST not be read from or written to.

ReservedBlock1Size: The size of the **ReservedBlock1** field. This field MUST be set to 0 (zero).

ReservedBlock1: Reserved.

2.2.1.44.3 ChangeHighlight Structure

This field is only present if **WriterVersion2** is greater than or equal to 0x00003009.

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
ChangeHighlightSize																															
ChangeHighlightValue																															
Reserved(Variable)																															

ChangeHighlightSize: The size of the **ChangeHighlightValue** and **Reserved** fields combined.

ChangeHighlightValue: The value for the **PidLidChangeHighlight** property in the Exception Embedded Message object.

Reserved: Reserved.<23>

ReservedBlockEE1Size: The size of the **ReservedBlockEE1** field that follows. This MUST be 0 (zero).

ReservedBlockEE1: Reserved.

StartDateTime: The start time of the exception in local time in minutes since midnight, January 1, 1601.
This field is not present unless either the ARO_SUBJECT or ARO_LOCATION flags are set in the **OverrideFlags** field of the **ExceptionInfo** structure.

EndDateTime: The end time of the exception in local time in minutes since midnight, January 1, 1601.
This field is not present unless either the ARO_SUBJECT or ARO_LOCATION flags are set in the **OverrideFlags** field of the **ExceptionInfo** structure.

OriginalStartDate: The original start date of the exception in local time in minutes since midnight, January 1, 1601. This field is not present unless either the ARO_SUBJECT or ARO_LOCATION flags are set in the **OverrideFlags** field of the **ExceptionInfo** structure.

WideCharSubjectLength: The count of Unicode characters in the **WideCharSubject** field. This field is only present if the ARO_SUBJECT flag is set in the **OverrideFlags** field of the **ExceptionInfo** structure.

WideCharSubject: The Unicode string value for the exception's **PidTagNormalizedSubject** property. Note that **WideCharSubject** is not null-terminated. This field is only present if the ARO_SUBJECT flag is set in the **OverrideFlags** field of the **ExceptionInfo** structure.

WideCharLocationLength: The count of Unicode characters in the **WideCharLocation** field.
This field is only present if the ARO_LOCATION flag is set in the **OverrideFlags** field of the **ExceptionInfo** structure.

WideCharLocation: The Unicode string value for the **PidLidLocation** property in the Exception Embedded Message object. Note that **WideCharLocation** is not null-terminated. This field is only present if the ARO_LOCATION flag is set in the **OverrideFlags** field of the **ExceptionInfo** structure.

ReservedBlockEE2Size: The size of the **ReservedBlockEE2** field that follows. This field is not present unless either the ARO_SUBJECT or ARO_LOCATION flags are set in the **OverrideFlags** field of the **ExceptionInfo** structure. This field MUST be 0.

ReservedBlockEE2: Reserved. This field is not present unless either the ARO_SUBJECT or ARO_LOCATION flags are set in the **OverrideFlags** field of the **ExceptionInfo** structure.

ReservedBlock2Size: The size of the **ReservedBlock2** field that follows. This field MUST be 0.

ReservedBlock2: Reserved.

2.2.1.44.4 ExtendedException Structure

There is one **ExtendedException** structure per **ExceptionInfo** structure, and each one MUST be in the same order as its corresponding **ExceptionInfo** structure.

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
ChangeHighlight(Variable)^																															
ReservedBlockEE1Size																															
ReservedBlockEE1(Variable)																															
StartDateTime*																															

EndDateTime*	
OriginalStartDate*	
WideCharSubjectLength*	WideCharSubject(Variable)*
WideCharLocationLength*	WideCharLocation(Variable)*
ReservedBlockEE2Size*	
ReservedBlockEE2(Variable)*	

^ = This field is only present if the **WriterVersion2** field is greater than or equal to 0x00003009.

* = The presence of this field is conditional based on the value of the **OverrideFlags** field. For more information, see **OverrideFlags** earlier in this section.

2.2.1.44.5 AppointmentRecurrencePattern Structure

This structure specifies a **recurrence pattern** for a **Calendar object**, including information about **exception property** values. The fields of this structure are stored in **little-endian** byte order.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RecurrencePattern(Variable)																															
ReaderVersion2																															
WriterVersion2																															
StartTimeOffset																															
EndTimeOffset																															
ExceptionCount																					ExceptionInfo(Variable)[1…ExceptionCount]										
ReservedBlock1Size																															
ReservedBlock1(Variable)																															
ExtendedException(Variable)[1...ExceptionCount]																															

ReservedBlock2Size
ReservedBlock2(Variable)

RecurrencePattern: This field is a **RecurrencePattern** structure that defines the recurrences. For details, see section 2.2.1.44.1

ReaderVersion2: This value MUST be set to 0x00003006.

WriterVersion2: This value SHOULD be set to 0x00003009, but can be set to 0x00003008. The value of this field affects the format of the **ExtendedException** field.

StartTimeOffset: The number of minutes since midnight after which each occurrence starts. For example, the value for midnight is 0 (zero) and the value for 12:00 P.M. is 720.

EndTimeOffset: The number of minutes since midnight after which each occurrence ends. For example, the value for midnight is 0 (zero) and the value for 12:00 P.M. is 720.

ExceptionCount: This field is the count of **ExceptionInfo** structures. This is also the count of **ExtendedException** structures. This MUST be the same value as the **ModifiedInstanceCount**.

2.2.1.45 PidLidRecurrenceType

Type: **PtypInteger32**
Specifies the recurrence type of the **recurring series** by using one of the values listed in the following table.

Status	Value	Description
rectypeNone	0	A single-instance appointment.
rectypeDaily	1	A daily recurrence pattern.
rectypeWeekly	2	A weekly recurrence pattern.
rectypeMonthly	3	A monthly recurrence pattern.
rectypeYearly	4	A yearly recurrence pattern.

2.2.1.46 PidLidRecurrencePattern

Type: **PtypString**
Specifies a description of the **recurrence pattern** of the **Calendar object**. This **property** is not required, but if set, it is set to a description of the recurrence specified by the **PidLidAppointmentRecur** property.

2.2.1.47 PidLidLinkedTaskItems

Type: **PtypMultipleBinary**
Specifies a list of the **PidTagEntryId properties** of **Task objects** [MS-OXOTASK] that are related to the **Calendar object**. This property is not required. <24>

2.2.1.48 PidLidMeetingWorkspaceUrl

Type: **PtypString**
Specifies the URL of the **Meeting Workspace**, as specified in [MS-MEETS], that is associated with a **Calendar object**. This **property** is not required.

2.2.1.49 PidTagIconIndex

Type: **PtypInteger32**
The value of this **property** indicates that an icon is used with the object. It SHOULD<25> be set to one of the following, but can be -1.

Description	Value	Used by
Single-instance appointment	0x00000400	**Appointment object**
Recurring appointment	0x00000401	Appointment object
Single-instance meeting	0x00000402	**Meeting object**
Recurring meeting	0x00000403	Meeting object
Meeting request/full update	0x00000404	**Meeting Request object**, **Meeting Update object**
Accept	0x00000405	**Meeting Response object**
Decline	0x00000406	Meeting Response object
Tentatively accept	0x00000407	Meeting Response object
Cancellation	0x00000408	Meeting Cancellation object
Informational update	0x00000409	**Meeting Update object**
Forward notification	0x0000040b	**Meeting Forward Notification object**

2.2.1.50 Deprecated properties

The following properties are deprecated and SHOULD NOT be written by clients or servers <26>. If **PidLidConferencingCheck** is set to FALSE, all the properties in this section are ignored. These properties are only to be set on **Calendar objects** and **meeting-related objects**.

2.2.1.50.1 PidLidConferencingCheck

Type: **PtypBoolean**
This **property** indicates that this meeting is one of the following types:

- "Windows Media Services"
- "Windows NetMeeting"

- "Exchange Conferencing"

If this property is set, **PidLidConferencingType** is also to be set. This property is set to TRUE only on **Meeting objects** or **meeting-related objects**.

2.2.1.50.2 PidLidConferencingType

Type: **PtypInteger32**
This **property** specifies the type of the meeting. The value of this property MUST be set to one of the values listed in the following table.

Type of Meeting	Value
Windows Netmeeting	0x00000000
Windows Media Services	0x00000001
Exchange Conferencing	0x00000002

2.2.1.50.3 PidLidDirectory

Type: **PtypString**
This **property** specifies the directory server to be used with NetMeeting.

2.2.1.50.4 PidLidAllowExternalCheck

Type: **PtypBoolean**
This **property** MUST be set to TRUE.

2.2.1.50.5 PidLidOrganizerAlias

Type: **PtypString**
This **property** specifies the e-mail address of the **Organizer**.

2.2.1.50.6 PidLidCollaborateDoc

Type: **PtypString**
This **property** specifies the document to be launched when the user joins the meeting. This property is valid only when **PidLidConferencingType** has the value 0x00000000.

2.2.1.50.7 PidLidNetShowUrl

Type: **PtypString**
This **property** specifies the URL to be launched when the user joins the meeting. This property is valid only when the **PidLidConferencingType** property has the value 0x00000001 or 0x00000002.

For meetings with 0x00000001 as the value of **PidLidConferencingType**, this is a user-supplied URL. For meetings with 0x00000002 as the value of **PidLidConferencingType**, this URL is generated as follows:

1. For each **Bcc recipient** of a **Meeting Request object**, open the associated folder of the **Calendar folder** in the recipient's mailbox.
2. Find the message the **PidTagMessageClass** property for which has a value of "EXCH_CONFERENCE." If the message is not found, move on to the next Bcc recipient. If the message is found, open it and get its **PidTagLocation** property.
3. Append the base64-encoded value of the **PidLidGlobalObjectId** property of the **Meeting object**.
4. Append the string "&p=" followed by the value of the **PidLidOnlinePassword** property.
5. Finally, convert the string to **Unicode**.

If there are multiple Exchange Conferencing mailboxes in the **BCC** field, the value that is calculated by using the last mailbox is used.

2.2.1.50.8 PidLidOnlinePassword

Type: **PtypString**
This **property** specifies the password for a meeting on which the property **PidLidConferencingType** has the value 0x00000002. If set, this string is a maximum of 255 characters, not including NULL.

2.2.2 Calendar Object

This section specifies properties that are specific to **Calendar objects**. <27> Unless otherwise specified, these properties are to always exist.

2.2.2.1 PidTagMessageClass

Type: **PtypString8**
The value of this **property** MUST be "IPM.Appointment" or be prefixed with "IPM.Appointment".

2.2.2.2 PidLidSideEffects

Type: **PtypInteger32**
The possible flag values of this **property** are specified in [MS-OXCMSG]. All **Calendar objects** SHOULD<28> include the following flags:

seOpenToDelete
seOpenToCopy
seOpenToMove
seCoerceToInbox
seOpenForCtxMenu

2.2.2.3 PidLidFExceptionalAttendees

Type: **PtypBoolean**
A value of TRUE for this **property** indicates that it is a **Recurring Calendar object** with one or more **exceptions**, and at least one of the **Exception Embedded Message object**s has at least one **RecipientRow**. A value of FALSE, or the absence of this property, indicates that the **Calendar object** either has no exceptions, or that none of the Exception Embedded Message objects has **RecipientRows**.<29>

2.2.3 Meeting Object

This section specifies the properties that are specific to **Meeting objects**. These properties have no meaning for **Appointment objects**. <30> Unless otherwise specified, these properties are to always exist.

2.2.3.1 PidLidAppointmentSequenceTime

Type: **PtypTime**
The value of this **property** on the **organizer's Meeting object** indicates the date and time at which the property **PidLidAppointmentSequence** was last modified. The value is specified in **UTC**.

2.2.3.2 PidLidAppointmentLastSequence

Type: **PtypInteger32**
The value of this **property** indicates to the **organizer** the last **sequence number** that was sent to any **attendee**. For details about when and how a client increments the sequence number, see section 3.1.5.4. This property has no meaning for an attendee.

2.2.3.3 PidLidAppointmentReplyTime

Type: **PtypTime**
The value of this **property** on the **attendee's Meeting object** specifies the date and time at which the attendee responded to a received **meeting request** or **Meeting Update object**. The value is specified in **UTC**.

2.2.3.4 PidLidFInvited

Type: **PtypBoolean**
This **property** indicates whether invitations have been sent for the meeting that this **Meeting object** represents. A value of FALSE, or the absence of this property, indicates that a **Meeting Request object** has never been sent. A value of TRUE indicates that a Meeting Request object has been sent. After this value is set to TRUE on a Meeting object, it MUST NOT be changed.

2.2.3.5 PidLidAppointmentReplyName

Type: **PtypString**

This **property** on the **attendee's Meeting object** specifies the user who last replied to the **meeting request** or **meeting update**. This property is set only for a **delegator** when a **delegate** responded. The value is equal to the **PidTagMailboxOwnerName** property for the delegate's **store**. This property has no meaning for the **organizer**. For details about **PidTagMailboxOwnerName**, see [MS-OXCSTOR].

2.2.3.6 PidLidAppointmentProposalNumber

Type: **PtypInteger32**
This **property** specifies the number of **attendees** who have sent **counter proposals** that have not been accepted or rejected by the **organizer**.

2.2.3.7 PidLidAppointmentCounterProposal

Type: **PtypBoolean**
This **property** indicates to the **organizer** that there are **counter proposals** that have not been accepted or rejected (by the organizer). This property has no meaning for an **attendee**.

2.2.3.8 PidLidAutoFillLocation

Type: **PtypBoolean**
A value of TRUE for this **Boolean property** on the **organizer**'s **Meeting object** indicates that the value of the **PidLidLocation** property is set to the **PidTagDisplayName** property from the **RecipientRow** that represents a **resource**.<31> For more details about **RecipientRow**, see =[MS-OXCMSG].

2.2.3.9 RecipientRow Properties

The **Meeting object** has one **RecipientRow** (as specified in [MS-OXCMSG]) for each **sendable attendee**. In addition, a **RecipientRow** can exist for the **organizer** of the Meeting object. **Unsendable attendees** do not have a corresponding **RecipientRow**, but SHOULD have a row in the **PidLidAppointmentUnsendableRecipients property** (see section 2.2.1.25). The Appointment and Meeting Object protocol defines properties that can be set in the "Extra Properties" section of **RecipientRows**. These are listed in the following sections.

2.2.3.9.1 PidTagRecipientFlags

Type: **PtypInteger32**
Specifies a bit field that describes the recipient status. This **property** is not required. The following are the individual flags that can be set:

- S (recipSendable, 0x00000001): The recipient is a **sendable attendee**. This flag is used only in the **PidLidAppointmentUnsendableRecipients** property.
- O (recipOrganizer, 0x0000002): The **RecipientRow** on which this flag is set represents the meeting **organizer**.

- ER (recipExceptionalResponse, 0x00000010): Indicates that the **attendee** gave a response for the **exception** on which this **RecipientRow** resides. This flag is used only in a **RecipientRow** of an **Exception Embedded Message object** of the organizer's **Meeting object**.
- ED (recipExceptionalDeleted, 0x00000020): Indicates that although the **RecipientRow** exists, it is treated as if the corresponding recipient does not exist. This flag is used only in a **RecipientRow** of an Exception Embedded Message object of the organizer's Meeting object.
- X: MUST NOT be set (reserved, 0x00000040) <32>.
- X: MUST NOT be set (reserved, 0x00000080) <33>.
- G: (recipOriginal, 0x00000100): Indicates that the recipient is an original Attendee. This flag is used only in the **PidLidAppointmentUnsendableRecipients** property.
- X: (reserved, 0x00000200) <34>.

2.2.3.9.2 PidTagRecipientTrackStatus

Type: **PtypInteger32**
The value of this **property** indicates the response status that is returned by the **attendee**. If this value is not set, it is assumed to be respNone. If set, it MUST be one of the following, as specified in section 2.2.1.11:

- respNone
- respAccepted
- respDeclined
- respTentative

2.2.3.9.3 PidTagRecipientTrackStatusTime

Type: **PtypTime**
This **property** indicates the date and time at which the **attendee** responded. The value is specified in **UTC**.

2.2.3.9.4 PidTagRecipientProposed

Type: **PtypBoolean**
A value of TRUE for this **property** indicates that the **attendee** proposed a new date and/or time. A value of FALSE, or the absence of this property, means either that the attendee did not yet respond, or that the most recent response from the **attendee** did not include a new date/time proposal. This value can not be TRUE for attendees in a **recurring series**.

2.2.3.9.5 PidTagRecipientProposedStartTime

Type: **PtypTime**
When the value of the **PidTagRecipientProposed property** is set to TRUE, the value of this property indicates the value requested by the a**ttendee** to set as the value of the

PidLidAppointmentStartWhole property for the **single-instance Meeting object** or **Exception object**.

2.2.3.9.6 PidTagRecipientProposedEndTime

Type: **PtypTime**
When the value of the **PidTagRecipientProposed property** is set to TRUE, the value of this property indicates the value requested by the **attendee** to set as the value of the **PidLidAppointmentEndWhole** property for the **single-instance Meeting object** or **Exception object**.

2.2.3.9.7 Recipient Type

Type: **PtypInteger32**
This **property** is specified in [MS-OXCMSG]. The appropriate value is set as the recipient type for each **RecipientRow** in the **Meeting object**. The following table lists the appropriate values for the recipient type.

Attendee type	Recipient type
Organizer	0x01
Sendable, **required attendee**	0x01
Sendable, **optional attendee**	0x02
Sendable, **resource**	0x03 (only on the Meeting object in the organizer's **Calendar folder**)

2.2.4 Meeting-Related Objects

This section specifies properties that are specific to **meeting-related objects**. These include **Meeting Request**, **Meeting Update**, **Meeting Cancellation**, **Meeting Response**, and **Meeting Forward Notification objects**. Unless otherwise specified, these properties MUST exist.

2.2.4.1 PidLidSideEffects

Type: **PtypInteger32**
The possible flag values of this **property** are specified in [MS-OXCMSG]. All **Meeting Request objects** are to always include the following flags:

seOpenToDelete (0x00000001)
seOpenToCopy (0x00000020)
seOpenToMove (0x00000040)
seCannotUndoDelete (0x00000400)
seCannotUndoCopy (0x00000800)
seCannotUndoMove (0x00001000)

2.2.4.2 PidLidAttendeeCriticalChange

Type: **PtypTime**
The value of this **property** specifies the date and time at which the **meeting-related object** was sent. The value is specified in **UTC**. <35>

2.2.4.3 PidLidWhere

Type: **PtypString**
The value of this **property** SHOULD be the same as the value of the **PidLidLocation** property from the associated **Meeting object**. <36>

2.2.4.4 PidLidServerProcessed

Type: **PtypBoolean**
A value of TRUE for this **Boolean property** indicates that the **Meeting Request Object** or **Meeting Update Object** has been processed.

2.2.4.5 PidLidServerProcessingActions

Type: **PtypInteger32**
This property indicates what processing actions have been taken on this **Meeting Request Object** or **Meeting Update Object**. The following flags can be set.

Flag	Value
cpsDelegatorWantsCopy	0x00000002
cpsCreatedOnPrincipal	0x00000010
cpsUpdatedCalItem	0x00000080
cpsCopiedOldProperties	0x00000100
cpsSendAutoResponse	0x00000400
cpsRevivedException	0x00000800
cpsProcessedMeetingForwardNotification	0x00001000

2.2.4.6 PidLidTimeZone

Type: **PtypInteger32**
The value of this **property** specifies information about the time zone of a recurring meeting. This property is only read if **PidLidAppointmentRecur** is not set, but **PidLidIsRecurring** is TRUE and **PidLidIsException** is FALSE. The lower **WORD** specifies an index into a table that contains time zone information. From the upper **WORD**, only the highest bit is read. If that bit is set, the time zone referenced will not observe daylight saving time; otherwise, the daylight saving time dates listed in the following table will be used<37>.

Index	Standard offset from UTC+12 (international date line) in minutes	Standard date {wMonth, wDayOfWeek, wDay, wHour}	Daylight date {wMonth, wDayOfWeek, wDay, wHour}
0	0	N/A	N/A
1	12*60	{10, 0, 5, 2}	{3, 0, 5, 1}
2	11*60	{9, 0, 5, 2}	{3, 0, 5, 1}
3	11*60	{10, 0, 5, 3}	{3, 0, 5, 2}
4	11*60	{10, 0, 5, 3}	{3, 0, 5, 2}
5	10*60	{9, 0, 5, 1}	{3, 0, 5, 0}
6	11*60	{9, 0, 5, 1}	{3, 0, 5, 0}
7	10*60	{10, 0, 5, 4}	{3, 0, 5, 3}
8	15*60	{2, 0, 2, 2}	{10, 0, 3, 2}
9	16*60	{11, 0, 1, 2}	{3, 0, 2, 2}
10	17*60	{11, 0, 1, 2}	{3, 0, 2, 2}
11	18*60	{11, 0, 1, 2}	{3, 0, 2, 2}
12	19*60	{11, 0, 1, 2}	{3, 0, 2, 2}
13	20*60	{11, 0, 1, 2}	{3, 0, 2, 2}
14	21*60	{11, 0, 1, 2}	{3, 0, 2, 2}
15	22*60	N/A	N/A
16	23*60	N/A	N/A
17	0*60	{4, 0, 1, 3}	{9, 0, 5, 2}
18	2*60	{3, 0, 5, 3}	{10, 0, 5, 2}
19	(2*60)+30	{3, 0, 5, 3}	{10, 0, 5, 2}
20	3*60	N/A	N/A
21	4*60	N/A	N/A
22	5*60	N/A	N/A
23	(6*60)+30	N/A	N/A
24	8*60	N/A	N/A
25	(8*60)+30	{9, 2, 4, 2}	{3, 0, 1, 2}
26	9*60	N/A	N/A
27	10*60	{9, 0, 3, 2}	{3, 5, 5, 2}
28	(15*60)+30	{11, 0, 1, 0}	{3, 0, 2, 0}
29	13*60	{10, 0, 5, 1}	{3, 0, 5, 0}
30	14*60	{10, 0, 5, 1}	{3, 0, 5, 0}
31	12*60	N/A	N/A
32	15*60	N/A	N/A
33	16*60	N/A	N/A
34	17*60	N/A	N/A
35	17*60	N/A	N/A
36	18*60	N/A	N/A

Index	Standard offset from UTC+12 (international date line) in minutes	Standard date {wMonth, wDayOfWeek, wDay, wHour}	Daylight date {wMonth, wDayOfWeek, wDay, wHour}
37	18*60	{10, 0, 5, 2}	{4, 0, 1, 2}
38	19*60	N/A	N/A
39	24*60	N/A	N/A
40	0*60	N/A	N/A
41	1*60	N/A	N/A
42	2*60	{3, 0, 5, 2}	{10, 0, 1, 2}
43	2*60	N/A	N/A
44	(2*60)+30	N/A	N/A
45	4*60	{9, 0, 2, 2}	{4, 0, 2, 2}
46	6*60	N/A	N/A
47	7*60	N/A	N/A
48	(7*60)+30	N/A	N/A
49	10*60	{9, 4, 5, 2}	{5, 5, 1, 2}
50	10*60	N/A	N/A
51	9*60	{10, 0, 5, 1}	{3, 0, 5, 0}
52	2*60	{3, 0, 5, 2}	{8, 0, 5, 2}
53	2*60	{4, 0, 1, 3}	{10, 0, 5, 2}
54	(2*60)+30	{4, 0, 1, 3}	{10, 0, 5, 2}
55	2*60	{4, 0, 1, 3}	{10, 0, 1, 2}
56	16*60	{3, 6, 2, 23}	{10, 6, 2, 23}
57	4*60	{3, 0, 5, 3}	{10, 0, 5, 2}
58	19*60	{10, 0, 5, 2}	{4, 0, 1, 2}
59	20*60	{10, 0, 5, 2}	{4, 0, 1, 2}

The Standard date and Daylight date columns specify a date in the following format:

{wMonth, wDayOfWeek, wDay, wHour}

These values are interpreted as follows:

wMonth:

Value	Meaning
1	January
2	February
3	March

Value	Meaning
4	April
5	May
6	June
7	July
8	August
9	September
10	October
11	November
12	December

wDayOfWeek:

Value	Meaning
0	Sunday
1	Monday
2	Tuesday
3	Wednesday
4	Thursday
5	Friday
6	Saturday

wDay: Indicates the occurrence of the day of the week within the month (1 to 5, where 5 indicates the final occurrence during the month if that day of the week does not occur 5 times).

wHour: Indicates the hour at which the transition will occur in local time. The member ranges in value from 0 (zero) (12:00 A.M.) to 23 (11:00 P.M.).

If daylight saving time is observed, during the daylight time period, an additional -60 offset is added to the standard offset.

2.2.5 Meeting Request/Update Object

This section specifies the properties that are specific to **Meeting Request objects** and **Meeting Update objects**. <38> Unless otherwise specified, these properties are to always exist.

2.2.5.1 PidTagMessageClass

Type: **PtypString8**
The value of this **property** MUST be "IPM.Schedule.Meeting.Request" or be prefixed with "IPM.Schedule.Meeting.Request".

2.2.5.2 PidLidChangeHighlight

Type: **PtypInteger32**
Specifies a bit field that indicates how the **Meeting object** has changed. <39> This **property** is not required. The following are the individual flags that can be set.

ST (BIT_CH_START, 0x00000001): The property **PidLidAppointmentStartWhole** has changed.

ET (BIT_CH_END, 0x00000002): The property **PidLidAppointmentEndWhole** has changed.

REC (BIT_CH_RECUR, 0x00000004): The **Recurrence pattern** has changed. See the property **PidLidAppointmentRecur**.

LOC (BIT_CH_LOCATION, 0x00000008): The property **PidLidLocation** has changed.

SUB (BIT_CH_SUBJECT, 0x00000010): The property **PidTagNormalizedSubject** has changed.

REQ (BIT_CH_REQATT, 0x00000020): One or more **required attendees** were added.

OPT (BIT_CH_OPTATT, 0x00000040): One or more **optional attendees** were added.

B (BIT_CH_BODY, 0x00000080): The body was modified.

RE (BIT_CH_RESPONSE, 0x00000200): Either the property **PidTagResponseRequested** or the property **PidTagReplyRequested** has changed.

AP (BIT_CH_ALLOWPROPOSE, 0x00000400): The property **PidLidAppointmentNotAllowPropose** has changed.

CNF (0x00000800): Deprecated.

REM (0x00001000): Reserved.

OTH (0x08000000): Reserved.

2.2.5.3 PidLidForwardInstance

Type: **PtypBoolean**
A value of TRUE for this **property** indicates that the **Meeting Request object** represents an **exception** to a **recurring series**, and it was forwarded (even when forwarded by the **organizer**) rather than being an invitation sent by the organizer. A value of FALSE for this property indicates that the Meeting Request object is not a forwarded **instance**. This property is not required. <40>

2.2.5.4 PidLidIntendedBusyStatus

Type: **PtypInteger32**
Specifies the value of the **PidLidBusyStatus property** on the **Meeting object** in the **organizer**'s calendar at the time the **Meeting Request object** or **Meeting Update object** was sent. The allowable values of this property are the same as those for the property **PidLidBusyStatus**.

2.2.5.5 PidLidMeetingType

Type: **PtypInteger32**
This **property** indicates the type of **Meeting Request object** or **Meeting Update object**. The value of this property MUST be set to one of those listed in the following table.

Property	Value	Description
mtgEmpty	0x00000000	Unspecified.
mtgRequest	0x00000001	Initial meeting request.
mtgFull	0x00010000	Full update.
mtgInfo	0x00020000	Informational update.
mtgOutOfDate	0x00080000	A newer Meeting Request object or Meeting Update object was received after this one. For more details, see section 3.1.5.2.
mtgDelegatorCopy	0x00100000	This is set on the **delegator's** copy when a **delegate** will handle **meeting-related objects**. For more details, see section 3.1.4.6.2.1.

2.2.5.6 PidLidAppointmentMessageClass

Type: **PtypString**

This **String property** indicates the **PidTagMessageClass** of the **Meeting object** that is to be generated from the Meeting Request object. The value of this property MUST either be "IPM.Appointment" or be prefixed with "IPM.Appointment". This property is not required.

2.2.5.7 PidLidOldLocation

Type: **PtypString**
This **property** indicates the original value of the **PidLidLocation** property before a **meeting update**<41>. This property is not required.

2.2.5.8 PidLidOldWhenStartWhole

Type: **PtypTime**
This **property** indicates the original value of the **PidLidAppointmentStartWhole** property before a **meeting update**<42>. This property is not required.

2.2.5.9 PidLidOldWhenEndWhole

Type: **PtypTime**
This **property** indicates the original value of the **PidLidAppointmentEndWhole** property before a **meeting update**<43>. This property is not required.

2.2.5.10 Attachments

A **Meeting Request object** or **Meeting Update object** represents a **single instance**, a **recurring series**, or an **exception**. A Meeting Request object or a Meeting Update object for a recurring series can not include any **Exception Attachment objects**. A separate Meeting Request object or Meeting Update object is to be sent for each exception, even when **attendees** are invited to both the recurring series and the exceptions.

2.2.5.11 PidLidCalendarType

Type: **PtypInteger32**
When the **Meeting Request object** represents a **recurring series** or an **exception**, this **property** is the value of the **CalendarType** field from the **PidLidAppointmentRecur property**. Otherwise, this property is not set and is assumed to be 0 (zero).

2.2.5.12 Best Body Properties

The body of a **Meeting Request object** is a copy of the body of the **Meeting object** or **Exception Embedded Message object** to which it refers, optionally preceded by "downlevel text." The term "downlevel text" refers to extra text that can be added into the body of a Meeting Request object before a copy of the Meeting object body, so that a client that receives the Meeting Request object but does not understand its format will still show the meeting details. Downlevel text is to be separated from the copied Meeting object body with a delimiter, and then the delimiter is to be followed by two blank lines. The following table lists the delimiters. <44>

PidLidCalendarType	Delimiter
CAL_HIJRI	+=+=+=+=+=+=+=+=+=+
CAL_HEBREW	+=+=+=+=+=+=+=+=+=+
CAL_THAI	+=+=+=+=+=+=+=+=+=+
CAL_LUNAR_KOREAN	+=+=+=+=+=+=+=+=+=+
CAL_LUNAR_JAPANESE	+=+=+=+=+=+=+=+=+=+
CAL_CHINESE_LUNAR	+=+=+=+=+=+=+=+=+=+
CAL_SAKA	+=+=+=+=+=+=+=+=+=+
CAL_GREGORIAN	*~*~*~*~*~*~*~*~*~*
Any other value	*~*~*~*~*~*~*~*~*~*

2.2.6 Meeting Response Object

This section specifies the properties that are specific to **Meeting Response objects**. A Meeting Response object takes the form of one of three types: Accept, Tentatively Accept, or Decline. These properties apply to all response types, except where individually noted. Unless otherwise specified, these properties are to always exist.

2.2.6.1 PidTagMessageClass

Type: **PtypString8**
The value of this **property** MUST begin with "IPM.Schedule.Meeting.Resp" and MUST be appended with either "Pos", ".Tent", or ".Neg", indicating accept, tentatively accept, or decline, respectively.

2.2.6.2 PidTagSubjectPrefix

Type: **PtypString**
The value of this **property** is a localized string that indicates accept, tentatively accept, or decline, unless the **Meeting Response object** includes a new date/time proposal, in which case this is to be indicated by the value of this property.<45>

2.2.6.3 PidLidAppointmentProposedStartWhole

Type: **PtypTime**
Specifies the proposed value for **PidLidAppointmentStartWhole** for a **counter proposal**. This value is specified in **UTC**.

2.2.6.4 PidLidAppointmentProposedEndWhole

Type: **PtypTime**
Specifies the proposed value for **PidLidAppointmentEndWhole** for a **counter proposal**. This value is specified in **UTC**.

2.2.6.5 PidLidAppointmentProposedDuration

Type: **PtypInteger32**
This **property** indicates the proposed value for **PidLidAppointmentDuration** for a **counter proposal**. If set, it is equal to the number of minutes between **PidLidAppointmentProposedStartWhole** and **PidLidAppointmentProposedEndWhole**.

2.2.6.6 PidLidAppointmentCounterProposal

Type: **PtypBoolean**
A value of TRUE for this **property** indicates that this **Meeting Response object** is a **counter proposal**.

2.2.6.7 PidLidIsSilent

Type: **PtypBoolean**
A value of TRUE for this **property** indicates that the user did not include any text in the body of the **Meeting Response object**.

2.2.6.8 PidLidPromptSendUpdate

Type: **PtypBoolean**
A value of TRUE for this property indicates that the Meeting Response object was out-of-date when it was received.

2.2.7 Meeting Cancellation Object

This section specifies the properties that are specific to **Meeting Cancellation objects**. Unless otherwise specified, these properties are to always exist.

2.2.7.1 PidTagMessageClass

Type: **PtypString8**
The value of this **property** MUST be "IPM.Schedule.Meeting.Canceled."

2.2.7.2 PidTagSubjectPrefix

Type: **PtypString**
The value of this **property** is a localized string that indicates that the meeting was canceled.<46>

2.2.7.3 PidLidIntendedBusyStatus

Type: **PtypInteger32**
The value of this **property** MUST be set to olFree.

2.2.7.4 PidLidResponseStatus

Type: **PtypInteger32**
The value of this **property** MUST be set to respNotResponded.

2.2.7.5 PidLidBusyStatus

Type: **PtypInteger32**
The value of this **property** MUST be set to olFree.

2.2.8 Meeting Forward Notification Object

This section specifies the properties that are specific to **Meeting Forward Notification objects**. Unless otherwise specified, these properties MUST exist.

2.2.8.1 PidTagMessageClass

Type: **PtypString8**
The value of this **property** MUST be "IPM.Schedule.Meeting.Notification.Forward".

2.2.8.2 PidTagSubjectPrefix

Type: **PtypString**
The value of this **property** MUST be a localized string that indicates that the object is a meeting forward notification object.

2.2.8.3 PidLidForwardNotificationRecipients

Type: **PtypBinary**
This binary property contains a list of **RecipientRows** that indicate the recipients of a meeting forward. See the **PidLidAppointmentUnsendableRecipients** property in section 2.2.1.25 for the format of this property.

2.2.8.4 PidLidPromptSendUpdate

Type: **PtypBoolean**
A value of TRUE for this property indicates that the **Meeting Forward Notification object** was out-of-date when it was received.

2.2.9 Exceptions

An **exception** specifies changes to an **instance** of a **recurring series**. Two objects define an exception: the **Exception Attachment object** and the **Exception Embedded Message object**. One Exception Attachment object SHOULD<47> exist for each instance listed in the **ModifiedInstanceDates** field of the **PidLidAppointmentRecur property** on the **Calendar object**. One Exception Embedded Message object MUST exist for each Exception Attachment object.

The Exception Attachment object is an **Attachment object**, as specified in [MS-OXCMSG], and holds attachment-related information. The Exception Embedded Message object is an **Embedded Message object,** as specified in [MS-OXCMSG], and holds the modifications to the instance. This section specifies the properties that are specific to the Exception Attachment

object and the Exception Embedded Message object that make up the exception. Unless otherwise specified, these properties are to always exist.

2.2.9.1 Exception Attachment Object

The **Exception Attachment object** MUST have the properties listed in the following sections.

2.2.9.1.1 PidTagAttachmentHidden

Type: **PtypBoolean**
This **property** is specified in [MS-OXCMSG]. The value of this property MUST be TRUE.

2.2.9.1.2 PidTagAttachmentFlags

Type: **PtypInteger32**
This **property** is specified in [MS-OXCMSG]. The value MUST include the afException (0x00000002) flag.

2.2.9.1.3 PidTagAttachMethod

Type: **PtypInteger32**
This **property** is specified in [MS-OXCMSG]. The value MUST be afEmbeddedMessage (0x00000005), which indicates that the **exception** data in **PidTagAttachDataObject** is an **Embedded Message object**.

2.2.9.1.4 PidTagExceptionStartTime

Type: **PtypTime**
The value of this **property** indicates the start date and time of the **exception** in the local time zone of the computer when the exception is created. This property is informational and can not<48> be relied on for critical information.

2.2.9.1.5 PidTagExceptionEndTime

Type: **PtypTime**
The value of this **property** indicates the end date and time of the **exception** in the local time zone of the computer when the exception is created. This property is informational and can not<49> be relied on for critical information.

2.2.9.1.6 PidTagExceptionReplaceTime

Type: **PtypTime**
The value of this **property** indicates the original date and time at which the **instance** in the **recurrence pattern** would have occurred if it were not an **exception**. This value is specified in **UTC**.<50>

2.2.9.2 Exception Embedded Message Object

The data stored in the **Embedded Message object** that is represented by the **PidTagAttachDataObject property** (see [MS-OXCMSG]) contains properties that are specific to the **exception**. Any property that is not set on the **Exception Embedded Message object** is obtained from the recurrence series. The following properties SHOULD NOT be set on an Exception Embedded Message object; if they are set, they are not used by the client or server:

- **PidLidAppointmentSequence**
- **PidLidAppointmentSequenceTime**
- **PidLidAppointmentLastSequence**
- **PidLidMeetingWorkspaceUrl**
- **PidLidContacts** (see [MS-OXCMSG])
- **PidTagSensitivity** (see [MS-OXCMSG])
- **PidLidPrivate** (see [MS-OXCMSG])
- **PidNameKeywords** (see [MS-OXCMSG])

The following properties are specific to the Exception Embedded Message object.

2.2.9.2.1 PidTagMessageClass

Type: **PtypString8**
The value of this **property** MUST be "IPM.OLE.CLASS.{00061055-0000-0000-C000-000000000046}".

2.2.9.2.2 Best Body Properties

If the value of the **PidLidFExceptionalBody property** is FALSE, body properties SHOULD NOT be written to the **Exception Embedded Message object**. If body properties are written, then they follow the same rules that body properties for a **Calendar object** follow.

2.2.9.2.3 PidLidAppointmentStartWhole

Type: **PtypTime**
This **property** MUST exist on an **Exception Embedded Message object**, even if the **exception** has the same start date and time as the **instance** in the **recurring series** to which it corresponds. It contains the start date and time of the exception, and is specified in **UTC**.

2.2.9.2.4 PidLidAppointmentEndWhole

Type: **PtypTime**
This **property** MUST exist on an **Exception object**, even if the **exception** has the same end date and time as the **instance** in the **recurring series** to which it corresponds. It contains the end date and time of the exception and is specified in **UTC**.

2.2.9.2.5 PidLidExceptionReplaceTime

Type: **PtypTime**
This **property** specifies the date and time within the **recurrence pattern** that the **exception** will replace. The value is specified in **UTC**. This property allows the **Exception Attachment object** to be found for a particular **instance**.

2.2.9.2.6 PidLidFExceptionalBody

Type: **PtypBoolean**
A value of TRUE for this **property** indicates that the **Exception Embedded Message object** has a body that differs from the **Recurring Calendar object**. If the value of this property is TRUE, the Exception Embedded Message object MUST have a body. If the value of this property is FALSE, or if the property does not exist, a client or server obtains the body from the Recurring Calendar object.

2.2.9.2.7 PidLidFInvited

Type: **PtypBoolean**
The value of this **property** for an **Exception Embedded Message object** takes the same meaning as specified in section 2.2.3.4. If a **meeting request** has been sent for an **exception** but not for the **recurring series**, the value of this property on the **Recurring Calendar object** will still be FALSE, but the value on the Exception Embedded Message object will be TRUE.

2.2.10 Calendar Folder

For a folder to be treated as a **Calendar folder**, it MUST have the properties specified in this section. When creating **Calendar objects**, the client or server SHOULD<51> create them in the **Calendar special folder**.

2.2.10.1 PidTagContainerClass

Type: **PtypString8**
The value of this **property** for all **Calendar folder**s MUST be set to "IPF.Appointment.".

2.2.10.2 PidTagDefaultPostMessageClass

Type: **PtypString**
If this **property** is set on a **Calendar folder**, the value MUST either contain "IPM.Appointment", or begin with "IPM.Appointment".

2.2.11 Delegate Information Object

The following properties are set on the **Delegate Information object**, as specified in [MS-OXODLGT].

2.2.11.1 PidTagFreeBusyCountMonths

Type: **PtypInteger32**

This **property** is used to calculate the start and end dates of the range of free/busy data to be published to the **public folders** <52>, as specified in [MS-OXOPFFB]. The value of this property MUST be greater than or equal to 0x00000000 and less than or equal to 0x00000024. This is not a required property.

2.2.11.2 PidTagScheduleInfoAutoAcceptAppointments

Type: **PtypBoolean**
A value of TRUE for this **property** indicates that a client or server SHOULD automatically respond to all **meeting requests** for the **attendee** or **resource**. The response MUST be acceptance, unless an additional constraint specified by the **PidTagScheduleInfoDisallowRecurringAppts** or **PidTagScheduleInfoDisallowOverlappingAppts** property is met. A value of FALSE or the absence of this property indicates that a client or server does not automatically accept meeting requests. This is not a required property.

2.2.11.3 PidTagScheduleInfoDisallowRecurringAppts

Type: **PtypBoolean**
This **property** is only meaningful when the value of the **PidTagScheduleInfoAutoAcceptAppointments** property is TRUE. A value of TRUE indicates that when automatically responding to **meeting requests**, a client or server declines **Meeting Request objects** that represent a **recurring series**. A value of FALSE, or the absence of this property, indicates that recurring meetings are accepted. This is not a required property.

2.2.11.4 PidTagScheduleInfoDisallowOverlappingAppts

Type: **PtypBoolean**
This **property** is only meaningful when the value of the **PidTagScheduleInfoAutoAcceptAppointments** property is TRUE. A value of TRUE indicates that when automatically responding to **meeting requests**, a client or server declines **instances** that overlap with previously scheduled events. A value of FALSE or the absence of this property indicates that overlapping instances are accepted. This is not a required property.

2.2.11.5 PidTagScheduleInfoAppointmentTombstone

Type: **PtypBinary**
This **property** in a **delegator's Delegate Information object** contains a list of tombstones. Each tombstone represents a **Meeting object** that has been declined. This is not a required property. If this property does not exist when a meeting is declined by the delegator or the **delegate**, it MUST be created.

This property has the following structure, where the fields are stored in **little-endian** byte order:

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
Identifier																															
HeaderSize																															
Version																															
RecordsCount																															
RecordsSize																															
Records(Variable)[1...RecordsCount]																															

Identifier: This field MUST have a value of 0xBEDEAFCD.

HeaderSize: This field MUST have a value of 0x00000014.

Version: This field MUST have a value of 0x00000003.

RecordsCount: The count of the **Records** field.

RecordsSize: This field MUST have a value of 0x00000014.

Records: An array of the **Record** data structure, where **Record** is defined as follows:

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
StartTime																															
EndTime																															
GlobalObjectIdSize																															
GlobalObjectId(Variable)																															
UsernameSize																Username(Variable)															

StartTime: The Meeting Object's start time in minutes since midnight, January 1, 1601, **UTC**.

EndTime: The Meeting object's end time in minutes since midnight, January 1, 1601, UTC.

GlobalObjectIdSize: The size, in bytes, of the **GlobalObjectId** field.

GlobalObjectId: The value of the **PidLidGlobalObjectId** property of the meeting that this record represents.

UsernameSize: The size, in bytes, of the **Username** field.

Username: A non-**Unicode** string. The **PidTagDisplayName** of the **Address Book object** of the user who added the tombstone.

3 Protocol Details

There is no server role beyond those specified in [MS-OXCMSG] and [MS-OXOMSG].

3.1 Client Details

3.1.1 Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This specification does not mandate that implementations adhere to this model, as long as their external behavior is consistent with that described in this specification.

Objects specified in this document extend the **Message object**. The an abstract data model for these objects is the same as that specified in [MS-OXOMSG].

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Higher-Layer Triggered Events

3.1.4.1 Creating a Calendar Object

Although **Appointment objects** can be created in any **Calendar folder**, **Meeting objects** SHOULD only be created in the **Calendar special folder** (see [MS-OXOSFLD]). If a user creates a Meeting object in another Calendar folder, the client SHOULD<53> create a clone of the meeting in the Calendar special folder at the time of creation. All **Calendar objects** MUST have all the required **properties**, as specified in sections 2.2.1 and 2.2.2. A Meeting object MUST also have the required properties, as specified in section 2.2.3.

3.1.4.2 Converting an Appointment Object to a Meeting Object

To change an **Appointment object** into a **Meeting object**, the client sets the **asfMeeting** bit to 1 in the **PidLidAppointmentStateFlags** property. As long as a **meeting request** has not been sent for the Meeting object (according to the property **PidLidFInvited**), the client can set the **asfMeeting** bit to 0 (zero), reverting the Meeting object back to an Appointment object. However, after a meeting request is sent out, the **asfMeeting** bit MUST remain set to 1 on the Meeting object. In other words, the Meeting object MUST NOT revert to an Appointment object, even if all **Attendees** are later removed.

3.1.4.3 Copying a Calendar Object

To copy a **Calendar object**, the client creates a new Calendar object in the target folder, and then copies all properties from the original object onto the new Calendar object, with the exception of the following properties. <54>

The following properties MUST NOT be copied onto the new object:

- **PidLidAppointmentColor**
- **PidLidGlobalObjectId**
- **PidLidCleanGlobalObjectId**
- **PidLidMeetingWorkspaceUrl**

If the Calendar Object to be copied is a **Meeting Object,** the following actions MUST be taken by the client:

- The flag auxApptFlagCopied is added to the value of the PidLidAppointmentAuxiliaryFlags property on the new Object.
- The flag asfReceived SHOULD be added to the value of the PidLidAppointmentStateFlags property on the new Object<55>

In addition:

- The value of the **PidLidFInvited** property on the new object MUST be set to FALSE.
- The value of the **PidTagOwnerAppointmentId** property on the new object MUST be set to 0x00000000.
- The **RecipientRows** SHOULD be copied onto the new object. <56>
- The **PidLidResponseStatus** SHOULD<57> be set to **respNotResponded**.
- The **PidTagSubjectPrefix** property SHOULD<58> be set to to a localized string indicating the meeting is a copy.

3.1.4.3.1 Source Object is an Exception

When the source object is an **exception**, the client creates a new **Calendar object**. The client follows the same requirements for the new object, as already specified for copying a **Calendar object**. Furthermore, all properties that are not set on the **Exception Embedded**

Message object but that are set on the **Recurring Calendar object** are to be copied onto the new object. In addition, the following actions MUST be taken by the client:

- The value of the **PidTagMessageClass property** MUST be reset to "IPM.**Appointment**" on the new object.
- In addition to those already specified in section 3.1.4.3, the following properties MUST NOT be copied onto the new object:
  - **PidLidAppointmentRecur**
  - **PidLidRecurrenceType**
  - **PidLidRecurrencePattern**
  - **PidLidTimeZoneStruct**
  - **PidLidTimeZoneDescription**
  - **PidLidFExceptionalAttendees**
- The value of the **PidLidClipStart** property MUST be set to the value of the **PidLidAppointmentStartWhole** property.
- The value of the **PidLidClipEnd** property MUST be set to the value of the **PidLidAppointmentEndWhole** property.
- The value of the **PidTagIconIndex** property SHOULD be set to 0x00000400 if the **Exception Attachment object** was attached to an **Appointment object** or 0x00000402 if the Exception Attachment object was attached to a **Meeting object**.
- The value of the **PidLidRecurring** property MUST be set to FALSE.
- When copying the **RecipientRows**, the client copies them from the Exception Embedded Message object and not from the Recurring Calendar object.

3.1.4.3.2 Source is Not a Calendar Object

When the source object is not a **Calendar object**, the client creates a new **Appointment object,** and after copying all properties from the source object, ensure that all required properties (as specified in sections 2.2.1 and 2.2.2) exist on the new Appointment object.

3.1.4.4 Deleting a Meeting Object

When the user deletes a **Meeting object**, the client SHOULD<59> send a **Meeting Cancellation object** to all **attendees**, as specified in section 3.1.4.8.1.

3.1.4.5 Recurrence Expansion

A client uses the **RecurrencePattern** structure specified in section 2.2.1.44.1 to enumerate the **instances** of the **recurring series** between the **StartDate** and **EndDate**. The client excludes every instance that occurs on a **DeletedInstanceDate** and includes every date in the **ModifiedInstanceDate** list. Note that **ModifiedInstanceDate** contains only the date on which the **exception** will occur and not its exact time. To get specific start and end dates and times for a given exception, the client uses the values from the **StartDateTime** and **EndDateTime** fields of the **ExceptionInfo** field specified in section 2.2.1.44.2.

3.1.4.5.1 Finding an Exception

The **AppointmentRecurrencePattern** structure specified in section 2.2.1.44.12 specifies deleted **instances** and modified **instances**. Every modified instance is associated with an **Exception Attachment object**, as specified in 2.2.9. For each modified instance in the **RecurrencePattern**, there is a matching **ExceptionInfo** structure, as specified in section 2.2.1.44.2. The **StartDateTime property** is stored in the time zone represented by the **PidLidTimeZoneStruct** property that is stored on the **Recurring Calendar object**. To find the Exception Attachment object that corresponds to a modified instance, the **StartDateTime** field of the **ExceptionInfo** structure of that modified instance is matched to the **PidLidAppointmentStartWhole** property of the **Exception Embedded Message object**. The **StartDateTime** is converted to **UTC** by using **PidLidTimeZoneStruct**. This date and time SHOULD match the **PidLidAppointmentStartWhole** property of exactly one Exception Embedded Message object. If an Exception Attachment object cannot be found, the client creates a new one.

3.1.4.5.2 Creating an Exception

An **exception** replaces an **instance** of the **recurring series**. When creating a new exception, the client modifies the value of the **PidLidAppointmentRecur** property (as specified in section 2.2.1.44) in the following way: The exception's new start date is added to the **ModifiedInstanceDate** array. **ModifiedInstanceCount** is incremented. The original start date is added to the **DeletedInstanceDate** array and the **DeletedInstanceCount** is incremented. The new and original start dates are in the time zone specified by **PidLidTimeZoneStruct**. The **ExceptionInfo**, as specified in section 2.2.1.44.2, is added to the recurrence **BLOB**. Note that the original start date and the new start date can be the same, if the date was not modified in the exception.

The client also adds an **Exception Attachment object** and **Exception Embedded Message object**, each with properties specified in section 2.2.9, and adds any overridden properties to the Exception Embedded Message object. The **PidLidAppointmentStartWhole** property of the Exception Embedded Message object is specified in **UTC** and is the UTC equivalent of the date and time added to **StartDateTime** in the **ExceptionInfo** field. The client also copies the **RecipientRows** from the **Meeting object** to the Exception Embedded Message object.

3.1.4.5.3 Deleting an Instance of a Recurring Series

To delete a single occurrence of a **recurring series** that is not a previously modified **instance**, the **DeletedInstanceCount** is incremented and the date of the instance being deleted is added to the **DeletedInstanceDate** array.

3.1.4.5.4 Deleting an Exception

To delete an **exception**, the **instance** being deleted is removed from the **ModificeInstanceDate** array and the **ModifiedInstanceCount** is decremented. The associated **Exception Attachment object** is also to be deleted.

3.1.4.6 Meeting Requests

3.1.4.6.1 Sending a Meeting Request

The **organizer** or **delegate** of the organizer sends a **meeting request** to inform **attendees** of the event. To do so, the client creates and submit a new **Meeting Request object**. The client copies all **properties** specified in section 2.2.1 from the **Meeting object** to the Meeting Request object. The client also adds all required properties specified in section 2.2.5. The client then sets the following on the Meeting Request object:

- The value of the **PidLidAppointmentSequence** property to zero.
- The **asfReceived** and **asfMeeting** bits on the **PidLidAppointmentStateFlags** property to 1.
- The value of the **PidLidResponseStatus** property to respNotResponded.
- The value of the **PidLidIntendedBusyStatus** property equal to the value of the **PidLidBusyStatus** property from the Meeting object.
- The value of the **PidLidBusyStatus** property to olTentative.
- The value of the **PidLidFExceptionalAttendees** property to FALSE.
- The value of the **PidLidFExceptionalBody** property to FALSE.
- The value of the **PidLidIsRecurring** property, as specified in section 2.2.1.13.
- The value of the **PidLidRecurring** property, as specified in section 2.2.1.12.
- The value of the **PidLidCalendarType** property, if the Meeting Request object represents a **recurring series**.
- The value of the **PidLidWhere** property equal to the value of the **PidLidLocation** property from the Meeting object.
- The value of the property **PidLidAttendeeCriticalChange** to the current date and time in **UTC**.
- The value of the **PidLidMeetingType** to mtgRequest.
- The value of the **PidLidAllAttendeesString** property, as specified in section 2.2.1.16.
- The value of the **PidLidToAttendeesString** property, as specified in section 2.2.1.17.
- The value of the **PidLidCcAttendeesString** property, as specified in section 2.2.1.18.
- The value of the **PidTagStartDate** property, as specified in section 2.2.1.30.
- The value of the **PidTagEndDate** property, as specified in section 2.2.1.31.

The property **PidTagProcessed** is not set.

The following optional properties SHOULD also be set on the Meeting Request object:

- If the user has not modified the value of the **PidLidReminderDelta** property from its default value (as defined by the client), the value of this property SHOULD be set to the **LONG** value 0x5AE980E1.
- The client SHOULD prepend downlevel text to the body, as specified in section 2.2.5.12.

After successfully sending a Meeting Request object, the client modifies the Meeting object in the organizer's **Calendar folder** in the following ways:

- Set the value of the **PidLidFInvited** property to TRUE.
- Set the value of the **PidLidToAttendeesString** property equal to the value that was set on the Meeting Request object.
- Set the value of the **PidLidCcAttendeesString** property equal to the value that was set on the Meeting Request object.

3.1.4.6.1.1 Direct Booking

The term "direct booking" refers to the action of creating a **Meeting object** directly on the **Calendar folder** of an **attendee** instead of sending a **Meeting Request object** to the attendee. A client MAY<60> attempt to direct book any **sendable attendee** as long as the following two conditions exist:

- The value of the **PidTagScheduleInfoAutoAcceptAppointments property** in the attendee's **Delegate Information object** is set to TRUE (see section 2.2.11.2).<61>
- The **organizer** has permission to write to the attendee's **Calendar special folder** (see [MS-OXCPERM]).

The client fails the direct booking action and does not send a Meeting Request object to any **attendees** if either of the following occurs:

- The value of the **PidTagScheduleInfoDisallowRecurringAppts** property in the attendee's Delegate Information object is set to TRUE and the Meeting Request object represents a **recurring series** (see section 2.2.11.2).
- The value of the **PidTagScheduleInfoDisallowOverlappingAppts** property (see section 2.2.11.2) in the attendee's Delegate Information object is set to TRUE and there is a meeting conflict during the date/time specified on the Meeting Request object. For details about how to determine whether a conflict exists, see section 3.1.4.12.

To direct book an attendee, the client takes the following actions:

- Create the Meeting object on the attendee's Calendar special folder, as specified in section 3.1.4.6.2.2, and then modify the Meeting object as if the attendee had accepted it, as specified in section 3.1.4.7.1. A **Meeting Response object** MUST NOT be sent to the organizer.
- Publish updated free/busy information to the **resource's** Delegate Information object.
- Set the value of the **PidTagRecipientTrackStatus** property to respAccepted on the **RecipientRow** that represents the attendee on the organizer's **Meeting object**.
- Set the value of the **PidTagRecipientTrackStatusTime** property to the current date and time on the **RecipientRow** that represents the attendee in the organizer's Meeting object.
- If the Meeting Request object represents an **exception**, set the **recipExceptionalResponse** bit to 1 in the **PidTagRecipientFlags** property on the **RecipientRow** that represents the attendee in the organizer's Meeting object.
- Remove the **RecipientRow** that represents the attendee from the Meeting Request object so that it will not be sent to the attendee.

3.1.4.6.2 Receiving a Meeting Request

Some time after receiving a **Meeting Request object**, the client checks to determine whether the **Calendar object** is eligible for update, as specified in section 3.1.4.6.2.1, to determine whether to create a **Meeting object** in the user's **Calendar special folder** by using the information in the Meeting Request object. If the client does determine that the Meeting object has to be created, it creates the object as specified in section 3.1.4.6.2.2. If the PiAutoProcess value in the Calendar Options Dictionary [MS-OXOCFG] is set to 0 (zero), the client SHOULD NOT<62> immediately create the Meeting object, but wait until the user views the Meeting Request object. A client that does not support the Calendar Options Dictionary can have its own defined mechanism for allowing the user to decide whether Meeting objects will be automatically created upon receipt of a Meeting Request object.

If the client decides to create the Meeting object, the client creates it according to the rules specified in section 3.1.4.6.2.1.

3.1.4.6.2.1 Deciding to Create a Meeting Object

When a **delegator** receives a **Meeting Request object**, the client follows the sequencing rules described in section 3.1.5.6 before deciding to automatically create a **Meeting object**.

If any one of the following conditions are met, the client does not automatically create the Meeting object:

- The Meeting Request object is located in the **Sent Mail folder** (see [MS-OXOSFLD]) or the Outbox **special folder** (see [MS-OXOSFLD]).
- The value of the **PidTagProcessed** property on the Meeting Request object is set to TRUE.

- The Meeting Request object is intended for the delegator and a tombstone exists (as specified in section 2.2.11.5), indicating that another user has already declined the meeting.

The client MAY<63> skip automatic creation of the Meeting object if the value of the **PidLidServerProcessed** property on the Meeting Request object is set to TRUE, and the PidLidServerProcessingActions property either does not exist or has the **cpsCreatedOnPrincipal** bit of this property is set to 1. If the client skips automatic creation of the Meeting object, it MUST NOT set the PidTagProcessed property on the Meeting Request object.

3.1.4.6.2.2 Creating the Meeting Object

Before creating the **Meeting object**, the client tries to find the **Calendar object**, as specified in section 3.1.5.1, and does not create a new Meeting object if a match was found. After creating a Meeting object, the client copies all the properties specified in section 2.2.1 from the **Meeting Request object** onto the Meeting object. The client also adds all required properties specified in section 2.2.3. The client MAY<64> change the value of the **PidTagMessageClass** property on the new Meeting object to the value of the **PidLidAppointmentMessageClass** property from the Meeting Request object. In addition, the client sets the following properties on the Meeting object:

- The value of the **PidLidResponseStatus** property to respNotResponded.
- The value of the **PidLidBusyStatus** property to olTentative, unless the value of the **PidLidIntendedBusyStatus** property is olFree, in which case it MUST be set to olFree.
- If the value of the **PidLidReminderDelta** property in the Meeting Request object is set to 0x5AE980E1, change it to its default value (as defined by the client), and then recalculate the **PidLidReminderSignalTime** property, as specified in [MS-OXORMDR].
- The client SHOULD<65> copy the value of the **PidLidAppointmentAuxiliaryFlags** property from the Meeting Request object to the Meeting object.
- The client SHOULD remove the downlevel text (see section 2.2.5.12) from the body.
- The client SHOULD<66> set the value of the **PidLidAppointmentReplyName** of the Meeting object to a null string.
- The client SHOULD<67> copy the **RecipientRows** in the **PidLidAppointmentUnsendableRecipients** property of the Meeting Request object to the **RecipientRows** of the Meeting object. For each **RecipientRow** copied, if the recipOriginal bit is set to 1 in the **PidTagRecipientFlags** property of the **RecipientRow**, then the client MUST set the **recipSendable** bit to 1 in the **PidTagRecipientFlags** property.

- The client MUST NOT copy the **PidLidAppointmentUnsendableRecipients** property from the Meeting Request object to the Meeting object.
- If the **PidLidAppointmentUnsendableRecipients** property is not set on the Meeting Request Object, or if the client did not copy the **RecipientRows** in the **PidLidAppointmentUnsendableRecipients** property of the Meeting Request object to the Meeting object, then the client creates a **RecipientRow** for each recipient listed in the **PidLidNonSendableTo**, **PidLidNonSendableCc**, and **PidLidNonSendableBcc** properties. The client sets the **Recipient Type** for each **RecipientRow** added as specified in 2.2.1.19, 2.2.1.20, and 2.2.1.21.
- The client sets the **PidLidNonSendableTo**, **PidLidNonSendableCc**, and **PidLidNonSendableBcc** properties to the null string on the Meeting object.

If the Meeting Request object represents a **recurring series** and the Meeting object was created, the client searches the folder for **orphan instances** of the meeting by matching the **PidLidCleanGlobalObjectId** property with that of the new Meeting object. The client then converts any orphan instances that are found into **exceptions**, and deletes the orphan instances. For each converted exception the client SHOULD<68> copy the **PidLidBusyStatus** from the orphan instance into the **BusyStatus** member of the associated **ExceptionInfo** field and set the ARO_BUSYSTATUS flag according to section 2.2.1.44.2.

After creating the Meeting object, the client SHOULD set the value of the **PidTagProcessed** property on the Meeting Request object to TRUE, unless it is in a **public folder**, in which case this property is not set. <69>

After creating the Meeting object, the client MAY<70> set the **PidLidServerProcessed** property to TRUE. If setting the **PidLidServerProcessed** property, the client either sets both the **cpsCreatedOnPrincipal** and **cpsUpdatedCalItem** bits of the **PidLidServerProcessingActions** property to 1 or leaves this property unset. <71>

3.1.4.6.2.3 Auto Respond

After creating the Meeting object, the client can automatically send a **Meeting Response object** to the **organizer** if the value of the **property PidTagScheduleInfoAutoAcceptAppointments** in the organizer's **Delegate Information object** is nonzero. When sending the Meeting Response object, the client does so as specified in section 3.1.4.7. If the client chooses to automatically respond to **Meeting Request objects**, it also adheres to the requirements of the **PidTagScheduleInfoDisallowRecurringAppts** and **PidTagScheduleInfoDisallowOverlappingAppts** properties, accepting or declining meetings as appropriate.

The client MAY<72> skip automatic sending of Meeting Response objects to the organizer if the **PidLidServerProcessed** property of the Meeting Request object is set to TRUE and the **cpsSendAutoResponse** bit of the **PidLidServerProcessingActions** property is set to 1. If the

client automatically responds to the Meeting Request object, it MAY<73> set the **cpsSendAutoResponse** bit of the **PidLidServerProcessingActions** property to 1.

When the client is acting for the **delegate**, and the client supports sending automatic responses, it uses the values defined for the **delegator** and not for the delegate when deciding whether or not to automatically respond to Meeting Request objects on behalf of the delegator.

3.1.4.6.3 Sending a Meeting Update

The **organizer** or **delegate** of the organizer sends an update to inform **attendees** of changes to an event that has already been sent out (according to the **PidLidFInvited property** on the **Meeting object**). To do so, the client creates and submits a **Meeting Update object**, following the same rules as sending a **Meeting Request object** (section 3.1.4.6.1), with differences as explained in this section.

If the value of the **PidLidLocation** property was modified by the user on the Meeting object, the client SHOULD set the value of the **PidLidOldLocation** property on the Meeting Update object to the old value. Similarly, if the value of the **PidLidAppointmentStartWhole** and/or **PidLidAppointmentEndWhole** properties were modified by the user on the Meeting object, the client SHOULD set the old values as the value of the **PidLidOldWhenStartWhole** and **PidLidOldWhenEndWhole** properties, respectively.<74>

The client modifies the sequence number as specified in section 3.1.5.4.

3.1.4.6.3.1 Significant Change

Certain constraints result when a "significant change" is made to a **Meeting object**. A significant change to a Meeting object includes any of the following conditions:

- The value of the **property PidLidAppointmentStartWhole** is changed.
- The value of the property **PidLidAppointmentEndWhole** is changed.
- The **recurrence pattern**, as defined in the property **PidLidAppointmentRecur**, was added, modified, or removed.

In the case that one of these significant changes has been made to the Meeting object, the value of the **PidLidMeetingType** property MUST be set to mtgFull. Otherwise, the value of this property SHOULD<75> be set to mtgInfo.

3.1.4.6.3.2 Clearing Previous Responses

If the **Meeting object** is set to request responses (according to the **property PidTagResponseRequested**), and a significant change (as specified in section 3.1.4.6.3.1) has been made, the client SHOULD clear all tallied responses that have been previously received from **attendees**. The client SHOULD NOT clear the tallied responses if a significant change has not been made, or if the Meeting object is not set to request responses.<76>

To clear the tallied responses, the client sets the value of the **PidTagRecipientTrackStatus** property to respNone in each **RecipientRow** of the Meeting object, as well as for any **RecipientRows** in the **PidLidAppointmentUnsendableRecipients** property and any recipients listed in the **PidLidNonSendToTrackStatus**, **PidLidNonSendCcTrackStatus**, and **PidLidNonSendBccTrackStatus** properties. The client also can set the value of the **PidTagRecipientTrackStatusTime** property in each **RecipientRow** to an invalid date<77>.

3.1.4.6.3.3 Adding Attendees to a Meeting

When the organizer adds a new attendee to a recurring series or single instance meeting, the client adds the attendee to the Meeting Object's recipient rows and sets the properties as specified in 2.2.3.9.

When the organizer adds a new attendee to an exception of a recurring series, the client adds a recipient row for the attendee to the Exception Embedded Message object. If the attendee already existed in the exception, but the **recipExceptionalDeleted** bit of the **PidTagRecipientFlags** property of the attendee's RecipientRow was set to 1, then the client resets this bit to 0.

3.1.4.6.3.4 Partial Attendee List

When a significant change (as specified in section 3.1.4.6.3.1) has not been made, and the user has added **attendees**, the client MAY<78> send the **Meeting Update object** to only the new attendees. The client SHOULD<79> treat an attendee as a new attendee if the value of the **recipSendable bit** of the attendee's **PidTagRecipientFlags** property has changed from 0 to 1. When sending a Meeting Update object to only new attendees, the client SHOULD<80> add all other attendees (for example, those not receiving the Meeting Update object) into the **PidLidAppointmentUnsendableRecipients** property on the Meeting Update object. For each attendee added to the **PidLidAppointmentUnsendableRecipients** property, the client sets **the recipOriginal** bit of the **PidTagRecipientFlags** property of the attendee's **RecipientRow** to 1 if the **recipSendable** bit is set to 1, and sets the recipSendable bit to 0.

3.1.4.6.3.5 Updating a Recurring Series

After a **Meeting Update object** is sent for a **recurring series** that has modified **exceptions** and the **Recurrence Pattern** has not changed, the client sends a Meeting Update object for each modified exception (according to the **PidLidAppointmentStartWhole property** on the **Exception Embedded Message object**) for which the start date and time has not yet passed. The Meeting Update object for each exception conforms to the specifications in section 2.2.5. Before sending a Meeting Update object for each exception, the client SHOULD<81> send a Meeting Cancelation object for that exception to each attendee included in the Recurring Series that is not included in the exception. If the attendee exists in the RecipientRows of the Exception object and the **recipExceptionalDeleted** bit of the **PidTagRecipientFlags** property of the attendee's RecipientRow is set to 1, then the client treats the attendee as not included in

the exception. If the series has deleted exceptions, the client sends a Meeting Cancellation object for each deleted exception for which, (according to the **DeletedInstanceDates** field of the **PidLidAppointmentRecur** property of the **Meeting Object**), the start date and time has not yet passed. The Meeting Cancellation object for each exception conforms to the specifications in section 2.2.5. If the **Recurrence Pattern** has changed, then the client SHOULD<82> send out Meeting Cancelation objects for each exception whose start date and time (according to the **PidLidAppointmentStartWhole** property on the Exception Embedded Message object) has not yet passed to every attendee of the Exception, and removes every exception from **PidLidAppointmentRecur** and every **Exception Attachment object**.

After a Meeting Update object is sent to a Partial Attendee List as defined in 3.1.4.6.3.3 for a **Recurring Series** that has **exceptions**, the client SHOULD<83> send a Meeting Request object for each exception whose start date and time (according to the PidLidAppointmentStartWhole **property** on the **Exception Embedded Message object**) has not yet passed to every Attendee of the Exception that is in the Partial Attendee List.

3.1.4.6.4 Receiving a Meeting Update

Some time after receiving a **Meeting Update object**, the client determines whether to update the **Meeting object** in the user's **Calendar special folder** with the information in the Meeting Update object, as specified in section 3.1.4.6.4.1. If the client decides that the Meeting object has to be updated, it does so as specified in section 3.1.4.6.4.2. If the PiAutoProcess value in the Calendar Options Dictionary (see [MS-OXOCFG]) is set to 0 (zero), the client SHOULD NOT<84> immediately update the Meeting object, but will wait until the user views the Meeting Update object. A client that does not support the Calendar Options Dictionary can have its own defined mechanism for allowing the user to decide whether **Meeting objects** will be automatically updated upon receipt of a Meeting Update object.

3.1.4.6.4.1 Deciding to Update a Meeting Object

When a **delegator** receives a **Meeting Update object**, the client follows the sequencing rules described in section 3.1.5.6 before deciding to automatically update the **Meeting object**. If any one of the following conditions is met, the client does not automatically update the Meeting object:

- The Meeting Request object is located in the **Sent Mail folder** or the Outbox **special folder** (see [MS-OXOSFLD]).
- The value of the **PidTagProcessed** property on the Meeting Request object is set to TRUE.
- The Meeting Request object is intended for the delegator and a tombstone exists (as specified in section 2.2.11.5), indicating that another user has already declined the meeting.

The client MAY<85> skip automatic updating of the Meeting object if the value of the **PidLidServerProcessed** property on the **Meeting Request object** is set to TRUE, and the **PidLidServerProcessingActions** property either does not exist or has the **cpsUpdatedCalItem** bit of this property is set to 1. If the client skips automatic updating of the Meeting object, it MUST NOT set the **PidTagProcessed** property on the Meeting Update object.

3.1.4.6.4.2 Updating the Meeting Object

When the client has determined that the **Meeting object** is eligible for an update, it first tries to find the **Calendar object**, as specified in section 3.1.5.1. If the **Meeting Update object** represents an **exception**, and the **recurring series** was found in the calendar, but the exception was previously deleted from the recurring series, then the client recreates the exception, as specified in section 3.1.4.5.2, unless the **cpsRevivedException** bit of the **PidLidServerProcessingActions** property of the **Meeting Request object** is set to 1 and the **PidLidServerProcessed** property is set to TRUE, in which case the client MAY<86> skip recreation of the exception. After recreating the exception, the client MAY<87> set the **cpsRevivedException** bit of the **PidLidServerProcessingActions** property of the Meeting Request object to TRUE. If the Meeting object was not found, then the client SHOULD change the value of the **PidLidMeetingType property** on the Meeting Update object to mtgRequest, and then follow the specification for receiving a new Meeting Request object, as specified in section 3.1.4.6.2.

If the user is the **organizer** of the **Meeting**, then the client does not update the Calendar object with the information from the Meeting Update object.

If the Meeting Update object is out of date, as defined in section 3.1.5.2, the client SHOULD change the value of the **PidLidMeetingType** property on the Meeting Update object to mtgOutofDate and does not update the Meeting object. Similarly, if the Meeting Update object is not newer than the Meeting object, as defined in section 3.1.5.3, the client does not update the Meeting object.

Before modifying the Meeting object, the client SHOULD<88> do the following:

- Copy the value of the **PidLidLocation** property from the Meeting object onto the value of the **PidLidOldLocation** property on the Meeting Request object.
- Copy the value of the **PidLidAppointmentStartWhole** property from the Meeting object onto the value of the **PidLidOldWhenStartWhole** property on the Meeting Request object.
- Copy the value of the **PidLidAppointmentEndWhole** property from the Meeting object onto the value of the **PidLidOldWhenEndWhole** property on the Meeting Request object.

- The client MAY<89> skip these actions if the **cpsCopiedOldProperties** bit of the **PidLidServerProcessingActions** property of the Meeting Update object is set to 1 and the **PidLidServerProcessed** property is set to TRUE. The client MAY<90> set the **cpsCopiedOldProperties** bit of the **PidLidServerProcessingActions** property of the Meeting Update object to 1 after completing these actions.

To update the meeting, the client copies all the properties specified in section 2.2.1 from the Meeting Update object onto the Meeting object. The client also adds all required properties specified in section 2.2.3. However, the client SHOULD comply with the following exemptions:

- If the value of the **PidTagSensitivity property** (see [MS-OXCMSG]) on the Meeting object is set to private, it SHOULD<91> remain so, even if this is not the value of the property on the Meeting Update object.
- Remove the downlevel text (see section 2.2.5.12) from the body.

If the user had not yet responded to the original Meeting Request object, as reflected in the **PidLidResponseStatus** property on the Meeting object, the client has to ensure that the value of the **PidLidMeetingType** property on the Meeting Update object is mtgFull and the value of the **PidTagIconIndex** property on the Meeting Update object is 0x00000404.

If the Meeting Update object does not include a significant change (as specified in section 3.1.4.6.3.1), and the **attendee** had already responded to the original Meeting Request object, the client SHOULD NOT<92> change the value of the **PidLidResponseStatus** property on the Meeting object. Regardless of whether the attendee had previously responded, if the Meeting Update object represents an update with a significant change (as specified in section 3.1.4.6.3.1), the client sets the following properties on the Meeting object so that it looks as if the attendee has not yet responded:

- The value of the **PidLidResponseStatus** property to respNotResponded.
- The value of the **PidLidBusyStatus** property to olTentative, unless the value of the **PidLidIntendedBusyStatus** property is olFree, in which case it is set to olFree.

The client follows the same rules surrounding Auto Respond for a Meeting Update object, as specified for a Meeting Request object in section 3.1.4.6.2.3.

After updating the Meeting object, the client SHOULD set the value of the **PidTagProcessed** property to TRUE, unless the object is in a **public folder**, in which case this property is not to be set. <93>

After updating the Meeting object, the client MAY<94> set the **PidLidServerProcessed** property to TRUE. When setting the **PidLidServerProcessed** property, the client MUST

either set the **cpsUpdatedCalItem** bit of the **PidLidServerProcessingActions** property to 1 or leave this property unset. <95>

3.1.4.6.5 Forwarding a Meeting Request

To forward a **Meeting Request object**, either from the **organizer** or from an **attendee** who received it, the client creates a new Meeting Request object and copies all the properties from the original Meeting Request object onto the new object. The client then makes the following additional changes on the new object:

- Set the value of the **PidLidAttendeeCriticalChange property** to the current date and time, in **UTC**.
- Set the value of the **PidLidResponseStatus** property to respNotResponded.
- Set the value of the **PidLidBusyStatus** property to olTentative, unless the value of the **PidLidIntendedBusyStatus** is olFree, in which case **PidLidBusyStatus** is set to olFree.
- Ensure that the **asfMeeting** and **asfReceived** bits are set to 1 in the **PidLidAppointmentStateFlags** property.
- Reset the value of the **PidLidAllAttendeesString**, **PidLidToAttendeesString**, and **PidLidCcAttendeesString** properties to a blank string.
- Set the value of the **PidTagSenderName** property to the value of the **PidTagDisplayName** property of the **Address Book object** of the forwarding user.
- Set the value of the **PidTagSenderEntryId** property to the value of the **EntryID** of the Address Book object of the forwarding user.
- Set the value of the **PidTagSenderSearchKey** property to the value of the **SearchKey** of the Address Book object of the forwarding user.
- Set the value of the **PidTagSentRepresentingName** property to the value of the **PidTagDisplayName** property of the Address Book object of the organizer.
- Set the value of the **PidTagSentRepresentingEntryId** property to the value of the **EntryID** of the Address Book object of the organizer.
- Set the value of the **PidTagSentRepresentingSearchKey** property to the value of the **SearchKey** of the Address Book object of the organizer.
- If the Meeting Request object represents an **exception** to a **recurring series**, set the value of the **PidLidForwardInstance** property to TRUE.
- Set the value of the **PidLidChangeHighlight** property to 0x00000000.
- Set the **auxApptFlagForwarded** bit to 1 in the **PidLidAppointmentAuxiliaryFlags** property.
- The client SHOULD<96> set the value of the **PidLidMeetingType** property to 0x00000001.

The client SHOULD copy all the **RecipientRows** from the original Meeting Request object into the **PidLidAppointmentUnsendableRecipients**<97> property of the new object. The

client MUST NOT copy the **RecipientRows** from the original Meeting Request object into **RecipientRows** on the new object. The client can set the **auxApptFlagForceMtgResponse** bit in the **PidLidAppointmentAuxiliaryFlags** property. The property **PidTagProcessed** MUST NOT be set.

When a Meeting Request object is forwarded, the client MAY send a **Meeting Forward Notification object** to the **organizer** according to section 3.1.4.9.1.

3.1.4.6.5.1 Forwarding a Recurring Series

After a **Meeting Request object** is forwarded for a **Recurring Series** that has **exceptions**, the client SHOULD<98> forward each exception whose start date and time (according to the **PidLidAppointmentStartWhole property** on the **Exception Embedded Message object**) has not yet passed, as specified in section 3.1.4.6.5.

3.1.4.7 Meeting Responses

3.1.4.7.1 Accepting a Meeting

When the **attendee** or a **delegate** of the attendee decides to accept a **Meeting Request object**, the client ensures that the **Meeting object** has been created in the attendee's **Calendar special folder**, as specified in section 3.1.4.6.2.2. Similarly, when the attendee or delegate of the attendee accepts a **Meeting Update object**, the client ensures that the Meeting object has been updated in the attendee's Calendar special folder, as specified in section 3.1.4.6.4.2, unless the Meeting Update object is out of date, as specified in section 3.1.5.2, in which case the client does not modify the Meeting object or send a **Meeting Response object**.

After creating or updating the Meeting object, all changes made to the Meeting object in the attendee's Calendar special folder MUST be atomic, for example, by creating a copy of the object, applying the changes to the copy, then deleting the original Meeting object. The client MUST make the following changes to the Meeting object:

- Set the value of the **PidLidBusyStatus property** equal to the value of the **PidLidIntendedBusyStatus** property from the Meeting Request object.
- Set the value of the **PidLidResponseStatus** property to respAccepted.
- Set the value of the **PidLidAppointmentReplyTime** property to the current date and time.
- If it is the delegate that is responding, set the value of the **PidLidAppointmentReplyName** property equal to the value of the **PidTagMailboxOwnerName** property from the **store**. If the delegate is not the one who is responding, the **PidLidAppointmentReplyName** property will not be not set.

The client MAY<99> send a Meeting Response object back to the **organizer**, as specified in section 3.1.4.7.4.

3.1.4.7.2 Tentatively Accepting a Meeting

When the **attendee** or a **delegate** of the attendee decides to tentatively accept a **Meeting Request object**, the client follows the process specified in section 3.1.4.7.1, except that when updating the Meeting object, the following substitutions are made:

- Set the value of the **PidLidBusyStatus property** to olTentative, unless the value of the **PidLidIntendedBusyStatus** property is olFree, in which case it MUST be set to olFree.
- Set the value of the **PidLidResponseStatus** property to respTentative.

3.1.4.7.3 Declining a Meeting

When the **attendee** or a **delegate** of the attendee decides to decline a **Meeting Request object**, the client ensures that the Meeting object has been created in the attendee's **Calendar special folder**, as specified in section 3.1.4.6.2.2. Similarly, when the attendee or delegate of the attendee declines a **Meeting Update object**, the client has to ensure that the Meeting object has been updated in the attendee's Calendar special folder, as specified in section 3.1.4.6.4.2, unless the Meeting Update object is out of date, as specified in section 3.1.5.2, in which case the client MUST NOT modify the Meeting object and MUST NOT send a **Meeting Response object**.

After creating or updating the Meeting object, the client applies the following changes to the Meeting object in the attendee's Calendar special folder:

- If the value of the **PidLidReminderSet property** is set to TRUE, the Meeting object is not a **recurring series**, and the **signal time** has passed, set the value of the **PidLidReminderSet** property to FALSE.
- Set the value of the **PidLidResponseStatus** property to **respDeclined**.
- Set the value of the **PidLidAppointmentReplyTime** property to the current date and time.
- If the delegate is responding, set the value of the **PidLidAppointmentReplyName** property equal to the value of the **PidTagMailboxOwnerName** property from the **store**. If the delegate is not the one who is responding, the **PidLidAppointmentReplyName** property is not set.
- If it is the delegate acting on behalf of the **delegator**, the client SHOULD set the value of the **PidLidOriginalStoreEntryId** property to the **EntryID** of the delegator's store.

The following additional actions are performed by the client:

- If the Meeting Request object or Meeting Update object represents either a recurring series or **single instance** meeting, the client removes the Meeting object from the attendee's calendar, either by moving the Meeting object to the Deleted Items special folder (see [MS-OXOSFLD]) or by permanently deleting the object.
- If the Meeting Request object or Meeting Update object represents an **exception** to a recurring series, the client removes the **Exception Attachment object** from the recurring series, as specified in section 3.1.4.5.4.
- If the delegator or a delegate acting on behalf of the delegator, declines a meeting, a tombstone SHOULD be added to the **PidTagScheduleInfoAppointmentTombstone** property on the delegator's **Delegate Information object**, as specified in section 2.2.11.5.

The client can send a Meeting Response object back to the **organizer**, as specified in section 3.1.4.7.4.

3.1.4.7.4 Sending a Meeting Response

After choosing a response, an **attendee** or a **delegate** of the attendee sends a **Meeting Response object** to inform the **organizer** of the attendee's choice. The client SHOULD NOT send a Meeting Response object if one of the following conditions is true:

- The attendee is also the meeting organizer.<100>
- The value of the **PidTagResponseRequested property** on the **Meeting Request object** is set to FALSE.<101>

If the following condition is true, the client can require sending a Meeting Response object to the organizer:

- The **auxApptFlagForceMtgResponse** bit is set to 1 in the value of the **PidLidAppointmentAuxiliaryFlags** property of the **Meeting object** (which came from the Meeting Request object or **Meeting Update object**).

Beyond these constraints, the client can send a Meeting Response object to the organizer to inform them of the attendee's choice. To do so, the client creates and submits a new Meeting Response object. The client then copies the following properties from the Meeting object to the Meeting Response object<102>:

- **PidLidLocation**
- **PidLidWhere**
- **PidLidAppointmentSequence**
- **PidLidOwnerCriticalChange**
- **PidTagStartDate**

- **PidTagEndDate**
- **PidLidAppointmentStartWhole**
- **PidLidAppointmentEndWhole**
- **PidLidGlobalObjectId**
- **PidLidIsException**
- **PidTagOwnerAppointmentId**
- **PidTagSensitivity**

In addition to these properties, if the Meeting Response object represents a **recurring series**, the client MUST copy the following properties from the Meeting object:
<103>

- **PidLidTimeZoneStruct**
- **PidLidAppointmentRecur**
- **PidLidAppointmentTimeZoneDefinitionRecur**
- **PidLidIsRecurring**
- **PidLidTimeZone**
- **PidLidTimeZoneDescription**

The client MUST also set the following on the Meeting Response object:

- The value of the **PidTagMessageClass** property as specified in section 2.2.6.1.
- The value of the **PidTagIconIndex** property as specified in section 2.2.1.49.
- The value of the **PidLidAttendeeCriticalChange** to the current date and time.
- The value of the **PidTagSubjectPrefix** property as specified in section 2.2.6.2 to indicate the response type.
- Increment **PidTagConversationIndex**, as specified in [MS-OXOMSG].
- The value of the **PidTagSentRepresentingName** property to the value of the **PidTagMailboxOwnerName** property from the user's mailbox (for example, a **delegate** acting on behalf of the **delegator** would write the name of the delegate).
- The value of the **PidTagSentRepresentingEntryId** property to the value of the **PidTagMailboxOwnerEntryId** property from the user's mailbox.
- The value of the **PidLidIsSilent** property to TRUE if the user did not write any text in the body of the response.

3.1.4.7.4.1 Proposing a New Time

Along with the response, whether Accept, Tentatively Accept, or Decline, the **attendee** or a **delegate** of the attendee can request that the **organizer** change the meeting date and/or time. The client MUST NOT allow the attendee or delegate of the attendee to propose a new date or time in the following cases:

- The attendee is the organizer.

- The value of the **PidLidAppointmentNotAllowPropose property** on the **Meeting Request object** is set to TRUE.
- The Meeting Request object represents a **recurring series**. (However, the attendee can propose a new date and/or time for a **single instance** of a recurring series.)

To make the new date and/or time proposal, the client sets the following properties on the **Meeting Response object**:

- The value of the **PidTagSubjectPrefix** property as specified in section 2.2.6.2 to indicate a new date/time proposal.
- The value of the **PidLidAppointmentCounterProposal** property to TRUE.
- The value of the **PidLidAppointmentProposedStartWhole** property to the new proposed start date and time, in **(UTC)**.
- The value of the **PidLidAppointmentProposedEndWhole** property to the new proposed end date and time, in UTC.
- The value of the **PidLidAppointmentProposedDuration** property to the new proposed duration, in minutes.

In addition to the previous information, when proposing a new date and/or time, the client MUST NOT set the value of the **PidLidIsSilent** property to TRUE, even if the Attendee does not edit the body of the response.

3.1.4.7.5 Receiving a Meeting Response

Some time after receiving a **Meeting Response object**, the client decides, as specified in section 3.1.4.7.5.1, whether to record the **attendee's** response on the **Meeting object** in the **organizer**'s **Calendar special folder**. If the client decides that the attendee's response needs to be recorded, it records the response as specified in section 3.1.4.7.5.2. If the PiAutoProcess value in the Calendar Options Dictionary (see [MS-OXOCFG]) is set to 0 (zero), the client SHOULD NOT<104> immediately record the response, but instead wait until the user views the Meeting Response object. A client that does not support the Calendar Options Dictionary can have its own defined mechanism for allowing the user to decide whether meeting responses will be automatically recorded upon receipt of a Meeting Response object.

3.1.4.7.5.1 Deciding to Record the Response

If any one of the following conditions is met, the client does not record the response for the **attendee** on the **organizer**'s **Meeting object**:

- The **Meeting Response object** is located in the **Sent Mail folder** (see [MS-OXOSFLD]) or the Outbox **special folder** (see [MS-OXOSFLD]).
- The value of the **PidTagProcessed property** on the Meeting Response object is set to TRUE.

The client SHOULD NOT<105> record the response for the attendee when the value of the **PidLidServerProcessed** property on the Meeting Response object is set to TRUE and the **PidLidServerProcessingActions** property either does not exist or has the cpsUpdatedCalItem bit of this property set to 1. <106>

3.1.4.7.5.2 Recording the Response

When the client has decided to record the response on the **Meeting object**, it finds the **Calendar object**, as specified in section 3.1.5.1. If the **Meeting Response object** represents an **exception** to a **recurring series**, and the recurring series was found in the calendar but it does not have an **Exception Attachment object** for this **instance**, one of two actions might need to be taken:

- If the instance was previously deleted from the recurring series on the **organizer's** Meeting **object**, the client MUST NOT recreate the Exception Attachment object on the organizer's Meeting object just to record the response. Instead, the response is discarded.
- If the instance exists on the organizer's Meeting object but is not an exception, the Exception Attachment object is created on the organizer's Meeting object so that the response can be recorded.

If the Meeting Response object is found to be out of date, as specified in section 3.1.5.2, the client SHOULD<107> set the value of the PidLidPromptSendUpdate property on the Meeting Response Object to TRUE and SHOULD<108> verify that a **RecipientRow** exists for the attendee, but the response MUST NOT be recorded.

To verify that a RecipientRow exists for the attendee, the client needs to find the **RecipientRow** that corresponds to the **attendee** in the organizer's Meeting object. If the client cannot find a **RecipientRow** for the attendee, it SHOULD<109> add a **RecipientRow** for the attendee as an **optional attendee**. If a **RecipientRow** for the attendee already exists, and the value of the **PidTagRecipientTrackStatusTime property** from the **RecipientRow** is a time that is later than the value of the **PidLidAttendeeCriticalChange** property on the Meeting Response object, the response from the Meeting Response object is not recorded. <110>

To record the response, the client sets the following on the **RecipientRow**:

- The value of the **PidTagRecipientTrackStatus** property to the appropriate value from the response table specified in section 2.2.1.11, according to the **PidTagMessageClass** property on the Meeting Response object.

PidTagMessageClass	PidTagRecipientTrackStatus
"IPM.Schedule.Meeting.Resp.Pos"	respAccepted

PidTagMessageClass	PidTagRecipientTrackStatus
"IPM.Schedule.Meeting.Resp.Tent"	respTentative
"IPM.Schedule.Meeting.Resp.Neg"	respDeclined

- The value of the **PidTagRecipientTrackStatusTime** property to the value of the **PidLidAttendeeCriticalChange** property from the Meeting Response object.<111>
- T **recipExceptionalResponse** bit to 1 in the **PidTagRecipientFlags** property, if the Meeting Response object represents an exception to a recurring series.

Regardless of whether the Meeting Response object includes a new date/time proposal, additional properties might need to be set. For more details about new date/time proposals, see section 3.1.4.7.5.3 .

After recording the response, the client SHOULD<112> delete the Meeting Response object if the value of the **PidLidIsSilent** property is set to TRUE and the piAutoDeleteReceipts value in the Calendar Options Dictionary (see [MS-OXOCFG]) is set to True. A client that does not support the Calendar Options Dictionary MAY have its own defined mechanism for allowing the user to decide whether to automatically delete Meeting Response objects on which the PidLidIsSilent property is set to TRUE.

3.1.4.7.5.3 Handling New Date/Time Proposals

When the value of the **PidLidAppointmentCounterProposal property** on the **Meeting Response object** is set to TRUE, the **attendee** is proposing a new date and/or time. When this is the case, the client takes the following additional actions:

- Set the value of the **PidTagRecipientProposed** property to TRUE in the **RecipientRow** for the attendee.
- Set the value of the **PidTagRecipientProposedStartTime** property in the **RecipientRow** for the attendee equal to the value of the **PidLidAppointmentProposedStartWhole** property from the Meeting Response object.
- Set the value of the **PidTagRecipientProposedEndTime** property in the **RecipientRow** for the attendee equal to the value of the **PidLidAppointmentProposedEndWhole** property from the Meeting Response object.
- Set the value of the **PidLidAppointmentCounterProposal** property on the **organizer's Meeting object** to TRUE.
- If it is the first time this attendee has proposed a new date/time, increment the value of the **PidLidAppointmentProposalNumber** property on the organizer's Meeting object, by 0x00000001. If this property did not previously exist on the organizer's Meeting object, it MUST be set to the value of 0x00000001.

In light of the actions specified above, some actions might be required when a Meeting Response object is received without a new date/time proposal. Specifically, in the case where the attendee had previously proposed a new date/time (for example, the value of the **PidTagRecipientProposed** property in the **RecipientRow** for the attendee is already set to TRUE), and the new Meeting Response object does not have the property **PidLidAppointmentCounterProposal** set to TRUE, the client takes the following actions to undo the previous **counter proposal**:

- Set the value of the **PidTagRecipientProposed** property to FALSE in the **RecipientRow** for the Attendee.
- Decrement the value of the **PidLidAppointmentProposalNumber** property on the organizer's Meeting object by 1.
- If the value of the **PidLidAppointmentProposalNumber** property becomes zero (meaning no other attendees have new date/time proposals), set the value of the **PidLidAppointmentCounterProposal** property on the organizer's Meeting object to FALSE.

3.1.4.8 Meeting Cancellations

3.1.4.8.1 Sending a Meeting Cancellation

The **organizer** or **delegate** of the organizer sends a **Meeting Cancellation object** to inform **attendees** that they no longer need to attend the event. To do so, the client creates and submits a new Meeting Cancellation object. The client then copies all **properties** from the **Meeting object** to the Meeting Cancellation object, with the exception/addition of those specified in section 2.2.7.

The client modifies the sequence number, as specified in section 3.1.5.4.

The client sets the following on the Meeting Cancellation object:

- All the bits in the value of the **PidLidAppointmentStateFlags** property that are set in this value on the Meeting object, and the **asfReceived** and **asfCanceled** bits to 1.
- The value of the **PidLidResponseStatus** property to respNotResponded.
- The value of the **PidLidIntendedBusyStatus** property to olFree.
- The value of the **PidLidBusyStatus** property to olFree.
- The value of the **PidLidFExceptionalAttendees** property to FALSE.
- The value of the **PidLidFExceptionalBody** property to FALSE.
- The property **PidTagProcessed** MUST NOT be set.
- The value of the **PidTagSubjectPrefix** property, as specified in section 2.2.7.2.

The following optional properties are also set on the Meeting Cancellation object:

- **PidLidAllAttendeesString**, as specified in section 2.2.1.16.
- **PidLidToAttendeesString**, as specified in section 2.2.1.17.
- **PidLidCcAttendeesString**, as specified in section 2.2.1.18.
- **PidTagStartDate**, as specified in section 2.2.1.30.
- **PidTagEndDate**, as specified in section 2.2.1.31.
- If the user has not modified the value of the **PidLidReminderDelta** property from its default value (as defined by the client), the value of this property SHOULD be set to the **LONG** value 0x5AE980E1.

After successfully sending a Meeting Cancellation object, the client does the following to modify the Meeting object in the **organizer's Calendar folder**:

- Set the value of the **PidLidToAttendeesString** property equal to the value that was set on the Meeting Cancellation object.
- Set the value of the **PidLidCcAttendeesString** property equal to the value that was set on the Meeting Cancellation object.

3.1.4.8.1.1 Partial Attendee List

When the **Organizer** or **delegate** of the Organizer removes **Attendees** from the **Meeting object**, the client sends a **Meeting Cancellation object** to the Attendees that were removed, but does not send a Meeting Cancellation object to any other Attendees. If the organizer or delegate has changed the value of the **recipSendable** bit of the **PidTagRecipientFlags** property of any attendees from 1 to 0, the, the client SHOULD<113> send a cancelation to those attendees.

When sending a cancelation for a recurring series, the client removes the recipient rows corresponding to the attendees receiving cancelations from the Meeting object's recipient rows.

When sending a cancelation for an exception to a recurring series that is not a deleted exception, the client sets the **recipExceptionalDeleted** of the **PidTagRecipientFlags** property to 1 for each recipient row of the **Exception Embedded Message object** corresponding to the attendee receiving the cancelation.

3.1.4.8.1.2 Cancelling a Recurring Series

After a **Meeting Cancellation Object** is sent to all attendees for a **Recurring Series** that has **exceptions**, the client sends a Meeting Cancelation Object for each exception whose start date and time (according to the PidLidAppointmentStartWhole **property** on the **Exception**

Embedded Message Object) has not yet passed. The Meeting Cancellation Object for each exception conforms to the specifications in section 2.2.7
If the series has deleted exceptions, the client SHOULD NOT<114> send a Meeting Cancelation Object for each deleted exception the start date and time for which (according to the **DeletedInstanceDates** field of the **PidLidAppointmentRecur** property of the **Meeting Object**) has not yet passed.
After a Meeting Cancellation Object is sent to a Partial Attendee List as defined in 3.1.4.8.1.1, the client SHOULD<115> send a Meeting Cancellation for each exception whose start date and time has not yet passed to every Attendee of the Exception that is also in the Partial Attendee List. If sending a Meeting Cancellation for an exception, the client sets the recipExceptionalDeleted bit of the PidTagRecipientFlags property to 1 for each removed attendee.

3.1.4.8.2 Receiving a Meeting Cancellation

Some time after receiving a **Meeting Cancellation object**, the client decides, as specified in section 3.1.4.8.2.1, whether to update the **Meeting object** in the user's **Calendar special folder** with the information in the Meeting Cancellation object. If the client decides that the Meeting object needs to be updated, it updates the object as specified in section 3.1.4.8.2.2. If the **PiAutoProcess** value in the Calendar Options Dictionary (see [MS-OXOCFG]) is set to 0 (zero), the client SHOULD NOT<116> immediately update the Meeting object, but wait until the user views the Meeting Cancellation object. A client that does not support the Calendar Options Dictionary can have its own defined mechanism for allowing the user to decide whether Meeting objects will be automatically updated upon receipt of a Meeting Cancellation object.

3.1.4.8.2.1 Deciding to Update a Meeting Object

When a **delegator** receives a **Meeting Cancellation object**, the client MUST follow the sequencing rules described in section 3.1.5.6 before deciding to automatically update the **Meeting object**.

If any one of the following conditions is met, the client does not automatically update the Meeting object:

- The **Meeting Cancellation object** is located in the **Sent Mail folder** (see [MS-OXOSFLD]) or the Outbox **special folder** (see [MS-OXOSFLD]).
- The value of the **PidTagProcessed property** on the Meeting Cancellation object is set to TRUE.
- The client MAY<117> skip automatic updating of the Meeting object if the value of the **PidLidServerProcessed** property on the Meeting Cancellation object is set to TRUE and the **PidLidServerProcessingActions** property either does not exist or the **cpsUpdatedCalItem** bit of this property is set to 1. If the client skips automatic

updating of the Meeting object, then it MUST NOT set the **PidTagProcessed** property on the Meeting Cancellation object.

As long as the client has decided to update the Meeting object, it first tries to find the **Calendar object**, as specified in section 3.1.5.1. If the **Meeting Update object** represents an **exception** to a **recurring series**, and the recurring series was found in the calendar but the exception was previously deleted from the recurring series, the client SHOULD NOT<118> recreate the **Exception Attachment object** and the **Exception Embedded Message object** on the recurring Meeting object. If the Meeting object was not found at all, the client SHOULD NOT<119> recreate it.

If the Meeting Update object is out of date, as specified in section 3.1.5.2, the client SHOULD change the value of the **PidLidMeetingType** property on the Meeting Update object to mtgOutofDate but does not update the Meeting object. Similarly, if the Meeting Cancellation object is not newer than the Meeting object, as specified in section 3.1.5.3, the client does not update the Meeting object.

3.1.4.8.2.2 Updating the Meeting Object

To update the **Meeting object**, the client copies all the properties specified in section 2.2.1 from the **Meeting Update object** onto the Meeting object.

After updating the Meeting object, the client SHOULD set the value of the **PidTagProcessed property** to TRUE, unless the object is in a **public folder**, in which case this property is not set. <120>

3.1.4.9 Meeting Forward Notifications

3.1.4.9.1 Sending a Meeting Forward Notification

When a **Meeting Request object** is forwarded (see section 3.1.4.6.5), the client can send a **Meeting Forward Notification object** to the **organizer**. The client does not send a Meeting Forward Notification object if one of the following conditions is true:

- The **PidTagAddressType** property of the organizer's **Address Book object** is not equal to "EX"
- The **PidTagAddressType** property of the organizer's Address Book object is equal to "EX", but the **PidLidGlobalObjectId** is of type **ThirdPartyGlobalId**, as specified in [MS-OXCICAL] section 2.2.1.20.26.
- The version number returned by the server in the results from **EcDoConnectEx**, as specified in [MS-OXCRPC], is greater than or equal to 8.0.0.0.

The client SHOULD NOT<121> send a Meeting Forward Notification object if the following condition is true:

- The asfReceived bit of the **PidLidAppointmentStateFlags** property of the corresponding Meeting object is not set.

To notify the organizer of the new attendees, the client creates and submits a new Meeting Forward Notification object. The client MUST copy the following properties from the Meeting object to the Meeting Forward Notification object<122>:

- **PidNameSubject**
- **PidLidLocation**
- **PidLidWhere**
- **PidLidAppointmentSequence**
- **PidLidOwnerCriticalChange**
- **PidTagStartDate**
- **PidTagEndDate**
- **PidLidAppointmentStartWhole**
- **PidLidAppointmentEndWhole**
- **PidLidGlobalObjectId**
- **PidLidCleanGlobalObjectId**
- **PidLidIsException**
- **PidTagOwnerAppointmentId**
- **PidTagSensitivity**
- **PidTagResponseRequested**

In addition to these properties, if the forwarded Meeting Request object represents a **recurring series**, the client copies the following properties from the Meeting object to the Meeting Forward Notification object:
<123>

- **PidLidTimeZoneStruct**
- **PidLidAppointmentRecur**
- **PidLidAppointmentTimeZoneDefinitionRecur**
- **PidLidIsRecurring**
- **PidLidTimeZone**
- **PidLidTimeZoneDescription**

The client MUST also set the following on the Meeting Forward Notification object:

- The value of the **PidTagMessageClass** property, as specified in section 2.2.8.1.
- The value of the **PidTagIconIndex** property, as specified in section 2.2.1.49.
- The value of the **PidLidAttendeeCriticalChange** to the current date and time.
- The value of the **PidTagSubjectPrefix** property, as specified in section 2.2.8.2

- Increment **PidTagConversationIndex**, as specified in [MS-OXOMSG].
- The value of the **PidTagSentRepresentingName** property to the value of the **PidTagMailboxOwnerName** property from the user's mailbox (for example, a **delegate** acting on behalf of the **delegator** would write the name of the delegate).
- The value of the **PidTagSentRepresentingEntryId** property to the value of the **PidTagMailboxOwnerEntryId** property from the user's mailbox.

In addition, the client copies each RecipientRow with the recipSendable bit set in the PidTagRecipientFlags property from the forwarded Meeting Request object's RecipientRows to the **PidLidForwardNotificationRecipients** property on the Meeting Forward Notification object.

3.1.4.9.2 Receiving a Meeting Forward Notification

Some time after receiving a **Meeting Forward Notificaton object**, the client decides, as specified in section 3.1.4.7.5.1, whether to add the attendees included in the **Meeting Forward Notification Object** to the **Meeting object**. If the client decides to add the attendees to the Meeting object, it MUST do so as specified in section 3.1.4.9.2.2. If the PiAutoProcess value in the Calendar Options Dictionary (see [MS-OXOCFG]) is set to 0 (zero), then the client SHOULD NOT<124> immediately add the forwarded attendees to the Meeting object, but instead wait until the user views the Meeting Forward Notification object. A client that does not support the Calendar Options Dictionary can have its own defined mechanism for allowing the user to decide whether forwarded attendees will be copied to the Meeting object upon receipt of a Meeting Forward Notification object.

3.1.4.9.2.1 Deciding to Add the Forwarded Attendees to the Meeting Object

If any one of the following conditions is met, the client MUST NOT record the **attendee** on the **organizer**'s **Meeting object**:

- The **Meeting Forward Notification object** is located in the **Sent Mail folder** (see [MS-OXOSFLD]) or the Outbox **special folder** (see [MS-OXOSFLD]).
- The value of the **PidTagProcessed property** on the Meeting Forward Notification object is set to TRUE.
- The **cpsProcessedMeetingForwardNotification** bit of the **PidLidServerProcessingActions** property of the Meeting Forward Notification object is set to 1.

3.1.4.9.2.2 Adding the Forwarded Attendees to the Meeting Object

As long as the client has decided to add the forwarded attendees to the **Meeting object**, it MUST find the **Calendar object**, as specified in section 3.1.5.1. If the **Meeting Forward Notification object** represents an **exception** to a **recurring series**, and the recurring series

was found in the calendar but it does not have an **Exception Attachment object** for this **instance**, one of two actions might need to be taken:

- If the instance was previously deleted from the recurring series on the **organizer's** Meeting **object**, the client MUST NOT recreate the Exception Attachment object on the organizer's Meeting object just to add the attendee.
- If the instance exists on the organizer's Meeting object but is not an exception, the Exception Attachment object MUST be created on the organizer's Meeting object so that the response can be recorded.

To add the forwarded attendees to the Meeting object, the client MUST copy each **RecipientRow** in the **PidLidForwardNotificationRecipients** property of the Meeting Forward Notification object to the **RecipientRows** of the Meeting object if and only if the following conditions are met:

- The value of the RecipientRow's Recipient Type is not 0x03.
- The recipient already exists in the Meeting object's RecipientRows according to the value of the PidTagEntryId property.

If the client copies a RecipientRow and the Recipient Type of the RecipientRow is 0x01, the client MUST set the Recipient Type of the corresponding RecipientRow on the Meeting Object to 0x02.

If the Meeting Forward Notification object is out-of-date as specified in section 3.1.5.2, the client sets the value of the PidLidPromptSendUpdate property to TRUE.

After copying the forwarded attendees to the Meeting object, the client MUST set either the PidTagProcessed or PidLidServerProcessed property of the Meeting Forward Notification object to TRUE. If the client sets the PidLidServerProcessed property, the client MUST set the cpsProcessedMeetingForwardNotification bit of the PidLidServerProcessingActions of the Meeting Forward Notification Object to 1.

3.1.4.10 Determining Meeting Conflicts

To determine whether a meeting conflicts with another meeting, follow these steps:

- Build a list of meetings that are in the range. Determine the range by using the start and end date/time of the given meeting as the start and end of the range. Any meeting the end date/time for which is greater than or equal to the start date/time of the given meeting and the start date/time is less than or equal to the end date/time of the given meeting is considered to be in conflict.

- Expand any recurring meetings. For details about how to expand recurring meetings, see section 3.1.4.5. If multiple **instances** or **exceptions** fall into the range, each of them is considered as a **single instance** meeting for the purpose of this algorithm.

If the size of the list is greater than or equal to 1, the given meeting is considered to be in conflict.

3.1.5 Message Processing Events and Sequencing Rules

3.1.5.1 Finding the Calendar Object

Several actions require finding the **Calendar object** to which a **meeting-related object** is referring. To find Calendar objects, the client searches in the **Calendar special folder** of the mailbox that the event was intended for. This is typically the mailbox of the user who is logged on, but for the **delegate**, the client searches the **delegator's** folder for objects received on behalf of the delegator.

To look for the object, the client first looks for a Calendar object for which the **PidLidGlobalObjectId property** matches the value of the **PidLidCleanGlobalObjectId** property of the meeting-related object.

If the action is being applied to an **exception** to a **recurring series**, the following additional operations are required, depending on whether a matching recurring series object was found:

- If a recurring series object was found, the client attempts to find the **Exception Attachment object** within a Calendar object by comparing the value of the **PidLidExceptionReplaceTime** property from the meeting-related object with either the **PidTagExceptionReplaceTime** property on the Exception Attachment object, or the **PidLidExceptionReplaceTime** property on the **Exception Embedded Message object**. Note that the **PidTagExceptionReplaceTime** property will not always be present on the Exception Attachment object. In the case where the Exception Attachment object cannot be found, a new one can be created.
- If the recurring series object was not found, the client looks for a recurring series object the **PidLidGlobalObjectId** property for which matches the value of the **PidLidGlobalObjectId** property of the meeting-related object. This would be the case, for example, if a user has been invited only to an exception to a recurring series.

3.1.5.2 Out-of-Date Meetings

A **Meeting Request object** or **Meeting Update object** becomes out of date when a more recent version is received and processed. A **Meeting Response object** is out of date when the **attendee** responds to an older Meeting Request object or Meeting Update object, instead of the most current Meeting Update object.

This section specifies how the client can determine whether the Meeting Request object or Meeting Response object is out of date. If one of the following conditions is true, the Meeting Request object or Meeting Response object is considered to be out of date:

- The value of the **property PidLidMeetingType** on the Meeting Request object is set to mtgOutofDate.
- The **sequence number** of the **Meeting object** is greater than that of the Meeting Request object or Meeting Response object.
- The sequence number of the Meeting object is the same as that of the Meeting Request object or Meeting Response object, but the value of the **PidLidOwnerCriticalChange** property on the Meeting Request object or Meeting Response object is earlier than the value of the "Request Time" property on the Meeting object, where "Request Time" is defined as follows:

Recipient	Request Time
Organizer	**PidLidAppointmentSequenceTime**
Attendees	**PidLidOwnerCriticalChange**

- The value of the **PidLidAttendeeCriticalChange** property on the Meeting Response object is less than the value of the **PidTagRecipientTrackStatusTime** property on the **RecipientRow** of the **organizer's** Meeting object that represents the attendee.

3.1.5.3 Newer Meetings

A **Meeting Request object** or **Meeting Cancellation object** is considered to be from a newer version of the **organizer's Meeting object** than the Meeting object on the **attendee's** calendar if one of the following conditions is true:

- The sequence number on the Meeting Request object or Meeting Cancellation object is greater than the sequence number on the Meeting object.
- The sequence number on the Meeting Request object or Meeting Cancellation object equals the sequence number on the Meeting object, but the value of the **PidLidOwnerCriticalChange property** on the Meeting Request object or Meeting Cancellation object is greater than that of the Meeting object.

3.1.5.4 Incrementing the Sequence Number

When sending a Meeting Update object or Meeting Cancellation object, the client increments the sequence number except in the following cases:

- When sending a Meeting Cancellation object for a deleted exception after sending a Meeting Update object for a recurring series (See 3.1.4.6.3.5) the client does not increment the sequence number.

- When sending a Meeting Update object or Meeting Cancellation object for an exception to a recurring series, the client SHOULD<125> increment the sequence number.

If not incrementing the sequence number, the client sets the value of the **PidLidAppointmentSequence** property on the Meeting Update object or Meeting Cancellation object equal to the value of the **PidLidAppointmentLastSequence** property of the **Meeting object**

When incrementing the sequence number, the client sets the sequence number of the Meeting Update Object or Meeting Cancellation Object to a value greater than the sequence number that was set on any previous Meeting Request object, Meeting Cancellation object, or Meeting Update object. The client selects the greater of **PidLidAppointmentLastSequence** and **PidLidAppointmentSequence** properties from the Meeting object, and increment that value by 1, which results in the new sequence number. The client sets the new sequence number as the value of both the **PidLidAppointmentLastSequence** property on the Meeting object and the **PidLidAppointmentSequence** property on the Meeting Request object or the Meeting Cancellation object

If the Meeting Update object or Meeting Cancellation object is not being sent to all **attendees** of the meeting, then the client SHOULD NOT<126> set this new sequence number as the value of the **PidLidAppointmentSequence** property of the Meeting object.

3.1.5.5 Time Display Adjustments

In some cases, the client needs to make adjustments to the way in which it interprets **PidLidAppointmentStartWhole** and **PidLidAppointmentEndWhole**. Instead of interpreting these time properties as **UTC** values, a different process is followed for **floating appointments** (see section 3.1.5.5.1) and **time zone updates** (see section 3.1.5.5.2).

3.1.5.5.1 Data Interpretation for Floating Appointments

The client SHOULD<127> interpret an object as a **floating appoinmtent** if both of the following conditions are met:

- The value of **PidLidAppointmentSubType** property is TRUE
- The **asfMeeting** bit in the **PidLidAppointmentStateFlags** property is set to 0.

To correctly interpret the floating appointment the client MUST use the **TZRule** that is marked with the **TZRULE_FLAG_EFFECTIVE_TZREG** in the **PidLidAppointmentTimeZoneDefinitionStartDisplay** property to convert the values of the **PidLidAppointmentStartWhole** and **PidLidAppointmentEndWhole** properties from **UTC** to the time zone described by **PidLidAppointmentTimeZoneDefinitionStartDisplay**. The client MUST interpret these two time properties at this calculated time regardless of any

additional time zone considerations. When performing these calculations, **PidLidAppointmentTimeZoneDefinitionStartDisplay** is used for all time properties, including **PidLidAppointmentEndWhole**.

3.1.5.5.2 Data Interpretation for Time Zone Updates

The **TZRule** that is marked with the **TZRULE_FLAG_EFFECTIVE_TZREG** in the property **PidLidAppointmentTimeZoneDefinitionStartDisplay** indicates the TZRule with which the **Appointment object's** times were converted to **UTC** time when the object was created. In some cases, the time zone rule that is in effect for the given time zone will be updated after the object is created.

When the client detects that the time zone rule for the time zone specified by PidLidAppointmentTimeZoneDefinitionStartDisplay has been updated, the client SHOULD<128> continue to interpret the **PidLidAppointmentStartWhole** and **PidLidAppointmentEndWhole** so that the values occur at the same time that was specified when the object was created. For example, if a user creates an Appointment object to begin at 2pm on April 1st in a time zone that has a -8 offset from UTC, PidLidAppointmentStartWhole would have been saved as 10pm UTC. If after creating this object, the time zone specified in PidLidAppointmentTimeZoneDefinitionStartDisplay is updated such that on April 1st the time zone's offset from UTC is now -7, the object's start time MUST continue to be interpreted as 2pm when PidLidAppointmentStartWhole is converted to that same time zone. The client can detect and perform these calculations using the data specified in PidLidAppointmentTimeZoneDefinitionStartDisplay. When performing these calculations, PidLidAppointmentTimeZoneDefinitionStartDisplay is to be used for all time properties, including PidLidAppointmentEndWhole.

If the object's times are being converted to a time zone that is different than the time zone specified by PidLidAppointmentTimeZoneDefinitionStartDisplay, the client MUST first convert PidLidAppointmentStartWhole and PidLidAppointmentEndWhole from UTC time to the time zone specified by the effective TZRule, and then use the updated time zone rule to convert to an updated UTC time prior to converting the time to another time zone.

3.1.5.6 Delegator Wants Copy

A value of TRUE for the **PidTagScheduleInfoDelegatorWantsInfo** property on the **delegator**'s **Delegate Information object** indicates that the delegator only wants to be notified of **meetings** without taking action on them. When the delegator receives a **Meeting Request object** or **Meeting Cancellation object**, the client SHOULD<129> check the value of the PidTagScheduleInfoDelegatorWantsInfo property to see if it is set to TRUE unless one of the following holds true:

- The value of the PidLidMeetingType is mtgDelegatorCopy or mtgOutOfDate.

- The value of the **PidLidServerProcessed** property on the meeting-related object is TRUE and the value of the **cpsDelegatorWantsCopy** bit of the **PidLidServerProcessingActions** property on the meeting-related object is set to 1.
- The value of the **PidTagSensitivity** property (see [MS-OXCMSG]) is set to private**.**

If none of the above conditions holds true, and the client finds that the value of the PidTagScheduleInfoDelegatorWantsInfo property is TRUE, the client MUST change the value of the PidLidMeetingType property to mtgDelegatorCopy, and change the value of the PidTagIconIndex property to 0x00000409.

After checking whether or not the PidTagScheduleInfoDelegatorWantsInfo property is set to TRUE, the client MAY<130> set the **cpsDelegatorWantsCopy** bit of the **PidLidServerProcessingActions** property on the meeting-related object to 1.

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

4 Protocol Examples

4.1 Examples of Properties

4.1.1 Recurrence BLOB Examples

Included in this section are several examples of the **PidLidAppointmentRecur** recurrence **BLOB**. The data for the fields of the recurrence BLOB are stored in **little-endian** byte ordering.

4.1.1.1 Recurrence BLOB Without Exceptions

The following example shows the binary recurrence data for an **appointment** that has the following characteristics:

- Occurs every Monday, Thursday, and Friday from 10:00 A.M. to 10:30 A.M.
- The recurrence ends after 12 occurrences.

The following is the recurrence **binary large object (BLOB)**:

```
043004300B2001000000C0210000010000000000000320000002220000000C0000000000000
0000000000000000008020BC0C20ADBC0C0630000009300000580200007602000000000000000
0000000000
```

The following table lists the content of the recurrence BLOB.

Name	Type	Size	Example	Description
ReaderVersion	**WORD**	2	04 30	This field indicates version 0x3004.
WriterVersion	**WORD**	2	04 30	This field indicates version 0x3004.
RecurFrequency	**WORD**	2	0b 20	The pattern of the recurrence is weekly.
PatternType	**WORD**	2	01 00	The pattern type is Week (0x0001).
CalendarType	**WORD**	2	00 00	The calendar type is Gregorian (0x0000).
FirstDateTime	**ULONG**	4	c0 21 00 00	1. Find the first **FirstDOW** before **StartDate**: 3/25/2007 2. Calculate the number of minutes between midnight that day and midnight, January 1, 1601: 213,654,240 3. Take that value modulo **Period**×10080 (The number of minutes in a week): 8640 (0x000021C0)
Period	**ULONG**	4	01 00 00 00	The recurrence occurs every week (0x0001).
SlidingFlag	**ULONG**	4	00 00 00 00	The recurring **instances** do not rely on completion of the previous instances.

Name	Type	Size	Example	Description
PatternTypeSpecific	**Byte Array**	Varies	32 00 00 00	The recurring appointment occurs on Monday, Thursday, and Friday. The value is determined by adding together the binary value of the decimal day mask (Sunday = 2^0 = 1, Monday = 2^1 = 2, Tuesday = 2^2 = 4, and so on). Monday (0x00000002) + Thursday (0x0000010) +Friday (0x00000020) = 0x00000032
EndType	**ULONG**	4	22 20 00 00	End after N occurrences. (0x00000222)
OccurrenceCount	**ULONG**	4	0C 00 00 00	The recurrence ends after 12 occurrences. 12 decimal value = 0x0C hexadecimal value.
FirstDOW	**ULONG**	4	00 00 00 00	The first day of the week on the calendar is Sunday (the default value).
DeletedInstanceCount	**ULONG**	4	00 00 00 00	There are no deleted instances.
ModifiedInstanceCount	**ULONG**	4	00 00 00 00	There are no modified instances.
StartDate	**ULONG**	4	80 20 BC 0C	The start date of the recurrence given in minutes since midnight January 1, 1601 corresponds to March 26, 2007 12:00:00 A.M.
EndDate	**ULONG**	4	20 AD BC 0C	The end date of the recurrence given in minutes since midnight January 1, 1601 corresponds to April 20, 2007 12:00:00 A.M.
ReaderVersion2	**ULONG**	4	06 30 00 00	This field indicates version 0x00003006.

Name	Type	Size	Example	Description
WriterVersion2	**ULONG**	4	09 30 00 00	This field indicates version 0x00003009.
StartTimeOffset	**ULONG**	4	58 02 00 00	The hexadecimal start time of the recurrence is 0x00000258, which corresponds to 600 in decimal. 600 minutes is 10 hours, which is 10:00 A.M.
EndTimeOffset	**ULONG**	4	76 02 00 00	The hexadecimal end time of the recurrence is 0x000000276, which corresponds to 630 minutes, which is 10:30 A.M.
ExceptionCount	**WORD**	2	00 00	There are no exceptions in this recurrence BLOB.
ReservedBlock1Size	**ULONG**	4	00 00 00 00	There is no data in the reserved block.
ReservedBlock2Size	**ULONG**	4	00 00 00 00	There is no data in the reserved block.

4.1.1.2 Weekly Recurrence BLOB with Exceptions

The following example shows the binary recurrence data for a **meeting request**.
The meeting mequest is the same as the request that is used in section 4.1.1.1, but in this example, the following information has been changed:

- Occurs every Monday, Thursday, and Friday from 10:00 A.M. to 10:30 A.M.
- The recurrence ends after 12 occurrences.
- The subject has been changed from 'Sample Recurrence' to 'Sample Recurrence with Exception'.
- The location has been changed from 34/4639 to 34/4141.
- The start date and time has been modified from Monday 4/16/2007 10:00 A.M. to Monday 4/16/2007 11:00 A.M.
- The end date and time has been modified from Monday 4/16/2007 10:30 A.M. to Monday 4/16/2007 11:30 A.M.

The following is the recurrence **BLOB**:

```
043004300B2001000000C0210000010000000000000032000000222000000C000000000
0000001000000A096BC0C01000000A096BC0C8020BC0C20ADBC0C063000000930000058
02000076020000010034 99BC0C5299BC0CF898BC0C1100220021005 3696D706C6520526
563757272656E6365207769746820657863657074696F6E730800070033342F34313431
000000000400000000000000000000003499BC0C5299BC0CF898BC0C2100530069006D0
070006C006500200052006500630075007200720065006E006300650020007700690074
```

```
0068002000650078006300650070007400690006F006E00730007003300340002F0034003
1003400310000000000000000000
```

Size: 0x0106 bytes

The following table lists the content of the modified recurrence BLOB.

Name	Type	Size	Example	Description
ReaderVersion	**WORD**	2	04 30	
WriterVersion	**WORD**	2	04 30	
RecurFrequency	**WORD**	2	0b 20	The pattern of the recurrence is weekly.
PatternType	**WORD**	2	01 00	The pattern type is Week (0x0001).
CalendarType	**WORD**	2	00 00	The calendar type is Gregorian (0x0000).
FirstDateTime	**ULONG**	4	c0 21 00 00	1. Find the first **FirstDOW** before **StartDate**: 3/25/2007 2. Calculate the number of minutes between midnight that day and midnight, January 1, 1601: 213,654,240 3. Take that value modulo **Period**×10080 (the number of minutes in a week): 8640 (0x000021C0)
Period	**ULONG**	4	01 00 00 00	The recurrence occurs every week (0x0001).
SlidingFlag	**ULONG**	4	00 00 00 00	The recurring **instances** do not rely on completion of the previous instances.

Name	Type	Size	Example	Description
PatternTypeSpecific	**Byte Array**	Varies	32 00 00 00	The recurring appointment occurs on Monday, Thursday, and Friday. The value is determined by adding together the binary value of the decimal day mask (Sunday = 2^0 = 1, Monday = 2^1 = 2, Tuesday = 2^2 = 4, and so on). Monday (0x00000002) + Thursday (0x0000010) + Friday (0x00000020) = 0x00000032
EndType	**ULONG**	4	22 20 00 00	Ends after N occurrences. (0x00000222)
OccurrenceCount	**ULONG**	4	0C 00 00 00	The recurrence ends after 12 occurrences. 12 decimal value = 0x0C hexadecimal value.
FirstDOW	**ULONG**	4	00 00 00 00	The first day of the week on the calendar is Sunday (the default value).
DeletedInstanceCount	**ULONG**	4	01 00 00 00	There is one deleted instance.
DeletedInstanceDate	**ULONG**	4	A0 96 BC 0C	The date of the deleted instance is 4/16/2007 at 12:00:00 A.M.
ModifiedInstanceCount	**ULONG**	4	01 00 00 00	There is one modified instance.
ModifiedInstanceDate	**ULONG**	4	A0 96 BC 0C	The date of the modified or deleted instance is 4/16/2007 at 12:00:00 A.M.

Name	Type	Size	Example	Description
StartDate	**ULONG**	4	80 20 BC 0C	The start date of the recurrence given in minutes since midnight January 1, 1601 corresponds to 3/26/2007 12:00:00 A.M.
EndDate	**ULONG**	4	20 AD BC 0C	The end date of the recurrence given in minutes since midnight January 1, 1601 corresponds to 4/20/2007 12:00:00 A.M.
ReaderVersion2	**ULONG**	4	06 30 00 00	
WriterVersion2	**ULONG**	4	09 30 00 00	
StartTimeOffset	**ULONG**	4	58 02 00 00	The hexadecimal start time of the recurrence is 0x00000258, which corresponds to 600 in decimal. 600 minutes is 10 hours, which is 10:00 A.M.
EndTimeOffset	**ULONG**	4	76 02 00 00	The hexadecimal end time of the recurrence is 0x000000276, which corresponds to 630 minutes, which is 10:30 A.M.
ExceptionCount	**WORD**	2	01 00	One **exception**.
ExceptionInfo block				
StartDateTime	**ULONG**	4	34 99 BC 0C	The start date and time of the exception is 4/16/2007 at 11:00:00 A.M.

Name	Type	Size	Example	Description
EndDateTime	**ULONG**	4	52 99 BC 0C	The end date and time of the exception is 4/16/2007 at 11:30:00 A.M.
OriginalStartTime	**ULONG**	4	F8 98 BC 0C	The original start date and time of the modified occurrence was 4/16/2007 at 10:00:00 A.M.
OverrideFlags	**WORD**	2	11 00	A value of 0x0011 indicates that two override flags are present: the ARO_SUBJECT (0x0001) and ARO_LOCATION (0x0010).
SubjectLength	**WORD**	2	22 00	The length of the subject including a null terminator is 34 characters.
SubjectLength2	**WORD**	2	21 00	The length of the subject is 33 characters.
Subject	**Byte Array**	Varies	53 69 6D 70 6C 65 20 52 65 63 75 72 72 65 6E 63 65 20 77 69 74 68 20 65 78 63 65 70 74 69 6F 6E 73	"Simple Recurrence with exceptions"
LocationLength	**WORD**	2	08 00	The length of the location string including a null terminator is 8 characters.
LocationLength2	**WORD**	2	07 00	The length of the location string is 7 characters.
Location	**Byte Array**	Varies	33 34 2F 34 31 34 31	The modified location is "34/4141".

Name	Type	Size	Example	Description
ReservedBlock1Size	**ULONG**	4	00 00 00 00	There is no data in this skip block.
ExtendedException block				
ChangeHighlight	**Byte Array**	Varies	04 00 00 00 00 00 00 00	The **HighlightChange** value is zero.
ReservedBlockEE1Size	**ULONG**	4	00 00 00 00	There is no data in this skip block.
StartTime	**ULONG**	4	34 99 BC 0C	The start time of the recurrence is 4/16/2007 at 11:00:00 A.M.
EndTime	**ULONG**	4	52 99 BC 0C	The end time of the recurrence is 4/16/2007 at 11:30:00 A.M.
OriginalStartTime	**ULONG**	4	F8 98 BC 0C	The original start date and time of the recurrence was 4/16/2007 at 10:00:00 A.M.
WideCharSubjectLength	**WORD**	2	21 00	The length of the **Unicode** subject string is 33 characters.
WideCharSubject	**Byte Array**	Varies	53 00 69 00 6D 00 70 00 6C 00 65 00 20 00 52 00 65 00 63 00 75 00 72 00 72 00 65 00 6E 00 63 00 65 00 20 00 77 00 69 00 74 00 68 00 20 00 65 00 78 00 63 00 65 00 70 00 74 00 69 00 6F 00 6E 00 73 00	The modified Unicode subject is: "Simple recurrence with exceptions."
WideCharLocationLength	**WORD**	2	07 00	The Unicode location string is 7 characters.

Name	Type	Size	Example	Description
WideCharLocation	**Byte Array**	Varies	33 00 34 00 2F 00 34 00 31 00 34 00 31 00	The modified Unicode location is: "34/4141."
ReservedBlockEE2Size	**ULONG**	4	00 00 00 00	No data in this skip block.
ReservedBlock2Size	**ULONG**	4	00 00 00 00	No data in this skip block.

4.1.1.3 Daily Recurrence BLOB with Exceptions

The following example shows the binary recurrence data for an **appointment** that has the following characteristics:

- Occurs every 3 days, effective 4/7/2011 until 5/4/2011 from 8:00 A.M. to 8:30 A.M.
- The **instances** on 4/19/2011 and 4/22/2011 were deleted.

The following is the recurrence **BLOB**:

```
043004300A2000000000A0050000E01000000000000021200000A00000000000000020
00000A0C1DC0C80D2DC0C00000000207EDC0C0016DD0C06300000093000000E0010000FE
010000000000000000000000000
```

Size: 0x0054 bytes

The following table lists the content of the modified recurrence BLOB.

Name	Type	Size	Example	Description
ReaderVersion	**WORD**	2	04 30	
WriterVersion	**WORD**	2	04 30	
RecurFrequency	**WORD**	2	0A 20	The pattern of the recurrence is daily.
PatternType	**WORD**	2	00 00	The pattern type is **Day** (0x0000).
CalendarType	**WORD**	2	00 00	The calendar type is Gregorian (0x0000).
FirstDateTime	**ULONG**	4	A0 05 00 00	For a daily recurrence, this value is numerical value of **StartDate** modulo **Period**.

Name	Type	Size	Example	Description
Period	**ULONG**	4	E0 10 00 00	The recurrence occurs every 4320 minutes (3 days).
SlidingFlag	**ULONG**	4	00 00 00 00	The recurring **instances** do not rely on completion of the previous instances.
EndType	**ULONG**	4	21 20 00 00	Ends after an end date. (0x00002021)
OccurrenceCount	**ULONG**	4	0C 00 00 00	Not used.
FirstDOW	**ULONG**	4	00 00 00 00	The first day of the week on the calendar is Sunday (the default value).
DeletedInstanceCount	**ULONG**	4	02 00 00 00	There are two deleted instances.
DeletedInstanceDate	**ULONG**	4	A0 C1 DC 0C	The date of the deleted instance is 4/19/2007.
DeletedInstanceDate	**ULONG**	4	80 D2 DC 0C	The date of the deleted instance is 4/22/2007.
ModifiedInstanceCount	**ULONG**	4	00 00 00 00	There are no modified instances.
StartDate	**ULONG**	4	20 7E DC 0C	The start date of the recurrence is 4/7/2011.
EndDate	**ULONG**	4	00 16 DD 0C	The end date of the recurrence is 5/4/2011
ReaderVersion2	**ULONG**	4	06 30 00 00	
WriterVersion2	**ULONG**	4	09 30 00 00	
StartTimeOffset	**ULONG**	4	E0 01 00 00	The appointment's start time is 480 minutes past midnight or 8:00 AM.
EndTimeOffset	**ULONG**	4	FE 01 00 00	The appointment's end time is 510 minutes past midnight or 8:30 AM.
ExceptionCount	**WORD**	2	00 00	No modified **exceptions**.
ReservedBlock1Size	**ULONG**	4	00 00 00 00	There is no data in this skip block.
ReservedBlock2Size	**ULONG**	4	00 00 00 00	No data in this skip block.

4.1.1.4 N-Monthly Recurrence BLOB with Exceptions

The following example shows the binary recurrence data for an **appointment** that has the following characteristics:

- Occurs every third weekend day every 3 months starting at 2/9/2008 and ending after 10 occurrences.
- The **instance** on 5/10/2008 is moved to 5/11/2008.
- The location of the instance on 8/9/2008 is changed to "new location.".

The following is the recurrence **BLOB** for this recurrence:

```
043004300C200300000060AE0000030000000000000041000000030000002220000000A00000
00000000002000000 6028C50C4028C70C02000000002EC50C4028C70C8028C30C6027D50C06
3000000930000048030000FC0300002004831C50CFC31C50CA82BC50C0000882BC70C3C2CC
70C882BC70C10000D000C006E6577206C6F636174696F6E0000000004000000000000000000
00000400000000000000000000000882BC70C3C2CC70C882BC70C0C006E006500770020006C0
06F006300610074006900 6F006E000000000000000000
```

Size: 0x00D2 bytes

The following table lists the content of the modified recurrence BLOB.

Name	Type	Size	Example	Description
ReaderVersion	**WORD**	2	04 30	
WriterVersion	**WORD**	2	04 30	
RecurFrequency	**WORD**	2	0C 20	The pattern of the recurrence is monthly.
PatternType	**WORD**	2	03 00	The pattern type is MonthNth (0x0003).
CalendarType	**WORD**	2	00 00	The calendar type is Gregorian (0x0000).

Name	Type	Size	Example	Description
FirstDateTime	**ULONG**	4	60 AE 00 00	1. Find the first day of the month of the month of **StartDate**: 2/1/2008 2. Calculate the number of months between that midnight that day and midnight of the first day of the first month that falls in the Gregorian year of 1601: 4885 3. Take that value modulo **Period**: 1 4. Add that number of months to the first day of the first month that falls in the Gregorian year 1601. 2/1/1601 5. Calculate the number of minutes between midnight that day and midnight, January 1, 1601. 44640 (0x0000AE60)
Period	**ULONG**	4	03 00 00 00	The recurrence occurs every 3 months.
SlidingFlag	**ULONG**	4	00 00 00 00	The recurring instances do not rely on the completion of the previous instances.
PatternTypeSpecific	**Byte Array**	Varies	41 00 00 00 03 00 00 00	The recurring appointment occurs on Saturday (0x00000040) and Sunday (0x00000001). The appointment occurs on the third occurrence of these days (0x00000003).

Name	Type	Size	Example	Description
EndType	**ULONG**	4	22 20 00 00	End after *N* occurrences. (0x00000222).
OccurrenceCount	**ULONG**	4	0A 00 00 00	The recurrence ends after 10 occurrences.
FirstDOW	**ULONG**	4	00 00 00 00	The first day of the week on the calendar is Sunday (the default value).
DeletedInstanceCount	**ULONG**	4	02 00 00 00	There are two deleted instances.
DeletedInstanceDate	**ULONG**	4	60 28 C5 0C	The date of the deleted instance is 5/10/2008.
DeletedInstanceDate	**ULONG**	4	40 28 C7 0C	The date of the deleted instance is 8/9/2008.
ModifiedInstanceCount	**ULONG**	4	02 00 00 00	There are two modified instances.
ModifiedInstanceDate	**ULONG**	4	00 2E C5 0C	The date of the modified instance is 5/11/2008.
ModifiedInstanceDate	**ULONG**	4	40 28 C7 0C	The date of the modified instance is 8/9/2008.
StartDate	**ULONG**	4	80 28 C3 0C	The start date of the recurrence is 2/9/2008.
EndDate	**ULONG**	4	60 27 D5 0C	The end date of the recurrence is 5/8/2010.
ReaderVersion2	**ULONG**	4	06 30 00 00	
WriterVersion2	**ULONG**	4	09 30 00 00	
StartTimeOffset	**ULONG**	4	48 03 00 00	The appointment's start time is 840 minutes past midnight, or 2:00 P.M.
EndTimeOffset	**ULONG**	4	FC 03 00 00	The appointment's end time is 1020 minutes past midnight, or 5:00 P.M.
ExceptionCount	**WORD**	2	02 00	Two **exceptions**.
ExceptionInfo block for exception 1:				
StartDateTime	**ULONG**	4	48 31 C5 0C	The start date and time of the exception is 5/11/2008 2:00 P.M.
EndDateTime	**ULONG**	4	FC 31 C5 0C	The end time of the exception is 5/11/2008 5:00 P.M.

Name	Type	Size	Example	Description
OriginalStartTime	**ULONG**	4	A8 2B C5 0C	The original start date and time of the occurrence was 5/10/2008 2:00 P.M.
OverrideFlags	**WORD**	2	00 00	None.
ExceptionInfo block for exception 2:				
StartDateTime	**ULONG**	4	88 2B C7 0C	The start date and time of the exception is 8/9/2008 2:00 P.M.
EndDateTime	**ULONG**	4	3C 2C C7 0C	The end date and time of the exception is 8/9/2008 5:00 P.M.
OriginalStartTime	**ULONG**	4	88 2B C7 0C	The original start date and time of the occurrence was 8/9/2008 2:00 P.M.
OverrideFlags	**WORD**	2	10 00	ARO_LOCATION (0x00000010). The location has been modified.
LocationLength	**WORD**	2	0D 00	The length of the location string, including a null character, is 13.
LocationLength2	**WORD**	2	0C 00	The length of the location string is 12.
Location	**Byte Array**	Varies	6E 65 77 20 6C 6F 63 61 74 69 6F 6E	"new location"
ReservedBlock1Size	**ULONG**	4	00 00 00 00	There is no data in this skip block.
ExtendedException block for exception 1:				
ChangeHighlight	**Byte Array**	Varies	04 00 00 00 00 00 00 00	The size of the ChangeHighlight is 4. The value of the **PidLidChangeHighlight property** is zero for this exception.
ReservedBlockEE1Size	**ULONG**	4	00 00 00 00	There is no data in this skip block.
ExtendedException block for exception 2:				

Name	Type	Size	Example	Description
ChangeHighlight	**Byte Array**	Varies	04 00 00 00 00 00 00 00	The size of the ChangeHighlight is 4. The value of the **PidLidChangeHighlight** property is zero for this exception.
ReservedBlockEE1Size	**ULONG**	4	00 00 00 00	There is no data in this skip block.
StartDateTime	**ULONG**	4	88 2B C7 0C	The start date and time of the exception is 8/9/2008 2:00 P.M.
EndDateTime	**ULONG**	4	3C 2C C7 0C	The end date and time of the exception is 8/9/2008 5:00 P.M.
OriginalStartTime	**ULONG**	4	88 2B C7 0C	The original start date and time of the occurrence was 8/9/2008 2:00 P.M.
WideCharLocationLength	**WORD**	2	0C 00	The length of the exception's **Unicode** location is 12 characters.
WideCharLocation	**Byte Array**	Varies	6E 00 65 00 77 00 20 00 6C 00 6F 00 63 00 61 00 74 00 69 00 6F 00 6E 00	"new location" in Unicode.
ReservedBlockEE2Size	**ULONG**	4	00 00 00 00	No data in this skip block.
ReservedBlock2Size	**ULONG**	4	00 00 00 00	No data in this skip block.

4.1.1.5 Yearly Recurrence BLOB with Exceptions

The following example shows the binary recurrence data for an **appointment** that has the following characteristics:

- Occurs every April 19, effective 4/19/2011 from 8:00 A.M. to 8:30 A.M.
- Move the **instance** on 4/19/2012 to 4/21/2012.

The following is the recurrence **BLOB** for this recurrence:

```
043004300D200200000040FA01000C0000000000000001300000023200000A0000000000000
00100000060CCE40C01000000A0D7E40CA0C1DC0CDF80E95A0630000009300000E0010000FE
```

```
010000010080D9E40C9ED9E40C40CEE40C0000000000000400000000000000000000000000000
000
```

Size: 0x0072 bytes

The following table lists the content of the modified recurrence BLOB.

Name	Type	Size	Example	Description
ReaderVersion	**WORD**	2	04 30	
WriterVersion	**WORD**	2	04 30	
RecurFrequency	**WORD**	2	0D 20	The pattern of the recurrence is yearly.
PatternType	**WORD**	2	02 00	The pattern type is Month (0x0002).
CalendarType	**WORD**	2	00 00	The calendar type is Gregorian.

Name	Type	Size	Example	Description
FirstDateTime	**ULONG**	4	40 FA 01 00	6. Find the first day of the month of the month of **StartDate**: 4/1/2011 7. Calculate the number of months between midnight of that day and midnight of the first day of the first month that falls in the Gregorian year of 1601: 4/1/2011-1/1/1601 is 4887 months. 8. Take that value modulo **Period**: 4887 % 12 = 3. 9. Add that number of months to the first day of the first month that falls in the Gregorian year of the Gregorian year of 1601. 1/1/1601 + 3 months is 4/1/1601. 10. Calculate the number of minutes between midnight that day and midnight, January 1, 1601. 129,600 (0x0001FA40)
Period	**ULONG**	4	0C 00 00 00	The recurrence occurs every 12 months.
SlidingFlag	**ULONG**	4	00 00 00 00	The recurring instances do not rely on completion of the previous instances.
PatternTypeSpecific	**Byte Array**	Varies	13 00 00 00	The recurrence falls on the 19th of the month.
EndType	**ULONG**	4	23 20 00 00	Never ends. (0x00000232).

Name	Type	Size	Example	Description
OccurrenceCount	**ULONG**	4	0A 00 00 00	Not used.
FirstDOW	**ULONG**	4	00 00 00 00	The first day of the week on the calendar is Sunday (the default value).
DeletedInstanceCount	**ULONG**	4	01 00 00 00	There is one deleted instance.
DeletedInstanceDate	**ULONG**	4	60 CC E4 0C	The date of the deleted instance is 4/19/2012.
ModifiedInstanceCount	**ULONG**	4	01 00 00 00	There is one modified instance.
ModifiedInstanceDate	**ULONG**	4	A0 D7 E4 0C	The date of the modified instance is 4/21/2012.
StartDate	**ULONG**	4	A0 C1 DC 0C	The start date of the recurrence is 4/8/2008.
EndDate	**ULONG**	4	DF 80 E9 5A	The end date of the recurrence is never. (12/31/4500)
ReaderVersion2	**ULONG**	4	06 30 00 00	
WriterVersion2	**ULONG**	4	09 30 00 00	
StartTimeOffset	**ULONG**	4	E0 01 00 00	The appointment's start time is 480 minutes past midnight or 8:00 A.M.
EndTimeOffset	**ULONG**	4	FE 01 00 00	The appointment's end time is 510 minutes past midnight or 8:30 A.M.
ExceptionCount	**WORD**	2	01 00	One **exception**.
ExceptionInfo block for exception 1:				
StartDateTime	**ULONG**	4	80 D9 E4 0C	The start date and time of the exception is 4/21/2012 8:00 A.M.
EndDateTime	**ULONG**	4	9E D9 E4 0C	The end date and time of the exception is 4/21/2012 8:30 A.M.
OriginalStartTime	**ULONG**	4	40 CE E4 0C	The original start date and time of the occurrence was 4/19/2012 8:00 A.M.
OverrideFlags	**WORD**	2	00 00	None.
ReservedBlock1Size	**ULONG**	4	00 00 00 00	There is no data in this skip block.

Name	Type	Size	Example	Description
ExtendedException block for exception 1:				
ChangeHighlight	**Byte Array**	Varies	04 00 00 00 00 00 00 00	The size of the **ChangeHighlight** is 4. The value of the **PidLidChangeHighlight property** is zero for this exception.
ReservedBlockEE1Size	**ULONG**	4	00 00 00 00	There is no data in this skip block.
ReservedBlock2Size	**ULONG**	4	00 00 00 00	No data in this skip block.

4.1.1.6 Yearly Hebrew Lunar Recurrence BLOB with Exceptions

The following example shows the binary recurrence data for an **appointment** that has the following characteristics:

- Occurs every year on ג ניסן starting 00:8 morf ח"תשס ניסן ג' A.M. to 8:30 A.M..
- Change the busy status of the second **instance** to ""“tentative"”, make the reminder fire 60 minutes before the appointment, and change the body text.

The following is the recurrence **BLOB** for this recurrence:

```
043004300D20020080080750A000C000000000000003000002320000000A0000000000000
001000000207EDC0C01000000207EDC0C6074C40CDF80E95A0630000009300000E0010000FE
0100000100008 0DC0C1E80DC0C0080DC0C24023C0000000100000000000000400000000000
0000000000000000000
```

Size: 0x007A bytes

The following table contains the content of the modified recurrence BLOB.

Name	Type	Size	Example	Description
ReaderVersion	**WORD**	2	04 30	
WriterVersion	**WORD**	2	04 30	
RecurFrequency	**WORD**	2	0D 20	The pattern of the recurrence is yearly.
PatternType	**WORD**	2	02 00	The pattern type is **Month** (0x0002).
CalendarType	**WORD**	2	08 00	The calendar type is **CAL_HEBREW** (0x0008).

Name	Type	Size	Example	Description
FirstDateTime	**ULONG**	4	0x000A7580	Find the first day of the month of the month of StartDate: 4/6/2008 (in Gregorian) Calculate the number of months between midnight of that day and midnight of the first day of the first month that falls in the Gregorian year of 1601: 4/6/2008-9/27/1601 is 4879 months. Take that value modulo **Period**: 4879 % 12 = 7 Add that number of months to the first day of the first month that falls in the Gregorian year of the Gregorian year of 1601. 9/27/1601 + 7 Hebrew lunar months is 4/22/1602. Calculate the number of minutes between midnight of that day and midnight, January 1, 1601. 685,440 (0x000A7580)
Period	**ULONG**	4	0C 00 00 00	The recurrence occurs every 12 months.
SlidingFlag	**ULONG**	4	00 00 00 00	The recurring instances do not rely on completion of the previous instances.
PatternTypeSpecific	**Byte Array**	Varies	03 00 00 00	The recurrence falls on the third day of the month (in the Hebrew lunar calendar).

Name	Type	Size	Example	Description
EndType	**ULONG**	4	23 20 00 00	Never ends. (0x00000232).
OccurrenceCount	**ULONG**	4	0A 00 00 00	Not used.
FirstDOW	**ULONG**	4	00 00 00 00	The first day of the week on the calendar is Sunday (the default value).
DeletedInstanceCount	**ULONG**	4	01 00 00 00	There is one deleted instance.
DeletedInstanceDate	**ULONG**	4	20 7E DC 0C	The date of the deleted instance is 4/7/2011.
ModifiedInstanceCount	**ULONG**	4	01 00 00 00	There is one modified instance.
ModifiedInstanceDate	**ULONG**	4	20 7E DC 0C	The date of the modified instance is 4/7/2011.
StartDate	**ULONG**	4	60 74 C4 0C	The start date of the recurrence is 4/8/2008.
EndDate	**ULONG**	4	DF 80 E9 5A	The end date of the recurrence is never. (12/31/4500)
ReaderVersion2	**ULONG**	4	06 30 00 00	
WriterVersion2	**ULONG**	4	09 30 00 00	
StartTimeOffset	**ULONG**	4	E0 01 00 00	The appointment's start time is 480 minutes past midnight or 8:00 A.M.
EndTimeOffset	**ULONG**	4	FE 01 00 00	The appointment's end time is 510 minutes past midnight or 8:30 A.M.
ExceptionCount	**WORD**	2	01 00	One **exception**.
ExceptionInfo block:				
StartDateTime	**ULONG**	4	00 80 DC 0C	The start date and time of the exception is 4/7/2011 8:00 A.M.
EndDateTime	**ULONG**	4	1E 80 DC 0C	The end date and time of the exception is 4/7/2011 at 8:30 A.M.
OriginalStartTime	**ULONG**	4	00 80 DC 0C	The original start date and time of the occurrence was 4/7/2011 at 8:00 A.M.

Name	Type	Size	Example	Description
OverrideFlags	**WORD**	2	24 02	A value of 0x0224 indicates that the following flags are set to 1 in this **property**: ARO_BUSYSTATUS | ARO_REMINDERDELTA | ARO_EXCEPTIONAL_BODY
ReminderDelta	**ULONG**	4	3C 00 00 00	The exception's value for **PidLidReminderDelta** is 60 (0x0000003C).
BusyStatus	**ULONG**	4	01 00 00 00	The exception's value for **PidLidBusyStatus** is 1.
ReservedBlock1Size	**ULONG**	4	00 00 00 00	There is no data in this skip block.
ExtendedException block:				
ChangeHighlight	**Byte Array**	Varies	04 00 00 00 00 00 00 00	The size of the **ChangeHighlight** is 4. The value of the **PidLidChangeHighlight** property is zero for this exception.
ReservedBlockEE1Size	**ULONG**	4	00 00 00 00	There is no data in this skip block.
ReservedBlock2Size	**ULONG**	4	00 00 00 00	No data in this skip block.

4.1.2 Global Object ID Examples

This section includes examples of the **PidLidGlobalObjectId** and **PidLidCleanGlobalObjectId BLOB properties** that refer to an **exception** to a **recurring series**. The data for the fields of the **Global Obj ID BLOB** are stored in **little-endian** byte order, unless otherwise specified.

4.1.2.1 PidLidGlobalObjectId

The following is the value of the **PidLidGlobalObjectId property** for an object that represents an **exception** to a **recurring series**. The **instance** that is represented by the exception was moved from March 25, 2008 to March 26, 2008.

cb: 56

lpb:

040000008200E00074C5B7101A82E00807D803195025D461E473C8010000000000000000
100000002A5844B3A444F74A9C246C60886F116B

Name	Type	Size	Sample	Description
Identifier	**BYTE Array**	16	04 00 00 00 82 00 E0 00 74 C5 B7 10 1A 82 E0 08	This byte array identifies the **BLOB** as a Global Object ID.
Year	**WORD**	2	07 D8	The original year of the Instance represented by the exception. This value is in big-endian format instead of little-endian format. 0x07D8 (2008)
Month	**BYTE**	1	03	The original month of the **instance** represented by the **exception**. 0x03 (March)
Day	**BYTE**	1	19	The original day of the instance represented by the exception. 0x19 (25)
Creation Date	**PtypTime**	8	50 25 D4 61 E4 73 C8 01	2008/02/20 17:16:51
Reserved	**Byte Array**	8	00 00 00 00 00 00 00 00	
cbData	**LONG**	4	10 00 00 00	The length of the **Data** field. 0x00000010 (16) bytes
Data	**Byte Array**	16	2A 58 44 B3 A4 44 F7 4A 9C 24 6C 60 88 6F 11 6B	The data that uniquely identifies this **Meeting object**.

4.1.2.2 PidLidCleanGlobalObjectId

The following is the value of the **PidLidCleanGlobalObjectId property** for the **exception** from the example described in section 4.1.2.1. The only difference between these two properties is that in the clean version, the **Year**, **Month**, and **Day** fields are all 0 (zero).

cb: 56

lpb:

040000008200E00074C5B7101A82E008**00000000**5025D461E473C8010000000000000000000
100000002A5844B3A444F74A9C246C60886F116B

4.1.3 Downlevel Text for Meeting Request Body

A **Meeting Request object** can have extra body text with the date/time and location to help clients that do not understand the format, as specified in section 2.2.5.12. The following is sample text from the body of a **Meeting object**:

```
Paulo,

This Friday I feel like eating out. How about we hit our old favorite?

- Jim
```

The following shows how the body of the Meeting Request object might look to a client that does not understand the Meeting Request object format:

```
When: Thursday, February 28, 2008 12:00 PM-1:00 PM
Where: Our favorite restaurant

*~*~*~*~*~*~*~*~*~*

Paulo,

This Friday I feel like eating out. How about we hit our old favorite?

- Jim
```

4.1.4 TimeZoneDefinition BLOB

The following is an example of a **TimeZoneDefinition BLOB**.

cb: 184 (0x000000B8)
lpb:
02013000020015005000610063006900660069006300200053007400610 06E006400
610072006400200054006900 6D006500200020 13E000000D607000000000000000
0000000000000E001000000000000C4FFFFFF00000A00000005000200000000000
0000000400000001000200000000000000 2013E000200D707000000000000000000
0000000000E001000000000000C4FFFFFF00000B00000001000200000000000000
0000300000002000200000000000000

The following table shows the content of this **TimeZoneDefinition** BLOB.

Name	Type	Size	Example	Description
Major Version	**BYTE**	1	02	

Name	Type	Size	Example	Description
Minor Version	**BYTE**	1	01	
cbHeader	**WORD**	2	30 00	Header contains 48 bytes.
TimeZoneDefinition Flags	**WORD**	2	02 00	TZDEFINITION_FLAG_VALID_KEYNAME is set.
cchKeyName	**WORD**	2	15 00	KeyName has a length of 21 **Unicode** characters.
KeyName	**Unicode String, not terminated**	Varies	50 00 61 00 63 00 69 00 66 00 69 00 63 00 20 00 53 00 74 00 61 00 6E 00 64 00 61 00 72 00 64 00 20 00 54 00 69 00 6D 00 65 00	"Pacific Time"
cRules	**WORD**	2	02 00	There will be two **TZRules**.
(Beginning of first **TZRule**)				
Major Version	**BYTE**	1	02	
Minor Version	**BYTE**	1	01	
Reserved	**WORD**	2	3E 00	
TZRule Flags	**WORD**	2	00 00	This rule is not marked as the effective rule.
wYear	**WORD**	2	D6 07	This rule is applicable beginning January 1, 2006.
X	**Byte Array**	14	00 00 00 00 00 00 00 00 00 00 00 00 00 00	MUST be all zeros.
lBias	**LONG**	4	E0 01 00 00	This rule has a standard bias of 480 minutes from **UTC**.
lStandardBias	**LONG**	4	00 00 00 00	No additional bias during standard time.
lDaylightBias	**LONG**	4	C4 FF FF FF	Daylight offset of -60 from the standard bias during daylight time.

Name	Type	Size	Example	Description
stStandardDate	**SYSTEMTIME**	16	00 00 0A 00 00 00 05 00 02 00 00 00 00 00 00 00	This indicates the following **SYSTEMTIME** (in decimal): wYear: 0 wMonth: 10 wDayOfWeek: 0 wDay: 5 wHour: 2 wMinute: 0 wSecond: 0 wMilliseconds: 0 This means that the time zone will transition to standard time on the last Sunday of October at 2:00 A.M.
stDaylightDate	**SYSTEMTIME**	16	00 00 04 00 00 00 01 00 02 00 00 00 00 00 00 00	This indicates the following **SYSTEMTIME** (in decimal format): wYear: 0 wMonth: 4 wDayOfWeek: 0 wDay: 1 wHour: 2 wMinute: 0 wSecond: 0 wMilliseconds: 0 This means that the time zone will transition to daylight time on the first Sunday of April at 2:00 A.M.
(Beginning of second **TZRule**)				
Major Version	**BYTE**	1	02	
Minor Version	**BYTE**	1	01	
Reserved	**WORD**	2	3E 00	
TZRule Flags	**WORD**	2	02 00	The TZRULE_FLAG_EFFECTIVE_TZREG flag is set to indicate that this rule is the effective rule.

Name	Type	Size	Example	Description
wYear	**WORD**	2	D7 07	This rule is applicable beginning January 1, 2007.
X	**Byte Array**	14	00 00 00 00 00 00 00 00 00 00 00 00 00 00	MUST be all zeros.
lBias	**LONG**	4	E0 01 00 00	This rule has a standard bias of 480 minutes from UTC.
lStandardBias	**LONG**	4	00 00 00 00	No additional offset during standard time.
lDaylightBias	**LONG**	4	C4 FF FF FF	Offset of -60 from the standard bias during daylight time.
stStandardDate	**SYSTEMTIME**	16	00 00 0B 00 00 00 01 00 02 00 00 00 00 00 00 00	This indicates the following **SYSTEMTIME** (in decimal): wYear: 0 wMonth: 11 wDayOfWeek: 0 wDay: 1 wHour: 2 wMinute: 0 wSecond: 0 wMilliseconds: 0 This means that the time zone will transition to standard time on the first Sunday of November at 2:00 A.M.

Name	Type	Size	Example	Description
stDaylightDate	**SYSTEMTIME**	16	00 00 03 00 00 00 02 00 02 00 00 00 00 00 00 00	This indicates the following **SYSTEMTIME** (in decimal format): wYear: 0 wMonth: 3 wDayOfWeek: 0 wDay: 2 wHour: 2 wMinute: 0 wSecond: 0 wMilliseconds: 0 This means that the time zone will transition to daylight time on the second Sunday of March at 2:00 A.M.

4.1.5 PidLidTimeZoneStruct

The following is an example of a value for the **PidLidTimeZoneStruct property**.

cb: 48 (0x00000030)
lpb:
E001000000000000C4FFFFFF000000000B0000000100020000000000000000000000300000000200020000000000000000

The following table lists the content of the **PidLidTimeZoneStruct BLOB**.

Name	Type	Size	Example	Description
lBias	**LONG**	4	E0 01 00 00	This rule has a standard bias of 480 minutes from **UTC**.
lStandardBias	**LONG**	4	00 00 00 00	No additional offset during standard time.
lDaylightBias	**LONG**	4	C4 FF FF FF	Offset of -60 from the standard bias during daylight time.
wStandardYear	**WORD**	2	00 00	No year is specified, which indicates that the rule is a relative rule.

Name	Type	Size	Example	Description
stStandardDate	**SYSTEMTIME**	16	00 00 0B 00 00 00 01 00 02 00 00 00 00 00 00 00	This indicates the following **SYSTEMTIME** (in decimal format): wYear: 0 wMonth: 11 wDayOfWeek: 0 wDay: 1 wHour: 2 wMinute: 0 wSecond: 0 wMilliseconds: 0 This means that the time zone will transition to standard time on the first Sunday of November at 2:00 A.M..
wDaylightYear	**WORD**	2	00 00	No year is specified, which indicates that the rule is a relative rule.
stDaylightDate	**SYSTEMTIME**	16	00 00 03 00 00 00 02 00 02 00 00 00 00 00 00 00	This indicates the following **SYSTEMTIME** (in decimal): wYear: 0 wMonth: 3 wDayOfWeek: 0 wDay: 2 wHour: 2 wMinute: 0 wSecond: 0 wMilliseconds: 0 This means that the time zone will transition to daylight time on the second Sunday of March at 2:00 A.M.

4.1.6 Sample of PidLidTimeZone

A **PidLidTimeZone** equal to 13 would indicate that the time zone has an offset from **UTC**+12 of 20*60 minutes, or 1200 minutes from UTC+12. This time zone has a daylight saving Standard Date of {11, 0, 1, 2}, equivalent to the first Sunday of November at 2:00

A.M. It has a Daylight Date of {3, 0, 2, 2}, equivalent to the second Sunday of March at 2:00 A.M.

4.2 Examples of Objects

Before manipulating an object, the client needs to ask the server to perform a mapping from **property** names to property IDs, using **RopGetPropertyIdsFromNames**. The following properties are referenced in the examples that follow.

Property	Property set GUID	Name or ID
PidLidAppointmentSequence	{ 00062002-0000-0000-c000-000000000046}	0x8201
PidLidAppointmentSequenceTime	{ 00062002-0000-0000-c000-000000000046}	0x8202
PidLidChangeHighlight	{ 00062002-0000-0000-c000-000000000046}	0x8204
PidLidBusyStatus	{ 00062002-0000-0000-c000-000000000046}	0x8205
PidLidAppointmentAuxiliaryFlags	{ 00062002-0000-0000-c000-000000000046}	0x8207
PidLidLocation	{ 00062002-0000-0000-c000-000000000046}	0x8208
PidLidAppointmentStartWhole	{ 00062002-0000-0000-c000-000000000046}	0x820D
PidLidAppointmentEndWhole	{ 00062002-0000-0000-c000-000000000046}	0x820E
PidLidAppointmentDuration	{ 00062002-0000-0000-c000-000000000046}	0x8213
PidLidAppointmentColor	{ 00062002-0000-0000-c000-000000000046}	0x8214
PidLidAppointmentSubType	{ 00062002-0000-0000-c000-000000000046}	0x8215
PidLidAppointmentRecur	{ 00062002-0000-0000-c000-000000000046}	0x8216
PidLidAppointmentStateFlags	{ 00062002-0000-0000-c000-000000000046}	0x8217
PidLidResponseStatus	{ 00062002-0000-0000-c000-000000000046}	0x8218
PidLidAppointmentReplyTime	{ 00062002-0000-0000-c000-000000000046}	0x8220
PidLidRecurring	{ 00062002-0000-0000-c000-000000000046}	0x8223

Property	Property set GUID	Name or ID
PidLidIntendedBusyStatus	{ 00062002-0000-0000-c000-000000000046}	0x8224
PidLidFInvited	{ 00062002-0000-0000-c000-000000000046}	0x8229
PidLidAppointmentReplyName	{ 00062002-0000-0000-c000-000000000046}	0x8230
PidLidRecurrenceType	{ 00062002-0000-0000-c000-000000000046}	0x8231
PidLidRecurrencePattern	{ 00062002-0000-0000-c000-000000000046}	0x8232
PidLidTimeZoneStruct	{ 00062002-0000-0000-c000-000000000046}	0x8233
PidLidTimeZoneDescription	{ 00062002-0000-0000-c000-000000000046}	0x8234
PidLidClipStart	{ 00062002-0000-0000-c000-000000000046}	0x8235
PidLidClipEnd	{ 00062002-0000-0000-c000-000000000046}	0x8236
PidLidAllAttendeesString	{ 00062002-0000-0000-c000-000000000046}	0x8238
PidLidAutoFillLocation	{ 00062002-0000-0000-c000-000000000046}	0x823A
PidLidToAttendeesString	{ 00062002-0000-0000-c000-000000000046}	0x823B
PidLidCcAttendeesString	{ 00062002-0000-0000-c000-000000000046}	0x823C
PidLidAppointmentNotAllowPropose	{ 00062002-0000-0000-c000-000000000046}	0x825A
PidLidAppointmentTimeZoneDefinitionStartDisplay	{ 00062002-0000-0000-c000-000000000046}	0x825E
PidLidAppointmentTimeZoneDefinitionEndDisplay	{ 00062002-0000-0000-c000-000000000046}	0x825F
PidLidAppointmentTimeZoneDefinitionRecur	{ 00062002-0000-0000-c000-000000000046}	0x8260
PidLidExceptionReplaceTime	{ 00062002-0000-0000-c000-000000000046}	0x8228
PidLidFExceptionalAttendees	{ 00062002-0000-0000-c000-000000000046}	0x822B
PidLidFExceptionalBody	{ 00062002-0000-0000-c000-000000000046}	0x8206
PidLidReminderDelta	{ 00062008-0000-0000-c000-000000000046}	0x8501

Property	Property set GUID	Name or ID
PidLidReminderTime	{ 00062008-0000-0000-c000-000000000046}	0x8502
PidLidReminderSet	{ 00062008-0000-0000-c000-000000000046}	0x8503
PidLidReminderSignalTime	{ 00062008-0000-0000-c000-000000000046}	0x8504
PidLidPrivate	{ 00062008-0000-0000-c000-000000000046}	0x8506
PidLidSideEffects	{ 00062008-0000-0000-c000-000000000046}	0x8510
PidLidCommonStart	{ 00062008-0000-0000-c000-000000000046}	0x8516
PidLidCommonEnd	{ 00062008-0000-0000-c000-000000000046}	0x8517
PidLidAttendeeCriticalChange	{6ed8da90-450b-101b-98da-00aa003f1305}	0x0001
PidLidWhere	{6ed8da90-450b-101b-98da-00aa003f1305}	0x0002
PidLidGlobalObjectId	{6ed8da90-450b-101b-98da-00aa003f1305}	0x0003
PidLidIsSilent	{6ed8da90-450b-101b-98da-00aa003f1305}	0x0004
PidLidIsRecurring	{6ed8da90-450b-101b-98da-00aa003f1305}	0x0005
PidLidIsException	{6ed8da90-450b-101b-98da-00aa003f1305}	0x000A
PidLidTimeZone	{6ed8da90-450b-101b-98da-00aa003f1305}	0x000C
PidLidOwnerCriticalChange	{6ed8da90-450b-101b-98da-00aa003f1305}	0x001A
PidLidCalendarType	{6ed8da90-450b-101b-98da-00aa003f1305}	0x001C
PidLidCleanGlobalObjectId	{6ed8da90-450b-101b-98da-00aa003f1305}	0x0023
PidLidAppointmentMessageClass	{6ed8da90-450b-101b-98da-00aa003f1305}	0x0024
PidLidMeetingType	{6ed8da90-450b-101b-98da-00aa003f1305}	0x0026
PidLidOldLocation	{6ed8da90-450b-101b-98da-00aa003f1305}	0x0028
PidLidOldWhenEndWhole	{6ed8da90-450b-101b-98da-00aa003f1305}	0x0029

Property	Property set GUID	Name or ID
PidLidOldWhenStartWhole	{6ed8da90-450b-101b-98da-00aa003f1305}	0x002A

It is up to the server to keep track of, and return, the actual mapping. The following mapping values will be used in each of the examples in this section, as if the server had returned these values.

Property	Property ID
PidLidAppointmentSequence	0x81AF
PidLidAppointmentSequenceTime	0x82E7
PidLidChangeHighlight	0x82EC
PidLidBusyStatus	0x81B6
PidLidAppointmentAuxiliaryFlags	0x82D2
PidLidLocation	0x8009
PidLidAppointmentStartWhole	0x81B2
PidLidAppointmentEndWhole	0x81AC
PidLidAppointmentDuration	0x81A9
PidLidAppointmentColor	0x82CA
PidLidAppointmentSubType	0x8120
PidLidAppointmentRecur	0x81AD
PidLidAppointmentStateFlags	0x81B3
PidLidResponseStatus	0x8122
PidLidAppointmentReplyTime	0x8139
PidLidRecurring	0x81FD
PidLidIntendedBusyStatus	0x81E2
PidLidFInvited	0x81DA
PidLidAppointmentReplyName	0x81AE
PidLidRecurrenceType	0x81FE
PidLidRecurrencePattern	0x81FC
PidLidTimeZoneStruct	0x8214
PidLidTimeZoneDescription	0x8213
PidLidClipStart	0x81BA
PidLidClipEnd	0x81B9
PidLidAllAttendeesString	0x81A8
PidLidAutoFillLocation	0x82E8
PidLidToAttendeesString	0x82D9

Property	Property ID
PidLidCcAttendeesString	0x82DA
PidLidAppointmentNotAllowPropose	0x82D5
PidLidAppointmentTimeZoneDefinitionStartDisplay	0x83Aa8
PidLidAppointmentTimeZoneDefinitionEndDisplay	0x83A9
PidLidAppointmentTimeZoneDefinitionRecur	0x83AA
PidLidExceptionReplaceTime	0x83AC
PidLidFExceptionalAttendees	0x82D7
PidLidFExceptionalBody	0x82D8
PidLidReminderDelta	0x81FF
PidLidReminderTime	0x8005
PidLidReminderSet	0x8004
PidLidReminderSignalTime	0x8006
PidLidPrivate	0x82EF
PidLidSideEffects	0x8002
PidLidCommonStart	0x81BC
PidLidCommonEnd	0x81BB
PidLidAttendeeCriticalChange	0x81B5
PidLidWhere	0x8219
PidLidGlobalObjectId	0x81E0
PidLidIsSilent	0x81E6
PidLidIsRecurring	0x81E5
PidLidIsException	0x81E4
PidLidTimeZone	0x8212
PidLidOwnerCriticalChange	0x8128
PidLidCalendarType	0x81B7
PidLidCleanGlobalObjectId	0x81B8
PidLidAppointmentMessageClass	0x8311
PidLidMeetingType	0x8314
PidLidOldLocation	0x8316
PidLidOldWhenEndWhole	0x83CD
PidLidOldWhenStartWhole	0x83CC

4.2.1.1 Appointment Example

After making a dentist appointment for 10:00 A.M. (Pacific Daylight Time) on May 1, 2009, Mindy decides to set the information in her **Calendar folder** so that she will not forget about it. The appointment is an hour long, and she wants to be reminded about it half an hour before

it happens. She wants to treat this as a private appointment, which indicates to a client to hide the details from other people. The following is a description of what a client might do to accomplish Mindy's intentions and the responses a server might return.

To create an **Appointment object**, the client uses **RopCreateMessage**. The server returns a success code and a **handle** to a **Message object**.

The client then uses **RopSetProperties** to transmit Mindy's data to the server.The following table shows an example of the data that might be sent by the client.

Property	Property ID	Property type	Value
PidTagMessageClass	0x001a	0x001f (**PtypString**)	IPM.Appointment
PidTagIconIndex	0x1080	0x0003 (**PtypInteger32**)	0x00000400
PidTagSensitivity	0x0036	0x0003 (**PtypInteger32**)	0x00000002 (SENSITIIVITY_PRIVATE)
PidLidPrivate	0x82ef	0x000b (**PtypBoolean**)	0x01 (TRUE)
PidLidSideEffects	0x8002	0x0003 (**PtypInteger32**)	0x00000171
PidLidCommonStart	0x81bc	0x0040 (**PtypTime**)	0x01c9ca7e43442800 (2009/05/01 17:00:00.000)
PidLidCommonEnd	0x81bb	0x0040 (**PtypTime**)	0x01c9ca86a5089000 (2009/05/01 18:00:00.000)
PidLidReminderSet	0x8004	0x000b (**PtypBoolean**)	0x01 (TRUE)
PidLidReminderDelta	0x81ff	0x0003 (**PtypInteger32**)	0x0000001E (30)

Property	Property ID	Property type	Value
PidLidReminderTime	0x8005	0x0040 (**PtypTime**)	0x01c9ca7e43442800 (2009/05/01 17:00:00.000)
PidLidReminderSignalTime	0x8006	0x0040 (**PtypTime**)	0x01c9ca7a1261f400 (2009/05/01 16:30:00.000)
PidLidBusyStatus	0x81b6	0x0003 (**PtypInteger32**)	0x00000002 (olBusy)
PidLidLocation	0x8009	0x001f (**PtypString**)	My Dentist's Office
PidLidAppointmentColor	0x82ca	0x0003 (**PtypInteger32**)	0x00000000
PidLidAppointmentStateFlags	0x81b3	0x0003 (**PtypInteger32**)	0x00000000
PidLidAppointmentAuxiliaryFlags	0x82d2	0x0003 (**PtypInteger32**)	0x00000000
PidLidAppointmentSubType	0x8120	0x000b (**PtypBoolean**)	0x00 (FALSE)
PidLidResponseStatus	0x8122	0x0003 (**PtypInteger32**)	0x00000000 (respNone)
PidLidFInvited	0x81da	0x000b (**PtypBoolean**)	0x00 (FALSE)
PidLidAppointmentDuration	0x81a9	0x0003 (**PtypInteger32**)	0x0000003C (60)
PidLidAppointmentStartWhole	0x81b2	0x0040 (**PtypTime**)	0x01c9ca7e43442800 (2009/05/01 17:00:00.000)
PidLidAppointmentEndWhole	0x81ac	0x0040 (**PtypTime**)	0x01c9ca86a5089000 (2009/05/01 18:00:00.000)

Property	Property ID	Property type	Value
PidLidClipStart	0x81ba	0x0040 (**PtypTime**)	0x01c9ca7e43442800 (2009/05/01 17:00:00.000)
PidLidClipEnd	0x81b9	0x0040 (**PtypTime**)	0x01c9ca86a5089000 (2009/05/01 18:00:00.000)
PidLidRecurrenceType	0x81fe	0x0003 (**PtypInteger32**)	0x00000000
PidLidRecurring	0x81fd	0x000b (**PtypBoolean**)	0x00 (FALSE)
PidLidTimeZoneDescription	0x8213	0x001f (**PtypString**)	(GMT-08:00) Pacific Time (US & Canada)
PidLidAppointmentTimeZoneDefinitionStartDisplay	0x83a8	0x0102 (**PtypBinary**)	*1
PidLidAppointmentTimeZoneDefinitionEndDisplay	0x83a9	0x0102 (**PtypBinary**)	*1
PidLidGlobalObjectId	0x81e0	0x0102 (**PtypBinary**)	*2
PidLidCleanGlobalObjectId	0x81b8	0x0102 (**PtypBinary**)	*2

*1 = The start and end dates for this **appointment** are both set in the same time zone. See section 4.1.4 for an example of this **TimeZoneDefinition BLOB**. The time zone data for this appointment is as follows:

cb: 184

lpb:
02013000020015005000610063006900660069006300200053007400610 06E00640061007200640020005400690 06D006500200020 02013E000000D607000000000000000000000000000000E001000000000000C4FFFFFF00000A00000005000200000000000000000400000001000200000000000000002013E000200D70700000000000000000000000000E001000000000000C4FFFFFF00000B00000001000200000000000000000300000002000200000000000000

*2 = This Appointment is a **single instance** so the value of the **PidLidGlobalObjectId** and **PidLidCleanGlobalObjectId** properties are the same. See section 4.1.2 for an example ofthe Global Obj ID BLOB. The following is the value for this appointment:

cb: 56

lpb:
040000008200E00074C5B7101A82E0080000000020631F30F072C8010000000000000010000000D97737CAB6762A43BFF793851D08DB16

After setting all property values, the client can use **RopSaveChangesMessage** to commit the properties on the server. Without this , the newly created object will not be persisted. The server returns a success code that indicates that the data has been accepted.

Finally, the client uses **RopRelease** to release the handle that the server had returned from the initial **RopCreateMessage**.

4.2.1.2 Meeting Example

Mr. Glen John needs to set up a weekly half-hour meeting with a newly hired employee named Mr. Dennis Saylor. Mr. John likes to have meetings with team members on Tuesdays, and he is available at 10:30 A.M. The following sections provide a description of what a client might do to accomplish these tasks and the responses a server might return.

4.2.1.2.1 Creating the Meeting

To create the **Meeting object**, the client uses **RopCreateMessage**. The server returns a success code and a **handle** to a Message object.

The client then uses **RopSetProperties** to transmit Mr. John's data to the server. The following table shows an example of the data that might be sent by the client.

Property	Property ID	Property type	Value
PidTagNormalizedSubject	0x0E1D	0x001F (**PtypString**)	Weekly Meeting
PidTagSubjectPrefix	0x003D	0x001F (**PtypString**)	
PidLidBusyStatus	0x81B6	0x0003 (**PtypInteger32**)	0x00000002 (2)
PidLidAppointmentColor	0x82CA	0x0003 (**PtypInteger32**)	0x00000000 (0)

Property	Property ID	Property type	Value
PidLidLocation	0x8009	0x001F (**PtypString**)	Your Office
PidLidRecurring	0x81FD	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidLidAppointmentStartWhole	0x81B2	0x0040 (**PtypTime**)	0x01C878A5984A4400 (2008/02/26 18:30:00.000)
PidLidAppointmentEndWhole	0x81AC	0x0040 (**PtypTime**)	0x01C878A9C92C7800 (2008/02/26 19:00:00.000)
PidLidAppointmentDuration	0x81A9	0x0003 (**PtypInteger32**)	0x0000001E (30)
PidLidAppointmentAuxiliaryFlags	0x82D2	0x0003 (**PtypInteger32**)	0x00000000 (0)
PidLidAppointmentSubType	0x8120	0x000B (**PtypBoolean**)	0x00 (FALSE)
PidLidAppointmentStateFlags	0x81B3	0x0003 (**PtypInteger32**)	0x00000001 (1)
PidLidResponseStatus	0x8122	0x0003 (**PtypInteger32**)	0x00000001 (respOrganized)
PidLidAppointmentNotAllowPropose	0x82D5	0x000B (**PtypBoolean**)	0x00 (FALSE)
PidLidFInvited	0x81DA	0x000B (**PtypBoolean**)	0x00 (FALSE)
PidLidRecurrenceType	0x81FE	0x0003 (**PtypInteger32**)	0x00000002 (2)
PidLidRecurrencePattern	0x81FC	0x001F (**PtypString**)	Every Tuesday from 10:30 A.M. to 11:00 A.M.
PidLidTimeZoneDescription	0x8213	0x001F (**PtypString**)	(GMT-08:00) Pacific Time (US & Canada)

Property	Property ID	Property type	Value
PidLidClipStart	0x81BA	0x0040 (**PtypTime**)	0x01C8784D95BC0000 (2008/02/26 08:00:00.000)
PidLidClipEnd	0x81B9	0x0040 (**PtypTime**)	0x0CB2E57949B47A00 (4500/08/31 23:59:00.000)
PidLidToAttendeesString	0x82D9	0x001F (**PtypString**)	desaylor
PidLidAppointmentSequence	0x81AF	0x0003 (**PtypInteger32**)	0x00000000 (0)
PidLidAutoFillLocation	0x82E8	0x000B (**PtypBoolean**)	0x00 (FALSE)
PidLidReminderDelta	0x81FF	0x0003 (**PtypInteger32**)	0x0000000F (15)
PidLidReminderTime	0x8005	0x0040 (**PtypTime**)	0x01C878A5984A4400 (2008/02/26 18:30:00.000)
PidLidReminderSignalTime	0x8006	0x0040 (**PtypTime**)	0x01C878A37FD92A00 (2008/02/26 18:15:00.000)
PidLidCommonStart	0x81BC	0x0040 (**PtypTime**)	0x01C878A5984A4400 (2008/02/26 18:30:00.000)
PidLidCommonEnd	0x81BB	0x0040 (**PtypTime**)	0x01C878A9C92C7800 (2008/02/26 19:00:00.000)
PidLidReminderSet	0x8004	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidLidSideEffects	0x8002	0x0003 (**PtypInteger32**)	0x00000171 (369)
PidLidMeetingType	0x8314	0x0003 (**PtypInteger32**)	0x00000001 (1)

Property	Property ID	Property type	Value
PidTagMessageClass	0x001A	0x001F (**PtypString**)	IPM.Appointment
PidTagResponseRequested	0x0063	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidTagIconIndex	0x1080	0x0003 (**PtypInteger32**)	0x00000403 (1027)
PidLidTimeZoneStruct	0x8214	0x0102 (**PtypBinary**)	*1
PidLidAppointmentTimeZoneDefinitionRecur	0x83AA	0x0102 (**PtypBinary**)	*2
PidLidAppointmentTimeZoneDefinitionStartDisplay	0x83A8	0x0102 (**PtypBinary**)	*3
PidLidAppointmentTimeZoneDefinitionEndDisplay	0x83A9	0x0102 (**PtypBinary**)	*3
PidLidGlobalObjectId	0x81E0	0x0102 (**PtypBinary**)	*4
PidLidCleanGlobalObjectId	0x81B8	0x0102 (**PtypBinary**)	*4
PidLidAppointmentRecur	0x81AD	0x0102 (**PtypBinary**)	*5
Best Body Properties	A body stream, the text of which was written by Mr. John, that indicates to Mr. Saylor the purpose of the meeting. See [MS-OXBBODY] for details.		

*1 = See section 4.1.5 for an example of the **PidLidTimeZoneStruct BLOB**. The following is the value for this Meeting object:

cb: 48

lpb:
E001000000000000C4FFFFFF000000000B0000000100020000000000000000000000300000002000200000000000000

*2 = The **PidLidAppointmentTimeZoneDefinitionRecur** dates for this **appointment** are both set in the same time zone. See section 4.1.4 for an example of the **TimeZoneDefinition** BLOB. The only difference between this BLOB and that in **PidLidAppointmentTimeZoneDefinitionStartDisplay**/**PidLidAppointmentTimeZoneDefinitionEndDisplay** is that the TZRULE_FLAG_RECUR_CURRENT_TZREG flag is set in this BLOB. The following is the value for this Meeting Object:

cb: 184

lpb:
02013000020015005000610063006900660069006300200053007400610 06E006400
610072006400200054006900 6D006500020002013E000000D607000000000000000
0000000000000E001000000000000C4FFFFFF00000A00000005000200000000000000
000000400000001000200000000000000002013E000300D707000000000000000000
0000000000E001000000000000C4FFFFFF00000B00000001000200000000000000000
000030000000200020000000000000

*3 = The start and end dates for this appointment are both set in the same time zone. See section 4.1.4 for a an example of the **TimeZoneDefinition** BLOB. The following is the value for this Meeting object:

cb: 184

lpb:
02013000020015005000610063006900660069006300200053007400610 06E006400
610072006400200054006900 6D006500020002013E000000D607000000000000000
0000000000000E001000000000000C4FFFFFF00000A00000005000200000000000000
000000400000001000200000000000000002013E000200D707000000000000000000
0000000000E001000000000000C4FFFFFF00000B00000001000200000000000000000
000030000000200020000000000000

*4 = This Meeting object is a **recurring series**, so the value of the **PidLidGlobalObjectId** and **PidLidCleanGlobalObjectId** properties are the same. See section 4.1.2 for a an example of the Global Obj ID BLOB. The following is the value for this Meeting object:

cb: 56

lpb:
040000008200E00074C5B7101A82E00800000000406FD661E473C8010000000000
000000100000002A5844B3A444F74A9C246C60886F116B

*5 = Section 4.1.1.2 shows an example of the Recurrence BLOB for a Weekly recurring meeting. The following is the value for this Meeting object:

cb: 80

lpb:

043004300B2001000000C0210000010000000000000040000002320000000A00000
0000000000000000000000000002088C30CDF80E95A0630000009300000760200009
4020000000000000000000000000

The client uses **RopModifyRecipients** to add Dennis Saylor to the Meeting object, including the extra properties listed in the following table.

Property	Property ID	Property type	Value
PidTagRecipientFlags	0x5FFD	0x0003 (**PtypInteger32**)	0x00000201 (513)
PidTagRecipientTrackStatus	0x5FFF	0x0003 (**PtypInteger32**)	0x00000000 (0)

After setting all property values, the client can use **RopSaveChangesMessage** to commit the properties on the server. Without these properties, the newly created object will not be persisted. The server returns a success code that indicates that the data has been accepted.

4.2.1.2.2 Sending the Meeting Request

The client needs to use **RopCreateMessage** to create a new **Meeting Request object** in the Outbox **special folder** so that **attendees** can be notified of the event. The server returns a success code and a **handle** to a new **Message object**.

Next, the client uses **RopSetProperties** to set on this new Meeting Request object all the properties that were set on the **Meeting object** as described in section 4.2.1.2.1, except for the following:

- **PidLidBusyStatus**
- **PidLidAppointmentStateFlags**
- **PidLidResponseStatus**
- **PidLidFInvited**
- **PidLidAppointmentSequence**
- **PidLidAutoFillLocation**
- **PidLidReminderDelta***
- **PidLidReminderSignalTime***
- **PidLidSideEffects**
- **PidTagMessageClass**
- **PidTagIconIndex**
- **Best Body Properties**

* = The values of these reminder properties are not copied because the **organizer** kept the default reminder values. Instead, special values will be set on the Meeting Request object so that the receiving client uses default values that the **attendee** has defined.

In addition to the values that were already on the Meeting object, the client uses **RopSetProperties** to put the **property** values listed in the following table onto the Meeting Request object.

Property	Property ID	Property type	Value
PidTagMessageClass	0x001A	0x001F (**PtypString**)	IPM.Schedule.Meeting.Request
PidTagIconIndex	0x1080	0x0003 (**PtypInteger32**)	0xFFFFFFFF (-1)
PidTagStartDate	0x0060	0x0040 (**PtypTime**)	0x01C878A5984A4400 (2008/02/26 18:30:00.000)
PidTagEndDate	0x0061	0x0040 (**PtypTime**)	0x01C878A9C92C7800 (2008/02/26 19:00:00.000)
PidTagOwnerAppointmentId	0x0062	0x0003 (**PtypInteger32**)	0x4D9427D8 (1301555160)
PidLidBusyStatus	0x81B6	0x0003 (**PtypInteger32**)	0x00000001 (olTentative)
PidLidIntendedBusyStatus	0x81E2	0x0003 (**PtypInteger32**)	0x00000002 (olBusy)
PidLidAppointmentStateFlags	0x81B3	0x0003 (**PtypInteger32**)	0x00000003 (3)
PidLidResponseStatus	0x8122	0x0003 (**PtypInteger32**)	0x00000005 (respNotResponded)
PidLidFInvited	0x81DA	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidLidAllAttendeesString	0x81A8	0x001F (**PtypString**)	desaylor
PidLidAppointmentSequence	0x81AF	0x0003 (**PtypInteger32**)	0x00000000 (0) If this had been an update, the sequence number would have been incremented.
PidLidChangeHighlight	0x82EC	0x0003 (**PtypInteger32**)	0x00000000 (0)
PidLidReminderDelta	0x81FF	0x0003 (**PtypInteger32**)	0x5AE980E1 (1525252321)
PidLidReminderSignalTime	0x8006	0x0040 (**PtypTime**)	0x01C878A5984A4400 (2008/02/26 18:30:00.000)

Property	Property ID	Property type	Value
PidLidSideEffects	0x8002	0x0003 (**PtypInteger32**)	0x00001C61 (7265)
PidLidAttendeeCriticalChange	0x81B5	0x0040 (**PtypTime**)	0x01C874276FF4F450 (2008/02/21 01:16:51.093)
PidLidWhere	0x8219	0x001F (**PtypString**)	Your Office
PidLidAppointmentMessageClass	0x8311	0x001F (**PtypString**)	IPM.Appointment
PidLidIsRecurring	0x81E5	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidLidIsException	0x81E4	0x000B (**PtypBoolean**)	0x00 (FALSE)
PidLidTimeZone	0x8212	0x0003 (**PtypInteger32**)	0x0000000D (13)
PidLidCalendarType	0x81B7	0x0003 (**PtypInteger32**)	0x00000001 (1)
PidLidOwnerCriticalChange	0x8128	0x0040 (**PtypTime**)	0x01C874276FF4F450 (2008/02/21 01:16:51.093)
Best Body Properties	A body stream, the text of which is the downlevel text, as specified in section 2.2.5.12, followed by a copy of the body text from the Meeting object.		

In addition to these properties, the client needs to use **RopSetProperties** to add all properties that are required to send a Message object, as specified in [MS-OXOMSG], to the Meeting Request object so that it can be delivered to the attendee. This client also needs to use **RopModifyRecipients** to add a **RecipientRow** for Mr. Saylor to the Meeting Request object.

After the Meeting Request object has been created and filled in, it will be sent instead of saved. The client uses **RopSubmitMessage** to send this Message object for transport.

After the server returns a success code from submission, the client makes the changes listed in the following table to the Meeting object on Mr. John's calendar by using **RopSetProperties**.

Property	Property ID	Property type	Value
PidLidFInvited	0x81DA	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidLidAppointmentSequence	0x81AF	0x0003 (**PtypInteger32**)	0x00000000 (0)

Property	Property ID	Property type	Value
PidLidAppointmentSequenceTime	0x82E7	0x0040 (**PtypTime**)	0x01C874276FF4F450 (2008/02/21 01:16:51.093)
PidLidAttendeeCriticalChange	0x81B5	0x0040 (**PtypTime**)	0x0CB34557A3DD4000 (4501/01/01 00:00:00.000)
PidLidOwnerCriticalChange	0x8128	0x0040 (**PtypTime**)	0x01C874276FF4F450 (2008/02/21 01:16:51.093)
PidTagOwnerAppointmentId	0x0062	0x0003 (**PtypInteger32**)	0x4D9427D8 (1301555160)

Finally, the client issues **RopSaveChangesMessage** to save these changes to the **organizer's** Meeting object, and then releases both the Meeting and Meeting Request objects by using a **RopRelease** for each.

4.2.1.2.3 Receiving the Meeting Request

After receiving the **Meeting Request object**, a client might tentatively add a **Meeting object** to the **Calendar special folder** in Mr. Saylor's mailbox.

To accomplish this task, the client uses **RopOpenMessage** <131> to obtain a **handle** to the Meeting Request object, and **RopCreateMessage** to create a Meeting object in the Calendar special folder. The server returns a handle to each of these objects, along with appropriate success codes.

Next, the client uses **RopSetProperties** to set, on this new Meeting object, all the **properties** that were set on the Meeting Request object as described in section 4.2.1.2.2, except for the following:

- **PidTagMessageClass**
- **PidTagIconIndex**
- **PidLidChangeHighlight**
- **PidLidReminderDelta**
- **PidLidReminderSignalTime**
- **PidLidSideEffects**
- Best Body properties

In addition to the values that were already on the Meeting object, the client uses **RopSetProperties** to put the property values listed in the following table onto the Meeting object.

Property	Property ID	Property type	Value

Property	Property ID	Property type	Value
PidLidReminderDelta	0x81FF	0x0003 (**PtypInteger32**)	0x0000000F (15) The default value for this client, given that the value on the Meeting Request object was 0x5AE980E1.
PidLidReminderSignalTime	0x8006	0x0040 (**PtypTime**)	0x01C878A37FD92A00 (2008/02/26 18:15:00.000)
PidTagMessageClass	0x001A	0x001F (**PtypString**)	IPM.Appointment
PidTagIconIndex	0x1080	0x0003 (**PtypInteger32**)	0x00000403 (1027)
PidLidChangeHighlight	0x82EC	0x0003 (**PtypInteger32**)	0x00000E1F (3615)
PidLidSideEffects	0x8002	0x0003 (**PtypInteger32**)	0x00000171 (369)
Best Body properties	The client can look for and remove the downlevel text, as specified in section 2.2.5.12, before copying the text stream onto the new Meeting object.		

The client needs to set the recipients on the Meeting object by using **RopModifyRecipients**. The recipients are obtained from the **RecipientRows** of the Meeting Request object, as well as the **PidLidAppointmentUnsendableRecipients** property. In addition, if the **organizer** (in this case, Mr. John) is not in the list of recipients, his information is obtained from the **PidTagSentRepresenting*** properties and added as a **RecipientRow**.

After setting all property values, the client can use **RopSaveChangesMessage** to commit the properties on the server. Without this, the newly created object will not be persisted. The server returns a success code that indicates that the data has been accepted.

The client sets the following property on the Meeting Request object by using **RopSetProperties**, followed by **RopSaveChangesMessage**.

Property	Property ID	Property type	Value
PidTagProcessed	0x7D01	0x000B (**PtypBoolean**)	0x01 (TRUE)

Finally, the client uses **RopRelease** to release the **handle** of the Meeting object and Meeting Request object.

4.2.1.2.4 Accepting the Meeting Request

After receiving the **Meeting Request object** that was, Mr. Dennis Saylor decides he will attend the meeting with Mr. Glen John. The client needs to send a **Meeting Response object** back to Mr. John so that he knows that Mr. Saylor will be in attendance.
To accomplish this task, the client uses **RopOpenMessage** to obtain a **handle** to the tentative **Meeting object**, and **RopCreateMessage** to create a Meeting object in the **Calendar special folder**. The server returns a handle to each of these objects, along with appropriate success codes.

The client uses **RopCopyTo** to copy all **properties** from the tentative Meeting object to the new Meeting object. The properties listed in the following table are then modified on the new Meeting object by using **RopSetProperties**.

Property	Property ID	Property type	Value
PidLidAppointmentMessageClass	0x8311	0x001F (**PtypString**)	IPM.Appointment
PidLidBusyStatus	0x81B6	0x0003 (**PtypInteger32**)	0x00000002 (olBusy)
PidLidResponseStatus	0x8122	0x0003 (**PtypInteger32**)	0x00000003 (respAccepted)
PidLidAppointmentReplyTime	0x8139	0x0040 (**PtypTime**)	0x01C87427BCCA9A00 (2008/02/21 01:19:00.000)
PidLidAppointmentReplyName	0x81AE	0x001F (**PtypString**)	desaylor

The client uses **RopSaveChangesMessage** to persist the new Meeting object in Mr. Saylor's Calendar special folder. It releases a handle to the tentative Meeting object by using **RopRelease**, and then deletes the tentative Meeting object by using **RopDeleteMessages**.

Now the client needs to respond to the **organizer**. It uses **RopCreateMessage** to create a new Meeting Response object in the Outbox **special folder**. The server returns a success code and a handle to a new Message object.

The client uses **RopGetPropertiesSpecific** on the Meeting object and then uses **RopSetProperties** to copy, onto this new Meeting Response object, the value of the following properties that were on the Meeting object:

- **PidTagNormalizedSubject**
- **PidLidBusyStatus**
- **PidLidAppointmentColor**
- **PidLidLocation**

- **PidLidRecurring**
- **PidLidAppointmentStartWhole**
- **PidLidAppointmentEndWhole**
- **PidLidAppointmentTimeZoneDefinitionStartDisplay**
- **PidLidAppointmentTimeZoneDefinitionEndDisplay**
- **PidLidAppointmentDuration**
- **PidLidAppointmentAuxiliaryFlags**
- **PidLidAppointmentSubType**
- **PidLidAppointmentRecur**
- **PidLidRecurrenceType**
- **PidLidRecurrencePattern**
- **PidLidTimeZoneStruct**
- **PidLidAppointmentTimeZoneDefinitionRecur**
- **PidLidTimeZoneDescription**
- **PidLidClipStart**
- **PidLidClipEnd**
- **PidLidAppointmentSequence**
- **PidLidCommonStart**
- **PidLidCommonEnd**
- **PidLidWhere**
- **PidLidGlobalObjectId**
- **PidLidCleanGlobalObjectId**
- **PidLidAppointmentMessageClass**
- **PidLidIsRecurring**
- **PidLidIsException**
- **PidLidTimeZone**
- **PidLidCalendarType**
- **PidLidOwnerCriticalChange**
- **PidTagStartDate**
- **PidTagEndDate**
- **PidTagOwnerAppointmentId**

In addition to the values that were already on the Meeting object, the client uses **RopSetProperties** to put the property values listed in the following table onto the Meeting Response object.

Property	Property ID	Property type	Value
PidTagMessageClass	0x001A	0x001F (**PtypString**)	IPM.Schedule.Meeting.Resp.Pos

Property	Property ID	Property type	Value
PidTagSubjectPrefix	0x003D	0x001F (**PtypString**)	Accepted:
PidLidSideEffects	0x8002	0x0003 (**PtypInteger32**)	0x00001C61 (7265)
PidLidAttendeeCriticalChange	0x81B5	0x0040 (**PtypTime**)	0x01C87427BF62AA00 (2008/02/21 01:19:04.352)
PidLidIsSilent	0x81E6	0x000B (**PtypBoolean**)	0x01 (TRUE)

The client adds the organizer by using **RopModifyRecipients**, and then sends the object via **RopSubmit**. After the server returns a success code from submission, the client releases both the Meeting object and the Meeting Response objects with a **RopRelease** for each.

4.2.1.2.5 Receiving the Meeting Response

When Mr. John receives Mr. Saylor's response, the response can be recorded on the **Meeting object** in Mr. John's **Calendar special folder**.

To accomplish this task, the client issues **RopOpenMessage** to get a **handle** to the object, and **RopGetPropertiesSpecific** to get the **PidTagMessageClass property**. The server returns a handle to the **Meeting Response object** and the value for this property, which is "IPM.Schedule.Meeting.Resp.Pos."

After seeing that this is a Meeting Response object, the client issues the **RopOpenMessage** for the Meeting object in the Calendar special folder. The server returns a handle for the Meeting object. The server also returns the set of **RecipientRows** as a result of opening the object. These **RecipientRows** need to be stored in an in-memory recipient cache so that they can be manipulated and then later replace those on the Meeting object.

The client uses **RopGetPropertiesSpecific** to get the following properties from the **Meeting Request object**, the values of which are returned by the server:

- **PidTagSentRepresentingSearchKey**
- **PidTagSentRepresentingName**
- **PidTagSenderSearchKey**
- **PidTagSenderName**
- **PidLidAttendeeCriticalChange**

If the **PidTagSentRepresentingSearchKey** and **PidTagSentRepresentingName** properties are available, these are used for searching for the **RecipientRow**. Otherwise, the

PidTagSenderSearchKey and **PidTagSenderName** properties are used. The client looks through the **RecipientRows**, first attempting to find a **PidTagSearchKey** that matches the **PidTagSentRepresentingSearchKey** (or **PidTagSenderSearchKey**). If no match is found, then the client attempts to match the **PidTagDisplayName** property from the **RecipientRow** with **PidTagSentRepresentingName** (or **PidTagSenderName**).

If a **RecipientRow** is not found, a new one with **Recipient Type RECIP_CC** is added to the in-memory recipient cache to represent this **attendee**. The following table lists the extra properties that are added to the in-memory **RecipientRow** that represents this attendee.

Property	Property ID	Property type	Value
PidTagRecipientTrackStatus	0x5FFF	0x0003 (**PtypInteger32**)	0x00000003 (respAccepted)
PidTagRecipientTrackStatusTime	0x5FFB	0x0040 (**PtypTime**)	0x01C87427BCCA9A00 (2008/02/21 01:19:00.000)*

* = The value of the **PidLidAttendeeCriticalChange** property is rounded down to the nearest minute, then set as the value of the **PidTagRecipientTrackStatusTime** property.

The client uses **RopRemoveAllRecipients** to delete all the recipients from the Meeting object, and then uses **RopModifyRecipients** to copy the in-memory recipient cache back onto the Message object.

The client sets the property listed in the following table on the Meeting Request object by using **RopSetProperties**, followed by **RopSaveChangesMessage**.

Property	Property ID	Property type	Value
PidTagProcessed	0x7D01	0x000B (**PtypBoolean**)	0x01 (TRUE)

Finally, the client releases both the Meeting object and Meeting Response object by using **RopRelease**.

4.2.1.2.6 Creating and Sending the Exception

Mr. John will be out of the office one Tuesday, and therefore wants to move that **instance** to a Wednesday. He creates an **exception** for this instance, adds some comments in the object body as to why it is being changed, and then sends a **Meeting Update object** to notify Mr. Saylor of the new date.

To accomplish this task, the client uses **RopOpenMessage** to open the **Meeting object** from Mr. John's **Calendar special folder**, to which the server returns a success code and a **handle** to the Meeting object.

The data for the exception is written to an **Embedded Message object** in an **Attachment object** on the **Meeting object**. A client first uses **RopCreateAttachment** to create the Attachment object. A server returns a success code and a handle to the new Attachment object. The **property** listed in the following table is set on the Attachment object.

Property	Property ID	Property type	Value
PidTagAttachMethod	0x3705	0x0003 (**PtypInteger32**)	0x00000005 (ATTACH_EMBEDDED_MSG)

After setting the attachment method, the client uses **RopOpenEmbeddedMessage** with the OpenModeFlag of Create (see [MS-OXCMSG]) to request a new Embedded Message object from the Attachment object. The server returns a success code and a handle to the new Embedded Message object. The client then uses **RopSetProperties** to set the properties listed in the following table on the **Exception Embedded Message object**.

Property	Property ID	Property type	Value
PidTagMessageClass	0x001A	0x001F (**PtypString**)	IPM.OLE.CLASS.{00061055-0000-0000-C000-000000000046}
PidLidBusyStatus	0x81B6	0x0003 (**PtypInteger32**)	0x00000002 (2)
PidLidAppointmentStartWhole	0x81B2	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidLidAppointmentEndWhole	0x81AC	0x0040 (**PtypTime**)	0x01C88F6B3562D000 (2008/03/26 18:00:00.000)
PidLidAppointmentTimeZoneDefinitionStartDisplay	0x83A8	0x0102 (**PtypBinary**)	*1
PidLidAppointmentTimeZoneDefinitionEndDisplay	0x83A8	0x0102 (**PtypBinary**)	*1
PidLidAppointmentDuration	0x81A9	0x0003 (**PtypInteger32**)	0x0000001E (30)
PidLidAppointmentSubType	0x8120	0x000B (**PtypBoolean**)	0x00 (FALSE)
PidLidExceptionReplaceTime	0x83AC	0x0040 (**PtypTime**)	0x01C88E9DDA16DC00 (2008/03/25 17:30:00.000)
PidLidFInvited	0x81DA	0x000B (**PtypBoolean**)	0x01 (TRUE)

Property	Property ID	Property type	Value
PidLidFExceptionalBody	0x82D8	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidLidClipStart	0x81BA	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidLidClipEnd	0x81B9	0x0040 (**PtypTime**)	0x01C88F6B3562D000 (2008/03/26 18:00:00.000)
PidLidToAttendeesString	0x82D9	0x001F (**PtypString**)	desaylor
PidLidReminderTime	0x8005	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidLidCommonStart	0x81BC	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidLidCommonEnd	0x81BB	0x0040 (**PtypTime**)	0x01C88F6B3562D000 (2008/03/26 18:00:00.000)
PidLidOwnerCriticalChange	0x8128	0x0040 (**PtypTime**)	0x01C874289289D700 (2008/02/21 01:24:58.608)
PidLidMeetingType	0x8314	0x0003 (**PtypInteger32**)	0x00010000 (65536)
PidTagStartDate	0x0060	0x0040 (**PtypTime**)	0x01C88E9DDA16DC00 (2008/03/25 17:30:00.000)
PidTagEndDate	0x0061	0x0040 (**PtypTime**)	0x01C88EA20AF91000 (2008/03/25 18:00:00.000)
PidTagOwnerAppointmentId	0x0062	0x0003 (**PtypInteger32**)	0x4D9427D8 (1301555160)
Best Body Properties	A body stream, the text of which was written by Mr. John. See [MS-OXBBODY] for details.		

*1 = The start and end dates for this **appointment** are both set in the same time zone. See section 4.1.4 for a description of the **TimeZoneDefinition BLOB**. The following is the value for this exception (and is the same as the associated Meeting object):

cb: 184

lpb:
02013000020015005000610063006900660069006300200053007400610 06E00640061007200640020005400690 06D006500200020 02013E000000D607000000000000000000000000000000E001000000000000C4FFFFFF00000A00000005000200000000000000000400000001000200000000000000002013E000200D70700000000000000000000000000E001000000000000C4FFFFFF00000B00000001000200000000000000000300000002000200000000000000

The client uses **RopModifyRecipients** to add all the recipients from the Meeting object onto the Exception Embedded Message object, and then saves the new Exception Embedded

Message object by using **RopSaveChangesMessage**, to which the server returns success codes.

The client uses **RopSetProperties** to set the properties listed in the following tableon the **Exception Attachment object** (not the Exception Embedded Message object).

Property	Property ID	Property type	Value
PidTagExceptionStartTime	0x7FFB	0x0040 (**PtypTime**)	0x01C88F2C5821C400 (2008/03/26 10:30:00.000)
PidTagExceptionEndTime	0x7FFC	0x0040 (**PtypTime**)	0x01C88F308903F800 (2008/03/26 11:00:00.000)
PidTagExceptionReplaceTime	0x7FF9	0x0040 (**PtypTime**)	0x01C88E9DDA16DC00 (2008/03/25 17:30:00.000)
PidTagAttachmentFlags	0x7FFD	0x0003 (**PtypInteger32**)	0x00000002 (afException)
PidTagAttachmentHidden	0x7FFE	0x000B (**PtypBoolean**)	0x01 (TRUE)

The client uses **RopSaveChangesAttachment** to save the changes to the Attachment object.

The client needs to use **RopCreateMessage** to create a new **Meeting Request object** in the Outbox **special folder** so that **attendees** can be notified of the change. The server returns a success code and a handle to a new Message object.

Next, the client uses **RopSetProperties** to set the properties listed in the following tableon this new Meeting Request object.

Property	Property ID	Property type	Value
PidTagMessageClass	0x001A	0x001F (**PtypString**)	IPM.Schedule.Meeting.Request
PidLidBusyStatus	0x81B6	0x0003 (**PtypInteger32**)	0x00000001 (1)
PidLidAppointmentColor	0x82CA	0x0003 (**PtypInteger32**)	0x00000000 (0)
PidLidIntendedBusyStatus	0x81E2	0x0003 (**PtypInteger32**)	0x00000002 (2)
PidLidLocation	0x8009	0x001F (**PtypString**)	Your Office

Property	Property ID	Property type	Value
PidLidRecurring	0x81FD	0x000B (**PtypBoolean**)	0x00 (FALSE)
PidLidAppointmentStartWhole	0x81B2	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidLidAppointmentEndWhole	0x81AC	0x0040 (**PtypTime**)	0x01C88F6B3562D000 (2008/03/26 18:00:00.000)
PidLidTimeZoneStruct	0x8214	0x0102 (**PtypBinary**)	*1
PidLidAppointmentTimeZoneDefinitionStartDisplay	0x83A8	0x0102 (**PtypBinary**)	*2
PidLidAppointmentTimeZoneDefinitionEndDisplay	0x83A9	0x0102 (**PtypBinary**)	*2
PidLidAppointmentTimeZoneDefinitionRecur	0x83AA	0x0102 (**PtypBinary**)	*3
PidLidAppointmentDuration	0x81A9	0x0003 (**PtypInteger32**)	0x0000001E (30)
PidLidAppointmentAuxiliaryFlags	0x82D2	0x0003 (**PtypInteger32**)	0x00000000 (0)
PidLidAppointmentSubType	0x8120	0x000B (**PtypBoolean**)	0x00 (FALSE)
PidLidAppointmentStateFlags	0x81B3	0x0003 (**PtypInteger32**)	0x00000003 (3)
PidLidResponseStatus	0x8122	0x0003 (**PtypInteger32**)	0x00000005 (respNotResponded)
PidLidAppointmentNotAllowPropose	0x82D5	0x000B (**PtypBoolean**)	0x00 (FALSE)
PidLidFExceptionalAttendees	0x82D7	0x000B (**PtypBoolean**)	0x00 (FALSE)
PidLidFExceptionalBody	0x82D8	0x000B (**PtypBoolean**)	0x00 (FALSE)
PidLidRecurrenceType	0x81FE	0x0003 (**PtypInteger32**)	0x00000002 (2)
PidLidRecurrencePattern	0x81FC	0x001F (**PtypString**)	Every Tuesday from 10:30 A.M. to 11:00 A.M.
PidLidTimeZoneDescription	0x8213	0x001F (**PtypString**)	(GMT-08:00) Pacific Time (US & Canada)
PidLidClipStart	0x81BA	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidLidClipEnd	0x81B9	0x0040 (**PtypTime**)	0x01C88F6B3562D000 (2008/03/26 18:00:00.000)

Property	Property ID	Property type	Value
PidLidAllAttendeesString	0x81A8	0x001F (**PtypString**)	desaylor
PidLidToAttendeesString	0x82D9	0x001F (**PtypString**)	desaylor
PidLidAppointmentSequence	0x81AF	0x0003 (**PtypInteger32**)	0x00000000 (0)
PidLidAppointmentSequenceTime	0x82E7	0x0040 (**PtypTime**)	0x01C874276FF4F450 (2008/02/21 01:16:51.093)
PidLidChangeHighlight	0x82EC	0x0003 (**PtypInteger32**)	0x00000083 (131)
PidLidReminderDelta	0x81FF	0x0003 (**PtypInteger32**)	0x5AE980E1 (1525252321)
PidLidReminderTime	0x8005	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidLidReminderSignalTime	0x8006	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidLidCommonStart	0x81BC	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidLidCommonEnd	0x81BB	0x0040 (**PtypTime**)	0x01C88F6B3562D000 (2008/03/26 18:00:00.000)
PidLidReminderSet	0x8004	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidLidSideEffects	0x8002	0x0003 (**PtypInteger32**)	0x00001C61 (7265)
PidLidAttendeeCriticalChange	0x81B5	0x0040 (**PtypTime**)	0x01C8742891F14080 (2008/02/21 01:24:57.608)
PidLidWhere	0x8219	0x001F (**PtypString**)	Your Office
PidLidGlobalObjectId	0x81E0	0x0102 (**PtypBinary**)	*4
PidLidCleanGlobalObjectId	0x81B8	0x0102 (**PtypBinary**)	*5
PidLidAppointmentMessageClass	0x8311	0x001F (**PtypString**)	IPM.Appointment
PidLidIsRecurring	0x81E5	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidLidIsException	0x81E4	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidLidTimeZone	0x8212	0x0003 (**PtypInteger32**)	0x0000000D (13)

Property	Property ID	Property type	Value
PidLidCalendarType	0x81B7	0x0003 (**PtypInteger32**)	0x00000001 (1)
PidLidOwnerCriticalChange	0x8128	0x0040 (**PtypTime**)	0x01C874289289D700 (2008/02/21 01:24:58.608)
PidLidMeetingType	0x8314	0x0003 (**PtypInteger32**)	0x00010000 (65536)
PidLidOldLocation	0x8316	0x001F (**PtypString**)	(null)
PidLidOldWhenStartWhole	0x83CC	0x0040 (**PtypTime**)	0x01C88E9DDA16DC00 (2008/03/25 17:30:00.000)
PidLidOldWhenEndWhole	0x83CD	0x0040 (**PtypTime**)	0x01C88EA20AF91000 (2008/03/25 18:00:00.000)
PidTagResponseRequested	0x0063	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidTagStartDate	0x0060	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidTagEndDate	0x0061	0x0040 (**PtypTime**)	0x01C88F6B3562D000 (2008/03/26 18:00:00.000)
PidTagOwnerAppointmentId	0x0062	0x0003 (**PtypInteger32**)	0x4D9427D8
Best Body Properties	A body stream, the text of which is the downlevel text, as specified in section 2.2.5.12, followed by a copy of the body text from the Exception Embedded Message object.		

*1 = See section 4.1.5 for a description of the **PidLidTimeZoneStruct BLOB**. The following is the value for this Meeting Request object:

cb: 48

lpb:
E001000000000000C4FFFFFF000000000B0000000100020000000000000000000000300000002000200000000000000

*2 = The **PidLidAppointmentTimeZoneDefinitionRecur** dates for this **appointment** are both set in the same time zone. See section 4.1.4 for a description of the **TimeZoneDefinition**

BLOB. The only difference between this BLOB and that in **PidLidAppointmentTimeZoneDefinitionStartDisplay**/**PidLidAppointmentTimeZoneDefinitionEndDisplay** is that the TZRULE_FLAG_RECUR_CURRENT_TZREG flag is set in this BLOB. The following is the value for this Meeting Request object:

cb: 184

lpb:
02013000020015005000610063006900660069006300200053007400610 06E006400610072006400200540069006D006500020002013E000000D607000000000000000000000000000E001000000000000C4FFFFFF00000A00000005000200000000000000000400000001000200000000000000002013E000300D707000000000000000000000000000E001000000000000C4FFFFFF00000B00000001000200000000000000000300000002000200000000000000

*3 = The start and end dates for this appointment are both set in the same time zone. See section 4.1.4 for a description of the **TimeZoneDefinition** BLOB. The following is the value for this Meeting Request object:

cb: 184

lpb:
02013000020015005000610063006900660069006300200053007400610 06E006400610072006400200540069006D006500020002013E000000D607000000000000000000000000000E001000000000000C4FFFFFF00000A00000005000200000000000000000400000001000200000000000000002013E000200D707000000000000000000000000000E001000000000000C4FFFFFF00000B00000001000200000000000000000300000002000200000000000000

*4 = The following is the value of the **PidLidGlobalObjectId** for this Meeting Request object. See section 4.1.2 for a description of the Global Obj ID BLOB.

cb: 56

lpb:
040000008200E00074C5B7101A82E00807D803195025D461E473C801000000000000000100000002A5844B3A444F74A9C246C60886F116B

*5 = The following is the value of the **PidLidCleanGlobalObjectId** for this Meeting Request object. This is identical to the value of the **PidLidGlobalObjectId** property, except that the **Year**, **Month**, and **Day** fields are filled with zeros.

cb: 56

lpb:
040000008200E00074C5B7101A82E008000000005025D461E473C8010000000000
000000100000002A5844B3A444F74A9C246C60886F116B

In addition to these properties, the client needs to use **RopSetProperties** to add all properties that are required to send a Message object, as specified in [MS-OXOMSG], to the Meeting Request object so that it can be delivered to the **attendee**. This client also needs to use **RopModifyRecipients** to add a **RecipientRow** for Mr. Saylor to the Meeting Request object.

Now that the Meeting Request object has been created and filled in, it will be sent instead of saved. The client uses **RopSubmitMessage** to send this Message object for transport.

The client makes the changes listed in the following table to the Meeting object (the object that represents the **recurring series**) on Mr. John's calendar by using **RopSetProperties**.

Property	Property ID	Property type	Value
PidLidAppointmentRecur	0x81AD	0x0102 (**PtypBinary**)	*1
PidLidFExceptionalAttendees	0x82D7	0x000B (**PtypBoolean**)	0x01 (TRUE)

*1 = The value of the **PidLidAppointmentRecur** property will include necessary information about this new exception. The following is the new value for this Meeting object:

cb: 114

lpb:
043004300B2001000000C0210000010000000000000040000002320000000A00000
000000000010000000A025C40C01000000402BC40C2088C30CDF80E95A0630000
009300000760200009402000001 00B62DC40CD42DC40C1628C40C000200000000
040000000000000000000000000000000

Finally, the client issues **RopSaveChangesMessage** to save the Meeting object that represents the recurring series, and then uses **RopRelease** to release all handles (Embedded Message, Attachment, Meeting, and **Meeting Request objects**).

4.2.1.2.7 Accepting the Exception

After receiving the **Meeting Update object**, Mr. Dennis Saylor decides that the change will still work with his schedule. The **Calendar object** in Mr. Saylor's **Calendar folder** needs to be updated, and a **Meeting Response object** needs to be sent back to Mr. John.

To accomplish this task, the client uses **RopOpenMessage** to open the Meeting Update object to which the server returns a success code and a **handle**. The client uses **RopGetPropertiesSpecific** to get at least the following properties: **PidTagOwnerAppointmentId**, **PidLidGlobalObjectId**, and **PidLidCleanGlobalObjectId**.

The client uses **RopGetContentsTable** to open the contents table of the **Calendar special folder**. The server returns a handle to the contents table. The client sets at least the following column set on the contents table by using **RopSetColumns**:

- **PidTagMid**
- **PidTagOwnerAppointmentId**
- **PidLidGlobalObjectId**

The Meeting Update object in this example has a value for the **PidTagOwnerAppointmentId property**, so the client uses **RopSortTable** to sort the contents table in ascending order of this property. The client then uses **RopFindRow** to find the first matching table row. The server returns a success code with the first matching row, or returns an error code if a matching row was not found.

For each matching row, the client compares the value of the **PidLidCleanGlobalObjectId** property from the Meeting Update object with the value of the **PidLidGlobalObjectId** property in the row, until a match is found.<132> After finding a matching row, the client issues **RopOpenMessage** by using the value of the **PidTagMid** property from that row to open the **Meeting object**, to which the server returns a success code and a handle.

Having obtained the **recurring series**, the client tries to find the **Exception Attachment object**. The client uses **RopGetAttachmentTable** to open the list of attachments. The client uses **RopSetColumns** to set at least the following columns on this table:

- **PidTagAttachMethod**
- **PidTagAttachmentFlags**
- **PidTagAttachNumber**
- **PidTagExceptionReplaceTime**

The client uses **RopQueryRows** to loop through the rows in the attachment table, attempting to find the matching Exception Attachment object. If the value of the **PidTagAttachmentFlags** property in a row does not include the afException flag, the attachment does not represent an **exception**. To find the matching Exception Attachment object, the client uses the values of the **Day**, **Month**, and **Year** fields of the

PidLidGlobalObjectId property on the Meeting Update object to compute the replace date/time, and looks for an Exception Attachment object with a matching value.<133>

In this example, an Exception Attachment object does not exist, so the client uses **RopCreateAttachment** to create a new one, to which the server returns a success code and a handle. The client uses **RopSetProperties** to set the following property on the **Attachment object**.

Property	Property ID	Property type	Value
PidTagAttachMethod	0x3705	0x0003 (**PtypInteger32**)	0x00000005 (ATTACH_EMBEDDED_MSG)

After setting the attachment method, the client uses **RopOpenEmbeddedMessage** with the OpenModeFlag of Create (see [MS-OXCMSG]) to request a new **Embedded Message object** from the Attachment object. The server returns a success code and a handle to the new Embedded Message object. The client then uses **RopSetProperties** to set the properties listed in the following table on the **Exception Embedded Message object**, as copied from the **Meeting Request object**:

Property	Property ID	Property type	Value
PidTagMessageClass	0x001A	0x001F (**PtypString**)	IPM.OLE.CLASS.{00061055-0000-0000-C000-000000000046}
PidTagSubjectPrefix	0x003D	0x001F (**PtypString**)	
PidTagNormalizedSubject	0x0E1D	0x001F (**PtypString**)	Weekly Meeting
PidLidBusyStatus	0x81B6	0x0003 (**PtypInteger32**)	0x00000001 (olTentative)
PidLidIntendedBusyStatus	0x81E2	0x0003 (**PtypInteger32**)	0x00000002 (olBusy)
PidLidLocation	0x8009	0x001F (**PtypString**)	Your Office
PidLidRecurring	0x81FD	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidLidAppointmentStartWhole	0x81B2	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidLidAppointmentEndWhole	0x81AC	0x0040 (**PtypTime**)	0x01C88F6B3562D000 (2008/03/26 18:00:00.000)

Property	Property ID	Property type	Value
PidLidTimeZoneStruct	0x8214	0x0102 (**PtypBinary**)	*1
PidLidAppointmentTimeZoneDefinitionStartDisplay	0x83A8	0x0102 (**PtypBinary**)	*2
PidLidAppointmentTimeZoneDefinitionEndDisplay	0x83A9	0x0102 (**PtypBinary**)	*2
PidLidAppointmentTimeZoneDefinitionRecur	0x83AA	0x0102 (**PtypBinary**)	*3
PidLidAppointmentDuration	0x81A9	0x0003 (**PtypInteger32**)	0x0000001E (30)
PidLidAppointmentAuxiliaryFlags	0x82D2	0x0003 (**PtypInteger32**)	0x00000000 (0)
PidLidAppointmentSubType	0x8120	0x000B (**PtypBoolean**)	0x00 (FALSE)
PidLidAppointmentStateFlags	0x81B3	0x0003 (**PtypInteger32**)	0x00000003 (3)
PidLidResponseStatus	0x8122	0x0003 (**PtypInteger32**)	0x00000005 (respNotResponded)
PidLidAppointmentNotAllowPropose	0x82D5	0x000B (**PtypBoolean**)	0x00 (FALSE)
PidLidExceptionReplaceTime	0x83AC	0x0040 (**PtypTime**)	0x01C88E9DDA16DC00 (2008/03/25 17:30:00.000)
PidLidFInvited	0x81DA	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidLidFExceptionalAttendees	0x82D7	0x000B (**PtypBoolean**)	0x00 (FALSE)
PidLidFExceptionalBody	0x82D8	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidLidRecurrenceType	0x81FE	0x0003 (**PtypInteger32**)	0x00000002 (2)
PidLidRecurrencePattern	0x81FC	0x001F (**PtypString**)	Every Tuesday from 10:30 A.M. to 11:00 A.M.
PidLidTimeZoneDescription	0x8213	0x001F (**PtypString**)	(GMT-08:00) Pacific Time (US & Canada)
PidLidClipStart	0x81BA	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidLidClipEnd	0x81B9	0x0040 (**PtypTime**)	0x01C88F6B3562D000 (2008/03/26 18:00:00.000)

Property	Property ID	Property type	Value
PidLidAllAttendeesString	0x81A8	0x001F (**PtypString**)	desaylor
PidLidToAttendeesString	0x82D9	0x001F (**PtypString**)	desaylor
PidLidAppointmentSequence	0x81AF	0x0003 (**PtypInteger32**)	0x00000000 (0)
PidLidAppointmentSequenceTime	0x82E7	0x0040 (**PtypTime**)	0x01C874276FF4F450 (2008/02/21 01:16:51.093)
PidLidChangeHighlight	0x82EC	0x0003 (**PtypInteger32**)	0x00000083 (131)
PidLidReminderTime	0x8005	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidLidCommonStart	0x81BC	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidLidCommonEnd	0x81BB	0x0040 (**PtypTime**)	0x01C88F6B3562D000 (2008/03/26 18:00:00.000)
PidLidAttendeeCriticalChange	0x81B5	0x0040 (**PtypTime**)	0x01C8742891F14080 (2008/02/21 01:24:57.608)
PidLidWhere	0x8219	0x001F (**PtypString**)	Your Office
PidLidGlobalObjectId	0x81E0	0x0102 (**PtypBinary**)	*4
PidLidCleanGlobalObjectId	0x81B8	0x0102 (**PtypBinary**)	*5
PidLidAppointmentMessageClass	0x8311	0x001F (**PtypString**)	IPM.Appointment
PidLidIsRecurring	0x81E5	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidLidIsException	0x81E4	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidLidTimeZone	0x8212	0x0003 (**PtypInteger32**)	0x0000000D (13)
PidLidCalendarType	0x81B7	0x0003 (**PtypInteger32**)	0x00000001 (CAL_GREGORIAN)
PidLidOwnerCriticalChange	0x8128	0x0040 (**PtypTime**)	0x01C874289289D700 (2008/02/21 01:24:58.608)
PidLidMeetingType	0x8314	0x0003 (**PtypInteger32**)	0x00010000 (65536)
PidLidOldLocation	0x8316	0x001F (**PtypString**)	(null)

Property	Property ID	Property type	Value
PidLidOldWhenStartWhole	0x83CC	0x0040 (**PtypTime**)	0x01C88E9DDA16DC00 (2008/03/25 17:30:00.000)
PidLidOldWhenEndWhole	0x83CD	0x0040 (**PtypTime**)	0x01C88EA20AF91000 (2008/03/25 18:00:00.000)
PidTagResponseRequested	0x0063	0x000B (**PtypBoolean**)	0x01 (TRUE)
PidTagStartDate	0x0060	0x0040 (**PtypTime**)	0x01C88F6704809C00 (2008/03/26 17:30:00.000)
PidTagEndDate	0x0061	0x0040 (**PtypTime**)	0x01C88F6B3562D000 (2008/03/26 18:00:00.000)
PidTagOwnerAppointmentId	0x0062	0x0003 (**PtypInteger32**)	0x4D9427D8
Best Body properties	The client can look for and remove the downlevel text, as specified in section 2.2.5.12, before copying the text stream onto the new Exception Embedded Message object.		

*1 = See section 4.1.5 for a description of the **PidLidTimeZoneStruct BLOB**. The following is the value for this Meeting Request object:

cb: 48

lpb:
E001000000000000C4FFFFFF000000000B0000000100020000000000000000000000300000002000200000000000000

*2 = The **PidLidAppointmentTimeZoneDefinitionRecur** dates for this **appointment** are both set in the same time zone. See section 4.1.4 for a description of the **TimeZoneDefinition** BLOB. The only difference between this BLOB and that in **PidLidAppointmentTimeZoneDefinitionStartDisplay**/**PidLidAppointmentTimeZoneDefinitionEndDisplay** is that the TZRULE_FLAG_RECUR_CURRENT_TZREG flag is set in this BLOB. The following is the value for this Meeting Request object:

cb: 184

lpb:
02013000020015005000610063006900660069006300200053007400610 06E00640061007200640020005400690 06D006500200020 13E000000D607000000000000000000000000000000E001000000000000C4FFFFFF00000A00000005000200000000000000000040000000100020000000000000002013E000300D70700000000000000000000000000000E001000000000000C4FFFFFF00000B000000010002000000000000000000030000000200020000000000000

*3 = The start and end dates for this appointment are both set in the same time zone. See section 4.1.4 for a description of the **TimeZoneDefinition** BLOB. The following is the value for this Meeting Request object:

cb: 184

lpb:
02013000020015005000610063006900660069006300200053007400610 06E006400
610072006400200054006900 6D006500200020013E000000D607000000000000000
0000000000000E001000000000000C4FFFFFF00000A00000005000200000000000000
0000004000000010002000000000000002013E000200D707000000000000000000000
0000000000E001000000000000C4FFFFFF00000B00000001000200000000000000000
0003000000020002000000000000

*4 = The following is the value of the **PidLidGlobalObjectId** property for this Meeting Request object. See section 4.1.2 for a description of the Global Obj ID BLOB.

cb: 56

lpb:
040000008200E00074C5B7101A82E00807D803195025D461E473C801000000000000000100000002A5844B3A444F74A9C246C60886F116B

*5 = The following is the value of the **PidLidCleanGlobalObjectId** property for this Meeting Request object. This is identical to the value of the **PidLidGlobalObjectId** property except that the **Year**, **Month**, and **Day** fields are filled with zeros.

cb: 56

lpb:
040000008200E00074C5B7101A82E008000000005025D461E473C8010000000000000000100000002A5844B3A444F74A9C246C60886F116B

The client uses **RopModifyRecipients** to set the recipients on the Exception Embedded Message object. The recipients are obtained from the **RecipientRows** of the Meeting Request object, as well as the **PidLidAppointmentUnsendableRecipients** property. In addition, if the **organizer** (in this case, Mr. John) is not in the list of recipients, his information is obtained from the **PidTagSentRepresentingSearchKey** and **PidTagSentRepresentingName** properties and added as a **RecipientRow**. The Exception Embedded Message object is saved by using **RopSaveChangesMessage**, to which the server returns a success code.

After saving the Exception Embedded Message object, the client uses **RopSetProperties** to set the properties listed in the following table on the Exception Attachment object (not the Exception Embedded Message object).

Property	Property ID	Property type	Value
PidTagExceptionStartTime	0x7FFB	0x0040 (**PtypTime**)	0x01C88F2C5821C400 (2008/03/26 10:30:00.000)
PidTagExceptionEndTime	0x7FFC	0x0040 (**PtypTime**)	0x01C88F308903F800 (2008/03/26 11:00:00.000)
PidTagExceptionReplaceTime	0x7FF9	0x0040 (**PtypTime**)	0x01C88E9DDA16DC00 (2008/03/25 17:30:00.000)
PidTagAttachmentFlags	0x7FFD	0x0003 (**PtypInteger32**)	0x00000002 (afException)
PidTagAttachmentHidden	0x7FFE	0x000B (**PtypBoolean**)	0x01 (TRUE)

The client uses **RopSaveChangesAttachment** to save the changes to the **Attachment object**.

Now that the **exception** has been created, the client makes the following change to the Meeting object (the object that represents the recurring series) on Mr. Saylor's calendar by using **RopSetProperties**.

Property	Property ID	Property type	Value
PidLidAppointmentRecur	0x81AD	0x0102 (**PtypBinary**)	*1

*1 = The value of the **PidLidAppointmentRecur** property will include necessary information about this new exception. The following is the new value for the attendee's Meeting object.

cb: 114

lpb:
043004300B2001000000C0210000010000000000000040000002320000000A00000
0000000001000000A025C40C01000000402BC40C2088C30CDF80E95A0630000
0093000007602000094020000100B62DC40CD42DC40C1628C40C000200000000
040000000000000000000000000000000

The client sets the following property on the Meeting Request object by using **RopSetProperties**, followed by **RopSaveChangesMessage**.

Property	Property ID	Property type	Value

Property	Property ID	Property type	Value
PidTagProcessed	0x7D01	0x000B (**PtypBoolean**)	0x01 (TRUE)

After processing the Meeting Request object, the client is now ready to act on the response. To start, the changes listed in the following table are made to the Exception Embedded Message object by using **RopSetProperties**.

Property	Property ID	Property type	Value
PidLidBusyStatus	0x81B6	0x0003 (**PtypInteger32**)	0x00000002 (2)
PidLidResponseStatus	0x8122	0x0003 (**PtypInteger32**)	0x00000003 (respAccepted)
PidLidAppointmentReplyTime	0x8139	0x0040 (**PtypTime**)	0x01C87428FEA81000 (2008/02/21 01:28:00.000)
PidLidAppointmentReplyName	0x81AE	0x001F (**PtypString**)	desaylor

The client again saves the Exception Embedded Message object by using **RopSaveChangesMessage** and another **RopSaveChangesMessage** to save the Meeting object that represents the recurring series, to which the server returns success codes.

The last thing the client needs to do is send a response to the organizer. The client creates a new Meeting Response object in the Outbox **special folder** by using **RopCreateMessage**, to which the server returns a success code and a handle. The client sets the following properties on this new Message object by using **RopSetProperties** using the values from the Exception Embedded Message object:

- **PidTagNormalizedSubject**
- **PidLidBusyStatus**
- **PidLidAppointmentColor**
- **PidLidLocation**
- **PidLidRecurring**
- **PidLidAppointmentStartWhole**
- **PidLidAppointmentEndWhole**
- **PidLidAppointmentTimeZoneDefinitionStartDisplay**
- **PidLidAppointmentTimeZoneDefinitionEndDisplay**
- **PidLidAppointmentDuration**
- **PidLidAppointmentAuxiliaryFlags**
- **PidLidAppointmentSubType**
- **PidLidAppointmentRecur**
- **PidLidRecurrenceType**

- **PidLidRecurrencePattern**
- **PidLidTimeZoneStruct**
- **PidLidAppointmentTimeZoneDefinitionRecur**
- **PidLidTimeZoneDescription**
- **PidLidClipStart**
- **PidLidClipEnd**
- **PidLidAppointmentSequence**
- **PidLidCommonStart**
- **PidLidCommonEnd**
- **PidLidWhere**
- **PidLidGlobalObjectId**
- **PidLidCleanGlobalObjectId**
- **PidLidAppointmentMessageClass**
- **PidLidIsRecurring**
- **PidLidIsException**
- **PidLidTimeZone**
- **PidLidCalendarType**
- **PidLidOwnerCriticalChange**
- **PidTagStartDate**
- **PidTagEndDate**
- **PidTagOwnerAppointmentId**

In addition to these, the client uses **RopSetProperties** to put the property values listed in the following table onto the Meeting Response object.

Property	Property ID	Property type	Value
PidTagMessageClass	0x001A	0x001F (**PtypString**)	IPM.Schedule.Meeting.Resp.Pos
PidTagSubjectPrefix	0x003D	0x001F (**PtypString**)	Accepted:
PidLidSideEffects	0x8002	0x0003 (**PtypInteger32**)	0x00001C61 (7265)
PidLidAttendeeCriticalChange	0x81B5	0x0040 (**PtypTime**)	0x01C874292153F290 (2008/02/21 01:28:58.169)
PidLidIsSilent	0x81E6	0x000B (**PtypBoolean**)	0x01 (TRUE)

The client adds the organizer by using **RopModifyRecipients**, and then sends the object via **RopSubmit**. After the server returns a success code from submission, the client releases all

objects, including the Embedded Message, Attachment, Attachment Table, Meeting, and Meeting Request objects, by using a **RopRelease** for each.

5 Security

5.1 Security Considerations for Implementers

There are no special security considerations specific to the protocol. General security considerations that pertain to the underlying RPC-based transport apply (see [MS-OXCROPS]).

5.2 Index of Security Parameters

None.

6 Appendix A: Office/Exchange Behavior

The information in this specification is applicable to the following versions of Office/Exchange:

- Microsoft Office Outlook 2003
- Microsoft Exchange Server 2003
- Microsoft Office Outlook 2007
- Microsoft Exchange Server 2007
- Microsoft Outlook 2010
- Microsoft Exchange Server 2010

Exceptions, if any, are noted as follows. Unless otherwise specified, any statement of optional behavior in this specification prescribed by using the terms SHOULD or SHOULD NOT implies Office/Exchange behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies Office/Exchange does not follow the prescription.

<1> Office sets the following additional properties on a new object, regardless of user input: **PidLidAgingDontAgeMe**, **PidLidCurrentVersion**, **PidLidCurrentVersionName**, **PidLidValidFlagStringProof**, **PidTagAlternateRecipientAllowed**,

PidTagClientSubmitTime, **PidTagDeleteAfterSubmit**,, **PidTagMessageDeliveryTime**, **PidTagOriginatorDeliveryReportRequested**, **PidTagReadReceiptRequested**

<2> The following additional properties can be set on items described by the Appointment and Meeting object protocol for backward compatibility with earlier clients. These properties are not used by Office:
PidLidRequiredAttendees, **PidLidOptionalAttendees**, **PidLidResourceAttendees**, **PidLidDelegateMail**, **PidLidSingleInvite**, **PidLidTimeZone**, **PidLidStartRecurDate**, **PidLidStartRecurTime**, **PidLidEndRecurDate**, **PidLidEndRecurTime**, **PidLidDayInterval**, **PidLidWeekInterval**, **PidLidMonthInterval**, **PidLidYearInterval**, **PidLidDowMask**, **PidLidDomMask**, **PidLidMoyMask**, **PidLidRecurrenceType**, **PidLidDowPref**, **PidLidAllAttendeesList**.

<3> Outlook 2007 sets the following properties regardless of user input; their values have no meaning in the context of this protocol:
PidLidTaskStatus, **PidLidPercentComplete**, **PidLidTaskSMUG**, **PidLidTaskActualEffort**, **PidLidTaskEstimatedEffort**, **PidLidTaskVersion**, **PidLidTaskState**, **PidLidTaskComplete**, **PidLidTaskAssigner**, **PidLidTaskOrdinal**, **PidLidTaskNoCompute**, **PidLidTaskFRecur**, **PidLidTaskRole**, **PidLidTaskOwnership**, **PidLidTaskAcceptanceState**, **PidLidTaskFFixOffline**.

<4> Exchange does not set the auxApptFlagCopied flag when copying **Calendar objects**.

<5> Exchange 2003 ignores this property and always computes this from the difference between **PidLidAppointmentEndWhole** and **PidLidAppointmentStartWhole**.

<6> Exchange 2003 does not read or write this property.

<7> Outlook 2003 and Exchange 2003 instead use the following properties properties to track unsendable attendees:

PidLidNonSendableTo
PidLidNonSendableCc
PidLidNonSendableBcc
PidLidNonSendableToTrackStatus
PidLidNonSendableCcTrackStatus
PidLidNonSendableBccTrackStatus

<8> When a **Meeting object** is created, Office sets this value to the number of minutes between the start time and midnight, January 1, 1601. When trying to find a Meeting object, Office sorts the table according to the **PidLidOwnerAppointmentId** property, thus allowing increased performance in the search.

<9> Office and Exchange allow the user to choose whether they want to send a **Meeting Response object** to the organizer.

<10> **PidLidAppointmentTimeZoneDefinitionRecur** contains one **TZRule** that is marked with the TZRULE_FLAG_EFFECTIVE_TZREG flag. This **TZRule** has fields **lBias**, **lStandardBias**, **lDaylightBias**, **stStandardDate**, and **stDaylightDate**. If any of these fields do not match exactly the corresponding field in **PidLidTimeZoneStruct**, the properties **PidLidAppointmentTimeZoneDefinitionRecur** and **PidLidTimeZoneStruct** are considered inconsistent.

<11> Outlook 2003 does not support **PidLidAppointmentTimeZoneDefinitionRecur**.

<12> In the Windows operating system, the unique names of all currently defined time zones can be obtained by enumerating key names of all registry keys that appear as children of the following registry key: HKLM\Software\Microsoft\Windows NT\CurrentVersion\Time Zones. For example, on Windows Vista as of January 1, 2008, this list consists of the following:

Afghanistan Standard Time
Alaskan Standard Time
Arab Standard Time
Arabian Standard Time
Arabic Standard Time
Atlantic Standard Time
AUS Central Standard Time
AUS Eastern Standard Time
Azerbaijan Standard Time
Azores Standard Time
Canada Central Standard Time
Cape Verde Standard Time
Caucasus Standard Time

Cen. Australia Standard Time
Central America Standard Time
Central Asia Standard Time
Central Brazilian Standard Time
Central Europe Standard Time
Central European Standard Time
Central Pacific Standard Time
Central Standard Time
Central Standard Time (Mexico)
China Standard Time
Dateline Standard Time
E. Africa Standard Time
E. Australia Standard Time
E. Europe Standard Time
E. South America Standard Time
Eastern Standard Time
Egypt Standard Time
Ekaterinburg Standard Time
Fiji Standard Time
FLE Standard Time
Georgian Standard Time
GMT Standard Time
Greenland Standard Time
Greenwich Standard Time
GTB Standard Time
Hawaiian Standard Time
India Standard Time
Iran Standard Time
Israel Standard Time
Jordan Standard Time
Korea Standard Time
Mid-Atlantic Standard Time
Middle East Standard Time
Mountain Standard Time
Mountain Standard Time (Mexico)
Myanmar Standard Time
N. Central Asia Standard Time

Namibia Standard Time
Nepal Standard Time
New Zealand Standard Time
Newfoundland Standard Time
North Asia East Standard Time
North Asia Standard Time
Pacific SA Standard Time
Pacific Standard Time
Pacific Standard Time (Mexico)
Romance Standard Time
Russian Standard Time
SA Eastern Standard Time
SA Pacific Standard Time
SA Western Standard Time
Samoa Standard Time
SE Asia Standard Time
Singapore Standard Time
South Africa Standard Time
Sri Lanka Standard Time
Taipei Standard Time
Tasmania Standard Time
Tokyo Standard Time
Tonga Standard Time
US Eastern Standard Time
US Mountain Standard Time
Vladivostok Standard Time
W. Australia Standard Time
W. Central Africa Standard Time
W. Europe Standard Time
West Asia Standard Time
West Pacific Standard Time
Yakutsk Standard Time

<13> Exchange 2003 and Exchange 2007 use the signal time rather than the start time when calculating whether **exceptions** overlap. Outlook 2003 and Outlook 2007 use the start time.

<14> These values can be read by Office but are not used:

Name	Value	Description
MonthEnd	0x0004	The event has a month end recurrence.
HjMonth	0x000A	The event has a monthly recurrence in the Hijri calendar. For this PatternType, the CalendarType MUST be set to 0x0000.

<15> Exchange 2003 supports only the Gregorian calendar. Exchange 2007 does not support the CAL_SAKA calendar.

<16> The following is a description of how the **FirstDateTime** value is used for a daily recurrence pattern:

Daily recurrences are evaluated by advancing by the number of minutes required to reach the next instance (period). This will vary depending on the frequency/interval (every *x* days), but given that granularity is days, the number of minutes will always be a multiple of 1440 (number of minutes in a day).

Taking a valid instance and adding the period will yield the next instance. Therefore, finding a valid instance is essential.

FirstDateTime is used to find a valid day within the pattern, by computing the offset of the start clip date given the period (clipStart modulo period). This produces the number of minutes that need to be subtracted from an input date prior to checking whether it is a valid instance (it is valid if the adjusted date modulo period yields 0 (zero)). If it is not a valid instance, the modulo operation will yield the value to subtract from the input date to find a valid instance.

For example, given the following dates (in minutes, assuming time is truncated so the value indicates the day), and a pattern that starts on Day 1:
Day 0 = 0
Day 1 = 1440
Day 2 = 2880
Day 3 = 4320
...

It can be seen that an "Every 1 day" (period is 1440 * 1 = 1440) pattern is uninteresting, **FirstDateTime** will always be 0 (zero), as (**Day** X modulo 1440) will always yield 0 (zero), which indicates that every input date is a valid instance in the pattern.

Now consider an "Every 3 days" (period is 1440 * 3 = 4320) pattern. In this case, valid instances are 1, 4, 7, 10, …, so not every day is a part of the pattern. In this case, **FirstDateTime** will be computed to be 1440, which indicates that this offset is subtracted from an input date prior to determining if it is a valid instance. If Day 9 (12960) is the input date, the following computation determines if this is a valid instance:

Adjusted input date: 12960 - 1440 = 11520
Check for valid date: 11520 modulo 4320 = 2880 (this is not a valid instance, and 2880 minutes, or 2 days, needs to be subtracted to find the previous valid instance).
Previous valid instance: 12960 - 2880 = 10080 (this is Day 7, and is a valid instance).

An interesting aspect of **FirstDateTime** for a daily recurrence pattern is that it will always be a value between 0 (zero) and (period - 1440).

<17> The following is a description of how the **FirstDateTime** value is used for a weekly recurrence pattern.

Weekly recurrences are slightly more complex, as a valid week needs to be found, as well as a valid day within that week. This will vary depending on the frequency/interval (every *x* weeks), but will also vary by the first day of week with which the pattern was created. The first day of week dependency is what makes this somewhat more complex. For example, consider the pattern "Every 2 weeks on Monday, Tuesday, and Friday, starting in week 2." If the first day of the week is Wednesday, then when evaluating the pattern, the Monday, Tuesday, and Friday instances in a given week are not the same as they would be if the first day of week was Sunday. The following list might make this a little bit easier to understand:

Assuming a pattern "Every 2 weeks on Mon, Tue, and Fri., Starting in week 2"

Week	First Day of Week is Sunday							First Day of Week is Wednesday						
	Su	Mo	Tu	We	Th	Fr	Sa	We	Th	Fr	Sa	Su	Mo	Tu
1	1	2	3	4	5	6	7	4	5	6	7	8	9	10
2	8	**9**	**10**	11	12	**13**	14	11	12	**13**	14	15	**16**	**17**
3	15	16	17	18	19	20	21	18	19	20	21	22	23	24

4 22 **23** **24** 25 26 **27** 28 25 26 **27** 28 29 **30** **31**

If the first day of the week was Sunday, the valid dates would be the 9th, 10th, 13th, 23rd, 24th, and 27th of the month, but if the first day of the week was defined to be Wednesday, the valid dates would be the 13th, 16th, 17th, 27th, 30th, and 31st of the month. The first day of week makes a huge difference. When evaluating the weekly recurrence pattern, all instances need to be on the same week (relative to the first day of week setting).

With a better understanding of the evaluation, focus can shift to what information is trying to be preserved to properly find a valid instance given some input date. First, a valid week must be found, which is where **FirstDateTime** comes into play. After it is adjusted to a valid week, a valid day within the week can be found.

As was the case for daily, **FirstDateTime** represents the necessary offset to adjust from the input week to find a valid week. The only difference is that this offset is adjusted relative to the beginning of a week, which requires also looking at the first day of week.

To compute the offset:

1. Adjust the start clip date to the beginning of a week.
2. Compute the clip start offset (**FirstDateTime**) by taking the adjusted start clip date value modulo (period * 10080). Unlike daily patterns, Period is not stored in number of minutes, rather number of weeks. 10080 is the number of minutes in a week (1440 * 7). Because this value is adjusted to beginning of the week, and because 1-based computations will be used, the value of **FirstDateTime** will always be 1440 (1 day) less than what one might expect. For example:

8640 instead of 10080 for 1 week.
18720 instead of 20160 for 2 weeks.

After finding a valid week, the first valid day in the week is found.

Using the previous example (week starts on Wednesday), assume that the input date provided was the 21st.

1. Adjust to the start of the week, which is the 18th.

2. Using the **FirstDateTime** weekly offset value, determine if this is a valid week. If it is not, this computation will provide the number of weeks to advance to get to a valid week. In the example, this would adjust the week to the 25th.
3. Look forward until a valid day is found, which would be the 27th, the next valid instance.

<18> The following is a description of how the **FirstDateTime** value is used for a Monthly or Yearly recurrence pattern.

Monthly and Yearly are evaluated in the same way; yearly just happens to be a monthly pattern that occurs every 12 months.

With an understanding of how the **FirstDateTime** value is used in a daily pattern, the monthly/yearly pattern is straightforward. **FirstDateTime** is the offset (in months relative to 1600) needed to find a valid month within the recurrence.

From an input date, the next valid month is found by adding the difference between the input month and the 1600 offset (**FirstDateTime**) modulo period.

Other details exist for non-Gregorian calendars, which may have leap months and other non-Gregorian specific details.

<19> Outlook 2003, Outlook 2007, Exchange 2003, and Exchange 2007 always write a default value of 0x0000000A for the Occurrence Count when the recurrence pattern has no end date.

<20> Exchange 2007 does not allow duplicate entries, and will remove them if they are present.

<21> Exchange 2007 does not allow duplicate entries, and will remove them if they are present.

<22> This flag is not set in Outlook 2003, Outlook 2007, Exchange 2003, or Exchange 2007. This flag is reserved for future enhancements and is not used.

<23> This field does not exist in Outlook 2003, Outlook 2007, Exchange 2003, or Exchange 2007. This field is reserved for future enhancements and is not used.

<24> Outlook 2007 sets this property, but Outlook 2003, Exchange 2003, and Exchange 2007 do not.

<25> Exchange 2003 does not read or write this property, but Outlook 2003, Outlook 2007, and Exchange 2007 do.

<26> Outlook 2003 reads and writes the properties in this section. Outlook 2007 does not write any of these properties but reads some of them. Exchange 2003 and Exchange 2007 do not read or write these properties.

<27> **Calendar objects** can also have the following reminder-related properties as specified in [MS-OXORMDR]:

PidLidReminderSet, PidLidReminderSignalTime, PidLidReminderDelta, PidLidReminderTime, PidLidReminderOverride, PidLidReminderPlaySound, PidLidReminderFileParam.

<28> Exchange 2003 only includes the seCoerceToInbox and seOpenForCtxMenu flags. Without all the flags, the Outlook user interface will not always behave as expected when a **Calendar object** is moved, deleted, or copied, or when a context menu is displayed for the object.

<29> The **PidLidFExceptionalAttendees** property is used to determine, from an **Appointment object**, whether attendees have been invited to any exceptions.

<30> **Meeting objects** can also have the following property

PidLidOrigStoreEidCalendar

<31> If there is more than one **resource** in a **Meeting object**, the **PidLidLocation** property is set to the first sendable resource that is added to the meeting. If none of the resources are sendable, the **PidLidLocation** property is set to the first unsendable resource that is added to the meeting.

<32> Outlook 2003 and Outlook 2007 use these reserved flags for internal information that does not affect the Appointment and Meeting Object protocol. A server or non-Office clients do not need to read these flags, but need to keep the values if they are set.

<33> Outlook 2003 and Outlook 2007 use these reserved flags for internal information that does not affect the Appointment and Meeting Object protocol. A server or non-Office clients do not need to read these flags, but need to keep the values if they are set.

<34> Outlook 2003 and Outlook 2007 use these reserved flags for internal information that does not affect the Appointment and Meeting Object protocol. A server or non-Office clients do not need to read these flags, but need to keep the values if they are set.

<35> If this value is not specified, Exchange 2003 will assume the last modified time as this value. Exchange 2007, Outlook 2003, and Outlook 2007 do not make this assumption.

<36> Exchange 2003 does not read or write this property.

<37> The data in this table is used by Outlook 2003 and Outlook 2007, although its content is subject to change with future time zone updates.

<38> **Meeting Request objects** and **Meeting Update objects** can also have the following properties, which have no effect on the Appointment and Meeting Object protocol: **PidLidTrustRecipHighlights**.

<39> Exchange 2003 and Outlook 2003 do not read or write this property.

<40> The property **PidLidForwardInstance** is used by Outlook 2003, but not by Outlook 2007, Exchange 2003, or Exchange 2007.

<41> Outlook 2007 and Exchange 2007 set this property, but Outlook 2003 and Exchange 2003 do not.

<42> Outlook 2007 and Exchange 2007 set this property, but Outlook 2003 and Exchange 2003 do not.

<43> Outlook 2003 and Exchange 2003 set this property, but Outlook 2003 and Exchange 2003 do not.

<44> Outlook 2003 and Outlook 2007 show the values of the **PidLidAppointmentStartWhole**, **PidLidAppointmentEndWhole**, and **PidLidLocation**

properties as the downlevel text. Exchange 2003 and Exchange 2007 do not add downlevel text.

<45> For English, Outlook 2003, Outlook 2007, Exchange 2003, and Exchange 2007 use the string "New Time Proposed" to indicate that the **Meeting Response object** includes a new date/time proposal. If no proposal is included, Outlook 2003, Outlook 2007, Exchange 2003, and Exchange 2007 use "Accepted," "Tentative," or "Declined" for an accepted, tentatively accepted, or declined meeting response, respectively.

<46> For English, Outlook 2003, Outlook 2007, Exchange 2003, and Exchange 2007 use the string "Canceled".

<47> There are some circumstances in which the number of **Exception Attachment Objects** will not match the number of values in the **ModifiedInstanceDates** field of the **PidLidAppointmentRecur** property. It can happen in the following case:

- When an Exception Attachment object cannot be found in the set of attachments, a client or server can create it. In some cases, this erroneously leads to multiple Exception Attachment objects for one instance.

<48> If the user changes the client computer's time zone after this property is written, the value of this property will no longer match what is expected by the client. Therefore, a client or sever cannot rely on this property to be correct.

<49> If the user changes the client computer's time zone after this property is written, the value of this property will no longer match what is expected by the client. Therefore, a client or sever cannot rely on this property to be correct.

<50> Outlook 2003 and Outlook 2007 do not write this value.

<51> An end user can create calendar items in any **Calendar folder**. However, free/busy information is only calculated from the **Calendar special folder**.

<52> Exchange 2010 Beta supports public folder referrals, but does not support public folders when client connection services are deployed on an Exchange server that does not also have a mailbox store installed.

<53> When an end user creates a meeting in a **Calendar folder** other than the **Calendar special folder**, Outlook 2003 and Outlook 2007 will ask the user if he or she wants to create a clone in the Calendar special folder. Exchange 2003 and Exchange 2007 will not create a clone of the meeting.

<54> A copy of a **Calendar object** is a static copy of the original. When the source object is a meeting, the new copy will not be updated with any future changes made by the organizer.

<55> Outlook 2007 sets this property, but Outlook 2003 and Exchange 2003 and Exchange 2007 do not.

<56> Outlook 2003 and Outlook 2007 sometimes do not copy the recipient list. If the **RecipientRows** from a meeting object are not copied, the resulting snapshot will not show who was invited to the meeting at the time the copy was made.

<57> Outlook 2007 sets this property, but Outlook 2003, Exchange 2003 and Exchange 2007 do not.

<58> Outlook 2007 sets this property, but Outlook 2003, Exchange 2003 and Exchange 2007 do not.

<59> Outlook 2007 and Exchange 2007 require the **organizer** to send a meeting cancellation to **attendees** when deleting a meeting. Outlook 2003 and Exchange 2003 give the user an option to delete without sending a cancellation.

<60> Outlook 2003 and Outlook 2007 attempt direct booking only for resources. Exchange 2003 and Exchange 2007 do not attempt direct booking for any attendees.

<61> This requires **public folders** to be enabled on the server. Exchange 2007 allows a configuration without public folders, in which case direct booking would not be possible.

<62> Outlook 2007 and Exchange 2007support the Calendar Dictionary, but Outlook 2003and Exchange 2003do not.

<63>Outlook 2007 skips automatic creation of the Meeting Object based on the values of these properties, but Outlook 2003, Exchange 2007, and Exchange 2003 SP2 do not.

<64> Outlook 2003 and Outlook 2007 do this in certain circumstances. Exchange 2003 SP2 and Exchange 2007 never change the **PidTagMessageClass** property in this way.

<65> Outlook 2003 and Outlook 2007 both copy the **PidLidAppointmentAuxFlags** to the **Meeting object** but Exchange 2003 and Exchange 2007 do not.

<66> Outlook 2007, Exchange 2007, and Exchange 2003 set this property, but Outlook 2003 does not.

<67> Outlook 2007 and Exchange 2007copy the RecipientRows of the **PidLidAppointmentUnsendableRecipients** property of the **Meeting Request object** to the RecipientRows of the **Meeting object**. Outlook 2003 and Exchange 2003 do not.

<68> Outlook 2003 and Outlook 2007 do not copy the busy status for the exception.

<69> Outlook 2003 and Outlook 2007 both set **PidTagProcessed**. Exchange 2003 and Exchange 2007 do not set this flag.

<70>Exchange 2007, Exchange 2003, Outlook 2007, and Outlook 2003 do not set this property.

<71>Exchange 2007 sets this property, but Exchange 2003, Outlook 2007, and Outlook 2003 do not.

<72> Outlook 2007 does not automatically send **Meeting Response objects** if this property is set, but Outlook 2003, Exchange 2007, and Exchange 2007 do.

<73>Exchange 2007, Exchange 2003, Outlook 2007, and Outlook 2007 do not set this property.

<74> Outlook 2007 and Exchange 2007 will set the "old" properties. Outlook 2003 and Exchange 2003 will not set these properties.

<75> Outlook 2007 and Exchange 2007 will set the value of the **PidLidMeetingType** to mtgInfo in this case. Outlook 2003 and Exchange 2003 will set the value of this property to mtgFull.

<76> Outlook 2003 and Exchange 2003 will always clear responses whenever any update is sent out.

<77> Outlook 2003 and Outlook 2007 set the **PidTagRecipientTrackStatusTime** value to 12:18 A.M. 23 October 1602. Exchange 2003 and Exchange 2007 do not change this value. Changing this value is not required.

<78> Outlook 2003, Outlook 2007, Exchange 2003, and Exchange 2007 all give the user a choice about whether they want to send the update to all recipients or only added/removed recipients.

<79> Outlook 2007 will treat an attendee that has been marked sendable as an new attendee, but Outlook 2003, Exchange 2007, and Exchange 2003 do not.

<80> Outlook 2007 and Exchange 2007 set the **PidLidAppointmentUnsendableRecipients** as described, while Outlook 2003 and Exchange 2003 do not.

<81> Outlook 2007 does this, but Outlook 2003 and Exchange do not.

<82> Outlook 2007 sends out cancelations to exceptions when the recurrence pattern has changed, but Outlook 2003 does not.

<83> Outlook 2007 sends **Meeting Request objects** for exceptions when the organizer adds attendees to the series and sends a **Meeting Update object** to a Partial Attendee List.

<84> Outlook 2007 and Exchange 2007 support the Calendar Dictionary, but Outlook 2003 and Exchange 2003 do not.

<85>Outlook 2007 skips automatic updating of the **Meeting object** based on the values of these properties, but Outlook 2003, Exchange 2007, and Exchange 2003 do not.

<86>Outlook 2007 does not recreate the exception if these properties are set, but Outlook 2003, Exchange 2007, and Exchange 2003 do not.

<87>Exchange 2007, Exchange 2003, Outlook 2007, and Outlook 2003 do not set this property.

<88> Outlook 2007 copies these properties onto the **Meeting Update object**, while Outlook 2003, Exchange 2003, and Exchange 2007 do not.

<89>Outlook 2007 does not perform these actions if these properties are set but Outlook 2003, Exchange 2007, and Exchange 2003 do.

<90>Exchange 2007, Exchange 2003, Outlook 2007, and Outlook 2003 do not set this property.

<91>Outlook 2007 does not overwrite a private value of **PidTagSensitivity**, but Outlook 2003, Exchange 2003, and Exchange 2007 do.

<92> Outlook 2007 and Exchange 2007 allow a **Meeting object** to be updated without changing the value of the **PidLidResponseStatus** property. Outlook 2003 and Exchange 2003 reset the value of this property to respNotResponded.

<93> Outlook 2003 and Outlook 2007 both set PidTagProcessed. Exchange 2003, and Exchange 2007 do not set this flag.

<94>Exchange 2007, Exchange 2003, Outlook 2007, and Outlook 2003 do not set this property.

<95>Exchange 2007 sets these properties, but Exchange 2003, Outlook 2007, and Outlook 2003 do not.

<96> Outlook 2003 and Outlook 2007 set the value of the PidLidMeetingType property to 0x00000000.

<97> Outlook 2007 and Exchange 2007 write the **PidLidAppointmentUnsendableRecipients** property, but Outlook 2003SP3 and Exchange 2003 do not.

<98> Outlook 2007 forwards exceptions to a recurring series, but Outlook 2003 SP, Exchange 2007, and Exchange 2003 do not.

<99> Outlook 2003, Outlook 2007, Exchange 2003, and Exchange 2007 allow the end user to decide whether or not the end user wants to send a response to the organizer.

<100> Outlook 2003 and Exchange 2003 will allow an organizer to send a response to their own meeting, but only if the **asfReceived** bit is not set in the value of the **PidLidAppointmentStateFlags** property. Outlook 2007 and Exchange 2007 will not allow an organizer to respond to their own meeting.

<101> Often when the **organizer** sends a **Meeting Request object** to a very large set of people, the organizer does not want to be flooded with **Meeting Response objects**. Regardless of the reason, when the property is set, the client SHOULD NOT send Meeting Response objects for the meeting.

<102> Outlook 2003 and Outlook 2007 also write the following properties, which are not used by Outlook 2003, Outlook 2007, Exchange 2003, or Exchange 2007:

PidLidInetAcctName, **PidLidInetAcctStamp**, **PidLidSendMtgAsICAL**

<103> Outlook 2003 and Outlook 2007 also write the following properties when the **Meeting Response object** represents a **recurring series**. These are not used by Outlook 2003, Outlook 2007, Exchange 2003, or Exchange 2007:

PidLidRequiredAttendees, **PidLidOptionalAttendees**, **PidLidResourceAttendees**, **PidLidDelegateMail**, **PidLidSingleInvite**, **PidLidTimeZone**, **PidLidStartRecurDate**, **PidLidStartRecurTime**, **PidLidEndRecurDate**, **PidLidEndRecurTime**, **PidLidDayInterval**, **PidLidWeekInterval**, **PidLidMonthInterval**, **PidLidYearInterval**, **PidLidDowMask**, **PidLidDomMask**, **PidLidMoyMask**, **PidLidRecurrenceType**, **PidLidDowPref**, **PidLidAllAttendeesList**

<104> Outlook 2007 and Exchange 2007 support the Calendar Dictionary, but Outlook 2003 and Exchange 2003 do not.

<105> Outlook 2003 will process the response regardless of the value of **PidLidServerProcessingActions** property.

<106> When Exchange 2007 processes a **Meeting Response object** that represents a **exception** on a **Recurring Appointment**, Exchange 2007 will not record the response but still sets the **cpsUpdatedCalItem** bit of the **PidLidServerProcessingActions** property to 1. In this case, Office ignores the cpsUpdatedCalItem bit and still records the response.

<107> Outlook 2007 and Exchange do not set the **PidLidPromptSendUpdate** property.

<108> Outlook 2003, Outlook 2007 and Exchange do not verify that the attendee exists on an out-of-date Meeting Response object.

<109> Outlook 2003, Outlook 2007 and Exchange do not add the attendee as an optional attendee if the Meeting Response object is out-of-date.

<110> Outlook 2003 and Outlook 2007 compare the two time values rounded down to the nearest minute so that if an **attendee** responds twice within the same minute, both responses will be seen as having been sent at the same time. Exchange 2003 and Exchange 2007 do not round the time value.

<111> Outlook 2003 and Outlook 2007 round the time value from the **PidLidAttendeeCriticalChange** property down to the nearest minute before setting the value in the **PidTagRecipientTrackStatusTime** property. Exchange 2003 and Exchange 2007 do not round the time value.

<112> Outlook 2003 and Outlook 2007 allow the user to decide whether to "Delete empty responses." Exchange 2003 and Exchange 2007 never automatically delete responses.

<113> Outlook 2007 will send cancelations to attendees marked not sendable, but Outlook 2003, Exchange 2007, and Exchange 2003 will not.

<114> Outlook 2003 sends out cancellations for deleted exceptions when sending out a cancellation for a recurring series but Outlook 2007, Exchange 2003, and Exchange 2007 do not.

<115> Outlook 2007 sends **Meeting Cancelation objects** to exceptions when sending a Meeting Cancelation object to a Recurring Series to a Partial Attendee List, but Outlook 2003 and Exchange do not.

<116> Outlook 2007 and Exchange 2007 support the Calendar Dictionary, but Outlook 2003 and Exchange 2003 do not.

<117>Outlook 2003 and Exchange do not skip automatic updating of the **Meeting object** based on these properties.

<118> Outlook 2003 and Outlook 2007 will recreate the **Exception object**, but Exchange 2003 and Exchange 2007 will not.

<119> Outlook 2003 and Outlook 2007 will create the **Meeting object**, but Exchange 2003 and Exchange 2007 will not.

<120> Outlook 2003 and Outlook 2007 both set PidTagProcessed. Exchange 2003 and Exchange 2007 do not set this flag.

<121> Exchange will send a Meeting Forward Notification regardless of the value of the PidLidAppointmentStateFlags property.
<122> Office also writes the following properties, which are not used by Office or Exchange :

PidLidInetAcctName, **PidLidInetAcctStamp**, and **PidLidSendMtgAsICAL**

<123> Office also writes the following properties when the **Meeting Response object** represents a **recurring series**. These are not used by Office or Exchange:

PidLidRequiredAttendees, **PidLidOptionalAttendees**, **PidLidResourceAttendees**, **PidLidDelegateMail**, **PidLidSingleInvite**, **PidLidTimeZone**, **PidLidStartRecurDate**, **PidLidStartRecurTime**, **PidLidEndRecurDate**, **PidLidEndRecurTime**, **PidLidDayInterval**, **PidLidWeekInterval**, **PidLidMonthInterval**, **PidLidYearInterval**, **PidLidDowMask**, **PidLidDomMask**, **PidLidMoyMask**, **PidLidRecurrenceType**, **PidLidDowPref**, and **PidLidAllAttendeesList**

<124> Outlook 2007 and Exchange 2007 support the Calendar Dictionary, but Outlook 2003 and Exchange 2003 do not.

<125> Outlook 2007 and Exchange 2007 increment the sequence number when sending a **Meeting Update Object** for an **exception** but Outlook 2003 and Exchange 2003 do not.
<126> If the new sequence number is set in the **PidLidAppointmentSequence** property of the **Meeting object** when the **Meeting Request object** is only sent to Added/Removed Attendees, any meeting responses from the original **attendees** will not be recorded on the Meeting object. Exchange 2007 does set the new sequence number in the **PidLidAppointmentSequence** property.

<127> Outlook 2003, Outlook 2007, Exchange 2003, and Exchange 2007 do not interpret data in this manner.

<128> Outlook 2003, Outlook 2007, Exchange 2003, and Exchange 2007 do not interpret data in this manner.

<129> Outlook 2003, Exchange 2003, and Exchange 2007 do not support the PidTagScheduleInfoDelegatorWantsInfo property.

<130> Office, Exchange 2003, and Exchange 2007 do not set the **cpsDelegatorWantsCopy** bit of the **PidLidServerProcessingActions** property.

<131 > Exchange 2010 Beta can output unexpected results when using **RopOpenMessage** when client connection services are deployed on an Exchange server that does not also have a mailbox store installed.

<132> If a match had not been found, a client would search for an **orphan instance** by trying to match the value of the **PidLidGlobalObjectId** property from the **Meeting Update object** (because this Meeting Update object represents an exception). If an orphan instance is not found, a client would search for a matching row with the **PidTagOwnerAppointmentId** value of 0 (zero). If a matching recurring series or orphan exception still could not be found, then it would be assumed that the **Meeting object** does not exist in the folder and the Meeting Update object would be treated as a **Meeting Request object**.

<133> If the **Exception Attachment object** has the **PidTagExceptionReplaceTime** property, the value of this property is compared with the computed **Replace Time** to determine if the attachment is the matching exception. If the attachment does not have this property, the client needs to use **RopOpenAttachment**, **RopOpenEmbeddedMessage**, and **RopGetPropertiesSpecific** to get the **PidLidExceptionReplaceTime** property from the **Exception Embedded Message object**, and match that value against the computed **Replace Time**.

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