

[MS-OXOJRNL]:

Journal Object Protocol

Intellectual Property Rights Notice for Open Specifications Documentation

- **Technical Documentation.** Microsoft publishes Open Specifications documentation (“this documentation”) for protocols, file formats, data portability, computer languages, and standards support. Additionally, overview documents cover inter-protocol relationships and interactions.
- **Copyrights.** This documentation is covered by Microsoft copyrights. Regardless of any other terms that are contained in the terms of use for the Microsoft website that hosts this documentation, you can make copies of it in order to develop implementations of the technologies that are described in this documentation and can distribute portions of it in your implementations that use these technologies or in your documentation as necessary to properly document the implementation. You can also distribute in your implementation, with or without modification, any schemas, IDLs, or code samples that are included in the documentation. This permission also applies to any documents that are referenced in the Open Specifications documentation.
- **No Trade Secrets.** Microsoft does not claim any trade secret rights in this documentation.
- **Patents.** Microsoft has patents that might cover your implementations of the technologies described in the Open Specifications documentation. Neither this notice nor Microsoft's delivery of this documentation grants any licenses under those patents or any other Microsoft patents. However, a given Open Specifications document might be covered by the Microsoft [Open Specifications Promise](#) or the [Microsoft Community Promise](#). If you would prefer a written license, or if the technologies described in this documentation are not covered by the Open Specifications Promise or Community Promise, as applicable, patent licenses are available by contacting iplg@microsoft.com.
- **License Programs.** To see all of the protocols in scope under a specific license program and the associated patents, visit the [Patent Map](#).
- **Trademarks.** The names of companies and products contained in this documentation might be covered by trademarks or similar intellectual property rights. This notice does not grant any licenses under those rights. For a list of Microsoft trademarks, visit www.microsoft.com/trademarks.
- **Fictitious Names.** The example companies, organizations, products, domain names, email addresses, logos, people, places, and events that are depicted in this documentation are fictitious. No association with any real company, organization, product, domain name, email address, logo, person, place, or event is intended or should be inferred.

Reservation of Rights. All other rights are reserved, and this notice does not grant any rights other than as specifically described above, whether by implication, estoppel, or otherwise.

Tools. The Open Specifications documentation does not require the use of Microsoft programming tools or programming environments in order for you to develop an implementation. If you have access to Microsoft programming tools and environments, you are free to take advantage of them. Certain Open Specifications documents are intended for use in conjunction with publicly available standards specifications and network programming art and, as such, assume that the reader either is familiar with the aforementioned material or has immediate access to it.

Support. For questions and support, please contact dochelp@microsoft.com.

Revision Summary

Date	Revision History	Revision Class	Comments
4/4/2008	0.1	New	Initial Availability.
4/25/2008	0.2	Minor	Revised and updated property names and other technical content.
6/27/2008	1.0	Major	Initial Release.
8/6/2008	1.01	Minor	Updated references to reflect date of initial release.
9/3/2008	1.02	Minor	Updated references.
12/3/2008	1.03	Minor	Revised and edited technical content.
4/10/2009	2.0	Major	Updated applicable product releases.
7/15/2009	3.0	Major	Revised and edited for technical content.
11/4/2009	4.0.0	Major	Updated and revised the technical content.
2/10/2010	4.1.0	Minor	Updated the technical content.
5/5/2010	4.1.1	Editorial	Revised and edited the technical content.
8/4/2010	4.2	Minor	Clarified the meaning of the technical content.
11/3/2010	4.2	None	No changes to the meaning, language, or formatting of the technical content.
3/18/2011	4.2	None	No changes to the meaning, language, and formatting of the technical content.
8/5/2011	4.2	None	No changes to the meaning, language, or formatting of the technical content.
10/7/2011	4.3	Minor	Clarified the meaning of the technical content.
1/20/2012	5.0	Major	Significantly changed the technical content.
4/27/2012	5.0	None	No changes to the meaning, language, or formatting of the technical content.
7/16/2012	5.0	None	No changes to the meaning, language, or formatting of the technical content.
10/8/2012	5.1	Minor	Clarified the meaning of the technical content.
2/11/2013	5.1	None	No changes to the meaning, language, or formatting of the technical content.
7/26/2013	5.1	None	No changes to the meaning, language, or formatting of the technical content.
11/18/2013	5.1	None	No changes to the meaning, language, or formatting of the technical content.
2/10/2014	5.1	None	No changes to the meaning, language, or formatting of the technical content.
4/30/2014	5.1	None	No changes to the meaning, language, or formatting of the technical content.

Date	Revision History	Revision Class	Comments
7/31/2014	5.1	None	No changes to the meaning, language, or formatting of the technical content.
10/30/2014	5.2	Minor	Clarified the meaning of the technical content.
3/16/2015	6.0	Major	Significantly changed the technical content.
5/26/2015	7.0	Major	Significantly changed the technical content.
9/14/2015	7.0	None	No changes to the meaning, language, or formatting of the technical content.
6/13/2016	7.0	None	No changes to the meaning, language, or formatting of the technical content.
9/14/2016	7.0	None	No changes to the meaning, language, or formatting of the technical content.
7/24/2018	8.0	Major	Significantly changed the technical content.
10/1/2018	9.0	Major	Significantly changed the technical content.
4/22/2021	10.0	Major	Significantly changed the technical content.
8/17/2021	11.0	Major	Significantly changed the technical content.

Table of Contents

1	Introduction	6
1.1	Glossary	6
1.2	References	7
1.2.1	Normative References	7
1.2.2	Informative References	7
1.3	Overview	8
1.4	Relationship to Other Protocols	8
1.5	Prerequisites/Preconditions	8
1.6	Applicability Statement	8
1.7	Versioning and Capability Negotiation	8
1.8	Vendor-Extensible Fields	8
1.9	Standards Assignments.....	8
2	Messages.....	9
2.1	Transport	9
2.2	Message Syntax	9
2.2.1	Journal Object Properties.....	9
2.2.1.1	PidLidLogType Property.....	9
2.2.1.2	PidLidLogTypeDesc Property	9
2.2.1.3	PidLidLogStart Property	9
2.2.1.4	PidLidLogEnd Property	9
2.2.1.5	PidLidLogDuration Property	10
2.2.1.6	PidLidLogFlags Property	10
2.2.1.7	PidLidLogDocumentPrinted Property	10
2.2.1.8	PidLidLogDocumentSaved Property	10
2.2.1.9	PidLidLogDocumentRouted Property	10
2.2.1.10	PidLidLogDocumentPosted Property.....	10
2.2.2	Additional Property Constraints	11
2.2.2.1	PidTagMessageClass Property	11
2.2.2.2	Best Body Properties	11
2.2.2.3	PidTagIconIndex Property	11
2.2.2.4	PidLidCompanies Property	12
2.2.2.5	Recipients	12
2.2.2.6	Journal-Associated Attachments.....	12
3	Protocol Details.....	14
3.1	Client Details.....	14
3.1.1	Abstract Data Model.....	14
3.1.2	Timers	14
3.1.3	Initialization.....	14
3.1.4	Higher-Layer Triggered Events	14
3.1.4.1	Creating a Journal Object.....	14
3.1.4.2	Modifying a Journal Object	14
3.1.4.3	Deleting a Journal Object	14
3.1.5	Message Processing Events and Sequencing Rules	14
3.1.6	Timer Events.....	15
3.1.7	Other Local Events.....	15
3.2	Server Details.....	15
3.2.1	Abstract Data Model.....	15
3.2.2	Timers	15
3.2.3	Initialization.....	15
3.2.4	Higher-Layer Triggered Events	15
3.2.5	Message Processing Events and Sequencing Rules	15
3.2.6	Timer Events.....	15
3.2.7	Other Local Events.....	15

4	Protocol Examples	16
4.1	Journal Object for a Telephone Call Example	16
5	Security	19
5.1	Security Considerations for Implementers	19
5.2	Index of Security Parameters	19
6	Appendix A: Product Behavior	20
7	Change Tracking.....	21
8	Index.....	22

1 Introduction

The Journal Object Protocol is used to track activity related to a meeting, task, **contact**, or application file. This protocol extends the Message and Attachment Object Protocol, which is described in [\[MS-OXCMMSG\]](#).

Sections 1.5, 1.8, 1.9, 2, and 3 of this specification are normative. All other sections and examples in this specification are informative.

1.1 Glossary

This document uses the following terms:

Attachment object: A set of properties that represents a file, **Message object**, or structured storage that is attached to a Message object and is visible through the attachments table for a Message object.

contact: A person, company, or other entity that is stored in a directory and is associated with one or more unique identifiers and attributes, such as an Internet message address or login name.

Coordinated Universal Time (UTC): A high-precision atomic time standard that approximately tracks Universal Time (UT). It is the basis for legal, civil time all over the Earth. Time zones around the world are expressed as positive and negative offsets from UTC. In this role, it is also referred to as Zulu time (Z) and Greenwich Mean Time (GMT). In these specifications, all references to UTC refer to the time at UTC-0 (or GMT).

EntryID: A sequence of bytes that is used to identify and access an object.

Folder object: A messaging construct that is typically used to organize data into a hierarchy of objects containing Message objects and folder associated information (FAI) Message objects.

handle: Any token that can be used to identify and access an object such as a device, file, or a window.

Journal object: A **Message object** that represents an entry in a journal or log and adheres to the property descriptions that are described in [\[MS-OXOJRN\]](#).

Mail User Agent (MUA): A client application that is used to compose and read email messages.

Message object: A set of properties that represents an email message, appointment, contact, or other type of personal-information-management object. In addition to its own properties, a Message object contains recipient properties that represent the addressees to which it is addressed, and an attachments table that represents any files and other Message objects that are attached to it.

metafile: A file that stores an image as graphical objects, such as lines, circles, and polygons, instead of pixels. A metafile preserves an image more accurately than pixels when an image is resized.

named property: A property that is identified by both a GUID and either a string name or a 32-bit identifier.

property ID: A 16-bit numeric identifier of a specific attribute. A property ID does not include any property type information.

recipient: An entity that can receive email messages.

remote operation (ROP): An operation that is invoked against a server. Each ROP represents an action, such as delete, send, or query. A ROP is contained in a ROP buffer for transmission over the wire.

Rich Text Format (RTF): Text with formatting as described in [\[MSFT-RTF\]](#).

ROP request: See ROP request buffer.

ROP response: See ROP response buffer.

special folder: One of a default set of **Folder objects** that can be used by an implementation to store and retrieve user data objects.

storage: An element of a compound file that is a unit of containment for one or more storages and streams, analogous to directories in a file system, as described in [\[MS-CFB\]](#).

stream: An element of a compound file, as described in [\[MS-CFB\]](#). A stream contains a sequence of bytes that can be read from or written to by an application, and they can exist only in storages.

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

1.2 References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the [Errata](#).

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information.

[MS-OXCDATA] Microsoft Corporation, "[Data Structures](#)".

[MS-OXCFOLD] Microsoft Corporation, "[Folder Object Protocol](#)".

[MS-OXCMSG] Microsoft Corporation, "[Message and Attachment Object Protocol](#)".

[MS-OXCPRPT] Microsoft Corporation, "[Property and Stream Object Protocol](#)".

[MS-OXOMSG] Microsoft Corporation, "[Email Object Protocol](#)".

[MS-OXOSFLD] Microsoft Corporation, "[Special Folders Protocol](#)".

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

[MS-OXRTFCP] Microsoft Corporation, "[Rich Text Format \(RTF\) Compression Algorithm](#)".

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

1.2.2 Informative References

[MS-OXCROPS] Microsoft Corporation, "[Remote Operations \(ROP\) List and Encoding Protocol](#)".

1.3 Overview

The Journal Object Protocol allows a user to track activity on a meeting, task, or **contact**. Activity on a file such as a spreadsheet or word-processing document can also be tracked. This protocol defines a **Journal object** to represent a journal entry that contains a log of the activity. The properties of a Journal object specify the name of the activity, the duration, any contacts that are associated with the activity, and other details. The Journal object is stored in a **Folder object**.

The Journal Object Protocol extends the Message and Attachment Object Protocol, described in [\[MS-OXCMSG\]](#), in that it defines new properties on the **Message object** and adds constraints to the existing properties of the Message object.

1.4 Relationship to Other Protocols

The Journal Object Protocol has the same dependencies as the Message and Attachment Object Protocol, which it extends. For information about the Message and Attachment Object Protocol, see [\[MS-OXCMSG\]](#).

For conceptual background information and overviews of the relationships and interactions between this and other protocols, see [\[MS-OXPROTO\]](#).

1.5 Prerequisites/Preconditions

The Journal Object Protocol has the same prerequisites and preconditions as the Message and Attachment Object Protocol, as specified in [\[MS-OXCMSG\]](#).

1.6 Applicability Statement

A client can use this protocol to record the user's activities on various items.

1.7 Versioning and Capability Negotiation

None.

1.8 Vendor-Extensible Fields

This protocol provides no vendor extensibility beyond what is already specified in [\[MS-OXCMSG\]](#).

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

The Journal Object Protocol uses the same underlying transport as that used by the Message and Attachment Object Protocol, as specified in [\[MS-OXCMSG\]](#).

2.2 Message Syntax

A **Journal object** can be created and modified by clients and servers. Except where noted, this section defines constraints under which both clients and servers operate.

Clients operate on a Journal object by using the Message and Attachment Object Protocol, as specified in [\[MS-OXCMSG\]](#). How a server operates on a Journal object is implementation-dependent, but the results of any such operations MUST be exposed to clients in a manner that is consistent with the Journal Object Protocol.

Unless otherwise specified, a Journal object adheres to all property constraints specified in [\[MS-EXPROPS\]](#) and [\[MS-OXCMSG\]](#).

2.2.1 Journal Object Properties

2.2.1.1 PidLidLogType Property

Type: **PtypString** ([\[MS-OXCDATA\]](#) section 2.11.1)

The **PidLidLogType** property ([\[MS-EXPROPS\]](#) section 2.168) specifies the name of the activity that is being recorded.

2.2.1.2 PidLidLogTypeDesc Property

Type: **PtypString** ([\[MS-OXCDATA\]](#) section 2.11.1)

The **PidLidLogTypeDesc** property ([\[MS-EXPROPS\]](#) section 2.169) describes the activity that is being recorded.

2.2.1.3 PidLidLogStart Property

Type: **PtypTime** ([\[MS-OXCDATA\]](#) section 2.11.1)

The **PidLidLogStart** property ([\[MS-EXPROPS\]](#) section 2.167) specifies the time, in **Coordinated Universal Time (UTC)**, at which the activity began. The value of this property MUST be equal to the value of the **PidLidCommonStart** property ([\[MS-OXCMSG\]](#) section 2.2.1.18).

2.2.1.4 PidLidLogEnd Property

Type: **PtypTime** ([\[MS-OXCDATA\]](#) section 2.11.1)

The **PidLidLogEnd** property ([\[MS-EXPROPS\]](#) section 2.165) specifies the time, in **UTC**, at which the activity ended. The value of this property MUST be equal to the value of the **PidLidCommonEnd** property ([\[MS-OXCMSG\]](#) section 2.2.1.19) and therefore greater than or equal to the **PidLidLogStart** property (section [2.2.1.3](#)).

2.2.1.5 PidLidLogDuration Property

Type: **PtypInteger32** ([MS-OXCDATA] section 2.11.1)

The **PidLidLogDuration** property ([MS-OXPROPS] section 2.164) specifies the duration, in minutes, of the activity. The value of this property is the difference between the values of the **PidLidLogEnd** (section 2.2.1.4) and **PidLidLogStart** (section 2.2.1.3) properties.

2.2.1.6 PidLidLogFlags Property

Type: **PtypInteger32** ([MS-OXCDATA] section 2.11.1)

The **PidLidLogFlags** property ([MS-OXPROPS] section 2.166) contains bits that specify whether the **Journal object** has a journal-associated attachment. This property MUST be set to one of the values in the following table.

Bit value	Meaning
0x00000000	This Journal object has no journal-associated attachment (section 2.2.2.6).
0x40000000	This Journal object has a journal-associated attachment (section 2.2.2.6).

2.2.1.7 PidLidLogDocumentPrinted Property

Type: **PtypBoolean** ([MS-OXCDATA] section 2.11.1)

The **PidLidLogDocumentPrinted** property ([MS-OXPROPS] section 2.161) indicates whether the file, on which activity is being tracked, was printed during the tracking of the activity. <1> If printing occurred, this property is set to 0x01.

2.2.1.8 PidLidLogDocumentSaved Property

Type: **PtypBoolean** ([MS-OXCDATA] section 2.11.1)

The **PidLidLogDocumentSaved** property ([MS-OXPROPS] section 2.163) indicates whether the file, on which activity is being tracked, was saved during the tracking of the activity. <2> If the document was saved, this property is set to 0x01.

2.2.1.9 PidLidLogDocumentRouted Property

Type: **PtypBoolean** ([MS-OXCDATA] section 2.11.1)

The **PidLidLogDocumentRouted** property ([MS-OXPROPS] section 2.162) indicates whether the file, on which activity is being tracked, was sent to a **recipient** during the tracking of the activity. <3> If the document was sent, this property is set to 0x01.

2.2.1.10 PidLidLogDocumentPosted Property

Type: **PtypBoolean** ([MS-OXCDATA] section 2.11.1)

The **PidLidLogDocumentPosted** property ([MS-OXPROPS] section 2.160) indicates whether the file, on which activity is being tracked, was sent by e-mail or posted to a server's folder during the tracking of the activity. <4> If the document was posted, this property is set to 0x01. If the document was sent by e-mail, it is set to 0x00.

2.2.2 Additional Property Constraints

This protocol places additional constraints on properties beyond what is specified in [\[MS-OXCMSG\]](#). These constraints are specified in section [2.2.2.1](#) through section [2.2.2.6](#).

2.2.2.1 PidTagMessageClass Property

Type: **PtypString** ([\[MS-OXCDATA\]](#) section 2.11.1)

The **PidTagMessageClass** property ([\[MS-OXCMSG\]](#) section 2.2.1.3) specifies the type of the **Message object**. The value of this property MUST be "IPM.Activity" or MUST begin with "IPM.Activity.", in addition to meeting the criteria specified in [\[MS-OXCMSG\]](#).

2.2.2.2 Best Body Properties

The main text of the **Journal object** MUST be stored in the **PidTagRtfCompressed** property ([\[MS-OXCMSG\]](#) section 2.2.1.56.4), as specified in [\[MS-OXRTFCP\]](#).

2.2.2.3 PidTagIconIndex Property

Type: **PtypInteger32** ([\[MS-OXCDATA\]](#) section 2.11.1)

The **PidTagIconIndex** property ([\[MS-OXOMSG\]](#) section 2.2.1.10) specifies which icon is to be used by a user interface when displaying the **Journal object**. The valid values for this property are specified in the following table.

Value	Meaning
0x00000601	Conversation
0x00000612	Document
0x00000602	E-mail message
0x00000609	Fax
0x0000060C	Letter
0x00000613	Meeting
0x00000614	Meeting cancellation
0x00000603	Meeting request
0x00000604	Meeting response
0x00000610	A database application file
0x0000060E	A spreadsheet application file
0x0000060F	A slide-show presentation application file
0x0000060D	A word processing application file
0x00000608	Note
0x0000060A	Phone call
0x00000615	Remote session
0x0000060B	Task

Value	Meaning
0x00000606	Task request
0x00000607	Task response
0x00000003	Other

2.2.2.4 PidLidCompanies Property

Type: PtypMultipleString ([\[MS-OXCDATA\]](#) section 2.11.1)

The **PidLidCompanies** property ([\[MS-OXPROPS\]](#) section 2.64) contains a list of company names, each of which is associated with a **contact** that is specified in the **PidLidContacts** property ([\[MS-OXCMSG\]](#) section 2.2.1.57.2).

2.2.2.5 Recipients

A **Journal object** MUST NOT have **recipients**.

2.2.2.6 Journal-Associated Attachments

A journal-associated attachment links a **Journal object** with another object, such as a document. A Journal object MUST NOT have more than one journal-associated attachment.

The properties of a journal-associated attachment follow the requirements specified in [\[MS-OXCMSG\]](#) section 2.2.2 for **Attachment objects**, except that certain properties on the Attachment object MUST be set as specified in the following table.

Property	Value
PidTagAttachmentLinkId ([MS-OXCMSG] section 2.2.2.22)	0x00000004
PidTagAttachMethod ([MS-OXCMSG] section 2.2.2.9)	0x00000006
PidTagRenderingPosition ([MS-OXCMSG] section 2.2.2.16)	0xFFFFFFFF
PidTagAttachmentFlags ([MS-OXCMSG] section 2.2.2.23)	0x00000000
PidTagAttachmentHidden ([MS-OXCMSG] section 2.2.2.24)	0x00
PidTagAccess ([MS-OXCPRPT] section 2.2.1.1)	0x00000002

The content of the **PidTagAttachDataBinary** property ([\[MS-OXCMSG\]](#) section 2.2.2.7) is formatted as a structured **storage** that comprises eight **streams**, the names and contents of which are detailed in the following table.

Stream name	Contents
IOlePres000	A metafile that contains the icon to be used when rendering the attachment.
\3MailStream*	Binary contents: 04 00 00 00 00 00 00 00 00 00 00 00
MailMsgAttFld	The EntryID of the folder of the linked Message object .
MailMsgAttMdb	The EntryID of the store of the linked Message object.

Stream name	Contents
MailMsgAttMsg	The EntryID of the linked Message object; required only if the MailMsgAttSrchKey stream is empty.
MailMsgAttSrchFld	The object EntryID of the Sent Items special folder of the linked Message object. For details about special folders, see [MS-OXOSFLD] .
MailMsgAttSrchKey	The value of the PidTagSearchKey property ([MS-OXCPRPT] section 2.2.1.9), as specified in [MS-OXCMSG], of the linked Message object; required only if the MailMsgAttMsg stream is empty.
MailMsgAttSubject	The value of the PidTagSubject property ([MS-OXCMSG] section 2.2.1.46) of the linked Message object.

* The "\3" in "\3MailStream" represents the byte 0x03.

3 Protocol Details

3.1 Client Details

The client creates and manipulates a **Journal object** and in all other ways operates within the client role as specified in [\[MS-OXCMSG\]](#).

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 document does not mandate that implementations adhere to this model as long as the external behavior of the implementation is consistent with the behavior described in this document.

This protocol uses the abstract data model that is specified in [\[MS-OXCMSG\]](#) section 3.1.1 with the following adaptations:

- The **Journal object** is an extension of the **Message object**.
- A Journal object is created in the Journal **special folder** unless the end user or **Mail User Agent (MUA)** explicitly specifies another folder. For details about special folders, see [\[MS-OXOSFLD\]](#).

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Higher-Layer Triggered Events

3.1.4.1 Creating a Journal Object

When the user creates a journal entry, the client creates a **Message object**, as specified in [\[MS-OXCMSG\]](#) section 3.1.4.2, sets properties in accordance with the requirements in section 2, and saves the resulting **Journal object**, as specified in [\[MS-OXCMSG\]](#) section 3.1.4.3.

3.1.4.2 Modifying a Journal Object

When the user modifies a journal entry, the client opens the **Journal object** as specified in [\[MS-OXCMSG\]](#) section 3.1.4.1, modifies any of the properties in accordance with the requirements in section 2, and saves the Journal object as specified in [\[MS-OXCMSG\]](#) section 3.1.4.3. For details about modifying the properties of a **Message object**, see [\[MS-OXCPRPT\]](#).

3.1.4.3 Deleting a Journal Object

When a user deletes a journal entry, the client deletes the **Journal object** in the same way that it deletes any **Message object**, as specified in [\[MS-OXCFLD\]](#) section 3.1.4.8.

3.1.5 Message Processing Events and Sequencing Rules

None.

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

3.2 Server Details

The server processes a client's requests regarding a **Journal object** and in all other ways operates within the server role as specified in [\[MS-OXCMSG\]](#).

3.2.1 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 document does not mandate that implementations adhere to this model as long as the external behavior of the implementation is consistent with the behavior described in this document.

This protocol uses the abstract data model that is specified in [\[MS-OXCMSG\]](#) section 3.2.1 with the following adaptations:

- The **Journal object** is an extension of the **Message object**.
- A Journal object is created in the Journal **special folder** unless the end-user or **MUA** explicitly specifies another folder. For details about special folders, see [\[MS-OXOSFLD\]](#).

3.2.2 Timers

None.

3.2.3 Initialization

None.

3.2.4 Higher-Layer Triggered Events

None.

3.2.5 Message Processing Events and Sequencing Rules

The server responds to client requests as specified in [\[MS-OXCMSG\]](#) section 3.2.5.

3.2.6 Timer Events

None.

3.2.7 Other Local Events

None.

4 Protocol Examples

4.1 Journal Object for a Telephone Call Example

A user creates a journal entry to track a telephone call. The user records the start and end times, puts notes in the body, and links a **contact** and company. The following is a description of what a client might do to accomplish Joe's intentions and the responses a server might return. For information about **remote operations (ROPs)**, see [\[MS-OXCPRPT\]](#) and [\[MS-OXCMSG\]](#).

Before manipulating a **Journal object**, the client asks the server to map **named properties** to **property IDs**, by sending a **RopGetPropertyIDsFromNames ROP request** ([\[MS-OXCROPS\]](#) section 2.2.8.1).

Property	Property set GUID	LID
PidLidCommonStart ([MS-OXCMSG] section 2.2.1.18)	{00062008-0000-0000-C000-000000000046}	0x00008516
PidLidCommonEnd ([MS-OXCMSG] section 2.2.1.19)	{00062008-0000-0000-C000-000000000046}	0x00008517
PidLidCompanies (section 2.2.2.4)	{00062008-0000-0000-C000-000000000046}	0x00008539
PidLidContacts ([MS-OXCMSG] section 2.2.1.57.2)	{00062008-0000-0000-C000-000000000046}	0x0000853A
PidLidContactLinkName ([MS-OXCMSG] section 2.2.1.57.3)	{00062008-0000-0000-C000-000000000046}	0x00008586
PidLidContactLinkEntry ([MS-OXCMSG] section 2.2.1.57.1)	{00062008-0000-0000-C000-000000000046}	0x00008585
PidLidContactLinkSearchKey ([MS-OXCMSG] section 2.2.1.57.4)	{00062008-0000-0000-C000-000000000046}	0x00008584
PidLidLogTypeDesc (section 2.2.1.2)	{0006200A-0000-0000-C000-000000000046}	0x00008712
PidLidLogType (section 2.2.1.1)	{0006200A-0000-0000-C000-000000000046}	0x00008700
PidLidLogStart (section 2.2.1.3)	{0006200A-0000-0000-C000-000000000046}	0x00008706
PidLidLogEnd (section 2.2.1.4)	{0006200A-0000-0000-C000-000000000046}	0x00008708
PidLidLogDuration (section 2.2.1.5)	{0006200A-0000-0000-C000-000000000046}	0x00008707
PidLidLogFlags (section 2.2.1.6)	{0006200A-0000-0000-C000-000000000046}	0x0000870C
PidLidLogDocumentPrinted (section 2.2.1.7)	{0006200A-0000-0000-C000-000000000046}	0x0000870E
PidLidLogDocumentSaved (section 2.2.1.8)	{0006200A-0000-0000-C000-000000000046}	0x0000870F
PidLidLogDocumentRouted (section 2.2.1.9)	{0006200A-0000-0000-C000-000000000046}	0x00008710

Property	Property set GUID	LID
PidLidLogDocumentPosted (section 2.2.1.10)	{0006200A-0000-0000-C000-000000000046}	0x00008711

The server sends a **RopGetPropertyIDsFromNames ROP response** with the following property IDs, which will be used in the example that follows. (The actual property IDs are at the discretion of the server.)

Property	Property ID
PidLidCommonStart	0X81BD
PidLidCommonEnd	0X81BC
PidLidCompanies	0X800C
PidLidContacts	0X8019
PidLidContactLinkName	0X802B
PidLidContactLinkEntry	0X82F6
PidLidContactLinkSearchKey	0X82F7
PidLidLogTypeDesc	0X8230
PidLidLogType	0X801A
PidLidLogStart	0X8233
PidLidLogEnd	0X8234
PidLidLogDuration	0X8235
PidLidLogFlags	0X8236
PidLidLogDocumentPrinted	0X8238
PidLidLogDocumentSaved	0X8239
PidLidLogDocumentRouted	0X823A
PidLidLogDocumentPosted	0X823B

To create a Journal object, the client uses the **RopCreateMessage** ROP ([MS-OXCROPS] section 2.2.6.2). The server returns a **handle** to a **Message object**.

After the user has input his content for the Journal object, the client transmits the data to the server by using the **RopSetProperties** ROP ([MS-OXCROPS] section 2.2.8.6). For information about the property types in the following table, see [\[MS-OXCDATA\]](#) section 2.11.1.

Property	Property ID	Property type	Value
PidLidCommonStart	0x81bd	0x0040 (PtypTime)	2008/02/20 23:02:00.000
PidLidCommonEnd	0x81bc	0x0040	2008/02/20 23:12:00.000

Property	Property ID	Property type	Value
PidLidCompanies	0x800c	0X101F (PtypMultipleString ([MS-OXCDATA] section 2.11.1))	[1 entry] "Contoso Pharmaceuticals"
PidLidContacts	0x8019	0X101F	[1 entry] "Adam Barr"
PidLidContactLinkName	0x802b	0X001F (PtypString)	"Adam Barr"
PidLidContactLinkEntry	0x82f6	0x0102 (PtypBinary)	*(See note following table)
PidLidContactLinkSearchKey	0x82f7	0x0102	** (See note following table)
PidLidLogTypeDesc	0x8230	0X001F	"Phone call"
PidLidLogType	0x801a	0X001F	"Phone call"
PidLidLogStart	0x8233	0x0040	2008/02/20 23:02:00.000
PidLidLogEnd	0x8234	0x0040	2008/02/20 23:12:00.000
PidLidLogDuration	0x8235	0x0003 (PtypInteger32)	0x0000000A
PidLidLogFlags	0x8236	0x0003	0x00000000
PidLidLogDocumentPrinted	0x8238	0X000B (PtypBoolean)	0x00
PidLidLogDocumentSaved	0x8239	0X000B	0x00
PidLidLogDocumentRouted	0x823a	0X000B	0x00
PidLidLogDocumentPosted	0x823b	0X000B	0x00
PidTagRtfCompressed ([MS-OXCMSG] section 2.2.1.56.4)	0x1009	0x0102	*** (See note following table)
PidTagIconIndex ([MS-OXOMSG] section 2.2.1.10)	0x1080	0x0003	0x0000060A

* The **PidLidContactLinkEntry** property contains a representation of the contact link, as described in [MS-OXCMSG] section 2.2.1.57.1.

** The **PidLidContactLinkSearchKey** property contains a representation of the contact link, as described in [MS-OXCMSG] section 2.2.1.57.4.

*** The **PidTagRtfCompressed** property ([MS-OXCMSG] section 2.2.1.56.4) contains the compressed **Rich Text Format (RTF)** representation of the body, as described in [\[MS-OXRTFCP\]](#).

When the user saves the changes, the client commits the properties on the server by using the **RopSaveChangesMessage** ROP ([MS-OXCROPS] section 2.2.6.3) and then releases the Journal object by using the **RopRelease** ROP ([MS-OXCROPS] section 2.2.15.3).

The values of some properties will change during the processing of the **RopSaveChangesMessage** ROP, but the properties specified in this document will not change.

5 Security

5.1 Security Considerations for Implementers

There are no special security considerations specific to the Journal Object Protocol. General security considerations pertaining to the underlying transport apply, as described in [\[MS-OXCMSG\]](#).

5.2 Index of Security Parameters

None.

6 Appendix A: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include updates to those products.

- Microsoft Exchange Server 2003
- Microsoft Exchange Server 2007
- Microsoft Exchange Server 2010
- Microsoft Exchange Server 2013
- Microsoft Exchange Server 2016
- Microsoft Exchange Server 2019
- Microsoft Office Outlook 2003
- Microsoft Office Outlook 2007
- Microsoft Outlook 2010
- Microsoft Outlook 2013
- Microsoft Outlook 2016
- Microsoft Outlook 2019
- Microsoft Outlook 2021

Exceptions, if any, are noted in this section. If an update version, service pack or Knowledge Base (KB) number appears with a product name, the behavior changed in that update. The new behavior also applies to subsequent updates unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification that is prescribed using the terms "SHOULD" or "SHOULD NOT" implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term "MAY" implies that the product does not follow the prescription.

<1> [Section 2.2.1.7](#): Outlook 2013, Outlook 2016, and Outlook 2019 do not support the **PidLidLogDocumentPrinted** property (section [2.2.1.7](#)).

<2> [Section 2.2.1.8](#): Outlook 2013, Outlook 2016, and Outlook 2019 do not support the **PidLidLogDocumentSaved** property (section [2.2.1.8](#)).

<3> [Section 2.2.1.9](#): Outlook 2013, Outlook 2016, and Outlook 2019 do not support the **PidLidLogDocumentRouted** property (section [2.2.1.9](#)).

<4> [Section 2.2.1.10](#): Outlook 2013, Outlook 2016, and Outlook 2019 do not support the **PidLidLogDocumentPosted** property (section [2.2.1.10](#)).

7 Change Tracking

This section identifies changes that were made to this document since the last release. Changes are classified as Major, Minor, or None.

The revision class **Major** means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

- A document revision that incorporates changes to interoperability requirements.
- A document revision that captures changes to protocol functionality.

The revision class **Minor** means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class **None** means that no new technical changes were introduced. Minor editorial and formatting changes may have been made, but the relevant technical content is identical to the last released version.

The changes made to this document are listed in the following table. For more information, please contact dochelp@microsoft.com.

Section	Description	Revision class
6 Appendix A: Product Behavior	Updated list of supported products.	major

8 Index

A

Abstract data model

[client](#) 14
[server](#) 15

Additional property constraints

[best body properties](#) 11
[journal-associated attachments](#) 12
[PidLidCompanies property](#) 12
[PidTagIconIndex property](#) 11
[PidTagMessageClass property](#) 11
[recipients](#) 12

[Additional Property Constraints message](#) 11

[Applicability](#) 8

B

[Best body additional property constraints](#) 11

C

[Capability negotiation](#) 8

[Change tracking](#) 21

Client

[abstract data model](#) 14
[initialization](#) 14
[message processing](#) 14
[other local events](#) 15
[overview](#) 14
[sequencing rules](#) 14
[timer events](#) 15
[timers](#) 14

Client - higher-layer triggered events

[creating a Journal object](#) 14
[deleting a Journal object](#) 14
[modifying a Journal object](#) 14

D

Data model - abstract

[client](#) 14
[server](#) 15

E

[Examples - Journal object for a telephone call](#) 16

F

[Fields - vendor-extensible](#) 8

G

[Glossary](#) 6

H

Higher-layer triggered events

[server](#) 15

Higher-layer triggered events - client

[creating a Journal object](#) 14

[deleting a Journal object](#) 14

[modifying a Journal object](#) 14

I

[Implementer - security considerations](#) 19

[Index of security parameters](#) 19

[Informative references](#) 7

Initialization

[client](#) 14
[server](#) 15

[Introduction](#) 6

J

[Journal object for a telephone call example](#) 16

Journal object properties

[PidLidLogDocumentPosted property](#) 10
[PidLidLogDocumentPrinted property](#) 10
[PidLidLogDocumentRouted property](#) 10
[PidLidLogDocumentSaved property](#) 10
[PidLidLogDuration property](#) 10
[PidLidLogEnd property](#) 9
[PidLidLogFlags property](#) 10
[PidLidLogStart property](#) 9
[PidLidLogType property](#) 9
[PidLidLogTypeDesc property](#) 9

[Journal-associated attachments additional property constraints](#) 12

M

Message processing

[client](#) 14
[server](#) 15

Messages

[Additional Property Constraints](#) 11
[syntax](#) 9
[transport](#) 9

N

[Normative references](#) 7

O

Other local events

[client](#) 15
[server](#) 15

[Overview \(synopsis\)](#) 8

P

[Parameters - security index](#) 19

[PidLidCompanies additional property constraints](#) 12

[PidLidLogDocumentPosted Journal object property](#) 10

[PidLidLogDocumentPrinted Journal object property](#)

10

[PidLidLogDocumentRouted Journal object property](#)

10

[PidLidLogDocumentSaved Journal object property](#) 10

[PidLidLogDuration Journal object property](#) 10
[PidLidLogEnd Journal object property](#) 9
[PidLidLogFlags Journal object property](#) 10
[PidLidLogStart Journal object property](#) 9
[PidLidLogType Journal object property](#) 9
[PidLidLogTypeDesc Journal object property](#) 9
[PidTagIconIndex additional property constraints](#) 11
[PidTagMessageClass additional property constraints](#)
11
[Preconditions](#) 8
[Prerequisites](#) 8
[Product behavior](#) 20

R

[Recipients additional property constraints](#) 12
[References](#) 7
 [informative](#) 7
 [normative](#) 7
[Relationship to other protocols](#) 8

S

Security
 [implementer considerations](#) 19
 [parameter index](#) 19
Sequencing rules
 [client](#) 14
 [server](#) 15
Server
 [abstract data model](#) 15
 [higher-layer triggered events](#) 15
 [initialization](#) 15
 [message processing](#) 15
 [other local events](#) 15
 [overview](#) 15
 [sequencing rules](#) 15
 [timer events](#) 15
 [timers](#) 15
[Standards assignments](#) 8
[Syntax](#) 9

T

Timer events
 [client](#) 15
 [server](#) 15
Timers
 [client](#) 14
 [server](#) 15
[Tracking changes](#) 21
[Transport](#) 9
Triggered events - client
 [creating a Journal object](#) 14
 [deleting a Journal object](#) 14
 [modifying a Journal object](#) 14
Triggered events - higher-layer
 [server](#) 15

V

[Vendor-extensible fields](#) 8
[Versioning](#) 8