

# [MS-OXONOTE]: Note Object Protocol Specification

---

## Intellectual Property Rights Notice for Open Specifications Documentation

- **Technical Documentation.** Microsoft publishes Open Specifications documentation for protocols, file formats, languages, standards as well as overviews of the interaction among each of these technologies.
- **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 may make copies of it in order to develop implementations of the technologies described in the Open Specifications and may distribute portions of it in your implementations using these technologies or your documentation as necessary to properly document the implementation. You may also distribute in your implementation, with or without modification, any schema, IDL's, or code samples that are included in the documentation. This permission also applies to any documents that are referenced in the Open Specifications.
- **No Trade Secrets.** Microsoft does not claim any trade secret rights in this documentation.
- **Patents.** Microsoft has patents that may cover your implementations of the technologies described in the Open Specifications. Neither this notice nor Microsoft's delivery of the documentation grants any licenses under those or any other Microsoft patents. However, a given Open Specification may be covered by Microsoft's Open Specification Promise (available here: <http://www.microsoft.com/interop/osp>) or the Community Promise (available here: <http://www.microsoft.com/interop/cp/default.msp>). If you would prefer a written license, or if the technologies described in the Open Specifications are not covered by the Open Specifications Promise or Community Promise, as applicable, patent licenses are available by contacting [iplg@microsoft.com](mailto:iplg@microsoft.com).
- **Trademarks.** The names of companies and products contained in this documentation may be covered by trademarks or similar intellectual property rights. This notice does not grant any licenses under those rights.
- **Fictitious Names.** The example companies, organizations, products, domain names, e-mail addresses, logos, people, places, and events 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 specifically described above, whether by implication, estoppel, or otherwise.

**Tools.** The Open Specifications do 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 are intended for use in conjunction with publicly available standard specifications and network programming art, and assumes that the reader either is familiar with the aforementioned material or has immediate access to it.

## Revision Summary

Date	Revision History	Revision Class	Comments
04/04/2008	0.1		Initial Availability.
06/27/2008	1.0		Initial Release.
08/06/2008	1.01		Revised and edited technical content.
09/03/2008	1.02		Updated references.
12/03/2008	1.03		Updated IP notice.
04/10/2009	2.0		Updated applicable product releases.
07/15/2009	3.0	Major	Revised and edited for technical content.
11/04/2009	4.0.0	Major	Updated and revised the technical content.
02/10/2010	4.0.0	None	Version 4.0.0 release
05/05/2010	4.0.1	Editorial	Revised and edited the technical content.
08/04/2010	4.1	Minor	Clarified the meaning of the technical content.
11/03/2010	4.2	Minor	Clarified the meaning of the technical content.
03/18/2011	4.2	No change	No changes to the meaning, language, and formatting of the technical content.

# Table of Contents

<b>1 Introduction</b>	<b>5</b>
1.1 Glossary	5
1.2 References	5
1.2.1 Normative References	5
1.2.2 Informative References	6
1.3 Overview	6
1.4 Relationship to Other Protocols	6
1.5 Prerequisites/Preconditions	6
1.6 Applicability Statement	6
1.7 Versioning and Capability Negotiation	6
1.8 Vendor-Extensible Fields	6
1.9 Standards Assignments	7
<b>2 Messages</b>	<b>8</b>
2.1 Transport	8
2.2 Message Syntax	8
2.2.1 Note Object Properties	8
2.2.1.1 PidLidNoteColor	8
2.2.1.2 PidLidNoteWidth	8
2.2.1.3 PidLidNoteHeight	8
2.2.1.4 PidLidNoteX	9
2.2.1.5 PidLidNoteY	9
2.2.2 Additional Property Constraints	9
2.2.2.1 Best Body Properties	9
2.2.2.2 PidTagIconIndex	9
2.2.2.3 PidTagMessageClass	9
2.2.2.4 PidTagNormalizedSubject	9
2.2.2.5 Recipients	9
2.2.2.6 Attachment Objects	10
<b>3 Protocol Details</b>	<b>11</b>
3.1 Common Details	11
3.1.1 Abstract Data Model	11
3.1.1.1 Note Objects	11
3.1.1.2 Note Special Folder	11
3.1.2 Timers	11
3.1.3 Initialization	11
3.1.4 Higher-Layer Triggered Events	11
3.1.4.1 Creation of a Note Object	11
3.1.4.2 Modification of a Note Object	11
3.1.4.3 Deletion of a Note Object	11
3.1.5 Message Processing Events and Sequencing Rules	12
3.1.6 Timer Events	12
3.1.7 Other Local Events	12
<b>4 Protocol Examples</b>	<b>13</b>
4.1 Sample Note Object	13
<b>5 Security</b>	<b>15</b>
5.1 Security Considerations for Implementers	15
5.2 Index of Security Parameters	15

**6 Appendix A: Product Behavior ..... 16**  
**7 Change Tracking..... 18**  
**8 Index ..... 19**

# 1 Introduction

This document specifies the Note Object Protocol, which defines properties of objects that function as electronic equivalents of paper sticky notes. A **Note object** presents the user with a very simple interface for keeping brief notes.

## 1.1 Glossary

The following terms are defined in [\[MS-GLOS\]](#):

**handle**

The following terms are defined in [\[MS-OXGLOS\]](#):

**Attachment object**  
**Folder object**  
**Mail User Agent (MUA)**  
**Message object**  
**named property**  
**Note object**  
**plain text**  
**plain text message body**  
**property ID**  
**property type**  
**recipient**  
**remote operation (ROP)**  
**special folder**

The following terms are specific to this document:

**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

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](mailto:dochelp@microsoft.com). We will assist you in finding the relevant information. Please check the archive site, <http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624>, as an additional source.

[MS-OXCDATA] Microsoft Corporation, "[Data Structures](#)", April 2008.

[MS-OXCFCOLD] Microsoft Corporation, "[Folder Object Protocol Specification](#)", June 2008.

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

[MS-OXCPRPT] Microsoft Corporation, "[Property and Stream Object Protocol Specification](#)", June 2008.

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

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

[MS-GLOS] Microsoft Corporation, "[Windows Protocols Master Glossary](#)", March 2007.

[MS-OXCROPS] Microsoft Corporation, "[Remote Operations \(ROP\) List and Encoding Protocol Specification](#)", June 2008.

[MS-OXGLOS] Microsoft Corporation, "[Exchange Server Protocols Master Glossary](#)", April 2008.

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

[MS-OXRTFEX] Microsoft Corporation, "[Rich Text Format \(RTF\) Extensions Specification](#)", June 2008.

## 1.3 Overview

The Note Object Protocol enables the representation of a simple text note in a messaging store. The Note Object Protocol extends the Message and Attachment Object Protocol in that it defines new properties and adds restrictions to the properties that are defined in [\[MS-OXCMSG\]](#).

A Note object represents a "sticky note." The properties that are specific to a Note object facilitate retaining information about the background color, window location, and size of the note. A Note object contains simple text (that is, text with minimal formatting other than line breaks), and is stored in a **Folder object**. The Note Object Protocol also specifies how a Note object is created and manipulated.

## 1.4 Relationship to Other Protocols

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

## 1.5 Prerequisites/Preconditions

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

## 1.6 Applicability Statement

None.

## 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 Note Object Protocol uses the protocols defined in [\[MS-OXCPRPT\]](#) and [\[MS-OXCMSG\]](#) as its primary transport mechanism.

### 2.2 Message Syntax

A Note 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 Note objects by using the Message and Attachment Object Protocol, as specified in [\[MS-OXCMSG\]](#). How a server operates on Note objects is implementation-dependent. The results of any such operation are exposed to clients in a manner that is consistent with the Note Object Protocol.

Unless otherwise specified, a Note object adheres to all property constraints specified in [\[MS-OXPROPS\]](#) and all property constraints specified in [\[MS-OXCMSG\]](#). A Note object can also contain other properties, [<1><2>](#) which are defined in [\[MS-OXPROPS\]](#), but these properties have no impact on the Note Object Protocol.

#### 2.2.1 Note Object Properties

The following properties are specific to Note objects. All property value types (**PtypInteger32**, **PtypString**, and so on) are defined in [\[MS-OXCDATA\]](#) section 2.11.1.

##### 2.2.1.1 PidLidNoteColor

Type: **PtypInteger32**

Specifies the suggested background color of the Note object; MUST be one of the entries in the following table. [<3>](#)

Value	Color
0x00000000	Blue
0x00000001	Green
0x00000002	Pink
0x00000003	Yellow
0x00000004	White

##### 2.2.1.2 PidLidNoteWidth

Type: **PtypInteger32**, signed

Specifies the width of the visible message window in pixels; the value MUST be greater than zero.

##### 2.2.1.3 PidLidNoteHeight

Type: **PtypInteger32**, signed



Specifies the height of the visible message window in pixels; the value MUST be greater than zero.

#### 2.2.1.4 PidLidNoteX

Type: **PtypInteger32**, signed

Specifies the distance, in pixels, from the left edge of the screen that a user interface displays a Note object.

#### 2.2.1.5 PidLidNoteY

Type: **PtypInteger32**, signed

Specifies the distance, in pixels, from the top edge of the screen that a user interface displays a Note object.

### 2.2.2 Additional Property Constraints

This protocol specifies additional constraints on the following properties beyond what is specified in [\[MS-OXCMSG\]](#). All property value types, (**PtypInteger32**, **PtypString**, and so on) are defined in [\[MS-OXCDATA\]](#) section 2.11.1.

#### 2.2.2.1 Best Body Properties

Specifies the content of the Note object. The content is a **plain text message body** stored in the **PidTagBody** ([\[MS-OXCMSG\]](#) section 2.2.1.44.1).<4>

#### 2.2.2.2 PidTagIconIndex

Type: **PtypInteger32**

Specifies which icon is to be used by a user interface when displaying a group of Note object. The value MUST be 0x00000300 added to the value of **PidLidNoteColor** ([\[MS-OXPROPS\]](#) section 2.181).

#### 2.2.2.3 PidTagMessageClass

Type: **PtypString**, case-insensitive

Specifies the type of the message item. The value MUST be "IPM.StickyNote" or begin with "IPM.StickyNote.", in addition to meeting the criteria specified in [\[MS-OXCMSG\]](#) section 2.2.1.3.

#### 2.2.2.4 PidTagNormalizedSubject

Type: **PtypString**

Specifies an abbreviated version of the contents of the note that is suitable for displaying groups of Note object to a user.<5>

#### 2.2.2.5 Recipients

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

### 2.2.2.6 Attachment Objects

A Note object MUST NOT have **Attachment objects**.

## 3 Protocol Details

General protocol details, as specified in [\[MS-OXPROPS\]](#) and [\[MS-OXCMSG\]](#), apply.

### 3.1 Common Details

The client and server roles are to create and manipulate electronic sticky notes, and otherwise operate in their roles 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 specification does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this document.

##### 3.1.1.1 Note Objects

A Note object extends the **Message object** as defined in [\[MS-OXCMSG\]](#).

##### 3.1.1.2 Note Special Folder

A Note object is created in the Notes **special folder** as defined in [\[MS-OXOSFLD\]](#) unless the **Mail User Agent (MUA)** explicitly specifies another Folder object.

##### 3.1.2 Timers

None.

##### 3.1.3 Initialization

None.

##### 3.1.4 Higher-Layer Triggered Events

###### 3.1.4.1 Creation of a Note Object

To create a Note object, the server or client creates a Message object as specified in [\[MS-OXCMSG\]](#), sets properties in accordance with the requirements in section 2 and [\[MS-OXCPRPT\]](#), and saves the resulting Message object as specified in [\[MS-OXCMSG\]](#).

###### 3.1.4.2 Modification of a Note Object

When modifying a Note object, the client or server opens a Message object, as specified in [\[MS-OXCMSG\]](#), modifies any of the properties in accordance with the requirements in section 2 and [\[MS-OXCPRPT\]](#), and saves the Message object as specified in [\[MS-OXCMSG\]](#).

###### 3.1.4.3 Deletion of a Note Object

Note objects have no special semantics in relation to deletion beyond what is defined in [\[MS-OXCFCOLD\]](#).

### **3.1.5 Message Processing Events and Sequencing Rules**

None.

### **3.1.6 Timer Events**

None.

### **3.1.7 Other Local Events**

None.

## 4 Protocol Examples

### 4.1 Sample Note Object

Joe creates a Note object, types in his grocery list, and saves it. 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 Note objects, the client needs to ask the server to perform a mapping from **named properties** to **property IDs**, using **RopGetPropertyIdsFromNames** ([\[MS-OXCROPS\]](#) section 2.2.8.1).

Property	Property set GUID	NameID
<b>PidLidNoteColor</b> ( <a href="#">[MS-OXPROPS]</a> section 2.181)	{0006200E-0000-0000-C000-000000000046}	0x00008B00
<b>PidLidNoteWidth</b> ( <a href="#">[MS-OXPROPS]</a> section 2.183)	{0006200E-0000-0000-C000-000000000046}	0x00008B02
<b>PidLidNoteHeight</b> ( <a href="#">[MS-OXPROPS]</a> section 2.182)	{0006200E-0000-0000-C000-000000000046}	0x00008B03
<b>PidLidNoteX</b> ( <a href="#">[MS-OXPROPS]</a> section 2.184)	{0006200E-0000-0000-C000-000000000046}	0x00008B04
<b>PidLidNoteY</b> ( <a href="#">[MS-OXPROPS]</a> section 2.185)	{0006200E-0000-0000-C000-000000000046}	0x00008B05

The server might respond with the following identifiers, which will be used in the example that follows. (The actual identifiers are at the discretion of the server.)

Property	Property ID
<b>PidLidNoteColor</b> ( <a href="#">[MS-OXPROPS]</a> section 2.181)	0x8046
<b>PidLidNoteWidth</b> ( <a href="#">[MS-OXPROPS]</a> section 2.183)	0x8047
<b>PidLidNoteHeight</b> ( <a href="#">[MS-OXPROPS]</a> section 2.182)	0x8048
<b>PidLidNoteX</b> ( <a href="#">[MS-OXPROPS]</a> section 2.184)	0x8049
<b>PidLidNoteY</b> ( <a href="#">[MS-OXPROPS]</a> section 2.185)	0x804A

To create a Note object, the client uses **RopCreateMessage** ([\[MS-OXCROPS\]](#) section 2.2.6.2). The server returns a success code and a **handle** to a Message object.

After Joe has input his content for the Note object, the client uses **RopSetProperties** ([\[MS-OXCROPS\]](#) section 2.2.8.6) to transmit his data to the server. For information about **property types**, see [\[MS-OXCDATA\]](#).

Property	Property ID	Data Type	Value
<b>PidLidNoteColor</b> ( <a href="#">[MS-OXPROPS]</a> section 2.181)	0x8046	0x0003 (PtypInteger32)	0x00000003

Property	Property ID	Data Type	Value
<b>PidLidNoteWidth</b> ( <a href="#">[MS-OXPROPS]</a> section 2.183)	0x8047	0x0003 (PtypInteger32)	0x000000C8
<b>PidLidNoteHeight</b> ( <a href="#">[MS-OXPROPS]</a> section 2.182)	0x8048	0x0003 (PtypInteger32)	0x000000A6
<b>PidLidNoteX</b> ( <a href="#">[MS-OXPROPS]</a> section 2.184)	0x8049	0x0003 (PtypInteger32)	0x0000006E
<b>PidLidNoteY</b> ( <a href="#">[MS-OXPROPS]</a> section 2.185)	0x804A	0x0003 (PtypInteger32)	0x0000006E
<b>PidTagIconIndex</b> ( <a href="#">[MS-OXPROPS]</a> section 2.813)	0x1080	0x0003 (PtypInteger32)	0x00000303
<b>PidTagMessageClass</b> ( <a href="#">[MS-OXPROPS]</a> section 2.884)	0x001A	0x001F (PtypString)	IPM.StickyNote
<b>PidTagNormalizedSubject</b> ( <a href="#">[MS-OXPROPS]</a> section 2.907)	0x0E1D	0x001F (PtypString)	Grocery List
<b>PidTagSubjectPrefix</b> ( <a href="#">[MS-OXPROPS]</a> section 2.1146)	0x003D	0x001F (PtypString)	(null)
<b>PidTagBody</b> ( <a href="#">[MS-OXPROPS]</a> section 2.683)	0x1000	0x001F (PtypString)	Grocery List: Celery Broccoli

When Joe is ready to save his changes, the client uses **RopSaveChangesMessage** ([\[MS-OXCROPS\]](#) section 2.2.6.3) to commit the properties on the server, and then **RopRelease** ([\[MS-OXCROPS\]](#) section 2.2.15.3) to release the Note object.

The values of some properties will change during the execution of **RopSaveChangesMessage**, 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 Note Object Protocol. General security considerations pertaining to the underlying transport apply, as specified in [\[MS-OXCMSG\]](#) and [\[MS-OXCPRPT\]](#).

### 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 released service packs:

- Microsoft® Exchange Server 2003
- Microsoft® Exchange Server 2007
- Microsoft® Exchange Server 2010
- Microsoft® Office Outlook® 2003
- Microsoft® Office Outlook® 2003 Service Pack 3 (SP3)
- Microsoft® Office Outlook® 2007
- Microsoft® Office Outlook® 2007 Service Pack 1
- Microsoft® Outlook® 2010

Exceptions, if any, are noted below. If a service pack or Quick Fix Engineering (QFE) number appears with the product version, behavior changed in that service pack or QFE. The new behavior also applies to subsequent service packs of the product 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](#): Office Outlook 2003 SP3 and Office Outlook 2007 SP1 set the following properties regardless of user input, but their values have no meaning in the context of this protocol:

**PidLidAgingDontAgeMe, PidLidCurrentVersion, PidLidCurrentVersionName, PidLidPrivate, PidLidSideEffects, PidTagAlternateRecipientAllowed, PidTagClientSubmitTime, PidTagDeleteAfterSubmit, PidTagImportance, PidTagMessageDeliveryTime, PidTagPriority, PidTagReadReceiptRequested, PidTagSensitivity, PidLidReminderDelta, PidLidReminderSet, PidLidReminderTimeTime, PidLidTaskMode.** For details about these properties, see [\[MS-OXPROPS\]](#).

<2> [Section 2.2](#): Office Outlook 2007 SP1 sets the following properties regardless of user input, but their values have no meaning in the context of this protocol:

**PidLidPercentComplete, PidLidTaskActualEffort, PidLidTaskComplete, PidLidTaskAssigner, PidLidTaskAcceptanceState, PidLidTaskEstimatedEffort, PidLidTaskFFixOffline, PidLidTaskFRecurring, PidLidTaskNoCompute, PidLidTaskOrdinal, PidLidTaskOwnership, PidLidTaskRole, PidLidTaskState, PidLidTaskStatus, PidLidTaskVersion, PidLidTeamTask, PidLidValidFlagStringProof.** For details about these properties, see [\[MS-OXPROPS\]](#).

<3> [Section 2.2.1.1](#): Office Outlook 2003 SP3 will always use **PidLidNoteColor** ([\[MS-OXPROPS\]](#) section 2.181) to determine the background color, regardless of the existence or value of **PidNameKeywords** ([\[MS-OXPROPS\]](#) section 2.493). Office Outlook 2007 SP1 ignores **PidLidNoteColor** if the item has **PidNameKeywords** set also. In that case, the background color is the color associated with the first keyword listed, as described in [\[MS-OXOCFG\]](#).

<4> [Section 2.2.2.1](#): Office Outlook 2003 SP3 and Office Outlook 2007 SP1 set encapsulated **plain text** as a Rich Text Body. For more information, see [\[MS-OXRTFEX\]](#) and [\[MS-OXCMSG\]](#).



<5> [Section 2.2.2.4](#): Office Outlook 2007 always sets this property to the first line of the message body.

## 7 Change Tracking

No table of changes is available. The document is either new or has had no changes since its last release.

## 8 Index

### A

[Additional Property Constraints message](#) 9  
[Applicability](#) 6

### C

[Capability negotiation](#) 6  
[Change tracking](#) 18  
Client  
  [overview](#) 11

### F

[Fields - vendor-extensible](#) 6

### G

[Glossary](#) 5

### I

[Implementer - security considerations](#) 15  
[Index of security parameters](#) 15  
[Informative references](#) 6  
[Introduction](#) 5

### M

Messages  
  [Additional Property Constraints](#) 9  
  [Note Object Properties](#) 8  
  [transport](#) 8

### N

[Normative references](#) 5  
[Note Object Properties message](#) 8

### O

[Overview](#) 6

### P

[Parameters - security index](#) 15  
[Preconditions](#) 6  
[Prerequisites](#) 6  
[Product behavior](#) 16  
Proxy  
  [overview](#) 11

### R

References  
  [informative](#) 6  
  [normative](#) 5  
[Relationship to other protocols](#) 6

### S

Security  
  [implementer considerations](#) 15  
  [parameter index](#) 15  
Server  
  [overview](#) 11  
[Standards assignments](#) 7

### T

[Tracking changes](#) 18  
[Transport](#) 8

### V

[Vendor-extensible fields](#) 6  
[Versioning](#) 6