

# [MS-OXONOTE]: Note Object Protocol Specification

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# Table of Contents

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

3.1.6	Timer Events .....	9
3.1.7	Other Local Events.....	9
<b>4</b>	<b><i>Protocol Examples</i></b> .....	<b>10</b>
4.1	Sample Note Object.....	10
<b>5</b>	<b><i>Security</i></b> .....	<b>11</b>
5.1	Security Considerations for Implementers .....	11
5.2	Index of Security Parameters .....	11
<b>6</b>	<b><i>Appendix A: Office/Exchange Behavior</i></b> .....	<b>11</b>
	<b><i>Index</i></b> .....	<b>13</b>

# 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-OXGLOS]:

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

The following terms are specific to this document:

**Note object:** A **Message object** that represents a simple text note in a messaging store and that adheres to the **property** specifications in this document. A Note object functions as the electronic equivalent of a paper sticky note.

**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-OXCFOLD] 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-OXGLOS] Microsoft Corporation, "Exchange Server Protocols Master Glossary", 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

[MS-OXCDATA] Microsoft Corporation, "Data Structures Protocol Specification", June 2008.

## 1.3 Protocol 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 **MAY** 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.

#### 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].

### 2.2.2.1 Best Body Properties

The contents of the **Note object**. A **plain text message body** stored as specified in [MS-OXCMSG]<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 objects**. The value **MUST** be 0x00000300 added to the value of **PidLidNoteColor**.

#### 2.2.2.3 PidTagMessageClass

Type: **PtypString8**, 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].

#### 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 objects** to a user.

#### 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** 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-OXCFOLD].

### 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**:

Property	Property Set GUID	NameID
<b>PidLidNoteColor</b>	{0006200E-0000-0000-C000-000000000046}	0x00008B00
<b>PidLidNoteWidth</b>	{0006200E-0000-0000-C000-000000000046}	0x00008B02
<b>PidLidNoteHeight</b>	{0006200E-0000-0000-C000-000000000046}	0x00008B03
<b>PidLidNoteX</b>	{0006200E-0000-0000-C000-000000000046}	0x00008B04
<b>PidLidNoteY</b>	{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>	0x8046
<b>PidLidNoteWidth</b>	0x8047
<b>PidLidNoteHeight</b>	0x8048
<b>PidLidNoteX</b>	0x8049
<b>PidLidNoteY</b>	0x804A

To create a Note object, the client uses **RopCreateMessage**. 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** to transmit his data to the server. For information about **property types**, see [MS-OXCDATA].

Property	Property ID	Data Type	Value
<b>PidLidNoteColor</b>	0x8046	0x0003 ( <b>PtypInteger32</b> )	0x00000003
<b>PidLidNoteWidth</b>	0x8047	0x0003 ( <b>PtypInteger32</b> )	0x000000C8
<b>PidLidNoteHeight</b>	0x8048	0x0003 ( <b>PtypInteger32</b> )	0x000000A6

Property	Property ID	Data Type	Value
<b>PidLidNoteX</b>	0x8049	0x0003 ( <b>PtypInteger32</b> )	0x0000006E
<b>PidLidNoteY</b>	0x804A	0x0003 ( <b>PtypInteger32</b> )	0x0000006E
<b>PidTagIconIndex</b>	0x1080	0x0003 ( <b>PtypInteger32</b> )	0x00000303
<b>PidTagMessageClass</b>	0x001A	0x001E ( <b>PtypString8</b> )	IPM.StickyNote
<b>PidTagNormalizedSubject</b>	0x0e1d	0x001f ( <b>PtypString</b> )	Grocery List
<b>PidTagSubjectPrefix</b>	0x003d	0x001f ( <b>PtypString</b> )	(null)
<b>PidTagBody</b>	0x1000	0x001f ( <b>PtypString</b> )	"Grocery List: Celery Broccoli"

When Joe is ready to save his changes, the client uses **RopSaveChangesMessage** to commit the properties on the server, and then **RopRelease** 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: Office/Exchange Behavior

The information in this specification is applicable to the following versions of Office/Exchange:

- Office 2003 with Service Pack 3 applied
- Exchange 2003 with Service Pack 2 applied
- Office 2007 with Service Pack 1 applied
- Exchange 2007 with Service Pack 1 applied

Exceptions, if any, are noted below. Unless otherwise specified, any statement of optional behavior in this specification prescribed 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.

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<1> Section 2.2.1: Outlook 2003 SP3 and Outlook 2007 SP1 sometimes set the following properties regardless of user input; their values have no meaning in the context of this protocol.

**PidLidAgingDontAgeMe, PidLidCurrentVersion, PidLidCurrentVersionName, PidLidPrivate, PidLidSideEffect, PidTagAlternateRecipientAllowed, PidTagClientSubmitTime, PidTagDeleteAfterSubmit, PidTagImportance, PidTagMessageDeliveryTime, PidTagPriority, PidTagReadReceiptRequested, PidTagSensitivity, PidLidReminderDelta, PidLidReminderSet, PidLidReminderNextTime, PidLidTaskMode**

<2> Section 2.2.1: Outlook 2007 SP1 sets the following properties regardless of user input; 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**

<3> Outlook 2003 SP3 will always use **PidLidNoteColor** to determine the background color, regardless of the existence or value of **PidNameKeywords**. Outlook 2007 SP1 ignores **PidLidNoteColor** if the item has **PidNameKeywords** set also. In that case, the background color will be the color associated with the first keyword listed, as specified in [MS-OXOCFG].

<4> Outlook 2003 SP3 and Office Outlook 2007 SP1 set encapsulated **plain text** as a Rich Text Body, as specified in [MS-OXRTFEX] and [MS-OXCMSG].

# Index

- Introduction, 4
  - Applicability statement, 6
  - Glossary, 4
  - Prerequisites/Preconditions, 5
  - Protocol Overview, 5
  - References, 4
  - Relationship to other protocols, 5
  - Standards assignments, 6
  - Vendor-extensible fields, 6
  - Versioning, 6
- Messages, 6
  - Message syntax, 6
  - Transport, 6
- Office/Exchange behavior, 11
- Protocol details, 8
  - Common details, 8
- Protocol examples, 10
  - Sample note object, 10
- References
  - Informative references, 5
  - Normative references, 4
- Security, 11
  - Index of security parameters, 11
  - Security considerations for implementers, 11