

[MS-XWDMAIL]: Web Distributed Authoring and Versioning (WebDAV) Extensions for E-Mail Support

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Revision Summary

Date	Revision History	Revision Class	Comments
12/03/2008	1.0		Initial Release.
03/04/2009	1.01		Revised and edited technical content.
04/10/2009	2.0		Deprecated for Exchange 2010.
07/15/2009	3.0	Major	Changes made for template compliance.
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05/05/2010	4.1.0	Minor	Updated the technical content.
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1 Introduction

This document specifies the WebDAV Extensions for E-Mail Support protocol, which extends the WebDAV protocol (specified in [\[RFC2518\]](#)) and the Hypertext Transfer Protocol (HTTP) 1.1 (specified in [\[RFC2068\]](#)). The WebDAV Extensions for E-Mail Support protocol is used by clients to send, receive, and manipulate e-mail through **HTTP**.

1.1 Glossary

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

8.3 name
Augmented Backus-Naur Form (ABNF)
attachment
Coordinated Universal Time (UTC)
folder
Hypertext Markup Language (HTML)
Hypertext Transfer Protocol (HTTP)
Message object
Multipurpose Internet Mail Extensions (MIME)
Rich Text Format (RTF)
Simple Mail Transfer Protocol (SMTP)
Uniform Resource Identifier (URI)
Uniform Resource Locator (URL)
WebDAV
WebDAV client
WebDAV server
XML

The following terms are specific to this document:

mail submission URI: The **URI** to which mail is sent. This URI represents the outbound mail queue.

Network News Transfer Protocol (NNTP): A protocol for the distribution, inquiry, retrieval, and posting of news articles.

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. 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-OXCMAIL] Microsoft Corporation, "[RFC2822 and MIME to E-Mail Object Conversion Protocol Specification](#)", April 2008.

- [MS-OXCMMSG] Microsoft Corporation, "[Message and Attachment Object Protocol Specification](#)", April 2008.
- [MS-OXOMSG] Microsoft Corporation, "[E-Mail Object Protocol Specification](#)", April 2008.
- [MS-OXPROPS] Microsoft Corporation, "[Exchange Server Protocols Master Property List](#)", April 2008.
- [MS-WDVSE] Microsoft Corporation, "Web Distributed Authoring and Versioning (WebDAV) Protocol: Server Extensions", September 2007, <http://msdn.microsoft.com/en-us/library/cc250200.aspx>
- [MS-XWDEXT] Microsoft Corporation, "[Web Distributed Authoring and Versioning \(WebDAV\) Core Extensions](#)", April 2009.
- [MS-XWDNOTIF] Microsoft Corporation, "[Web Distributed Authoring and Versioning \(WebDAV\) Extensions for Notifications](#)", December 2008.
- [RFC821] Postel, J., "SIMPLE MAIL TRANSFER PROTOCOL", RFC 821, August 1982, <http://www.rfc-editor.org/rfc/rfc821.txt>
- [RFC822] Crocker, D., "STANDARD FOR THE FORMAT OF ARPA INTERNET TEXT MESSAGES", RFC 822, August 1982, <http://www.ietf.org/rfc/rfc0822.txt>
- [RFC850] Horton, M., "Standard for Interchange of USENET Messages", RFC 850, June 1983, <http://www.rfc-editor.org/rfc/rfc850.txt>
- [RFC1327] Hardcastle-Kille, S., "Mapping between X.400 (1988) / ISO 10021 and RFC 822", RFC 1327, May 1992, <ftp://ftp.rfc-editor.org/in-notes/rfc1327.txt>
- [RFC2068] Fielding, R., Gettys, J., Mogul, J., et al., "Hypertext Transfer Protocol -- HTTP/1.1", RFC 2068, January 1997, <http://www.ietf.org/rfc/rfc2068.txt>
- [RFC2076] Palme, J., "Common Internet Message Headers", RFC 2076, February 1997, <ftp://ftp.rfc-editor.org/in-notes/rfc2076.txt>
- [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>
- [RFC2298] Fajman, R., "An Extensible Message Format for Message Disposition Notifications", RFC 2298, March 1998, <ftp://ftp.rfc-editor.org/in-notes/rfc2298.txt>
- [RFC2518] Goland Y., Whitehead, E., Faizi, A., et al., "HTTP Extensions for Distributed Authoring -- WEBDAV", RFC 2518, February 1999, <http://www.ietf.org/rfc/rfc2518.txt>
- [RFC2818] Rescorla, E., "HTTP Over TLS", RFC 2818, May 2000, <http://www.ietf.org/rfc/rfc2818.txt>
- [RFC2980] Barber, S., "Common NNTP Extensions", RFC 2980, October 2000, <ftp://ftp.rfc-editor.org/in-notes/rfc2980.txt>
- [RFC5234] Crocker, D., Ed., and Overell, P., "Augmented BNF for Syntax Specifications: ABNF", STD 68, RFC 5234, January 2008, <http://www.ietf.org/rfc/rfc5234.txt>

1.2.2 Informative References

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

1.3 Overview

The WebDAV Extensions for E-Mail Support protocol extends [\[RFC2068\]](#) and [\[RFC2518\]](#) to provide support for e-mail operations.

A client uses the WebDAV Extensions for E-Mail Support protocol to send, receive, and manipulate e-mail through HTTP. The protocol treats a mailbox as a **folder** and treats messages as items within the folder.

A client uses the HTTP**OPTIONS** method to determine whether a given server supports sending, receiving, and manipulating mail through HTTP. If the server supports this manner of processing mail, the client can then perform these mail operations by using HTTP or **WebDAV** methods, treating the mail as an item within a folder. For example, the client can use an HTTP or WebDAV method to send mail as if it were placing the mail into a folder.

1.4 Relationship to Other Protocols

The WebDAV Extensions for E-Mail Support protocol relies on the HTTP Extensions for WebDAV protocol, which is specified by [\[RFC2518\]](#), and the Hypertext Transfer Protocol (HTTP) 1.1, which is specified by [\[RFC2068\]](#). The WebDAV Extensions for E-Mail Support protocol also relies on the Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS), specified by [\[RFC2818\]](#), for data protection services.

The WebDAV Extensions for E-Mail Support protocol uses extensions to [\[RFC2518\]](#), which are specified in [\[MS-WDVSE\]](#) and [\[MS-XWDEXT\]](#).

1.5 Prerequisites/Preconditions

This protocol assumes that both the client and server have WebDAV installed and enabled.

1.6 Applicability Statement

The WebDAV Extensions for E-Mail Support protocol is applicable when a client wants to perform mail operations through HTTP, treating the mail as an item within a folder.

1.7 Versioning and Capability Negotiation

- **Versioning:** This protocol uses no new versioning mechanisms except those that already exist in WebDAV and HTTP, as specified in [\[RFC2518\]](#) and [\[RFC2068\]](#).
- **Capability Negotiation:** The client sends an **OPTIONS** request to determine whether the server supports this protocol. If the response includes the **Allow-Extension** header with the value "urn:schemas:httpmail", the server supports this protocol.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

The WebDAV Extensions for E-Mail Support protocol uses the same transport mechanism as that specified in [\[RFC2518\]](#).

2.2 Message Syntax

2.2.1 Headers

The WebDAV Extensions for E-Mail Support protocol defines the HTTP headers that are specified in the following sections. These headers extend [\[RFC2518\]](#). For more details about the format of HTTP headers, see [\[RFC2068\]](#) section 4.2.

The **Augmented Backus-Naur Form (ABNF)** notation, as specified in [\[RFC5234\]](#), is used to specify the syntax of the headers.

2.2.1.1 Allow-Extension

This header specifies the extensions that the given authenticated user has permissions to use. The **Allow-Extension** header has the following syntax.

```
Allow-Extension = "Allow-Extension" ":" Allow-Extension-value
```

Allow-Extension-value: A string that is the **URI** to be used for sending mail. If the server supports sending mail through HTTP, this value will be "urn:schemas:httpmail".

2.2.1.2 Public-Extension

This header specifies the extension for a given namespace. The **Public-Extension** header has the following syntax.

```
Public-Extension = "Public-Extension" ":" Public-Extension-value
```

Public-Extension-value: A string that specifies the extension for the namespace. If the server supports sending mail through HTTP, then this value will be "urn:schemas:httpmail" in one of the **Public-Extension** headers of the response. (The response can include multiple **Public-Extension** headers.)

2.2.1.3 Savedestination

This header specifies, to the server, the **URL** of the folder in which to save the message. This header is ignored if the value of the **Saveintent** header is equivalent to FALSE. The **Savedestination** header has the following syntax.

```
Savedestination = "Savedestination" ":" Savedestination-value
```

Savedestination-value: A string that specifies the URL of the folder in which to save the message.

2.2.1.4 Saveinsent

Indicates, to the server, whether a copy of the outbound mail is to be saved to the folder that is specified by the **Savedestination** header. The **Saveinsent** header has the following syntax.

```
Saveinsent = "Saveinsent" ":" Saveinsent-value
```

Saveinsent-value: Contains a string that indicates whether the message is to be saved to the specified folder. Only the first letter of the string is examined. If the first letter is "t" or "T", or if the **Saveinsent** header is not present, then the value of **Saveinsent** is equivalent to TRUE and the server saves the message to the specified folder; otherwise, the value of **Saveinsent** is equivalent to FALSE and the message is not saved.

2.2.1.5 Translate

Indicates, to the server, whether to interpret the resource before responding to the client. The **Translate** header has the following syntax.

```
Translate = "Translate" ":" Translate-value
```

Translate-value: Contains a string that indicates whether the server MUST operate on the raw resource, which is identified by the request URI. Only the first letter of the string is examined. If the first letter is "f" or "F", then the value of **Translate** is equivalent to FALSE and the server operates on the raw resource. If the first letter is not "f" or "F", or if the **Translate** header is not present, then the value of **Translate** is equivalent to TRUE and the server's behavior is implementation-defined.

For example, suppose that the client issues a **GET** command against a script that, normally, would be executed by the server. (The result of running the script would be returned in the server's response.) If the **Translate** header is set to "f", then the server will not execute the script, but, instead, will return the actual script in the response.

2.2.2 Properties

The WebDAV Extensions for E-Mail Support protocol defines the properties that are specified in the following sections. Properties are listed by canonical name. For more details about the canonical name and WebDAV property naming, see [\[MS-OXPROPS\]](#) sections [1.3](#) and [1.3.4](#), respectively. The property data types are defined in [\[MS-OXCDATA\]](#) sections [2.11.1.5](#) and [2.11.1.5.1](#).

2.2.2.1 DAV: Namespace Properties

2.2.2.1.1 PidNameContentClass

DAV property name: DAV:contentclass

Data type: PtypString

The [PidNameContentClass](#) property specifies the content class of a folder or mail item. This property is further specified in [\[MS-OXCMAIL\]](#) section 2.1.2.2.

2.2.2.1.2 PidTagUrlCompName

DAV property name: DAV:displayname

Data type: PtypString

The [PidTagUrlCompName](#) property specifies the composite name. The following substrings are concatenated in the given order to form the composite name:

1. The subject of the e-mail
2. A string that uniquely identifies the message
3. The string ".EML"

2.2.2.1.3 PidNameDavGetContentType

DAV property name: DAV:getcontenttype

Data type: PtypString

The [PidNameDavGetContentType](#) property specifies the type of the message's content. For e-mail messages, the value of this property is "message/rfc822".

2.2.2.1.4 PidTagUrlName

DAV property name: DAV:href

Data type: PtypString

The [PidTagUrlName](#) property specifies the URL of the mail item. The value of this property MUST be encoded according to the request URI, as specified in [\[RFC2068\]](#) section 5.1.2.

2.2.2.2 [http://schemas.microsoft.com/exchange/](#) Namespace Properties

2.2.2.2.1 PidTagMessageClass

DAV property name: [http://schemas.microsoft.com/exchange/outlookmessageclass](#)

Data type: PtypString

The [PidTagMessageClass](#) property contains the object-type classification. This property is further specified in [\[MS-OXOMSG\]](#) section 2.2.1.16.

2.2.2.2.2 PidTagSensitivity

DAV property name: [http://schemas.microsoft.com/exchange/sensitivity](#)

Data type: PtypInteger32

The [PidTagSensitivity](#) property specifies the sender's assessment of the sensitivity of the **Message object**. This property is further specified in [\[MS-OXCMSG\]](#) section 2.2.1.13.

2.2.2.3 [http://schemas.microsoft.com/mapi/proptag/](#) Namespace Properties

2.2.2.3.1 PidTagAttachSize

DAV property name: [http://schemas.microsoft.com/mapi/proptag/x0e200003](#)

Data type: PtypInteger32

The [PidTagAttachSize](#) property specifies the size, in bytes, consumed by the **attachment** on the server. This property is read-only for the client.

2.2.2.3.2 PidTagAttachNumber

DAV property name: <http://schemas.microsoft.com/mapi/proptag/x0e210003>

Data type: PtypInteger32

The [PidTagAttachNumber](#) property identifies the attachment within its message. The value **MUST** be unique among the attachments in a message.

2.2.2.3.3 PidTagAttachExtension

DAV property name: <http://schemas.microsoft.com/mapi/proptag/x3703001f>

Data type: PtypString

The [PidTagAttachExtension](#) property contains the filename extension, which indicates the document type of an attachment.

2.2.2.3.4 PidTagAttachFilename

DAV property name: <http://schemas.microsoft.com/mapi/proptag/x3704001f>

Data type: PtypString

The [PidTagAttachFilename](#) property contains the filename, in **8.3 name** format, of the attachment. [<1>](#)

2.2.2.3.5 PidTagAttachMethod

DAV property name: <http://schemas.microsoft.com/mapi/proptag/x37050003>

Data type: PtypInteger32

The [PidTagAttachMethod](#) property specifies the way in which the contents of an attachment are accessed. This property is further specified in [\[MS-OXCMSG\]](#) section 2.2.2.9.

2.2.2.3.6 PidTagRenderingPosition

DAV property name: <http://schemas.microsoft.com/mapi/proptag/x370b0003>

Data type: PtypInteger32

The [PidTagRenderingPosition](#) property specifies an offset, in number of rendered characters, to use when rendering an attachment within the main message text. The value 0xFFFFFFFF indicates a hidden attachment.

2.2.2.3.7 PidTagAttachFlags

DAV property name: <http://schemas.microsoft.com/mapi/proptag/x37140003>

Data type: PtypInteger32

The [PidTagAttachFlags](#) property indicates which body formats might reference the attachment when rendering data. The value is a bitwise OR of zero or more of the following flags. If this property is absent or its value is 0x00000000, the attachment is available to be rendered in any format.

Value	Meaning
0x00000001	The attachment is not available to be rendered in HTML .
0x00000002	The attachment is not available to be rendered in Rich Text Format .
0x00000004	The attachment is referenced and rendered within the HTML body of the associated message.

2.2.2.4 MAIL: Namespace Properties

2.2.2.4.1 PidNameMailSubmissionUri

DAV property name: MAIL:submissionuri

Data type: PtypString

The [PidNameMailSubmissionUri](#) property specifies the URI that is used for mail submission. This property is synonymous with the [PidNameHttpmailSendMessage](#) property. The two properties can be used interchangeably.

The URI that is specified by this property is called the **mail submission URI**. The following substrings are concatenated in the given order to form the URI. This property exists on all folders and does not exist on any other entity.

1. The base URL of the mailbox
2. The string `"/# #DavMailSubmissionURI# #/"`

2.2.2.5 urn:schemas:contacts Namespace Properties

2.2.2.5.1 PidTagDisplayName

DAV property name: urn:schemas:contacts:cn

Data type: PtypString

The [PidTagDisplayName](#) property specifies either the filename of the attached document or the subject of the attached message.

2.2.2.6 urn:schemas:httpmail: Namespace Properties

2.2.2.6.1 PidTagAttachLongFilename

DAV property name: urn:schemas:httpmail:attachmentfilename

Data type: PtypString

The [PidTagAttachLongFilename](#) property contains the full filename and extension of the attachment. This property is further specified in [\[MS-OXCMSG\]](#) section 2.2.2.10.

2.2.2.6.2 PidNameHttpmailCc

DAV property name: urn:schemas:httpmail:cc

Data type: PtypString

The [PidNameHttpmailCc](#) property specifies the carbon copy (Cc) recipients of the message.

2.2.2.6.3 PidNameHttpmailContentMediaType

DAV property name: urn:schemas:httpmail:content-media-type

Data type: PtypString

The [PidNameHttpmailContentMediaType](#) property specifies the content media type for the body part.

2.2.2.6.4 PidTagClientSubmitTime

DAV property name: urn:schemas:httpmail:date

Data type: PtypTime

The [PidTagClientSubmitTime](#) property specifies the current time (in **UTC**) when the e-mail message is submitted. This property is further specified in [\[MS-OXOMSG\]](#) section 2.2.3.11.

2.2.2.6.5 PidTagMessageDeliveryTime

DAV property name: urn:schemas:httpmail:datereceived

Data type: PtypTime

The [PidTagMessageDeliveryTime](#) property specifies the current time (in UTC) when the server receives a message. This property is further specified in [\[MS-OXOMSG\]](#) section 2.2.3.9.

2.2.2.6.6 PidTagDisplayCc

DAV property name: urn:schemas:httpmail:displaycc

Data type: PtypString

The [PidTagDisplayCc](#) property specifies a list of carbon copy recipient display names, separated by semicolons. This property is further specified in [\[MS-OXOMSG\]](#) section 2.2.1.8.

2.2.2.6.7 PidTagDisplayTo

DAV property name: urn:schemas:httpmail:displayto

Data type: PtypString

The [PidTagDisplayTo](#) property specifies a list of the primary recipient display names, separated by semicolons. This property is further specified in [\[MS-OXOMSG\]](#) section 2.2.1.9.

2.2.2.6.8 PidNameHttpmailFrom

DAV property name: urn:schemas:httpmail:from

Data type: PtypString

The [PidNameHttpmailFrom](#) property specifies the person from whom the message was sent. The value of this property is in the form that will be displayed in the mail client.

2.2.2.6.9 PidNameHttpmailFromEmail

DAV property name: urn:schemas:httpmail:fromemail

Data type: PtypString

The [PidNameHttpmailFromEmail](#) property specifies the e-mail address from which the message was sent.

2.2.2.6.10 PidTagSentRepresentingName

DAV property name: urn:schemas:httpmail:fromname

Data type: PtypString

The [PidTagSentRepresentingName](#) property contains the display name for the end user represented by the sending mailbox owner. This property is further specified in [\[MS-OXOMSG\]](#) section 2.2.1.48.

2.2.2.6.11 PidTagHasAttachments

DAV property name: urn:schemas:httpmail:hasattachment

Data type: PtypBoolean

The [PidTagHasAttachments](#) property indicates whether the Message object contains at least one attachment. This property is further specified in [\[MS-OXCMSG\]](#) section 2.2.1.2.

2.2.2.6.12 PidNameHttpmailHtmlDescription

DAV property name: urn:schemas:httpmail:htmldescription

Data type: PtypString

The [PidNameHttpmailHtmlDescription](#) property contains a description of the HTML content of the message.

2.2.2.6.13 PidTagImportance

DAV property name: urn:schemas:httpmail:importance

Data type: PtypInteger32

The [PidTagImportance](#) property specifies the level of importance assigned by the end user to the Message object. This property is further specified in [\[MS-OXCMSG\]](#) section 2.2.1.11.

2.2.2.6.14 PidTagNormalizedSubject

DAV property name: urn:schemas:httpmail:normalizedsubject

Data type: PtypString

The [PidTagNormalizedSubject](#) property specifies the normalized subject of the message. This property is further specified in [\[MS-OXCMSG\]](#) section 2.2.1.10.

2.2.2.6.15 PidTagPriority

DAV property name: urn:schemas:httpmail:priority

Data type: PtypInteger32

The [PidTagPriority](#) property specifies the client's request for the priority at which the message is to be sent by the messaging system. This property is further specified in [\[MS-OXCMSG\]](#) section 2.2.1.12.

2.2.2.6.16 PidTagRead

DAV property name: urn:schemas:httpmail:read

Data type: PtypBoolean

The [PidTagRead](#) property indicates whether the message has been read.

2.2.2.6.17 PidTagSenderName

DAV property name: urn:schemas:httpmail:sendername

Data type: PtypString

The [PidTagSenderName](#) property contains the sending mailbox owner's display name. This property is further specified in [\[MS-OXOMSG\]](#) section 2.2.1.43.

2.2.2.6.18 PidNameHttpmailSendMessage

DAV property name: urn:schemas:httpmail:sendmsg

Data type: PtypString

The [PidNameHttpmailSendMessage](#) property specifies the URI that is used for mail submission. This property is synonymous with the [PidNameMailSubmissionUri](#) property. The two properties can be used interchangeably and both are read-only properties.

The URI that is specified by this property is called the mail submission URI. The following substrings are concatenated in the given order to form the URI. This property exists on all folders and does not exist on any other entity.

1. The base URL of the mailbox
2. The string `"/##DavMailSumissionURI##/"`

2.2.2.6.19 PidTagSubject

DAV property name: urn:schemas:httpmail:subject

Data type: PtypString

The [PidTagSubject](#) property specifies the subject of the message, which is formatted as a **MessageRFC822** structure. For more details about the **MessageRFC822** structure, see section [2.2.3.2](#).

2.2.2.6.20 PidNameHttpmailSubmitted

DAV property name: urn:schemas:httpmail:submitted

Data type: PtypBoolean

The [PidNameHttpmailSubmitted](#) property specifies whether a message has been submitted to the Outbox.

2.2.2.6.21 PidTagBody

DAV property name: urn:schemas:httpmail:textdescription

Data type: PtypString

The [PidTagBody](#) property contains the unformatted text analogous to the text/plain body of [\[RFC822\]](#). This property is further specified in [\[MS-OXCMSG\]](#) section 2.2.1.22.1.

2.2.2.6.22 PidTagConversationTopic

DAV property name: urn:schemas:httpmail:thread-topic

Data type: PtypString

The [PidTagConversationTopic](#) property contains an unchanging copy of the original subject. This property is further specified in [\[MS-OXOMSG\]](#) section 2.2.1.5.

2.2.2.6.23 PidNameHttpmailTo

DAV property name: urn:schemas:httpmail:to

Data type: PtypString

The [PidNameHttpmailTo](#) property specifies the principal (To) message addressees.

2.2.2.7 urn:schemas:mailheader: Namespace Properties

2.2.2.7.1 PidNameApproved

DAV property name: urn:schemas:mailheader:approved

Data type: PtypString

The [PidNameApproved](#) property specifies the address of the moderator that approved and posted a message. For more details about this property, see [\[RFC2076\]](#) section 3.4.

2.2.2.7.2 PidNameBcc

DAV property name: urn:schemas:mailheader:bcc

Data type: PtypString

The [PidNameBcc](#) property specifies the blind carbon copy addressees of the message. This property SHOULD be directly imported from and exported to the bcc header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.4.

2.2.2.7.3 PidNameCc

DAV property name: urn:schemas:mailheader:cc

Data type: PtypString

The [PidNameCc](#) property specifies the carbon copy addressees of the message. This property SHOULD be directly imported from and exported to the cc header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.4.

2.2.2.7.4 PidNameInternetComment

DAV property name: urn:schemas:mailheader:comment

Data type: PtypString

The [PidNameInternetComment](#) property contains a comment about the purpose or content of the folder. This property SHOULD be directly imported from and exported to the Comment header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.7.

2.2.2.7.5 PidNameContentClass

DAV property name: urn:schemas:mailheader:content-class

Data type: PtypString

The [PidNameContentClass](#) property specifies the content class for the mail item. This property is further specified in [\[MS-OXCMAIL\]](#) section 2.1.2.2.

2.2.2.7.6 PidNameContentDisposition

DAV property name: urn:schemas:mailheader:content-disposition

Data type: PtypString

The [PidNameContentDisposition](#) property specifies the intended disposition of the body part. For more details about this property, see [\[RFC2076\]](#) section 3.3.

2.2.2.7.7 PidNameContentID

DAV property name: urn:schemas:mailheader:content-id

Data type: PtypString

The [PidNameContentID](#) property specifies a unique identifier for the body part. For more details about this property, see [\[RFC2076\]](#) section 3.6.

2.2.2.7.8 PidNameContentLanguage

DAV property name: urn:schemas:mailheader:content-language

Data type: PtypString

The [PidNameContentLanguage](#) property specifies the language identifier for the text content of the body part. For more details about this property, see [\[RFC2076\]](#) section 3.1.

2.2.2.7.9 PidNameContentLocation

DAV property name: urn:schemas:mailheader:content-location

Data type: PtypString

The [PidNameContentLocation](#) property specifies the Uniform Resource Identifier (URI) that corresponds to the content of the body part. For more details about this property, see [\[RFC2076\]](#) section 3.6.

2.2.2.7.10 PidNameContentTransferEncoding

DAV property name: urn:schemas:mailheader:content-transfer-encoding

Data type: PtypString

The [PidNameContentTransferEncoding](#) property specifies the encoding mechanism used to encode the content of the body part. For more details about this property, see [\[RFC2076\]](#) section 3.13.

2.2.2.7.11 PidNameContentType

DAV property name: urn:schemas:mailheader:content-type

Data type: PtypString

The [PidNameContentType](#) property specifies the type of the body part's content. For more details about this property, see [\[RFC2076\]](#) section 3.13.

2.2.2.7.12 PidNameControl

DAV property name: urn:schemas:mailheader:control

Data type: PtypString

The [PidNameControl](#) property specifies a Usenet control command. For more details about this property, see [\[RFC2076\]](#) section 3.3.

2.2.2.7.13 PidTagClientSubmitTime

DAV property name: urn:schemas:mailheader:date

Data type: PtypTime

The [PidTagClientSubmitTime](#) property specifies the current time (in UTC) when the e-mail message is submitted. This property SHOULD be directly imported from and exported to the Date header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.8.

2.2.2.7.14 PidNameDisposition

DAV property name: urn:schemas:mailheader:disposition

Data type: PtypString

The [PidNameDisposition](#) property specifies the Mail Delivery Notification (MDN) status for the message.

2.2.2.7.15 PidNameDispositionNotificationTo

DAV property name: urn:schemas:mailheader:disposition-notification-to

Data type: PtypString

The [PidNameDispositionNotificationTo](#) property specifies the destination to which disposition notifications should be sent. For more details about this property, see [\[RFC2298\]](#) section 2.1.

2.2.2.7.16 PidNameDistribution

DAV property name: urn:schemas:mailheader:distribution

Data type: PtypString

The [PidNameDistribution](#) property contains a comma-separated list, similar to the Newsgroups header field, intended to restrict the distribution of a message. For more details about this property, see [\[RFC2076\]](#) section 3.4.

2.2.2.7.17 PidNameExpires

DAV property name: urn:schemas:mailheader:expires

Data type: PtypString

The [PidNameExpires](#) property specifies the date on which the message expires. For more details about this property, see [\[RFC2076\]](#) section 3.8.

2.2.2.7.18 PidNameExpiryDate

DAV property name: urn:schemas:mailheader:expiry-date

Data type: PtypString

The [PidNameExpiryDate](#) property specifies the expiry date of a message in a mail header. For more details about this property, see [\[RFC1327\]](#) section 2.3.1.2.

2.2.2.7.19 PidNameFollowupTo

DAV property name: urn:schemas:mailheader:followup-to

Data type: PtypString

The [PidNameFollowupTo](#) property specifies the newsgroups to which follow-up messages are to be posted. For more details about this property, see [\[RFC2076\]](#) section 3.5. The server MAY<2> implement this property. If the server implements this property, it MUST support the **Network News Transfer Protocol (NNTP)**.

2.2.2.7.20 PidNameFrom

DAV property name: urn:schemas:mailheader:from

Data type: PtypString

The [PidNameFrom](#) property specifies the person from whom the message was sent. This property SHOULD be directly imported from and exported to the From header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.4.

2.2.2.7.21 PidNameImportance

DAV property name: urn:schemas:mailheader:importance

Data type: PtypString

The [PidNameImportance](#) property indicates the level of importance for a message as either low, normal, or high. For more details about this property, see [\[RFC2076\]](#) section 3.9.

2.2.2.7.22 PidNameInReplyTo

DAV property name: urn:schemas:mailheader:in-reply-to

Data type: PtypString

The [PidNameInReplyTo](#) property specifies the message to which another message is a reply. This property SHOULD be directly imported from and exported to the In-Reply-To header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.6.

2.2.2.7.23 PidNameInternetKeywords

DAV property name: urn:schemas:mailheader:keywords

Data type: PtypString

The [PidNameInternetKeywords](#) property specifies the key words for the message. This property SHOULD be directly imported from and exported to the Keywords header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.7.

2.2.2.7.24 PidNameLines

DAV property name: urn:schemas:mailheader:lines

Data type: PtypString

The [PidNameLines](#) property specifies the number of lines in the body of a newsgroup message. For more details about this property, see [\[RFC2076\]](#) section 3.11. The server MAY<3> implement this property. If the server implements this property, it MUST support the Network News Transfer Protocol (NNTP).

2.2.2.7.25 PidNameMessageId

DAV property name: urn:schemas:mailheader:message-id

Data type: PtypString

The [PidNameMessageId](#) property specifies a unique identifier for the message. This property SHOULD be directly imported from and exported to the Message-ID header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.6.

2.2.2.7.26 PidNameMimeVersion

DAV property name: urn:schemas:mailheader:mime-version

Data type: PtypString

The [PidNameMimeVersion](#) property specifies the version of **Multipurpose Internet Mail Extensions (MIME)** that is used to format the message. For more details about this property, see [\[RFC2076\]](#) section 3.3.

2.2.2.7.27 PidNameNewsgroups

DAV property name: urn:schemas:mailheader:newsgroups

Data type: PtypString

The [PidNameNewsgroups](#) property specifies the newsgroup addressees for the message. For more details about this property, see [\[RFC2076\]](#) section 3.4. The server MAY<4> implement this property. If the server implements this property, it MUST support the Network News Transfer Protocol (NNTP).

2.2.2.7.28 PidNameNntpPostingHost

DAV property name: urn:schemas:mailheader:nntp-posting-host

Data type: PtypString

The [PidNameNntpPostingHost](#) property specifies the initial host to which the USENET feed was posted. For more details about this property, see [\[RFC2980\]](#) section 3.4.1. The server MAY<5> implement this property. If the server implements this property, it MUST support the Network News Transfer Protocol (NNTP).

2.2.2.7.29 PidNameOrganization

DAV property name: urn:schemas:mailheader:organization

Data type: PtypString

The [PidNameOrganization](#) property specifies the organization to which the sender belongs. For more details about this property, see [\[RFC2076\]](#) section 3.7.

2.2.2.7.30 PidNameOriginalRecipient

DAV property name: urn:schemas:mailheader:original-recipient

Data type: PtypString

The [PidNameOriginalRecipient](#) property specifies the e-mail address of an original recipient of the message.

2.2.2.7.31 PidNamePath

DAV property name: urn:schemas:mailheader:path

Data type: PtypString

The [PidNamePath](#) property specifies the list of Network News Transfer Protocol (NNTP) hosts through which this message was relayed before arriving at the current host. For more details about this property, see [\[RFC2076\]](#) section 3.2. The server MAY<6> implement this property. If the server implements this property, it MUST support the Network News Transfer Protocol (NNTP).

2.2.2.7.32 PidNamePostingVersion

DAV property name: urn:schemas:mailheader:posting-version

Data type: PtypString

The [PidNamePostingVersion](#) property identifies the software that is used to post the message. For more details about this property, see [\[RFC850\]](#) section 2.1.2.

2.2.2.7.33 PidNamePriority

DAV property name: urn:schemas:mailheader:priority

Data type: PtypString

The [PidNamePriority](#) property specifies the priority of a message or appointment. For more details about this property, see [\[RFC2076\]](#) section 3.9.

2.2.2.7.34 PidNameReceived

DAV property name: urn:schemas:mailheader:received

Data type: PtypString

The [PidNameReceived](#) property specifies the **SMTP** host received headers for a message. This property SHOULD be directly imported from and exported to the Received header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.2.

2.2.2.7.35 PidNameReferences

DAV property name: urn:schemas:mailheader:references

Data type: PtypString

The [PidNameReferences](#) property specifies the USENET header used to correlate replies with their original messages. This property SHOULD be directly imported from and exported to the References header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.6. The server MAY<7> implement this property. If the server implements this property, it MUST support the Network News Transfer Protocol (NNTP).

2.2.2.7.36 PidNameRelayVersion

DAV property name: urn:schemas:mailheader:relay-version

Data type: PtypString

The [PidNameRelayVersion](#) property specifies the version of the program responsible for transmitting an item over the immediate link. In other words, this property specifies the version of the program that is relaying an item from another site. For more details about this property, see [\[RFC850\]](#) section 2.1.1.

2.2.2.7.37 PidNameReplyBy

DAV property name: urn:schemas:mailheader:reply-by

Data type: PtypString

The [PidNameReplyBy](#) property indicates when there should be a reply to a message. For more details about this property, see [\[RFC2076\]](#) section 3.8.

2.2.2.7.38 PidNameReplyTo

DAV property name: urn:schemas:mailheader:reply-to

Data type: PtypString

The [PidNameReplyTo](#) property specifies the address to which replies are to be sent. This property SHOULD be directly imported from and exported to the **Reply-To** header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.5.

2.2.2.7.39 PidNameReturnPath

DAV property name: urn:schemas:mailheader:return-path

Data type: PtypString

The [PidNameReturnPath](#) property specifies the address of the message originator. This property SHOULD be directly imported from and exported to the **Return-Path** header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.2.

2.2.2.7.40 PidNameReturnReceiptTo

DAV property name: urn:schemas:mailheader:return-receipt-to

Data type: PtypString

The [PidNameReturnReceiptTo](#) property specifies the address to which return receipts are to be sent. For more details about this property, see [\[RFC2076\]](#) section 3.5.

2.2.2.7.41 PidNameSender

DAV property name: urn:schemas:mailheader:sender

Data type: PtypString

The [PidNameSender](#) property specifies the sender of the message. This property SHOULD be directly imported from and exported to the **Sender** header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.4.

2.2.2.7.42 PidNameSensitivity

DAV property name: urn:schemas:mailheader:sensitivity

Data type: PtypString

The [PidNameSensitivity](#) property specifies the sensitivity of the message or appointment. Valid values are "None", "Personal", "Private", and "Company Confidential". This field corresponds to the Sensitivity: mail header. For more details about this property, see [\[RFC2076\]](#) section 3.9.

2.2.2.7.43 PidNameInternetSubject

DAV property name: urn:schemas:mailheader:subject

Data type: PtypString

The [PidNameInternetSubject](#) property specifies the subject of the message. This property SHOULD be directly imported from and exported to the **Subject** header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.7.

2.2.2.7.44 PidNameSummary

DAV property name: urn:schemas:mailheader:summary

Data type: PtypString

The [PidNameSummary](#) property contains a summary of the message. For more details about this property, see [\[RFC2076\]](#) section 3.7.

2.2.2.7.45 PidNameThreadIndex

DAV property name: urn:schemas:mailheader:thread-index

Data type: PtypString

The [PidNameThreadIndex](#) property identifies a particular conversation thread; computed from message references.

2.2.2.7.46 PidNameThreadTopic

DAV property name: urn:schemas:mailheader:thread-topic

Data type: PtypString

The [PidNameThreadTopic](#) property specifies the topic of a discussion thread.

2.2.2.7.47 PidNameTo

DAV property name: urn:schemas:mailheader:to

Data type: PtypString

The [PidNameTo](#) property specifies the principal message addressees. This property SHOULD be directly imported from and exported to the **To** header that is specified in [\[RFC822\]](#). For more details about this property, see [\[RFC2076\]](#) section 3.4.

2.2.2.7.48 PidNameXMailer

DAV property name: urn:schemas:mailheader:x-mailer

Data type: PtypString

The [PidNameXMailer](#) property specifies the name of the software used to send the message. For more details about this property, see [\[RFC2076\]](#) section 3.4.

2.2.2.7.49 PidNameXMessageCompleted

DAV property name: urn:schemas:mailheader:x-message-completed

Data type: PtypString

The [PidNameXMessageCompleted](#) property contains the header for message flag completion.

2.2.2.7.50 PidNameXMessageFlag

DAV property name: urn:schemas:mailheader:x-message-flag

Data type: PtypString

The [PidNameXMessageFlag](#) property specifies message flags that indicate special characteristics of a particular message.

2.2.2.7.51 PidNameCrossReference

DAV property name: urn:schemas:mailheader:xref

Data type: PtypString

The [PidNameCrossReference](#) property contains the name of the host (with domains omitted) and a white-space-separated list of colon-separated pairs of newsgroup names and message numbers. For more details about this property, see [\[RFC2076\]](#) section 3.15. The server MAY<8> implement this property. If the server implements this property, it MUST support the Network News Transfer Protocol (NNTP).

2.2.3 Structures

The WebDAV Extensions for E-Mail Support protocol uses the structures that are specified in the following sections.

2.2.3.1 MessageRFC821

The **MessageRFC821** structure is an internet media type that is used to encapsulate SMTP transport information. This structure corresponds to the message/rfc821 MIME content type.

The **MessageRFC821** structure MUST allow standard SMTP transport information. The structure SHOULD allow extensions to the SMTP command set without conflict.

This structure has the following syntax. For more details about the **MessageRFC821** structure, see [\[RFC821\]](#).

```
MessageRFC821 =  
  0 * command CRLF  
  message-rfc822
```

command: This field contains a command that specifies the mail system function that is requested by the user. The field can contain one of the following:

- An SMTP command, as specified in section [2.2.3.1.1](#) of this document.
- A command, determined by the implementation, that is defined as an extension to the SMTP command set.

message-rfc822: This field contains a **MessageRFC822** structure. See section [2.2.3.2](#) of this document for details.

2.2.3.1.1 SMTP Commands

2.2.3.1.1.1 RCPT Command

This command identifies an individual recipient of the mail data. The syntax is shown below. For more details about the semantics and syntax, see [\[RFC821\]](#) sections 4.1.1 and 4.1.2, respectively.

```
RCPT =  
  "RCPT" SP "TO:" forward-path CRLF
```

forward-path: This field contains an optional list of hosts and an optional destination mailbox.

2.2.3.1.1.2 MAIL Command

This command provides sender-information as part of the mail envelope. The syntax is shown below. For more details about the semantics and syntax, see [\[RFC821\]](#) sections 4.1.1 and 4.1.2, respectively.

```
MAIL =  
  "MAIL" SP "FROM:" reverse-path CRLF
```

reverse-path: This field contains an optional list of hosts and a required source mailbox.

2.2.3.2 MessageRFC822

A sequence of octets representing a message, as specified in [\[RFC822\]](#). This structure contains the content of the message. This structure corresponds to the message/rfc822 MIME content type.

2.2.4 Methods

The WebDAV Extensions for E-Mail Support protocol uses the methods specified in the following sections.

2.2.4.1 X-MS-ENUMATTS

The **X-MS-ENUMATTS** method is used to retrieve a list of an e-mail's attachments. This list is specified in an **XML** format.

The **X-MS-ENUMATTS** method uses the same request headers, response headers, and XML elements that the **PROPFIND** method uses on folders. For more details about the **X-MS-ENUMATTS** method, see [\[MS-XWDEXT\]](#) section 2.2.1.24. For more details about the **PROPFIND** method, see [\[RFC2518\]](#) section 8.1 and [\[MS-XWDEXT\]](#) section 2.2.1.17.

2.2.4.2 Other Methods

Other methods used by the WebDAV Extensions for E-Mail Support protocol are as follows. For more details about the semantics of these methods, see the references below.

- **COPY** method — specified in [\[RFC2518\]](#) section 8.8. Extensions to this method are specified in [\[MS-XWDEXT\]](#) section 2.2.1.6.
- **DELETE** method — specified in [\[RFC2068\]](#) section 9.7 and [\[RFC2518\]](#) section 8.6. Extensions to this method are specified in [\[MS-XWDEXT\]](#) section 2.2.1.7.

- **GET** method — specified in [\[RFC2068\]](#) section 9.3 and [\[RFC2518\]](#) section 8.4. Extensions to this method are specified in [\[MS-XWDEXT\]](#) section 2.2.1.8.
- **MOVE** method — specified in [\[RFC2518\]](#) section 8.9. Extensions to this method are specified in [\[MS-XWDEXT\]](#) section 2.2.1.12.
- **NOTIFY** method — specified in [\[MS-XWDNOTIF\]](#) section 2.2.10.
- **OPTIONS** method — specified in [\[RFC2068\]](#) section 9.2. Extensions to this method are specified in [\[MS-XWDEXT\]](#) section 2.2.1.14.
- **POLL** method — specified in [\[MS-XWDNOTIF\]](#) section 2.2.9.
- **POST** method — specified in [\[RFC2068\]](#) section 9.5 and [\[RFC2518\]](#) section 8.5. Extensions to this method are specified in [\[MS-XWDEXT\]](#) section 2.2.1.16.
- **PROPFIND** method — specified in [\[RFC2518\]](#) section 8.1. Extensions to this method are specified in [\[MS-XWDEXT\]](#) section 2.2.1.17.
- **PROPPATCH** method — specified in [\[RFC2518\]](#) section 9.2. Extensions to this method are specified in [\[MS-XWDEXT\]](#) section 2.2.1.18.
- **PUT** method — specified in [\[RFC2068\]](#) section 9.6 and [\[RFC2518\]](#) section 8.7. Extensions to this method are specified in [\[MS-XWDEXT\]](#) section 2.2.1.19.
- **SUBSCRIBE** method — specified in [\[MS-XWDNOTIF\]](#) section 2.2.7.
- **UNSUBSCRIBE** method — specified in [\[MS-XWDNOTIF\]](#) section 2.2.8.

3 Protocol Details

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

The protocol treats a mailbox as a folder and treats messages as items within the folder. A URI is used to represent the outbound mail queue.

3.1.2 Timers

None.

3.1.3 Initialization

Prior to using the WebDAV Extensions for E-Mail Support protocol for mail operations, the client determines whether the server supports the protocol. The client makes this determination by using the HTTP **OPTIONS** method to discover support. For details about discovery, see section [3.1.4.1](#) of this document.

3.1.4 Higher-Layer Triggered Events

3.1.4.1 Discovery

Discovery involves determining whether the server supports the WebDAV Extensions for E-Mail Support protocol and obtaining the mail submission URI.

A client uses the **OPTIONS** method to discover whether the server supports the WebDAV Extensions for E-Mail Support protocol. The **Allow-Extension** header will contain "urn:schemas:httpmail" if the server supports the protocol.

If the server supports the WebDAV Extensions for E-Mail Support protocol, a client then retrieves the URI to be used for mail submission. The client uses the **PROPFIND** method to retrieve the [PidNameHttpmailSendMessage](#) property, which specifies the mail submission URI.

A client can assume that, if a collection supports the protocol and has the [PidNameHttpmailSendMessage](#) property, any child collections will have the same value for the [PidNameHttpmailSendMessage](#) property. Thus, repeated discovery is not necessary.

For details about the **OPTIONS** and **PROPFIND** methods, see section [2.2.4.2](#) of this document. For details about the **Allow-Extension** header, see section [2.2.1.1](#) of this document.

3.1.4.2 Manipulating Mail

The user can manipulate mail in various ways to organize and maintain his mailbox. The client uses the **COPY**, **DELETE**, **MOVE**, or **PROPPATCH** methods to execute the user's manipulations as follows.

- When the user copies a mail item from his inbox to another mail folder on the server, the client issues a **COPY** request.
- When the user moves a mail item from the inbox to another folder, the client issues a **MOVE** request.
- When the user deletes a mail item, the client issues a **DELETE** request..
- When the user changes the properties of a mail item, the client issues a **PROPPATCH** request.

The client MUST include the **Translate** header with the value set to the equivalent of FALSE in **COPY** and **MOVE** requests. If the value of **Translate** is equivalent to TRUE, or if **Translate** is not included in the request, then the server's behavior is implementation-defined.

For details about the **COPY**, **DELETE**, **MOVE**, and **PROPPATCH** methods, see section [2.2.4.2](#) of this document. For details about the **Translate** header, see section [2.2.1.5](#) of this document.

3.1.4.3 Retrieving Attachments

When the user views e-mail, the client presents a list of attachments, if any. The client sends an **X-MS-ENUMATTS** request to retrieve the list of attachments. The list includes the URL of each attachment. When the user opens an attachment, the client sends a **GET** request to retrieve the attachment. The **GET** request MUST specify the URL of the attachment to be retrieved.

For details about the **X-MS-ENUMATTS** and **GET** methods, see sections [2.2.4.1](#) and [2.2.4.2](#), respectively.

3.1.4.4 Sending Mail

When a user sends mail, the client issues a **POST** or **PUT** request.

The client submits a **POST** request to the URI that is specified by the [PidNameHttpmailSendMessage](#) property. This URI, called the mail submission URI, represents the outbound mail queue.

The client submits a **PUT** request to either the mail submission URI or a URI that is a child of the mail submission URI. The server MUST treat the subordinate URI as equivalent to the mail submission URI. For example, if the mail submission URI is identified as "http://contoso.com/submitmailhere", then using **PUT** with "http://contoso.com/submitmailhere/child1" is valid as well. The name of the child is not significant to the operation.

For both **POST** and **PUT** requests, the value of the **Content-Type** header MUST be "message/rfc821" or "message/rfc822". The client can copy the message to the user's Sent Items folder by including the **Saveinsent** header in the request and setting its value to indicate TRUE. If the client wishes to save the message to a specific destination, then it includes the **Savedestination** header.

The client MUST include the **Translate** header with the value set to indicate FALSE in **POST** and **PUT** requests. If the value of **Translate** is equivalent to TRUE, or if **Translate** is not included in the request, then the server's behavior is implementation-defined.

For details about the **POST** and **PUT** methods, see section [2.2.4.2](#) of this document. For more details about the **Saveinsent**, **Savedestination**, and **Translate** headers, see sections [2.2.1.4](#), [2.2.1.3](#), and [2.2.1.5](#), respectively, of this document. For more details about the **Content-Type** header, see [\[RFC2068\]](#) section 14.18.

3.1.4.5 Subscribing to Receive Mail

A user can receive mail only after subscribing to his Inbox. When a user subscribes to his Inbox, the client submits a **SUBSCRIBE** request to register the user's subscription, as specified in [\[MS-XWDNOTIF\]](#) section 3.2. The client submits an **UNSUBSCRIBE** request to cancel the subscription, as specified in [\[MS-XWDNOTIF\]](#) section 3.2.

If the server is not sending notifications, the client uses the **POLL** method to inquire about events, as specified in [\[MS-XWDNOTIF\]](#) section 3.3.1.

For details about the **SUBSCRIBE**, **UNSUBSCRIBE**, and **POLL** methods, see section [2.2.4.2](#) of this document.

3.1.5 Message Processing Events and Sequencing Rules

3.1.5.1 Receiving Mail

Once the user has subscribed to his Inbox, the client receives a notification from the server when new mail arrives in the user's Inbox. The notification includes a subscription ID that identifies the resource. For more details about the **NOTIFY** method and notifications, see [\[MS-XWDNOTIF\]](#) sections [2.2.10](#) and [3.3](#), respectively.

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

3.2 Server Details

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 their external behavior is consistent with that described in this document.

The protocol treats a mailbox as a folder and treats messages as items within the folder. A URI is used to represent the outbound mail queue.

3.2.2 Timers

None.

3.2.3 Initialization

None.

3.2.4 Higher-Layer Triggered Events

The server uses the **NOTIFY** method to send a notification to the client when new mail arrives in a user's Inbox. The notification **MUST** include the subscription ID that specifies the resource URI. For more details about how the server uses the **NOTIFY** method, see [\[MS-XWDNOTIF\]](#) section 3.3.2.

3.2.5 Message Processing Events and Sequencing Rules

3.2.5.1 Processing an OPTIONS Request

The **OPTIONS** response includes the **Public-Extension** header. If the server supports the WebDAV Extensions for E-Mail Support protocol, the **OPTIONS** response includes the **Allow-Extension** header with the value "urn:schemas:httptmail". For more details about how the server responds to an **OPTIONS** request, see [\[RFC2068\]](#).

3.2.5.2 Processing an X-MS-ENUMATTS Request

The server ignores any body that is sent in the **X-MS-ENUMATTS** request. The **X-MS-ENUMATTS** response adheres to the same rules that are specified for a **PROPFIND** response. For more details about the **PROPFIND** response, see [\[RFC2518\]](#) and [\[MS-XWDEXT\]](#) section 3.1.5.1.10.

The **X-MS-ENUMATTS** response contains a list, specified in XML format, that includes the following for each item that is attached to a particular e-mail.

- The URL of the attached item.
- The properties of the attached item.

The following properties are returned for an embedded e-mail attachment: [<9>](#)

- [PidTagAttachMethod](#)
- [PidTagRenderingPosition](#)
- [PidTagAttachFlags](#)
- [PidTagAttachSize](#)
- [PidTagAttachNumber](#)
- [PidTagDisplayName](#)
- [PidTagAttachFilename](#)

The following properties are returned for a document attachment:

- [PidTagAttachExtension](#)
- [PidTagAttachFilename](#)
- [PidTagAttachMethod](#)
- [PidTagRenderingPosition](#)
- [PidTagAttachFlags](#)
- [PidTagAttachSize](#)

- [PidTagAttachNumber](#)
- [PidTagAttachLongFilename](#)
- [PidTagDisplayName](#)

3.2.5.3 Processing All Other Requests

For details about how the server responds to other requests, see the references in the following list:

- **COPY** response — [\[RFC2518\]](#) and [\[MS-XWDEXT\]](#) section 3.1.5.1.6
- **MOVE** response — [\[RFC2518\]](#) and [\[MS-XWDEXT\]](#) section 3.1.5.1.9
- **PROPFIND** response — [\[RFC2518\]](#) and [\[MS-XWDEXT\]](#) section 3.1.5.1.10
- **PROPPATCH** response — [\[RFC2518\]](#) and [\[MS-XWDEXT\]](#) section 2.2.1.18
- **DELETE**, **GET**, **POST**, and **PUT** responses — [\[RFC2068\]](#) and [\[RFC2518\]](#)
- **SUBSCRIBE**, **UNSUBSCRIBE**, and **POLL** responses — [\[MS-XWDNOTIF\]](#) sections [3.2](#) and [3.3.1](#)

3.2.6 Timer Events

None.

3.2.7 Other Local Events

None.

4 Protocol Examples

4.1 Discovery

The following example shows that the server supports mail submission through DAV and that this particular resource can be used for mail submission. The server first sends an **OPTIONS** request to determine support. Then, the server sends a **PROPFIND** request to retrieve the mail submission URI.

Request

```
OPTIONS /contoso/ HTTP/1.1
Host: contoso.com
Content-Length: 0
```

Response

```
HTTP/1.1 200 OK
Server: Microsoft-IIS/5.0
Date: Thu, 09 Jul 1998 15:20:02 GMT
Connection: close
Accept-Ranges: bytes
Cache-Control: private
Dav: 1, 2
Public-Extension: http://contoso.com/schemal
Public-Extension: urn:schemas:httpmail
Allow-Extension: urn:schemas:httpmail
Content-Length: 0
```

Request

```
PROPFIND /exchange/test/Inbox HTTP/1.1
Host: contoso.com
Content-Type: text/xml
Depth: 0
Content-Length: 176
Authorization: NTLM

<?xml version="1.0" encoding="utf-8" ?>
<D:propfind xmlns:D="DAV:">
  <D:prop xmlns:m="urn:schemas:httpmail:">
    <m:sendmsg/>
  </D:prop>
</D:propfind>
```

Response

```
HTTP/1.1 207 Multi-Status
Cache-Control: no-cache
Transfer-Encoding: chunked
Content-Type: text/xml
```

```
Accept-Ranges: rows
Server: Microsoft-IIS/7.0
MS-WebStorage: 08.01.10240
X-Powered-By: ASP.NET
Date: Wed, 22 Oct 2008 17:46:34 GMT
```

```
<?xml version="1.0"?>
<a:multistatus xmlns:b="urn:uuid:c2f41010-65b3-11d1-a29f-00aa00c14882/"
xmlns:d="urn:schemas:httpmail:" xmlns:c="xml:" xmlns:a="DAV:">
  <a:response>
    <a:href>https://exch1/exchange/alex/</a:href>
    <a:propstat>
      <a:status>HTTP/1.1 200 OK</a:status>
      <a:prop>
        <d:sendmsg>https://exch1/exchange/alex/%23%23DavMailSubmissionURI%23%23/
        </d:sendmsg>
      </a:prop>
    </a:propstat>
  </a:response>
</a:multistatus>
```

4.2 Sending Mail

The following example uses the **POST** method to send mail using the message/rfc821 media type.

Request

```
POST /exchange/test/%23%23DavMailSubmissionURI%23%23/ HTTP/1.1
Host: contoso.com
Content-Type: message/rfc821
Content-Length: xxx
Translate: f

MAIL FROM:<john@contoso.com >
RCPT TO:<john@bencipldcontoso.com>

from: anne@contoso.com
to: bar@contoso.com
Content-Type: text/plain
MIME-Version: 1.0
subject: Test of email

This is my email
```

Response

```
HTTP/1.1 200 OK
Server: Microsoft-IIS/5.0
Date: Thu, 09 Jul 1998 15:20:02 GMT
Connection: close
```

4.3 Attachments

The following example uses the **X-MS-ENUMATTS** method to retrieve a list of the items that are attached to the e-mail "attachment.EML". The response lists two attachments: "longnamestuff.doc" (a document) and "msginmsg.EML" (an embedded e-mail message).

Request:

```
X-MS-ENUMATTS /exchange/user/inbox/attachment.EML HTTP/1.1
```

Response:

```
HTTP/1.1 207 Multi-Status
Date: Thu, 22 Jan 2009 22:39:43 GMT
Server: Microsoft-IIS/6.0
Content-Type: text/xml
Accept-Ranges: rows
MS-WebStorage: 6.5.7638
Transfer-Encoding: chunked
Cache-Control: no-cache

<?xml version="1.0" ?>
<a:multistatus xmlns:b="urn:uuid:c2f41010-65b3-11d1-a29f-00aa00c14882/"
xmlns:e="urn:schemas:httpmail:" xmlns:c="xml:"
xmlns:d="http://schemas.microsoft.com/mapi/proptag/" xmlns:f="urn:schemas:contacts:"
xmlns:a="DAV:">
  <a:response>
    <a:href>http://server/exchange/user/inbox/attachment.EML/longnamestuff.doc</a:href>
    <a:propstat>
      <a:status>HTTP/1.1 200 OK</a:status>
      <a:prop>
        <d:x3703001f>.doc</d:x3703001f>
        <d:x3704001f>LONGNA~1.DOC</d:x3704001f>
        <d:x37050003 b:dt="int">1</d:x37050003>
        <d:x370b0003 b:dt="int">-1</d:x370b0003>
        <d:x37140003 b:dt="int">0</d:x37140003>
        <d:x0e200003 b:dt="int">111634</d:x0e200003>
        <d:x0e210003 b:dt="int">0</d:x0e210003>
        <e:attachmentfilename>longnamestuff.doc</e:attachmentfilename>
        <f:cn>longnamestuff.doc</f:cn>
      </a:prop>
    </a:propstat>
  </a:response>
  <a:response>
    <a:href>http://server/exchange/user/inbox/attachment.EML/msginmsg.EML</a:href>
    <a:propstat>
      <a:status>HTTP/1.1 200 OK</a:status>
      <a:prop>
        <d:x37050003 b:dt="int">5</d:x37050003>
        <d:x370b0003 b:dt="int">-1</d:x370b0003>
        <d:x37140003 b:dt="int">0</d:x37140003>
        <d:x0e200003 b:dt="int">6434</d:x0e200003>
        <d:x0e210003 b:dt="int">1</d:x0e210003>
        <f:cn>msginmsg</f:cn>
      </a:prop>
    </a:propstat>
  </a:response>
```

</a:multistatus>

5 Security

5.1 Security Considerations for Implementers

None.

5.2 Index of Security Parameters

None.

6 Appendix A: Product Behavior

The information in this specification is applicable to the following Microsoft products:

- Microsoft® Exchange Server 2003
- Microsoft® Exchange Server 2007

Exceptions, if any, are noted below. If a service pack number appears with the product version, behavior changed in that service pack. 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 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 product does not follow the prescription.

<1> [Section 2.2.2.3.4](#): When the [PidTagAttachFilename](#) property is returned by Exchange 2007 for an embedded e-mail attachment, the filename specified by the property is not in 8.3 name format.

<2> [Section 2.2.2.7.19](#): Exchange 2003 does implement the [PidNameFollowupTo](#) property.

<3> [Section 2.2.2.7.24](#): Exchange 2003 does implement the [PidNameLines](#) property.

<4> [Section 2.2.2.7.27](#): Exchange 2003 does implement the [PidNameNewsgroups](#) property.

<5> [Section 2.2.2.7.28](#): Exchange 2003 does implement the [PidNameNntpPostingHost](#) property.

<6> [Section 2.2.2.7.31](#): Exchange 2003 does implement the [PidNamePath](#) property.

<7> [Section 2.2.2.7.35](#): Exchange 2003 does implement the [PidNameReferences](#) property.

<8> [Section 2.2.2.7.51](#): Exchange 2003 does implement the [PidNameCrossReference](#) property.

<9> [Section 3.2.5.2](#): Exchange 2003 does not return the [PidTagAttachFilename](#) property for an embedded e-mail attachment.

7 Change Tracking

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

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