

[MS-XWDCNTC]: Web Distributed Authoring and Versioning (WebDAV) Extensions for Contacts Support

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Revision Summary

Date	Revision History	Revision Class	Comments
02/04/2009	1.0	Major	Initial release.
03/04/2009	1.0.1	Editorial	Revised and edited technical content.
04/10/2009	2.0	Major	Deprecated for Exchange 2010.
07/15/2009	3.0	Major	Changes made for template compliance.
11/04/2009	3.1.0	Minor	Updated the technical content.
02/10/2010	4.0.0	Major	Updated and revised the technical content.
05/05/2010	4.0.1	Editorial	Revised and edited the technical content.
08/04/2010	4.0.1	No change	No changes to the meaning, language, or formatting of the technical content.
11/03/2010	4.0.1	No change	No changes to the meaning, language, or formatting of the technical content.
03/18/2011	4.1	Minor	Clarified the meaning of the technical content.

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1 Introduction

This document specifies the WebDAV Extensions for Contacts Support, which extend the **WebDAV** protocol to allow the creation and manipulation of **Contact objects** by using WebDAV. For details about the WebDAV protocol, see [\[RFC2518\]](#).

1.1 Glossary

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

distinguished name (DN)
Hypertext Transfer Protocol (HTTP)

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

contact
Contact object
File Transfer Protocol (FTP)
Message object
Root folder
telecommunications device for the deaf (TDD)
Uniform Resource Locator (URL)
Web Distributed Authoring and Versioning Protocol (WebDAV)
WebDAV client
WebDAV server
X500 DN

The following terms are specific to this document:

Integrated Services Digital Network (ISDN): A high-speed digital technology that uses existing telephone lines to provide Internet access and digital network services.

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.

[ISO-639-2] International Organization for Standardization, "Codes for the representation of names of languages -- Part 2: Alpha-3 code", ISO 639-2:1998, http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=4767

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

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

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

[MS-OXOMSG] Microsoft Corporation, "[E-Mail 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.

[MS-WDVSE] Microsoft Corporation, "[Web Distributed Authoring and Versioning \(WebDAV\) Protocol: Server Extensions](#)", September 2007.

[MS-XWDEXT] Microsoft Corporation, "[Web Distributed Authoring and Versioning \(WebDAV\) Core Extensions](#)", July 2009.

[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>

[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>

[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>

1.2.2 Informative References

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

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

[RFC2291] Slein, J., Vitali, F., Whitehead, E., et al., "Requirements for a Distributed Authoring and Versioning Protocol for the World Wide Web", RFC 2291, February 1998, <http://www.ietf.org/rfc/rfc2291.txt>

[RFC2818] Rescorla, E., "HTTP Over TLS", RFC 2818, May 2000, <http://www.ietf.org/rfc/rfc2818.txt>

1.3 Overview

A client uses the WebDAV Extensions for Contacts Support to create and manipulate Contact objects. A Contact object is a **Message object** that includes additional properties to describe a **contact**. The following operations can be performed:

- Create, retrieve, and delete contacts.
- Set, retrieve, and delete properties of a contact.

These operations use standard WebDAV constructs and server extensions to WebDAV. No additional headers or methods are specified in this document, but some of the methods used by the WebDAV Extensions for Contacts Support protocol are extended, as described in [\[MS-XWDEXT\]](#). Standard WebDAV constructs are described in [\[RFC2068\]](#) and [\[RFC2518\]](#). Server extensions to WebDAV are described in [\[MS-WDVSE\]](#).

1.4 Relationship to Other Protocols

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

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

Many of the WebDAV contact properties that are specified in section [2.2.1](#) of this document map to the Contact object properties that are described in [\[MS-OXOCNTC\]](#) section 2.2.1 and section .

1.5 Prerequisites/Preconditions

The WebDAV Extensions for Contacts Support protocol requires the following:

- The **WebDAV server** operates as described in [\[RFC2291\]](#).
- The **WebDAV client** has a **URL** that points to the WebDAV server.
- The WebDAV client obtains the URL through a mechanism that is outside of WebDAV and that is determined by the implementer.

1.6 Applicability Statement

A client can use this protocol to communicate with a server to create, retrieve, and manipulate contacts by using WebDAV.

1.7 Versioning and Capability Negotiation

Versioning: The WebDAV Extensions for Contacts Support have no versioning mechanisms except those that already exist in WebDAV and **HTTP**, as described in [\[RFC2068\]](#) and [\[RFC2518\]](#).

Capability Negotiation: The WebDAV Extensions for Contacts Support have no capability negotiation mechanisms except those that already exist in WebDAV and HTTP, as described in [\[RFC2068\]](#) and [\[RFC2518\]](#).

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

The WebDAV Extensions for Contacts Support protocol transports messages by using HTTP, as specified in [\[RFC2068\]](#) and [\[RFC2518\]](#).

2.2 Message Syntax

2.2.1 Properties

This section contains the WebDAV properties for the Contact object. Many of these properties map directly to the Contact object properties that are specified in [\[MS-OXOCNTC\]](#) sections and .

These properties are listed by canonical name. For more details about the canonical name and WebDAV property naming, see [\[MS-OXPROPS\]](#) sections and , respectively. The property data types are defined in [\[MS-OXCDATA\]](#) sections and .

2.2.1.1 DAV: Namespace Properties

This section specifies properties that are defined by the **DAV:** namespace.

2.2.1.1.1 PidNameContentClass

DAV property name: DAV:contentclass

Data type: PtypString

The **PidNameContentClass** property ([\[MS-OXPROPS\]](#) section 2.432) identifies the content class of an item. For a Contact object, the value of this property MUST be "urn:content-class:person". For a contacts folder, the value of this property MUST be "urn:content-classes:contactfolder".

The **PidNameContentClass** property is further specified in [\[MS-OXCMAIL\]](#) section 2.1.3.2.2.

2.2.1.2 http://schemas.microsoft.com/exchange/ Namespace Properties

This section specifies properties that are defined by the **http://schemas.microsoft.com/exchange/** namespace.

2.2.1.2.1 PidTagContainerClass

DAV property name: http://schemas.microsoft.com/exchange/outlookfolderclass

Data type: PtypString

The **PidTagContainerClass** property ([\[MS-OXPROPS\]](#) section 2.712) identifies the content class of a folder. For a contacts folder, the value of this property MUST be "IPF.Contact".

The **PidTagContainerClass** property is further specified in [\[MS-OXOSFLD\]](#) section 2.2.5.

2.2.1.2.2 PidTagMessageClass

DAV property name: http://schemas.microsoft.com/exchange/outlookmessageclass

Data type: PtypString

The **PidTagMessageClass** property ([\[MS-OXPROPS\]](#) section 2.884) contains the object-type classification. For a Contact object, the value of this property MUST be "IPM.contact".

The **PidTagMessageClass** property is further specified in [\[MS-OXOMSG\]](#) section 2.2.1.16.

2.2.1.3 urn:schemas:contacts: Namespace Properties

This section specifies properties that are defined by the **urn:schemas:contacts:** namespace.

2.2.1.3.1 PidLidBilling

DAV property name: urn:schemas:contacts:billinginformation

Data type: PtypString

The **PidLidBilling** property ([\[MS-OXPROPS\]](#) section 2.42) specifies the billing information for the contact.

2.2.1.3.2 PidLidHomeAddress

DAV property name: urn:schemas:contacts:homepostaladdress

Data type: PtypString

The **PidLidHomeAddress** property ([\[MS-OXPROPS\]](#) section 2.143) specifies the home postal address of the contact and is read-only. The value of this property is constructed from the "Home Address" group of properties, which are listed in the table in [\[MS-OXOCNTC\]](#) section 2.2.1.3.

2.2.1.3.3 PidLidOtherAddress

DAV property name: urn:schemas:contacts:otherpostaladdress

Data type: PtypString

The **PidLidOtherAddress** property ([\[MS-OXPROPS\]](#) section 2.195) specifies the alternate postal address for the contact and is read-only. The value of this property is constructed from the "Other Address" group of properties, which are listed in the table in [\[MS-OXOCNTC\]](#) section 2.2.1.3.

2.2.1.3.4 PidLidPostalAddressId

DAV property name: urn:schemas:contacts:mailingaddressid

Data type: PtypInteger32

The **PidLidPostalAddressId** property ([\[MS-OXPROPS\]](#) section 2.200) specifies a numeric value that determines how the contact's mailing address is generated. This property is further specified in [\[MS-OXOCNTC\]](#) section 2.2.1.3.9.

The following table lists the valid values for the **PidLidPostalAddressId** property.

Value	Meaning
0x00000000	The mailing address is not constructed from other properties and the mailing address is manually specified.
0x00000001	The mailing address is constructed from the "Home Address" group of properties, which are

Value	Meaning
	listed in the table in [MS-OXOCNTC] section 2.2.1.3.
0x00000002	The mailing address is constructed from the "Work Address" group of properties, which are listed in the table in [MS-OXOCNTC] section 2.2.1.3.
0x00000003	The mailing address is constructed from the "Other Address" group of properties, which are listed in the table in [MS-OXOCNTC] section 2.2.1.3.

2.2.1.3.5 PidLidReferredBy

DAV property name: urn:schemas:contacts:referredby

Data type: PtypString

The **PidLidReferredBy** property ([\[MS-OXPROPS\]](#) section 2.215) specifies the full name of the person who referred the contact.

2.2.1.3.6 PidLidWorkAddress

DAV property name: urn:schemas:contacts:workaddress

Data type: PtypString

The **PidLidWorkAddress** property ([\[MS-OXPROPS\]](#) section 2.353) specifies the work address for the contact and is read-only. The value of this property is constructed from the "Work Address" group of properties, which are listed in the table in [\[MS-OXOCNTC\]](#) section 2.2.1.3.

2.2.1.3.7 PidLidWorkAddressCity

DAV property name: urn:schemas:contacts:l

Data type: PtypString

The **PidLidWorkAddressCity** property ([\[MS-OXPROPS\]](#) section 2.354) specifies the city for the contact's work address.

2.2.1.3.8 PidLidWorkAddressCountry

DAV property name: urn:schemas:contacts:co

Data type: PtypString

The **PidLidWorkAddressCountry** property ([\[MS-OXPROPS\]](#) section 2.355) specifies the country/region for the contact's work address.

2.2.1.3.9 PidLidWorkAddressPostalCode

DAV property name: urn:schemas:contacts:postalcode

Data type: PtypString

The **PidLidWorkAddressPostalCode** property ([\[MS-OXPROPS\]](#) section 2.357) specifies the postal code for the contact's work address.

2.2.1.3.10 PidLidWorkAddressPostOfficeBox

DAV property name: urn:schemas:contacts:postofficebox

Data type: PtypString

The **PidLidWorkAddressPostOfficeBox** property ([\[MS-OXPROPS\]](#) section 2.358) specifies the post office box number for the contact's work address.

2.2.1.3.11 PidLidWorkAddressState

DAV property name: urn:schemas:contacts:st

Data type: PtypString

The **PidLidWorkAddressState** property ([\[MS-OXPROPS\]](#) section 2.359) specifies the state for the contact's work address.

2.2.1.3.12 PidLidWorkAddressStreet

DAV property name: urn:schemas:contacts:street

Data type: PtypString

The **PidLidWorkAddressStreet** property ([\[MS-OXPROPS\]](#) section 2.360) specifies the street for the contact's work address.

2.2.1.3.13 PidNameContactsAlternateRecipient

DAV property name: urn:schemas:contacts:alternaterecipient

Data type: PtypString

The **PidNameContactsAlternateRecipient** property ([\[MS-OXPROPS\]](#) section 2.414) specifies an alternate e-mail address for this contact.

2.2.1.3.14 PidNameContactsCountry

DAV property name: urn:schemas:contacts:c

Data type: PtypString

The **PidNameContactsCountry** property ([\[MS-OXPROPS\]](#) section 2.415) specifies the country/region code for the contact's work address.

2.2.1.3.15 PidNameContactsEmail1

DAV property name: urn:schemas:contacts:email1

Data type: PtypString

The **PidNameContactsEmail1** property ([\[MS-OXPROPS\]](#) section 2.416) specifies the primary e-mail address of the contact.

2.2.1.3.16 PidNameContactsEmail2

DAV property name: urn:schemas:contacts:email2

Data type: PtypString

The **PidNameContactsEmail2** property ([\[MS-OXPROPS\]](#) section 2.417) specifies the secondary e-mail address of the contact.

2.2.1.3.17 PidNameContactsEmail3

DAV property name: urn:schemas:contacts:email3

Data type: PtypString

The **PidNameContactsEmail3** property ([\[MS-OXPROPS\]](#) section 2.418) specifies the third e-mail address of the contact.

2.2.1.3.18 PidNameContactsFileAs

DAV property name: urn:schemas:contacts:fileas

Data type: PtypString

The **PidNameContactsFileAs** property ([\[MS-OXPROPS\]](#) section 2.419) specifies the contact information in the format in which it is to be displayed.

If the value of this property is not null, the contact information is displayed exactly as it appears in this property; otherwise, the **PidNameContactsFileasId** property ([\[MS-OXPROPS\]](#) section 2.420) specifies how the contact information is to be displayed. For details about the **PidNameContactsFileasId** property, see section [2.2.1.3.19](#) of this document.

If the value of the **PidNameContactsFileasId** property is zero and the **PidNameContactsFileAs** property is set to null (empty string), the **PidNameContactsFileAs** property will be deleted.

2.2.1.3.19 PidNameContactsFileasId

DAV property name: urn:schemas:contacts:fileasid

Data type: PtypInteger32

The **PidNameContactsFileasId** property ([\[MS-OXPROPS\]](#) section 2.420) specifies a numeric value that determines how the contact information is displayed.

If the **PidNameContactsFileAs** property ([\[MS-OXPROPS\]](#) section 2.419) is set to a non-null value, then its value overrides the format that is specified by **PidNameContactsFileasId** ; otherwise, the value of the **PidNameContactsFileAs** property is assembled from other properties, as specified in this section.

The following table lists the valid values for the **PidNameContactsFileasId** property. Each value specifies how the value of the **PidNameContactsFileAs** property is generated if its value is currently null (an empty string). Commas and spaces appear exactly as shown. The following abbreviations are used in the table to represent the values of the properties that compose the **PidNameContactsFileAs** property.

- Gn — the contact's given name (also called the first name), taken from the **PidTagGivenName** property ([\[MS-OXPROPS\]](#) section 2.791).
- Mn — the contact's middle name, taken from the **PidTagMiddleName** property ([\[MS-OXPROPS\]](#) section 2.899).

- Org — the contact's organization or company, taken from the **PidTagCompanyName** property ([\[MS-OXPROPS\]](#) section 2.708).
- Sn — the contact's surname, taken from the **PidTagSurname** property ([\[MS-OXPROPS\]](#) section 2.1147).

Value	Value of PidNameContactsFileAs property
0x00000000	The PidNameContactsFileAs property is deleted.
0x00000001	Sn, Gn Mn
0x00000002	Gn Mn Sn
0x00000003	Org
0x00000004	Sn, Gn Mn (Org)
0x00000005	Org (Sn, Gn Mn)
0x00000006	SnGn Mn
0x00000007	SnGn Mn (Org)
0x00000008	Org (SnGn Mn)
0x00000009	SnGn
0x0000000A	Sn Gn Mn (Org)
0x0000000B	Org (Sn Gn Mn)
0x0000000C	Sn Gn Mn

2.2.1.3.20 PidNameContactsHomeLatitude

DAV property name: urn:schemas:contacts:homelatitude

Data type: PtypFloating64

The **PidNameContactsHomeLatitude** property ([\[MS-OXPROPS\]](#) section 2.421) specifies the latitude of the contact's home.

2.2.1.3.21 PidNameContactsHomeLongitude

DAV property name: urn:schemas:contacts:homelongitude

Data type: PtypFloating64

The **PidNameContactsHomeLongitude** property ([\[MS-OXPROPS\]](#) section 2.422) specifies the longitude of the contact's home.

2.2.1.3.22 PidNameContactsHomeTimeZone

DAV property name: urn:schemas:contacts:hometimezone

Data type: PtypString

The **PidNameContactsHomeTimeZone** property ([\[MS-OXPROPS\]](#) section 2.423) specifies the time zone of the contact's home.

2.2.1.3.23 PidNameContactsMapUrl

DAV property name: urn:schemas:contacts:mapurl

Data type: PtypString

The **PidNameContactsMapUrl** property ([\[MS-OXPROPS\]](#) section 2.424) specifies the map URL for the contact. The property is read-only.

2.2.1.3.24 PidNameContactsOtherCountryCode

DAV property name: urn:schemas:contacts:othercountrycode

Data type: PtypString

The **PidNameContactsOtherCountryCode** property ([\[MS-OXPROPS\]](#) section 2.425) specifies an alternative, two-letter country/region code for the contact.

2.2.1.3.25 PidNameContactsOtherPager

DAV property name: urn:schemas:contacts:otherpager

Data type: PtypString

The **PidNameContactsOtherPager** property ([\[MS-OXPROPS\]](#) section 2.426) specifies a pager telephone number for the contact.

2.2.1.3.26 PidNameContactsOtherTimeZone

DAV property name: urn:schemas:contacts:othertimezone

Data type: PtypString

The **PidNameContactsOtherTimeZone** property ([\[MS-OXPROPS\]](#) section 2.427) specifies an alternate time zone for the contact.

2.2.1.3.27 PidNameContactsProxyAddresses

DAV property name: urn:schemas:contacts:proxyaddresses

Data type: PtypMultipleString

The **PidNameContactsProxyAddresses** property ([\[MS-OXPROPS\]](#) section 2.428) specifies one or more e-mail addresses.

2.2.1.3.28 PidNameContactsSecretaryUrl

DAV property name: urn:schemas:contacts:secretaryurl

Data type: PtypString

The **PidNameContactsSecretaryUrl** property ([\[MS-OXPROPS\]](#) section 2.429) specifies the URL to the contact's secretary.

2.2.1.3.29 PidNameContactsSourceUrl

DAV property name: urn:schemas:contacts:sourceurl

Data type: PtypString

The **PidNameContactsSourceUrl** property ([\[MS-OXPROPS\]](#) section 2.430) specifies the URL of the source from which the contact's information was obtained.

2.2.1.3.30 PidTagAccount

DAV property name: urn:schemas:contacts:account

Data type: PtypString

The **PidTagAccount** property ([\[MS-OXPROPS\]](#) section 2.585) specifies the account (typically an account number) for the contact.

2.2.1.3.31 PidTagAssistant

DAV property name: urn:schemas:contacts:secretarycn

Data type: PtypString

The **PidTagAssistant** property ([\[MS-OXPROPS\]](#) section 2.646) specifies the friendly name of the contact's secretary.

2.2.1.3.32 PidTagAssistantTelephoneNumber

DAV property name: urn:schemas:contacts:secretaryphone

Data type: PtypString

The **PidTagAssistantTelephoneNumber** property ([\[MS-OXPROPS\]](#) section 2.647) specifies the phone number of the contact's secretary.

2.2.1.3.33 PidTagBirthday

DAV property name: urn:schemas:contacts:bday

Data type: PtypTime

The **PidTagBirthday** property ([\[MS-OXPROPS\]](#) section 2.681) specifies the birthday of the contact.

2.2.1.3.34 PidTagBusiness2TelephoneNumber

DAV property name: urn:schemas:contacts:telephonenumber2

Data type: PtypString

The **PidTagBusiness2TelephoneNumber** property ([\[MS-OXPROPS\]](#) section 2.687) specifies an alternate work phone number for the contact.

2.2.1.3.35 PidTagBusinessFaxNumber

DAV property name: urn:schemas:contacts:facsimiletelephonenumber

Data type: PtypString

The **PidTagBusinessFaxNumber** property ([\[MS-OXPROPS\]](#) section 2.689) specifies the work facsimile (fax) telephone number for the contact.

2.2.1.3.36 PidTagBusinessHomePage

DAV property name: urn:schemas:contacts:businesshomepage

Data type: PtypString

The **PidTagBusinessHomePage** property ([\[MS-OXPROPS\]](#) section 2.690) specifies the URL to the home page of a business's Web site.

2.2.1.3.37 PidTagBusinessTelephoneNumber

DAV property name: urn:schemas:contacts:telephoneNumber

Data type: PtypString

The **PidTagBusinessTelephoneNumber** property ([\[MS-OXPROPS\]](#) section 2.691) specifies the work phone number for the contact.

2.2.1.3.38 PidTagCallbackTelephoneNumber

DAV property name: urn:schemas:contacts:callbackphone

Data type: PtypString

The **PidTagCallbackTelephoneNumber** property ([\[MS-OXPROPS\]](#) section 2.692) specifies the phone number that is used for returning calls to the contact.

2.2.1.3.39 PidTagCarTelephoneNumber

DAV property name: urn:schemas:contacts:othermobile

Data type: PtypString

The **PidTagCarTelephoneNumber** property ([\[MS-OXPROPS\]](#) section 2.694) specifies an alternate mobile phone number for the contact.

2.2.1.3.40 PidTagChildrensNames

DAV property name: urn:schemas:contacts:childrensnames

Data type: PtypMultipleString

The **PidTagChildrensNames** property ([\[MS-OXPROPS\]](#) section 2.699) specifies the names of the contact's children.

2.2.1.3.41 PidTagCompanyMainTelephoneNumber

DAV property name: urn:schemas:contacts:organizationmainphone

Data type: PtypString

The **PidTagCompanyMainTelephoneNumber** property ([\[MS-OXPROPS\]](#) section 2.707) specifies the main telephone number for a company.

2.2.1.3.42 PidTagCompanyName

DAV property name: urn:schemas:contacts:o

Data type: PtypString

The **PidTagCompanyName** property ([\[MS-OXPROPS\]](#) section 2.708) specifies the name of the company or organization with which the contact is associated.

2.2.1.3.43 PidTagComputerNetworkName

DAV property name: urn:schemas:contacts:computernetworkname

Data type: PtypString

The **PidTagComputerNetworkName** property ([\[MS-OXPROPS\]](#) section 2.709) specifies the computer network name for the contact.

2.2.1.3.44 PidTagCountry

DAV property name: urn:schemas:contacts:mailingcountry

Data type: PtypString

The **PidTagCountry** property ([\[MS-OXPROPS\]](#) section 2.724) specifies the country/region portion of the contact's mailing address and is read-only.

2.2.1.3.45 PidTagCustomerId

DAV property name: urn:schemas:contacts:customerid

Data type: PtypString

The **PidTagCustomerId** property ([\[MS-OXPROPS\]](#) section 2.729) specifies the customer ID of the contact.

2.2.1.3.46 PidTagDepartmentName

DAV property name: urn:schemas:contacts:department

Data type: PtypString

The **PidTagDepartmentName** property ([\[MS-OXPROPS\]](#) section 2.742) specifies the department for the contact.

2.2.1.3.47 PidTagDisplayName

DAV property name: urn:schemas:contacts:cn

Data type: PtypString

The **PidTagDisplayName** property ([\[MS-OXPROPS\]](#) section 2.746) specifies the friendly name of the contact.

2.2.1.3.48 PidTagDisplayNamePrefix

DAV property name: urn:schemas:contacts:personaltitle

Data type: PtypString

The **PidTagDisplayNamePrefix** property ([\[MS-OXPROPS\]](#) section 2.747) specifies the prefix title for the contact.

2.2.1.3.49 PidTagFtpSite

DAV property name: urn:schemas:contacts:ftpsite

Data type: PtypString

The **PidTagFtpSite** property ([\[MS-OXPROPS\]](#) section 2.785) specifies the URL to the **File Transfer Protocol (FTP)** site for the contact.

2.2.1.3.50 PidTagGender

DAV property name: urn:schemas:contacts:gender

Data type: PtypInteger16

The **PidTagGender** property ([\[MS-OXPROPS\]](#) section 2.789) specifies the gender of the contact.

The following table lists the valid values for the **PidTagGender** property.

Value	Meaning
0x0001	The contact is female.
0x0002	The contact is male.

2.2.1.3.51 PidTagGeneration

DAV property name: urn:schemas:contacts:namesuffix

Data type: PtypString

The **PidTagGeneration** property ([\[MS-OXPROPS\]](#) section 2.790) specifies the generation qualifier for the contact.

2.2.1.3.52 PidTagGivenName

DAV property name: urn:schemas:contacts:givenName

Data type: PtypString

The **PidTagGivenName** property ([\[MS-OXPROPS\]](#) section 2.791) specifies the first name of the contact.

2.2.1.3.53 PidTagGovernmentIdNumber

DAV property name: urn:schemas:contacts:governmentid

Data type: PtypString

The **PidTagGovernmentIdNumber** property ([\[MS-OXPROPS\]](#) section 2.792) specifies the government identifier for the contact. In the United States, the government identifier is typically the Social Security number.

2.2.1.3.54 PidTagHobbies

DAV property name: urn:schemas:contacts:hobbies

Data type: PtypString

The **PidTagHobbies** property ([\[MS-OXPROPS\]](#) section 2.798) specifies the contact's hobbies, separated by semicolons.

2.2.1.3.55 PidTagHome2TelephoneNumber

DAV property name: urn:schemas:contacts:homephone2

Data type: PtypString

The **PidTagHome2TelephoneNumber** property ([\[MS-OXPROPS\]](#) section 2.799) specifies an alternate home telephone number for the contact.

2.2.1.3.56 PidTagHomeAddressCity

DAV property name: urn:schemas:contacts:homeCity

Data type: PtypString

The **PidTagHomeAddressCity** property ([\[MS-OXPROPS\]](#) section 2.801) specifies the contact's home city.

2.2.1.3.57 PidTagHomeAddressCountry

DAV property name: urn:schemas:contacts:homeCountry

Data type: PtypString

The **PidTagHomeAddressCountry** property ([\[MS-OXPROPS\]](#) section 2.802) specifies the contact's home country.

2.2.1.3.58 PidTagHomeAddressPostalCode

DAV property name: urn:schemas:contacts:homePostalCode

Data type: PtypString

The **PidTagHomeAddressPostalCode** property ([\[MS-OXPROPS\]](#) section 2.803) specifies the contact's home postal code. In the United States, the postal code is typically the zip code.

2.2.1.3.59 PidTagHomeAddressPostOfficeBox

DAV property name: urn:schemas:contacts:homepostofficebox

Data type: PtypString

The **PidTagHomeAddressPostOfficeBox** property ([\[MS-OXPROPS\]](#) section 2.804) specifies the post office box number for the contact's home address.

2.2.1.3.60 PidTagHomeAddressStateOrProvince

DAV property name: urn:schemas:contacts:homeState

Data type: PtypString

The **PidTagHomeAddressStateOrProvince** property ([\[MS-OXPROPS\]](#) section 2.805) specifies the home state of the contact.

2.2.1.3.61 PidTagHomeAddressStreet

DAV property name: urn:schemas:contacts:homeStreet

Data type: PtypString

The **PidTagHomeAddressStreet** property ([\[MS-OXPROPS\]](#) section 2.806) specifies the street for the contact's home address.

2.2.1.3.62 PidTagHomeFaxNumber

DAV property name: urn:schemas:contacts:homefax

Data type: PtypString

The **PidTagHomeFaxNumber** property ([\[MS-OXPROPS\]](#) section 2.807) specifies the home facsimile (fax) number for the contact.

2.2.1.3.63 PidTagHomeTelephoneNumber

DAV property name: urn:schemas:contacts:homePhone

Data type: PtypString

The **PidTagHomeTelephoneNumber** property ([\[MS-OXPROPS\]](#) section 2.808) specifies the home telephone number, in international dialing format, for the contact.

2.2.1.3.64 PidTagInitials

DAV property name: urn:schemas:contacts:initials

Data type: PtypString

The **PidTagInitials** property ([\[MS-OXPROPS\]](#) section 2.837) specifies the contact's initials.

2.2.1.3.65 PidTagIsdnNumber

DAV property name: urn:schemas:contacts:internationalisdnnumber

Data type: PtypString

The **PidTagIsdnNumber** property ([\[MS-OXPROPS\]](#) section 2.853) specifies the **Integrated Services Digital Network (ISDN)** number for the contact.

2.2.1.3.66 PidTagLanguage

DAV property name: urn:schemas:contacts:language

Data type: PtypString

The **PidTagLanguage** property ([\[MS-OXPROPS\]](#) section 2.860) contains an ISO-639-Alpha-3 code that specifies the language of the contact. For more details about ISO-639-Alpha-3 codes, see [\[ISO-639-2\]](#).

2.2.1.3.67 PidTagLocality

DAV property name: urn:schemas:contacts:mailingcity

Data type: PtypString

The **PidTagLocality** property ([\[MS-OXPROPS\]](#) section 2.872) specifies the city portion of the contact's mailing address and is read-only.

2.2.1.3.68 PidTagLocation

DAV property name: urn:schemas:contacts:location

Data type: PtypString

The **PidTagLocation** property ([\[MS-OXPROPS\]](#) section 2.873) specifies the contact's regional location.

2.2.1.3.69 PidTagManagerName

DAV property name: urn:schemas:contacts:manager

Data type: PtypString

The **PidTagManagerName** property ([\[MS-OXPROPS\]](#) section 2.876) specifies the **distinguished name (DN)** for the manager of the contact.

2.2.1.3.70 PidTagMessageHandlingSystemCommonName

DAV property name: urn:schemas:contacts:dn

Data type: PtypString

The **PidTagMessageHandlingSystemCommonName** property ([\[MS-OXPROPS\]](#) section 2.889) specifies the **X500 DN** of the contact. This property is read-only.

2.2.1.3.71 PidTagMiddleName

DAV property name: urn:schemas:contacts:middlename

Data type: PtypString

The **PidTagMiddleName** property ([\[MS-OXPROPS\]](#) section 2.899) specifies the contact's middle name.

2.2.1.3.72 PidTagMobileTelephoneNumber

DAV property name: urn:schemas:contacts:mobile

Data type: PtypString

The **PidTagMobileTelephoneNumber** property ([\[MS-OXPROPS\]](#) section 2.901) specifies the contact's mobile telephone number.

2.2.1.3.73 PidTagNickname

DAV property name: urn:schemas:contacts:nickname

Data type: PtypString

The **PidTagNickname** property ([\[MS-OXPROPS\]](#) section 2.906) specifies the contact's nickname.

2.2.1.3.74 PidTagOfficeLocation

DAV property name: urn:schemas:contacts:roomnumber

Data type: PtypString

The **PidTagOfficeLocation** property ([\[MS-OXPROPS\]](#) section 2.910) specifies the contact's office number.

2.2.1.3.75 PidTagOrganizationalIdNumber

DAV property name: urn:schemas:contacts:employeenumber

Data type: PtypString

The **PidTagOrganizationalIdNumber** property ([\[MS-OXPROPS\]](#) section 2.918) specifies the contact's employee number.

2.2.1.3.76 PidTagOtherAddressCity

DAV property name: urn:schemas:contacts:othercity

Data type: PtypString

The **PidTagOtherAddressCity** property ([\[MS-OXPROPS\]](#) section 2.941) specifies an alternate city for the contact.

2.2.1.3.77 PidTagOtherAddressCountry

DAV property name: urn:schemas:contacts:othercountry

Data type: PtypString

The **PidTagOtherAddressCountry** property ([\[MS-OXPROPS\]](#) section 2.942) specifies an alternate country/region for the contact.

2.2.1.3.78 PidTagOtherAddressPostalCode

DAV property name: urn:schemas:contacts:otherpostalcode

Data type: PtypString

The **PidTagOtherAddressPostalCode** property ([\[MS-OXPROPS\]](#) section 2.943) specifies an alternate postal code, typically a zip code in the United States, for the contact.

2.2.1.3.79 PidTagOtherAddressPostOfficeBox

DAV property name: urn:schemas:contacts:otherpostofficebox

Data type: PtypString

The **PidTagOtherAddressPostOfficeBox** property ([\[MS-OXPROPS\]](#) section 2.944) specifies an alternate post office box for the contact.

2.2.1.3.80 PidTagOtherAddressStateOrProvince

DAV property name: urn:schemas:contacts:otherstate

Data type: PtypString

The **PidTagOtherAddressStateOrProvince** property ([\[MS-OXPROPS\]](#) section 2.945) specifies an alternate state or province for the contact.

2.2.1.3.81 PidTagOtherAddressStreet

DAV property name: urn:schemas:contacts:otherstreet

Data type: PtypString

The **PidTagOtherAddressStreet** property ([\[MS-OXPROPS\]](#) section 2.946) specifies an alternate street address for the contact.

2.2.1.3.82 PidTagOtherTelephoneNumber

DAV property name: urn:schemas:contacts:otherTelephone

Data type: PtypString

The **PidTagOtherTelephoneNumber** property ([\[MS-OXPROPS\]](#) section 2.947) specifies an alternate telephone number for the contact.

2.2.1.3.83 PidTagPagerTelephoneNumber

DAV property name: urn:schemas:contacts:pager

Data type: PtypString

The **PidTagPagerTelephoneNumber** property ([\[MS-OXPROPS\]](#) section 2.950) specifies the contact's work pager number.

2.2.1.3.84 PidTagPersonalHomePage

DAV property name: urn:schemas:contacts:personalHomePage

Data type: PtypString

The **PidTagPersonalHomePage** property ([\[MS-OXPROPS\]](#) section 2.955) specifies the URL of the home page for the contact.

2.2.1.3.85 PidTagPostalAddress

DAV property name: urn:schemas:contacts:mailingpostaladdress

Data type: PtypString

The **PidTagPostalAddress** property ([\[MS-OXPROPS\]](#) section 2.957) specifies the postal portion of the contact's home mailing address and is read-only. The value of this property is constructed from the "Mailing Address" group of properties, which are listed in the table in [\[MS-OXOCNTC\]](#) section 2.2.1.3.

2.2.1.3.86 PidTagPostalCode

DAV property name: urn:schemas:contacts:mailingpostalcode

Data type: PtypString

The **PidTagPostalCode** property ([\[MS-OXPROPS\]](#) section 2.958) specifies postal code portion of the contact's home mailing address and is read-only.

2.2.1.3.87 PidTagPostOfficeBox

DAV property name: urn:schemas:contacts:mailingpostofficebox

Data type: PtypString

The **PidTagPostOfficeBox** property ([\[MS-OXPROPS\]](#) section 2.959) specifies the post office box portion of the contact's home mailing address and is read-only.

2.2.1.3.88 PidTagPrimaryFaxNumber

DAV property name: urn:schemas:contacts:otherfax

Data type: PtypString

The **PidTagPrimaryFaxNumber** property ([\[MS-OXPROPS\]](#) section 2.961) specifies an alternate facsimile (fax) number for the contact.

2.2.1.3.89 PidTagProfession

DAV property name: urn:schemas:contacts:profession

Data type: PtypString

The **PidTagProfession** property ([\[MS-OXPROPS\]](#) section 2.967) specifies the contact's profession.

2.2.1.3.90 PidTagSpouseName

DAV property name: urn:schemas:contacts:spousecn

Data type: PtypString

The **PidTagSpouseName** property ([\[MS-OXPROPS\]](#) section 2.1129) specifies the friendly name of the contact's spouse/partner.

2.2.1.3.91 PidTagStateOrProvince

DAV property name: urn:schemas:contacts:mailingstate

Data type: PtypString

The **PidTagStateOrProvince** property ([\[MS-OXPROPS\]](#) section 2.1138) specifies the state portion of the contact's mailing address and is read-only.

2.2.1.3.92 PidTagStreetAddress

DAV property name: urn:schemas:contacts:mailingstreet

Data type: PtypString

The **PidTagStreetAddress** property ([\[MS-OXPROPS\]](#) section 2.1142) specifies the street portion of the contact's mailing address and is read-only.

2.2.1.3.93 PidTagSurname

DAV property name: urn:schemas:contacts:sn

Data type: PtypString

The **PidTagSurname** property ([\[MS-OXPROPS\]](#) section 2.1147) specifies the contact's surname.

2.2.1.3.94 PidTagTelecommunicationsDeviceForDeafTelephoneNumber

DAV property name: urn:schemas:contacts:ttytdphone

Data type: PtypString

The **PidTagTelecommunicationsDeviceForDeafTelephoneNumber** property ([\[MS-OXPROPS\]](#) section 2.1152) specifies the contact's **TDD** phone number.

2.2.1.3.95 PidTagTelexNumber

DAV property name: urn:schemas:contacts:telexnumber

Data type: PtypString

The **PidTagTelexNumber** property ([\[MS-OXPROPS\]](#) section 2.1153) specifies the contact's work telex number.

2.2.1.3.96 PidTagTitle

DAV property name: urn:schemas:contacts:title

Data type: PtypString

The **PidTagTitle** property ([\[MS-OXPROPS\]](#) section 2.1159) specifies the contact's work title or job position.

2.2.1.3.97 PidTagUserCertificate

DAV property name: urn:schemas:contacts:usercertificate

Data type: PtypBinary

The **PidTagUserCertificate** property ([\[MS-OXPROPS\]](#) section 2.1169) specifies the certificate that is used to authenticate the contact.

2.2.1.3.98 PidTagWeddingAnniversary

DAV property name: urn:schemas:contacts:weddinganniversary

Data type: PtypTime

The **PidTagWeddingAnniversary** property ([\[MS-OXPROPS\]](#) section 2.1179) specifies the contact's wedding anniversary.

2.2.1.4 urn:schemas:httpmail: Namespace Properties

This section specifies properties that are defined by the **urn:schemas:httpmail:** namespace.

2.2.1.4.1 PidNameHttpmailContacts

DAV property name: urn:schemas:httpmail:contacts

Data type: PtypString

The **PidNameHttpmailContacts** property ([\[MS-OXPROPS\]](#) section 2.475) specifies the URL of the user's default contacts folder. This property exists only on the **Root folder** of the user's mailbox on the server. If the property is nonexistent, the mailbox does not contain a default contacts folder.

2.2.2 Methods

The WebDAV Extensions for Contacts Support protocol uses the following methods:

- **DELETE** – 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.
- **PROPFIND** – specified in [\[RFC2518\]](#) section 8.1. Extensions to this method are specified in [MS-XWDEXT] section 2.2.1.17.
- **PROPPATCH** – specified in [\[RFC2518\]](#) section 9.2. Extensions to this method are specified in [MS-XWDEXT] section 2.2.1.18.
- **SEARCH** – specified in [\[MS-WDVSE\]](#) section 2.2.4.

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 list of contacts as a folder and treats each contact as an item within the folder. Each contact has properties, as specified in section [2.2.1.1](#) of this document.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Higher-Layer Triggered Events

The client responds to higher-layer triggered events by sending requests, as specified in [\[RFC2068\]](#) and [\[RFC2518\]](#). Each request contains a method that specifies an operation to be performed. The following sections provide details about the methods used by this protocol to perform operations.

3.1.4.1 Discovery

The client uses the **PROPFIND** method to discover which contacts folders exist on the server.

For more details about **PROPFIND**, see section [2.2.2](#).

3.1.4.1.1 Default Contacts Folder in User's Mailbox

To determine the location of the default contacts folder, the client retrieves the **PidNameHttpmailContacts** property ([\[MS-OXPROPS\]](#) section 2.475) from the Root folder of the user's mailbox on the server. The property specifies the URL of the user's default contacts folder. If the property is not present, the user's mailbox does not contain a default contacts folder.

3.1.4.1.2 Other Contacts Folders

To discover other contacts folders that may exist either in the user's mailbox or in public folders, the client retrieves the **PidNameContentClass** property ([\[MS-OXPROPS\]](#) section 2.432) and the **PidTagContainerClass** property ([\[MS-OXPROPS\]](#) section 2.712). A folder is a contacts folder if these properties are set as follows:

- The **PidNameContentClass** property is set to the value "urn:content-classes:contactfolder".
- The **PidTagContainerClass** property is set to the value "IPF.contact".

3.1.4.2 Creating a Contact

The client uses the **PROPPATCH** method to create a new contact in the contacts folder. The new contact **MUST** have the following property settings:

- The **PidNameContentClass** property ([\[MS-OXPROPS\]](#) section 2.432) is set to "urn:content-class:person".
- The **PidTagMessageClass** property ([\[MS-OXPROPS\]](#) section 2.884) is set to "IPM.contact".

For more details about **PROPPATCH**, see section [2.2.2](#).

3.1.4.3 Retrieving a List of Contacts

The client uses the **PROPFIND** method or the **SEARCH** method to retrieve the list of contacts from the contacts folder. The request **MUST** have the **Depth** header set to either 1 or infinity. For more details about the **Depth** header, see [\[RFC2518\]](#) and [\[MS-WDVSE\]](#).

For more details about **PROPFIND**, see section [2.2.2](#). For more details about **SEARCH**, see [\[MS-WDVSE\]](#) section 2.2.4.

3.1.4.4 Deleting a Contact

The client uses the **DELETE** method to delete a contact.

For more details about **DELETE**, see section [2.2.2](#).

3.1.4.5 Setting Properties on a Contact

The client uses the **PROPPATCH** method to set properties on a particular contact.

For more details about **PROPPATCH**, see section [2.2.2](#).

3.1.4.6 Retrieving Properties on a Contact

The client uses the **PROPFIND** method to retrieve properties on a particular contact. The request **MUST** have the **Depth** header set to zero. For more details about the **Depth** header, see [\[RFC2518\]](#) and [\[MS-WDVSE\]](#).

For more details about **PROPFIND**, see section [2.2.2](#).

3.1.4.7 Deleting Properties on a Contact

The client uses the **PROPPATCH** method to delete properties on a particular contact.

For more details about **PROPPATCH**, see section [2.2.2](#).

3.1.5 Message Processing Events and Sequencing Rules

The client handles responses from the server as specified in [\[RFC2068\]](#) and [\[RFC2518\]](#).

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 list of contacts as a folder and treats each contact as an item within the folder. Each contact has properties, as specified in section [2.2.1.1](#) of this document.

3.2.2 Timers

None.

3.2.3 Initialization

None.

3.2.4 Higher-Layer Triggered Events

None.

3.2.5 Message Processing Events and Sequencing Rules

General response behavior is specified in [\[RFC2068\]](#) and [\[RFC2518\]](#).

3.2.5.1 Processing a DELETE Request

The server deletes the specified contact from the contacts folder.

For more details about the **DELETE** response, see [\[RFC2068\]](#) and [\[RFC2518\]](#).

3.2.5.2 Processing a PROPFIND Request

The server sends one of the following, depending on the request:

- A list of the contacts that exist in the contacts folder. In this case, the request will specify the depth as either 1 or infinity.
- The properties on a particular contact or resource. In this case, the request will specify the depth as zero.

For more details about the **PROPFIND** response, see [\[RFC2518\]](#) and [\[MS-XWDEXT\]](#) section 3.1.5.1.10.

3.2.5.3 Processing a PROPPATCH Request

The server does one of the following, depending on the request:

- Creates a new contact in the contacts folder.
- Sets properties on the specified contact.
- Deletes properties on the specified contact.

For more details about the **PROPPATCH** response, see [\[RFC2518\]](#) and [\[MS-XWDEXT\]](#) section 2.2.1.18.

3.2.5.4 Processing a SEARCH Request

The server sends a list of the contacts that exist in the contacts folder.

For more details about the **SEARCH** response, see [\[MS-WDVSE\]](#).

3.2.6 Timer Events

None.

3.2.7 Other Local Events

None.

4 Protocol Examples

4.1 Creating a Contact

The following example shows how to use the **PROPPATCH** method to create a contact. The response is a standard WebDAV response to the **PROPPATCH** request.

Request body

```
<?xml version="1.0"?>
<a:propertyupdate xmlns:a="DAV:" xmlns:ex="http://schemas.microsoft.com/exchange/"
xmlns:ct="urn:schemas:contacts:" xmlns:dt="urn:uuid:c2f41010-65b3-11d1-a29f-00aa00c14882/">
  <a:set>
    <a:prop>
      <ct:givenName>Richard</>
      <ct:middlename>Milhouse</>
      <ct:sn>Nixon</>
      <ct:o>IBM</>
      <a:contentclass>urn:content-classes:person</>
      <ct:fileasid dt:dt="i4">6</>
      <ex:outlookmessageclass>IPM.Contact</>
      <ct:email1>trickydick@nixon.org</>
    </a:prop>
  </a:set>
</a:propertyupdate>
```

Response body

```
<?xml version="1.0"?>
<a:multistatus xmlns:c="http://schemas.microsoft.com/exchange/"
xmlns:b="urn:schemas:contacts:" xmlns:a="DAV:">
  <a:response>
    <a:href>http://exch-d-739/exchange/johnk/Contacts/Dick.eml</a:href>
    <a:status>HTTP/1.1 201 Created</a:status>
    <a:propstat>
      <a:status>HTTP/1.1 200 OK</a:status>
      <a:prop>
        <b:givenName/>
        <b:middlename/>
        <b:sn/>
        <b:o/>
        <a:contentclass/>
        <b:fileasid/>
        <c:outlookmessageclass/>
        <b:email1/>
      </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 or supplemental software. References to product versions include released service packs:

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

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.

7 Change Tracking

This section identifies changes that were made to the [MS-XWDCNTC] protocol document between the November 2010 and March 2011 releases. Changes are classified as New, Major, Minor, Editorial, or No change.

The revision class **New** means that a new document is being released.

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

- A document revision that incorporates changes to interoperability requirements or functionality.
- An extensive rewrite, addition, or deletion of major portions of content.
- The removal of a document from the documentation set.
- Changes made for template compliance.

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

The revision class **Editorial** means that the language and formatting in the technical content was changed. Editorial changes apply to grammatical, formatting, and style issues.

The revision class **No change** means that no new technical or language changes were introduced. The technical content of the document is identical to the last released version, but minor editorial and formatting changes, as well as updates to the header and footer information, and to the revision summary, may have been made.

Major and minor changes can be described further using the following change types:

- New content added.
- Content updated.
- Content removed.
- New product behavior note added.
- Product behavior note updated.
- Product behavior note removed.
- New protocol syntax added.
- Protocol syntax updated.
- Protocol syntax removed.
- New content added due to protocol revision.
- Content updated due to protocol revision.
- Content removed due to protocol revision.
- New protocol syntax added due to protocol revision.

- Protocol syntax updated due to protocol revision.
- Protocol syntax removed due to protocol revision.
- New content added for template compliance.
- Content updated for template compliance.
- Content removed for template compliance.
- Obsolete document removed.

Editorial changes are always classified with the change type **Editorially updated**.

Some important terms used in the change type descriptions are defined as follows:

- **Protocol syntax** refers to data elements (such as packets, structures, enumerations, and methods) as well as interfaces.
- **Protocol revision** refers to changes made to a protocol that affect the bits that are sent over the wire.

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

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
1.3 Overview	Updated reference to [RFC2068] to [RFC2616].	N	Content updated.
1.4 Relationship to Other Protocols	Updated reference to [RFC2068] to [RFC2616].	N	Content updated.
1.7 Versioning and Capability Negotiation	Updated reference to [RFC2068] to [RFC2616].	N	Content updated.
2.1 Transport	Updated reference to [RFC2068] to [RFC2616].	N	Content updated.
2.2.2 Methods	Updated reference to [RFC2068] to [RFC2616].	N	Content updated.
3.1.4 Higher-Layer Triggered Events	Updated reference to [RFC2068] to [RFC2616].	N	Content updated.
3.1.5 Message Processing Events and Sequencing Rules	Updated reference to [RFC2068] to [RFC2616].	N	Content updated.
3.2.5 Message Processing Events and Sequencing Rules	Updated reference to [RFC2068] to [RFC2616].	N	Content updated.
3.2.5.1 Processing a DELETE Request	Updated reference to [RFC2068] to [RFC2616].	N	Content updated.

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