# [MS-WDVMODUU]:

# Office Document Update Utility Extensions

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## Revision Summary

| Date | Revision History | Revision Class | Comments |
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| 4/4/2008 | 0.1 | New | Initial Availability |
| 6/27/2008 | 1.0 | Major | Revised and edited the technical content |
| 12/12/2008 | 1.01 | Editorial | Revised and edited the technical content |
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| 3/31/2010 | 2.01 | Editorial | Revised and edited the technical content |
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| 6/30/2015 | 3.0 | Major | Significantly changed the technical content. |
| 2/26/2016 | 4.0 | Major | Significantly changed the technical content. |
| 4/14/2016 | 5.0 | Major | Significantly changed the technical content. |
| 7/15/2016 | 5.0 | None | No changes to the meaning, language, or formatting of the technical content. |

# Table of Contents

# 1 Introduction

This specification, Web Distributed Authoring and Versioning (WebDAV) Protocol: Microsoft Office Document Update Utility Extensions Protocol (MODUU), documents extensions to the Web Distributed Authoring and Versioning (WebDAV) protocols described in [RFC2518]. Extensions documented in this specification include header updates, a property which enables optimized protocol interaction for synchronization, and a property which allows the server to send clients the virus infection status of a document.

MODUU extensions are designed for use with files stored on a WebDAV server.

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

## 1.1 Glossary

This document uses the following terms:

**Augmented Backus-Naur Form (ABNF)**: A modified version of Backus-Naur Form (BNF), commonly used by Internet specifications. ABNF notation balances compactness and simplicity with reasonable representational power. ABNF differs from standard BNF in its definitions and uses of naming rules, repetition, alternatives, order-independence, and value ranges. For more information, see [RFC5234].

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

**curly braced GUID string**: The string representation of a 128-bit globally unique identifier (GUID) using the form {XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX}, where X denotes a hexadecimal digit. The string representation between the enclosing braces is the standard representation of a GUID as described in [RFC4122] section 3. Unlike a GUIDString, a curly braced GUID string includes enclosing braces.

**Document Workspace site**: A SharePoint site that is based on a Document Workspace site template and has a template identifier value of "1". A Document Workspace site is used for planning, posting, and working together on a document or a set of related documents.

**file**: A single, discrete unit of content.

**HTTP GET**: An HTTP method for retrieving a resource, as described in [RFC2616].

**Hypertext Transfer Protocol (HTTP)**: An application-level protocol for distributed, collaborative, hypermedia information systems (text, graphic images, sound, video, and other multimedia files) on the World Wide Web.

**Hypertext Transfer Protocol 1.1 (HTTP/1.1)**: Version 1.1 of the Hypertext Transfer Protocol (HTTP), as described in [RFC2068].

**Uniform Resource Locator (URL)**: A string of characters in a standardized format that identifies a document or resource on the World Wide Web. The format is as specified in [RFC1738].

**User-Agent header**: An HTTP request-header field, as described in [RFC2616]. It contains information about the user agent that originated a request.

**Web Distributed Authoring and Versioning Protocol (WebDAV)**: The Web Distributed Authoring and Versioning Protocol, as described in [RFC2518] or [RFC4918].

**WebDAV client**: A computer that uses **WebDAV**, as described in [RFC2518] or [RFC4918], to retrieve data from a **WebDAV server**.

**WebDAV server**: A computer that supports **WebDAV**, as described in [RFC2518] or [RFC4918], and responds to requests from **WebDAV clients**.

**XML element**: An XML structure that typically consists of a start tag, an end tag, and the information between those tags. Elements can have attributes (1) and can contain other elements.

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

## 1.2 References

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

### 1.2.1 Normative References

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

[ISO-8601] International Organization for Standardization, "Data Elements and Interchange Formats - Information Interchange - Representation of Dates and Times", ISO/IEC 8601:2004, December 2004, http://www.iso.org/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=40874&ICS1=1&ICS2=140&ICS3=30

**Note** There is a charge to download the specification.

[MS-DTYP] Microsoft Corporation, "Windows Data Types".

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

[RFC2616] Fielding, R., Gettys, J., Mogul, J., et al., "Hypertext Transfer Protocol -- HTTP/1.1", RFC 2616, June 1999, http://www.rfc-editor.org/rfc/rfc2616.txt

[XML10] World Wide Web Consortium, "Extensible Markup Language (XML) 1.0 (Third Edition)", February 2004, http://www.w3.org/TR/2004/REC-xml-20040204/

### 1.2.2 Informative References

[MS-DWSS] Microsoft Corporation, "Document Workspace Web Service Protocol".

## 1.3 Protocol Overview (Synopsis)

**Web Distributed Authoring and Versioning Protocol (WebDAV)** is a set of methods, headers, and content types that extend **Hypertext Transfer Protocol 1.1 (HTTP/1.1)**, as described in [RFC2616]. WebDAV allows data to be written to Internet servers and is an Internet standard for collaborative authoring, as described in [RFC2518].

WebDAV expands the basic support in HTTP/1.1 as described in [RFC2616] for content authoring by introducing additional methods and headers that provide support for resource properties and other base functions, such as resource locking. These new capabilities make WebDAV suitable for basic remote-mountable file systems.

MODUU extensions specify the following extensions to the base WebDAV extensions, as described in [RFC2518]:

- A header that a server includes in a response to the client to indicate whether a **file** is infected with a virus, as described in section 2.2.1.1.
- A new property that contains a timestamp. Clients can use this property in a **PROPFIND** request to query for recent changes, as described in section 2.2.2.
- Seven new optional client headers that are ignored by the server, documented for completeness. They are described in sections 2.2.1.2 to 2.2.1.8.

## 1.4 Relationship to Other Protocols

MODUU extensions rely on HTTP Extensions for Distributed Authoring —WebDAV, as described in [RFC2518], which in turn relies on HTTP/1.1, as described in [RFC2616].

## 1.5 Prerequisites/Preconditions

MODUU extensions require a **WebDAV server** that implements the protocol described in [RFC2518].

Additionally, servers that implement the MODUU extensions also need to support the protocol described in [MS-DWSS].<1>

This protocol also requires a **WebDAV client** that has **URLs** which refer to the WebDAV server.

The prerequisite to MODUU, WebDAV, as described in [RFC2518], extends the standard **Hypertext Transfer Protocol (HTTP)** mechanisms described in [RFC2616] to provide file access and content management functionality for use across the Internet. WebDAV enables an Internet-based file system. However, some tasks—for example, synchronizing server and client copies of the same file—are not easily managed by WebDAV. Also, some protocol interactions, such as obtaining the properties of recently modified files, are less than optimal for large document libraries.

## 1.6 Applicability Statement

MODUU extensions apply in scenarios that require efficient file synchronization between client and server. It also allows the server to send clients the virus infection status of a document.

## 1.7 Versioning and Capability Negotiation

MODUU extensions introduce no new versioning mechanisms beyond those that already exist in the protocol and as described in [RFC2616] (HTTP/1.1).

MODUU extensions introduce no new capability negotiation mechanisms beyond those already described in [RFC2518].

## 1.8 Vendor-Extensible Fields

None.

## 1.9 Standards Assignments

None.

# 2 Messages

This section describes MODUU extensions transport requirements and syntax.

## 2.1 Transport

Messages are transported by using HTTP, as specified in [RFC2518] and [RFC2616].

## 2.2 Common Data Types

This section specifies the following deviations from [RFC2518] in the WebDAV server implementation. **XML element** type declarations are given using the format defined in [XML10].

- A new XML element is added to the **DAV:multistatus** element collection, as defined in [RFC2518]. The syntax is specified in section 2.2.2.1 and section 2.2.2.2.

```
<!ELEMENT multistatus (repl?, response+, responsedescription?) >
```

- A new XML element is added to the **PROPFIND** element collection. Its syntax is specified in section 2.2.2.1 and section 2.2.2.2.

```
<!ELEMENT propfind ((repl, allprop)  |  (allprop | propname | prop)) >
```

### 2.2.1 MODUU Extension Headers

The extension headers in this protocol conform to the form and behavior of other custom HTTP 1.1 headers, as specified in [RFC2616] section 4.2. They are consistent with the WebDAV verbs and headers, as specified in [RFC2518] sections 8 and 9. Definitions are specified using the **Augmented Backus-Naur Form (ABNF)** syntax specified in [RFC2616] section 2.1.

#### 2.2.1.1 X-Virus-Infected Header

If returned, the **X-Virus-Infected** header MUST take the following form:

```
X-Virus-Infected Header = "x-virus-infected" ":" Virus-Name
Virus-Name = 1*TEXT
```

The **X-Virus-Infected** header usage is specified in section 3.1.4.1 and section 3.2.4.1.

#### 2.2.1.2 Moss-Uid Header

A WebDAV client SHOULD NOT include the **Moss-Uid** header in any HTTP 1.1 requests.<2>

If this header is included, it MUST contain a **curly braced GUID string** that represents the current user identifier on the WebDAV client. This new header is specified as follows:

```
Moss-Uid Header = "moss-uid" ":" Curly Braced GUID String
```

Because the server ignores this header, there are no usage specifications for this header.

### 2.2.1.3 Moss-Did Header

A WebDAV client SHOULD NOT include the **Moss-Did** header in any HTTP 1.1 requests.<3>

If this header is included, it MUST contain a curly braced GUID String. It is identical to the moss-uid header. This new header is specified as follows:

```
Moss-Did Header = "moss-did" ":" Curly Braced GUID String
```

Because the server ignores this header, there are no usage specifications for this header.

### 2.2.1.4 Moss-VerFrom Header

A WebDAV client SHOULD NOT include the **Moss-VerFrom** header in any HTTP 1.1 requests.<4>

If this header is included, it MUST contain a non-negative integer expressed in decimal notation with 11 or fewer digits. It is used in a PUT request and represents the version of the document being uploaded. This new header is specified as follows:

```
Moss-VerFrom Header = "moss-verfrom" ":" Ver-Number
Ver-Number = 1*11DIGIT
```

Because the server ignores this header, there are no usage specifications for this header.

### 2.2.1.5 Moss-CBFile Header

A WebDAV client SHOULD NOT include the **Moss-CBFile** header in any HTTP 1.1 requests.<5>

If this header is included, it MUST contain the lower DWORD, as defined in [MS-DTYP], of the size of the file it is uploading, in bytes. This new header is specified as follows:

```
Moss-CBFile Header = "moss-cbfile" ":" 1*DIGIT
```

Because the server ignores this header, there are no usage specifications for this header.

### 2.2.1.6 MS-Set-Repl-Uid Header

A WebDAV client SHOULD NOT include the **MS-Set-Repl-Uid** header in any HTTP 1.1 requests.<6>

If this header is included, its value MUST be the value of the Repl-Uid site property returned by the WebDAV server in response to a **PROPFIND** request.

This new header is specified as follows:

```
MS-Set-Repl-Uid Header = "MS-Set-repl-uid" ":" Repl-Uid
Repl-Uid = "rid" ":" Curly Braced GUID String
```

Because the server ignores this header, there are no usage specifications for this header.

### 2.2.1.7 MS-BinDiff Header

A WebDAV client SHOULD NOT include the **MS-BinDiff** header in any HTTP 1.1 requests. <7>

If this header is included, it MUST contain the value "1.0". This new header is specified as follows:

```
MS-BinDiff Header = "MS-BinDiff" ":" Version-Number
Version-Number = "1.0"
```

Because the server ignores this header unless it is included in an HTTP PUT request, there are no usage specifications for this header.

#### 2.2.1.8 X-Office-Version Header

A WebDAV client SHOULD NOT include the **X-Office-Version** header in any HTTP 1.1 requests.<8>

If this header is included, it MUST contain a version number. This version number is the same as the WebDAV client version number. This new header is specified as follows:

```
X-Office-Version Header = "X-Office-Version" ":" Version-Number
Version-Number = "12" "." "0" "." 4DIGIT
```

Because the server ignores this header, there are no usage specifications for this header.

#### 2.2.1.9 User-Agent Header

The standard **User-Agent header** in all MODUU extension requests MAY include "SyncMan [version number]" as a comment.<9> The version number SHOULD be the same as the Version-Number in the X-Office-Version Header. Because the server ignores this header, there are no usage specifications for this header.

### 2.2.2 MODUU Extensions Property

When the **Repl:collblob** and **Repl:repl** elements appear in a response to a WebDAV client request, the response MUST also include this schema alias.

```
xmlns:Repl="http://schemas.microsoft.com/repl/"
```

#### 2.2.2.1 Repl:collblob Element

The **Repl:collblob** XML element MUST contain a **UTC** timestamp that conforms to the [ISO-8601] standard.

```
<!ELEMENT collblob (#PCDATA) >
```

The **Repl:collblob** element MUST NOT appear except within the **Repl:repl** XML element collection.

The **Repl:collblob** element usage is specified in section 3.1.4.10 and section 3.2.4.2.

#### 2.2.2.2 Repl:repl Element Collection

The **Repl:repl** XML element collection MUST contain a single **Repl:collblob** element, as specified in section 2.2.2.1). This collection appears in the request entity body of a **PROPFIND** request (section 2.2.2) or within the **multistatus** element collection (section 2.2.2).

```
<!ELEMENT repl (collblob) >
```

The **Repl:repl** element collection usage is specified in sections 3.1.4.10 and 3.2.4.2.

# 3 Protocol Details

As specified in [RFC2518], WebDAV operates between a requester, or WebDAV client, and a responder, or WebDAV server. This section specifies client and server behaviors with respect to MODUU extensions.

## 3.1 WebDAV: MODUU Extensions Server Details

### 3.1.1 Abstract Data Model

No new abstract data model is needed other than that described in the WebDAV protocol, as specified in [RFC2518].

### 3.1.2 Timers

No new timers are required except those in WebDAV, as specified in [RFC2518].

### 3.1.3 Initialization

No initialization is required except that in WebDAV, as specified in [RFC2518].

### 3.1.4 Message Processing Events and Sequencing Rules

#### 3.1.4.1 X-Virus-Infected Header

A WebDAV server returns the **X-Virus-Infected** header in response to an **HTTP GET** or a PUT request to indicate that the requested file is infected with a virus.

If this header is returned by a WebDAV server in response to an HTTP PUT or a GET request, the server MUST fail the request and respond with a message containing HTTP status code "409 CONFLICT".

The server MUST NOT return the infected file to the client following a GET request "409 CONFLICT" error condition.

#### 3.1.4.2 Moss-Uid Header

The **Moss-Uid** header is ignored by WebDAV servers.

#### 3.1.4.3 Moss-Did Header

The **Moss-Did** header is ignored by WebDAV servers.

#### 3.1.4.4 Moss-VerFrom Header

The **Moss-VerFrom** header is ignored by WebDAV servers.

#### 3.1.4.5 Moss-CBFile Header

The **Moss-CBFile** header is ignored by WebDAV servers.

#### 3.1.4.6 MS-Set-Repl-Uid Header

The **MS-Set-Repl-Uid** header is ignored by WebDAV servers.

#### 3.1.4.7 MS-BinDiff Header

The **MS-BinDiff** header is ignored by WebDAV servers unless it is included in an HTTP PUT request. If the MS-BinDiff header is included in an HTTP PUT request, the server MUST fail the request and respond with a message containing HTTP status code "415 UNSUPPORTED MEDIA TYPE".

#### 3.1.4.8 X-Office-Version Header

The **X-Office-Version** header is ignored by WebDAV servers.

#### 3.1.4.9 User-Agent Header

The **User-Agent Header** header is ignored by WebDAV servers.

#### 3.1.4.10 Repl:collblob and Repl:repl

The existence of a **Repl:collblob** element in a **PROPFIND** request restricts the set of results returned by the server.

When the server receives a **PROPFIND** request with the **Repl:collblob** element set to a timestamp, it includes a response element for each resource in the **multistatus** element that is a descendant of the Request-URI (limited by the **Depth** header specified in [RFC2518]) and that has changed according to the following rules:

1. The resource was last modified later than or equal to 5 minutes before the timestamp, OR
2. The resource is a descendant of a resource that has changed later than or equal to 5 minutes before the timestamp.

In addition, the server includes the **Repl:repl** element collection in the response as specified.

```
<!ELEMENT multistatus (repl, response+, responsedescription?) >
```

The value of the **repl:collblob** element is the server time when it processed this request.

### 3.1.5 Timer Events

No new timers are used beyond those in WebDAV, as specified in [RFC2518].

### 3.1.6 Other Local Events

There are no new local events beyond WebDAV, as specified in [RFC2518].

## 3.2 WebDAV: MODUU Extensions Client Details

### 3.2.1 Abstract Data Model

No new abstract data model is needed beyond WebDAV, as specified in [RFC2518].

### 3.2.2 Timers

No new timers are required beyond WebDAV, as specified in [RFC2518].

### 3.2.3 Initialization

No additional initialization is required beyond that specified in [RFC2518].

### 3.2.4 Message Processing Events and Sequencing Rules

#### 3.2.4.1 X-Virus-Infected Header

There are no special prescriptions of client behavior for this header.

#### 3.2.4.2 Repl:collblob and Repl:repl

The client caches the most recent value of a **Repl:collblob** element returned by the server for use in subsequent requests. When the client does not have a cache of this value, it uses 1969-01-01T12:00:00Z.

### 3.2.5 Timer Events

No new timers are required beyond those specified in [RFC2518].

### 3.2.6 Other Local Events

There are no new local events beyond those specified in [RFC2518].

# 4 Protocol Examples

## 4.1 PROPFIND on Non-Collection Resource

In this scenario a client sends a **PROPFIND** request with a non-collection resource Request-URI. The client also includes the **Repl:repl** element collection within the request entity body.

**Request**

Header

PROPFIND /subwebpath /Document1.docx

```
HTTP/1.1
X-Office-Version: 12.0.6234
Depth: 0
moss-uid: {0673D303-E1F1-41DF-94B6-98DE16E099AD}
Pragma: no-cache
User-Agent: Microsoft Office/12.0 (Windows NT 5.2; SyncMan 12.0.6234; Pro)
Host: hostpath
Connection: Keep-Alive
Cache-Control: no-cache
Authorization: NTLM
Content-Length: 180
```

Body

```
<?xml version="1.0"?>
  <D:propfind xmlns:D="DAV:" xmlns:Repl="http://schemas.microsoft.com/repl/">
    <Repl:repl>
      <Repl:collblob>2008-01-16T19:35:00Z</Repl:collblob>
    </Repl:repl>
  <D:allprop/>
</D:propfind>
```

**Response**

Header

```
HTTP/1.1 207 MULTI-STATUS
Date: Thu, 17 Jan 2008 22:59:02 GMT
Server: Microsoft-IIS/6.0
MicrosoftSharePointTeamServices: 12.0.0.6210
X-Powered-By: ASP.NET
Cache-Control: no-cache
Content-Type: text/xml
Content-Length: 1402
Public-Extension: http://schemas.microsoft.com/repl-2
Set-Cookie: WSS_KeepSessionAuthenticated=80; path=/
```

Body

```
<?xml version="1.0" encoding="utf-8" ?>
<D:multistatus
   xmlns:D="DAV:"
   xmlns:Office="urn:schemas-microsoft-com:office:office"
   xmlns:Repl="http://schemas.microsoft.com/repl/"
```

```
   xmlns:Z="urn:schemas-microsoft-com:">
   <Repl:repl>
<Repl:collblob>2008-01-17T22:59:02Z</Repl:collblob>
   </Repl:repl>
   <D:response>
<D:href>http://hostpath/subwebpath/Document1.docx</D:href>
<D:propstat>
<D:prop>
<D:displayname>Document1.docx</D:displayname>
<D:lockdiscovery/>
<D:supportedlock>
<D:lockentry>
<D:lockscope><D:exclusive/></D:lockscope>
<D:locktype><D:write/></D:locktype>
</D:lockentry>
</D:supportedlock>
<D:getlastmodified>2008-01-16T19:54:33Z</D:getlastmodified>
<Z:Win32LastModifiedTime>Wed, 16 Jan 2008 19:54:32 GMT</Z:Win32LastModifiedTime>
<D:creationdate>2008-01-16T19:34:57Z</D:creationdate>
<D:getcontentlength>17371</D:getcontentlength>
<Repl:repl-uid>
rid:{B1BB6974-0D9D-4D2D-9C6A-8419F2D1EF09}
</Repl:repl-uid>
<Repl:resourcetag>
rt:B1BB6974-0D9D-4D2D-9C6A-8419F2D1EF0900000000006
</Repl:resourcetag>
<Z:Win32CreationTime>Wed, 16 Jan 2008 19:34:57 GMT</Z:Win32CreationTime>
<Z:Win32LastAccessTime>Wed, 16 Jan 2008 19:54:32 GMT</Z:Win32LastAccessTime>
<D:getetag>
&quot;{B1BB6974-0D9D-4D2D-9C6A-8419F2D1EF09},&quot;
</D:getetag>
<Office:modifiedby>username</Office:modifiedby>
<Z:Win32FileAttributes>00000020</Z:Win32FileAttributes>
</D:prop>
<D:status>HTTP/1.1 200 OK</D:status>
</D:propstat>
</D:response>
</D:multistatus>
```

## 4.2 PROPFIND On Collection Resource

In this scenario a protocol client sends a **PROPFIND** request with a collection resource Request-URI. The client also includes the **Repl:repl** element collection within the request entity body.

The client sets the **Depth** header to "infinity". So the server responds with property information for every descendent of the Request-URI.

**Request**

Header

```
PROPFIND /subwebpath HTTP/1.1
X-Office-Version: 12.0.6017
Depth: infinity
moss-uid: {C309FC17-42A0-4C99-A87F-5F2BCBF7AAB8}
Pragma: no-cache
User-Agent: Microsoft Office/12.0 (Windows NT 6.0; SyncMan 12.0.6017; Pro)
Host: my
Content-Length: 180
Connection: Keep-Alive
Cache-Control: no-cache
Cookie: WSS_KeepSessionAuthenticated=80
```

Body

```
<?xml version="1.0"?>
<D:propfind xmlns:D="DAV:" xmlns:r="http://schemas.microsoft.com/repl/">
   <r:repl><r:collblob>2008-03-12T19:57:05Z</r:collblob></r:repl>
   <D:allprop/>
</D:propfind>
```

### Response

```
HTTP/1.1 207 MULTI-STATUS
Date: Wed, 12 Mar 2008 20:00:33 GMT
Server: Microsoft-IIS/6.0
MicrosoftSharePointTeamServices: 12.0.0.6210
X-Powered-By: ASP.NET
Cache-Control: no-cache
Content-Type: text/xml
Content-Length: 10739
Public-Extension: http://schemas.microsoft.com/repl-2
Set-Cookie: WSS_KeepSessionAuthenticated=80; path=/

<?xml version="1.0" encoding="utf-8" ?>
<D:multistatus
  xmlns:D="DAV:"
  xmlns:Office="urn:schemas-microsoft-com:office:office"
  xmlns:Repl="http://schemas.microsoft.com/repl/"
  xmlns:Z="urn:schemas-microsoft-com:">

  <Repl:repl> <Repl:collblob>2008-03-12T20:00:33Z</Repl:collblob></Repl:repl>

  <D:response>
    <D:href>http://hostpath/subwebpath</D:href>
    <D:propstat>
      <D:prop>
        <D:displayname>Shared Documents</D:displayname>
        <D:lockdiscovery/>
        <D:supportedlock/>
        <D:isFolder>t</D:isFolder>
        <D:iscollection>1</D:iscollection>
        <D:ishidden>0</D:ishidden>
        <D:getcontenttype>application/octet-stream</D:getcontenttype>
        <D:getcontentlength>0</D:getcontentlength>
        <D:resourcetype><D:collection/></D:resourcetype>
        <Repl:authoritative-directory>t</Repl:authoritative-directory>
        <D:getlastmodified>2008-03-12T19:57:00Z</D:getlastmodified>
        <D:creationdate>2008-03-12T19:56:57Z</D:creationdate>
        <Repl:repl-uid>rid:{C309FC17-42A0-4C99-A87F-5F2BCBF7AAB8}</Repl:repl-uid>
        <Repl:resourcetag>rt:C309FC17-42A0-4C99-A87F-
5F2BCBF7AAB8@00000000000</Repl:resourcetag>
        <D:getetag>&amp;quot;{C309FC17-42A0-4C99-A87F-5F2BCBF7AAB8},0&amp;quot;</D:getetag>
      </D:prop>
      <D:status>HTTP/1.1 200 OK</D:status>
    </D:propstat>
  </D:response>


  <D:response>
    <D:href>http://hostpath/subwebpath/Document1.docx</D:href>
    <D:propstat>
      <D:prop>
        <D:displayname>Document1.docx</D:displayname>
        <D:lockdiscovery/>
        <D:supportedlock>
          <D:lockentry>
            <D:lockscope><D:exclusive/></D:lockscope>
            <D:locktype><D:write/></D:locktype>
          </D:lockentry>
        </D:supportedlock>
```

```
        <D:getlastmodified>2008-03-12T19:57:00Z</D:getlastmodified>
        <Z:Win32LastModifiedTime>Wed, 12 Mar 2008 19:56:56 GMT</Z:Win32LastModifiedTime>
        <D:creationdate>2008-03-12T19:57:00Z</D:creationdate>
        <D:getcontentlength>15348</D:getcontentlength>
        <Repl:repl-uid>rid:{12F6054D-5A1F-4D5C-8170-702BABEF1C04}</Repl:repl-uid>
        <Repl:resourcetag>rt:12F6054D-5A1F-4D5C-8170-
702BABEF1C04@00000000003</Repl:resourcetag>
        <Z:Win32CreationTime>Wed, 12 Mar 2008 19:56:55 GMT</Z:Win32CreationTime>
        <Z:Win32LastAccessTime>Wed, 12 Mar 2008 19:56:56 GMT</Z:Win32LastAccessTime>
        <D:getetag>&quot;{12F6054D-5A1F-4D5C-8170-702BABEF1C04},3&quot;</D:getetag>
        <Office:modifiedby>REDMOND\mingweiw</Office:modifiedby>
        <Z:Win32FileAttributes>00000020</Z:Win32FileAttributes>
      </D:prop>
      <D:status>HTTP/1.1 200 OK</D:status>
    </D:propstat>
  </D:response>

  <D:response>
    <D:href>http://hostpath/subwebpath/subsubwebpath</D:href>
    <D:propstat>
      <D:prop>
        <D:displayname>Forms</D:displayname>
        <D:lockdiscovery/>
        <D:supportedlock/>
        <D:isFolder>t</D:isFolder>
        <D:iscollection>1</D:iscollection>
        <D:ishidden>0</D:ishidden>
        <D:getcontenttype>application/octet-stream</D:getcontenttype>
        <D:getcontentlength>0</D:getcontentlength>
        <D:resourcetype>
        <D:collection/></D:resourcetype>
        <Repl:authoritative-directory>t</Repl:authoritative-directory>
        <D:getlastmodified>2008-03-12T19:56:57Z</D:getlastmodified>
        <D:creationdate>2008-03-12T19:56:57Z</D:creationdate>
        <Repl:repl-uid>rid:{5A3ADA17-D8B8-49C2-9B72-ECEFDDDAC6C0}</Repl:repl-uid>
        <Repl:resourcetag>rt:5A3ADA17-D8B8-49C2-9B72-
ECEFDDDAC6C0@00000000000</Repl:resourcetag>
        <D:getetag>&quot;{5A3ADA17-D8B8-49C2-9B72-ECEFDDDAC6C0},0&quot;</D:getetag>
        <Z:Win32FileAttributes>00000012</Z:Win32FileAttributes>
      </D:prop>
      <D:status>HTTP/1.1 200 OK</D:status>
    </D:propstat>
  </D:response>


  <D:response>
    <D:href>http://hostpath/subwebpath/subsubwebpath/Combine.aspx</D:href>
    <D:propstat>
      <D:prop>
        <D:displayname>Combine.aspx</D:displayname>
        <D:lockdiscovery/>
        <D:supportedlock>
          <D:lockentry>
            <D:lockscope>
            <D:exclusive/></D:lockscope>
            <D:locktype><D:write/></D:locktype>
          </D:lockentry>
        </D:supportedlock>
        <D:getlastmodified>2008-03-12T19:56:57Z</D:getlastmodified>
        <D:creationdate>2008-03-12T19:56:57Z</D:creationdate>
        <D:getcontentlength>2649</D:getcontentlength>
        <Repl:repl-uid>rid:{54BC015F-5825-47E2-9E85-3D231BDDFE04}</Repl:repl-uid>
        <Repl:resourcetag>rt:54BC015F-5825-47E2-9E85-
3D231BDDFE04@00000000001</Repl:resourcetag>
        <D:getetag>&quot;{54BC015F-5825-47E2-9E85-3D231BDDFE04},1&quot;</D:getetag>
        <Office:modifiedby></Office:modifiedby>
      </D:prop>
      <D:status>HTTP/1.1 200 OK</D:status>
    </D:propstat>
```

```
  </D:response>

  <D:response>
    <D:href>http://hostpath/subwebpath/subsubwebpath/Document2.doc</D:href>
    <D:propstat>
      <D:prop>
        <D:displayname>Document2.doc</D:displayname>
        <D:lockdiscovery/>
        <D:supportedlock>
          <D:lockentry>
            <D:lockscope><D:exclusive/></D:lockscope>
            <D:locktype><D:write/></D:locktype>
          </D:lockentry>
        </D:supportedlock>
        <D:getlastmodified>2008-03-12T19:56:57Z</D:getlastmodified>
        <D:creationdate>2008-03-12T19:56:57Z</D:creationdate>
        <D:getcontentlength>21504</D:getcontentlength>
        <Repl:repl-uid>rid:{4634A4B2-B48C-4A4B-879D-64C10E6B52D0}</Repl:repl-uid>
        <Repl:resourcetag>rt:4634A4B2-B48C-4A4B-879D-
64C10E6B52D0@00000000001</Repl:resourcetag>
        <D:getetag>&quot;{4634A4B2-B48C-4A4B-879D-64C10E6B52D0},1&quot;</D:getetag>
        <Office:modifiedby></Office:modifiedby>
      </D:prop>
      <D:status>HTTP/1.1 200 OK</D:status>
    </D:propstat>
  </D:response>
</D:multistatus>
```

## 4.3 PUT Message with WebDAV: Protocol MODUU Extensions Headers

The following is the header of a PUT request from the client to the server for a document stored in a **Document Workspace site**, and the response.

**Request**

Header

```
PUT /hostpath/subwebpath/bar.docx
    ProtocolVersion: HTTP/1.1
    X-Office-Version: 12.0.6234
    moss-uid: {E6AA0E42-D27C-4FD8-89C6-EDB73AB1C741}
    moss-did: {E6AA0E42-D27C-4FD8-89C6-EDB73AB1C741}
    moss-cbfile: 15341
    moss-verfrom: 1
    MS-Set-repl-uid: rid:{E819DFCB-DB60-49D7-A70E-51E31F5344BE}
    Pragma: no-cache
    User-Agent: Microsoft Office/12.0 (Windows NT 5.2; SyncMan 12.0.6234; Pro)
    Host: hostpath
    ContentLength: 17192
    Connection: Keep-Alive
    Cache-Control: no-cache
    Cookie: WSS_KeepSessionAuthenticated=80
    HeaderEnd: CRLF
```

**Response**

Header

```
    ProtocolVersion: HTTP/1.1
```

```
     StatusCode: 200, Ok
     Reason: OK
     Date: Fri, 18 Jan 2008 19:51:40 GMT
     Server: Microsoft-IIS/6.0
     MicrosoftSharePointTeamServices: 12.0.0.6210
     X-Powered-By: ASP.NET
     Last-Modified: Fri, 18 Jan 2008 19:51:41 GMT
     ETag: "{E819DFCB-DB60-49D7-A70E-51E31F5344BE},2"
     ResourceTag: rt:E819DFCB-DB60-49D7-A70E-51E31F5344BE@00000000002
     Repl-uid: rid:{E819DFCB-DB60-49D7-A70E-51E31F5344BE}
     ResourceTag: rt:E819DFCB-DB60-49D7-A70E-51E31F5344BE@00000000001
     Exires: Thu, 03 Jan 2008 19:51:40 GMT
     Cache-Control: private,max-age=0
     ContentLength: 0
     Public-Extension: http://schemas.microsoft.com/repl-2
     Set-Cookie: WSS_KeepSessionAuthenticated=80; path=/
     HeaderEnd: CRLF
```

## 4.4 GET Message with MODUU Extensions Headers

The following is the header of an HTTP GET request from the client to the server for a document stored in a Document Workspace site, and the response.

**Request**

Header

```
GET /hostpath/subwebpath/baz.docx
     ProtocolVersion: HTTP/1.1
     X-Office-Version: 12.0.6234
     If: (Not <rt:272A0DE5-FF5C-4DF4-8E40-CC3068CBEF04@00000000000>)
     moss-uid: {6833071C-36D4-4787-BA2C-6B814E35ABAE}
     MS-BinDiff: 1.0
     Translate: f/F - the Web server is to return the unprocessed (or source) content to the
WebDAV client
     Pragma: no-cache
     User-Agent: Microsoft Office/12.0 (Windows NT 5.2; SyncMan 12.0.6234; Pro)
     Host: hostpath
     Connection: Keep-Alive
     Cache-Control: no-cache
     Cookie: WSS_KeepSessionAuthenticated=80
     HeaderEnd: CRLF
```

**Response**

Header

```
     ProtocolVersion: HTTP/1.1
     StatusCode: 200, Ok
     Reason: OK
     Date: Wed, 16 Jan 2008 19:08:05 GMT
     Server: Microsoft-IIS/6.0
     MicrosoftSharePointTeamServices: 12.0.0.6210
     X-Powered-By: ASP.NET
     Last-Modified: Wed, 16 Jan 2008 19:08:01 GMT
     ETag: "{272A0DE5-FF5C-4DF4-8E40-CC3068CBEF04},1"
     ResourceTag: rt:272A0DE5-FF5C-4DF4-8E40-CC3068CBEF04@00000000001
     ContentType: application/vnd.ms-word.document.12
     Exires: Tue, 01 Jan 2008 19:08:05 GMT
```

```
Cache-Control: private,max-age=0
ContentLength: 15616
Public-Extension: http://schemas.microsoft.com/repl-2
Set-Cookie: WSS_KeepSessionAuthenticated=80; path=/
HeaderEnd: CRLF
```

# 5 Security

## 5.1 Security Considerations for Implementers

The server rejects HTTP PROPFIND, PROPPATCH and LOCK requests, as specified in [RFC2616] (HTTP 1.1 ), which result in an XML request entity body larger than 4096 bytes in size.

The server also rejects an HTTP PUT request if the Content-Type header has value multipart/MSDAVEXTPrefixEncoded and whose XML request entity body is larger than 4096 bytes. The server rejects these requests with an HTTP status code 413, "ENTITY TOO LARGE".

## 5.2 Index of Security Parameters

None.

# 6 Appendix A: Full IDL

None.

# 7 Appendix B: 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.

- The 2007 Microsoft Office system
- Windows SharePoint Services 3.0
- Microsoft SharePoint Foundation 2010
- Microsoft SharePoint Foundation 2013
- Windows 8.1 Update
- Windows 10 operating system
- Microsoft SharePoint Server 2016

Exceptions, if any, are noted below. If a service pack or Quick Fix Engineering (QFE) number appears with the product version, behavior changed in that service pack or QFE. The new behavior also applies to subsequent service packs of the product unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

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

<1> Section 1.5: Microsoft Office 2007 Service Pack 1 (SP1) system clients use MODUU extensions only against a Document Workspace site.

<2> Section 2.2.1.2: Office 2007 SP1 system clients include the **Moss-Uid** header in GET, PUT, OPTIONS, MOVE, DELETE, MKCOL and PROPFIND requests, though Windows SharePoint Services 3.0 ignores it.

<3> Section 2.2.1.3: Office 2007 SP1 system clients include the **Moss-Did** header in PUT and MKCOL requests, though Windows SharePoint Services 3.0 ignores it.

<4> Section 2.2.1.4: Office 2007 SP1 system clients include the **Moss-VerFrom** header in PUT requests, though Windows SharePoint Services 3.0 ignores it.

<5> Section 2.2.1.5: Office 2007 SP1 system clients include the **Moss-CBFile** header in PUT requests, though Windows SharePoint Services 3.0 ignores it.

<6> Section 2.2.1.6: Office 2007 SP1 system clients include the **MS-Set-Repl-Uid** header in PUT and MKCOL requests, though Windows SharePoint Services 3.0 ignores it.

<7> Section 2.2.1.7: Office 2007 SP1 system clients include the **MS-BinDiff** header in GET requests, though Windows SharePoint Services 3.0 ignores it.

<8> Section 2.2.1.8: Office 2007 SP1 system clients include the **X-Office-Version** header in GET, PUT, OPTIONS, MOVE, DELETE, MKCOL and PROPFIND requests, though Windows SharePoint Services 3.0 ignores it.

<9> Section 2.2.1.9: Office 2007 SP1 system clients include "SyncMan []" in the user-agent header. Servers running Windows SharePoint Services 3.0 ignore comments of this value in the User-Agent Header.

# 8 Change Tracking

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

# 9 Index

**N**



**O**



**P**



**R**



**S**



**T**



**U**



**V**



**X**