

[MS-WDVSE]: Web Distributed Authoring and Versioning (WebDAV) Protocol: Server Extensions

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1 Introduction

The Web-based Distributed Authoring and Versioning (**WebDAV**) protocol defined in [\[RFC2518\]](#) extends the standard **HTTP** mechanisms defined in [\[RFC2068\]](#) to provide file access and content management over the Internet. The WebDAV Protocol enables an Internet-based file system, however, some types of files (for example, files with programmatically derived content) are not easily managed by WebDAV and some protocol interactions are suboptimal for file system usage.

This specification extends WebDAV by introducing new HTTP request and response headers that both enable the file types that are not currently manageable and optimize protocol interactions for file system clients. This specification also introduces a new WebDAV method that is used to send search queries to disparate search providers.

1.1 Glossary

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

Hypertext Transfer Protocol (HTTP)
Hypertext Transfer Protocol over Secure Socket Layer (HTTPS)
Secure Sockets Layer (SSL)
URI
Uniform Resource Locator (URL)

The following terms are specific to this document:

Entity: Any document on a server that is accessible using an **HTTP URL**.

Locking: A mechanism that is used for overwrite protection. **Locking** may be applied to individual **resources** or to entire collection hierarchies. This term is used as specified in [\[RFC2518\]](#) sections 3 and 4.

Property: A name-value pair that associates metadata with a **resource**. This term is used as specified in [\[RFC2518\]](#) sections 1 and 6.

Resource: An **entity** that can be identified by a **URI**. This term is used as specified in [\[RFC2068\]](#) section 1.3.

Transport Layer Security (TLS): A security protocol that supports confidentiality and integrity of messages in client and server applications that communicate over open networks. **TLS** supports server authentication and, optionally, client authentication by using X.509 certificates (as specified in [\[X509\]](#)). **TLS** is standardized in the Internet Engineering Task Force (IETF) **TLS** working group, as specified in [\[RFC2246\]](#).

WebDAV: Web Distributed Authoring and Versioning Protocol, as specified in [\[RFC2518\]](#).

WebDAV Client: A computer that uses the WebDAV Protocol, as specified in [\[RFC2518\]](#), to retrieve data from the **WebDAV server**.

WebDAV Server: A computer that supports the WebDAV Protocol, as specified in [\[RFC2518\]](#). **WebDAV clients** can connect to, and retrieve data from, a **WebDAV server**.

Web Server: A computer on the Web that is connected to the Internet backbone and stores Web pages that a client can retrieve.

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

[RFC2068] Fielding, R., Gettys, J., Mogul, J., Frystyk, H., and Berners-Lee, T., "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>

[RFC2246] Dierks, T. and Allen, C., "The TLS Protocol Version 1.0", RFC 2246, January 1999, <http://www.ietf.org/rfc/rfc2246.txt>

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

[RFC2518] Goland, Y., Whitehead, E., Faizi, A., Carter, S., and Jensen, D., "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>

[X509] ITU-T, "Information Technology - Open Systems Interconnection - The Directory: Public-Key and Attribute Certificate Frameworks", Recommendation X.509, August 2005, <http://www.itu.int/rec/T-REC-X.509/en>

Note There is a charge to download the specification.

1.2.2 Informative References

[MSASP] Microsoft Corporation, "Active Server Pages", <http://msdn2.microsoft.com/en-us/library/aa286483.aspx>

1.3 Protocol Overview (Synopsis)

WebDAV is a set of methods, headers, and content types that extend the HTTP 1.1 Protocol, as specified in [\[RFC2068\]](#). WebDAV allows data to be written to Internet servers and is an Internet standard for collaborative authoring, as specified in [\[RFC2518\]](#).

WebDAV expands the basic support in HTTP 1.1 for content authoring by introducing additional methods and headers to provide support for **resource properties** and other base functions, such as resource **locking**. These new capabilities make the WebDAV Protocol suitable for basic remotely mountable file systems.

This document specifies the following extensions to the base WebDAV Protocol, as specified in [\[RFC2518\]](#).

- An HTTP method that serves as the transport vehicle for search functionality in external processes.
- An HTTP request header that indicates whether an **entity** is to be returned as-is, or whether any associated programmatic processing should be performed and the result returned.
- An HTTP response header that indicates which authoring tools to use.
- An extension to the existing Depth HTTP request header that indicates whether the root of a resource should be included in the results.
- Additional properties in the DAV namespace that describe additional file characteristics.

1.4 Relationship to Other Protocols

The WebDAV Protocol: Server Extensions rely on WebDAV which, in turn, relies on HTTP 1.1 as defined in [\[RFC2068\]](#). These extensions also rely on **HTTPS** for data protection services, as defined in [\[RFC2818\]](#).

1.5 Prerequisites/Preconditions

This specification requires a **WebDAV server**, as defined in [\[RFC2291\]](#), that supports the OPTIONS command.

This specification also requires that **WebDAV clients** have **URLs** that point to WebDAV servers. The client has to obtain the URLs through some out-of-band mechanism.

1.6 Applicability Statement

WebDAV Protocol: Server Extensions applies in scenarios that require efficient file operations. Note that this document specifies only those extensions specific to enabling efficient file system clients. These extensions do not add any functionality. They instead help reduce the network traffic and increase the performance of clients that use the WebDAV Protocol. [<1>](#)

1.7 Versioning and Capability Negotiation

Supported Transports: WebDAV Protocol: Server Extensions use HTTP as the only transport.

Versioning: No new versioning mechanisms have been introduced beyond those that already exist in WebDAV and HTTP, as specified in [\[RFC2518\]](#) and [\[RFC2068\]](#).

Capability Negotiation: Negotiation of WebDAV (as specified in [\[RFC2518\]](#) sections 9.1 and 15) and HTTP capabilities (as specified in [\[RFC2068\]](#) section 9.2) is via the OPTIONS method. This specification extends the OPTIONS method that uses an HTTP response header to indicate which authoring tools should be used. For more information about authoring, see section [2.2.2](#).

1.8 Vendor-Extensible Fields

The WebDAV Protocol: Server Extensions does not define any vendor-extensible fields.

This protocol uses HTTP status codes as defined in [\[RFC2068\]](#) section 10 and [\[RFC2518\]](#) section 10.

1.9 Standards Assignments

No standards body has approved or governs this document or its header names, values, methods, and deviations. This specification conforms to the form and behavior of other custom HTTP headers, as specified in [\[RFC2068\]](#) section 4.2.

2 Messages

The following section describes transport requirements and the syntax of the WebDAV Protocol: Server Extensions.

2.1 Transport

Messages are transported using HTTP as specified in [\[RFC2518\]](#) and [\[RFC2068\]](#).

This protocol MAY be used with **Secure Sockets Layer (SSL)** or **Transport Layer Security (TLS)**, as specified in [\[RFC2246\]](#).

Port 80 is the standard port assignment for HTTP, and port 443 is the standard port assignment for HTTP over SSL or TLS; however, individual implementations MAY support other ports.

2.2 Message Syntax

The extension headers in this protocol conform to the form and behavior of other custom HTTP headers, as specified in [\[RFC2068\]](#) section 4.2, and are consistent with the WebDAV verbs and headers as defined in [\[RFC2518\]](#) sections 8 and 9.

This section specifies the following header extensions.

- The [Translate request header \(section 2.2.1\)](#) allows the WebDAV client to request the source of an entity.
- The [MS-Author-Via response header \(section 2.2.2\)](#) allows the WebDAV server to specify the type of WebDAV clients that SHOULD be used for authoring.
- The "[noroot \(section 2.2.3\)](#)" extension to the Depth request header extends the functionality that is specified in [\[RFC2518\]](#) section 9.2, allowing a WebDAV client to request the children of a requested entity, but not to include the requested entity itself.

This section specifies the following method:

- The [SEARCH method \(section 2.2.4\)](#) is used to transport search-related commands to external search providers.

This section specifies the following deviations from [\[RFC2518\]](#) in the WebDAV server implementation.

- WebDAV property retrieval, as specified in [\[RFC2518\]](#) section 8.1, MAY include additional "live" property settings, as specified in section [2.2.5.1](#).
- WebDAV locks, as specified in [\[RFC2518\]](#) sections 6 and 7, MAY not be supported on WebDAV collections, as specified in section [2.2.5.2](#) and in [\[RFC2518\]](#) section 7.5.
- The WebDAV property setting, as specified in [\[RFC2518\]](#) section 8.2, MAY not be transactional, as specified in section [2.2.5.3](#).
- The WebDAV, property setting, as specified in [\[RFC2518\]](#) section 8.2, MAY include multiple, un-nested property settings, as specified in section [2.2.5.4](#).

2.2.1 Translate Request Header

Many resources obtained from a WebDAV server are returned exactly as-is. However, some resources are programmatically interpreted by the **Web server** and the result of that interpretation is returned instead of the source representation. For instance, a request to retrieve an Active Server Page (ASP) (as described in [\[MSASP\]](#)) from the Web server would return the processed HTML file rather than the actual source of the ASP page.

In order for a WebDAV client to indicate the required representation, WebDAV Protocol: Server Extensions introduces a new Translate request header. This request header indicates to the Web server that it should perform "translation" (programmatic interpretation) of the file.

This new request header is defined as follows, using the ABNF syntax, as specified in [\[RFC2068\]](#) section 2.1.

```
Translate-header = "Translate" ":" Translate-value
Translate-value  = "t" | "f" | "F"
```

If the Translate value is "t", the Web server is to process the content before returning it to the WebDAV client; if "f" | "F", the Web server is to return the unprocessed (or source) content to the WebDAV client. The values "f" and "F" are synonymous. All other values SHOULD be ignored by the Web server. For more information about processing of this request header, see section [3.1.2.<2>](#)

This request header MUST be supported on the GET verb and MAY be supported on other verbs.[<3>](#)

2.2.2 MS-Author-Via Response Header

The MS-Author-Via response header suggests to certain authoring applications the protocol mechanism to author with. The preference is ordered, so the first mechanism listed is the one most strongly suggested.[<4>](#)

```
MS-Author-Via = "MS-Author-Via" ":" ("DAV" | "MS-FP/4.0" | "MS-FP/4.0,DAV" | "DAV ,MS-FP/4.0")
```

In this case, only the following two protocol mechanisms are listed.

- MS-FP/4.0 refers to Microsoft FrontPage Server protocol version 4.0 enabled on the Web server. Some applications look for this string and use that protocol to communicate with this Web server.
- DAV is used to indicate that WebDAV is enabled on the WebDAV server, and a WebDAV client MAY use WebDAV commands to communicate with this WebDAV server.

2.2.3 Depth "noroot" Request Header Extension

This request header extension is defined as follows, using the ABNF syntax, as specified in [\[RFC2068\]](#) section 2.1.

```
Depth = "Depth" ":" ("0" | "1" | "infinity" | "1,noroot" | "infinity,noroot")
```

The following values are associated with the Depth request header:

Value	Meaning
0	The command applies only to the specified resource.
1	The command applies to the specified resource and the next level of resources that it contains.
infinity	The command applies to the specified resource and all the resources that it contains.
1,noroot	The command applies to the next level of resources in the container but not to the container itself.
infinity,noroot	The command applies to all the resources in the container but not to the container itself.

The noroot extension is present if the "1,noroot" or "infinity,noroot" values are set. [<5>](#)

2.2.4 SEARCH Method

This method extension allows a WebDAV client to request search results from an external search provider. A WebDAV server MAY advertise support for the SEARCH method in the response to an OPTIONS request. The SEARCH method is simply a delivery mechanism for passing queries to external search providers. [<6>](#)

The following example shows the syntax for the SEARCH method, which conforms to the HTTP syntax as defined in [\[RFC2068\]](#).

```
SEARCH /[resource] HTTP/1.1
Host: www.example.com
Content-type: text/xml; charset="utf-8"
Content-Length: nnn
<?xml version="1.0" encoding="utf-8" ?>
<D:searchquery xmlns:D="DAV:">
  <D:sql>
    [implementation-specific content for a search provider]
  </D:sql>
</D:searchquery>
```

2.2.5 Deviations from [RFC2518]

2.2.5.1 Additional "Live" Properties

[\[RFC2518\]](#) sections 4 and 13 define the "live" properties that a WebDAV server SHOULD implement. [<7>](#)

2.2.5.2 Collections and Locking

[\[RFC2518\]](#) sections 7 and 8 define how WebDAV servers SHOULD implement locking for collections. [<8>](#)

2.2.5.3 Property Settings

[RFC2518] section 8.2 states that property-setting instructions are transactional. Property-setting instructions MUST either all succeed or all fail. If an error occurs during processing, all previously completed property-setting instructions MUST be reset to their original values. [<9>](#)

2.2.5.4 Multiple Property Elements

[RFC2518] section 8.2 defines the message syntax for setting properties by using the PROPPATCH method. A property or group of properties for a resource is enclosed within a single `<d:prop></d:prop>` element, [<10>](#) as shown in the following example.

```
PROPPATCH /[resource] HTTP/1.1
Host: www.example.com
Content-type: text/xml; charset="utf-8"
Content-Length: nnn
<?xml version="1.0" encoding="utf-8" ?>
<a:propertyupdate xmlns:a='DAV:'>
  <a:set>
    <a:prop>
      <a:owner>Owner's Name</a:owner>
    </a:prop>
  </a:set>
</a:propertyupdate>
```

3 Protocol Details

As specified in [\[RFC2518\]](#), WebDAV operates between an initiator (a WebDAV client) and a responder (a WebDAV server). This section specifies the client and the server behaviors with respect to the WebDAV extensions.

3.1 WebDAV Client Details

3.1.1 Abstract Data Model

A WebDAV client MAY maintain a variable for each server with which it communicates that contains the value of the [MS-Author-Via response header](#).

3.1.2 Timers

No new timers are required beyond those specified in [\[RFC2068\]](#).

3.1.3 Initialization

Prior to general interaction with a WebDAV server, the WebDAV client MAY perform an OPTIONS request in order to determine the current authoring implementation using the [MS-Author-Via response header](#).<11>

3.1.4 Higher-Layer Triggered Events

No new events are triggered beyond those specified in [\[RFC2068\]](#).

3.1.5 Message Processing Events and Sequencing Rules

A WebDAV client MAY send an OPTIONS request to the server and query the response headers for the presence of the WebDAV server's supported features. When sending an OPTIONS request, the WebDAV client SHOULD send the OPTIONS request before sending any other requests to the WebDAV server. The information returned SHOULD be used by the WebDAV client to specialize requests to this server.

3.1.5.1 Translate Request Header

The WebDAV client MAY add the [Translate request header](#) with an 'f' flag to a request if the WebDAV client needs the source of a file without any translation; otherwise this header SHOULD be omitted.

3.1.5.2 MS-Author-Via Response Header

A WebDAV client MAY send an OPTIONS request to the server and query the response headers for the presence of the MS-Author-Via header. The WebDAV client SHOULD use the following information to determine the best method to send requests to the server.

- The WebDAV client SHOULD NOT use WebDAV commands when communicating with a server that responds to the OPTIONS command with only the MS-Author-Via: MS-FP/4.0 response header.
- The WebDAV client MAY use WebDAV commands when communicating with a server that responds to the OPTIONS command with any of the following [MS-Author-Via response header](#) values:
 - MS-Author-Via: DAV

- MS-Author-Via: DAV, MS-FP/4.0
- MS-Author-Via: MS-FP/4.0, DAV

3.1.5.3 Depth "noroot" Request Header Extension

The WebDAV client MAY add the [Depth request header](#) with a value of '1,noroot' or 'infinity,noroot' to a request if the WebDAV client needs all the resources in the container, but not to the container itself; otherwise this header SHOULD be omitted.

3.1.5.4 SEARCH Method

A WebDAV client may send a SEARCH request to a WebDAV server that advertises support for the SEARCH method through the response to an OPTIONS request from the WebDAV client. If the WebDAV server does not advertise support for the SEARCH method, the WebDAV client SHOULD NOT send a SEARCH request.

3.1.6 Timer Events

No new timers are required beyond those in the base protocol.

3.1.7 Other Local Events

There are no new local events other than those described in the base protocol.

3.2 WebDAV Server Details

3.2.1 Abstract Data Model

No new abstract data model is needed other than that described in the base protocol.

3.2.2 Timers

No new timers are required beyond those in the base protocol.

3.2.3 Initialization

No initialization is required beyond that in the base protocol.

3.2.4 Higher-Layer Triggered Events

No new events are triggered beyond that in the base protocol.

3.2.5 Message Processing Events and Sequencing Rules

A WebDAV server MAY advertise support for WebDAV authoring by adding the MS-Author-Via: DAV response header to the response to the OPTIONS command. If the server does not support WebDAV authoring, the OPTIONS response SHOULD omit the MS-Author-Via: DAV response header. A WebDAV server MAY add the MS-Author-Via: DAV header to other responses.

3.2.5.1 Translate Request Header

The WebDAV server MUST respond with the actual source of the file if the translate request header exists with a flag value starting with "f" or "F". The WebDAV server SHOULD perform access checks when processing a command with a [Translate request header](#).<12>

To maintain consistency with Web browsers, the default behavior if this request header is omitted is to translate the file; omission of this header is the same as sending Translate: t.<13>

3.2.5.2 MS-Author-Via Response Header

The WebDAV server SHOULD respond with the [MS-Author-Via response header](#) when a WebDAV client sends an OPTIONS request.<14> The WebDAV server should respond with the appropriate information when the following conditions are true.

- "MS-Author-Via: DAV" The WebDAV server should respond with this header when WebDAV is enabled.
- "MS-Author-Via: MS-FP/4.0" The Web server should respond with this header when the FrontPage Server Extensions protocol is enabled.
- "MS-Author-Via: DAV,MS-FP/4.0" The WebDAV server should respond with this header when both WebDAV and the FrontPage Server Extensions protocol are enabled, and WebDAV is preferred over the FrontPage Server Extensions protocol.
- "MS-Author-Via: MS-FP/4.0,DAV" The WebDAV server should respond with this header when both the FrontPage Server Extensions protocol and WebDAV are enabled, and the FrontPage Server Extensions protocol is preferred over WebDAV.

3.2.5.3 Depth "noroot" Request Header Extension

If the WebDAV server supports the [Depth "noroot" request header extension](#), the WebDAV server SHOULD respond appropriately depending on the WebDAV command that the WebDAV client is sending.<15>

3.2.5.4 SEARCH Method

A WebDAV server should advertise support for the SEARCH method through the response to an OPTIONS request from the WebDAV client. If a WebDAV client sends a SEARCH request, the WebDAV server should send the request to the appropriate search provider on the server.<16>

3.2.6 Timer Events

No new timers are required beyond those in the base protocol.

3.2.7 Other Local Events

There are no new local events other than those described in the base protocol.

4 Protocol Examples

This section provides examples of the protocol extensions.

4.1 MS-Author-Via Response Header

The following example shows an OPTIONS request from a WebDAV client and the response from the WebDAV server that contains the [MS-Author-Via response header](#).

Request:

```
OPTIONS / HTTP/1.1
Host: localhost
Accept: */*
```

Response:

```
HTTP/1.1 200 OK
Server: Microsoft-IIS/6.0
Date: Wed, 28 Jun 2006 00:06:21 GMT
MS-Author-Via: DAV
Allow: OPTIONS, TRACE, GET, HEAD, POST, LOCK, UNLOCK, MKCOL, PROPFIND, PROPPATCH, COPY,
MOVE
Public: OPTIONS, TRACE, GET, HEAD, POST, LOCK, UNLOCK, MKCOL, PROPFIND, PROPPATCH, COPY,
MOVE
MS-Author-Via: DAV
Content-Length: 0
```

4.2 Translate Request Header

The following examples show the difference between requesting an entity and the source of an entity. The first example is a typical HTTP GET command as issued by a browser such as Internet Explorer.

Request:

```
GET /Temp/world.asp HTTP/1.1
Translate: t
Host: localhost
Accept: */*
```

Response:

```
HTTP/1.1 200 OK
Server: Microsoft-IIS/5.1
Date: Wed, 28 Jun 2006 00:06:21 GMT
Content-Length: 129
Content-Type: text/html
Set-Cookie: ASPSESSIONIDCSSTSCQB=IEEJDPNAAIJECIOOBLMMGDJM; path=/
Cache-control: private

<FONT SIZE="1">Hello World</FONT><BR>
```



```
<FONT SIZE="2">Hello World</FONT><BR>
```

```
<FONT SIZE="3">Hello World</FONT><BR>
```

An authoring application may want to retrieve the source of an entity, and it would issue the same request asking for the source of the entity as follows:

Request:

```
GET /Temp/world.asp HTTP/1.1
Translate: f
Host: localhost
Accept: */*
```

Response:

```
HTTP/1.1 200 OK
Server: Microsoft-IIS/5.1
Date: Wed, 28 Jun 2006 00:16:34 GMT
Content-Type: text/plain
Content-Length: 497
ETag: "22a87614489ac61:c02"
Last-Modified: Wed, 28 Jun 2006 00:16:19 GMT
Accept-Ranges: bytes
<%
' *****
'          Sample ASP Code                      *
'          *                                     *
' *****
' Declare loop variable.
Dim I

' Loop 3 times, adjusting the
' font size in each loop.
For I = 1 To 3 Step 1
' Output our HTML and text using the value
' of I as the FONT TAG's SIZE attribute.
%>
<FONT SIZE="<%=I%>">Hello World</FONT><BR>
<%
Next ' continue looping
%>
```

The difference between these two requests is that the second one is requesting the source of an entity. This is a typical example of how the [Translate request header](#) is used.

4.3 Depth "noroot" Request Header Extension

The following example shows a PROPFIND request from a WebDAV client and the response from the WebDAV server that contains the [Depth "noroot" Request Header Extension](#).

PROPFIND request with Depth: 1

```
PROPFIND /dav/ HTTP/1.1
Depth: 1
Content-Type: text/xml
Host: localhost
Accept: */*
Content-Length:104

<?xml version="1.0"?>
<D:propfind xmlns:D="DAV:">
  <D:prop>
    <D:displayname/>
  </D:prop>
</D:propfind>
```

Response:

```
HTTP/1.1 207 Multi-Status
Date: Fri, 17 Aug 2007 20:24:20 GMT
Server: Microsoft-IIS/6.0
X-Powered-By: ASP.NET
Content-Type: text/xml
Transfer-Encoding: chunked

<?xml version="1.0"?>
<a:multistatus xmlns:b="urn:uuid:c2f41010-65b3-11d1-a29f-00aa00c14882/" xmlns:c="xml:"
xmlns:a="DAV:">
  <a:response>
    <a:href>http://localhost/dav/</a:href>
    <a:propstat>
      <a:status>HTTP/1.1 200 OK</a:status>
      <a:prop>
        <a:displayname>dav</a:displayname>
      </a:prop>
    </a:propstat>
  </a:response>
  <a:response>
    <a:href>http://localhost/dav/pagerror.gif</a:href>
    <a:propstat>
      <a:status>HTTP/1.1 200 OK</a:status>
      <a:prop>
        <a:displayname>pagerror.gif</a:displayname>
      </a:prop>
    </a:propstat>
  </a:response>
  <a:response>
    <a:href>http://localhost/dav/script.asp</a:href>
    <a:propstat>
      <a:status>HTTP/1.1 200 OK</a:status>
      <a:prop>
        <a:displayname>script.asp</a:displayname>
      </a:prop>
    </a:propstat>
  </a:response>
  <a:response>
    <a:href>http://localhost/dav/textfile.txt</a:href>
    <a:propstat>
      <a:status>HTTP/1.1 200 OK</a:status>
      <a:prop>
        <a:displayname>textfile.txt</a:displayname>
```

```
</a:prop>
</a:propstat>
</a:response>
</a:multistatus>
```

PROPFIND request with Depth: 1,noroot

```
PROPFIND /dav/ HTTP/1.1
Depth: 1,noroot
Content-Type: text/xml
Host: localhost
Accept: */*\r\n
Content-Length:104

<?xml version="1.0"?>
<D:propfind xmlns:D="DAV:">
  <D:prop>
    <D:displayname/>
  </D:prop>
</D:propfind>
```

Response:

```
HTTP/1.1 207 Multi-Status
Date: Fri, 17 Aug 2007 20:28:15 GMT
Server: Microsoft-IIS/6.0
X-Powered-By: ASP.NET
Content-Type: text/xml
Transfer-Encoding: chunked

<?xml version="1.0"?>
<a:multistatus xmlns:b="urn:uuid:c2f41010-65b3-11d1-a29f-00aa00c14882/" xmlns:c="xml:"
xmlns:a="DAV:">
  <a:response>
    <a:href>http://localhost/dav/pagerror.gif</a:href>
    <a:propstat>
      <a:status>HTTP/1.1 200 OK</a:status>
      <a:prop>
        <a:displayname>pagerror.gif</a:displayname>
      </a:prop>
    </a:propstat>
  </a:response>
  <a:response>
    <a:href>http://localhost/dav/script.asp</a:href>
    <a:propstat>
      <a:status>HTTP/1.1 200 OK</a:status>
      <a:prop>
        <a:displayname>script.asp</a:displayname>
      </a:prop>
    </a:propstat>
  </a:response>
  <a:response>
    <a:href>http://localhost/dav/textfile.txt</a:href>
    <a:propstat>
      <a:status>HTTP/1.1 200 OK</a:status>
      <a:prop>
        <a:displayname>textfile.txt</a:displayname>
      </a:prop>
    </a:propstat>
```

```
</a:response>  
</a:multistatus>
```

5 Security

The following sections specify security considerations for implementers of the WebDAV Protocol: Server Extensions.

5.1 Security Considerations for Implementers

WebDAV servers that support the [Translate request header](#) SHOULD perform access checks before returning the source of the file, as specified in section [3.2.5.1](#), in order to protect any source content (for example, database passwords).<17>

5.2 Index of Security Parameters

No new security parameters are required beyond those in the base protocol.

6 Appendix A: Windows Behavior

The information in this specification is applicable to the following versions of Windows:

- Windows Server 2003
- Windows 2000
- Windows XP

Exceptions, if any, are noted below. Unless otherwise specified, any statement of optional behavior in this specification prescribed using the terms SHOULD or SHOULD NOT implies Windows behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies that Windows does not follow the prescription.

[<1> Section 1.6:](#) The WebDAV server that is described in this specification is available as an Internet Server API (ISAPI) extension in Internet Information Services (IIS) 5, IIS 5.1, and IIS 6; and as an HTTP module in IIS 7.

[<2> Section 2.2.1:](#) The Web server in IIS for Windows Server 2003, Windows 2000, and Windows XP can accept the [Translate request header](#). This implementation accepts "f*" and "F*" as FALSE, where "*" is a wildcard, not a literal character. Everything else, including omission of the header, is accepted as TRUE.

[<3> Section 2.2.1:](#) The Web server in IIS for Windows Server 2003, Windows 2000, and Windows XP can accept this header on all commands, while only honoring this header on GET commands.

[<4> Section 2.2.2:](#) This response header can be returned by the WebDAV server in IIS for Windows Server 2003, Windows 2000, and Windows XP.

[<5> Section 2.2.3:](#) This request header can be supported by the WebDAV server in IIS for Windows Server 2003, Windows 2000, and Windows XP.

[<6> Section 2.2.4:](#) This method can be supported by the ISAPI-based WebDAV server in IIS for Windows Server 2003, Windows 2000, and Windows XP, and is used to pass queries to Windows Index Server.

[<7> Section 2.2.5.1:](#) The WebDAV server in IIS for Windows Server 2003, Windows 2000, and Windows XP return the additional IsCollection and IsHidden properties as "live" properties.

[<8> Section 2.2.5.2:](#) The WebDAV server in IIS for Windows Server 2003, Windows 2000, and Windows XP does not support locking collections.

[<9> Section 2.2.5.3:](#) The WebDAV server in IIS for Windows Server 2003, Windows 2000, and Windows XP is not transactional; if a failure occurs when setting any property in a PROPPATCH request, the remaining properties are not reset to their original values.

[<10> Section 2.2.5.4:](#) The ISAPI-based WebDAV server in IIS for Windows Server 2003, Windows 2000, and Windows XP allows the use of multiple `<d:prop></d:prop>` elements to encapsulate multiple properties.

[<11> Section 3.1.3:](#) The WebDAV server in Windows Server 2003, Windows 2000, and Windows XP can return the MS-Author-Via: DAV response header if WebDAV is enabled on the server.

[<12> Section 3.2.5.1:](#) The WebDAV server in IIS for Windows Server 2003, Windows 2000, and Windows XP requires WRITE access to the file to return the source of the file.

[<13> Section 3.2.5.1:](#) The WebDAV server in IIS for Windows Server 2003, Windows 2000, and Windows XP assumes the header as Translate: t by default.

[<14> Section 3.2.5.2:](#) The WebDAV server in IIS for Windows Server 2003, Windows 2000, and Windows XP can return the [MS-Author-Via response header](#) in response to an OPTIONS request.

[<15> Section 3.2.5.3:](#) The WebDAV server in IIS for Windows Server 2003, Windows 2000, and Windows XP supports the [Depth "noroot" request header extension](#).

[<16> Section 3.2.5.4:](#) The WebDAV server in IIS for Windows Server 2003, Windows 2000, and Windows XP supports the SEARCH method.

[<17> Section 5.1:](#) For a Translate header value of FALSE, the WebDAV server in IIS for Windows Server 2003, Windows 2000, and Windows XP requires WRITE access to return the source of the file.

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