

# [MS-WDVRN]: World Wide Distributed Authoring and Versioning (WebDAV) Noroot Depth Protocol Specification

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## Revision Summary

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# 1 Introduction

This document specifies an extension to the Web-based Distributed Authoring and Versioning (WebDAV) Protocol (as specified in [\[RFC2518\]](#)) by using a standard HTTP mechanism (as specified in [\[RFC2616\]](#)). The noroot extension described in this document extends the [Depth](#) header field so that it is possible to specify that the **collection** against which a method is executed is not to be included as part of that particular method execution. [<1>](#)

## 1.1 Glossary

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

### **Hypertext Transfer Protocol (HTTP) URI**

The following terms are specific to this document:

**Collection:** A **resource** that contains a set of URIs that identify member **resources**. Use of this term is consistent with what is specified in [\[RFC2518\]](#) section 5.2.

**Resource:** An entity that can be identified by a URI. Use of this term is consistent with what is specified in [\[RFC2616\]](#) section 1.3.

**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](mailto: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.

[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., Carter, S., and Jensen, D., "HTTP Extensions for Distributed Authoring—WebDAV", RFC 2518, February 1999, <http://www.ietf.org/rfc/rfc2518.txt>

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

[RFC4234] Crocker, D., Ed. and Overell, P., "Augmented BNF for Syntax Specifications: ABNF", RFC 4234, October 2005, <http://www.ietf.org/rfc/rfc4234.txt>

### 1.2.2 Informative References

None.

### 1.3 Protocol Overview (Synopsis)

In [\[RFC2518\]](#) section 9.2, the Web-based Distributed Authoring and Versioning (WebDAV) Protocol specifies the [Depth](#) header field, which specifies whether methods executed on **resources** apply only to the resource itself, to the resource and its immediate children, or to the resource and all its children. The noroot extension specified in this document is applicable only to collections and specifies whether methods executed on a resource applies to its immediate children or to all its children.[<2>](#)

### 1.4 Relationship to Other Protocols

The noroot extension to the [Depth](#) header field is based on [\[RFC2518\]](#) section 9.2. This is an addition to the existing WebDAV specification and modifies the behavior of the base WebDAV specification.

### 1.5 Prerequisites/Preconditions

None.

### 1.6 Applicability Statement

This protocol extension is useful when a client issuing a WebDAV command requires that a command that is to be issued against a collection (and that would normally affect the resource itself) only affect collection members. For example, if the client wanted to apply DELETE (see [\[RFC2518\]](#) section 8.6.2) to a collection, but not remove the resource itself, noroot would be appropriate. The [Depth](#) header is only supported if a method's definition explicitly provides for such support, as specified in [\[RFC2518\]](#) section 9.2.

### 1.7 Versioning and Capability Negotiation

This document introduces no new versioning issues.

Negotiation of WebDAV and HTTP is specified in [\[RFC2518\]](#) section 15 and [\[RFC2616\]](#) section 3.1, respectively.

### 1.8 Vendor-Extensible Fields

This extension provides no vendor-extensible fields.

### 1.9 Standards Assignments

There are no standards assignments for this protocol other than the ones assigned for the base HTTP protocol. This protocol conforms to the form and behavior of other custom HTTP header fields, as specified in [\[RFC2616\]](#) section 4.2.

## 2 Messages

This extension modifies the existing WebDAV specification by introducing new values for the WebDAV [Depth](#) header field.

### 2.1 Transport

The [Depth](#) header field value noroot MUST be transported as a header-value of the WebDAV Depth header field, as specified in [\[RFC2518\]](#) section 9.2.

### 2.2 Message Syntax

This extension specifies that an **HTTP** verb that carries the header MUST NOT be applied against the collection itself. The syntax of the [Depth](#) header is specified in [\[RFC2518\]](#) section 9.2. This extension updates that syntax, using the ABNF grammar specified in [\[RFC2616\]](#) section 2.1.

#### 2.2.1 Depth

This header extension is defined as follows, using the ABNF syntax defined in [\[RFC2616\]](#) section 2.1:

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

The following values are associated with the Depth 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 it contains.
infinity	The command applies to the specified resource and all the resources 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.

## 3 Protocol Details

The following sections specify details of the World Wide Distributed Authoring and Versioning (WebDAV) Noroot Depth Protocol, including abstract data models and message processing rules.

### 3.1 Client Details

#### 3.1.1 Abstract Data Model

No additional data is required beyond what is in the base protocol.

#### 3.1.2 Timers

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

#### 3.1.3 Initialization

No initialization is required beyond what is in the base protocol.

#### 3.1.4 Higher-Layer Triggered Events

No additional higher-layer triggered events exist beyond those in the base protocol, and the behavior of any existing higher-layer triggered events is unchanged by the extension specified herein.

#### 3.1.5 Message Processing Events and Sequencing Rules

The client sends a WebDAV command that supports the [Depth](#) header against a collection to the server requesting that the operation is not to affect the collection itself. The client MUST set the Depth header with a value of either "1,noroot" or "infinity,noroot".

A response from the server MUST be processed according to the rules for the particular WebDAV command specified in [\[RFC2518\]](#).

#### 3.1.6 Timer Events

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

#### 3.1.7 Other Local Events

No additional local events are defined by this extension.

### 3.2 Server Details

#### 3.2.1 Abstract Data Model

No additional data is required beyond what is 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 what is in the base protocol.

### 3.2.4 Higher-Layer Triggered Events

The server MUST parse the WebDAV command to find the [Depth](#) request-header field. If the request-header field is present, the server MUST continue to parse for the noroot extension.

If the Depth request-header field is not found or does not contain the noroot value, the server MUST process the request according to the rules for that request specified in [\[RFC2518\]](#). If a Depth header is found with a noroot value, the server MUST process the request according to the rules for that request specified in [\[RFC2518\]](#), with the exception that the collection specified in the request URI MUST NOT be affected by the request.

The server MUST then return a WebDAV response according to the rules for the particular request specified in [\[RFC2518\]](#).

### 3.2.5 Message Processing Events and Sequencing Rules

None.

### 3.2.6 Timer Events

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

### 3.2.7 Other Local Events

None



## 4 Protocol Examples

The following example shows a PROPFIND command issued against a collection '/webdav/'. In the first example, the noroot option is not added to the [Depth](#) header field, so the collection entity '/webdav/' is included in the response.

Request:

```
PROPFIND /webdav/ HTTP/1.1
Content-Type: text/xml
Depth: 1
Host: localhost
Accept: */*
Content-Length:117

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

Response:

```
HTTP/1.1 207 Multi-Status
Server: xxxx
Date: Wed, 28 Jun 2006 20:23:34 GMT
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/webdav/</a:href>
    <a:propstat>
      <a:status>HTTP/1.1 200 OK</a:status>
      <a:prop>
        <a:displayname>webdav</a:displayname>
      </a:prop>
    </a:propstat>
  </a:response>
  <a:response>
    <a:href>http://localhost/webdav/page.xml</a:href>
    <a:propstat>
      <a:status>HTTP/1.1 200 OK</a:status>
      <a:prop>
        <a:displayname>page.xml</a:displayname>
      </a:prop>
    </a:propstat>
  </a:response>
</a:multistatus>
```

In this second example, the noroot option is added to the Depth header field, and the collection '/webdav/' is not listed in the response.

**Request:**

```
PROPFIND /webdav/ HTTP/1.1
Content-Type: text/xml
Depth: 1,noroot
Host: xxxx
Accept: */*
Content-Length:117

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

**Response:**

```
HTTP/1.1 207 Multi-Status
Server: xxxx
Date: Wed, 28 Jun 2006 20:23:34 GMT
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/webdav/page.xml</a:href>
    <a:propstat>
      <a:status>HTTP/1.1 200 OK</a:status>
      <a:prop>
        <a:displayname>page.xml</a:displayname>
      </a:prop>
    </a:propstat>
  </a:response>
</a:multistatus>
```

## 5 Security

The following sections specify security considerations for implementers of the World Wide Distributed Authoring and Versioning (WebDAV) Noroot Depth Protocol.

### 5.1 Security Considerations for Implementers

This extension has no security considerations beyond what is specified by the Web-based Distributed Authoring and Versioning (WebDAV) Protocol (as specified in [\[RFC2518\]](#) section 17) and HTTP (as specified in [\[RFC2616\]](#) section 15).

### 5.2 Index of Security Parameters

None.

## 6 Appendix A: Windows Behavior

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

- Windows 2000
- Windows Server 2003
- 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. specified, the term MAY implies Windows does not follow the prescription.

[<1> Section 1:](#) The noroot extension is deprecated in Windows Server 2008.

[<2> Section 1.3:](#) The [Depth](#) header field is used with several WebDAV commands. However, Windows implementations only support the noroot extension on two verbs: DELETE and PROPFIND. Attempting to specify noroot on other verbs that support the [Depth](#) header field will result in a 400 Bad Request being returned.

Windows 2000 Server and all subsequent server versions support this extension.

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