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## Revision Summary

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1 Introduction

The MetaWeblog Extensions Protocol is a set of extensions to the MetaWeblog API to enable more secure authentication mechanisms.

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:

- **blog**: A website that contains a series of posts about a subject and is arranged in reverse chronological order. Also referred to as web log.

- **category**: A custom string that is used to group one or more documents.

- **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.

- **NT LAN Manager (NTLM) Authentication Protocol**: A protocol using a challenge-response mechanism for authentication in which clients are able to verify their identities without sending a password to the server. It consists of three messages, commonly referred to as Type 1 (negotiation), Type 2 (challenge) and Type 3 (authentication).

- **server**: A computer on which the remote procedure call (RPC) server is executing.

- **Unicode**: A character encoding standard developed by the Unicode Consortium that represents almost all of the written languages of the world. The Unicode standard [UNICODE5.0.0/2007] provides three forms (UTF-8, UTF-16, and UTF-32) and seven schemes (UTF-8, UTF-16, UTF-16 BE, UTF-16 LE, UTF-32, UTF-32 LE, and UTF-32 BE).

- **XML**: The Extensible Markup Language, as described in [XML1.0].

**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.


[MS-NTHT] Microsoft Corporation, "NTLM Over HTTP Protocol".

1.2.2 Informative References


1.3 Overview

The RFC: MetaWeblog API, as described in [RFC-MWA], is a protocol that allows client software to get and set the text and attributes of posts on a blog. The RFC: MetaWeblog API uses the XML-RPC communication protocol, as described in [XML-RPC], for communication between client applications and a blog server. The client sends XML-RPC method call requests to the server, and the server returns a response to the client. The server never initiates any communication with the client.

This protocol extends the RFC: MetaWeblog API to enable the client sending empty usernames and passwords in MetaWeblog API methods, and the server authenticating blog users with other mechanisms in the underlying transport. A typical scenario is that a blog (1) user wants to add a new post to a blog, and the client software sends a method request with empty username and password parameters.

1.4 Relationship to Other Protocols

This protocol is a set of extensions to the RFC: MetaWeblog API that enables the server to use other authentication methods. The RFC: MetaWeblog API is an extension of the Blogger API, as described in [Blogger API]. Therefore, many blog tools and editors that support the RFC: MetaWeblog API also support the Blogger API.

1.5 Prerequisites/Preconditions

It is assumed that a MetaWeblog client has obtained the name of a server that supports the RFC: MetaWeblog API before this protocol is invoked.

The protocol server endpoint is formed by appending "/_layouts/metaweblog.aspx" to the URL of the blog site; for example, http://www.example.com/_layouts/metaweblog.aspx.

1.6 Applicability Statement

The RFC: MetaWeblog API is applicable wherever there is a need to get and set the text and attributes of posts on a blog. This protocol extension is applicable when a client using the RFC: MetaWeblog API does not send the user's name and password directly in the messages, but rather uses the authentication performed by an underlying transport.

1.7 Versioning and Capability Negotiation

This document covers versioning issues in the following areas:
Supported Transports: This protocol can only be implemented using Hypertext Transfer Protocol (HTTP), as described in section 2.1.

Security and Authentication Methods: The MetaWeblog API methods each contain a username and a password parameter for user authentication purposes. Some MetaWeblog servers also support alternate authentication methods such as NT LAN Manager (NTLM) Authentication Protocol, as described in [MS-NLMP], and HTTP authentication, as described in [RFC2617].

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.
2 Messages

2.1 Transport

A MetaWeblog message is an HTTP version 1.1 POST request, as specified in [RFC2616]. The body of the request is in XML. A procedure executes on the server, and the response that is returned is formatted in XML.

2.2 Message Syntax

The format of the XML body for an XML-RPC request and response is specified in [XML-RPC]. The body of the request and response is in XML using Unicode string.

The format of the method request and response for each MetaWeblog method is specified in [RFC-MWA].

The Blogger API functions are specified in [Blogger API].

Each method in the MetaWeblog API provides username and password parameters for authenticating the blog user with the server. If the server is capable of authenticating the user by using the authentication methods described in section 1.7, these parameters are not necessary and a client SHOULD <1><2> pass them as empty elements.

2.2.1 metaWeblog.newPost Extension

The metaWeblog.newPost method posts a new entry to a blog. The structure of this method, as specified in [RFC-MWA], is as follows.

```c
public string metaWeblog.newPost(string blogid,
string username,
string password,
struct struct,
bool publish);
```

The use of the following parameters differs from that which is specified in [RFC-MWA].

username: An XML-encoded Unicode string that contains the login for the blog user, which SHOULD <3> be empty.

password: An XML-encoded Unicode string that contains the user's password, which SHOULD <4> be empty.

2.2.2 metaWeblog.editPost Extension

The metaWeblog.editPost method edits an existing entry on a blog. The structure of this method, as specified in [RFC-MWA], is as follows.

```c
public bool metaWeblog.editPost(string postid,
string username,
string password,
struct struct,
bool publish);
```

The use of the following parameters differs from that which is specified in [RFC-MWA].
**username:** An XML-encoded Unicode string containing the login for the blog user, which SHOULD <5> be empty.

**password:** An XML-encoded Unicode string containing the user's password, which SHOULD <6> be empty.

### 2.2.3 metaWeblog.getPost Extension

The **metaWeblog.getPost** method returns a specific entry from a blog. The structure of this method, as specified in [RFC-MWA], is as follows.

```csharp
public struct metaWeblog.getPost(string postid,
string username,
string password);
```

The use of the following parameters differs from that which is specified in [RFC-MWA].

**username:** An XML-encoded Unicode string containing the login for the blog user, which SHOULD <7> be empty.

**password:** An XML-encoded Unicode string containing the user's password, which SHOULD <8> be empty.

### 2.2.4 metaWeblog.newMediaObject Extension

The **metaWeblog.newMediaObject** method uploads a file from a user's computer to the user's blog. The structure of this method, as specified in [RFC-MWA], is as follows.

```csharp
public struct metaWeblog.newMediaObject(string blogid,
string username,
string password,
struct struct);
```

The use of the following parameters differs from that which is specified in [RFC-MWA].

**username:** An XML-encoded Unicode string containing the login for the blog user, which SHOULD <9> be empty.

**password:** An XML-encoded Unicode string containing the user's password, which SHOULD <10> be empty.

### 2.2.5 metaWeblog.getCategories Extension

The **metaWeblog.getCategories** method returns the list of categories that have been used in the blog. The structure of this method, as specified in [RFC-MWA], is as follows.

```csharp
public struct[] metaWeblog.getCategories(string blogid,
string username,
string password);
```

The use of the following parameters differs from that which is specified in [RFC-MWA].

**username:** An XML encoded Unicode string containing the login for the blog user, which SHOULD <11> be empty.
**password**: An XML encoded Unicode string containing the user's password, which SHOULD <13> be empty.

### 2.2.6 metaWeblog.getRecentPosts Extension

The `metaWeblog.getRecentPosts` method returns the most recent draft and non-draft blog posts in descending order by publish date. The structure of this method, as specified in [RFC-MWA], is as follows.

```csharp
public struct[] metaWeblog.getRecentPosts(string blogid,
                                string username,
                                string password,
                                int numberOfPosts);
```

The use of the following parameters differs from that which is specified in [RFC-MWA].

**username**: An XML encoded Unicode string containing the login for the blog user, which SHOULD <14> be empty.

**password**: An XML encoded Unicode string containing the user's password, which SHOULD <15> be empty.

### 2.2.7 blogger getUsersBlogs Extension

The `blogger.getUsersBlogs` method returns a list of blogs to which the current authenticated user has posting privileges. The structure of this method, as specified in [Blogger API], is as follows.

```csharp
public struct[] blogger.getUsersBlogs(string appkey,
                              string username,
                              string password);
```

The use of the following parameters differs from that which is specified in [Blogger API].

**username**: An XML-encoded Unicode string containing the login for the blog user, which SHOULD <16> be empty.

**password**: An XML-encoded Unicode string containing the user's password, which SHOULD <17> be empty.
3 Protocol Details

3.1 Common Details

3.1.1 Abstract Data Model
The abstract data model follows the specifications in [RFC-MWA] and [XML-RPC].

3.1.2 Timers
None.

3.1.3 Initialization
None.

3.1.4 Higher-Layer Triggered Events
None.

3.1.5 Message Processing Events and Sequencing Rules
When the server receives a protocol message containing an empty username or an empty password, the server MUST ensure that authentication has been established through some other mechanism compatible with the HTTP transport, as specified in [RFC2616], before performing the requested action.<18>

If the authentication through other mechanism fails to authenticate a blog user to the MetaWeblog service, an error MUST be returned as an XML-RPC <methodResponse> with a <fault> item, as specified in [XML-RPC]. If the authentication through another mechanism succeeds in authenticating the blog user, the server MUST perform the requested action and return a response, as specified in [RFC-MWA].

3.1.6 Timer Events
None.

3.1.7 Other Local Events
None.
4 Protocol Examples

4.1 Client Messages

Each method, as described in [RFC-MWA], follows a similar request and response pattern. The following example demonstrates a request with empty username and password parameters.

4.1.1 metaWeblog.newPost

When a blog user adds a new post to a blog, the client software will send a metaWeblog.newPost request, as described in [XML-RPC], with a body formatted as XML as follows.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<methodCall>
  <methodName>metaWeblog.newPost</methodName>
  <params>
    <param>
      <value>
        <string>MyBlog</string>
      </value>
    </param>
    <param>
      <value>
        <string></string>
      </value>
    </param>
    <param>
      <value>
        <string></string>
      </value>
    </param>
    <param>
      <value>
        <struct>
          <member>
            <name>title</name>
            <value>
              <string>My Title</string>
            </value>
          </member>
          <member>
            <name>description</name>
            <value>
              <string>My description</string>
            </value>
          </member>
          <member>
            <name>categories</name>
            <value>
              <array>
                <data>
                  <value>
                    <string>My Category</string>
                  </value>
                </data>
                <data>
                  <value>
                    <string></string>
                  </value>
                </data>
              </array>
            </value>
          </member>
        </struct>
      </value>
    </param>
  </params>
</methodCall>
```
The server processes the `metaWeblog.newPost` method request and returns a response, as described in [XML-RPC], with a body formatted as XML as follows.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<methodResponse>
  <params>
    <param>
      <value>1829</value>
    </param>
  </params>
</methodResponse>
```
5  Security

5.1  Security Considerations for Implementers

The protocol described in [RFC-MWA] uses HTTP version 1.1 as its transport mechanism. The security considerations for HTTP 1.1 are described in [RFC2616], section 15.

The protocols described in [Blogger API] and [RFC-MWA] use clear-text *username* and *password* parameters for authentication. This makes the protocol vulnerable to replay attacks, and permits the recovery of the user's password via the recording of client and server protocol exchanges.

The vulnerabilities of the RFC: MetaWeblog API can be mitigated by relying on authentication methods in the underlying transport such as the NTLM Over HTTP protocol, as described in [MS-NTHT] or in [RFC2617], and by sending empty *username* and *password* parameters in the message, as described in [RFC-MWA].

5.2  Index of Security Parameters

None.
6 Appendix A: XML-RPC Schema

For ease of implementation the following XML-RPC Schema is provided.

```xml
<?xml version="1.0"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">

<xsd:element name="methodCall">
    <xsd:complexType>
        <xsd:all>
            <xsd:element name="methodName">
                <xsd:simpleType>
                    <xsd:restriction base="ASCIIString">
                        <xsd:pattern value="([A-Za-z0-9]|\.|\:|\_)*" />
                    </xsd:restriction>
                </xsd:simpleType>
            </xsd:element>
            <xsd:element name="params" minOccurs="0" maxOccurs="1">
                <xsd:complexType>
                    <xsd:sequence>
                        <xsd:element name="param" type="ParamType" minOccurs="0" maxOccurs="unbounded" />
                    </xsd:sequence>
                </xsd:complexType>
            </xsd:element>
        </xsd:all>
    </xsd:complexType>
</xsd:element>

<xsd:element name="methodResponse">
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            <xsd:element name="params">
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                    </xsd:sequence>
                </xsd:complexType>
            </xsd:element>
            <xsd:element name="fault">
                <xsd:complexType>
                    <xsd:sequence>
                        <xsd:element name="value">
                            <xsd:complexType>
                                <xsd:sequence>
                                    <xsd:element name="struct">
                                        <xsd:complexType>
                                            <xsd:sequence>
                                                <xsd:element name="member" type="MemberType" />
                                            </xsd:sequence>
                                        </xsd:complexType>
                                    </xsd:element>
                                </xsd:sequence>
                            </xsd:complexType>
                        </xsd:element>
                    </xsd:sequence>
                </xsd:complexType>
            </xsd:element>
        </xsd:choice>
    </xsd:complexType>
</xsd:element>

<xsd:complexType name="ParamType">
    <xsd:sequence>
        <!--省略部分-->
    </xsd:sequence>
</xsd:complexType>

```
<xsd:element name="value" type="ValueType" />
</xsd:sequence>
</xsd:complexType>

<xsd:complexType name="ValueType" mixed="true">
    <xsd:choice>
        <xsd:element name="i4" type="xsd:int" />
        <xsd:element name="int" type="xsd:int" />
        <xsd:element name="string" type="ASCIIString" />
        <xsd:element name="double" type="xsd:decimal" />
        <xsd:element name="Base64" type="xsd:base64Binary" />
        <xsd:element name="boolean" type="NumericBoolean" />
        <xsd:element name="dateTime.iso8601" type="xsd:dateTime" />
        <xsd:element name="array" type="ArrayType" />
        <xsd:element name="struct" type="StructType" />
    </xsd:choice>
</xsd:complexType>

<xsd:complexType name="StructType">
    <xsd:sequence>
        <xsd:element name="member" type="MemberType" maxOccurs="unbounded" />
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="MemberType">
    <xsd:sequence>
        <xsd:element name="name" type="xsd:string" />
        <xsd:element name="value" type="ValueType" />
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="ArrayType">
    <xsd:sequence>
        <xsd:element name="data">
            <xsd:complexType>
                <xsd:sequence>
                    <xsd:element name="value" type="ValueType" minOccurs="0" maxOccurs="unbounded" />
                </xsd:sequence>
            </xsd:complexType>
        </xsd:element>
    </xsd:sequence>
</xsd:complexType>

<xsd:simpleType name="ASCIIString">
    <xsd:restriction base="xsd:string">
        <xsd:pattern value="([ -]|\n|\r|\t)+" />
    </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="NumericBoolean">
    <xsd:restriction base="xsd:boolean">
        <xsd:pattern value="0|1" />
    </xsd:restriction>
</xsd:simpleType>

</xsd:schema>
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 updates to those products.

- The 2007 Microsoft Office system
- Microsoft Office 2010 suites
- Microsoft Office 2013
- Microsoft Office SharePoint Server 2007
- Microsoft SharePoint Server 2010
- Windows SharePoint Services 3.0
- Microsoft SharePoint Foundation 2010
- Microsoft SharePoint Foundation 2013
- Microsoft Office 2016
- Microsoft SharePoint Server 2016
- Microsoft Office 2019
- Microsoft SharePoint Server 2019
- Microsoft Office 2021
- Microsoft SharePoint Server Subscription Edition

Exceptions, if any, are noted in this section. If an update version, service pack or Knowledge Base (KB) number appears with a product name, the behavior changed in that update. The new behavior also applies to subsequent updates 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 2.2: Microsoft Office Word 2007 sends an empty password parameter when communicating with Office SharePoint Server 2007, SharePoint Server 2010, Windows SharePoint Services 3.0, SharePoint Foundation 2010. Office SharePoint Server 2007, SharePoint Server 2010, Windows SharePoint Services 3.0, SharePoint Foundation 2010 can be configured to allow a non-empty password, but by default it will send a failure response if the client sends a non-empty password.


Section 2.2.4: The metaWeblog.newMediaObject method is not supported on Office server and server will send a failure response if client calls this method.

Section 2.2.5: Office Word 2007 sends an empty username parameter when communicating with Office SharePoint Server 2007, SharePoint Server 2010, Windows SharePoint Services 3.0, SharePoint Foundation 2010. Office SharePoint Server 2007, SharePoint Server 2010, Windows SharePoint Services 3.0, SharePoint Foundation 2010 can be configured to allow a nonempty username, but by default it will send a failure response if the client sends a nonempty username.
SharePoint Services 3.0, SharePoint Foundation 2010 can be configured to allow a nonempty username, but by default it will send a failure response if the client sends a nonempty username.


<16> Section 2.2.7: Office Word 2007 sends an empty username parameter when communicating with Office SharePoint Server 2007, SharePoint Server 2010, Windows SharePoint Services 3.0, SharePoint Foundation 2010. Office SharePoint Server 2007, SharePoint Server 2010, Windows SharePoint Services 3.0, SharePoint Foundation 2010 can be configured to allow a nonempty username, but by default it will send a failure response if the client sends a nonempty username.

<17> Section 2.2.7: Office Word 2007 sends an empty password parameter when communicating with Office SharePoint Server 2007, SharePoint Server 2010, Windows SharePoint Services 3.0, SharePoint Foundation 2010. Office SharePoint Server 2007, SharePoint Server 2010, Windows SharePoint Services 3.0, SharePoint Foundation 2010 can be configured to allow a non-empty password, but by default it will send a failure response if the client sends a non-empty password.

<18> Section 3.1.5: Office SharePoint Server 2007 authenticates blog users using [MS-NHT].
8 Change Tracking

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