# [MS-UPSSCXPP]:
# User Profile Synchronization (UPS):
# Schema Exchange Protocol Profile

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## Revision Summary

| Date | Revision History | Revision Class | Comments |
|------|------------------|----------------|----------|
| 08/14/2009 | 0.1 | Major | First Release. |
| 09/25/2009 | 0.2 | Minor | Updated the technical content. |
| 11/06/2009 | 0.2.1 | Editorial | Revised and edited the technical content. |
| 12/18/2009 | 0.2.2 | Editorial | Revised and edited the technical content. |
| 01/29/2010 | 0.2.3 | Editorial | Revised and edited the technical content. |
| 03/12/2010 | 0.2.4 | Editorial | Revised and edited the technical content. |
| 04/23/2010 | 0.2.5 | Editorial | Revised and edited the technical content. |
| 06/04/2010 | 0.2.6 | Editorial | Revised and edited the technical content. |
| 07/16/2010 | 0.2.6 | No change | No changes to the meaning, language, or formatting of the technical content. |
| 08/27/2010 | 0.3 | Minor | Clarified the meaning of the technical content. |
| 10/08/2010 | 0.3 | No change | No changes to the meaning, language, or formatting of the technical content. |
| 11/19/2010 | 0.3 | No change | No changes to the meaning, language, or formatting of the technical content. |
| 01/07/2011 | 0.3 | No change | No changes to the meaning, language, or formatting of the technical content. |
| 02/11/2011 | 0.3 | No change | No changes to the meaning, language, or formatting of the technical content. |
| 03/25/2011 | 0.3 | No change | No changes to the meaning, language, or formatting of the technical content. |
| 05/06/2011 | 0.4 | Minor | Clarified the meaning of the technical content. |
| 06/17/2011 | 0.5 | Minor | Clarified the meaning of the technical content. |
| 09/23/2011 | 0.5 | No change | No changes to the meaning, language, or formatting of the technical content. |
| 12/16/2011 | 0.5 | No change | No changes to the meaning, language, or formatting of the technical content. |
| 03/30/2012 | 0.5 | No change | No changes to the meaning, language, or formatting of the technical content. |
| 07/12/2012 | 0.5 | No change | No changes to the meaning, language, or formatting of the technical content. |
| 09/12/2012 | 1.0 | No change | No changes to the meaning, language, or formatting of |

*Release: October 8, 2012*

| Date | Revision History | Revision Class | Comments |
|---|---|---|---|
| | | | the technical content. |
| 10/08/2012 | 1.0 | No change | No changes to the meaning, language, or formatting of the technical content. |

# Table of Contents

# 1   Introduction

The User Profile Synchronization (UPS): Schema Exchange Protocol Profile profiles metadata exchange with a Web service, as described in [WS-MetaDataExchange], enabling clients to discover metadata for a server implementation of the User Profile Synchronization (UPS): Configuration Data Structure, as described in [MS-UPSCDS].

Sections 1.8, 2, and 3 of this specification are normative and can contain the terms MAY, SHOULD, MUST, MUST NOT, and SHOULD NOT as defined in RFC 2119. Sections 1.5 and 1.9 are also normative but cannot contain those terms. All other sections and examples in this specification are informative.

## 1.1   Glossary

The following terms are defined in [MS-GLOS]:

> **directory service (DS)**
> **Hypertext Transfer Protocol (HTTP)**
> **Transmission Control Protocol (TCP)**

The following terms are defined in [MS-OFCGLOS]:

> **endpoint**
> **policy**
> **SOAP action**
> **SOAP body**
> **SOAP message**
> **Uniform Resource Locator (URL)**
> **Web Services Description Language (WSDL)**
> **XML attribute**
> **XML namespace**
> **XML schema**

The following terms are specific to this document:

> **port:** A TCP/IP numbered connection point that is used to transfer data.

> **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

References to Microsoft Open Specifications documentation do not include a publishing year because links are to the latest version of the technical documents, which are updated frequently. References to other documents include a publishing year when one is available.

### 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.

[IANAPORT] Internet Assigned Numbers Authority, "Port Numbers", November 2006, http://www.iana.org/assignments/port-numbers

[MS-UPSCDS] Microsoft Corporation, "User Profile Synchronization (UPS): Configuration Data Structure".

[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

[SOAP1.2/1] Gudgin, M., Hadley, M., Mendelsohn, N., Moreau, J., and Nielsen, H.F., "SOAP Version 1.2 Part 1: Messaging Framework", W3C Recommendation, June 2003, http://www.w3.org/TR/2003/REC-soap12-part1-20030624

[WSDL] Christensen, E., Curbera, F., Meredith, G., and Weerawarana, S., "Web Services Description Language (WSDL) 1.1", W3C Note, March 2001, http://www.w3.org/TR/2001/NOTE-wsdl-20010315

[WS-MetaDataExchange] Ballinger, K. et al., "Web Services Metadata Exchange (WS-MetadataExchange) Version 1.1", August 2006, http://specs.xmlsoap.org/ws/2004/09/mex/WS-MetadataExchange.pdf

[WXFR] Alexander, J., Box, D., Cabrera, L.F., et al., "Web Services Transfer (WS-Transfer)", September 2006, http://www.w3.org/Submission/2006/SUBM-WS-Transfer-20060927/

[XMLNS] Bray, T., Hollander, D., Layman, A., et al., Eds., "Namespaces in XML 1.0 (Third Edition)", W3C Recommendation, December 2009, http://www.w3.org/TR/2009/REC-xml-names-20091208/

[XMLSCHEMA1/2] Thompson, H.S., Ed., Beech, D., Ed., Maloney, M., Ed., and Mendelsohn, N., Ed., "XML Schema Part 1: Structures Second Edition", W3C Recommendation, October 2004, http://www.w3.org/TR/xmlschema-1/

[XMLSCHEMA1] Thompson, H.S., Ed., Beech, D., Ed., Maloney, M., Ed., and Mendelsohn, N., Ed., "XML Schema Part 1: Structures", W3C Recommendation, May 2001, http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/

[XMLSCHEMA2/2] Biron, P.V., Ed. and Malhotra, A., Ed., "XML Schema Part 2: Datatypes Second Edition", W3C Recommendation, October 2004, http://www.w3.org/TR/xmlschema-2

[XMLSCHEMA2] Biron, P.V., Ed. and Malhotra, A., Ed., "XML Schema Part 2: Datatypes", W3C Recommendation, May 2001, http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/

### 1.2.2 Informative References

[MS-GLOS] Microsoft Corporation, "Windows Protocols Master Glossary".

[MS-OFCGLOS] Microsoft Corporation, "Microsoft Office Master Glossary".

[WSSE 1.0] Nadalin, A., Kaler, C., Hallam-Baker, P., and Monzillo, R., Eds., "Web Services Security: SOAP Message Security 1.0 (WS-Security 2004)", OASIS Standard 200401, March 2004, http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-soap-message-security-1.0.pdf

### 1.3 Overview

The User Profile Synchronization (UPS): Schema Exchange Protocol Profile is a profile of [WS-MetaDataExchange] that enables a client to retrieve metadata from a server. Included in this metadata are [XMLSCHEMA1/2] elements, which describe the structures described in [MS-UPSCDS].
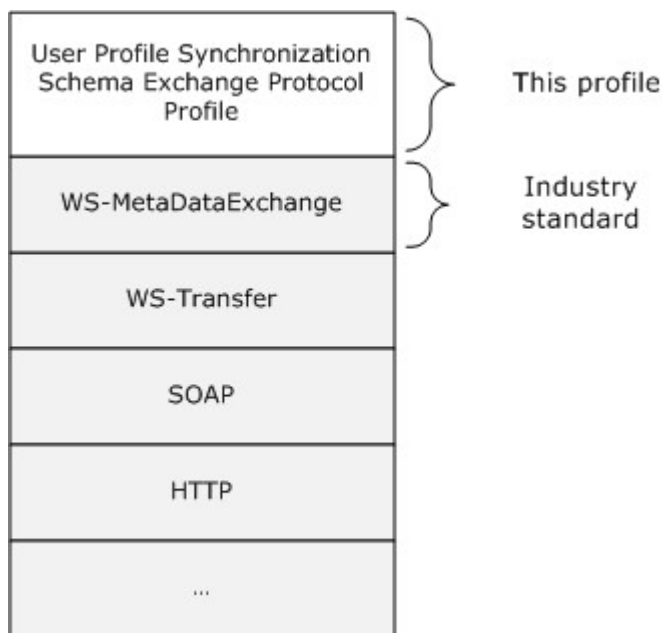
As an example of how the server accepts a request message sent by a client, as described in [WS-MetaDataExchange], and the server then returns a response message see section 4. The following figure, Message Pattern of the User Profile Synchronization (UPS): Schema Exchange Protocol Profile, illustrates this behavior.



**Figure 1: Message pattern of the User Profile Synchronization (UPS): Schema Exchange Protocol Profile**

## 1.4   Relationship to Other Protocols

The User Profile Synchronization (UPS): Schema Exchange Protocol Profile uses the SOAP protocol, as described in [SOAP1.2/1], over **HTTP** as shown in the following figure.



**Figure 2: This protocol in relation to other protocols**

## 1.5   Prerequisites/Preconditions

The operations described by this profile operate between a client and a server. The client is expected to have the **URL** of the resource **endpoint (4)** of the server.

The protocol server endpoint is formed by appending "/_vti_bin/OfficialFile.asmx " to the URL of the site, for example: http://www.example.com/Repository/_vti_bin/OfficialFile.asmx.

## 1.6   Applicability Statement

This profile is intended to return the **XML schema** elements, as described in [XMLSCHEMA1/2], of the User Profile Synchronization: Configuration Data Structure [MS-UPSCDS].

## 1.7   Versioning and Capability Negotiation

None.

## 1.8   Vendor-Extensible Fields

None.

## 1.9   Standards Assignments

All request messages defined in this profile are transmitted over **Transmission Control Protocol (TCP)** to a server listening on port 5725.

| Parameter | Value | Reference |
|---|---|---|
| TCP Port | 5725 | [IANAPORT] |

# 2 Messages

## 2.1 Transport

Messages MUST be transported using the SOAP protocol, as specified in [SOAP1.2/1], over HTTP. The HTTP connection is made by a client to a server listening on TCP port 5725.

## 2.2 Common Message Syntax

This section contains common definitions used by this profile. The syntax of the definitions uses an XML schema as defined in [XMLSCHEMA1/2] and [XMLSCHEMA2/2], and the **Web Services Description Language (WSDL)** as defined in [WSDL].

### 2.2.1 Namespaces

This specification defines and references various **XML namespaces** using the mechanisms specified in [XMLNS]. Although this specification associates a specific XML namespace prefix for each XML namespace that is used, the choice of any particular XML namespace prefix is implementation-specific and is not significant for interoperability.

| Prefix | Namespace URI | Reference |
|--------|---------------|-----------|
| xs | http://www.w3.org/2001/XMLSchema | [XMLSCHEMA1/2] |
| wxf | http://schemas.xmlsoap.org/ws/2004/09/transfer | [WXFR] |
| rm | http://schemas.microsoft.com/2006/11/ResourceManagement | [MS-UPSCDS] |
| mex | http://schemas.xmlsoap.org/ws/2004/09/mex | [WS-MetaDataExchange] |

### 2.2.2 Messages

| Message | Description |
|---------|-------------|
| GetMetadataMsg (section 2.2.2.1) | A message the client sends to request metadata from the server. |
| GetMetadataResponseMsg section 2.2.2.2() | A message the server sends in response to a GetMetadataMsg request. |

#### 2.2.2.1 GetMetadataMsg

The client sends the message **GetMetadataMsg** to request metadata from the server.

In contrast with section 5.2 of [WS-MetaDataExchange], the **SOAP action** value of the message MUST be:

```
http://schemas.xmlsoap.org/ws/2004/09/transfer/Get
```

The **SOAP body** MUST contain the element `<mex:GetMetadata>`. The element `<mex:GetMetadata>` is defined in section 2.2.3.3.

```
<wsdl:message name="GetMetadataMsg">
```

```
          <wsdl:part name="Body" element="mex:GetMetadata" />
       </wsdl:message>
```

## 2.2.2.2   GetMetadataResponseMsg

The server sends the message **GetMetadataResponseMsg** in response to a **GetMetadataMsg** request message (section 2.2.2.1).

In contrast with section 5.2 of [WS-MetaDataExchange], the SOAP action value of the message MUST be:

```
  http://schemas.xmlsoap.org/ws/2004/09/transfer/GetResponse
```

The SOAP body MUST contain the element <mex:Metadata>. This element is defined in section 2.2.3.4.

```
    <wsdl:message name="GetMetadataResponseMsg">
      <wsdl:part name="Body" element="mex:Metadata" />
    </wsdl:message>
```

## 2.2.3   Elements

| Element | Description |
|---------|-------------|
| DataType (section 2.2.3.1) | An element that contains the string literal "String". |
| Key (section 2.2.3.2) | An element that contains an integer. |
| GetMetadata (section 2.2.3.3) | An element that contains a query for metadata information. |
| Metadata (section 2.2.3.4) | An element that contains metadata information. |

## 2.2.3.1   DataType

The element `<rm:Data>` is derived from xs:string and MUST be the string literal "String".

```
  <?xml version="1.0" encoding="utf-8"?>
  <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://schemas.microsoft.com/2006/11/ResourceManagement">
    <xs:element name="Key">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:enumeration value="String"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
  </xs:schema>
```

## 2.2.3.2   Key

The element `<rm:Key>` is an xs:integer.

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.microsoft.com/2006/11/ResourceManagement">
  <xs:element name="Key" type="xs:integer"/>
</xs:schema>
```

### 2.2.3.3  GetMetadata

The element `<mex:GetMetadata>` is defined in section 5.2 of [WS-MetaDataExchange].

As a profile of [WS-MetaDataExchange], the element `<mex:GetMetadata>` MUST contain the attribute `<mex:Dialect>`, and the value of `<mex:Dialect>` MUST be set to the literal string "http://www.w3.org/2001/XMLSchema".

As a profile of [WS-MetaDataExchange], the element `<mex:GetMetadata>` MUST contain the attribute `<mex:Identifier>`, and the value of `<mex:Identifier>` MUST be set to the literal string ":".

### 2.2.3.4  Metadata

The element `<mex:Metadata>` is defined in section 4 of [WS-MetaDataExchange].

As a profile of [WS-MetaDataExchange], the first child of element `<mex:Metadata>` MUST be element `<mex:MetadataSection>`. This element `<mex:MetadataSection>` MUST have an **XML attribute @xmlns** with its value set to the empty string. The element `<mex:MetadataSection>` MUST have an XML attribute **@mex:Identifier** with a value set to the literal string ":". The element `<mex:MetadataSection>` MUST have an XML attribute **@mex:Dialect** with its value set to the literal string "http://www.w3.org/2001/XMLSchema". See section 4.1.2 for an example of this element.

As a profile of [WS-MetaDataExchange], the first child of the element `<mex:MetadataSection>` MUST be element `<xs:schema>`. The element `<xs:schema>` is defined in [XMLSCHEMA1/2].

As a profile of [WS-MetaDataExchange], [XMLSCHEMA1/2] annotations are present in <xs:element> elements. Annotating elements is defined in section 3.13 of [XMLSCHEMA1/2]. The manner in which a client uses annotations is not defined.

```
//xs:element/xs:annotation
```

The element `<xs:annotation>`, defined in section 3.13 of [XMLSCHEMA1/2], MUST be present as a child of all `<xs:element>` elements.

```
//xs:element/xs:annotation/xs:appinfo
```

The element `<xs:appinfo>`, defined in section 3.13 of [XMLSCHEMA1/2], MUST be present as a child of all `<xs:annotation>` elements.

```
//xs:element/xs:annotation/xs:appinfo/rm:DisplayName
```

The element `<rm:DisplayName>`, defined in section [MS-UPSCDS] section 2.1.3, MUST be present as a child of all `<xs:appinfo>` elements used to annotate `<xs:element>` elements.

```
//xs:element/xs:annotation/xs:appinfo/rm:Description
```

The element `<rm:Description>`, defined in [MS-UPSCDS] section 2.1.3, MUST be present as a child of all `<xs:appinfo>` elements used to annotate `<xs:element>` elements.

```
//xs:element/xs:annotation/xs:appinfo/rm:Key
```

The element `<rm:Key>`, defined in section 2.2.3.1 of this specification, MUST be present as a child of all `<xs:appinfo>` elements used to annotate `<xs:element>` elements.

```
//xs:simpleType[/xs:restriction/@xs:base="xs:string"
/xs:pattern/@xs:value=".{0,448}"]/xs:annotation
```

The element `<xs:annotation>`, defined in section 3.13 of [XMLSCHEMA1/2], MUST be present as a child of all `<xs:simpleType>` elements that derive from `<xs:string>` with the pattern ".{0,448}".

```
//xs:simpleType[/xs:restriction/@xs:base="xs:string"
/xs:pattern/@xs:value=".{0,448}"]/xs:annotation/xs:appinfo
```

The element `<xs:appinfo>`, defined in section 3.13 of [XMLSCHEMA1/2], MUST be present as a child of all `<xs:annotation>` elements that are children of `<xs:simpleType>` elements that derive from xs:string with pattern ".{0,448}".

```
//xs:simpleType[/xs:restriction/@xs:base="xs:string"/xs:pattern/@xs:value=".{0,448}"]/xs:anno
tation/xs:appinfo/rm:DataType
```

The element `<rm:DataType>`, defined in section 2.2.3.1 of this specification, MUST be present as a child of all `<xs:appinfo>` elements that are used to annotate `<xs:simpleType>` elements that are derived from xs:string with the pattern ".{0,448}".

### 2.2.4   Complex Types

This specification does not define any common XML schema complex type definitions.

### 2.2.5   Simple Types

This specification does not define any common XML schema simple type definitions.

### 2.2.6   Attributes

This specification does not define any common XML schema attribute definitions.

### 2.2.7   Groups

This specification does not define any common XML schema group definitions.

### 2.2.8   Attribute Groups

This specification does not define any common XML schema attribute group definitions.

## 2.3   Directory Service Schema Elements

Implementations of this profile do not require access to any **directory service (DS)** schema classes or attributes.

# 3   Protocol Details

## 3.1   Server Details

As a profile of [WS-MetaDataExchange], the server MUST provide the Resource endpoint (4) defined by the Resource **port** type in [WXFR]. The server processes the following operation on the Resource endpoint (4):

▪ Get

### 3.1.1   Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this profile. The described organization is provided to facilitate the explanation of how an implementation following this profile of [WS-MetaDataExchange] behaves. This document does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this document.

No new abstract data model is required other than those specified in [WS-MetaDataExchange] and [MS-UPSCDS].

### 3.1.2   Timers

None.

### 3.1.3   Initialization

There is no initialization in this profile. All **policy**, schema, and operations MUST be pre-configured prior to the client sending requests.

### 3.1.4   Message Processing Events and Sequencing Rules

| Operation | Description |
|-----------|-------------|
| Get | An operation that accepts a **GetMetadataMsg** request (section 2.2.2.1) from the client and returns a **GetMetadataResponseMsg** response (section 2.2.2.2). |

#### 3.1.4.1   Get

A client sends a **GetMetadataMsg** message, defined in section 2.2.2.1 of this specification, to the Resource endpoint (4) of the server to request metadata from the server. Upon successful processing of the GetMetadataMsg message, the server responds with a **GetMetadataResponseMsg** message, defined in section 2.2.2.2 of this specification.

```
    <wsdl:operation name="Get">
      <soap12:operation soapAction="http://schemas.xmlsoap.org/ws/2004/09/transfer/Get"
style="document" />
      <wsdl:input wsdl:message="mex:GetMetadataMsg"
wsa:Action="http://schemas.xmlsoap.org/ws/2004/09/transfer/Get">
      </wsdl:input>
      <wsdl:output wsdl:message="mex:GetMetadataResponseMsg"
wsa:Action="http://schemas.xmlsoap.org/ws/2004/09/transfer/GetResponse">
      </wsdl:output>
    </wsdl:operation>
```

If the server cannot successfully process the **GetMetadataMsg** message, the server will ignore any internal error and MUST respond with a **GetMetadataResponseMsg** message.

### 3.1.4.1.1 Messages

This operation defines no messages beyond those present in [WS-MetaDataExchange] and section 2.2.2 of this specification.

### 3.1.4.1.2 Elements

This operation defines no elements beyond those present in [WS-MetaDataExchange].

### 3.1.4.1.3 Complex Types

This operation defines no complex types beyond those present in [WS-MetaDataExchange].

### 3.1.4.1.4 Simple Types

This operation defines no simple types beyond those present in [WS-MetaDataExchange].

### 3.1.4.1.5 Attributes

This operation defines no attributes beyond those present in [WS-MetaDataExchange].

### 3.1.4.1.6 Groups

This operation defines no groups beyond those present in [WS-MetaDataExchange].

### 3.1.4.1.7 Attribute Groups

This operation defines no attribute groups beyond those present in [WS-MetaDataExchange].

## 3.1.5 Timer Events

None.

## 3.1.6 Other Local Events

None.

## 3.2 Client Details

None.

## 3.2.1 Abstract Data Model

None.

## 3.2.2 Timers

None.

### 3.2.3   Initialization

All metadata dialects and identifiers defined are expected to be configured on the client prior to sending requests.

### 3.2.4   Message Processing Events and Sequencing Rules

None.

### 3.2.5   Timer Events

None.

### 3.2.6   Other Local Events

None.

# 4 Protocol Examples

This section provides an example of the **SOAP messages** specified in section 2.

## 4.1 Example of Retrieving Metadata from the Server

In this section, the client requests metadata from the server using a **GetMetadataMsg** message (section 2.2.2.1) that contains a `<mex:GetMetadata>` element. The server responds to the client with a **GetMetadataResponseMsg** message (section 2.2.2.2) that contains a `<mex:Metadata>` element.

### 4.1.1 SOAP GetMetadataMsg Message

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope
  xmlns:a="http://www.w3.org/2005/08/addressing"
  xmlns:s="http://www.w3.org/2003/05/soap-envelope"
  xmlns:mex="http://schemas.xmlsoap.org/ws/2004/09/mex">

  <s:Header>
    <a:Action
s:mustUnderstand="1">http://schemas.xmlsoap.org/ws/2004/09/transfer/Get</a:Action>
    <a:MessageID>urn:uuid:6eb17746-64d0-42fb-8206-af9c2470819b</a:MessageID>
    <a:ReplyTo>
      <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
    </a:ReplyTo>
    <a:To s:mustUnderstand="1">http://localhost:5725/ResourceManagementService/MEX</a:To>
  </s:Header>
  <s:Body>
    <mex:GetMetadata>
      <mex:Dialect>http://www.w3.org/2001/XMLSchema</mex:Dialect>
      <mex:Identifier>:</mex:Identifier>
    </mex:GetMetadata>
  </s:Body>
</s:Envelope>
```

### 4.1.2 SOAP GetMetadataResponseMsg Message

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:a="http://www.w3.org/2005/08/addressing">
    <s:Header>
        <a:Action
s:mustUnderstand="1">http://schemas.xmlsoap.org/ws/2004/09/transfer/GetResponse</a:Action>
        <a:RelatesTo>urn:uuid:6eb17746-64d0-42fb-8206-af9c2470819b</a:RelatesTo>
    </s:Header>
    <s:Body>
        <Metadata xmlns="http://schemas.xmlsoap.org/ws/2004/09/mex"
xmlns:wsx="http://schemas.xmlsoap.org/ws/2004/09/mex">
<wsx:MetadataSection Dialect="http://www.w3.org/2001/XMLSchema" Identifier=":" xmlns="">
                <xs:schema attributeFormDefault="unqualified" elementFormDefault="qualified"
targetNamespace="http://schemas.microsoft.com/2006/11/ResourceManagement" version="1.0"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:rm="http://schemas.microsoft.com/2006/11/ResourceManagement">
                    <xs:simpleType name="ReferenceType">
                        <xs:restriction base="xs:string">
```

```xml
                                  <xs:pattern value="([0-9a-fA-F]){8}-([0-9a-fA-
F]){4}-([0-9a-fA-F]){4}-([0-9a-fA-F]){4}-([0-9a-fA-F]){12}" />
                            </xs:restriction>
                      </xs:simpleType>
                      <xs:complexType name="BinaryCollectionType">
                            <xs:sequence>
                                  <xs:element minOccurs="1" maxOccurs="unbounded" name="Item"
type="xs:base64Binary" />
                            </xs:sequence>
                      </xs:complexType>
                      <xs:complexType name="DateTimeCollectionType">
                            <xs:sequence>
                                  <xs:element minOccurs="1" maxOccurs="unbounded" name="Item"
type="xs:dateTime" />
                            </xs:sequence>
                      </xs:complexType>
                      <xs:complexType name="IntegerCollectionType">
                            <xs:sequence>
                                  <xs:element minOccurs="1" maxOccurs="unbounded" name="Item"
type="xs:integer" />
                            </xs:sequence>
                      </xs:complexType>
                      <xs:complexType name="ReferenceCollectionType">
                            <xs:sequence>
                                  <xs:element minOccurs="1" maxOccurs="unbounded" name="Item"
type="rm:ReferenceType" />
                            </xs:sequence>
                      </xs:complexType>
                      <xs:complexType name="StringCollectionType">
                            <xs:sequence>
                                  <xs:element minOccurs="1" maxOccurs="unbounded" name="Item">
                                        <xs:simpleType>
                                              <xs:annotation>
                                                    <xs:appinfo>
                                                          <rm:DataType>String</rm:DataType>
                                                    </xs:appinfo>
                                              </xs:annotation>
                                              <xs:restriction base="xs:string">
                                                    <xs:pattern value=".{0,448}" />
                                              </xs:restriction>
                                        </xs:simpleType>
                                  </xs:element>
<xs:element minOccurs="1" name="CreatedTime" type="xs:dateTime">
                                        <xs:annotation>
                                              <xs:appinfo>
                                                    <rm:DisplayName>Created Time</rm:DisplayName>
                                                    <rm:Description>The time when the resource is created
in the FIM service database. This attribute is assigned its value by the FIM service. It
cannot be modified by any user.</rm:Description>
                                                    <rm:Key>4</rm:Key>
                                              </xs:appinfo>
                                        </xs:annotation>
                                  </xs:element>
                            </xs:sequence>
                      </xs:complexType>
<xs:element name="mv-dataInstance" type="rm:mv-data" />
                  </xs:schema>
            </wsx:MetadataSection>
      </Metadata>
```

```
        </s:Body>
    </s:Envelope>
```

# 5   Security

## 5.1   Security Considerations for Implementers

In contrast with section 8 of [WS-MetaDataExchange], the server and client do not use security features, as described in [WSSE 1.0].

## 5.2   Index of Security Parameters

None.

# 6 Appendix A: Full WSDL

For ease of implementation, the full WSDL is provided in this appendix.

```xml
<?xml version="1.0" encoding="utf-8"?>
<wsdl:definitions xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/" xmlns:wsu="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsam="http://www.w3.org/2007/05/addressing/metadata"
xmlns:tns="http://schemas.microsoft.com/2006/11/ResourceManagement"
xmlns:wsp="http://www.w3.org/ns/ws-policy"
xmlns:i0="http://schemas.xmlsoap.org/ws/2004/09/transfer"
xmlns:wsap="http://schemas.xmlsoap.org/ws/2004/08/addressing/policy"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:msc="http://schemas.microsoft.com/2005/12/wsdl/contract"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"
xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/"
xmlns:wsa10="http://www.w3.org/2005/08/addressing"
targetNamespace="http://schemas.microsoft.com/2006/11/ResourceManagement"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
xmlns:mex="http://schemas.xmlsoap.org/ws/2004/09/mex"
>
  <wsdl:import namespace="http://schemas.xmlsoap.org/ws/2004/09/transfer"
location="http://schemas.xmlsoap.org/ws/2004/09/transfer/transfer.wsdl" />
  <wsdl:types>
    <xsd:schema targetNamespace="http://schemas.xmlsoap.org/ws/2004/09/mex">
      <xsd:include
schemaLocation="http://schemas.xmlsoap.org/ws/2004/09/mex/metadataexchange.xsd" />
    </xsd:schema>
  </wsdl:types>
  <wsdl:message name="GetMetadataMsg">
    <wsdl:part name="Body" element="mex:GetMetadata" />
  </wsdl:message>
  <wsdl:message name="GetMetadataResponseMsg">
    <wsdl:part name="Body" element="mex:Metadata" />
  </wsdl:message>
  <wsdl:binding name="ServiceMultipleTokenBinding_Resource" type="i0:Resource">
    <soap12:binding transport="http://schemas.xmlsoap.org/soap/http" />
    <wsdl:operation name="Get">
      <soap12:operation soapAction="http://schemas.xmlsoap.org/ws/2004/09/transfer/Get"
style="document" />
      <wsdl:input wsdl:message="mex:GetMetadataMsg"
wsa:Action="http://schemas.xmlsoap.org/ws/2004/09/transfer/Get">
      </wsdl:input>
      <wsdl:output wsdl:message="mex:GetMetadataResponseMsg"
wsa:Action="http://schemas.xmlsoap.org/ws/2004/09/transfer/GetResponse">
      </wsdl:output>
      <wsdl:input>
        <soap12:body use="literal" />
      </wsdl:input>
      <wsdl:output>
        <soap12:body use="literal" />
      </wsdl:output>
    </wsdl:operation>
  </wsdl:binding>
</wsdl:definitions>
```

# 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:

- Microsoft® SharePoint® Server 2010

- Microsoft® SharePoint® Server 2013

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.

# 8 Change Tracking

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

*Release: October 8, 2012*

# 9 Index