

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

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This document provides an overview of the User Profile Synchronization (UPS): Schema Exchange Protocol Profile Protocol Family. It is intended for use in conjunction with the Microsoft Protocol Technical Documents, publicly available standard specifications, network programming art, and Microsoft Windows distributed systems concepts. It assumes that the reader is either familiar with the aforementioned material or has immediate access to it.

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Abstract

Specifies the User Profile Synchronization (UPS): Schema Exchange Protocol Profile, which describes the WS-MetadataExchange profile for UPS schema exchange.

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.
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1 Introduction

This document specifies the User Profile Synchronization (UPS): Schema Exchange Protocol Profile. This profile of [\[WSMETA\]](#) enables clients to discover metadata for a server implementation of the User Profile Synchronization (UPS): Configuration Data Structure [\[MS-UPSCDS\]](#).

As specified in [\[WSMETA\]](#), a client requests the current metadata of the server by using a GetMetadataMsg request. The server responds with a GetMetadataResponseMsg response (also specified in [\[WSMETA\]](#)) that includes the metadata.

1.1 Glossary

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

SOAP action
SOAP body
SOAP message

The following terms are specific to this document:

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.

[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](#)", August 2009.

[SOAP1.2-1/2003] Gudgin, M., Hadley, M., Mendelsohn, N., et al., "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>

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

[WSS1] Nadalin, A., Kaler, C., Hallam-Baker, P., et al., "Web Services Security: SOAP Message Security 1.0 (WS-Security 2004)", March 2004, <http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-soap-message-security-1.0.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] World Wide Web Consortium, "Namespaces in XML 1.0 (Second Edition)", August 2006, <http://www.w3.org/TR/REC-xml-names/>

[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/>

[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/>

[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>

1.2.2 Informative References

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

1.3 Overview

The User Profile Synchronization (UPS): Schema Exchange Protocol Profile specification is a profile of [\[WSMETA\]](#) that enables a client to retrieve metadata from a server. Included in this metadata are [\[XMLSCHEMA1/2\]](#) elements which describe the structures defined in [\[MS-UPSCDS\]](#).

The server accepts a GetMetadataMsg message, as specified in [\[WSMETA\]](#). The server then returns a GetMetadataResponseMsg response. 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 specified in [\[SOAP1.2-1/2003\]](#), over HTTP as shown in the following figure, a Protocol layering diagram of MS-UPSSCXPP:

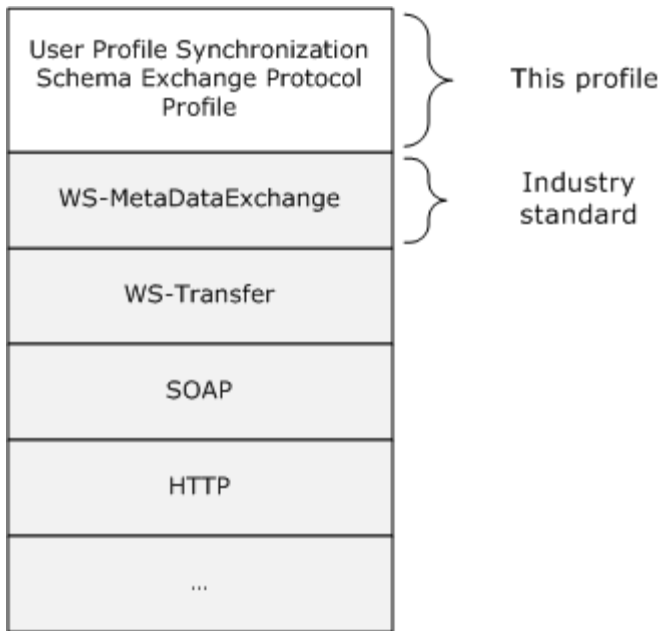


Figure 2: Protocol layering diagram of the User Profile Synchronization (UPS): Schema Exchange Protocol Profile

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 of the server.

1.6 Applicability Statement

This profile is intended to return the XML Schema elements [\[XMLSCHEMA1/2\]](#) elements of the SharePoint 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 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 [\[SOAP1.2-1/2003\]](#), 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 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	[WSMETA]

2.2.2 Messages

Message	Description
GetMetadataMsg	A message the client sends to request metadata from the server.
GetMetadataResponseMsg	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 [\[WSMETA\]](#), 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.

In contrast with section 5.2 of [\[WSMETA\]](#), 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	An element that contains the string literal "String".
Key	An element that contains an integer.
GetMetadata	An element that contains a query for metadata information.
Metadata	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 [\[WSMETA\]](#).

As a profile of [\[WSMETA\]](#), 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 [\[WSMETA\]](#), 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 [\[WSMETA\]](#).

As a profile of [\[WSMETA\]](#), 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 [\[WSMETA\]](#), 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 [\[WSMETA\]](#), [\[XMLSCHEMA1/2\]](#) 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 [2.1.3](#) of [\[MS-UPSCDS\]](#), 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 section [2.1.4](#) of [\[MS-UPSCDS\]](#), 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 who derive from `<xs:string>` with 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 schema classes or attributes.

3 Protocol Details

3.1 Server Details

The User Profile Synchronization (UPS): Schema Exchange Protocol Profile [MS-UPSSCXPP] specification is a profile of [\[WSMETA\]](#).

As a profile of [\[WSMETA\]](#), the server MUST provide the Resource endpoint defined by the Resource port type in [\[WXFR\]](#). The server processes the following operation on the Resource endpoint:

- 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 [\[WSMETA\]](#) 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 [\[WSMETA\]](#) 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 GetMetadadataMsg request from the client and returns a GetMetadadataResponseMsg response.

3.1.4.1 Get

A client sends a [GetMetadadataMsg](#) message, defined in section [2.2.2.1](#) of this specification, to the Resource endpoint of the server to request metadata from the server. Upon successful processing of the [GetMetadadataMsg](#) message, the server responds with a [GetMetadadataResponseMsg](#) 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:GetMetadadataMsg"
wsa:Action="http://schemas.xmlsoap.org/ws/2004/09/transfer/Get">
    </wsdl:input>
  <wsdl:output wsdl:message="mex:GetMetadadataResponseMsg"
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 [\[WSMETA\]](#) and section [2.2.2](#) of this specification.

3.1.4.1.2 Elements

This operation defines no elements beyond those present in [\[WSMETA\]](#).

3.1.4.1.3 Complex Types

This operation defines no complex types beyond those present in [\[WSMETA\]](#).

3.1.4.1.4 Simple Types

This operation defines no simple types beyond those present in [\[WSMETA\]](#).

3.1.4.1.5 Attributes

This operation defines no attributes beyond those present in [\[WSMETA\]](#).

3.1.4.1.6 Groups

This operation defines no groups beyond those present in [\[WSMETA\]](#).

3.1.4.1.7 Attribute Groups

This operation defines no attribute groups beyond those present in [\[WSMETA\]](#).

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** described 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 which contains a `<mex:GetMetadata>` element. The server responds to the client with a [GetMetadataResponseMsg](#) message which 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">
            <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:schema>
    </wsx:MetadataSection>
  </Metadata>
  </s:Body>
</s:Envelope>
```

```

        </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 [\[WSMETA\]](#), the server and client do not use security features, as specified in [\[WSS1\]](#).

5.2 Index of Security Parameters

None.

6 Appendix A: Full WSDL

```
<?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/ws/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: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

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.

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