

[MS-OXWSXPROP]: Extended Properties Web Service Schema

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Revision Summary

| Date | Revision History | Revision Class | Comments |
|------------|------------------|----------------|--------------------------------|
| 07/15/2009 | 1.0 | Major | Initial Availability. |
| 11/04/2009 | 1.1.0 | Minor | Updated the technical content. |

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1 Introduction

This document specifies the Extended Properties Web Service protocol, which is used by clients to manipulate extended properties on an object. Extended properties are custom properties on items and folders in a server's mailbox.

1.1 Glossary

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

SOAP body
SOAP fault
SOAP header
Web Services Description Language (WSDL)
WSDL message
WSDL port type
XML
XML namespace
XML schema

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.

[MS-OXGLOS] Microsoft Corporation, "[Exchange Server Protocols Master Glossary](#)", June 2008.

[MS-OXWSCDATA] Microsoft Corporation, "[Common Web Service Data Types](#)", July 2009.

[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>.

[RFC2396] Berners-Lee, T., Fielding, R., and Masinter, L., "Uniform Resource Identifiers (URI): Generic Syntax", RFC 2396, August 1998, <http://www.ietf.org/rfc/rfc2396.txt>.

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

[RFC2818] Rescorla, E., "HTTP over TLS", RFC 2818, May 2000, <http://www.ietf.org/rfc/rfc2818.txt>.

[SOAP1.1] Box, D., et al., "Simple Object Access Protocol (SOAP) 1.1", May 2000, <http://www.w3.org/TR/2000/NOTE-SOAP-20000508/>.

[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>.

[XMLNS] World Wide Web Consortium, "Namespaces in XML 1.0 (Second Edition)", August 2006, <http://www.w3.org/TR/REC-xml-names/>.

[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] 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

None.

1.3 Protocol Overview

The Extended Web Service Properties protocol specifies the extended property structure used by protocols that handle items and folders.

1.4 Relationship to Other Protocols

The information specified by this protocol is used by other Web Services protocols. Specifications in this document are used by one or more Web Services protocols.

1.5 Prerequisites/Preconditions

None.

1.6 Applicability Statement

The protocol specifications in this document apply to protocols that use extended properties.

1.7 Versioning and Capability Negotiation

This document specifies versioning issues in the following areas:

Supported Transports: This protocol uses SOAP 1.1, as specified in section [2.1](#).

Protocol Versions: This protocol specifies only one **WSDL** portType version.

Security and Authentication Methods: This protocol relies on the Web server that is hosting it to perform authentication.

Localization: This protocol includes text strings in various messages. Localization considerations for such strings are specified in section [3.1.4](#).

Capability Negotiation: None.

1.8 Vendor Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

The SOAP version supported is SOAP 1.1. For details, see [\[SOAP1.1\]](#).

2.2 Common Message Syntax

This section contains common definitions that are used by this protocol. The syntax of the definitions uses **XML schema**, as defined in [\[XMLSCHEMA1\]](#) and [\[XMLSCHEMA2\]](#), and **Web Services Description Language (WSDL)** as defined in [\[WSDL\]](#).

2.2.1 Namespaces

This specification defines and references various [XML namespaces](#) by 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 not significant for interoperability.

| Prefix | Namespace URI | Reference |
|-----------------|---|------------------------------|
| soap | http://schemas.xmlsoap.org/wsdl/soap/ | [SOAP1.1] |
| tns | http://schemas.microsoft.com/exchange/services/2006/messages | [MS-OXWSXPROP] |
| s | http://www.w3.org/2001/XMLSchema | [XMLSCHEMA1] |
| targetNamespace | http://schemas.microsoft.com/exchange/services/2006/messages | [MS-OXWSXPROP] |
| wsdl | http://schemas.xmlsoap.org/wsdl/ | [WSDL] |
| t | http://schemas.microsoft.com/exchange/services/2006/types | [MS-OXWSXPROP] |

2.2.2 Simple Types

The following table summarizes the set of common **XML schema** simple type definitions that are defined by this specification. **XML schema** simple type definitions that are specific to a particular operation are defined with the operation.

| Simple Type | Description |
|--|--|
| t:MapiPropertyTypeType | Specifies the property type. |
| t:PropertyTagType | Specifies the property tag without the type part of the tag. |

2.2.2.1 MapiPropertyTypeType Simple Type

The **MapiPropertyTypeType** simple type specifies the property type.

```
<xs:simpleType name="MapiPropertyTypeType">
  <xs:restriction
```



```
base="xs:string"
>
<xs:enumeration
  value="ApplicationTime"
/>
<xs:enumeration
  value="ApplicationTimeArray"
/>
<xs:enumeration
  value="Binary"
/>
<xs:enumeration
  value="BinaryArray"
/>
<xs:enumeration
  value="Boolean"
/>
<xs:enumeration
  value="CLSID"
/>
<xs:enumeration
  value="CLSIDArray"
/>
<xs:enumeration
  value="Currency"
/>
<xs:enumeration
  value="CurrencyArray"
/>
<xs:enumeration
  value="Double"
/>
<xs:enumeration
  value="DoubleArray"
/>
<xs:enumeration
  value="Error"
/>
<xs:enumeration
  value="Float"
/>
<xs:enumeration
  value="FloatArray"
/>
<xs:enumeration
  value="Integer"
/>
<xs:enumeration
  value="IntegerArray"
/>
<xs:enumeration
  value="Long"
/>
<xs:enumeration
  value="LongArray"
/>
<xs:enumeration
  value="Null"
/>
```

```

<xs:enumeration
  value="Object"
 />
<xs:enumeration
  value="ObjectArray"
 />
<xs:enumeration
  value="Short"
 />
<xs:enumeration
  value="ShortArray"
 />
<xs:enumeration
  value="SystemTime"
 />
<xs:enumeration
  value="SystemTimeArray"
 />
<xs:enumeration
  value="String"
 />
<xs:enumeration
  value="StringArray"
 />
</xs:restriction>
</xs:simpleType>

```

Enumeration

The following values are defined by the **MapiPropertyTypeType** simple type:

| Value | Description |
|----------------------|--|
| ApplicationTime | A double value that is interpreted as a date and time. The integer part is the date and the fraction part is the time. |
| ApplicationTimeArray | An array of double values that are interpreted as a date and time. |
| Binary | A base64-encoded binary value. |
| BinaryArray | An array of base64-encoded binary values. |
| Boolean | A Boolean true or false. |
| CLSID | A GUID string. |
| CLSIDArray | An array of GUID strings. |
| Currency | A 64-bit integer that is interpreted as the number of cents. |
| CurrencyArray | An array of 64-bit integers that are interpreted as the number of cents. |
| Double | A 64-bit floating-point value. |
| DoubleArray | An array of 64-bit floating-point values. |

| Value | Description |
|-----------------|--|
| Error | SCODE value; 32-bit unsigned integer. Not used for restrictions or for getting/setting values. This exists only for reporting. |
| Float | A 32-bit floating-point value. |
| FloatArray | An array of 32-bit floating-point values. |
| Integer | A signed 32-bit (Int32) integer. |
| IntegerArray | An array of signed 32-bit (Int32) integers. |
| Long | A signed or unsigned 64-bit (Int64) integer. |
| LongArray | An array of signed or unsigned 64-bit (Int64) integers. |
| Null | Indicates no property value. Not used for restrictions or for getting/setting values. This exists only for reporting. |
| Object | A pointer to an object that implements the IUnknown interface. Not used for restrictions or for getting/setting values. This exists only for reporting. |
| ObjectArray | An array of pointers to objects that implement the IUnknown interface. Not used for restrictions or for getting/setting values. This exists only for reporting. |
| Short | A signed 16-bit integer. |
| ShortArray | An array of signed 16-bit integers. |
| SystemTime | A 64-bit integer data and time value in the form of a FILETIME structure. |
| SystemTimeArray | An array of 64-bit integer data and time values in the form of a FILETIME structure. |
| String | A Unicode string. |
| StringArray | An array of Unicode strings. |

2.2.2.2 t:PropertyTagType Simple Type

The **PropertyTagType** simple type specifies the property tag without the type part of the tag.

```
<xs:simpleType name="PropertyTagType">
  <xs:union
    memberValues=""
  >
    <xs:simpleType
      id="HexPropertyTagType"
    >
      <xs:restriction
        base="xs:string"
      >
        <xs:pattern
          value="(0x|0X) [0-9A-Fa-f] {1, 4}"
        />
      </xs:restriction>
    </xs:simpleType>
```

```
</xs:union>
</xs:simpleType>
```

Patterns

The following pattern is defined by the **PropertyTagType** simple type:

```
(0x|0X)[0-9A-Fa-f]{1,4}
```

The property tag can be represented in either hexadecimal or decimal form.

2.2.3 Complex Types

The following table summarizes the set of common **XML schema** complex type definitions that are defined by this specification. XML schema complex type definitions that are specific to a particular operation are defined with the operation.

| ComplexType | Description |
|---|--|
| t:NonEmptyArrayOfPropertyValuesType | Specifies a collection of values for an extended property. |
| t:ExtendedPropertyType | Specifies extended properties on folders and items. |
| t:PathToExtendedFieldType | Specifies an extended property. |

2.2.3.1 t:NonEmptyArrayOfPropertyType Complex Type

The **NonEmptyArrayOfPropertyType** complex type specifies a collection of values for an extended property. This array has at least one member.

```
<xs:complexType>
  <xs:choice>
    <xs:element name="Value"
      type="xs:string"
      maxOccurs="unbounded"
    />
  </xs:choice>
</xs:complexType>
```

Child Elements

| Element | Type | Description |
|---------|-----------|---|
| Value | xs:string | Specifies a value for an extended property. |

2.2.3.2 t:ExtendedPropertyType Complex Type

The **ExtendedPropertyType** complex type specifies extended properties on folders and items.

```
<xs:complexType name="ExtendedPropertyType">
```

```

<xs:sequence>
  <xs:element name="ExtendedFieldURI"
    type="t:PathToExtendedFieldType"
  />
  <xs:choice>
    <xs:element name="Value"
      type="xs:string"
    />
    <xs:element name="Values"
      type="t:NonEmptyArrayOfPropertyValuesType"
    />
  </xs:choice>
</xs:sequence>
</xs:complexType>

```

Child Elements

| Element | Type | Description |
|------------------|---|---|
| ExtendedFieldURI | t:PathToExtendedFieldType | Specifies an extended property. |
| Value | xs:string | Specifies a single value for the property specified by the ExtendedFieldURI element. |
| Values | t:NonEmptyArrayOfPropertyValuesType | Specifies two or more values for the property specified by the ExtendedFieldURI element. |

2.2.3.3 t:PathToExtendedFieldType Complex Type

The **PathToExtendedFieldType** type specifies an extended property.

```

<xs:complexType name="PathToExtendedFieldType">
  <xs:complexContent>
    <xs:extension
      base="t:BasePathToElementType"
    >
      <xs:attribute name="DistinguishedPropertySetId"
        type="t:DistinguishedPropertySetType"
        use="optional"
      />
      <xs:attribute name="PropertySetId"
        type="t:GuidType"
        use="optional"
      />
      <xs:attribute name="PropertyTag"
        type="t:PropertyTagType"
        use="optional"
      />
      <xs:attribute name="PropertyName"
        type="xs:string"
        use="optional"
      />
      <xs:attribute name="PropertyId"
        type="xs:int"

```

```

        use="optional"
      />
    <xs:attribute name="PropertyType"
      type="t:MapiPropertyTypeType"
      use="required"
    />
  </xs:extension>
</xs:complexContent>
</xs:complexType>

```

Attributes

| Name | Type | Description |
|----------------------------|--|---|
| DistinguishedPropertySetId | t:DistinguishedPropertySetType | Specifies well-known property set IDs for extended properties. If this attribute is used, then the PropertySetId and PropertyTag attributes cannot be used. This attribute MUST be used with either the PropertyId or PropertyName attributes, and the PropertyType attribute. |
| PropertySetId | t:GuidType | Specifies an extended property set or namespace by its identifying GUID. If this attribute is used, then the DistinguishedPropertySetId and PropertyTag attributes cannot be used. This attribute MUST be used with either the PropertyId or PropertyName attribute, and the PropertyType attribute. |
| PropertyTag | t:PropertyTagType | Specifies the property tag without the type part of the tag. The PropertyTag can be represented as either a hexadecimal or a short integer. If the PropertyTag attribute is used, then the DistinguishedPropertySetId , PropertySetId , PropertyName , and PropertyId attributes MUST not be used. |
| PropertyName | xs:string | Specifies an extended property by its name. This property MUST be coupled with either DistinguishedPropertySetId or PropertySetId . |
| PropertyId | xs:int | Specifies an extended property by its dispatch ID. This property MUST be coupled with either DistinguishedPropertySetId or PropertySetId . |
| PropertyType | t:MapiPropertyTypeType | Specifies the property type of a property tag. This corresponds to the least |

| Name | Type | Description |
|------|------|--|
| | | significant word in a property tag. This property MUST be present. |

2.2.4 Elements

The following table summarizes the set of common XML schema element definitions that are defined by this specification. XML schema element definitions that are specific to a particular operation are defined with the operation.

| Element | Description |
|------------------------------------|--|
| t:ExtendedFieldURI | Specifies an extended MAPI property. |
| t:Value | Specifies the value of an extended property. |

2.2.4.1 ExtendedFieldURI Element

The [t:ExtendedFieldURI](#) element specifies an extended MAPI property.

```
<xs:element name="ExtendedFieldURI"
  type="t:PathToExtendedFieldType"
  />
```

```
<xs:element name="ExtendedFieldURI" type="t:PathToExtendedFieldType"
  substitutionGroup="t:Path"/>
```

Allows substitution of [t:Path](#) for [t:PathToExtendedFieldType](#).

2.2.4.2 Value Element

The [Value](#) element specifies the value of an extended property.

```
<xs:element name="Value"
  type="t:Value"
  />
```

2.2.5 Attributes

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

2.2.6 Groups

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

2.2.7 Attribute Groups

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

2.2.8 Messages

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

3 Protocol Details

This document specifies common XML schema types and elements and does not have any protocol details. This document does not specify any operations.

3.1 Server Details

This document specifies common XML schema types and elements, and does not have any server protocol details.

3.1.1 Abstract Data Model

None.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Message Processing Events and Sequencing Rules

None.

3.1.5 Timer Events

None.

3.1.6 Other Local Events

None.

3.2 Client Details

This document specifies common XML schema types and elements, and does not have any client protocol details.

3.2.1 Abstract Data Model

None.

3.2.2 Timers

None.

3.2.3 Initialization

None.

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

None.

5 Security

5.1 Security Considerations for Implementers

The Extended Exchange Server Web Service Properties protocol does not use any additional security mechanisms.

5.2 Index of Security Parameters

None.

6 Appendix A: Full WSDL

The following **XML** file is required to implement the functionality described in other protocol specifications. The contents of the file are contained in this section. This protocol does not define a WSDL file. This protocol defines an XML schema file that is referenced by other WSDL and XML schema files.

| Section | Protocol Filename | Description |
|------------------------------|------------------------|---|
| Types Schema | MS-OXWSXPROP-types.xsd | Contains the XML schema type definitions used in this protocol. |

This file **MUST** be placed in a common folder for any referencing WSDL or XML schema file to validate and operate. Also, any schema files that are included or imported into the MS-OXWSXPROP-types.xsd schema **MUST** be placed in the common folder with the file named in the table.

6.1 Types Schema

This section contains the MS-OXWSXPROP-types.xsd file and information about additional files that this schema file requires for correct operation.

MS-OXWSXPROP-types.xsd includes the following file. For correct operation, this file **MUST** be present in the same folder containing this protocol's WSDL, types, and messages schema files.

| Defining Protocol | Filename |
|---|------------------------|
| [MS-OXWSCDATA], section 6.2 | MS-OXWSCDATA-types.xsd |

The following information is the listing of MS-OXWSXPROP-types.xsd.

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://schemas.microsoft.com/exchange/services/2006/types"
  elementFormDefault="qualified" version="Exchange2010" id="types">
  <xs:include schemaLocation="MS-OXWSCDATA-types.xsd"/>
  <xs:element name="ExtendedFieldURI" type="t:PathToExtendedFieldType"
    substitutionGroup="t:Path"/>
  <xs:complexType name="ExtendedPropertyType">
    <xs:sequence>
      <xs:element name="ExtendedFieldURI" type="t:PathToExtendedFieldType"/>
      <xs:choice>
        <xs:element name="Value" type="xs:string"/>
        <xs:element name="Values" type="t:NonEmptyArrayOfPropertyValuesType"/>
      </xs:choice>
    </xs:sequence>
  </xs:complexType>
  <xs:simpleType name="MapiPropertyTypeType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="ApplicationTime"/>
      <xs:enumeration value="ApplicationTimeArray"/>
      <xs:enumeration value="Binary"/>
      <xs:enumeration value="BinaryArray"/>
      <xs:enumeration value="Boolean"/>
      <xs:enumeration value="CLSID"/>
      <xs:enumeration value="CLSIDArray"/>
    </xs:restriction>
  </xs:simpleType>
</xs:schema>
```

```

        <xs:enumeration value="Currency"/>
        <xs:enumeration value="CurrencyArray"/>
        <xs:enumeration value="Double"/>
        <xs:enumeration value="DoubleArray"/>
        <xs:enumeration value="Error"/>
        <xs:enumeration value="Float"/>
        <xs:enumeration value="FloatArray"/>
        <xs:enumeration value="Integer"/>
        <xs:enumeration value="IntegerArray"/>
        <xs:enumeration value="Long"/>
        <xs:enumeration value="LongArray"/>
        <xs:enumeration value="Null"/>
        <xs:enumeration value="Object"/>
        <xs:enumeration value="ObjectArray"/>
        <xs:enumeration value="Short"/>
        <xs:enumeration value="ShortArray"/>
        <xs:enumeration value="SystemTime"/>
        <xs:enumeration value="SystemTimeArray"/>
        <xs:enumeration value="String"/>
        <xs:enumeration value="StringArray"/>
    </xs:restriction>
</xs:simpleType>
<xs:complexType name="NonEmptyArrayOfPropertyValuesType">
    <xs:choice>
        <xs:element name="Value" type="xs:string" maxOccurs="unbounded"/>
    </xs:choice>
</xs:complexType>
<xs:complexType name="PathToExtendedFieldType">
    <xs:complexContent>
        <xs:extension base="t:BasePathToElementType">
            <xs:attribute name="DistinguishedPropertySetId"
type="t:DistinguishedPropertySetType" use="optional"/>
            <xs:attribute name="PropertySetId" type="t:GuidType" use="optional"/>
            <xs:attribute name="PropertyTag" type="t:PropertyTagType"
use="optional"/>
            <xs:attribute name="PropertyName" type="xs:string" use="optional"/>
            <xs:attribute name="PropertyId" type="xs:int" use="optional"/>
            <xs:attribute name="PropertyType" type="t:MapiPropertyTypeType"
use="required"/>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:simpleType name="PropertyTagType">
    <xs:union memberTypes="xs:unsignedShort">
        <xs:simpleType id="HexPropertyTagType">
            <xs:restriction base="xs:string">
                <xs:pattern value="(0x|0X) [0-9A-Fa-f]{1,4}"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:union>
</xs:simpleType>
    <xs:element name="Value" type="t:Value"/>
</xs:schema>

```

7 Appendix B: Product Behavior

The information in this specification is applicable to the following product versions. References to product versions include released service packs.

- Microsoft Exchange Server 2010

Exceptions, if any, are noted below. If a service pack number appears with the product version, behavior changed in that service pack. The new behavior also applies to subsequent service packs of the product unless otherwise specified.

Unless otherwise specified, any statement of optional behavior in this specification 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 product does not follow the prescription.

8 Change Tracking

This section identifies changes made to [MS-OXWSXPROP] protocol documentation between July 2009 and November 2009 releases. Changes are classed as major, minor, or editorial.

Major changes affect protocol interoperability or implementation. Examples of major changes are:

- A document revision that incorporates changes to interoperability requirements or functionality.
- An extensive rewrite, addition, or deletion of major portions of content.
- A protocol is deprecated.
- The removal of a document from the documentation set.
- Changes made for template compliance.

Minor changes do not affect protocol interoperability or implementation. Examples are updates to fix technical accuracy or ambiguity at the sentence, paragraph, or table level.

Editorial changes apply to grammatical, formatting, and style issues.

No changes means that the document is identical to its last release.

Major and minor changes can be described further using the following revision types:

- New content added.
- Content update.
- Content removed.
- New product behavior note added.
- Product behavior note updated.
- Product behavior note removed.
- New protocol syntax added.
- Protocol syntax updated.
- Protocol syntax removed.
- New content added due to protocol revision.
- Content updated due to protocol revision.
- Content removed due to protocol revision.
- New protocol syntax added due to protocol revision.
- Protocol syntax updated due to protocol revision.
- Protocol syntax removed due to protocol revision.
- New content added for template compliance.
- Content updated for template compliance.

- Content removed for template compliance.
- Obsolete document removed.

Editorial changes always have the revision type "Editorially updated."

Some important terms used in revision type descriptions are defined as follows:

Protocol syntax refers to data elements (such as packets, structures, enumerations, and methods) as well as interfaces.

Protocol revision refers to changes made to a protocol that affect the bits that are sent over the wire.

Changes are listed in the following table. If you need further information, please contact protocol@microsoft.com.

| Section | Tracking number (if applicable) and description | Major change (Y or N) | Revision Type |
|-----------------------------------|---|-----------------------|-----------------|
| 8 Change Tracking | 53355 Updated the specification title. | N | Content update. |

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