[MS-OXWSTASK]:
Tasks Web Service Protocol

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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.
02/10/2010	1.1.0	None	Version 1.1.0 release
05/05/2010	1.1.1	Editorial	Revised and edited the technical content.
08/04/2010	1.2	Minor	Clarified the meaning of the technical content.
11/03/2010	2.0	Major	Significantly changed the technical content.
03/18/2011	2.1	Minor	Clarified the meaning of the technical content.
08/05/2011	3.0	Major	Significantly changed the technical content.
10/07/2011	3.0	No change	No changes to the meaning, language, or formatting of the technical content.
01/20/2012	4.0	Major	Significantly changed the technical content.
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11/18/2013	4.2	Minor	Clarified the meaning of the technical content.
02/10/2014	4.2	No change	No changes to the meaning, language, or formatting of the technical content.

Table of Contents

1 Introduction

The Tasks Web Service Protocol enables clients to create, update, and delete task items on a server.

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]:

Hypertext Transfer Protocol (HTTP)
Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS)
SOAP
SOAP message
XML
XML namespace

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

delegate
endpoint
Inbox folder
mailbox
message store
Sent Items folder
Tasks folder
Uniform Resource Locator (URL)
web server
Web Services Description Language (WSDL)
WSDL message
WSDL operation
WSDL port type
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

References to Microsoft Open Specifications documentation do not include a publishing year because links are to the latest version of the 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.

[MS-OXWSCDATA] Microsoft Corporation, "Common Web Service Data Types".

[MS-OXWSCORE] Microsoft Corporation, "Core Items Web Service Protocol".

[MS-OXWSFOLD] Microsoft Corporation, "Folders and Folder Permissions Web Service Protocol".

[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

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

[SOAP1.1] Box, D., Ehnebuske, D., Kakivaya, G., 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] 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] Thompson, H.S., Beech, D., Maloney, M., and Mendelsohn, N., Eds., "XML Schema Part 1: Structures", W3C Recommendation, May 2001, http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/

[XMLSCHEMA2] Biron, P.V., and Malhotra, A., Eds., "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-OXDSCLI] Microsoft Corporation, "Autodiscover Publishing and Lookup Protocol".

[MS-OXGLOS] Microsoft Corporation, "Exchange Server Protocols Master Glossary".

[MS-OXPROTO] Microsoft Corporation, "Exchange Server Protocols System Overview".

[MS-OXWSADISC] Microsoft Corporation, "Autodiscover Publishing and Lookup SOAP-Based Web Service Protocol".

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

1.3   Overview

The Tasks Web Service Protocol provides clients with the ability to create, update, and delete task items on the server. Clients create task items by using the **CreateItem** operation, as described in [MS-OXWSCORE] section 3.1.4.2, or get properties of an existing task item by using the **GetItem** operation, as described in [MS-OXWSCORE] section 3.1.4.4. Clients can also update, delete, or copy tasks on the server by the using **UpdateItem** operation ([MS-OXWSCORE] section 3.1.4.7), the **DeleteItem** operation ([MS-OXWSCORE] section 3.1.4.3), and the **CopyItem** operation ([MS-OXWSCORE] section 3.1.4.1), respectively.

1.4   Relationship to Other Protocols

A client that implements this protocol can use the Autodiscover Publishing and Lookup SOAP-Based Web Service Protocol, as described in [MS-OXWSADISC], or the Autodiscover Publishing and Lookup

Protocol, as described in [MS-OXDSCLI], to identify the target **endpoint (4)** to use for each operation.

This protocol uses the SOAP Protocol, as described in [SOAP1.1], to specify the structure information exchanged between the client and server. This protocol uses the **XML** Protocol, as described in [XMLSCHEMA1] and [XMLSCHEMA2], to describe the message content sent to and from the server.

The Tasks Web Service Protocol uses **SOAP** over **HTTP**, as described in [RFC2616], and SOAP over **HTTPS**, as described in [RFC2818], as shown in the following layering diagram.

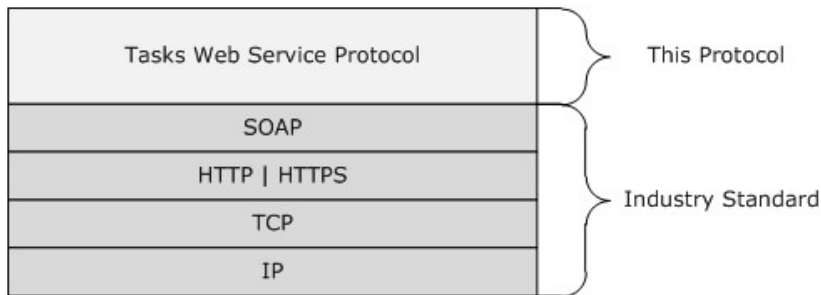**Figure 1: This protocol in relation to other protocols.**

When requests are made by using the Core Items Web Service Protocol [MS-OXWSCORE], the task information that is returned by the Tasks Web Service Protocol will be used if the targets of the requests are task items.

For conceptual background information and overviews of the relationships and interactions between this and other protocols, see [MS-OXPROTO].

1.5   Prerequisites/Preconditions

The endpoint (4) **URL** that is returned by either the Autodiscover Publishing Lookup SOAP-Based Web Service Protocol, as described in [MS-OXWSADISC], or the Autodiscover Publishing and Lookup Protocol, as described in [MS-OXDSCLI], is required to form the HTTP request to the **web server** that hosts this protocol. The operations that this protocol defines cannot be accessed unless the correct endpoint (4) is identified in the HTTP Web requests that target this protocol.

1.6   Applicability Statement

The protocol specified in this document is applicable to environments that create, delete, and update task items.

1.7   Versioning and Capability Negotiation

This document covers versioning issues in the following areas:

- **Supported Transports:** This protocol uses multiple transports with SOAP 1.1, as specified in section 2.1.

- **Protocol Versions:** This protocol has only one **WSDL port type** version. The **WSDL** version of the request is identified by using the **t:RequestServerVersion** element, as described in [MS-OXWSCDATA] section 2.2.3.9, and the version of the server responding to the request is identified by using the **t:ServerVersionInfo** element, as described in [MS-OXWSCDATA] section 2.2.3.10.

- **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 sections 2.2 and 3.1.4.

- **Capability Negotiation:** This protocol does not support version negotiation.

1.8   Vendor Extensible Fields

None.

1.9   Standards Assignments

None.

2   Messages

In the following sections, the schema definition might differ from the processing rules imposed by the protocol. The WSDL in this specification provides a base description of the protocol. The schema in this specification provides a base description of the message syntax. The text that specifies the WSDL and schema might specify restrictions that reflect actual protocol behavior. For example, the schema definition might allow for an element to be **empty**, **null**, or **not present** but the behavior of the protocol as specified restricts the same elements to being **non-empty**, **not null**, or **present**.

2.1   Transport

The SOAP version supported is SOAP 1.1. For details, see [SOAP1.1].

This protocol relies on the web server that hosts the application to perform authentication. The protocol SHOULD use secure communications by means of HTTPS, as defined in [RFC2818]. The protocol server SHOULD additionally support SOAP over HTTP as a transport means.

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 WSDL as defined in [WSDL].

2.2.1   Namespaces

This specification defines and references various **XML namespaces** by using the mechanisms that are 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	
s	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1]
targetNamespace	http://schemas.microsoft.com/exchange/services/2006/messages	
wsdl	http://schemas.xmlsoap.org/wsdl/	[WSDL]
t	http://schemas.microsoft.com/exchange/services/2006/types	

2.2.2   Messages

This specification does not define any common **WSDL message** definitions.

2.2.3   Elements

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

2.2.4   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.

Complex type name	Description
TaskRecurrenceType	Specifies the recurrence pattern for tasks.
TasksFolderType	Specifies a **Tasks folder** that is contained in a **mailbox**.
TaskType	Specifies a task in the **message store**.
DailyRegeneratingPatternType	Specifies the interval, in days, at which a task is regenerated.
MonthlyRegeneratingPatternType	Specifies the interval, in months, at which a task is regenerated.
RegeneratingPatternBaseType	Specifies the base type for all regenerating patterns.
WeeklyRegeneratingPatternType	Specifies the interval, in weeks, at which a task is regenerated.
YearlyRegeneratingPatternType	Specifies the interval, in years, at which a task is regenerated.

2.2.4.1   t:TaskRecurrenceType Complex Type

The **TaskRecurrenceType** complex type specifies the recurrence pattern for tasks.

```
<xs:complexType name="TaskRecurrenceType">
  <xs:sequence>
    <xs:group
      ref="t:TaskRecurrencePatternTypes"
     />
    <xs:group
      ref="t:RecurrenceRangeTypes"
     />
  </xs:sequence>
</xs:complexType>
```

The following table lists and describes the groups of the **TaskRecurrenceType** complex type.

Reference name	Description
t:TaskRecurrencePatternTypes (section 2.2.7.1)	Specifies recurrence information for recurring tasks.
t:RecurrenceRangeTypes ([MS-OXWSCDATA] section 2.2.7.2)	Specifies recurrence patterns with numbered recurrences, nonending recurrence patterns, and recurrence patterns with a set start date and end date.

2.2.4.2   t:TasksFolderType Complex Type

The **TasksFolderType** complex type specifies a Tasks folder that is contained in a mailbox. The **TasksFolderType** complex type extends the **FolderType** complex type, as specified in [MS-OXWSFOLD] section 2.2.4.10.

```
<xs:complexType name="TasksFolderType">
  <xs:complexContent>
    <xs:extension
      base="t:FolderType"
     />
  </xs:complexContent>
</xs:complexType>
```

2.2.4.3   t:TaskType Complex Type

The **TaskType** complex type specifies a task in the message store. The **TaskType** complex type extends the **ItemType** complex type, as specified in [MS-OXWSCORE] section 2.2.4.22.

```
<xs:complexType name="TaskType">
  <xs:complexContent>
    <xs:extension
      base="t:ItemType"
    >
      <xs:sequence>
        <xs:element name="ActualWork"
          type="xs:int"
          minOccurs="0"
         />
        <xs:element name="AssignedTime"
          type="xs:dateTime"
          minOccurs="0"
         />
        <xs:element name="BillingInformation"
          type="xs:string"
          minOccurs="0"
         />
        <xs:element name="ChangeCount"
          type="xs:int"
          minOccurs="0"
         />
        <xs:element name="Companies"
          type="t:ArrayOfStringsType"
          minOccurs="0"
         />
        <xs:element name="CompleteDate"
          type="xs:dateTime"
          minOccurs="0"
         />
        <xs:element name="Contacts"
          type="t:ArrayOfStringsType"
          minOccurs="0"
         />
        <xs:element name="DelegationState"
          type="t:TaskDelegateStateType"
          minOccurs="0"
         />
        <xs:element name="Delegator"
          type="xs:string"
          minOccurs="0"
         />
        <xs:element name="DueDate"
```

```
      type="xs:dateTime"
      minOccurs="0"
     />
    <xs:element name="IsAssignmentEditable"
      type="xs:int"
      minOccurs="0"
     />
    <xs:element name="IsComplete"
      type="xs:boolean"
      minOccurs="0"
     />
    <xs:element name="IsRecurring"
      type="xs:boolean"
      minOccurs="0"
     />
    <xs:element name="IsTeamTask"
      type="xs:boolean"
      minOccurs="0"
     />
    <xs:element name="Mileage"
      type="xs:string"
      minOccurs="0"
     />
    <xs:element name="Owner"
      type="xs:string"
      minOccurs="0"
     />
    <xs:element name="PercentComplete"
      type="xs:double"
      minOccurs="0"
     />
    <xs:element name="Recurrence"
      type="t:TaskRecurrenceType"
      minOccurs="0"
     />
    <xs:element name="StartDate"
      type="xs:dateTime"
      minOccurs="0"
     />
    <xs:element name="Status"
      type="t:TaskStatusType"
      minOccurs="0"
     />
    <xs:element name="StatusDescription"
      type="xs:string"
      minOccurs="0"
     />
    <xs:element name="TotalWork"
      type="xs:int"
      minOccurs="0"
     />
   </xs:sequence>
  </xs:extension>
 </xs:complexContent>
</xs:complexType>
```

The following table lists and describes the child elements of the **TaskType** complex type.

Element name	Type	Description
ActualWork	**xs:int** [XMLSCHEMA2]	Specifies an integer value that specifies the actual amount of time that is spent on a task.
AssignedTime	**xs:dateTime** [XMLSCHEMA2]	Specifies an instance of the **DateTime** structure that contains the time when a task is assigned to a contact.
BillingInformation	**xs:string** [XMLSCHEMA2]	Specifies a string value that contains billing information for a task.
ChangeCount	**xs:int**	Specifies an integer value that specifies the version of a task.
Companies	**t:ArrayOfStringsType** ([MS-OXWSCDATA] section 2.2.4.11)	Specifies an instance of an array of type **string** that represents a collection of companies that are associated with a task.
CompleteDate	**xs:dateTime**	Specifies an instance of the **DateTime** structure that represents the date on which a task was completed.
Contacts	**t:ArrayOfStringsType**	Specifies an instance of an array of type **string** that contains a list of contacts that are associated with a task.
DelegationState	**t:TaskDelegateStateType** (section 2.2.5.1)	Specifies one of the valid TaskDelegateStateType simple type enumeration values that represent the status of a delegated task.
Delegator	**xs:string**	Specifies a **string** value that contains the name of the delegator who assigned a task.
DueDate	**xs:dateTime**	Specifies an instance of the **DateTime** structure that represents the date when a task is due.
IsAssignmentEditable	**xs:int**	Specifies an **integer** value that represents the task type.
IsComplete	**xs:boolean** [XMLSCHEMA2]	Specifies a **Boolean** value that indicates whether a task has been completed.
IsRecurring	**xs:boolean**	Specifies a **Boolean** value that indicates whether a task is part of a recurring task.
IsTeamTask	**xs:boolean**	Specifies a **Boolean** value that indicates whether a task is owned by a team.
Mileage	**xs:string**	Specifies a **string** value that represents the mileage for a task.
Owner	**xs:string**	Specifies a **string** value that represents the owner of a task.
PercentComplete	**xs:double** [XMLSCHEMA2]	Specifies a **double** value from 0 through

Element name	Type	Description
		100 that describes the completion status of a task.
Recurrence	**t:TaskRecurrenceType** (section 2.2.5.1)	Specifies an instance of the TaskRecurrenceType complex type that contains recurrence information for a recurring task.
StartDate	**xs:dateTime**	Specifies an instance of the **DateTime** structure that represents the start date of a task.
Status	**t:TaskStatusType** (section 2.2.5.2)	Specifies one of the valid TaskStatusType simple type enumeration values that represent the status of a task.
StatusDescription	**xs:string**	Specifies a **string** value that contains an explanation of the status of a task.
TotalWork	**xs:int**	Specifies an **integer** value that represents the total amount of work that is associated with a task.

2.2.4.4   t:DailyRegeneratingPatternType Complex Type

The **DailyRegeneratingPatternType** complex type specifies the interval, in days, at which a task is regenerated. The **DailyRegeneratingPatternType** complex type extends the **RegeneratingPatternBaseType** complex type, as specified in section 2.2.4.6.

```
<xs:complexType name="DailyRegeneratingPatternType">
  <xs:complexContent>
    <xs:extension
      base="t:RegeneratingPatternBaseType"
     />
  </xs:complexContent>
</xs:complexType>
```

2.2.4.5   t:MonthlyRegeneratingPatternType Complex Type

The **MonthlyRegeneratingPatternType** complex type specifies the interval, in months, at which a task is regenerated. The **MonthlyRegeneratingPatternType** complex type extends the **RegeneratingPatternBaseType** complex type, as specified in section 2.2.4.6.

```
<xs:complexType name="MonthlyRegeneratingPatternType">
  <xs:complexContent>
    <xs:extension
      base="t:RegeneratingPatternBaseType"
     />
  </xs:complexContent>
</xs:complexType>
```

2.2.4.6   t:RegeneratingPatternBaseType Complex Type

The **RegeneratingPatternBaseType** complex type specifies the base type for all regenerating patterns. The **RegeneratingPatternBaseType** complex type extends the **IntervalRecurrencePatternBaseType** complex type, as specified in [MS-OXWSCDATA] section 2.2.4.36.

```
<xs:complexType name="RegeneratingPatternBaseType"
  abstract="true"
>
  <xs:complexContent>
    <xs:extension
      base="t:IntervalRecurrencePatternBaseType"
    />
  </xs:complexContent>
</xs:complexType>
```

2.2.4.7   t:WeeklyRegeneratingPatternType Complex Type

The **WeeklyRegeneratingPatternType** complex type specifies the interval, in weeks, at which a task is regenerated. The **WeeklyRegeneratingPatternType** complex type extends the **RegeneratingPatternBaseType** complex type, as specified in section 2.2.4.6.

```
<xs:complexType name="WeeklyRegeneratingPatternType">
  <xs:complexContent>
    <xs:extension
      base="t:RegeneratingPatternBaseType"
    />
  </xs:complexContent>
</xs:complexType>
```

2.2.4.8   t:YearlyRegeneratingPatternType Complex Type

The **YearlyRegeneratingPatternType** complex type specifies the interval, in years, at which a task is regenerated. The **YearlyRegeneratingPatternType** complex type extends the **RegeneratingPatternBaseType** complex type, as specified in section 2.2.4.6.

```
<xs:complexType name="YearlyRegeneratingPatternType">
  <xs:complexContent>
    <xs:extension
      base="t:RegeneratingPatternBaseType"
    />
  </xs:complexContent>
</xs:complexType>
```

2.2.5   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 name	Description
TaskDelegateStateType	Specifies the status types of a delegated task. This enumeration is never set.
TaskStatusType	Specifies the status types of a task item.

2.2.5.1 t:TaskDelegateStateType Simple Type

The **TaskDelegateStateType** simple type specifies the status types of a delegated task. The values for this simple type are never set.

```
<xs:simpleType name="TaskDelegateStateType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="Accepted"
     />
    <xs:enumeration
      value="Declined"
     />
    <xs:enumeration
      value="Max"
     />
    <xs:enumeration
      value="NoMatch"
     />
    <xs:enumeration
      value="Owned"
     />
    <xs:enumeration
      value="OwnNew"
     />
  </xs:restriction>
</xs:simpleType>
```

The following tables lists the values that are defined by the **TaskDelegateStateType** simple type.

Value name	Meaning
Accepted	Specifies that the task has been declined.
Declined	Not used.
Max	Not used.
NoMatch	Specifies that this is not a delegated task or that the task request has been created but not sent. This value is also used for a task request message, whether it's in the owner's **Sent Items folder** or the **delegate's Inbox folder**.
Owned	Specifies that the task has been accepted. This value cannot be in the simple type.
OwnNew	Specifies that this is a new task request that has been sent, but the delegate has not yet responded to the request.

2.2.5.2 t:TaskStatusType Simple Type

The **TaskStatusType** simple type specifies the status of a task item.

```
<xs:simpleType name="TaskStatusType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="Completed"
     />
    <xs:enumeration
      value="Deferred"
     />
    <xs:enumeration
      value="InProgress"
     />
    <xs:enumeration
      value="NotStarted"
     />
    <xs:enumeration
      value="WaitingOnOthers"
     />
  </xs:restriction>
</xs:simpleType>
```

The following table lists the values that are defined by the **TaskStatusType** simple type.

Value name	Meaning
Completed	Specifies that the task is completed.
Deferred	Specifies that the task is deferred.
InProgress	Specifies that the task is in progress.
NotStarted	Specifies that the task is not started.
WaitingOnOthers	Specifies that the task is waiting on other tasks.

2.2.6 Attributes

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

2.2.7 Groups

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

Group name	Description
TaskRecurrencePatternTypes	Specifies recurrence information for recurring tasks.

2.2.7.1 TaskRecurrencePatternTypes Group

The **TaskRecurrencePatternTypes** group specifies recurrence information for recurring tasks.

```xml
<xs:group name="TaskRecurrencePatternTypes">
  <xs:sequence>
    <xs:choice>
      <xs:element name="RelativeYearlyRecurrence"
        type="t:RelativeYearlyRecurrencePatternType"
       />
      <xs:element name="AbsoluteYearlyRecurrence"
        type="t:AbsoluteYearlyRecurrencePatternType"
       />
      <xs:element name="RelativeMonthlyRecurrence"
        type="t:RelativeMonthlyRecurrencePatternType"
       />
      <xs:element name="AbsoluteMonthlyRecurrence"
        type="t:AbsoluteMonthlyRecurrencePatternType"
       />
      <xs:element name="WeeklyRecurrence"
        type="t:WeeklyRecurrencePatternType"
       />
      <xs:element name="DailyRecurrence"
        type="t:DailyRecurrencePatternType"
       />
      <xs:element name="DailyRegeneration"
        type="t:DailyRegeneratingPatternType"
       />
      <xs:element name="WeeklyRegeneration"
        type="t:WeeklyRegeneratingPatternType"
       />
      <xs:element name="MonthlyRegeneration"
        type="t:MonthlyRegeneratingPatternType"
       />
      <xs:element name="YearlyRegeneration"
        type="t:YearlyRegeneratingPatternType"
       />
    </xs:choice>
  </xs:sequence>
</xs:group>
```

The following table lists and describes the child elements of the **TaskRecurrencePatternTypes** group.

Element name	Type	Description
RelativeYearlyRecurrence	**t:RelativeYearlyRecurrencePatternType** ([MS-OXWSCDATA] section 2.2.4.53)	Specifies a relative yearly recurrence pattern for a recurring task.
AbsoluteYearlyRecurrence	t:AbsoluteYearlyRecurrencePatternType ([MS-OXWSCDATA] section 2.2.4.2)	Specifies a yearly recurrence pattern for a recurring task.
RelativeMonthlyRecurrence	t:RelativeMonthlyRecurrencePatternType ([MS-	Specifies a relative monthly recurrence

Element name	Type	Description
	OXWSCDATA] section 2.2.4.52)	pattern for a recurring task.
AbsoluteMonthlyRecurrence	t:AbsoluteMonthlyRecurrencePatternType ([MS-OXWSCDATA] section 2.2.4.1)	Specifies a monthly recurrence pattern for a recurring task.
WeeklyRecurrence	t:WeeklyRecurrencePatternType ([MS-OXWSCDATA] section 2.2.4.64)	Specifies the weekly interval at which and the days on which a task recurs.
DailyRecurrence	t:DailyRecurrencePatternType ([MS-OXWSCDATA] section 2.2.4.21)	Specifies the interval, in days, at which a task recurs.
DailyRegeneration	t:DailyRegeneratingPatternType (section 2.2.4.4)	Specifies how many days after the completion of the current task the next occurrence will happen.
WeeklyRegeneration	t:WeeklyRegeneratingPatternType (section 2.2.4.7)	Specifies how many weeks after the completion of the current task the next occurrence will happen.
MonthlyRegeneration	t:MonthlyRegeneratingPatternType (section 2.2.4.5)	Specifies how many months after the completion of the current task the next occurrence will happen.
YearlyRegeneration	t:YearlyRegeneratingPatternType (section 2.2.4.8)	Specifies how many years after the completion of the current task the next occurrence will happen.

2.2.8 Attribute Groups

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

2.2.9 Common Data Structures

This specification does not define any common XML schema data structures.

3   Protocol Details

The client side of this protocol is simply a pass-through. That is, no additional timers or other state is required on the client side of this protocol. Calls made by the higher-layer protocol or application are passed directly to the transport, and the results returned by the transport are passed directly back to the higher-layer protocol or application.

3.1   ExchangeServicePortType Server Details

The Tasks Web Service Protocol defines a single port type with six operations. The operations enable client implementations to get, create, delete, update, move, and copy tasks on the server.

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

The following table summarizes the **WSDL operations** as defined by this specification.

Operation name	Description
GetItem	Gets task items on the server.
CreateItem	Creates task items on the server.
DeleteItem	Deletes task items on the server.
UpdateItem	Updates task items on the server.
MoveItem	Moves task items on the server.
CopyItem	Copies task items on the server.

3.1.4.1   CopyItem Operation

This protocol uses the **CopyItem** operation, as specified in [MS-OXWSCORE] section 3.1.4.1, to copy task items.

The following is the WSDL port type specification for the **CopyItem** operation.

```
<wsdl:operation name="CopyItem">
          <wsdl:input message="tns:CopyItemSoapIn" />
          <wsdl:output message="tns:CopyItemSoapOut" />
</wsdl:operation>
```

The following is the WSDL binding specification for the **CopyItem** operation.

```
<wsdl:operation name="CopyItem">
   <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/CopyItem"/>
   <wsdl:input>
      <soap:header message="tns:CopyItemSoapIn" part="Impersonation" use="literal"/>
      <soap:header message="tns:CopyItemSoapIn" part="MailboxCulture" use="literal"/>
      <soap:header message="tns:CopyItemSoapIn" part="RequestVersion" use="literal"/>
      <soap:body parts="request" use="literal"/>
   </wsdl:input>
   <wsdl:output>
      <soap:body parts="CopyItemResult" use="literal"/>
      <soap:header message="tns:CopyItemSoapOut" part="ServerVersion" use="literal"/>
   </wsdl:output>
</wsdl:operation>
```

Message format	Description
tns:CopyItemSoapIn ([MS-OXWSCORE] section 3.1.4.1.1.1)	Specifies the **SOAP message** that defines the task item to be copied. The **t:NonEmptyArrayOfAllItemsType** complex type (as specified in [MS-OXWSCDATA] section 2.2.4.42) of the **CopyItem** operation (as specified in [MS-OXWSCORE] section 3.1.4.1.1.1) that specifies the XML request MUST contain the **t:TargetFolderIdType** complex type (as specified in [MS-OXWSFOLD] section 2.2.4.14) and the **t:ItemIdType** complex type (as specified in [MS-OXWSCORE] section 2.2.4.23). All other elements MUST be empty.
tns:CopyItemSoapOut ([MS-OXWSCORE] section 3.1.4.1.1.2)	Specifies the SOAP message that is returned by the server in response.

3.1.4.2 CreateItem Operation

This protocol uses the **CreateItem** operation, as specified in [MS-OXWSCORE] section 3.1.4.2, to create task items.

The following is the WSDL port type specification for the **CreateItem** operation.

```
<wsdl:operation name="CreateItem">
     <wsdl:input message="tns:CreateItemSoapIn" />
     <wsdl:output message="tns:CreateItemSoapOut" />
</wsdl:operation>
```

The following is the WSDL binding specification for the **CreateItem** operation.

```
<wsdl:operation name="CreateItem">
   <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/CreateItem"/>
   <wsdl:input>
      <soap:header message="tns:CreateItemSoapIn" part="Impersonation" use="literal"/>
      <soap:header message="tns:CreateItemSoapIn" part="MailboxCulture" use="literal"/>
      <soap:header message="tns:CreateItemSoapIn" part="RequestVersion" use="literal"/>
      <soap:header message="tns:CreateItemSoapIn" part="TimeZoneContext" use="literal"/>
      <soap:body parts="request" use="literal"/>
   </wsdl:input>
```

```
<wsdl:output>
    <soap:body parts="CreateItemResult" use="literal"/>
    <soap:header message="tns:CreateItemSoapOut" part="ServerVersion" use="literal"/>
</wsdl:output>
</wsdl:operation>
```

Message format	Description
tns:CreateItemSoapIn ([MS-OXWSCORE] section 3.1.4.2.1.1)	Specifies the SOAP message that defines the task item to be created. The **t:NonEmptyArrayOfAllItemsType** complex type (as specified in [MS-OXWSCDATA] section 2.2.4.42) of the **CreateItem** operation (as specified in [MS-OXWSCORE] section 3.1.4.2) that specifies the XML request MUST contain one or more t:TaskType complex types(as specified in section 2.2.4.3). All other elements MUST be empty.
tns:CreateItemSoapOut ([MS-OXWSCORE] section 3.1.4.2.1.2)	Specifies the SOAP message that is returned by the server in response.

3.1.4.3   DeleteItem Operation

This protocol uses the **DeleteItem** operation, as specified in [MS-OXWSCORE] section 3.1.4.3, to delete task items.

The following is the WSDL port type specification for the **DeleteItem** operation.

```
<wsdl:operation name="DeleteItem">
    <wsdl:input message="tns:DeleteItemSoapIn" />
    <wsdl:output message="tns:DeleteItemSoapOut" />
</wsdl:operation>
```

The following is the WSDL binding specification for the **DeleteItem** operation.

```
<wsdl:operation name="DeleteItem">
    <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/DeleteItem"/>
    <wsdl:input>
        <soap:header message="tns:DeleteItemSoapIn" part="Impersonation" use="literal"/>
        <soap:header message="tns:DeleteItemSoapIn" part="MailboxCulture" use="literal"/>
        <soap:header message="tns:DeleteItemSoapIn" part="RequestVersion" use="literal"/>
        <soap:body parts="request" use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body parts="DeleteItemResult" use="literal"/>
        <soap:header message="tns:DeleteItemSoapOut" part="ServerVersion" use="literal"/>
    </wsdl:output>
</wsdl:operation>
```

Message format	Description
tns:DeleteItemSoapIn ([MS-OXWSCORE] section 3.1.4.3.1.1)	Specifies the SOAP message that defines the task item to be deleted. The **t:NonEmptyArrayOfAllItemsType** complex type (as specified in [MS-OXWSCDATA] section 2.2.4.42) of the **DeleteItem** operation (as specified in [MS-OXWSCORE] section 3.1.4.3) that specifies the XML request MUST contain one or more **t:ItemIdType** complex type elements (as specified in [MS-OXWSCORE] section 2.2.4.23). All other

Message format	Description
	elements MUST be empty.
tns:DeleteItemSoapOut ([MS-OXWSCORE] section 3.1.4.3.1.2)	Specifies the SOAP message that is returned by the server in response.

3.1.4.3.1 Simple Types

The following table lists and describes the XML schema simple type definitions that are specific to the **DeleteItem** operation.

Simple type name	Description
AffectedTaskOccurrencesType	Specifies whether an occurrence of a task or a master task is deleted.

3.1.4.3.1.1 t:AffectedTaskOccurrencesType Simple Type

The **AffectedTaskOccurrencesType** simple type specifies whether an occurrence of a task or a master task is deleted.

```
<xs:simpleType name="AffectedTaskOccurrencesType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="AllOccurrences"
     />
    <xs:enumeration
      value="SpecifiedOccurrenceOnly"
     />
  </xs:restriction>
</xs:simpleType>
```

The following table lists and describes the values that are defined by the **AffectedTaskOccurrencesType** simple type.

Value name	Description
AllOccurrences	Specifies that a **DeleteItem** operation request, as specified in [MS-OXWSCORE] section 3.1.4.3, deletes the master task and all recurring tasks that are associated with the master task.
SpecifiedOccurrenceOnly	Specifies that a **DeleteItem** operation request, as specified in [MS-OXWSCORE] section 3.1.4.3, deletes only the current occurrence of a task.

3.1.4.4 GetItem Operation

This protocol uses the **GetItem** operation, as specified in [MS-OXWSCORE] section 3.1.4.4, to get task items.

The following is the WSDL port type specification for the **GetItem** operation.

```
<wsdl:operation name="GetItem">
   <wsdl:input message="tns:GetItemSoapIn" />
   <wsdl:output message="tns:GetItemSoapOut" />
</wsdl:operation>
```

The following is the WSDL binding specification for the **GetItem** operation.

```
<wsdl:operation name="GetItem">
   <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/GetItem"/>
   <wsdl:input>
      <soap:header message="tns:GetItemSoapIn" part="Impersonation" use="literal"/>
      <soap:header message="tns:GetItemSoapIn" part="MailboxCulture" use="literal"/>
      <soap:header message="tns:GetItemSoapIn" part="RequestVersion" use="literal"/>
      <soap:header message="tns:GetItemSoapIn" part="TimeZoneContext" use="literal"/>
      <soap:body parts="request" use="literal"/>
   </wsdl:input>
   <wsdl:output>
      <soap:body parts="GetItemResult" use="literal"/>
      <soap:header message="tns:GetItemSoapOut" part="ServerVersion" use="literal"/>
   </wsdl:output>
</wsdl:operation>
```

Message format	Description
tns:GetItemSoapIn ([MS-OXWSCORE] section 3.1.4.4.1.1)	Specifies the SOAP message that defines the task item to be retrieved. The **t:NonEmptyArrayOfBaseItemIdsType** complex type (as specified in [MS-OXWSCORE] section 2.2.4.27) of the **GetItem** operation (as specified in [MS-OXWSCORE] section 3.1.4.4) that specifies the XML request MUST contain the **t:ItemResponseShapeType** complex type element (as specified in [MS-OXWSCDATA] section 2.2.4.38) and the **t:ItemIdType** complex type element (as specified in [MS-OXWSCORE] section 2.2.4.23).
tns:GetItemSoapOut ([MS-OXWSCORE] section 3.1.4.4.1.2)	Specifies the SOAP message that is returned by the server in response. The server returns a **t:ItemResponseShapeType** complex type element, as specified in [MS-OXWSCDATA] section 2.2.4.38, that contains properties associated with the task item.

3.1.4.5 MoveItem Operation

This protocol uses the **MoveItem** operation, as specified in [MS-OXWSCORE] section 3.1.4.7, to move task item elements.

The following is the WSDL port type specification for the **MoveItem** operation.

```
<wsdl:operation name="MoveItem">
   <wsdl:input message="tns:MoveItemSoapIn" />
   <wsdl:output message="tns:MoveItemSoapOut" />
</wsdl:operation>
```

The following is the WSDL binding specification for the **MoveItem** operation.

```
<wsdl:operation name="MoveItem">
   <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/MoveItem"/>
```

```
   <wsdl:input>
      <soap:header message="tns:MoveItemSoapIn" part="Impersonation" use="literal"/>
      <soap:header message="tns:MoveItemSoapIn" part="MailboxCulture" use="literal"/>
      <soap:header message="tns:MoveItemSoapIn" part="RequestVersion" use="literal"/>
      <soap:body parts="request" use="literal"/>
   </wsdl:input>
   <wsdl:output>
      <soap:body parts="MoveItemResult" use="literal"/>
      <soap:header message="tns:MoveItemSoapOut" part="ServerVersion" use="literal"/>
   </wsdl:output>
</wsdl:operation>
```

Message format	Description
tns:MoveItemSoapIn ([MS-OXWSCORE] section 3.1.4.7.1.1)	Specifies the SOAP message that defines the task item to be moved. The **t:NonEmptyArrayOfAllItemsType** complex type (as specified in [MS-OXWSCDATA] section 2.2.4.42) of the **MoveItem** operation (as specified in [MS-OXWSCORE] section 3.1.4.7) that specifies the XML request MUST contain the **t:TargetFolderIdType** complex type element (as specified in [MS-OXWSFOLD] section 2.2.4.14) and **t:ItemIdType** complex type element (as specified in [MS-OXWSCORE] section 2.2.4.23). All other elements MUST be empty.
tns:MoveItemSoapOut ([MS-OXWSCORE] section 3.1.4.7.1.2)	Specifies the SOAP message that is returned by the server in response.

3.1.4.6 UpdateItem Operation

This protocol uses the **UpdateItem** operation, as specified in [MS-OXWSCORE] section 3.1.4.9, to update task item elements.

The following is the WSDL port type specification for the **UpdateItem** operation.

```
<wsdl:operation name="UpdateItem">
   <wsdl:input message="tns:UpdateItemSoapIn" />
   <wsdl:output message="tns:UpdateItemSoapOut" />
</wsdl:operation>
```

The following is the WSDL binding specification for the **UpdateItem** operation.

```
<wsdl:operation name="UpdateItem">
   <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/UpdateItem"/>
   <wsdl:input>
      <soap:header message="tns:UpdateItemSoapIn" part="Impersonation" use="literal"/>
      <soap:header message="tns:UpdateItemSoapIn" part="MailboxCulture" use="literal"/>
      <soap:header message="tns:UpdateItemSoapIn" part="RequestVersion" use="literal"/>
      <soap:header message="tns:UpdateItemSoapIn" part="TimeZoneContext" use="literal"/>
      <soap:body parts="request" use="literal"/>
   </wsdl:input>
   <wsdl:output>
      <soap:body parts="UpdateItemResult" use="literal"/>
      <soap:header message="tns:UpdateItemSoapOut" part="ServerVersion" use="literal"/>
   </wsdl:output>
</wsdl:operation>
```

Message format	Description
tns:UpdateItemSoapIn ([MS-OXWSCORE] section 3.1.4.9.1.1)	Specifies the SOAP message that defines the task item to be updated.
tns:UpdateItemSoapOut ([MS-OXWSCORE] section 3.1.4.9.1.2)	Specifies the SOAP message that is returned by the server in response.

3.1.5 Timer Events

None.

3.1.6 Other Local Events

None.

4 Protocol Examples

None.

5 Security

5.1 Security Considerations for Implementers

None.

5.2 Index of Security Parameters

None.

6   Appendix A: Full WSDL

The XML files that are listed in the following table are required in order to implement the functionality described in this document.

File name	Description	Section
MS-OXWSTASK.wsdl	Contains the WSDL for the implementation of this protocol.	6
MS-OXWSTASK-types.xsd	Contains the XML schema type definitions that are used in this protocol.	7.2

These files have to be placed in a common folder in order for the WSDL to validate and operate. Also, any schema files that are included in or imported into the MS-OXWSTASK-types.xsd schema have to be placed in the common folder along with the files listed in the table.

This section contains the contents of the MS-OXWSTASK.wsdl file.

```
<?xml version="1.0" encoding="utf-8"?>
<wsdl:definitions xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:tns="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:s="http://www.w3.org/2001/XMLSchema" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/messages">
    <wsdl:types>
        <xs:schema id="messages" elementFormDefault="qualified" version="Exchange2013"
xmlns:m="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:tns="http://schemas.microsoft.com/exchange/services/2006/messages"
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/messages"
xmlns="http://schemas.microsoft.com/exchange/services/2006/messages">
            <xs:import
namespace="http://schemas.microsoft.com/exchange/services/2006/types" schemaLocation="MS-
OXWSCORE-types.xsd"/>
            <xs:include schemaLocation="MS-OXWSCORE-messages.xsd"/>
            <!-- Add global elements and types from messages.xsd -->
        </xs:schema>
        <xs:schema id="types" elementFormDefault="qualified" version="Exchange2013"
xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:tns="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
            <xs:import namespace="http://www.w3.org/XML/1998/namespace"/>
            <!-- Add global elements and types from types.xsd -->
        </xs:schema>
    </wsdl:types>
    <wsdl:portType name="ExchangeServicePortType">
        <wsdl:operation name="GetItem">
            <wsdl:input message="tns:GetItemSoapIn"/>
            <wsdl:output message="tns:GetItemSoapOut"/>
        </wsdl:operation>
        <wsdl:operation name="CreateItem">
            <wsdl:input message="tns:CreateItemSoapIn"/>
            <wsdl:output message="tns:CreateItemSoapOut"/>
        </wsdl:operation>
        <wsdl:operation name="DeleteItem">
            <wsdl:input message="tns:DeleteItemSoapIn"/>
```

```
                <wsdl:output message="tns:DeleteItemSoapOut"/>
            </wsdl:operation>
            <wsdl:operation name="UpdateItem">
                <wsdl:input message="tns:UpdateItemSoapIn"/>
                <wsdl:output message="tns:UpdateItemSoapOut"/>
            </wsdl:operation>
            <wsdl:operation name="MoveItem">
                <wsdl:input message="tns:MoveItemSoapIn"/>
                <wsdl:output message="tns:MoveItemSoapOut"/>
            </wsdl:operation>
            <wsdl:operation name="CopyItem">
                <wsdl:input message="tns:CopyItemSoapIn"/>
                <wsdl:output message="tns:CopyItemSoapOut"/>
            </wsdl:operation>
    </wsdl:portType>
    <wsdl:binding name="ExchangeServiceBinding" type="tns:ExchangeServicePortType">
        <wsdl:documentation>
            <wsi:Claim conformsTo="http://ws-i.org/profiles/basic/1.0"
 xmlns:wsi="http://ws-i.org/schemas/conformanceClaim/"/>
        </wsdl:documentation>
        <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
        <wsdl:operation name="GetItem">
            <soap:operation
 soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/GetItem"/>
            <wsdl:input>
                <soap:header message="tns:GetItemSoapIn" part="Impersonation"
 use="literal"/>
                <soap:header message="tns:GetItemSoapIn" part="MailboxCulture"
 use="literal"/>
                <soap:header message="tns:GetItemSoapIn" part="RequestVersion"
 use="literal"/>
                <soap:header message="tns:GetItemSoapIn" part="TimeZoneContext"
 use="literal"/>
                <soap:body parts="request" use="literal"/>
            </wsdl:input>
            <wsdl:output>
                <soap:body parts="GetItemResult" use="literal"/>
                <soap:header message="tns:GetItemSoapOut" part="ServerVersion"
 use="literal"/>
            </wsdl:output>
        </wsdl:operation>
        <wsdl:operation name="CreateItem">
            <soap:operation
 soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/CreateItem"/>
            <wsdl:input>
                <soap:header message="tns:CreateItemSoapIn" part="Impersonation"
 use="literal"/>
                <soap:header message="tns:CreateItemSoapIn" part="MailboxCulture"
 use="literal"/>
                <soap:header message="tns:CreateItemSoapIn" part="RequestVersion"
 use="literal"/>
                <soap:header message="tns:CreateItemSoapIn" part="TimeZoneContext"
 use="literal"/>
                <soap:body parts="request" use="literal"/>
            </wsdl:input>
            <wsdl:output>
                <soap:body parts="CreateItemResult" use="literal"/>
                <soap:header message="tns:CreateItemSoapOut" part="ServerVersion"
 use="literal"/>
            </wsdl:output>
```

```
                </wsdl:operation>
                <wsdl:operation name="DeleteItem">
                        <soap:operation
 soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/DeleteItem"/>
                        <wsdl:input>
                                <soap:header message="tns:DeleteItemSoapIn" part="Impersonation"
 use="literal"/>
                                <soap:header message="tns:DeleteItemSoapIn" part="MailboxCulture"
 use="literal"/>
                                <soap:header message="tns:DeleteItemSoapIn" part="RequestVersion"
 use="literal"/>
                                <soap:body parts="request" use="literal"/>
                        </wsdl:input>
                        <wsdl:output>
                                <soap:body parts="DeleteItemResult" use="literal"/>
                                <soap:header message="tns:DeleteItemSoapOut" part="ServerVersion"
 use="literal"/>
                        </wsdl:output>
                </wsdl:operation>
                <wsdl:operation name="UpdateItem">
                        <soap:operation
 soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/UpdateItem"/>
                        <wsdl:input>
                                <soap:header message="tns:UpdateItemSoapIn" part="Impersonation"
 use="literal"/>
                                <soap:header message="tns:UpdateItemSoapIn" part="MailboxCulture"
 use="literal"/>
                                <soap:header message="tns:UpdateItemSoapIn" part="RequestVersion"
 use="literal"/>
                                <soap:header message="tns:UpdateItemSoapIn" part="TimeZoneContext"
 use="literal"/>
                                <soap:body parts="request" use="literal"/>
                        </wsdl:input>
                        <wsdl:output>
                                <soap:body parts="UpdateItemResult" use="literal"/>
                                <soap:header message="tns:UpdateItemSoapOut" part="ServerVersion"
 use="literal"/>
                        </wsdl:output>
                </wsdl:operation>
                <wsdl:operation name="MoveItem">
                        <soap:operation
 soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/MoveItem"/>
                        <wsdl:input>
                                <soap:header message="tns:MoveItemSoapIn" part="Impersonation"
 use="literal"/>
                                <soap:header message="tns:MoveItemSoapIn" part="MailboxCulture"
 use="literal"/>
                                <soap:header message="tns:MoveItemSoapIn" part="RequestVersion"
 use="literal"/>
                                <soap:body parts="request" use="literal"/>
                        </wsdl:input>
                        <wsdl:output>
                                <soap:body parts="MoveItemResult" use="literal"/>
                                <soap:header message="tns:MoveItemSoapOut" part="ServerVersion"
 use="literal"/>
                        </wsdl:output>
                </wsdl:operation>
                <wsdl:operation name="CopyItem">
                        <soap:operation
 soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/CopyItem"/>
```

```
                    <wsdl:input>
                            <soap:header message="tns:CopyItemSoapIn" part="Impersonation"
use="literal"/>
                            <soap:header message="tns:CopyItemSoapIn" part="MailboxCulture"
use="literal"/>
                            <soap:header message="tns:CopyItemSoapIn" part="RequestVersion"
use="literal"/>
                            <soap:body parts="request" use="literal"/>
                    </wsdl:input>
                    <wsdl:output>
                            <soap:body parts="CopyItemResult" use="literal"/>
                            <soap:header message="tns:CopyItemSoapOut" part="ServerVersion"
use="literal"/>
                    </wsdl:output>
            </wsdl:operation>
        </wsdl:binding>
        <wsdl:message name="GetItemSoapIn">
            <wsdl:part name="request" element="tns:GetItem"/>
            <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
            <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
            <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
            <wsdl:part name="TimeZoneContext" element="t:TimeZoneContext"/>
        </wsdl:message>
        <wsdl:message name="GetItemSoapOut">
            <wsdl:part name="GetItemResult" element="tns:GetItemResponse"/>
            <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
        </wsdl:message>
        <wsdl:message name="CreateItemSoapIn">
            <wsdl:part name="request" element="tns:CreateItem"/>
            <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
            <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
            <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
            <wsdl:part name="TimeZoneContext" element="t:TimeZoneContext"/>
        </wsdl:message>
        <wsdl:message name="CreateItemSoapOut">
            <wsdl:part name="CreateItemResult" element="tns:CreateItemResponse"/>
            <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
        </wsdl:message>
        <wsdl:message name="DeleteItemSoapIn">
            <wsdl:part name="request" element="tns:DeleteItem"/>
            <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
            <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
            <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
        </wsdl:message>
        <wsdl:message name="DeleteItemSoapOut">
            <wsdl:part name="DeleteItemResult" element="tns:DeleteItemResponse"/>
            <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
        </wsdl:message>
        <wsdl:message name="UpdateItemSoapIn">
            <wsdl:part name="request" element="tns:UpdateItem"/>
            <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
            <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
            <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
            <wsdl:part name="TimeZoneContext" element="t:TimeZoneContext"/>
        </wsdl:message>
        <wsdl:message name="UpdateItemSoapOut">
            <wsdl:part name="UpdateItemResult" element="tns:UpdateItemResponse"/>
            <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
        </wsdl:message>
```

```
<wsdl:message name="MoveItemSoapIn">
      <wsdl:part name="request" element="tns:MoveItem"/>
      <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
      <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
      <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
</wsdl:message>
<wsdl:message name="MoveItemSoapOut">
      <wsdl:part name="MoveItemResult" element="tns:MoveItemResponse"/>
      <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
<wsdl:message name="CopyItemSoapIn">
      <wsdl:part name="request" element="tns:CopyItem"/>
      <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
      <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
      <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
</wsdl:message>
<wsdl:message name="CopyItemSoapOut">
      <wsdl:part name="CopyItemResult" element="tns:CopyItemResponse"/>
      <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
</wsdl:definitions>
```

7 Appendix B: Full XML Schema

For ease of implementation, the following sections provide the full XML schema for this protocol.

Schema name	Prefix	Section
Types schema	t:	7.2

This file has to be placed in a common folder in order for the WSDL to validate and operate. Also, any schema files that are included in or imported into the MS-OXWSNTIF-types.xsd schema has to be placed in the common folder along with the files listed in the table.

7.1 Messages Schema

This protocol does not use a messages schema file.

7.2 Types Schema

This section contains the contents of the MS-OXWSTASK-types.xsd file and information about additional files that this schema file requires in order to operate correctly.

MS-OXWSTASK-types.xsd includes the file listed in the following table. To operate correctly, this file has to be present in the folder that contains the WSDL and the types schema file for this protocol.

File name	Defining specification
MS-OXWSCFOLD-types.xsd	[MS-OXWSFOLD] section 7.2

```xml
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:tns="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="Exchange2013" id="types">
    <xs:import namespace="http://www.w3.org/XML/1998/namespace"/>
    <xs:include schemaLocation="MS-OXWSFOLD-types.xsd"/>
    <xs:simpleType name="AffectedTaskOccurrencesType">
        <xs:restriction base="xs:string">
            <xs:enumeration value="AllOccurrences"/>
            <xs:enumeration value="SpecifiedOccurrenceOnly"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="RegeneratingPatternBaseType" abstract="true">
        <xs:complexContent>
            <xs:extension base="t:IntervalRecurrencePatternBaseType"/>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="DailyRegeneratingPatternType">
        <xs:complexContent>
            <xs:extension base="t:RegeneratingPatternBaseType"/>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="WeeklyRegeneratingPatternType">
        <xs:complexContent>
            <xs:extension base="t:RegeneratingPatternBaseType"/>
        </xs:complexContent>
```

```xml
            </xs:complexType>
            <xs:complexType name="MonthlyRegeneratingPatternType">
                  <xs:complexContent>
                        <xs:extension base="t:RegeneratingPatternBaseType"/>
                  </xs:complexContent>
            </xs:complexType>
            <xs:complexType name="YearlyRegeneratingPatternType">
                  <xs:complexContent>
                        <xs:extension base="t:RegeneratingPatternBaseType"/>
                  </xs:complexContent>
            </xs:complexType>
            <xs:simpleType name="TaskStatusType">
                  <xs:restriction base="xs:string">
                        <xs:enumeration value="NotStarted"/>
                        <xs:enumeration value="InProgress"/>
                        <xs:enumeration value="Completed"/>
                        <xs:enumeration value="WaitingOnOthers"/>
                        <xs:enumeration value="Deferred"/>
                  </xs:restriction>
            </xs:simpleType>
            <xs:simpleType name="TaskDelegateStateType">
                  <xs:restriction base="xs:string">
                        <xs:enumeration value="NoMatch"/>
                        <xs:enumeration value="OwnNew"/>
                        <xs:enumeration value="Owned"/>
                        <xs:enumeration value="Accepted"/>
                        <xs:enumeration value="Declined"/>
                        <xs:enumeration value="Max"/>
                  </xs:restriction>
            </xs:simpleType>
            <xs:complexType name="TaskType">
                  <xs:complexContent>
                        <xs:extension base="t:ItemType">
                              <xs:sequence>
                                    <xs:element name="ActualWork" type="xs:int" minOccurs="0"/>
                                    <xs:element name="AssignedTime" type="xs:dateTime" minOccurs="0"/>
                                    <xs:element name="BillingInformation" type="xs:string"
 minOccurs="0"/>
                                    <xs:element name="ChangeCount" type="xs:int" minOccurs="0"/>
                                    <xs:element name="Companies" type="t:ArrayOfStringsType"
 minOccurs="0"/>
                                    <xs:element name="CompleteDate" type="xs:dateTime" minOccurs="0"/>
                                    <xs:element name="Contacts" type="t:ArrayOfStringsType"
 minOccurs="0"/>
                                    <xs:element name="DelegationState" type="t:TaskDelegateStateType"
 minOccurs="0"/>
                                    <xs:element name="Delegator" type="xs:string" minOccurs="0"/>
                                    <xs:element name="DueDate" type="xs:dateTime" minOccurs="0"/>
                                    <xs:element name="IsAssignmentEditable" type="xs:int"
 minOccurs="0"/>
                                    <xs:element name="IsComplete" type="xs:boolean" minOccurs="0"/>
                                    <xs:element name="IsRecurring" type="xs:boolean" minOccurs="0"/>
                                    <xs:element name="IsTeamTask" type="xs:boolean" minOccurs="0"/>
                                    <xs:element name="Mileage" type="xs:string" minOccurs="0"/>
                                    <xs:element name="Owner" type="xs:string" minOccurs="0"/>
                                    <xs:element name="PercentComplete" type="xs:double" minOccurs="0"/>
                                    <xs:element name="Recurrence" type="t:TaskRecurrenceType"
 minOccurs="0"/>
                                    <xs:element name="StartDate" type="xs:dateTime" minOccurs="0"/>
```

```
                              <xs:element name="Status" type="t:TaskStatusType" minOccurs="0"/>
                              <xs:element name="StatusDescription" type="xs:string"
minOccurs="0"/>
                              <xs:element name="TotalWork" type="xs:int" minOccurs="0"/>
                    </xs:sequence>
               </xs:extension>
         </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="TaskRecurrenceType">
         <xs:sequence>
              <xs:group ref="t:TaskRecurrencePatternTypes"/>
              <xs:group ref="t:RecurrenceRangeTypes"/>
         </xs:sequence>
    </xs:complexType>
    <xs:complexType name="TasksFolderType">
         <xs:complexContent>
              <xs:extension base="t:FolderType"/>
         </xs:complexContent>
    </xs:complexType>
</xs:schema>
```

8   Appendix C: 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 Exchange Server 2007

- Microsoft Exchange Server 2010

- Microsoft Exchange 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.

9 Change Tracking

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

10 Index

Release: February 10, 2014