

# [MS-OXWSTASK]: Tasks Web Service Protocol Specification

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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

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# 1 Introduction

This document specifies the Tasks Web Service protocol, which is responsible for creating, updating, and deleting task items on the server. Clients use the SOAP protocol [\[SOAP1.1\]](#) to contact the tasks service.

## 1.1 Glossary

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

**delegate**  
**Hypertext Transfer Protocol (HTTP)**  
**Hypertext Transfer Protocol over Secure Socket Layers (HTTPS)**  
**mailbox**  
**property**  
**SOAP body**  
**SOAP fault**  
**SOAP header**  
**SOAP message**  
**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](mailto: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.

[MS-OXWSCORE] Microsoft Corporation, "[Core Items Web Service Protocol Specification](#)", July 2009.

[MS-OXWSFOLD] Microsoft Corporation, "[Folders and Folder Permissions Web Service Protocol Specification](#)", 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>.

[RFC3066] Alvestrand, H., "Tags for the Identification of Languages", RFC 3066, January 2001, <http://www.ietf.org/rfc/rfc3066.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

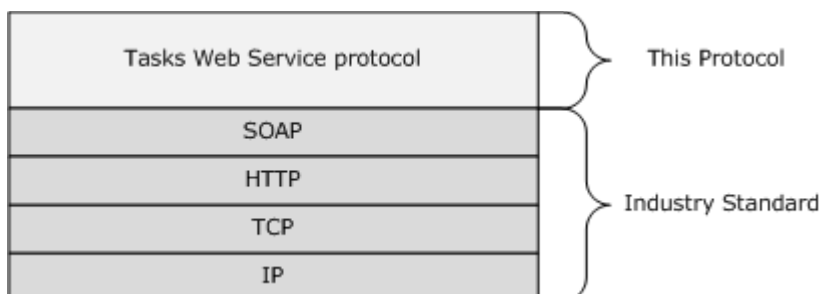
None.

### 1.3 Protocol Overview

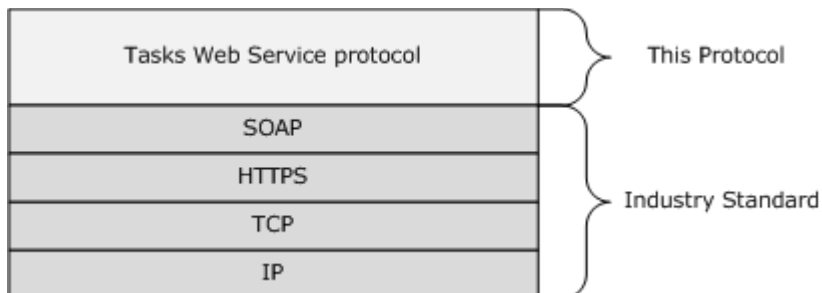
The Tasks Web Service protocol provides clients with the ability to create, update, and delete task items on the server. Clients create task items by using the **CreateItem** operation, as specified in [\[MS-OXWSCORE\]](#) section 3.1.4.2, or get properties of an existing task item by using the **GetItem** operation, as specified in [\[MS-OXWSCORE\]](#) section 3.1.4.4. Tasks can also be updated, deleted, or copied 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

The Tasks Web Service protocol uses SOAP over **HTTP** and SOAP over **HTTPS**, as shown in the following figures.



**Figure 1: Tasks Web Service protocol HTTP stack**



**Figure 2: Tasks Web Service protocol HTTPS stack**

The task information that is returned by the Tasks Web Service protocol is used when requests are made by using the Core Items Web Service protocol [\[MS-OXWSCORE\]](#).

### 1.5 Prerequisites/Preconditions

None.

### 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 SOAP 1.1, as specified in section [2.1](#).
- **Protocol Versions:** This protocol specifies only one **WSDL port type** 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 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	<a href="http://schemas.xmlsoap.org/wsdl/soap/">http://schemas.xmlsoap.org/wsdl/soap/</a>	<a href="#">[SOAP1.1]</a>
tns	<a href="http://schemas.microsoft.com/exchange/services/2006/messages">http://schemas.microsoft.com/exchange/services/2006/messages</a>	[MS-OXWSTASK]
s	<a href="http://www.w3.org/2001/XMLSchema">http://www.w3.org/2001/XMLSchema</a>	<a href="#">[XMLSCHEMA1]</a>
targetNamespace	<a href="http://schemas.microsoft.com/exchange/services/2006/messages">http://schemas.microsoft.com/exchange/services/2006/messages</a>	[MS-OXWSTASK]
wsdl	<a href="http://schemas.xmlsoap.org/wsdl/">http://schemas.xmlsoap.org/wsdl/</a>	<a href="#">[WSDL]</a>
t	<a href="http://schemas.microsoft.com/exchange/services/2006/types">http://schemas.microsoft.com/exchange/services/2006/types</a>	[MS-OXWSTASK]

#### 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
<a href="#">t:TaskDelegateStateType</a>	Specifies the status types of a delegated task. This enumeration is never set.
<a href="#">t:TaskStatusType</a>	Specifies the status types of a task item.

##### 2.2.2.1 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>

```

## Enumeration

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

Value	Description
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 is also used for a task request message, whether in the owner's Sent Items folder or the <b>delegate's</b> Inbox.
Owned	Specifies that a 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 task.

### 2.2.2.2 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:restriction>
</xs:simpleType>

```

```

    />
    <xs:enumeration
      value="Deferred"
    />
    <xs:enumeration
      value="InProgress"
    />
    <xs:enumeration
      value="NotStarted"
    />
    <xs:enumeration
      value="WaitingOnOthers"
    />
  </xs:restriction>
</xs:simpleType>

```

## Enumeration

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

Value	Description
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 others.

### 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.

Complex Type	Description
<a href="#">t:TaskRecurrenceType</a>	Specifies the recurrence pattern for tasks.
<a href="#">t:TasksFolderType</a>	Specifies a Tasks folder that is contained in a <b>mailbox</b> .
<a href="#">t:TaskType</a>	Specifies a task in the server store.
<a href="#">t:DailyRegeneratingPatternType</a>	Specifies the frequency, in days, at which a task is regenerated.
<a href="#">t:MonthlyRegeneratingPatternType</a>	Specifies the interval, in months, at which a task is regenerated.
<a href="#">t:RegeneratingPatternBaseType</a>	Specifies the base type for all regenerating patterns.
<a href="#">t:WeeklyRegeneratingPatternType</a>	Specifies the interval, in weeks, at which a task is regenerated.
<a href="#">t:YearlyRegeneratingPatternType</a>	Specifies the interval, in years, at which a task is regenerated.

### 2.2.3.1 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>
```

### 2.2.3.2 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 ([\[MS-OXWSFOLD\]](#) section 2.2.3.10).

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

### 2.2.3.3 t:TaskType Complex Type

The **TaskType** complex type specifies a task in the server store. The **TaskType** complex type extends the [ItemType](#) complex type ([\[MS-OXWSCORE\]](#) section 2.2.3.6).

```
<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>

```

## Child Elements

Element	Type	Description
ActualWork	xs:int	Specifies an integer value that specifies the actual amount of time that is spent on a task.
AssignedTime	xs:dateTime	Specifies an instance of the <b>DateTime</b> structure that contains the time when a task is assigned to a contact.
BillingInformation	xs:string	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	<a href="#">t:ArrayOfStringsType</a>	Specifies an instance of an array of type <b>string</b> that represents a collection of companies that are associated with a task.
CompleteDate	xs:dateTime	Specifies an instance of the <b>DateTime</b> 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	<b>t:TaskDelegateStateType</b>	Specifies one of the valid <a href="#">TaskDelegateStateType</a> simple type (section <a href="#">2.2.2.1</a> ) 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 the task.

Element	Type	Description
DueDate	xs:dateTime	Specifies an instance of the <b>Date Time</b> structure that represents the date when the task is due.
IsAssignmentEditable	xs:int	Specifies an integer value that represents the task type.
IsComplete	xs:boolean	Specifies a Boolean value that indicates whether the task has been completed.
IsRecurring	xs:boolean	Specifies a Boolean value that indicates whether the task is part of a recurring task.
IsTeamTask	xs:boolean	Specifies a Boolean value that indicates whether the 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 the task.
PercentComplete	xs:double	Specifies a double value from 0 to 100 that describes the completion status of a task.
Recurrence	<b>t:TaskRecurrenceType</b>	Specifies an instance of the <a href="#">TaskRecurrenceType</a> complex type (section <a href="#">2.2.2.1</a> ) that contains recurrence information for a recurring task.
StartDate	xs:dateTime	Specifies an instance of the <b>Date Time</b> structure that represents the start date of the task.
Status	<b>t:TaskStatusType</b>	Specifies one of the valid <a href="#">TaskStatusType</a> simple type (section <a href="#">2.2.2.2</a> ) enumeration values that represent the status of a task.
StatusDescription	xs:string	Specifies a string value that contains an explanation of the status of the task.
TotalWork	xs:int	Specifies an integer value that represents the total amount of work that is associated with the task.

#### 2.2.3.4 t:DailyRegeneratingPatternType Complex Type

The **DailyRegeneratingPatternType** complex type specifies the frequency, in days, at which a task is regenerated. The **DailyRegeneratingPatternType** complex type extends the [RegeneratingPatternBaseType](#) complex type (section [2.2.3.6](#)).

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

### 2.2.3.5 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 (section 2.2.3.6).

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

### 2.2.3.6 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 ([MS-OXWSCDATA] section 2.2.3.33).

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

### 2.2.3.7 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 (section 2.2.3.6).

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

### 2.2.3.8 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 ([MS-OXWSTASK] section 2.2.3.6).

```

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

```

## 2.2.4 Elements

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

## 2.2.5 Attributes

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

## 2.2.6 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	Description
<a href="#">t:TaskRecurrencePatternTypes</a>	Specifies recurrence information for recurring tasks.

### 2.2.6.1 TaskRecurrencePatternTypes Group

The [TaskRecurrencePatternTypes](#) group specifies recurrence information for recurring tasks.

```

<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:choice>
  </xs:sequence>
</xs:group>

```



```

<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>

```

## Child Elements

Element	Type	Description
RelativeYearlyRecurrence	<a href="#">t:RelativeYearlyRecurrencePatternType</a>	Specifies a relative yearly recurrence pattern.
AbsoluteYearlyRecurrence	<a href="#">t:AbsoluteYearlyRecurrencePatternType</a>	Specifies a yearly recurrence pattern.
RelativeMonthlyRecurrence	<a href="#">t:RelativeMonthlyRecurrencePatternType</a>	Specifies a relative monthly recurrence pattern for a recurring task item.
AbsoluteMonthlyRecurrence	<a href="#">t:AbsoluteMonthlyRecurrencePatternType</a>	Specifies a monthly recurrence pattern.
WeeklyRecurrence	<a href="#">t:WeeklyRecurrencePatternType</a>	Specifies the frequency, in weeks, at which and the days on which that a task item recurs.
DailyRecurrence	<a href="#">t:DailyRecurrencePatternType</a>	Specifies the frequency, in days, at which a task item recurs.
DailyRegeneration	<a href="#">t:DailyRegeneratingPatternType</a>	Specifies how many days after the completion of the current task the next occurrence will be due.
WeeklyRegeneration	<a href="#">t:WeeklyRegeneratingPatternType</a>	Specifies how many weeks after the completion of the current task the next occurrence will be due.
MonthlyRegeneration	<a href="#">t:MonthlyRegeneratingPatternType</a>	Specifies how many months after the completion of the current task the next occurrence will be due.

Element	Type	Description
YearlyRegeneration	<a href="#">t:YearlyRegeneratingPatternType</a>	Specifies how many years after the completion of the current task the next occurrence will be due.

### 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

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.

Operation	Description
<a href="#">GetItem</a>	Gets items in the server.
<a href="#">CreateItem</a>	Creates items in the server.
<a href="#">DeleteItem</a>	Deletes items in the server.
<a href="#">UpdateItem</a>	Updates items in the server.
<a href="#">MoveItem</a>	Moves items in the server.
<a href="#">CopyItem</a>	Copies items in the server.

##### 3.1.1 Abstract Data Model

The Tasks Web Service protocol is a stateless protocol.

##### 3.1.2 Timers

None.

##### 3.1.3 Initialization

None.

##### 3.1.4 Message Processing Events and Sequencing

This protocol includes the operations that are listed in the following table.

Operation	Description
<a href="#">GetItem</a>	Gets items on the server.
<a href="#">CreateItem</a>	Creates items on the server.
<a href="#">DeleteItem</a>	Deletes items on the server.
<a href="#">UpdateItem</a>	Updates items on the server.
<a href="#">MoveItem</a>	Moves items on the server.
<a href="#">CopyItem</a>	Copies items on the server.

### 3.1.4.1 CopyItem

This protocol uses the **CopyItem** operation ([\[MS-OXWSCORE\]](#) section 3.1.4.1) to copy task item elements.

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

Request

Message Format	Description
<a href="#">tns:CopyItemSoapIn</a>	Specifies the <b>SOAP message</b> that defines the task item to copy. The <b>t:NonEmptyArrayOfAllItemsType</b> complex type ( <a href="#">[MS-OXWSCORE]</a> section 2.2.3.38) of the <b>CopyItem</b> operation ( <a href="#">[MS-OXWSCORE]</a> section 3.1.4.1) that specifies the <b>XML</b> request MUST contain the <b>t:TargetFolderIdType</b> ( <a href="#">[MS-OXWSFOLD]</a> section 2.2.3.14) and <b>t:ItemIdType</b> ( <a href="#">[MS-OXWSCORE]</a> section 2.2.3.13) complex types. All other elements MUST be empty.

Response

Message Format	Description
<a href="#">tns:CopyItemSoapOut</a>	Specifies the SOAP message that is returned by the server in response.

### 3.1.4.2 CreateItem

This protocol uses the **CreateItem** operation ([\[MS-OXWSCORE\]](#) section 3.1.4.2) to create task item elements.

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

Request

Message Format	Description
<a href="#">tns:CreateItemSoapIn</a>	Specifies the SOAP message that defines the task item to create. The <b>t:NonEmptyArrayOfAllItemsType</b> complex type ( <a href="#">[MS-OXWSCORE]</a> section 2.2.3.38) of the <b>CreateItem</b> operation ( <a href="#">[MS-OXWSCORE]</a> section 3.1.4.2) that specifies the XML request MUST contain one or more <b>t:TaskType</b> complex types (section <a href="#">2.2.3.3</a> ). All other elements MUST be empty.

Response

Message Format	Description
<a href="#">tns:CreateItemSoapOut</a>	Specifies the SOAP message that is returned by the server in response.

### 3.1.4.3 DeleteItem

This protocol uses the **DeleteItem** operation ([\[MS-OXWSCORE\]](#) section 3.1.4.3) to delete task item elements.

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

Request

Message Format	Description
<a href="#">tns:DeleteItemSoapIn</a>	Specifies the SOAP message that defines the task item to delete. The <b>t:NonEmptyArrayOfAllItemsType</b> complex type ( <a href="#">[MS-OXWSCDATA]</a> section ) of the <b>DeleteItem</b> operation ( <a href="#">[MS-OXWSCORE]</a> section 3.1.4.3) that specifies the XML request MUST contain one or more <b>t:ItemIdType</b> complex type ( <a href="#">[MS-OXWSCORE]</a> section 2.2.3.13) elements. All other elements MUST be empty.

Response

Message Format	Description
<b>tns:DeleteItemSoapOut</b>	Specifies the SOAP message that is returned by the server in response.

#### 3.1.4.3.1 Simple Types

The following **XML schema** simple type definitions are specific to this operation.

##### 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>
```

Enumeration

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

Value	Description
AllOccurrences	Specifies that a <b>DeleteItem</b> operation ( <a href="#">[MS-OXWSCORE]</a> section 3.1.4.3) request deletes the master task, and therefore all recurring tasks that are associated with the master task.
SpecifiedOccurrenceOnly	Specifies that a <b>DeleteItem</b> operation ( <a href="#">[MS-OXWSCORE]</a> section 3.1.4.3) request deletes only the current occurrence of a task.

### 3.1.4.4 GetItem

This protocol uses the **GetItem** operation ([\[MS-OXWSCORE\]](#) section 3.1.4.4) to get task item elements.

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

Request

Message Format	Description
<a href="#">tns:GetItemSoapIn</a>	Specifies the SOAP message that defines the task item to get. The <b>t:NonEmptyArrayOfAllItemsType</b> complex type ( <a href="#">[MS-OXWSCDATA]</a> section 2.2.3.38) of the <b>GetItem</b> operation ( <a href="#">[MS-OXWSCORE]</a> section 3.1.4.4) that specifies the XML request MUST contain the <b>t:ItemResponseShapeType</b> complex type ( <a href="#">[MS-OXWSCDATA]</a> section 2.2.3.35) and <b>t:ItemIdType</b> complex type ( <a href="#">[MS-OXWSCORE]</a> section 2.2.3.13) elements.

Response

Message Format	Description
<a href="#">tns:GetItemSoapOut</a>	Specifies the SOAP message that is returned by the server in response. The server returns a <b>t:ItemResponseShapeType</b> complex type ( <a href="#">[MS-OXWSCDATA]</a> section 2.2.3.35) element that contains <b>properties</b> that are associated with the task item.

### 3.1.4.5 MoveItem

This protocol uses the **MoveItem** operation ([\[MS-OXWSCORE\]](#) section 3.1.4.5) to move task item elements.

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

Request

Message Format	Description
<a href="#">tns:MoveItemSoapIn</a>	Specifies the SOAP message that defines the task item to move. The <b>t:NonEmptyArrayOfAllItemsType</b> complex type ([MS-OXWSCDATA] section ) of the <b>MoveItem</b> operation ([MS-OXWSCORE] section 3.1.4.5) that specifies the XML request MUST contain the <b>t:TargetFolderIdType</b> complex type ([MS-OXWSFOLD] section 2.2.3.14) and <b>t:ItemIdType</b> complex type ([MS-OXWSCORE] section 2.2.3.13) elements. All other elements MUST be empty.

Response

Message Format	Description
<a href="#">tns:MoveItemSoapOut</a>	Specifies the SOAP message that is returned by the server in response.

### 3.1.4.6 UpdateItem

This protocol uses the **UpdateItem** operation ([MS-OXWSCORE] section 3.1.4.7) to update task item elements.

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

Request

Message Format	Description
<a href="#">tns:UpdateItemSoapIn</a>	Specifies the SOAP message that defines the task item to update.

Response

Message Format	Description
<a href="#">tns:UpdateItemSoapOut</a>	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.

## 3.2 Client 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 that are returned by the transport are passed directly back to the higher-layer protocol or application.

### **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**

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 Tasks Web Service protocol does not use any additional security mechanisms.

### **5.2 Index of Security Parameters**

None.

## 6 Appendix A: Full WSDL

The following table lists the XML files that are required in order to implement the functionality that is specified in this document. The contents of each file are included in this section.

File name	Description	Section
MS-OXWSTASK.wsdl	Contains the <b>WSDL</b> for the implementation of this protocol.	<a href="#">6.1</a>
MS-OXWSTASK-types.xsd	Contains the XML schema type definitions that are used in this protocol.	<a href="#">6.2</a>
MS-OXWSTASK-messages.xsd	Contains the XML schema message definitions that are used in this protocol.	<a href="#">6.3</a>

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 or MS-OXWSTASK-messages.xsd schemas have to be placed in the common folder along with the files.

### 6.1 WSDL

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="Exchange2010"
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="Exchange2010"
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: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>

```

## 6.2 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, types, and messages schema files for this protocol.

File name	Defining specification
MS-OXWSCFOLD-types.xsd	<a href="#">[MS-OXWSCFOLD]</a> section 6.2

```

<?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="Exchange2010" id="types">
  <xs:import namespace="http://www.w3.org/XML/1998/namespace"/>
  <xs:include schemaLocation="MS-OXWSCFOLD-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>
    </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:sequence>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>

```



```

        <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>

```

## 6.3 Messages Schema

This section contains the contents of the MS-OXWSTASK-messages.xsd file.

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema 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"
elementFormDefault="qualified" version="Exchange2010" id="messages">
    <!-- CHANGE THE SCHEMA LOCATION TO REFLECT THE TYPES XSD ASSOCIATED WITH THIS
DOCUMENT
    <xs:import namespace="http://schemas.microsoft.com/exchange/services/2006/types"
schemaLocation="types.xsd"/>
    <xs:include/>
-->
</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

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

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