[MS-SPWFCSOM]:
SharePoint Workflow Client-Side Object Model Protocol Specification

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Revision Summary

Date	Revision History	Revision Class	Comments
01/20/2012	0.1	New	Released new document.
04/11/2012	0.1	No change	No changes to the meaning, language, or formatting of the technical content.
07/16/2012	0.2	Minor	Clarified the meaning of the technical content.
09/12/2012	0.2	No change	No changes to the meaning, language, or formatting of the technical content.

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1 Introduction

The SharePoint Workflow Client-Side Object Model Protocol provides types, methods, and properties to enable a protocol client to manage and interact with workflow functionality on a collaboration 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]:

authentication
Coordinated Universal Time (UTC)
GUID
XML

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

action
activity
CSOM Boolean
CSOM DateTime
CSOM dictionary
CSOM GUID
CSOM Int32
CSOM String
empty GUID
event
event receiver
Extensible Application Markup Language (XAML)
field
item
leaf name
list
list item
published
site
solution package
store
Uniform Resource Locator (URL)
workflow
workflow association
workflow identifier
workflow initiation form
workflow instance

The following terms are specific to this document:

association form: A form that provides parameters for a workflow association.

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collateral file: Any file stored with a workflow definition. This file is intended to be used for management of the workflow definition, or to initiate and control of an instance of the workflow definition.

workflow host: A service that runs XAML workflows.

workflow store: A stored collection of workflow definitions, workflow associations, and files that are related to workflows.

workflow subscription: A relationship that determines the data a workflow uses and when the workflow will launch.

MAY, SHOULD, MUST, SHOULD NOT, MUST NOT: These terms (in all caps) are used as described in [RFC2119]. All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

1.2 References

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

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information. Please check the archive site, http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624, as an additional source.

[MS-CSOM] Microsoft Corporation, "SharePoint Client Query Protocol Specification".

[MS-CSOMSPT] Microsoft Corporation, "SharePoint Client-Side Object Model Protocol Specification".

[MS-SPPTC] Microsoft Corporation, "User Code Execution Protocol Specification".

[MS-WSSCAML] Microsoft Corporation, "Collaborative Application Markup Language (CAML) Structure Specification".

[MS-WSSTS] Microsoft Corporation, "Windows SharePoint Services Technical Specification".

[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

1.2.2 Informative References

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

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

[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

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

[RFC4627] Crockford, D., "The application/json Media Type for Javascript Object Notation (JSON)", RFC 4627, July 2006, http://www.ietf.org/rfc/rfc4627.txt

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1.3 Overview

This protocol defines types, methods, and properties that protocol clients use to manage **workflows (2)** on a **site (2)** on a protocol server. The types, properties, and methods enable remote clients to manage **workflow associations**, to send workflow (2) **events**, to control or to query **workflow instances**, and to manage workflow (2) definitions and **actions (2)**.

1.4 Relationship to Other Protocols

This protocol is a set of types, properties, and methods that can be accessed by using the SharePoint Client Query Protocol as described in [MS-CSOM]. This protocol uses JSON as described in [RFC4627] to format data returned to a protocol client. This protocol also uses HTTP, as described in [RFC2616], and HTTPS, as described in [RFC2818] as the transport. The dependencies for this protocol are shown in the following layering diagram.

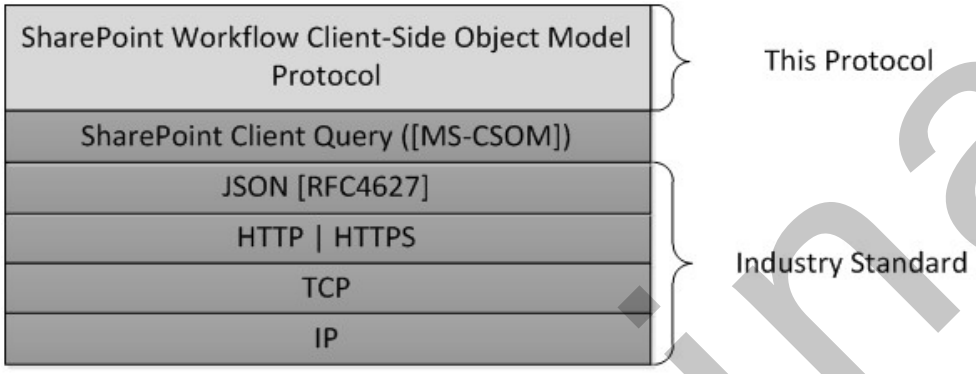

Figure 1: This protocol in relation to other protocols

1.5 Prerequisites/Preconditions

This protocol operates against workflows (2) on a site (2) that is identified by a **Uniform Resource Locator (URL)** that is recognized by protocol clients. This protocol assumes that **authentication (2)** has been performed by underlying protocols.

1.6 Applicability Statement

This protocol can be used by a protocol client to manage workflows (2) on a protocol server. This protocol is optimized to enable a protocol client to specify the exact set of data and operations to perform in a single batch, making it a suitable solution when the connection speed between the protocol client and the protocol server is slow. This protocol is not suitable and is inefficient if both the protocol client and protocol server are on the same computer. In this case, the protocol client can use an API that does not require communication over a network.

1.7 Versioning and Capability Negotiation

- Security and Authentication Methods: This protocol operates in the context of the authenticated user that made a request to the service, and that it runs in the context of a particular site (2).
- Localization: Localization-specific properties, such as the title of a **list (1)**, are returned by using the preferred language of the user, if available, or by using the default language of the site (2) as a fallback. Certain properties can be read or written for specific locales, and are listed in the document.

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1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

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2 Messages

2.1 Transport

Messages are transported by using the SharePoint Client Query Protocol Specification, as specified in [MS-CSOM].

2.2 Message Syntax

None.

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3 Protocol Details

3.1 Server Details

3.1.1 Abstract Data Model

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

This protocol deals with various structures associated with sites (2), lists (1), **items**, navigation, and other structures as specified in [MS-WSSTS].

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Higher-Layer Triggered Events

None.

3.1.5 Message Processing Events and Sequencing Rules

3.1.5.1 Microsoft.SharePoint.WorkflowServices.Client.WorkflowDefinition

TypeId: {60320D36-4B4D-4BAC-A092-8F8B5610EDCD}

ShortName: SP.WorkflowServices.WorkflowDefinition

Represents a workflow (2) definition and associated properties.

3.1.5.1.1 Properties

3.1.5.1.1.1 Scalar Properties

3.1.5.1.1.1.1 Description

Type: **CSOM String**

Accessibility: Read/Write

Specifies the description for **WorkflowDefinition** (section 3.1.5.1).

3.1.5.1.1.1.2 DisplayName

Type: CSOM String

Accessibility: Read/Write

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Specifies the display name for **WorkflowDefinition** (section 3.1.5.1).

3.1.5.1.1.1.3 Id

Type: **CSOM GUID**

Accessibility: Read/Write

Specifies the **workflow identifier** for **WorkflowDefinition** (section 3.1.5.1).

3.1.5.1.1.1.4 Properties

Type: **CSOM dictionary**

Accessibility: Read Only

Gets the custom properties for **WorkflowDefinition** (section 3.1.5.1).

3.1.5.1.1.1.5 Xaml

Type: CSOM String

Accessibility: Read/Write

Specifies the **XAML** for **WorkflowDefinition** (section 3.1.5.1).

3.1.5.1.1.1.6 AssociationUrl

Type: CSOM String

Accessibility: Read/Write

Specifies the Uniform Resource Locator (URL) of the **association form**.

Remarks:

If the value is null or empty, the workflow (2) has no association form.

3.1.5.1.1.1.7 FormField

Type: CSOM String

Accessibility: Read/Write

Defines the **fields** of the **workflow initiation forms** and association forms as specified in [MS-WSSCAML] section 2.3.2.9.

3.1.5.1.1.1.8 InitiationUrl

Type: CSOM String

Accessibility: Read/Write

Specifies the Uniform Resource Locator (URL) of the workflow initiation form.

Remarks:

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If the value is null or empty, the workflow (2) has no workflow initiation form.

3.1.5.1.1.1.9 RequiresAssociationForm

Type: **CSOM Boolean**

Accessibility: Read/Write

Determines whether to automatically generate an association form for this workflow (2).

Remarks:

If the value is true, and the **AssociationUrl** (section 3.1.5.1.1.1.6) is not already set, a default association form is automatically generated for the workflow (2) when **SaveDefinition** (section 3.1.5.9.2.1.6) is called.

3.1.5.1.1.1.10 RequiresInitiationForm

Type: CSOM Boolean

Accessibility: Read/Write

Determines whether to automatically generate a workflow initiation form for this workflow (2).

Remarks:

If the value is true, and the **InitiationUrl** (section 3.1.5.1.1.1.8) is not already set, a default workflow initiation form is automatically generated for the workflow (2) when **SaveDefinition** (section 3.1.5.9.2.1.6) is called.

3.1.5.1.1.1.11 Published

Type: CSOM Boolean

Accessibility: Read Only

"true" if the **WorkflowDefinition** (section 3.1.5.1) has been published to the external **workflow host**; "false" if the **WorkflowDefinition** is only saved on the site (2).

3.1.5.1.1.1.12 RestrictToScope

Type: CSOM String

Accessibility: Read/Write

Specifies the restricted scope of the **WorkflowDefinition** (section 3.1.5.1).

Remarks:

RestrictToScope is a **GUID** value, used in conjunction with the **RestrictToType** property to further restrict the scope of the definition. For example, if the **RestrictToType** is "List", then setting the **RestrictToScope** to a particular list (1) identifier limits the definition to be associable only to the specified list (1). If the **RestrictToType** is "List" but the **RestrictToScope** is null or the empty string, then the definition is associable to any list (1).

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3.1.5.1.1.1.13 RestrictToType

Type: CSOM String

Accessibility: Read/Write

Specifies the restricted type of the **WorkflowDefinition** (section 3.1.5.1).

Remarks:

RestrictToType determines the possible event source type for a workflow (2) subscription that uses this definition. Possible values include "List", "Site", the empty string, or null. For example, a value of "List" indicates this definition is a list (1) workflow (2) and can only be associated to a list (1). An empty string or null value indicates this definition is a universal template, available to associate to any type.

3.1.5.1.1.1.14 DraftVersion

Type: CSOM String

Accessibility: Read/Write

Identifier for a draft version of a **WorkflowDefinition** (section 3.1.5.1).

Remarks:

If **SaveDefinition** (section 3.1.5.9.2.1.6) is called with a **WorkflowDefinition** (section 3.1.5.1) identifier that matches the identifier of a **WorkflowDefinition** on the server, then the **DraftVersion** of the **WorkflowDefinition** MUST match the **DraftVersion** of the **WorkflowDefinition** on the server.

3.1.5.1.1.2 ObjectPath Properties

None.

3.1.5.1.2 Methods

3.1.5.1.2.1 Scalar Methods

3.1.5.1.2.1.1 SetProperty

Return Type: None

This method adds a key-value pair (propertyName, value) to the **WorkflowDefinition** (section 3.1.5.1) object's property bag.

Parameters:

propertyName: Name of the property to add.

Type: CSOM String

value: Value of the property to add.

Type: CSOM String

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3.1.5.1.2.2 ObjectPath Methods

3.1.5.1.2.2.1 CSOM Constructor

Creates an instance of the **WorkflowDefinition** (section 3.1.5.1) object.

Parameters: None

3.1.5.2 Microsoft.SharePoint.WorkflowServices.Client.WorkflowInstance

TypeId: {AEC0FE18-F5E5-4C65-A9D3-550B4169B1BC}

ShortName: SP.WorkflowServices.WorkflowInstance

Represents a workflow instance.

3.1.5.2.1 Properties

3.1.5.2.1.1 Scalar Properties

3.1.5.2.1.1.1 InstanceCreated

Type: **CSOM DateTime**

Accessibility: Read Only

Gets the **Coordinated Universal Time (UTC)** when this **WorkflowInstance** (section 3.1.5.2) was created.

3.1.5.2.1.1.2 LastUpdated

Type: CSOM DateTime

Accessibility: Read Only

Gets the Coordinated Universal Time (UTC) when this **WorkflowInstance** (section 3.1.5.2) state was last persisted.

3.1.5.2.1.1.3 Properties

Type: CSOM dictionary

Accessibility: Read Only

Specifies the properties of this **WorkflowInstance** (section 3.1.5.2).

3.1.5.2.1.1.4 Status

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowStatus

Accessibility: Read Only

Specifies the runtime status of this **WorkflowInstance** (section 3.1.5.2).

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3.1.5.2.1.1.5 UserStatus

Type: CSOM String

Accessibility: Read/Write

Specifies the custom status set by workflow (2) authors of this **WorkflowInstance** (section 3.1.5.2).

3.1.5.2.1.1.6 WorkflowSubscriptionId

Type: CSOM GUID

Accessibility: Read Only

Gets the unique identifier of the subscription that instantiates the **WorkflowInstance** (section 3.1.5.2).

3.1.5.2.1.1.7 WorkflowSubscriptionName

Type: CSOM String

Accessibility: Read Only

Gets the name of the subscription that instantiated this **WorkflowInstance** (section 3.1.5.2).

3.1.5.2.1.1.8 Id

Type: CSOM GUID

Accessibility: Read Only

Gets the unique identifier of the **WorkflowInstance** (section 3.1.5.2).

3.1.5.2.1.1.9 FaultInfo

Type: CSOM String

Accessibility: Read Only

Contains the error string or exception information if the workflow faults.

3.1.5.2.1.2 ObjectPath Properties

None.

3.1.5.2.2 Methods

3.1.5.2.2.1 Scalar Methods

None.

3.1.5.2.2.2 ObjectPath Methods

None.

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3.1.5.3 Microsoft.SharePoint.WorkflowServices.Client.WorkflowInstanceCollection

TypeId: {AEC0FE18-F5E5-4C65-A9D3-550B4169B1BB}

ShortName: SP.WorkflowServices.WorkflowInstanceCollection

A collection of **WorkflowInstance** (section 3.1.5.2) objects.

3.1.5.3.1 Properties

3.1.5.3.1.1 Scalar Properties

None.

3.1.5.3.1.2 ObjectPath Properties

None.

3.1.5.3.2 Methods

3.1.5.3.2.1 Scalar Methods

None.

3.1.5.3.2.2 ObjectPath Methods

None.

3.1.5.4 Microsoft.SharePoint.WorkflowServices.Client.WorkflowServicesManager

TypeId: {4CCC7F0E-BF7E-4477-999C-6458A73D0039}

ShortName: SP.WorkflowServices.WorkflowServicesManager

Describes the workflow host configuration states and provides service objects that interact with the workflow (2).

3.1.5.4.1 Properties

3.1.5.4.1.1 Scalar Properties

3.1.5.4.1.1.1 IsConnected

Type: CSOM Boolean

Accessibility: Read Only

Indicates whether this workflow (2) service is actively connected to a workflow host.

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3.1.5.4.1.2 ObjectPath Properties

3.1.5.4.1.2.1 Current

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowServicesManager

Accessibility: Read Only

Gets the **WorkflowServicesManager** (section 3.1.5.4) for the current **Web** ([MS-CSOMSPT] section 3.2.5.143) context.

3.1.5.4.2 Methods

3.1.5.4.2.1 Scalar Methods

None.

3.1.5.4.2.2 ObjectPath Methods

3.1.5.4.2.2.1 GetWorkflowDeploymentService

Return Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowDeploymentService

Prorovides the WorkflowInstanceService (section 3. (section 3.1.5.9), which manages **WorkflowDefinition** (section 3.1.5.1) objects and activities.

Parameters: None

3.1.5.4.2.2.2 GetWorkflowInstanceService

Return Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowInstanceService

Provides the **WorkflowInstanceService** (section 3.1.5.10), which manages workflow instances.

Parameters: None

3.1.5.4.2.2.3 GetWorkflowInteropService

Return Type: Microsoft.SharePoint.WorkflowServices.Client.InteropService

Returns the **InteropService** (section 3.1.5.8), which provides methods to start or to wait for other workflows (2).

Parameters: None

3.1.5.4.2.2.4 GetWorkflowSubscriptionService

Return Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscriptionService

Provides the **WorkflowSubscriptionService** (section 3.1.5.11), which manages **workflow subscriptions**.

Parameters: None

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3.1.5.4.2.2.5 CSOM Constructor

Creates an instance of the **WorkflowServicesManager** (section 3.1.5.4) scoped to the specified **Web** ([MS-CSOMSPT] section 3.2.5.143).

Parameters:

web: The **Web** in which the **WorkflowServicesManager** will operate. The **WorkflowServicesManager** can be used to return instances of objects that allow management and interaction with workflow (2) services, and these will be scoped to the **Web** specified by this constructor.

Type: Microsoft.SharePoint.Client.Web

3.1.5.5 Microsoft.SharePoint.WorkflowServices.Client.WorkflowStatus

ShortName: SP.WorkflowServices.WorkflowStatus

Flag: false

An enumeration that represents the runtime status of a workflow instance.

3.1.5.5.1 Field Values

3.1.5.5.1.1 Canceled

Value: 4

The workflow instance has been canceled.

3.1.5.5.1.2 Canceling

Value: 3

The workflow instance received a cancel command and is responding to the request.

3.1.5.5.1.3 Completed

Value: 6

The workflow instance has finished running.

3.1.5.5.1.4 Invalid

Value: 8

The workflow instance is in an invalid state.

3.1.5.5.1.5 NotSpecified

Value: 7

No status has been specified.

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3.1.5.5.1.6 NotStarted

Value: 0

The workflow instance has not started.

3.1.5.5.1.7 Started

Value: 1

The workflow instance has started.

3.1.5.5.1.8 Suspended

Value: 2

The workflow instance has been suspended.

3.1.5.5.1.9 Terminated

Value: 5

The workflow instance has been terminated.

3.1.5.6 Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscription

TypeId: {D185EDE6-C3C3-4D37-9E8C-2382DEB37708}

ShortName: SP.WorkflowServices.WorkflowSubscription

Represents a workflow subscription. Updating this subscription will asynchronously update the subscription in the external workflow host.

3.1.5.6.1 Properties

3.1.5.6.1.1 Scalar Properties

3.1.5.6.1.1.1 DefinitionId

Type: CSOM GUID

Accessibility: Read/Write

Specifies the identifier of the **WorkflowDefinition** (section 3.1.5.1) that this **WorkflowSubscription** (section 3.1.5.6) will use.

3.1.5.6.1.1.2 EventSource

Type: CSOM String

Accessibility: Read/Write

Specifies the logical source of the event.

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3.1.5.6.1.1.3 EventSourceId

Type: CSOM GUID

Accessibility: Read/Write

Specifies a unique identifier for the logical source of the event. Used by the **EnumerateSubscriptionsByEventSource** (section 3.1.5.11.2.2.3).

3.1.5.6.1.1.4 Id

Type: CSOM GUID

Accessibility: Read/Write

Gets or sets the unique identifier of this **WorkflowSubscription** (section 3.1.5.6).

3.1.5.6.1.1.5 Name

Type: CSOM String

Accessibility: Read/Write

Gets or sets the display name of this **WorkflowSubscription** (section 3.1.5.6).

3.1.5.6.1.1.6 PropertyDefinitions

Type: CSOM dictionary

Accessibility: Read Only

Specifies the set of properties that will be available to the workflow instance at runtime.

3.1.5.6.1.1.7 Enabled

Type: CSOM Boolean

Accessibility: Read/Write

Enables or disables this **WorkflowSubscription** (section 3.1.5.6). When "false", new instances of the subscription cannot be started, but existing instances will continue to run.

3.1.5.6.1.1.8 StatusFieldName

Type: CSOM String

Accessibility: Read/Write

Gets or sets the name of the workflow (2) status field (2) on the list (1).

Remarks:

Only used for list workflows. If the value is null or the empty string, then a new status field will be created on the specified list when calling **PublishSubscriptionForList** (section 3.1.5.11.2.1.3), and **StatusFieldName** is then set to the name of the new status field.

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3.1.5.6.1.1.9 EventTypes

Type: CSOM Array

Accessibility: Read/Write

Gets or sets the list of event (1) types that this **WorkflowSubscription** (section 3.1.5.6) is listening for.

For list (1) events these will map to an **SPEventReceiverType** enumeration value, as specified in [MS-SPPTC] section 2.2.1.5.

3.1.5.6.1.1.10 ManualStartBypassesActivationLimit

Type: CSOM Boolean

Accessibility: Read/Write

If the value is **true**, then multiple workflow (2) instances can be manually started on the same **list item** at the same time. Otherwise, the maximum number of workflow instances is limited. Only used for list (1) workflows.

3.1.5.6.1.2 ObjectPath Properties

None.

3.1.5.6.2 Methods

3.1.5.6.2.1 Scalar Methods

3.1.5.6.2.1.1 SetProperty

Return Type: None

Sets the properties for the **PropertyDefinitions** (section 3.1.5.6.1.1.6).

Parameters:

name: The name of the property.

Type: CSOM String

value: The value of the property.

Type: CSOM String

3.1.5.6.2.2 ObjectPath Methods

3.1.5.6.2.2.1 CSOM Constructor

Creates an instance of the **WorkflowSubscription** (section 3.1.5.6) object.

Parameters: None

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3.1.5.7 Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscriptionCollection

TypeId: {D185EDE6-C3C3-4D37-9E8C-2382DEB37707}

ShortName: SP.WorkflowServices.WorkflowSubscriptionCollection

A collection of **WorkflowSubscription** (section 3.1.5.6) objects.

3.1.5.7.1 Properties

3.1.5.7.1.1 Scalar Properties

None.

3.1.5.7.1.2 ObjectPath Properties

None.

3.1.5.7.2 Methods

3.1.5.7.2.1 Scalar Methods

None.

3.1.5.7.2.2 ObjectPath Methods

None.

3.1.5.8 Microsoft.SharePoint.WorkflowServices.Client.InteropService

TypeId: {AEDA1AE7-A445-429D-AD92-1D6B00DF7102}

ShortName: SP.WorkflowServices.InteropService

Allows the workflows (2) to invoke other workflows (2).

3.1.5.8.1 Properties

3.1.5.8.1.1 Scalar Properties

None.

3.1.5.8.1.2 ObjectPath Properties

3.1.5.8.1.2.1 Current

Type: Microsoft.SharePoint.WorkflowServices.Client.InteropService

Accessibility: Read Only

Gets the current **InteropService** (section 3.1.5.8) for this request.

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3.1.5.8.2 Methods

3.1.5.8.2.1 Scalar Methods

3.1.5.8.2.1.1 CancelWorkflow

Return Type: None

Stops a workflow (2).

Parameters:

instanceId: Identifier of the workflow (2) to cancel.

Type: CSOM GUID

3.1.5.8.2.1.2 DisableEvents

Return Type: None

Removes workflow (2) events from an object.

Parameters:

listId: Identifier of a list on which to remove workflow (2) events. Use an **empty GUID** to specify events that SHOULD be disabled at the higher web scope.

Type: CSOM GUID

itemGuid: GUID that identifies a list item. Use an empty GUID to ignore the parameter.

Type: CSOM GUID

3.1.5.8.2.1.3 EnableEvents

Return Type: None

Enables workflow (2) events on an object.

Parameters:

listId: Optional identifier of a list on which to enable workflow (2) events. Use an empty GUID to specify events should be enabled at the higher web scope.

Type: CSOM GUID

itemGuid: GUID that identifies a list item. Use an empty GUID to ignore the parameter.

Type: CSOM GUID

3.1.5.8.2.1.4 StartWorkflow

Return Type: CSOM GUID

Starts a workflow (2).

Parameters:

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associationName: The association name of the workflow (2) to start.

Type: CSOM String

correlationId: GUID that represents this request.

Type: CSOM GUID

listId: Identifier of a list on which to start. Use an empty GUID to specify this is a site (2) workflow (2) that runs at the scope of the web rather than a specific list.

Type: CSOM GUID

itemGuid: GUID that identifies a list item. Use an empty GUID for site (2) workflows (2).

Type: CSOM GUID

workflowParameters: Parameters passed to the new workflow (2).

Type: CSOM dictionary

3.1.5.8.2.2 ObjectPath Methods

None.

3.1.5.9 Microsoft.SharePoint.WorkflowServices.Client.WorkflowDeploymentService

TypeId: {3573A52F-3A27-4700-A08E-822C191C2C5D}

ShortName: SP.WorkflowServices.WorkflowDeploymentService

Manages the **WorkflowDefinition** (section 3.1.5.1) objects and **activity (1)** authoring.

3.1.5.9.1 Properties

3.1.5.9.1.1 Scalar Properties

None.

3.1.5.9.1.2 ObjectPath Properties

None.

3.1.5.9.2 Methods

3.1.5.9.2.1 Scalar Methods

3.1.5.9.2.1.1 DeleteDefinition

Return Type: None

Deletes a **WorkflowDefinition** (section 3.1.5.1).

Parameters:

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definitionId: Identifier of the **WorkflowDefinition** (section 3.1.5.1).

Type: CSOM GUID

3.1.5.9.2.1.2 DeprecateDefinition

Return Type: None

Marks a **WorkflowDefinition** (section 3.1.5.1) object as deprecated.

Parameters:

definitionId: Identifier of the definition to deprecate.

Type: CSOM GUID

3.1.5.9.2.1.3 GetActivitySignatures

Return Type: CSOM dictionary

Returns a collection of **XML** that represents the signature of a XAML (section 3.1.5.1.1.1.5) class.

Parameters:

lastChanged: The time to check for latest changes. Any signatures older than this time are excluded.

Type: CSOM DateTime

3.1.5.9.2.1.4 GetDesignerActions

Return Type: CSOM String

Returns the list of valid workflow (2) actions (2) for this server.

Parameters:

web: The site (2) from which to read the workflow (2) actions (2).

Type: Microsoft.SharePoint.Client.Web

3.1.5.9.2.1.5 PublishDefinition

Return Type: None

Publishes a **WorkflowDefinition** (section 3.1.5.1) to the **workflow store**.

Parameters:

definitionId: The identifier of the definition to publish.

Type: CSOM GUID

3.1.5.9.2.1.6 SaveDefinition

Return Type: CSOM GUID

Returns the unique identifier of the **WorkflowDefinition** (section 3.1.5.1) in the workflow store.

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Parameters:

definition: The definition to save.

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowDefinition

3.1.5.9.2.1.7 ValidateActivity

Return Type: CSOM String

Validates the activity (1) against the workflow store. Returns the error message encountered during validation, or null if successful.

Parameters:

activityXaml: The activity (1) to validate.

Type: CSOM String

3.1.5.9.2.1.8 DeleteCollateral

Return Type: None

Deletes the URL of a **collateral file** for a **WorkflowDefinition** (section 3.1.5.1).

Parameters:

workflowDefinitionId: Identifier of the **WorkflowDefinition** (section 3.1.5.1).

Type: CSOM GUID

leafFileName: The **leaf name** of the collateral file.

Type: CSOM String

3.1.5.9.2.1.9 GetCollateralUri

Return Type: CSOM String

Retrieves the URL of a collateral file for a **WorkflowDefinition** (section 3.1.5.1).

Parameters:

workflowDefinitionId: Identifier of the **WorkflowDefinition** (section 3.1.5.1).

Type: CSOM GUID

leafFileName: The leaf name of the collateral file.

Type: CSOM String

3.1.5.9.2.1.10 PackageDefinition

Return Type: CSOM String

Returns a Uniform Resource Locator (URL) to the **solution package** generated from a single **WorkflowDefinition** (section 3.1.5.1).

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Parameters:

definitionId: ID of the definition to package

Type: CSOM GUID

packageDefaultFilename: the default filename to choose for the new package

Type: CSOM String

packageTitle: the package title

Type: CSOM String

packageDescription: the package description

Type: CSOM String

3.1.5.9.2.1.11 SaveCollateral

Return Type: None

Saves the collateral file for a **WorkflowDefinition** (section 3.1.5.1).

Parameters:

workflowDefinitionId: Identifier of the **WorkflowDefinition** (section 3.1.5.1).

Type: CSOM GUID

leafFileName: The leaf name of the collateral file.

Type: CSOM String

fileContent: File content of the collateral file.

Type: CSOM Stream

3.1.5.9.2.2 ObjectPath Methods

3.1.5.9.2.2.1 GetDefinition

Return Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowDefinition

Retrieves a **WorkflowDefinition** (section 3.1.5.1) from the workflow store.

Parameters:

definitionId: Identifier of the definition to retrieve.

Type: CSOM GUID

3.1.5.9.2.2.2 EnumerateDefinitions

Return Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowDefinitionCollection

Retrieves the **WorkflowDefinition** (section 3.1.5.1) objects from the **store** that match the specified parameters.

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Parameters:

publishedOnly: "true" if only **published** workflows (2) should be returned.

Type: CSOM Boolean

3.1.5.10 Microsoft.SharePoint.WorkflowServices.Client.WorkflowInstanceService

TypeId: {71252277-2470-4022-BCAF-C4657AA118C3}

ShortName: SP.WorkflowServices.WorkflowInstanceService

Manages and reads workflow instances from the workflow host.

3.1.5.10.1 Properties

3.1.5.10.1.1 Scalar Properties

None.

3.1.5.10.1.2 ObjectPath Properties

None.

3.1.5.10.2 Methods

3.1.5.10.2.1 Scalar Methods

3.1.5.10.2.1.1 CancelWorkflow

Return Type: None

Sends a cancel message to a workflow (2) specified by the given instance.

Parameters:

instance: The **WorkflowInstance** (section 3.1.5.2) to cancel.

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowInstance

3.1.5.10.2.1.2 StartWorkflow

Return Type: CSOM GUID

Starts a **WorkflowInstance** (section 3.1.5.2) specified by the given subscription and payload.

Parameters:

subscription: The **WorkflowSubscription** (section 3.1.5.6) from which to start a new **WorkflowInstance** (section 3.1.5.2).

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscription

payload: Parameters to pass into the **WorkflowInstance** (section 3.1.5.2).

Type: CSOM dictionary

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3.1.5.10.2.1.3 TerminateWorkflow

Return Type: None

Terminates a workflow (2) specified by the given **WorkflowInstance** (section 3.1.5.2).

Parameters:

instance: The **WorkflowInstance** (section 3.1.5.2) to terminate.

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowInstance

3.1.5.10.2.1.4 PublishCustomEvent

Return Type: None

Sends a custom event and its payload to a workflow (2) specified by the given instance.

Parameters:

instance: The **WorkflowInstance** (section 3.1.5.2) to receive the custom event.

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowInstance

eventName: Name of the custom event.

Type: CSOM String

payload: Payload of the custom event.

Type: CSOM String

3.1.5.10.2.1.5 CountInstances

Return Type: CSOM Int32

Returns a count of all the instances of the specified **WorkflowSubscription** (section 3.1.5.6).

Parameters:

parentSubscription: The parent subscription of the instances to count.

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscription

3.1.5.10.2.1.6 CountInstancesWithStatus

Return Type: CSOM Int32

Returns a count of the instances of the specified **WorkflowSubscription** (section 3.1.5.6) with the specified status.

Parameters:

parentSubscription: The parent subscription of the instances to count.

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscription

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status: Only instances with this status value are counted. If the value is **WorkflowStatus.NotSpecified** (section 3.1.5.5.1.5), instances in all statuses are counted.

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowStatus

3.1.5.10.2.1.7 StartWorkflowOnListItem

Return Type: CSOM GUID

Starts a **WorkflowInstance** (section 3.1.5.2) specified by the given subscription on the given list item, passing in the supplied payload.

Parameters:

subscription: The **WorkflowSubscription** (section 3.1.5.6) from which to start a new **WorkflowInstance** (section 3.1.5.2).

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscription

itemId: The identifier of an existing list item on which to start a new **WorkflowInstance** (section 3.1.5.2).

Type: CSOM Int32

payload: Parameters to pass into the **WorkflowInstance** (section 3.1.5.2).

Type: CSOM dictionary

3.1.5.10.2.2 ObjectPath Methods

3.1.5.10.2.2.1 Enumerate

Return Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowInstanceCollection

Gets a collection of workflow instances started by the specified subscription.

Parameters:

parentSubscription: The subscription that started the workflow instances.

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscription

3.1.5.10.2.2.2 GetInstance

Return Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowInstance

Gets a **WorkflowInstance** (section 3.1.5.2) from an external workflow store by a specified instance identifier.

Parameters:

instanceId: Unique identifier of the **WorkflowInstance** (section 3.1.5.2).

Type: CSOM GUID

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3.1.5.10.2.2.3 EnumerateInstancesForListItem

Return Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowInstanceCollection

Gets the instances for the specified list item.

Parameters:

listId: The identifier of the list (1) to which the item belongs.

Type: CSOM GUID

itemId: The identifier of the item to get the instances for.

Type: CSOM Int32

3.1.5.10.2.2.4 EnumerateInstancesForSite

Return Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowInstanceCollection

Gets the site (2) workflow (2) instances for the current site (2).

Parameters: None

3.1.5.11 Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscriptionService

TypeId: {FC956693-2419-4950-8963-52EBC3E46501}

ShortName: SP.WorkflowServices.WorkflowSubscriptionService

Manages subscriptions for a workflow (2).

3.1.5.11.1 Properties

3.1.5.11.1.1 Scalar Properties

None.

3.1.5.11.1.2 ObjectPath Properties

3.1.5.11.1.2.1 Current

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscriptionService

Accessibility: Read Only

Gets the current **WorkflowSubscriptionService** (section 3.1.5.11) object.

3.1.5.11.2 Methods

3.1.5.11.2.1 Scalar Methods

3.1.5.11.2.1.1 DeleteSubscription

Return Type: None

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Deletes the specified **WorkflowSubscription** (section 3.1.5.6).

Parameters:

subscriptionId: The identifier of the subscription to delete.

Type: CSOM GUID

3.1.5.11.2.1.2 PublishSubscription

Return Type: CSOM GUID

Creates a **WorkflowSubscription** (section 3.1.5.6) for a workflow (2), and returns the unique identifier of the new subscription.

Parameters:

subscription: The subscription data to publish.

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscription

3.1.5.11.2.1.3 PublishSubscriptionForList

Return Type: CSOM GUID

Creates a workflow subscription for a workflow (2) and an **event receiver** on the specified list (1), and writes an **EventSourceId** (section 3.1.5.6.1.1.3) that matches the list as the event (2) source, and returns the unique identifier of the new subscription.

Parameters:

subscription: The subscription data to publish.

Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscription

listId: Identifier for the specified list.

Type: CSOM GUID

3.1.5.11.2.1.4 RegisterInterestInList

Return Type: None

Creates an event receiver on a list for the specified event (2) if necessary.

Parameters:

listId: GUID of the list to ensure that the event receiver is on.

Type: CSOM GUID

eventName: The name of the event (2).

Type: CSOM String

3.1.5.11.2.1.5 UnregisterInterestInList

Return Type: None

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Removes an event receiver from the specified list for the specified event.

Parameters:

listId: GUID of the list (1) containing the event receiver to be unregistered.

Type: CSOM GUID

eventName: The name of the event (2).

Type: CSOM String

3.1.5.11.2.2 ObjectPath Methods

3.1.5.11.2.2.1 EnumerateSubscriptions

Return Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscriptionCollection

Retrieves a **WorkflowSubscriptionCollection** (section 3.1.5.7) that contains all of the subscriptions on the **Web** ([MS-CSOMSPT] section 3.2.5.143).

Parameters: None

3.1.5.11.2.2.2 EnumerateSubscriptionsByDefinition

Return Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscriptionCollection

Retrieves a **WorkflowSubscriptionCollection** (section 3.1.5.7) based on a **WorkflowDefinition** (section 3.1.5.1).

Parameters:

definitionId: Identifier of a **WorkflowDefinition** (section 3.1.5.1) object.

Type: CSOM GUID

3.1.5.11.2.2.3 EnumerateSubscriptionsByEventSource

Return Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscriptionCollection

Retrieves a **WorkflowSubscriptionCollection** (section 3.1.5.7) based on the specified **EventSourceId** (section 3.1.5.6.1.1.3).

Parameters:

eventSourceId: The unique identifier of the **EventSource** (section 3.1.5.6.1.1.2) for the subscriptions.

Type: CSOM GUID

3.1.5.11.2.2.4 EnumerateSubscriptionsByList

Return Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscriptionCollection

Retrieves a **WorkflowSubscriptionCollection** (section 3.1.5.7) based on the specified list.

Parameters:

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listId: The unique identifier of the list on which to filter the subscriptions.

Type: CSOM GUID

3.1.5.11.2.2.5 GetSubscription

Return Type: Microsoft.SharePoint.WorkflowServices.Client.WorkflowSubscription

Retrieves an instance of the **WorkflowSubscription** (section 3.1.5.6) based on its unique identifier.

Parameters:

subscriptionId: The unique identifier of the subscription.

Type: CSOM GUID

3.1.5.12 Microsoft.SharePoint.WorkflowServices.Client.WorkflowDefinitionCollection

TypeId: {66F013C8-F126-4F84-BC22-8FD0E9A3E7D3}

ShortName: SP.WorkflowServices.WorkflowDefinitionCollection

Represents a collection of **WorkflowDefinition** (section 3.1.5.1) objects.

3.1.5.12.1 Properties

3.1.5.12.1.1 Scalar Properties

None.

3.1.5.12.1.2 ObjectPath Properties

None.

3.1.5.12.2 Methods

3.1.5.12.2.1 Scalar Methods

None.

3.1.5.12.2.2 ObjectPath Methods

None.

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

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4 Protocol Examples

4.1 Associate Workflow

In this example, a published workflow (2) definition is associated with a list.

Request:

```
<Request AddExpandoFieldTypeSuffix="true" SchemaVersion="15.0.0.0" LibraryVersion="15.0.0.0"
ApplicationName=".NET Library"
xmlns="http://schemas.microsoft.com/sharepoint/clientquery/2009">
  <Actions>
    <SetProperty Id="78" ObjectPathId="74" Name="DefinitionId">
      <Parameter Type="Guid">{3988dd69-2ffa-45b5-b3f0-5735d4150110}</Parameter>
    </SetProperty>
    <SetProperty Id="79" ObjectPathId="74" Name="EventSourceId">
      <Parameter Type="Guid">{96424cc8-dc44-409d-ad9e-87236ee608a2}</Parameter>
    </SetProperty>
    <SetProperty Id="80" ObjectPathId="74" Name="EventSource">
      <Parameter Type="String">e3137044-d96b-4989-ad80-aed34f0cc10b/375160a8-0ab6-46f2-9b3d-
b987684b30e3/96424cc8-dc44-409d-ad9e-87236ee608a2</Parameter>
    </SetProperty>
    <SetProperty Id="81" ObjectPathId="74" Name="EventType">
      <Parameter Type="String">WorkflowStart</Parameter>
    </SetProperty>
    <SetProperty Id="82" ObjectPathId="74" Name="Name">
      <Parameter Type="String">testWorkflowAssociation1</Parameter>
    </SetProperty>
    <Method Name="PublishSubscription" Id="83" ObjectPathId="30">
      <Parameters>
        <Parameter ObjectPathId="74" />
      </Parameters>
    </Method>
  </Actions>
  <ObjectPaths>
    <Identity Id="74" Name="50e607f0-ceab-4a8c-90c5-81e2f2ba78d9:00000000-0000-0000-0000-
000000000000" />
    <Method Id="30" ParentId="25" Name="GetWorkflowSubscriptionService" />
    <Constructor Id="25" TypeId="{4ccc7f0e-bf7e-4477-999c-6458a73d0039}">
      <Parameters>
        <Parameter ObjectPathId="7" />
      </Parameters>
    </Constructor>
    <Identity Id="7" Name="740c6a0b-85e2-48a0-a494-e0f1759d4aa7:web:375160a8-0ab6-46f2-9b3d-
b987684b30e3" />
  </ObjectPaths>
</Request>
```

Response:

```
[
{
"SchemaVersion":"15.0.0.0","LibraryVersion":"15.0.3427.1000","ErrorInfo":null
},83,"\/Guid(b72d25f3-8327-41d5-836d-ad956da3eb45)\/"
]
```

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4.2 Publish Definition

In this example, a saved workflow (2) definition is published.

Request:

```
<Request AddExpandoFieldTypeSuffix="true" SchemaVersion="15.0.0.0" LibraryVersion="15.0.0.0"
ApplicationName=".NET Library"
xmlns="http://schemas.microsoft.com/sharepoint/clientquery/2009">
  <Actions>
    <Method Name="PublishDefinition" Id="24" ObjectPathId="14">
      <Parameters>
        <Parameter Type="Guid">{3988dd69-2ffa-45b5-b3f0-5735d4150110}</Parameter>
      </Parameters>
    </Method>
  </Actions>
  <ObjectPaths>
    <Method Id="14" ParentId="11" Name="GetWorkflowDeploymentService" />
    <Constructor Id="11" TypeId="{4ccc7f0e-bf7e-4477-999c-6458a73d0039}">
      <Parameters>
        <Parameter ObjectPathId="7" />
      </Parameters>
    </Constructor>
    <Identity Id="7" Name="740c6a0b-85e2-48a0-a494-e0f1759d4aa7:web:375160a8-0ab6-46f2-9b3d-
b987684b30e3" />
  </ObjectPaths>
</Request>
```

Response:

```
[
{
"SchemaVersion":"15.0.0.0","LibraryVersion":"15.0.3427.1000","ErrorInfo":null
}
]
```

4.3 Save Definition

In this example, a **WorkflowDefinition** (section 3.1.5.1) is saved.

Request:

```
<Request AddExpandoFieldTypeSuffix="true" SchemaVersion="15.0.0.0" LibraryVersion="15.0.0.0"
ApplicationName=".NET Library"
xmlns="http://schemas.microsoft.com/sharepoint/clientquery/2009">
  <Actions>
    <SetProperty Id="20" ObjectPathId="16" Name="DisplayName">
      <Parameter Type="String">csomTest2</Parameter>
    </SetProperty>
    <SetProperty Id="21" ObjectPathId="16" Name="Id">
      <Parameter Type="Guid">{3988dd69-2ffa-45b5-b3f0-5735d4150110}</Parameter>
    </SetProperty>
    <SetProperty Id="22" ObjectPathId="16" Name="Xaml">
      <Parameter Type="String">
        &lt;p:Activity mva:VisualBasic.Settings="Assembly references and imported namespaces
for internal implementation" &#xD;
```

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```
        xmlns:mva="clr-
namespace:Microsoft.VisualBasic.Activities;assembly=System.Activities"&#xD;
        xmlns:p="http://schemas.microsoft.com/netfx/2009/xaml/activities"&#xD;
        xmlns:s="clr-namespace:System;assembly=mscorlib"&#xD;
        xmlns:mv="clr-namespace:Microsoft.VisualBasic;assembly=System" &#xD;
        xmlns:s1="clr-namespace:System;assembly=System" &#xD;
        xmlns:s2="clr-namespace:System;assembly=System.Xml" &#xD;
        xmlns:s3="clr-namespace:System;assembly=System.Core" &#xD;
        xmlns:scg="clr-namespace:System.Collections.Generic;assembly=System" &#xD;
        xmlns:scg1="clr-namespace:System.Collections.Generic;assembly=System.ServiceModel"
&#xD;
        xmlns:scg2="clr-namespace:System.Collections.Generic;assembly=System.Core" &#xD;
        xmlns:scg3="clr-namespace:System.Collections.Generic;assembly=mscorlib" &#xD;
        xmlns:sd="clr-namespace:System.Data;assembly=System.Data" &#xD;
        xmlns:sl="clr-namespace:System.Linq;assembly=System.Core" &#xD;
        xmlns:st="clr-namespace:System.Text;assembly=mscorlib"&#xD;
        xmlns:sad="clr-namespace:System.Activities.Debugger;assembly=System.Activities"&#xD;
        xmlns:sapx="clr-
namespace:System.Activities.Presentation.Xaml;assembly=System.Activities.Presentation"&#xD;
        xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"&gt;&#xD;
        &lt;/p:Activity&gt;
      </Parameter>
    </SetProperty>
    <Method Name="SaveDefinition" Id="23" ObjectPathId="14">
      <Parameters>
        <Parameter ObjectPathId="16" />
      </Parameters>
    </Method>
  </Actions>
  <ObjectPaths>
    <Identity Id="16" Name="98b53367-9eab-45ad-ae5a-6e041f4b3be8:8290b9e3-2772-45fb-8bee-
e502ed37cef3" />
    <Method Id="14" ParentId="11" Name="GetWorkflowDeploymentService" />
    <Constructor Id="11" TypeId="{4ccc7f0e-bf7e-4477-999c-6458a73d0039}">
      <Parameters>
        <Parameter ObjectPathId="7" />
      </Parameters>
    </Constructor>
    <Identity Id="7" Name="740c6a0b-85e2-48a0-a494-e0f1759d4aa7:web:375160a8-0ab6-46f2-9b3d-
b987684b30e3" />
  </ObjectPaths>
</Request>
```

Response:

```
[
{
"SchemaVersion":"15.0.0.0","LibraryVersion":"15.0.3427.1000","ErrorInfo":null
},23,"\/Guid(3988dd69-2ffa-45b5-b3f0-5735d4150110)\/"
]
```

4.4 Start Workflow

In this example, a workflow instance is triggered from an existing workflow association.

Request:

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```
<Request AddExpandoFieldTypeSuffix="true" SchemaVersion="15.0.0.0" LibraryVersion="15.0.0.0"
ApplicationName=".NET Library"
xmlns="http://schemas.microsoft.com/sharepoint/clientquery/2009">
  <Actions>
    <Method Name="StartWorkflow" Id="150" ObjectPathId="87">
      <Parameters>
        <Parameter ObjectPathId="131" />
        <Parameter Type="Dictionary">
          <Property Name="ListId" Type="Guid">{96424cc8-dc44-409d-ad9e-
87236ee608a2}</Property>
        </Parameter>
      </Parameters>
    </Method>
  </Actions>
  <ObjectPaths>
    <Method Id="87" ParentId="84" Name="GetWorkflowInstanceService" />
    <Identity Id="131" Name="50e607f0-ceab-4a8c-90c5-81e2f2ba78d9:b72d25f3-8327-41d5-836d-
ad956da3eb45" />
    <Constructor Id="84" TypeId="{4ccc7f0e-bf7e-4477-999c-6458a73d0039}">
      <Parameters>
        <Parameter ObjectPathId="7" />
      </Parameters>
    </Constructor>
    <Identity Id="7" Name="740c6a0b-85e2-48a0-a494-e0f1759d4aa7:web:375160a8-0ab6-46f2-9b3d-
b987684b30e3" />
  </ObjectPaths>
</Request>
```

Response:

```
[
{
"SchemaVersion":"15.0.0.0","LibraryVersion":"15.0.3427.1000","ErrorInfo":null
},150,"\/Guid(4f5dc953-22c4-40ad-8ae8-75c3af9bf339)\/"
]
```

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5 Security

5.1 Security Considerations for Implementers

None.

5.2 Index of Security Parameters

None.

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6 Appendix A: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include released service packs:

- Microsoft® SharePoint® Server 2013 Preview

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.

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7 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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