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

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Table of Contents

1 Introduction 8
1.1 Glossary 8
1.2 References 9
1.2.1 Normative References 9
1.2.2 Informative References 9
1.3 Overview 10
1.4 Relationship to Other Protocols 10
1.5 Prerequisites/Preconditions 10
1.6 Applicability Statement 10
1.7 Versioning and Capability Negotiation 10
1.8 Vendor-Extensible Fields 11
1.9 Standards Assignments 11

2 Messages 12
2.1 Transport 12
2.2 Message Syntax 12

3 Protocol Details 13
3.1 Server Details 13
3.1.1 Abstract Data Model 13
3.1.2 Timers 13
3.1.3 Initialization 13
3.1.4 Higher-Layer Triggered Events 13
3.1.5 Message Processing Events and Sequencing Rules 13
3.1.5.1 Microsoft.SharePoint.Client.WorkflowServices.WorkflowDefinition 13
3.1.5.1.1 Properties 13
3.1.5.1.1.1 Scalar Properties 13
3.1.5.1.1.1.1 Description 13
3.1.5.1.1.1.2 DisplayName 13
3.1.5.1.1.1.3 Id 14
3.1.5.1.1.1.4 Properties 14
3.1.5.1.1.1.5 Xaml 14
3.1.5.1.1.1.6 AssociationUrl 14
3.1.5.1.1.1.7 FormField 14
3.1.5.1.1.1.8 InitiationUrl 14
3.1.5.1.1.1.9 RequiresAssociationForm 15
3.1.5.1.1.1.10 RequiresInitiationForm 15
3.1.5.1.1.1.11 Published 15
3.1.5.1.1.1.12 RestrictToScope 15
3.1.5.1.1.1.13 RestrictToType 16
3.1.5.1.1.1.14 DraftVersion 16
3.1.5.1.1.2 ObjectPath Properties 16
3.1.5.1.2 Methods 16
3.1.5.1.2.1 Scalar Methods 16
3.1.5.1.2.1.1 SetProperty 16
3.1.5.1.2.2 ObjectPath Methods 17
3.1.5.1.2.2.1 CSOM Constructor 17
3.1.5.2 Microsoft.SharePoint.Client.WorkflowServices.WorkflowInstance 17
3.1.5.2.1 Properties 17
3.1.5.2.1.1 Scalar Properties 17

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3.1.5.2.1.1.1 InstanceCreated 17
3.1.5.2.1.1.2 LastUpdated 17
3.1.5.2.1.1.3 Properties 17
3.1.5.2.1.1.4 Status 17
3.1.5.2.1.1.5 UserStatus 18
3.1.5.2.1.1.6 WorkflowSubscriptionId 18
3.1.5.2.1.1.7 Id 18
3.1.5.2.1.1.8 FaultInfo 18
3.1.5.2.1.2 ObjectPath Properties 18
3.1.5.2.2 Methods 18
3.1.5.2.2.1 Scalar Methods 18
3.1.5.2.2.2 ObjectPath Methods 18
3.1.5.3 Microsoft.SharePoint.Client.WorkflowServices.WorkflowInstanceCollection 18
3.1.5.3.1 Properties 19
3.1.5.3.1.1 Scalar Properties 19
3.1.5.3.1.2 ObjectPath Properties 19
3.1.5.3.2 Methods 19
3.1.5.3.2.1 Scalar Methods 19
3.1.5.3.2.2 ObjectPath Methods 19
3.1.5.4 Microsoft.SharePoint.Client.WorkflowServices.WorkflowServicesManager 19
3.1.5.4.1 Properties 19
3.1.5.4.1.1 Scalar Properties 19
3.1.5.4.1.1.1 AppId 19
3.1.5.4.1.1.2 IsConnected 19
3.1.5.4.1.1.3 ScopePath 19
3.1.5.4.1.2 ObjectPath Properties 20
3.1.5.4.1.2.1 Current 20
3.1.5.4.2 Methods 20
3.1.5.4.2.1 Scalar Methods 20
3.1.5.4.2.2 ObjectPath Methods 20
3.1.5.4.2.2.1 GetWorkflowDeploymentService 20
3.1.5.4.2.2.2 GetWorkflowInstanceService 20
3.1.5.4.2.2.3 GetWorkflowInteropService 20
3.1.5.4.2.2.4 GetWorkflowSubscriptionService 20
3.1.5.4.2.2.5 CSOM Constructor 21
3.1.5.5 Microsoft.SharePoint.Client.WorkflowServices.WorkflowSubscription 21
3.1.5.5.1 Properties 21
3.1.5.5.1.1 Scalar Properties 21
3.1.5.5.1.1.1 DefinitionId 21
3.1.5.5.1.1.2 EventSourceId 21
3.1.5.5.1.1.3 Id 21
3.1.5.5.1.1.4 Name 21
3.1.5.5.1.1.5 PropertyDefinitions 22
3.1.5.5.1.1.6 Enabled 22
3.1.5.5.1.1.7 StatusFieldName 22
3.1.5.5.1.1.8 EventTypes 22
3.1.5.5.1.1.9 ManualStartBypassesActivationLimit 22
3.1.5.5.1.2 ObjectPath Properties 23
3.1.5.5.2 Methods 23
3.1.5.5.2.1 Scalar Methods 23
3.1.5.5.2.1.1 SetProperty 23
3.1.5.5.2.1.2 GetExternalVariable 23
3.1.5.5.2.1.3 SetExternalVariable 23

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3.1.5.5.2.2 ObjectPath Methods 23
3.1.5.5.2.2.1 CSOM Constructor 23
3.1.5.6 Microsoft.SharePoint.Client.WorkflowServices.WorkflowSubscriptionCollection 24
3.1.5.6.1 Properties 24
3.1.5.6.1.1 Scalar Properties 24
3.1.5.6.1.2 ObjectPath Properties 24
3.1.5.6.2 Methods 24
3.1.5.6.2.1 Scalar Methods 24
3.1.5.6.2.2 ObjectPath Methods 24
3.1.5.7 Microsoft.SharePoint.Client.WorkflowServices.InteropService 24
3.1.5.7.1 Properties 24
3.1.5.7.1.1 Scalar Properties 24
3.1.5.7.1.2 ObjectPath Properties 24
3.1.5.7.1.2.1 Current 24
3.1.5.7.2 Methods 25
3.1.5.7.2.1 Scalar Methods 25
3.1.5.7.2.1.1 CancelWorkflow 25
3.1.5.7.2.1.2 DisableEvents 25
3.1.5.7.2.1.3 EnableEvents 25
3.1.5.7.2.1.4 StartWorkflow 25
3.1.5.7.2.2 ObjectPath Methods 26
3.1.5.8 Microsoft.SharePoint.Client.WorkflowServices.WorkflowDeploymentService 26
3.1.5.8.1 Properties 26
3.1.5.8.1.1 Scalar Properties 26
3.1.5.8.1.2 ObjectPath Properties 26
3.1.5.8.2 Methods 26
3.1.5.8.2.1 Scalar Methods 26
3.1.5.8.2.1.1 DeleteDefinition 26
3.1.5.8.2.1.2 DeprecateDefinition 27
3.1.5.8.2.1.3 GetActivitySignatures 27
3.1.5.8.2.1.4 GetDesignerActions 27
3.1.5.8.2.1.5 PublishDefinition 27
3.1.5.8.2.1.6 SaveDefinition 27
3.1.5.8.2.1.7 ValidateActivity 28
3.1.5.8.2.1.8 DeleteCollateral 28
3.1.5.8.2.1.9 GetCollateralUri 28
3.1.5.8.2.1.10 PackageDefinition 28
3.1.5.8.2.1.11 SaveCollateral 29
3.1.5.8.2.2 ObjectPath Methods 29
3.1.5.8.2.2.1 GetDefinition 29
3.1.5.8.2.2.2 EnumerateDefinitions 29
3.1.5.9 Microsoft.SharePoint.Client.WorkflowServices.WorkflowInstanceService 30
3.1.5.9.1 Properties 30
3.1.5.9.1.1 Scalar Properties 30
3.1.5.9.1.2 ObjectPath Properties 30
3.1.5.9.1.2.1 Current 30
3.1.5.9.2 Methods 30
3.1.5.9.2.1 Scalar Methods 30
3.1.5.9.2.1.1 CancelWorkflow 30
3.1.5.9.2.1.2 StartWorkflow 30
3.1.5.9.2.1.3 TerminateWorkflow 31
3.1.5.9.2.1.4 PublishCustomEvent 31
3.1.5.9.2.1.5 CountInstances 31

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3.1.5.9.2.1.6 CountInstancesWithStatus 31
3.1.5.9.2.1.7 StartWorkflowOnListItem 32
3.1.5.9.2.1.8 GetDebugInfo 32
3.1.5.9.2.1.9 ResumeWorkflow 32
3.1.5.9.2.1.10 SuspendWorkflow 33
3.1.5.9.2.1.11 StartWorkflowOnListItemBySubscriptionId 33
3.1.5.9.2.2 ObjectPath Methods 33
3.1.5.9.2.2.1 Enumerate 33
3.1.5.9.2.2.2 GetInstance 33
3.1.5.9.2.2.3 EnumerateInstancesForListItem 34
3.1.5.9.2.2.4 EnumerateInstancesForSite 34
3.1.5.9.2.2.5 EnumerateInstancesForListItemWithOffset 34
3.1.5.9.2.2.6 EnumerateInstancesForSiteWithOffset 34
3.1.5.9.2.2.7 EnumerateWithOffset 35
3.1.5.10 Microsoft.SharePoint.Client.WorkflowServices.WorkflowSubscriptionService 35
3.1.5.10.1 Properties 35
3.1.5.10.1.1 Scalar Properties 35
3.1.5.10.1.2 ObjectPath Properties 35
3.1.5.10.1.2.1 Current 35
3.1.5.10.2 Methods 36
3.1.5.10.2.1 Scalar Methods 36
3.1.5.10.2.1.1 DeleteSubscription 36
3.1.5.10.2.1.2 PublishSubscription 36
3.1.5.10.2.1.3 PublishSubscriptionForList 36
3.1.5.10.2.1.4 RegisterInterestInList 36
3.1.5.10.2.1.5 UnregisterInterestInList 37
3.1.5.10.2.2 ObjectPath Methods 37
3.1.5.10.2.2.1 EnumerateSubscriptions 37
3.1.5.10.2.2.2 EnumerateSubscriptionsByDefinition 37
3.1.5.10.2.2.3 EnumerateSubscriptionsByEventSource 37
3.1.5.10.2.2.4 EnumerateSubscriptionsByList 38
3.1.5.10.2.2.5 GetSubscription 38
3.1.5.11 Microsoft.SharePoint.Client.WorkflowServices.WorkflowDefinitionCollection 38
3.1.5.11.1 Properties 38
3.1.5.11.1.1 Scalar Properties 38
3.1.5.11.1.2 ObjectPath Properties 38
3.1.5.11.2 Methods 38
3.1.5.11.2.1 Scalar Methods 38
3.1.5.11.2.2 ObjectPath Methods 38
3.1.5.12 Microsoft.SharePoint.Client.WorkflowServices.WorkflowStatus 39
3.1.5.12.1 Field Values 39
3.1.5.12.1.1 NotStarted 39
3.1.5.12.1.2 Started 39
3.1.5.12.1.3 Suspended 39
3.1.5.12.1.4 Canceling 39
3.1.5.12.1.5 Canceled 39
3.1.5.12.1.6 Terminated 39
3.1.5.12.1.7 Completed 39
3.1.5.12.1.8 NotSpecified 39
3.1.5.12.1.9 Invalid 40
3.1.6 Timer Events 40
3.1.7 Other Local Events 40

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4 Protocol Examples 41
4.1 Associate Workflow 41
4.2 Publish Definition 42
4.3 Save Definition 42
4.4 Start Workflow 43

5 Security 45
5.1 Security Considerations for Implementers 45
5.2 Index of Security Parameters 45

6 Appendix A: Product Behavior 46

7 Change Tracking 47

8 Index 49

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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]:

application
authentication
Coordinated Universal Time (UTC)
GUID
XML

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

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

The following terms are specific to this document:

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

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 documents, which are updated frequently. References to other documents include a publishing year when one is available.

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information.

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

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

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

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

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

[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.

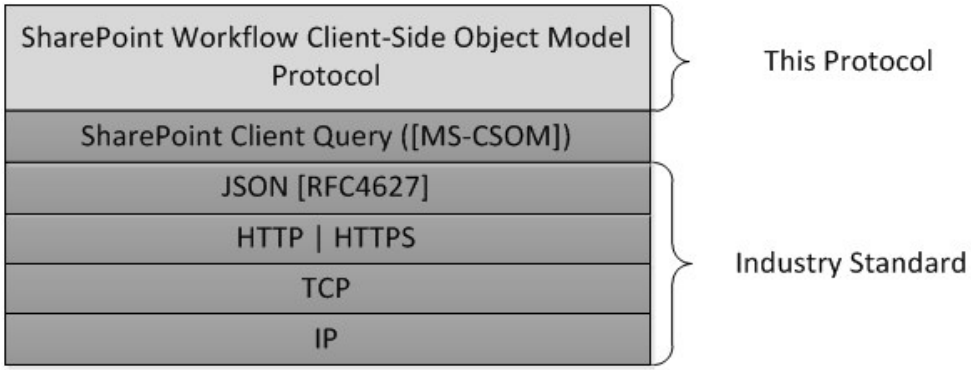

Figure 1: This protocol in relation to other protocols

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, 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.Client.WorkflowServices.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 3.1.5.8.2.1.6) 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 3.1.5.8.2.1.6) 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 3.1.5.8.2.1.6) 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.Client.WorkflowServices.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.Client.WorkflowServices.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 Id

Type: CSOM GUID

Accessibility: Read Only

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

3.1.5.2.1.1.8 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.

3.1.5.3 Microsoft.SharePoint.Client.WorkflowServices.WorkflowInstanceCollection

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

ShortName: SP.WorkflowServices.WorkflowInstanceCollection

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

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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.Client.WorkflowServices.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 AppId

Type: CSOM String

Accessibility: Read Only

The current **application** identifier.

3.1.5.4.1.1.2 IsConnected

Type: CSOM Boolean

Accessibility: Read Only

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

3.1.5.4.1.1.3 ScopePath

Type: CSOM String

Accessibility: Read Only

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Returns the path of the current scope in the workflow host.

3.1.5.4.1.2 ObjectPath Properties

3.1.5.4.1.2.1 Current

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowServicesManager

Accessibility: Read Only

Returns 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.Client.WorkflowServices.WorkflowDeploymentService

Returns the **WorkflowDeploymentService** (section 3.1.5.8), 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.Client.WorkflowServices.WorkflowInstanceService

Returns the **WorkflowInstanceService** (section 3.1.5.9), which manages workflow instances.

Parameters: None

3.1.5.4.2.2.3 GetWorkflowInteropService

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

Returns the **InteropService** (section 3.1.5.7), 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.Client.WorkflowServices.WorkflowSubscriptionService

Returns the **WorkflowSubscriptionService** (section 3.1.5.10), 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.Client.WorkflowServices.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.

3.1.5.5.1 Properties

3.1.5.5.1.1 Scalar Properties

3.1.5.5.1.1.1 DefinitionId

Type: CSOM GUID

Accessibility: Read/Write

Specifies the identifier of the **WorkflowDefinition** (section 3.1.5.1) that this **WorkflowSubscription** (section 3.1.5.5) will use.

3.1.5.5.1.1.2 EventSourceId

Type: CSOM GUID

Accessibility: Read/Write

Specifies a unique identifier for the logical source of the event. Used by the **EnumerateSubscriptionsByEventSource** (section 3.1.5.10.2.3).

3.1.5.5.1.1.3 Id

Type: CSOM GUID

Accessibility: Read/Write

Gets or sets the unique identifier of this **WorkflowSubscription** (section 3.1.5.5).

3.1.5.5.1.1.4 Name

Type: CSOM String

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Accessibility: Read/Write

Gets or sets the display name of this **WorkflowSubscription** (section 3.1.5.5).

3.1.5.5.1.1.5 PropertyDefinitions

Type: CSOM dictionary

Accessibility: Read Only

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

3.1.5.5.1.1.6 Enabled

Type: CSOM Boolean

Accessibility: Read/Write

Enables or disables this **WorkflowSubscription** (section 3.1.5.5). When "false", new instances of the subscription cannot be started, but existing instances will continue to run.

3.1.5.5.1.1.7 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 3.1.5.10.2.1.3), and **StatusFieldName** is then set to the name of the new status field.

3.1.5.5.1.1.8 EventTypes

Type: **CSOM array** of CSOM String

Accessibility: Read/Write

Specifies the list of event (1) types that this **WorkflowSubscription** (section 3.1.5.5) monitors.

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

3.1.5.5.1.1.9 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 applicable on list (1) workflows.

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3.1.5.5.1.2 ObjectPath Properties

None.

3.1.5.5.2 Methods

3.1.5.5.2.1 Scalar Methods

3.1.5.5.2.1.1 SetProperty

Return Type: None

Specifies the properties for the **PropertyDefinitions** (section 3.1.5.5.1.1.5).

Parameters:

name: The name of the property.

Type: CSOM String

value: The value of the property.

Type: CSOM String

3.1.5.5.2.1.2 GetExternalVariable

Return Type: CSOM String

Returns the value associated with the external variable name.

Parameters:

name: The name of the external variable.

Type: CSOM String

3.1.5.5.2.1.3 SetExternalVariable

Return Type: None

Specifies the default value for this external variable.

Parameters:

name: The name of the external variable.

Type: CSOM String

value: The value of the external variable.

Type: CSOM String

3.1.5.5.2.2 ObjectPath Methods

3.1.5.5.2.2.1 CSOM Constructor

Creates an instance of the **WorkflowSubscription** (section 3.1.5.5) object.

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Parameters: None

3.1.5.6 Microsoft.SharePoint.Client.WorkflowServices.WorkflowSubscriptionCollection

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

ShortName: SP.WorkflowServices.WorkflowSubscriptionCollection

A collection of **WorkflowSubscription** (section 3.1.5.5) objects.

3.1.5.6.1 Properties

3.1.5.6.1.1 Scalar Properties

None.

3.1.5.6.1.2 ObjectPath Properties

None.

3.1.5.6.2 Methods

3.1.5.6.2.1 Scalar Methods

None.

3.1.5.6.2.2 ObjectPath Methods

None.

3.1.5.7 Microsoft.SharePoint.Client.WorkflowServices.InteropService

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

ShortName: SP.WorkflowServices.InteropService

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

3.1.5.7.1 Properties

3.1.5.7.1.1 Scalar Properties

None.

3.1.5.7.1.2 ObjectPath Properties

3.1.5.7.1.2.1 Current

Type: Microsoft.SharePoint.Client.WorkflowServices.InteropService

Accessibility: Read Only

Gets the current **InteropService** (section 3.1.5.7) for this request.

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3.1.5.7.2 Methods

3.1.5.7.2.1 Scalar Methods

3.1.5.7.2.1.1 CancelWorkflow

Return Type: None

Stops a workflow (2).

Parameters:

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

Type: CSOM GUID

3.1.5.7.2.1.2 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

3.1.5.7.2.1.3 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

3.1.5.7.2.1.4 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

3.1.5.7.2.2 ObjectPath Methods

None.

3.1.5.8 Microsoft.SharePoint.Client.WorkflowServices.WorkflowDeploymentService

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

ShortName: SP.WorkflowServices.WorkflowDeploymentService

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

3.1.5.8.1 Properties

3.1.5.8.1.1 Scalar Properties

None.

3.1.5.8.1.2 ObjectPath Properties

None.

3.1.5.8.2 Methods

3.1.5.8.2.1 Scalar Methods

3.1.5.8.2.1.1 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

3.1.5.8.2.1.2 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

3.1.5.8.2.1.3 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

3.1.5.8.2.1.4 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

3.1.5.8.2.1.5 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

3.1.5.8.2.1.6 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.Client.WorkflowServices.WorkflowDefinition

3.1.5.8.2.1.7 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

3.1.5.8.2.1.8 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

3.1.5.8.2.1.9 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

3.1.5.8.2.1.10 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: The ID of the definition to package.

Type: CSOM GUID

packageDefaultFilename: The default file name to choose for the new package.

Type: CSOM String

packageTitle: The package title.

Type: CSOM String

packageDescription: The package description.

Type: CSOM String

3.1.5.8.2.1.11 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**

3.1.5.8.2.2 ObjectPath Methods

3.1.5.8.2.2.1 GetDefinition

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

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

Parameters:

definitionId: The identifier of the definition to retrieve.

Type: CSOM GUID

3.1.5.8.2.2.2 EnumerateDefinitions

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

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

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Parameters:

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

Type: CSOM Boolean

3.1.5.9 Microsoft.SharePoint.Client.WorkflowServices.WorkflowInstanceService

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

ShortName: SP.WorkflowServices.WorkflowInstanceService

Manages and reads workflow instances from the workflow host.

3.1.5.9.1 Properties

3.1.5.9.1.1 Scalar Properties

None.

3.1.5.9.1.2 ObjectPath Properties

3.1.5.9.1.2.1 Current

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowInstanceService

Accessibility: Read Only

Returns the current instance of the **WorkflowInstanceService** (section 3.1.5.9)

3.1.5.9.2 Methods

3.1.5.9.2.1 Scalar Methods

3.1.5.9.2.1.1 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.Client.WorkflowServices.WorkflowInstance

3.1.5.9.2.1.2 StartWorkflow

Return Type: CSOM GUID

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

Parameters:

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subscription: The **WorkflowSubscription** (section 3.1.5.5) from which to start a new **WorkflowInstance** (section 3.1.5.2).

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowSubscription

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

Type: CSOM dictionary

3.1.5.9.2.1.3 TerminateWorkflow

Return Type: None

Terminates a workflow (2) specified by the given workflow instance).

Parameters:

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

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowInstance

3.1.5.9.2.1.4 PublishCustomEvent

Return Type: None

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

Parameters:

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

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowInstance

eventName: Name of the custom event.

Type: CSOM String

payload: Payload of the custom event.

Type: CSOM String

3.1.5.9.2.1.5 CountInstances

Return Type: CSOM Int32

Returns a count of all the workflow instances of the specified **WorkflowSubscription** (section 3.1.5.5).

Parameters:

parentSubscription: The parent workflow subscription of the instances to count.

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowSubscription

3.1.5.9.2.1.6 CountInstancesWithStatus

Return Type: CSOM Int32

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Returns a count of the workflow instances of the specified **WorkflowSubscription** (section 3.1.5.5) with the specified status.

Parameters:

parentSubscription: The parent workflow subscription of the instances to count.

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowSubscription

status: Only instances with this status (section 3.1.5.12) value are counted. If the value is **WorkflowStatus.NotSpecified** (section 3.1.5.12.1.8), instances in all statuses are counted.

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowStatus

3.1.5.9.2.1.7 StartWorkflowOnListItem

Return Type: CSOM GUID

Starts a **WorkflowInstance** (section 3.1.5.2) specified by the given workflow subscription on the given list item, and passes additional parameters.

Parameters:

subscription: The **WorkflowSubscription** (section 3.1.5.5) from which to start a new **WorkflowInstance** (section 3.1.5.2).

Type: Microsoft.SharePoint.Client.WorkflowServices.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

3.1.5.9.2.1.8 GetDebugInfo

Return Type: CSOM String

Retrieves the debug information for the specified **WorkflowInstance** (section 3.1.5.2) in **JavaScript Object Notation (JSON)** format.

Parameters:

instance: The workflow instance to get debug information for.

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowInstance

3.1.5.9.2.1.9 ResumeWorkflow

Return Type: None

Resumes a workflow instance.

Parameters:

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instance: The workflow instance to resume.

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowInstance

3.1.5.9.2.1.10 SuspendWorkflow

Return Type: None

Suspends a workflow instance.

Parameters:

instance: The workflow instance to suspend.

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowInstance

3.1.5.9.2.1.11 StartWorkflowOnListItemBySubscriptionId

Return Type: CSOM GUID

Starts a **WorkflowInstance** (section 3.1.5.2) specified by the given workflow instance id on the given list item, and passes additional parameters.

Parameters:

subscriptionId: The guid of **WorkflowSubscription** (section 3.1.5.5) from which to start a **WorkflowInstance** (section 3.1.5.2).

Type: CSOM GUID

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

3.1.5.9.2.2 ObjectPath Methods

3.1.5.9.2.2.1 Enumerate

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

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

Parameters:

parentSubscription: The **WorkflowSubscription** (section 3.1.5.5) that started the workflow instances.

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowSubscription

3.1.5.9.2.2.2 GetInstance

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

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

Parameters:

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

Type: CSOM GUID

3.1.5.9.2.2.3 EnumerateInstancesForListItem

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

Returns the workflow 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

3.1.5.9.2.2.4 EnumerateInstancesForSite

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

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

Parameters: None

3.1.5.9.2.2.5 EnumerateInstancesForListItemWithOffset

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

Returns the collection of up to 100 workflow instances for the specified list item, starting from the specified offset.

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 workflow instances for.

Type: CSOM Int32

offset: The number of workflow instances to skip before returning the next 100 instances.

Type: CSOM Int32

3.1.5.9.2.2.6 EnumerateInstancesForSiteWithOffset

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

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Returns the collection of up to 100 site (2) workflow instances for the current site (2), starting from the specified offset.

Parameters:

offset: The number of workflow instances to skip before returning the next 100 instances.

Type: CSOM Int32

3.1.5.9.2.2.7 EnumerateWithOffset

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

Returns a collection of up to 100 workflow instances started by the specified subscription, starting from the specified offset.

Parameters:

parentSubscription: The subscription that started the workflow instances to get.

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowSubscription

offset: The number of workflow instances to skip before returning the next 100 instances.

Type: CSOM Int32

3.1.5.10 Microsoft.SharePoint.Client.WorkflowServices.WorkflowSubscriptionService

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

ShortName: SP.WorkflowServices.WorkflowSubscriptionService

Manages workflow subscriptions for a workflow (2).

3.1.5.10.1 Properties

3.1.5.10.1.1 Scalar Properties

None.

3.1.5.10.1.2 ObjectPath Properties

3.1.5.10.1.2.1 Current

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowSubscriptionService

Accessibility: Read Only

Returns the current **WorkflowSubscriptionService** (section 3.1.5.10) object.

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3.1.5.10.2 Methods

3.1.5.10.2.1 Scalar Methods

3.1.5.10.2.1.1 DeleteSubscription

Return Type: None

Deletes the specified **WorkflowSubscription** (section 3.1.5.5).

Parameters:

subscriptionId: The identifier of the subscription to delete.

Type: CSOM GUID

3.1.5.10.2.1.2 PublishSubscription

Return Type: CSOM GUID

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

Parameters:

subscription: The **WorkflowSubscription** (section 3.1.5.5) data to publish.

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowSubscription

3.1.5.10.2.1.3 PublishSubscriptionForList

Return Type: CSOM GUID

Creates a workflow subscription for a workflow (2) and if necessary an **event receiver** on the specified list (1). Also writes an **EventSourceId** (section 3.1.5.5.1.1.2) that matches the list as the event (2) source. Returns the unique identifier of the new subscription.

Parameters:

subscription: The **WorkflowSubscription** (section 3.1.5.5) data to publish.

Type: Microsoft.SharePoint.Client.WorkflowServices.WorkflowSubscription

listId: Identifier for the specified list.

Type: CSOM GUID

3.1.5.10.2.1.4 RegisterInterestInList

Return Type: None

Ensures that an event receiver will monitor a list for the specified event (2).

Parameters:

listId: GUID that specifies the list to monitor via an event receiver.

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Type: CSOM GUID

eventName: The name of the event (2) to monitor.

Type: CSOM String

3.1.5.10.2.1.5 UnregisterInterestInList

Return Type: None

Removes monitoring for an event receiver on the specified list with 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) to be removed.

Type: CSOM String

3.1.5.10.2.2 ObjectPath Methods

3.1.5.10.2.2.1 EnumerateSubscriptions

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

Retrieves a **WorkflowSubscriptionCollection** (section 3.1.5.6) that contains all of the workflow subscriptions on the **Web** ([MS-CSOMSPT] section 3.2.5.143).

Parameters: None

3.1.5.10.2.2.2 EnumerateSubscriptionsByDefinition

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

Retrieves a **WorkflowSubscriptionCollection** (section 3.1.5.6) based on a **WorkflowDefinition** (section 3.1.5.1).

Parameters:

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

Type: CSOM GUID

3.1.5.10.2.2.3 EnumerateSubscriptionsByEventSource

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

Retrieves a **WorkflowSubscriptionCollection** (section 3.1.5.6) based on the specified **EventSourceId** (section 3.1.5.5.1.1.2).

Parameters:

eventSourceId: The unique identifier of the **EventSource** (section 3.1.5.5.1.1.2) for the subscriptions.

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Type: CSOM GUID

3.1.5.10.2.2.4 EnumerateSubscriptionsByList

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

Retrieves a **WorkflowSubscriptionCollection** (section 3.1.5.6) based on the specified list.

Parameters:

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

Type: CSOM GUID

3.1.5.10.2.2.5 GetSubscription

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

Retrieves an instance of the **WorkflowSubscription** (section 3.1.5.5) based on its unique identifier.

Parameters:

subscriptionId: The unique identifier of the subscription.

Type: CSOM GUID

3.1.5.11 Microsoft.SharePoint.Client.WorkflowServices.WorkflowDefinitionCollection

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

ShortName: SP.WorkflowServices.WorkflowDefinitionCollection

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

3.1.5.11.1 Properties

3.1.5.11.1.1 Scalar Properties

None.

3.1.5.11.1.2 ObjectPath Properties

None.

3.1.5.11.2 Methods

3.1.5.11.2.1 Scalar Methods

None.

3.1.5.11.2.2 ObjectPath Methods

None.

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3.1.5.12 Microsoft.SharePoint.Client.WorkflowServices.WorkflowStatus

ShortName: SP.WorkflowServices.WorkflowStatus

Flag: false

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

3.1.5.12.1 Field Values

3.1.5.12.1.1 NotStarted

Value: 0

The workflow (2) instance has not started.

3.1.5.12.1.2 Started

Value: 1

The workflow instance has started.

3.1.5.12.1.3 Suspended

Value: 2

The workflow (2) instance was suspended.

3.1.5.12.1.4 Canceling

Value: 3

The workflow (2) instance received a cancel command and is responding to the request.

3.1.5.12.1.5 Canceled

Value: 4

The workflow (2) instance has been canceled.

3.1.5.12.1.6 Terminated

Value: 5

The workflow (2) instance has been terminated.

3.1.5.12.1.7 Completed

Value: 6

The workflow (2) instance has finished running and is in the completed state.

3.1.5.12.1.8 NotSpecified

Value: 7

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No status has been specified.

3.1.5.12.1.9 Invalid

Value: 8

The workflow (2) instance is in an invalid state.

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

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

This section identifies changes that were made to the [MS-SPWFCSOM] protocol document between the February 2014 and April 2014 releases. Changes are classified as New, Major, Minor, Editorial, or No change.

The revision class **New** means that a new document is being released.

The revision class **Major** means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

- A document revision that incorporates changes to interoperability requirements or functionality.
- The removal of a document from the documentation set.

The revision class **Minor** means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class **Editorial** means that the formatting in the technical content was changed. Editorial changes apply to grammatical, formatting, and style issues.

The revision class **No change** means that no new technical changes were introduced. Minor editorial and formatting changes may have been made, but the technical content of the document is identical to the last released version.

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

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

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- Obsolete document removed.

Editorial changes are always classified with the change type **Editorially updated.**

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

- **Protocol syntax** refers to data elements (such as packets, structures, enumerations, and methods) as well as interfaces.
- **Protocol revision** refers to changes made to a protocol that affect the bits that are sent over the wire.

The changes made to this document are listed in the following table. For more information, please contact dochelp@microsoft.com.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
3.1.5.5.2.1.2 GetExternalVariable	Added return type for CSOM String.	N	New content added.
3.1.5.5.2.1.2 GetExternalVariable	Added return type description for GetExternalVariable.	N	New content added.
3.1.5.5.2.1.2 GetExternalVariable	Added parameter description for GetExternalVariable.	N	New content added.
3.1.5.5.2.1.3 SetExternalVariable	Added description for SetExternalVariable return type.	N	New content added.
3.1.5.9.1.2.1 Current	Added Current property.	N	New content added.
3.1.5.9.2.1.11 StartWorkflowOnListItemBySubscriptionId	Added StartWorkflowOnListItemBySubscriptionId.	N	New content added.

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8 Index

A

Abstract data model
  server 13
Applicability 10
Associate Workflow example 41

C

Capability negotiation 10
Change tracking 47

D

Data model - abstract
  server 13

E

Examples
  Associate Workflow 41
  Publish Definition 42
  Save Definition 42
  Start Workflow 43

F

Fields - vendor-extensible 11

G

Glossary 8

H

Higher-layer triggered events
  server 13

I

Implementer - security considerations 45
Index of security parameters 45
Informative references 9
Initialization
  server 13
Introduction 8

M

Message processing - server 13
Messages
  transport 12

N

Normative references 9

O

Other local events
  server 40
Overview (synopsis) 10

P

Parameters - security index 45
Preconditions 10
Prerequisites 10
Product behavior 46
Publish Definition example 42

R

References 9
  informative 9
  normative 9
Relationship to other protocols 10

S

Save Definition example 42
Security
  implementer considerations 45
  parameter index 45
Sequencing rules - server 13
Server
  abstract data model 13
  higher-layer triggered events 13
  initialization 13
  message processing 13
  other local events 40
  sequencing rules 13
  timer events 40
  timers 13
Standards assignments 11
Start Workflow example 43

T

Timer events
  server 40
Timers
  server 13
Tracking changes 47
Transport 12
Triggered events - higher-layer
  server 13

V

Vendor-extensible fields 11
Versioning 10

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