[MS-OCSMP]:

Microsoft Online Conference Scheduling and Management Protocol

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Revision Summary

Date	Revision History	Revision Class	Comments
1/20/2012	0.1	New	Released new document.
4/11/2012	0.1	None	No changes to the meaning, language, or formatting of the technical content.
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Table of Contents

1 Introduction

The Microsoft Online Conference Scheduling and Management Protocol defines how a remote client communicates with the protocol server to schedule and manage online conferences.

Sections 1.5, 1.8, 1.9, 2, and 3 of this specification are normative. All other sections and examples in this specification are informative.

1.1 Glossary

This document uses the following terms:

byte order mark: A Unicode character that is used to indicate that text is encoded in UTF-8, UTF-16, or UTF-32.

delta: A unit of transactional consistency in a shared space. A delta can contain one or more commands.

Hypertext Transfer Protocol (HTTP): An application-level protocol for distributed, collaborative, hypermedia information systems (text, graphic images, sound, video, and other multimedia files) on the World Wide Web.

Hypertext Transfer Protocol Secure (HTTPS): An extension of HTTP that securely encrypts and decrypts web page requests. In some older protocols, "Hypertext Transfer Protocol over Secure Sockets Layer" is still used (Secure Sockets Layer has been deprecated). For more information, see [SSL3] and [RFC5246].

Multipurpose Internet Mail Extensions (MIME): A set of extensions that redefines and expands support for various types of content in email messages, as described in [RFC2045], [RFC2046], and [RFC2047].

public switched telephone network (PSTN): Public switched telephone network is the voice-oriented public switched telephone network. It is circuit-switched, as opposed to the packet-switched networks.

Session Initiation Protocol (SIP): An application-layer control (signaling) protocol for creating, modifying, and terminating sessions with one or more participants. **SIP** is defined in [RFC3261].

Uniform Resource Identifier (URI): A string that identifies a resource. The URI is an addressing mechanism defined in Internet Engineering Task Force (IETF) Uniform Resource Identifier (URI): Generic Syntax [RFC3986].

Uniform Resource Locator (URL): A string of characters in a standardized format that identifies a document or resource on the World Wide Web. The format is as specified in [RFC1738].

XML namespace: A collection of names that is used to identify elements, types, and attributes in XML documents identified in a URI reference [RFC3986]. A combination of XML namespace and local name allows XML documents to use elements, types, and attributes that have the same names but come from different sources. For more information, see [XMLNS-2ED].

XML namespace prefix: An abbreviated form of an **XML namespace**, as described in [XML].

XML schema: A description of a type of XML document that is typically expressed in terms of constraints on the structure and content of documents of that type, in addition to the basic syntax constraints that are imposed by XML itself. An XML schema provides a view of a document type at a relatively high level of abstraction.

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

1.2 References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the Errata.

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-OCDISCWS] Microsoft Corporation, "Lync Autodiscover Web Service Protocol".

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, http://www.rfc-editor.org/rfc/rfc2119.txt

[RFC2387] Levinson, E., "The MIME Multipart/Related Content-type", RFC 2387, August 1998, http://www.rfc-editor.org/rfc/rfc2387.txt

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

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

[XMLNS] Bray, T., Hollander, D., Layman, A., et al., Eds., "Namespaces in XML 1.0 (Third Edition)", W3C Recommendation, December 2009, http://www.w3.org/TR/2009/REC-xml-names-20091208/

[XMLSCHEMA1] Thompson, H., Beech, D., Maloney, M., and Mendelsohn, N., Eds., "XML Schema Part 1: Structures", W3C Recommendation, May 2001, http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/

[XMLSCHEMA2] Biron, P.V., Ed. and Malhotra, A., Ed., "XML Schema Part 2: Datatypes", W3C Recommendation, May 2001, http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/

1.2.2 Informative References

[MS-OCAUTHWS] Microsoft Corporation, "OC Authentication Web Service Protocol".

1.3 Overview

This protocol is used to create and manage online conferences that have been scheduled on the protocol server. Communication is always initiated by the protocol client using different operations, the functionality of which is outlined as follows.

- Getting data to be used as the basis for a data-driven UI
- Scheduling, updating and cancelling online conferences
- Getting an overview of the user's existing online conferences

A typical scenario for this protocol is a web or mobile application for scheduling and managing online conferences.

1.4 Relationship to Other Protocols

This protocol transmits request and response messages by using **HTTP**, as described in [RFC2616], or **Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS)**, as described in [RFC2818].

Access to the Conference Scheduling and Management Web Service is discovered through the Lync Autodiscover Web Service. The discovery service protocol is described in the [MS-OCDISCWS] document.

Conference Scheduling and Management is accessible only to authenticated users, either directly via a client application or indirectly via a trusted server application. The authentication service protocols are described in the [MS-OCAUTHWS] document.

The following diagram shows the underlying messaging and transport stack used by the protocol:

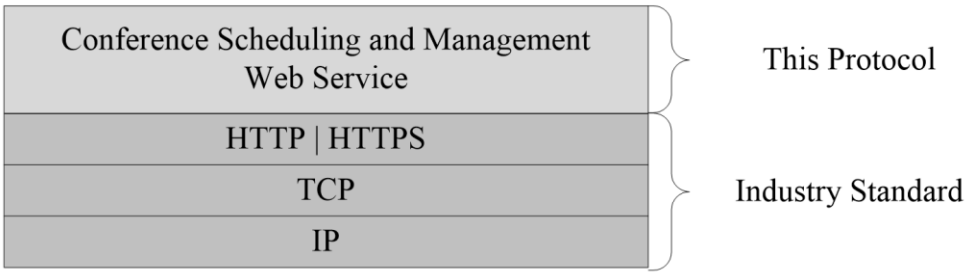

Figure 1: This protocol in relation to other protocols

1.5 Prerequisites/Preconditions

This protocol operates against a protocol server that is configured to listen for HTTP or HTTPS requests and a protocol client that knows the Request-URI of the protocol server.

1.6 Applicability Statement

This protocol is applicable for the following scenarios:

- Creating, reading, updating, or deleting conferences on the protocol server.
- Consumption of the Conference Scheduling and Management Service.

This protocol is not applicable for the following scenarios:

- Joining or participating in an online conference.
- Implementing a similar web service.

1.7 Versioning and Capability Negotiation

This document covers versioning issues in the area of supported transports. This protocol can use HTTP or HTTPS as a transport. For more information, see section 2.1.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

The Conference Scheduling and Management protocol is like a RESTful protocol transported using HTTP, as specified in [RFC2616], or HTTPS, as specified in [RFC2818]. The service SHOULD be served on ports 80 and 443 respectively, but MAY be served on other ports. For specific port information, please contact your service provider.

Protocol messages are text-based and MUST be UTF-8 encoded. Messages MUST NOT contain a **byte order mark**. The byte order mark is a Unicode character used to signal the byte order of a text file or stream.

2.2 Message Syntax

This section contains common definitions used by this protocol specification. The syntax of the definitions uses **XML schema** as defined in section 6.

2.2.1 Namespaces

This specification defines and references various **XML namespaces** using the mechanisms specified in [XMLNS]. Although this specification associates a specific **XML namespace prefix** for each XML namespace that is used, the choice of any particular XML namespace prefix is implementation-specific and not significant for interoperability.

Prefix	Namespace URI	Reference
xs	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1] [XMLSCHEMA2]

2.2.2 Common URI Parameters

The following table summarizes the set of common **URI** parameters defined by this specification.

URI Parameter	Description
conferenceId	A string that uniquely identifies a specific conference entity.

2.2.3 Elements

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

Element	Description
input	The root element of an HTTP request containing one or more **property** or **propertyList** elements.

Element	Description
reason	The root element of an HTTP response containing an error response (see section 2.2.4.4) object.
resource	The root element of an HTTP response containing one or more link, property, propertyList or resource elements.

2.2.3.1 input

The **input** element is the root element of an HTTP request containing one or more **property** or **propertyList** elements.

```
<xs:element name="input" type="tns:InputType" />
```

2.2.3.2 reason

The **reason** element is the root element of an HTTP response containing an error response (see section 2.2.4.4) object.

```
<xs:element name="reason" type="tns:ErrorType" />
```

2.2.3.3 resource

The resource element is the root element of an HTTP response containing one or more **link**, **property**, **propertyList**, or **resource** elements.

```
<xs:element name="resource" type="tns:ResourceType" />
```

2.2.4 Complex Types

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

Complex Type	Description
CollectionType	Represents a collection type.
InputType	Represents the type that captures the format of input data supplied in HTTP POST requests, as specified in [RFC2616].
EmbeddedResourceType	Represents the type that captures the format of a resource that can be embedded inside another resource.
ErrorType	Represents the type that captures the format of body in HTTP error responses, as specified in [RFC2616].
LinkType	Represents the type that captures a reference to another resource.
PropertyType	Represents the type that captures a property name and value.
ResourceType	Represents the type that captures the format of a resource.

Complex Type	Description
ErrorParametersType	Represents the list of parameters that failed validation.
ErrorDebugInfoType	Represents the debugging information about the error.

2.2.4.1 CollectionType

The **CollectionType** is a container for a key/values property

```
<xs:complexType name="CollectionType">
    <xs:sequence>
        <xs:element name="item" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:attribute name="name" type="xs:string" use="required"/>
</xs:complexType>
```

Element	Type	Description
item	xs:string ([XMLSCHEMA2])	An arbitrary string value

Attribute	Type	Description
name	xs:string ([XMLSCHEMA2])	The name of the property

2.2.4.2 InputType

The **InputType** is a container for key/value and key/values properties that are consumed in an HTTP request.

```
<xs:complexType name="InputType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="property" type="tns:PropertyType"/>
    <xs:element name="propertyList" type="tns:CollectionType"/>
  </xs:choice>
</xs:complexType>
```

Element	Type	Description
property	tns:PropertyType (section 2.2.4.6)	A key/value pair.
propertyList	tns:CollectionType (section 2.2.4.1)	A collection of key/values pairs.

2.2.4.3 EmbeddedResourceType

The **EmbeddedResourceType** is a superset of **ResourceType** (section 2.2.4.7) used when a resource is embedded within another **ResourceType** instance in an HTTP response.

```
<xs:complexType name="EmbeddedResourceType">
  <xs:complexContent>
    <xs:extension base="tns:ResourceType">
      <xs:attribute name="rel" type="xs:string" use="required"/>
      <xs:attribute name="etag" type="xs:string" use="optional"/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Attribute	Type	Description
rel	xs:string ([XMLSCHEMA2])	A value that provides a hint as to how the embedded resource is related to the resource in which it is embedded.
etag	xs:string ([XMLSCHEMA2])	A value that provides the etag value for the resource if the resource supports etag. This is optional property and hence can be missing even if the resource supports etag.

2.2.4.4 ErrorType

The **ErrorType** is the type of root element in the body of an HTTP response containing diagnostic information about a failed HTTP request.

```
<xs:complexType name="ErrorType">
  <xs:sequence>
    <xs:element name="link" type="tns:LinkType" minOccurs="0" maxOccurs="unbounded" />
    <xs:element name="code" type="xs:string" minOccurs="1" maxOccurs="1" />
    <xs:element name="subcode" type="xs:string" minOccurs="1" maxOccurs="1" />
    <xs:element name="message" type="xs:string" minOccurs="0" maxOccurs="1" />
    <xs:element name="debugInfo" type="tns:ErrorDebugInfoType" minOccurs="0" maxOccurs="1" />
    <xs:element name="parameters" type="tns:ErrorParametersType" minOccurs="0" maxOccurs="1"
/>

  </xs:sequence>
</xs:complexType>
```

Element	Type	Description
link	tns:LinkType (section 2.2.4.5)	List of the related links to convey additional information about the error.
code	xs:string ([XMLSCHEMA2])	A string describing the general class of error. A client that does not understand a specific code SHOULD fall back to use of http response code.
subcode	xs:string ([XMLSCHEMA2])	A string describing the more specific subclass of error. A client that does not understand the subcode SHOULD fall back to the error code.

Element	Type	Description
message	xs:string ([XMLSCHEMA2])	A freeform string describing the nature of the error. This is primarily used for debugging purpose and hence a client is not expected to take dependency on it for program flow control or user interface elements.
debugInfo	tns:ErrorDebugInfoType (section 2.2.4.9)	Debugging information.
parameters	tns:ErrorParametersType (section 2.2.4.8)	List of parameters that failed validation. This is primarily useful during program development to get information about the specific parameter that are supplied incorrectly. If the client can send data supplied by the end user to the server, then these parameter names can be useful to indicate to the user the specific fields that do not pass validation checks.

2.2.4.5 LinkType

The **LinkType** contains information on referencing a resource or service and what its relationship is to the resource containing the link.

```
<xs:complexType name="LinkType">
  <xs:attribute name="rel" type="xs:string" use="required"/>
  <xs:attribute name="href" type="xs:anyURI" use="required"/>
  <xs:attribute name="etag" type="xs:string" use="optional"/>
  <xs:attribute name="title" type="xs:anyURI" use="optional"/>
  <xs:attribute name="revision" type="xs:string" use="optional" />
</xs:complexType>
```

Attribute	Type	Description
href	xs:anyURI ([XMLSCHEMA2])	The URI of the related resource or service.
rel	xs:string ([XMLSCHEMA2])	The relationship type of the related resource or service.
etag	xs:string ([XMLSCHEMA2])	An optional attribute that represents the etag value of the resource.
title	xs:anyURI ([XMLSCHEMA2])	An optional human readable title of the resource the link points to.
revision	xs:string ([XMLSCHEMA2])	The resource revision. If attribute is not specified the default value is 1.

2.2.4.6 PropertyType

The **PropertyType** is a container for a key/value property.

```
<xs:complexType name="PropertyType">
  <xs:simpleContent>
    <xs:extension base="xs:string">
      <xs:attribute name="name" type="xs:string" use="required"/>
```

```
  </xs:extension>
 </xs:simpleContent>
</xs:complexType>
```

Attribute	Type	Description
name	xs:string ([XMLSCHEMA2])	The key for the property.

2.2.4.7 ResourceType

The top-level container for all properties that are sent from the client application as part of a request to perform an action.

```
<xs:complexType name="ResourceType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="link" type="tns:LinkType" />
    <xs:element name="property" type="tns:PropertyType" />
    <xs:element name="propertyList" type="tns:CollectionType" />
    <xs:element name="resource" type="tns:EmbeddedResourceType" />
  </xs:choice>
  <xs:attribute name="href" type="xs:anyURI" use="required"/>
  <xs:attribute name="rel" type="xs:string" use="required"/>
</xs:complexType>
```

Element	Type	Description
link	tns:LinkType (section 2.2.4.5)	A reference to a related resource.
property	tns:PropertyType (section 2.2.4.6)	A property represented by a key/value pair.
propertyList	tns:CollectionType (section 2.2.4.1)	A collection of properties.
resource	tns:EmbeddedResourceType (section 2.2.4.3)	An embedded resource.

Attribute	Type	Description
href	xs:anyURI ([XMLSCHEMA2])	The URI of the resource itself.
rel	xs:string ([XMLSCHEMA2])	A value that provides a hint as to what is the type of resource.

2.2.4.8 ErrorParametersType

The **ErrorParametersType** type represents the list of parameters that failed validation.

```
<xs:complexType name="ErrorParametersType">
       <xs:sequence>
           <xs:element name="property" type="tns:PropertyType" minOccurs="0"
maxOccurs="unbounded" />
```

```
        </xs:sequence>
    </xs:complexType>
```

Element	Type	Description
Property	tns:PropertyType (section 2.2.4.6)	A property represented by a key/value pair.

2.2.4.9 ErrorDebugInfoType

The **ErrorDebugInfoType** type represents the debugging information about the error.

```
<xs:complexType name="ErrorDebugInfoType">
       <xs:sequence>
           <xs:element name="property" type="tns:PropertyType" minOccurs="0"
maxOccurs="unbounded" />
       </xs:sequence>
    </xs:complexType>
```

Element	Type	Description
Property	tns:PropertyType (section 2.2.4.6)	A property represented by a key/value pair.

2.2.5 Simple Types

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

Simple Type	Description
AccessLevel	An enumeration representing the policy that determines whether certain types of contacts are allowed to participate in the online conference
AutomaticLeaderAssignment	An enumeration representing the policy that determines which participants are automatically promoted to leaders in the online conference.
EntryExitAnnouncement	An enumeration representing how dial-in attendees to the online conference will be announced to other attendees of the online conference.
GenericPolicy	An enumeration representing the state of a policy.
LobbyBypassForPhoneUsers	An enumeration representing the policy that determines whether certain types of contacts will automatically bypass the online conference lobby.
OnlineMeetingExtensionType	An enumeration of different online conference extension types that can be created.
OnlineMeetingRel	An enumeration representing the link relationship that SHOULD be used in identifying the default type of conference to be used when scheduling an online conference.
PhoneUserAdmission	An enumeration representing whether conference participants are allowed to join from a phone by dialing in to the conference.

2.2.5.1 AccessLevel

The following table summarizes the values of the **AccessLevel** enumeration.

Value	Description
SameEnterprise	Only the participants from the same company are admitted into the conference. Any other participant is placed in the conference lobby.
None	Not initialized.
Locked	Only the organizer is admitted into the conference. Any other participant is placed in the conference lobby.
Invited	Only invited participants from the same company are admitted into the conference. Any other participant is placed in the conference lobby.
Everyone	Everyone is admitted into the conference.

2.2.5.2 AutomaticLeaderAssignment

The following table summarizes the values of the **AutomaticLeaderAssignment** enumeration.

Value	Description
Disabled	No one is automatically promoted to leader. Pre-invited leaders will still join the conference as leaders.
SameEnterprise	Everyone from the same company is automatically promoted to leader.
Everyone	Everyone is automatically promoted to leader on joining the conference.

2.2.5.3 EntryExitAnnouncement

The following table summarizes the values of the **EntryExitAnnouncement** enumeration.

Value	Description
Unsupported	The online conference does not support modifying entry/exit announcements.
Disabled	Entry/exit announcements are disabled.
Enabled	Entry/exit announcements are enabled.

2.2.5.4 GenericPolicy

The following table summarizes the values of the **GenericPolicy** enumeration.

Value	Description
Disabled	The policy is disabled.
Enabled	The policy is enabled.
None	The default, uninitialized value.

2.2.5.5 LobbyBypassForPhoneUsers

The following table summarizes the values of the **LobbyBypassForPhoneUsers** enumeration.

Value	Description
Disabled	Lobby bypass is disabled for all participants.
Enabled	Lobby bypass is enabled for participants joining from a voice gateway.

2.2.5.6 OnlineMeetingExtensionType

The following table summarizes the values of the **OnlineMeetingExtensionType** enumeration.

Value	Description
RoamedOrganizerData	The data for the **OnlineMeetingExtension** is distributed to the meeting organizer
RoamedParticipantData	The data for the **OnlineMeetingExtension** is distributed to all meeting participants
Undefined	Uninitialized value

2.2.5.7 OnlineMeetingRel

The **OnlineMeetingRel** enumeration represents the link relationship that SHOULD be used in identifying the default type of online conference to be used when scheduling an online conference.

The following table summarizes the values of the **OnlineMeetingRel** enumeration.

Value	Description
myOnlineMeetings	The link with the **myOnlineMeetings** (section 3.1.5.5) relationship SHOULD be used to create a new online meeting.
myAssignedOnlineMeeting	The link with the **myAssignedOnlineMeeting** (section 3.1.5.4) relationship SHOULD be used to get the predefined, assigned online meeting

2.2.5.8 PhoneUserAdmission

The **PhoneUserAdmission** enumeration represents whether meeting participants are allowed to join from a phone by dialing in to the meeting.

The following table summarizes the values of the **PhoneUserAdmission** enumeration.

Value	Description
Disabled	Participants are not allowed to join by phone.
Enabled	Participants are allowed to join by phone.

2.2.6 Attributes

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

Attribute	Description
rel	Identifies the semantics of the link.
name	The name of a CollectionType (section 2.2.4.1) or PropertyType (section 2.2.4.6)
href	A **URL** that is relative to the host name of the service.

2.2.7 Common Data Structures

The following table summarizes the set of common data structures defined by this specification.

Data structure	Description
Error	An **ErrorType** structure containing properties describing the reason for an HTTP request failure.
OnlineMeetingInput	An **InputType** structure containing the properties required when creating an online conference.
OnlineMeetingExtensionInput	An **InputType** structure containing the properties required when creating an online conference extension.
OnlineMeetingExtensionResource	A **ResourceType** structure containing the properties of an existing online conference extension.
OnlineMeetingExtensionsResource	A **ResourceType** structure containing a collection of **OnlineMeetingExtensionResource** structures.
OnlineMeetingResource	A **ResourceType** structure containing the properties of an existing online conference.
OnlineMeetingsResource	A **ResourceType** structure containing a collection of **OnlineMeetingResource** structures.

2.2.7.1 Error

An **ErrorType** structure containing properties describing the reason for an HTTP request failure.

Property name	Type	Description
code	xs:string	The error code.
message	xs:string	The error message.
subcode	xs:string	The error subcode.
parameters	ErrorParametersType	List of parameters that failed validation.
link	LinkType	A link to convey additional information about the error. Optional.
debugInfo	ErrorDebugInfoType	Debugging information about the error.

2.2.7.2 OnlineMeetingInput

An **InputType** structure containing the properties required when creating an online conference.

Property name	Type	Description
accessLevel	AccessLevel	The policy indicating which class of user can join the online conference without being placed in the online conference lobby.
attendees	CollectionType	The list of invited online conference participants having permission to attend the online conference.
automaticLeaderAssignment	AutomaticLeaderAssignment	The policy indicating which participants SHOULD be automatically promoted to leader upon joining the online conference.
description	xs:string	A long description of the purpose of the online meeting.
entryExitAnnouncement	EntryExitAnnouncement	The policy indicating how entry/exit announcements will be used in the online conference.
expirationTime	xs:string	The absolute date and time (in UTC format) after which the conference can be deleted.
leaders	CollectionType	The list of invited online conference participants having permission to lead the online conference.
lobbyBypassForPhoneUsers	LobbyBypassForPhoneUsers	The policy indicating whether any user joining the conference via a telephone has to enter the online conference lobby before being able to fully join the online conference.
phoneUserAdmission	PhoneUserAdmission	The policy indicating which class of user joining the online conference via a telephone can join the online conference without first being placed in the online conference lobby.
subject	xs:string	A short description of the purpose of the online meeting.

2.2.7.3 OnlineMeetingExtensionInput

An **InputType** structure containing the properties required when creating an online conference extension.

Property name	Type	Description
id	xs:string	An identifier that is unique among all other extensions of the parent **OnlineMeetingResource** (section 2.2.7.6).
type	OnlineMeetingExtensionType	The type of extension.
Any custom property name	CollectionType	An application-defined custom property name, for example length, fileLocation, movieName.

2.2.7.4 OnlineMeetingExtensionResource

A **ResourceType** structure containing the properties of an existing online conference extension.

Property name	Type	Description
id	xs:string	An identifier that is unique among all other extensions of the parent **OnlineMeetingResource**.
type	OnlineMeetingExtensionType	The type of extension.
Any custom property name	CollectionType	An application-defined custom property name, for example length, fileLocation, movieName.

Link relationship	Description
self	A reference to the parent resource containing this link.

2.2.7.5 OnlineMeetingExtensionsResource

A **ResourceType** structure containing a collection of **OnlineMeetingExtensionResource** structures.

Property name	Type	Description
None.		There are no properties in a ResourceType structure.

Link relationship	Description
self	A reference to the parent resource containing this link.

2.2.7.6 OnlineMeetingResource

A **ResourceType** structure containing the properties of an existing online conference.

Property name	Type	Description
accessLevel	AccessLevel	The policy indicating which class of user can join the online conference without being placed in the online conference lobby.
attendees	CollectionType	The list of invited online conference participants having permission to attend the online conference.
automaticLeaderAssignment	AutomaticLeaderAssignment	The policy indicating which participants SHOULD be automatically promoted to leader upon joining the online conference.
conferenceId	xs:string	An identifier for use when joining the online conference by dialing in from a **public switched telephone network (PSTN)** phone line.
description	xs:string	A long description of the purpose of the online meeting.
entryExitAnnouncement	EntryExitAnnouncement	The policy indicating how entry/exit announcements will be used in the online conference.
expirationTime	xs:string	The absolute date and time (in UTC format) after which the conference can be deleted.
joinUrl	xs:string	The URL to use when joining the online conference meeting from the web.
leaders	CollectionType	The list of invited online conference participants having permission to lead the online conference.
lobbyBypassForPhoneUsers	LobbyBypassForPhoneUsers	The policy indicating whether any user joining the conference via a telephone has to enter the online conference lobby before being able to fully join the online conference.
onlineMeetingExtensions	OnlineMeetingExtensionsResource	A collection of application defined key/value properties to be sent to participants upon joining the online conference.
onlineMeetingId	xs:string	A system-defined identifier specific to this online conference instance.
onlineMeetingUri	xs:string	The **Session Initiation Protocol (SIP)** URI of the online conference.
organizerUri	xs:string	The SIP URI of the online conference

Property name	Type	Description
		owner.
subject	xs:string	A short description of the purpose of the online meeting.

Link relationship	Description
self	A reference to the parent resource containing this link.

2.2.7.7 OnlineMeetingsResource

A ResourceType structure containing a collection of OnlineMeetingResource structures.

Property name	Type	Description
None.		There are no properties in a ResourceType structure.

Link relationship	Description
self	A reference to the parent resource containing this link.

3 Protocol Details

3.1 Server Details

The basic unit for operations in the Conference Scheduling and Management protocol is a Resource. Applications will be able to discover available Resources as well as the Properties of a Resource thus allowing applications to create a UI that is dynamically adjustable. The entirety of the Online Conference Scheduling and Management API will be accessible via the HTTP protocol. This protocol is exposed via Unified Communications Web API (UCWA) web component of the protocol server.

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.

Web developers can use the Online Conference Scheduling and Management protocol to create web pages that take advantage of the communication and collaboration features of protocol server.

3.1.1.1 Introduction

An Online Conference Scheduling and Management Protocol client application first queries the autodiscovery service, as specified in [MS-OCDISCWS], to find the home server for the user that is associated with the application.

After the home server is located, an Online Conference Scheduling and Management Protocol client application interacts with the Online Conference Scheduling and Management Protocol server, using the HTTP protocol.

At the most basic level, an Online Conference Scheduling and Management Protocol client application communicates with the Online Conference Scheduling and Management Protocol server by sending HTTP requests (GET, POST, PUT, DELETE) to the service, which sends back HTTP responses. Each HTTP request that is sent to the Online Conference Scheduling and Management Protocol server includes the URL of a specific resource. The response typically includes links to related resources, in the form of URLs.

3.1.1.2 Basic Concepts

3.1.1.2.1 Hypermedia

The Online Conference Scheduling and Management Protocol leverages the concept of hypermedia so that clients can dynamically discover capabilities that are supported from the server, thus eliminating the need to hard-code them in the client. To accomplish dynamic discovery, the server provides ("serves") links to URLs in its responses to the various HTTP requests.

Clients SHOULD NOT hard-code URLs when they communicate with the Online Conference Scheduling and Management Protocol server because the server can change the URL location, depending on the situation. Instead, clients SHOULD rely on resources, which do not change. A client SHOULD use the **rel** attribute of a link to identify the particular resource and then use the **href** attribute from that same link. After the appropriate link has been found, clients can treat served URLs just as they would any other URL.

To summarize, the links are analogous to HTML links in a browser. There is human readable text between the <a> tags that describes where the link will take you, while the href is hidden from view.

The Online Conference Scheduling and Management Protocol uses the **Link** (section 2.2.4.5) element to express capabilities and relationships between resources. An XML example is shown next.

```
   <resource rel="onlineMeetings"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/onlineMeetings">
    <link rel="myOnlineMeetings"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings"/>
    <link rel="onlineMeetingDefaultValues"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/onlineMeetingDefaultValues"/>
    <link rel="onlineMeetingEligibleValues"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/onlineMeetingEligibleValues"/>
    <link rel="onlineMeetingInvitationCustomization"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/onlineMeetingInvitationCustomization"/
>
    <link rel="onlineMeetingPolicies"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/onlineMeetingPolicies"/>
    <link rel="phoneDialInInformation"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/phoneDialInInformation"/>
  </resource>
```

3.1.1.2.2 Resources

The Online Conference Scheduling and Management Protocol exposes various protocol-specific features to the client using what are known as resources. A resource is usually represented by a noun and has a well-defined self URL. A resource is comprised of a set of properties that are relevant to the feature represented by the resource, together with a set of links to related resources, and possibly a set of embedded resources.

3.1.1.2.2.1 Resource representation

Each resource representation that is received from a successful HTTP response has some or all of the following components.

- Properties (section 2.2.4.6)
  - Each property is a key-value pair that contains information about the state of the resource.
- Links (section 2.2.4.5)
  - Each link in a links collection contains a **rel** that acts as a key, and an **href** that is analogous to an HTML hyperlink. Links provide access to related resources, which can include capabilities.
- Embedded resources (section 2.2.4.3)
  - Each embedded resource is a composite that contains properties and links.

3.1.1.2.2.2 Root URL

One of the first operations a client must perform is discovering the URL of the root resource that is used to communicate with the Online Conference Scheduling and Management Protocol server. Performing a HTTP GET method on this URL results in a response that contains the root resource together with some related links. This pattern of GET, examine, and go to a related link is repeated in all Online Conference Scheduling and Management Protocol client applications. This is how you navigate the protocol.

3.1.1.2.2.3 Collections of resources

The Online Conference Scheduling and Management Protocol has well-defined set of resources, including some resources that are collections of other resources. A **myOnlineMeetings** (section

3.1.5.6) resource is a collection of **myOnlineMeeting** (section 3.1.5.5) resources, while an **onlineMeetingExtensions** (section 3.1.5.10) resource is a collection of **onlineMeetingExtension** (section 3.1.5.9) resources. The convention in this protocol is that a POST request on a collection is used to create a new resource that belongs to the collection. For example, to create a new online conference (a **myOnlineMeeting** resource), a POST request is sent for the **myOnlineMeetings** resource.

3.1.1.2.3 Discovery and Authentication

The first action for every Online Conference Scheduling and Management Protocol client application is to query the autodiscovery service, as specified in [MS-OCDISCWS], to find the home server for the user who is associated with the application. The application then provides credentials for the user on whose behalf the application will run.

3.1.1.2.4 Applications

Every protocol client making changes on the server or communicating with other clients needs to create an application resource that becomes the anchor for further communication. The root resource provides a link to the applications resource. To create a new application, the protocol client sends an HTTP POST request using the href of the application resource.

3.1.1.2.5 Batch Requests

The Online Conference Scheduling and Management Protocol MUST support HTTP-level request batching to allow client applications to reduce the number of HTTP request roundtrips when a large number of simple operations needs to be performed.

Batching allows the client application to send a single HTTP request containing a MIME multipart message where each part contains an embedded, individual HTTP request. The protocol server SHOULD process the requests in no particular order and send a single HTTP response containing a MIME multipart message where each part contains an embedded, individual HTTP response when all the requests have been processed.

The protocol server can throttle the number of outstanding requests across all applications of the specific user; therefore the protocol client SHOULD ensure that it limits the number of requests inside the batch to a small number.

3.1.1.3 Navigating the Protocol

3.1.1.3.1 Protocol Hierarchy

Navigating the Online Conference Scheduling and Management Protocol hierarchy is made possible by the information that is contained in the response from an HTTP request on the href of a resource. The response typically contains a set of properties, and a set of hypermedia links to related resources.

An application resource provides hypermedia links that contain hrefs to a number of related resources, including the **onlineMeetings** resource. In turn, the **onlineMeetings** resource provides hypermedia links to its related resources, including **myOnlineMeetings** (section 3.1.5.6), **onlineMeetingDefaultValues** (section 3.1.5.7), and **onlineMeetingEligibleValues** (section 3.1.5.8) (and others). Similarly, a **phoneDialInInformation** (section 3.1.5.13) resource provides access to the **dialInRegions** resource.

Using the hypermedia links that are served with a given resource, you can traverse from one resource to whatever resource you need.

3.1.1.4 Resource Links

When an HTTP request is made with a given resource, the response contains a collection of related links. The links can refer to the resource itself (a self link), other resources or capabilities, or state properties for the resource.

3.1.1.5 Protocol Conventions and Behaviors

The Conference Scheduling and Management protocol uses HTTP/HTTPS as its underlying transport and leverages existing HTTP/HTTPS conventions and idioms to their fullest advantage.

3.1.1.5.1 Optional Properties in a Request

Some operations can have a combination of required and optional properties in the request data. If a property is optional, that property can be completely omitted from the submitted request. In the case of creating a new object or updating an existing object for each missing optional property, the server can substitute the default value for the omitted property when it is necessary.

3.1.1.5.2 Key-Value Pair Properties

Some of the operations allow the application to store arbitrary data for later retrieval in a named collection of key-value pair properties. Each application SHOULD treat the collection name as a namespace in order to avoid potential conflicts with other applications that store a property with the same name. Treating the collection name in this manner also makes it easier for other applications to read the complete set of properties added by the application.

3.1.1.5.3 Updating Resources

When updating a Resource, the server will make no attempt to resolve **deltas** between the previous values of a Resource and the new values passed in during an update request. The application is responsible for submitting to the server the entirety of the updated Resource. The http "if-match" header can be used in the protocol to specify that the server performs the operation only when the etag value in the header matches the etag value of the current instance of the resource.

3.1.1.5.4 Operation Return Values

The result (success or failure) of a Web API operation will be available in the response code and response text of the HTTP response. The output properties of the operation will be serialized in the body of the HTTP response.

3.1.1.5.5 Errors and Exceptions

If an operation fails for any reason, error information that does not fit in the response code and/or response text can be serialized in the body of the HTTP response as an **Error** (section 2.2.7.1) data structure.

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

Resource	Description
application	Represents one instance of an application that is run by a user on a specific device.
applications	Represents a factory in which individual application resources are created.
batch	Represents a batched request handler to which multiple, independent HTTP requests packaged into a single multipart request can be sent.
myAssignedOnlineMeeting	Represents the protocol user's predefined online conference.
myOnlineMeeting	Represents a protocol user's previously scheduled online conference.
myOnlineMeetings	Represents a collection of **myOnlineMeeting** (section 3.1.5.5) resources in summary form.
onlineMeetingDefaultValues	Represents the recommended default values for use when scheduling an online conference.
onlineMeetingEligibleValues	Represents sets of available values for use when an online conference is scheduled.
onlineMeetingExtension	Represents a user defined collection of key-value pair extension properties of an online conference.
onlineMeetingExtensions	Represents a collection of extensions on an online conference.
onlineMeetingInvitationCustomization	Represents custom invitation values recommended for use when sending online conference invitations.
onlineMeetingPolicies	Represents whether availability status of the various online conference features.
phoneDialInInformation	Represents information for phone access.

3.1.5.1 application

The application resource exposes to the user discovery of available protocol resources. The values retrieved from this resource are specific to the user accessing this resource. The values retrieved SHOULD NOT be cached for later use by the current user or any other user.

The main client application scenario enabled by this resource is the discovery of available protocol resources.

The following operations are allowed to be performed on this resource.

Operation	Description
DELETE	Delete an existing application.
Get	Gets the application identified by the supplied URL in the request.

3.1.5.1.1 Delete the Application

Token	Media types	HTTP method
application	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	DELETE

3.1.5.1.1.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD be empty.

3.1.5.1.1.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body will be empty or contain an **Error** (section 2.2.7.1) data structure.

The response to this operation can result in the following status codes.

Status code	Description
204	Request was successful, but no data is sent back
410	The requested resource is no longer available at the server and no forwarding address is known
404	The requested resource is no longer available.

3.1.5.1.1.3 Processing Details

None.

3.1.5.1.2 Get the Application

Token	Media types	HTTP method
application	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	GET

3.1.5.1.2.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

3.1.5.1.2.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body will be the application resource.

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.
410	The requested resource is no longer available at the server and no forwarding address is known
404	The requested resource is no longer available.

3.1.5.1.2.3 Processing Details

None.

3.1.5.2 applications

The following operations are allowed to be performed on this resource.

Operation	Description
POST	Create an application with the specified settings.

3.1.5.2.1 Create the Application

Token	Media types	HTTP method
applications	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	POST

3.1.5.2.1.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json
Content-type	Request content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD contain an **ApplicationInput** (section 3.1.5.2.1.1.1) data structure.

3.1.5.2.1.1.1 ApplicationInput

An **InputType** structure containing the properties required when creating an application. The following table summarizes the structure of the **ApplicationInput** data structure.

Property name	Type	Description
culture	xs:string	The **Culture** of the client. Cannot be null or empty.
endpointId	xs:string	A unique identifier for this application. This value is required and cannot be null or empty.
userAgent	xs:string	The user agent string to be used for identifying messages sent on behalf of this application. This value is required and cannot be null or empty.

3.1.5.2.1.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body SHOULD contain an **ApplicationResource** (section 3.1.5.2.1.2.1) data structure if the request was successful, or an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
200	The application is already present in memory.
201	The application was successfully created.
400	The request is malformed or contains invalid values.

3.1.5.2.1.2.1 ApplicationResource

An **ApplicationResource** represents a long-running application. The application can run inside a browser or can be a device-specific application. This resource captures user preferences, device characteristics, and other application specific characteristics.

Property name	Type	Description
culture	xs:string	The **Culture** of the client. Cannot be null or empty.
userAgent	xs:string	The user agent string to be used for identifying messages sent on behalf of this application

Link relationship	Description
batch	Represents a batched request handler to which multiple, independent HTTP requests packaged into a single multipart request can be sent.
self	A reference to the resource containing this link.

3.1.5.2.1.3 Processing Details

None.

3.1.5.3 batch

Batching allows client applications to reduce the number of HTTP request roundtrips when a large number of simple operations need to be performed.

The following operations are allowed to be performed on this resource.

Operation	Description
POST	Perform multiple, embedded individual HTTP requests

The parts of the multipart message MUST have the content type of application/http;msgtype=request, as defined in section 19 of [RFC2616].

3.1.5.3.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json
Content-type	Request content-type.	multipart/batching;boundary=<application defined>

The request body MUST contain a **MIME** Multipart/Batching request consisting of multiple parts. Each part MUST contain exactly one HTTP request, as specified in [RFC2616].

3.1.5.3.1.1 Part Body

Request header	Usage	Value
Content-type	Batch part content-type.	application/http;msgtype=request

The part body MUST have at least one Content-Type header for the part itself. The remainder of the part body consists of a single HTTP request, as specified in [RFC2616].

3.1.5.3.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	multipart/batching;boundary=<application defined>

The response body MUST contain a MIME Multipart/Batching response consisting of multiple parts. Each part MUST contain exactly one HTTP response, as specified in [RFC2616].

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.
400	The request is malformed or contains invalid values.
429	Too many requests.

3.1.5.3.2.1 Part Body

Response header	Usage	Value
Content-type	Response content-type.	application/http;msgtype=response

The part body MUST have at least one Content-Type header for the part itself. The remainder of the part body consists of a single HTTP response, as specified in [RFC2616].

3.1.5.3.3 Processing Details

None.

3.1.5.4 myAssignedOnlineMeeting

The following operations are allowed to be performed on this resource.

Operation	Description
GET	Retrieve the assigned online conference.

3.1.5.4.1 Get the Assigned Online Conference

Token	Media types	HTTP method
myAssignedOnlineMeeting	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	GET

3.1.5.4.1.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD be empty.

3.1.5.4.1.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body SHOULD contain an **OnlineMeetingResource** (section 2.2.7.6) data structure if the request was successful, or an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.
404	The requested resource could not be found at the server.

3.1.5.4.1.3 Processing Details

None.

3.1.5.5 myOnlineMeeting

The following operations are allowed to be performed on this resource.

Operation	Description
DELETE	Delete (cancel) a previously scheduled online conference
GET	Retrieve a previously scheduled online conference
PUT	Update a previously scheduled online conference with new settings

3.1.5.5.1 Delete an Online Conference

Token	Media types	HTTP method
myOnlineMeeting	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	DELETE

3.1.5.5.1.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD be empty.

3.1.5.5.1.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body will be empty if the request was successful, or contain an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
204	Request was successful, but no data is sent back
410	The requested resource is no longer available at the server and no forwarding address is known
404	The requested resource is no longer available.

None.

3.1.5.5.1.3 Processing Details

None.

3.1.5.5.2 Get an Online Conference

Token	Media types	HTTP method
myOnlineMeeting	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	GET

3.1.5.5.2.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json
Content-type	Request content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD be empty.

3.1.5.5.2.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body SHOULD contain an **OnlineMeetingResource** (section 2.2.7.6) data structure if the request was successful, or an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.

Status code	Description
404	The requested resource could not be found at the server.

3.1.5.5.2.3 Processing Details

None.

3.1.5.5.3 Update an Online Conference

Token	Media types	HTTP method
myOnlineMeeting	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	PUT

3.1.5.5.3.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json
Content-type	Request content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD contain an **OnlineMeetingInput** (section 2.2.7.2) data structure. The client normally gets the resource before updating it and supply all properties including those not understood by the client. This allows the client to preserve the properties added by other clients in the future.

3.1.5.5.3.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body SHOULD contain an **OnlineMeetingResource** (section 2.2.7.6) data structure if the request was successful, or an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.

Status code	Description
400	The request was malformed or contains invalid values.
404	The requested resource could not be found at the server.

3.1.5.5.3.3 Processing Details

None.

3.1.5.6 myOnlineMeetings

The following operations are allowed to be performed on this resource.

Operation	Description
GET	Get the collection of summary information for all previously scheduled owned by the current user.
POST	Schedule an online conference with the specified settings.

3.1.5.6.1 Get all Online Conferences

Token	Media types	HTTP method
myOnlineMeetings	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	GET

3.1.5.6.1.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD be empty.

3.1.5.6.1.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body SHOULD contain an **OnlineMeetingsResource** (section 2.2.7.7) data structure if the request was successful, or an **Error** (section 2.2.7.1) data structure if the request was not successful. The resource embeds all meetings of the user inside with only a few properties that help identify the meeting. For example, every embedded meeting resource includes subject, and online meeting id.

The response to this operation can result in the following status codes.

Status code	Description
200	The specified online conference was successfully retrieved.
404	The requested resource could not be found at the server.

3.1.5.6.1.3 Processing Details

None.

3.1.5.6.2 Create an Online Conference without Extensions

Token	Media types	HTTP method
myOnlineMeetings	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	POST

3.1.5.6.2.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json
Content-type	Request content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD contain an **OnlineMeetingInput** (section 2.2.7.2) data structure.

3.1.5.6.2.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body SHOULD contain an **OnlineMeetingResource** (section 2.2.7.6) data structure if the request was successful, or an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.
400	The request is malformed or contains invalid values.

3.1.5.6.2.3 Processing Details

None.

3.1.5.6.3 Create an Online Conference with Extensions

Every online meeting can have 0 or more extensions. Some extensions are automatically created for every meeting. A client application can create extensions for its own needs but this is rarely needed and hence considered advanced scenario. These extensions need to consumed by some client for them to be useful. These extensions are delivered to clients at join time. If a client does not understand an extension, it will ignore it.

After an online conference is created it MAY be extended to include arbitrary application defined properties as shown in section 3.1.5.9. As a convenience the protocol client application MAY elect to create an online conference and create one or more online conference extensions together in one single HTTP request. This is facilitated by the use of the MIME Multipart/Related Content-type, as specified in [RFC2387].

3.1.5.6.3.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json
Content-type	Request content-type.	multipart/related;boundary=<application defined>

The request body SHOULD consist of a MIME Multipart/Related request containing one main part and one or more related parts. The protocol client application can create more than one extension by adding more than one related part to this request.

3.1.5.6.3.1.1 Main Part Body

Request header	Usage	Value
Content-type	Request content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The main part body SHOULD consist of an **OnlineMeetingInput** (section 2.2.7.2) data structure.

3.1.5.6.3.1.2 Related Part Body

Request header	Usage	Value
Content-Type	Request content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json
Content-Id	Unique identifier for this part within this request	<Application defined>

A related part body SHOULD consist of a single **OnlineMeetingExtensionInput** (section 2.2.7.3) data structure.

3.1.5.6.3.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body SHOULD contain an **OnlineMeetingResource** (section 2.2.7.6) data structure if the request was successful, or an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.
400	The request is malformed or contains invalid values.
404	The application is no longer available.

3.1.5.6.3.3 Processing Details

None.

3.1.5.7 onlineMeetingDefaultValues

The **onlineMeetingDefaultValues** resource exposes to the user discovery of recommended default property values for the respective properties in an OnlineMeetingInput data structure. The values retrieved from this resource are specific to the user accessing this resource. The values retrieved SHOULD NOT be cached for later use by the current user or any other user.

This resource enables two key scenarios in a client application:

1. The client application can use the data retrieved from this resource to render a data driven UI to the end user.

2. The retrieved data can be used to perform local validation of the data in a request to the **myOnlineMeeting** or **myOnlineMeetings** resources without incurring the cost of an additional round-trip over the wire to the Conference Scheduling and Management service for remote validation of the request.

The following operations are allowed to be performed on this resource.

Operation	Description
GET	Get the user specific property values that SHOULD be used as the default values for the respective properties of an **OnlineMeetingInput** data structure.

3.1.5.7.1 Get the Default Values

Token	Media types	HTTP method
onlineMeetingDefaultValues	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	GET

3.1.5.7.1.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json
Content-type	Request content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD be empty.

3.1.5.7.1.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body SHOULD contain an **OnlineMeetingDefaultValuesResource** (section 3.1.5.7.1.2.1) data structure if the request was successful, or an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.
404	The application is no longer available.

3.1.5.7.1.2.1 OnlineMeetingDefaultValuesResource

A **ResourceType** structure containing the property values that SHOULD be used as the default values for the respective properties of an **OnlineMeetingInput** data structure.

Property name	Type	Description
accessLevel	AccessLevel	The policy that determines whether certain types of contacts are allowed to participate in the online conference.
automaticLeaderAssignment	AutomaticLeaderAssignment	The policy that determines which participants are automatically promoted to leaders in the online conference.
defaultOnlineMeetingRel	OnlineMeetingRel	The link relationship that SHOULD be used in identifying the default type of conference to be used when scheduling an online conference.
entryExitAnnouncement	EntryExitAnnouncement	The policy that determines how dial-in attendees to the online conference will be announced to other attendees of the online conference.
lobbyBypassForPhoneUsers	LobbyBypassForPhoneUsers	The policy that determines whether certain types of contacts will automatically bypass the online conference lobby.
participantsWarningThreshold	xs:int	The maximum number of participants that the user can invite without triggering a warning.

Link relationship	Description
self	A reference to the parent resource containing this link.

3.1.5.7.1.3 Processing Details

None.

3.1.5.8 onlineMeetingEligibleValues

The **onlineMeetingEligibleValues** resource exposes to the user discovery of allowed property values and recommended default property values for the respective properties in an **OnlineMeetingInput** data structure. The values retrieved from this resource are specific to the user accessing this resource. The values retrieved SHOULD NOT be cached for later use by the current user or any other user.

This resource enables two key scenarios in a client application:

1. The client application can use the data retrieved from this resource to render a data driven UI to the end user.

2. The retrieved data can be used to perform local validation of the data in a request to the scheduled/conference or scheduled/conferences resources without incurring the cost of an additional round-trip over the wire to the Conference Scheduling and Management service for remote validation of the request.

The following operations are allowed to be performed on this resource.

Operation	Description
GET	Get the user specific eligible values that can be used for the respective properties of an OnlineMeetingInput data structure.

3.1.5.8.1 Get the Eligible Values

Token	Media types	HTTP method
onlineMeetingEligibleValues	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	GET

3.1.5.8.1.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json
Content-type	Request content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD be empty.

3.1.5.8.1.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body SHOULD contain an **OnlineMeetingEligibleValuesResource** (section 3.1.5.8.1.2.1) data structure if the request was successful, or an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.
404	The application is no longer available.

3.1.5.8.1.2.1 OnlineMeetingEligibleValuesResource

A **ResourceType** structure containing the collection of property values that are eligible to be used as a value for the respective properties of an **OnlineMeetingInput** data structure.

Property name	Type	Description
accessLevels	Array<AccessLevel>	An array of eligible **AccessLevel** values (section 2.2.5.1.)
automaticLeaderAssignments	Array<AutomaticLeaderAssignment>	An array of eligible **AutomaticLeaderAssignment** values (section 2.2.5.2.)
eligibleOnlineMeetingRels	Array<OnlineMeetingRel>	An array of eligible **OnlineMeetingRel** values (section 2.2.5.7.)
entryExitAnnouncements	Array<EntryExitAnnouncement>	An array of eligible **EntryExitAnnouncement** values (section 2.2.5.3.)
lobbyBypassForPhoneUsersSettings	Array<LobbyBypassForPhoneUsers>	An array of eligible **LobbyBypassForPhoneUsers** values (section 2.2.5.5.)

Link relationship	Description
self	A reference to the parent resource containing this link.

3.1.5.8.1.3 Processing Details

None.

3.1.5.9 onlineMeetingExtension

The following operations are allowed to be performed on this resource.

Operation	Description
DELETE	Delete (cancel) an existing online conference extension.
GET	Retrieve an existing online conference extension.
PUT	Update an existing online conference extension with new settings

3.1.5.9.1 Delete an Online Conference Extension

Token	Media types	HTTP method
onlineMeetingExtension	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	DELETE

3.1.5.9.1.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD be empty.

3.1.5.9.1.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body will be empty if the request was successful, or consist of an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
204	Request was successful, but no data is sent back.
404	The requested resource is no longer available.

3.1.5.9.1.3 Processing Details

None.

3.1.5.9.2 Get an Online Conference Extension

Token	Media types	HTTP method
onlineMeetingExtension	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	GET

3.1.5.9.2.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

Request header	Usage	Value
Content-type	Request content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD be empty.

3.1.5.9.2.2 Response Body

Response header	Usage	Value
None.		There are no protocol-specific headers.

The response body SHOULD contain an **OnlineMeetingExtensionResource** (section 2.2.7.4) data structure if the request was successful, or an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.
404	The requested resource could not be found at the server.

3.1.5.9.2.3 Processing Details

None.

3.1.5.9.3 Update an Online Conference Extension

Token	Media types	HTTP method
onlineMeetingExtension	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	PUT

3.1.5.9.3.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json
Content-type	Request content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD contain an **OnlineMeetingExtensionInput** (section 2.2.7.3) data structure.

3.1.5.9.3.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body SHOULD contain an **OnlineMeetingExtensionResource** (section 2.2.7.4) data structure if the request was successful, or an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.
400	The request is malformed or contains invalid values.
404	The requested resource could not be found at the server.

3.1.5.9.3.3 Processing Details

None.

3.1.5.10 onlineMeetingExtensions

The following operations are allowed to be performed on this resource.

Operation	Description
POST	Create an application-defined set of properties as an extension to an online conference.

3.1.5.10.1 Create an Online Conference Extension

Token	Media types	HTTP method
onlineMeetingExtensions	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	POST

3.1.5.10.1.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json
Content-type	Request content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD consist of an **OnlineMeetingExtensionInput** (section 2.2.7.3) data structure.

3.1.5.10.1.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body SHOULD contain an **OnlineMeetingExtensionResource** (section 2.2.7.4) data structure if the request was successful, or an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.
400	The request is malformed or contains invalid values.

3.1.5.10.1.3 Processing Details

None.

3.1.5.11 onlineMeetingInvitationCustomization

The following operations are allowed to be performed on this resource.

Operation	Description
GET	Get the values that can be used to customize an online conference invitation email message.

3.1.5.11.1 Get the Invitation Customization Values

Token	Media types	HTTP method
onlineMeetingInvitationCustomization	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	GET

3.1.5.11.1.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD be empty.

3.1.5.11.1.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body SHOULD contain an **OnlineMeetingInvitationCustomizationResource** (section 3.1.5.11.1.2.1) data structure if the request was successful , or an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.

3.1.5.11.1.2.1 OnlineMeetingInvitationCustomizationResource

A **ResourceType** structure containing the properties that can be used to customize a conference invitation email message.

Property name	Type	Description
enterpriseHelpUrl	xs:string	The URL for the default help information page for first time users.
invitationFooterText	xs:string	The footer text to be displayed on a customized meeting invitation.
invitationHelpUrl	xs:string	The URL of the help page associated with a customized meeting invitation.
invitationLegalUrl	xs:string	The URL of the legal info associated with a customized meeting invitation.
invitationLogoUrl	xs:string	The URL of the logo image to be displayed on a customized meeting invitation.

Link relationship	Description
self	A reference to the parent resource containing this link.

3.1.5.11.1.3 Processing Details

None.

3.1.5.12 onlineMeetingPolicies

The **onlineMeetingPolicies** resource exposes to the user discovery of available online conference features. The values retrieved from this resource are specific to the user accessing this resource. The values retrieved SHOULD NOT be cached for later use by the current user or any other user.

This resource enables two key scenarios in a client application:

1. The client application can use the data retrieved from this resource to render a data driven UI to the end user.
2. The retrieved data can be used to perform local validation of the data in a request to the scheduled/conference or scheduled/conferences resources without incurring the cost of an additional round-trip over the wire to the Conference Scheduling and Management service for remote validation of the request.

The following operations are allowed to be performed on this resource.

Operation	Description
GET	Get the user specific available online conference features

3.1.5.12.1 Get the Policies

Token	Media types	HTTP method
onlineMeetingPolicies	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	GET

3.1.5.12.1.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD be empty.

3.1.5.12.1.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body SHOULD contain an **OnlineMeetingPoliciesResource** (section 3.1.5.12.1.2.1) data structure if the request was successful, or an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.
404	The application was deleted from the server, or a fallback occurred.

3.1.5.12.1.2.1 OnlineMeetingPoliciesResource

A **ResourceType** structure containing the properties describing the behaviors expected of the client application and/or supported by the protocol server.

Property name	Type	Description
entryExitAnnouncement	GenericPolicy	The policy that determines whether entry/exit announcements can be used in the online conference.
externalUserMeetingRecording	GenericPolicy	The policy that determines whether external users can record an online conference.
meetingRecording	GenericPolicy	The policy that determines whether any user can record an online conference.
meetingSize	xs:int	The maximum number of online conference participants that can be invited before a warning is shown to the user.
phoneUserAdmission	GenericPolicy	The policy that determines whether accessing conferences via phone is available.
voipAudio	GenericPolicy	The policy that determines whether an online conference can use VoIP audio.

Link relationship	Description
self	A reference to the parent resource containing this link.

3.1.5.12.1.3 Processing Details

None.

3.1.5.13 phoneDialInInformation

The following operations are allowed to be performed on this resource.

Operation	Description
GET	Get the geographic regions and associated phone numbers that are available to online conference participants joining the conference via a phone line.

3.1.5.13.1 Get the Phone Dial-In Information

Token	Media types	HTTP method
phoneDialInInformation	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json	GET

3.1.5.13.1.1 Request Body

Request header	Usage	Value
Accept	Response content-type negotiation.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The request body SHOULD be empty.

3.1.5.13.1.2 Response Body

Response header	Usage	Value
Content-type	Response content-type.	application/vnd.microsoft.com.ucwa+xml application/vnd.microsoft.com.ucwa+json

The response body SHOULD contain a **PhoneDialInInformationResource** (section 3.1.5.13.1.2.3) data structure if the request was successful, or an **Error** (section 2.2.7.1) data structure if the request was not successful.

The response to this operation can result in the following status codes.

Status code	Description
200	Request was successful.
404	The application was deleted from the server, or a fallback occurred.

3.1.5.13.1.2.1 DialInRegionResource

Property name	Type	Description
languages	CollectionType	The languages associated with the phone number.
name	xs:string	The name of the region associated with the phone number.
number	xs:string	The phone number

Link relationship	Description
self	A reference to the parent resource containing this link.

3.1.5.13.1.2.2 DialInRegionsResource

A **ResourceType** structure containing a collection of **DialInRegionResource** structures.

Property name	Type	Description
None.		There are no properties in a ResourceType structure.

Link relationship	Description
self	A reference to the parent resource containing this link.

3.1.5.13.1.2.3 PhoneDialInInformationResource

A ResourceType structure containing the properties describing the geographic regions and associated phone numbers that are available to online conference participants joining the conference via a phone line.

Property name	Type	Description
externalDirectoryUri	xs:string	The web address for the external phone directory.
internalDirectoryUri	xs:string	The web address for the internal phone directory.
dialInRegion	DialInRegionsResource	The list of dial-in regions and their respective phone numbers.

Link relationship	Description
self	A reference to the parent resource containing this link.

3.1.5.13.1.3 Processing Details

None.

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

4 Protocol Examples

This section will show a few examples of how the protocol works.

4.1 Creating an Application

The following example illustrates the exchange of messages required for a client to create an ApplicationResource in order to successfully use the Online Conference Scheduling and Management Protocol Server.

The client application POSTs a request to create an application instance on the Online Conference Scheduling and Management Protocol Server. The URI to which the request is addressed is obtained from the auto-discovery response ([MS-OCDISCWS] section 4.1.)

4.1.1 HTTP Request

The body of the request includes the culture of the application, an endpointId that is unique to the client application, and the userAgent string for the client.

```
POST https://pool0.vdomain.com/ucwa/applications HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 05:50:47 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
Content-Length: 336

<?xml version="1.0" encoding="utf-8"?>
<input xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa">
  <property name="culture">en-US</property>
  <property name="endpointId">707ca69a-a366-45a9-bfaa-aa0c3283b182</property>
  <property name="userAgent">OcsmpClient/1.0</property>
</input>
```

4.1.2 HTTP Response

The client application parses the response to find the embedded resource with the "rel" equal to onlineMeetings. This embedded resource contains links to all other resources associated with scheduling and maintaining online conferences. These links will be needed in order to perform future requests. They should be cached, but not persisted because they are only valid for the lifetime of the application instance.

```
HTTP/1.1 201 Created
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 4317
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
P3P: CP="IDC CUR ADMa OUR BUS"
Set-Cookie: cwt_ucwa=AAEBHAEFAAAAAAAFFQAAACZfw6hMpZ-
w7RAMgZEGAACBEBeUl8NGfGxekivQc34B QOCAnDegyDkn3f4Sjtf6F48oQiLmuxbPqWIspWebqygSLeMdTFLQoYIMHfI
z8odzwgINi91Y3dhL2FwcGxpY2F0aW9ucy9CdWdTQnhPMjJuWVZrQnJVUmliSWdMYnY5NWUwPS9waG90bw;
path=/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/photo; secure; HttpOnly
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
```

```
Date: Thu, 21 Jun 2012 05:50:46 GMT

<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=">
  <property name="culture">en-US</property>
  <property name="userAgent">OcsmpClient/1.0</property>
  <property name="type">Browser</property>
  <resource rel="onlineMeetings"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/OnlineMeetings">
    <link rel="myOnlineMeetings"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings"/>
    <link rel="onlineMeetingDefaultValues"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/OnlineMeetingDefaultValues"/>
    <link rel="onlineMeetingEligibleValues"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/OnlineMeetingEligibleValues"/>
    <link rel="onlineMeetingInvitationCustomization"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/OnlineMeetingInvitationCustomization"/
>
    <link rel="onlineMeetingPolicies"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/OnlineMeetingPolicies"/>
    <link rel="phoneDialInInformation"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/PhoneDialInInformation"/>
  </resource>
</resource>
```

4.2 Creating an Online Conference

The following example illustrates the exchange of messages required for a client to retrieve the available and recommended default user-specific values required in order to successfully schedule a new online conference.

4.2.1 Getting the Online Conference Policies

The URI to which the request is sent is retrieved from the onlineMeetings embedded resource of the application. The "href" of the link with "rel" equal to onlineMeetingPolicies contains the relative URI for the resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.2.1.1 HTTP Request

The request is a simple GET with no body.

```
GET
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/OnlineMeetingPolici
es HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 05:53:56 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
```

4.2.1.2 HTTP Response

The response returns a resource containing several properties describing conferencing features and capabilities that are available to the user of the client application.

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 507
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 05:53:55 GMT

<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/OnlineMeetingPolicies">
  <property name="entryExitAnnouncement">Enabled</property>
  <property name="phoneUserAdmission">Enabled</property>
  <property name="externalUserMeetingRecording">Disabled</property>
  <property name="meetingRecording">Disabled</property>
  <property name="meetingSize">20</property>
  <property name="voipAudio">Enabled</property>
</resource>
```

4.2.2 Getting the Online Conference Eligible Values

The URI to which the request is sent is retrieved from the onlineMeetings embedded resource of the application. The "href" of the link with "rel" equal to onlineMeetingEligibleValues contains the relative URI for the resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.2.2.1 HTTP Request

The request is a simple GET with no body.

```
GET
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/OnlineMeetingEligib
leValues HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 05:56:57 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
```

4.2.2.2 HTTP Response

The response returns a resource containing several property lists each containing all of the potential values to which the corresponding property can be set when scheduling an online conference. These values can also be used by the client application to render a GUI as well as validate user input before sending the request to create an online conference to the protocol server.

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 1025
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
```

```
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 05:56:58 GMT

<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
rel="onlineMeetingEligibleValues"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/onlineMeetingEligibleValues">
  <link rel="myOnlineMeetings"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/onlineMeetings/myOnlineMeetings"/>
  <link rel="myAssignedOnlineMeeting"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/onlineMeetings/myOnlineMeetings/9M2F6P
2S"/>
  <propertyList name="entryExitAnnouncements">
    <item>Disabled</item>
    <item>Enabled</item>
  </propertyList>
  <propertyList name="automaticLeaderAssignments">
    <item>Disabled</item>
    <item>Everyone</item>
    <item>SameEnterprise</item>
  </propertyList>
  <propertyList name="accessLevels">
    <item>Invited</item>
    <item>SameEnterprise</item>
    <item>Everyone</item>
    <item>Locked</item>
  </propertyList>
  <propertyList name="lobbyBypassForPhoneUsersSettings">
    <item>Disabled</item>
    <item>Enabled</item>
  </propertyList>
  <propertyList name="eligibleOnlineMeetingRels">
    <item>myAssignedOnlineMeeting</item>
    <item>myOnlineMeetings</item>
  </propertyList>
</resource>
```

4.2.3 Getting the Online Conference Default Values

The URI to which the request is sent is retrieved from the onlineMeetings embedded resource of the application. The "href" of the link with "rel" equal to onlineMeetingDefaultValues contains the relative URI for the resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.2.3.1 HTTP Request

The request is a simple GET with no body.

```
GET
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/OnlineMeetingDefaul
tValues HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 05:58:58 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
```

4.2.3.2 HTTP Response

The response returns a resource containing several properties each containing a single value that should be used as the default value for the corresponding eligible values obtained earlier (section 4.2.2.2.)

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 564
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 05:58:57 GMT

<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
rel="onlineMeetingDefaultValues"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/OnlineMeetingDefaultValues">
  <property name="entryExitAnnouncement">Enabled</property>
  <property name="automaticLeaderAssignment">SameEnterprise</property>
  <property name="accessLevel">Everyone</property>
  <property name="participantsWarningThreshold">20</property>
  <property name="lobbyBypassForPhoneUsers">Disabled</property>
  <property name="defaultOnlineMeetingRel">MyAssignedOnlineMeeting</property>
</resource>
```

4.2.4 Creating the Online Conference

The URI to which the request is sent is retrieved from the onlineMeetings embedded resource of the application. The "href" of the link with "rel" equal to myOnlineMeetings contains the relative URI for the resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.2.4.1 HTTP Request

The body of the request includes all of the properties described in section 3.1.5.6.2.1.

```
POST
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings
HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 06:01:14 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
Content-Length: 877

<input xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa">
  <property name="accessLevel">Everyone</property>
  <property name="entryExitAnnouncement">Disabled</property>
  <property name="automaticLeaderAssignment">Everyone</property>
  <property name="description">Capabilities-based conference for BVT</property>
```

```
  <property name="expirationTime">2012-12-17T17:10:48.5520049-08:00</property>
  <property name="lobbyBypassForPhoneUsers">Disabled</property>
  <property name="phoneUserAdmission">Enabled</property>
  <property name="subject">Dynamic conference scheduling values</property>
  <propertyList name="leaders">
    <item>sip:User1@vdomain.com</item>
    <item>sip:User2@vdomain.com</item>
  </propertyList>
  <propertyList name="attendees">
    <item>sip:User3@vdomain.com</item>
    <item>sip:User4@vdomain.com</item>
  </propertyList>
</input>
```

4.2.4.2 HTTP Response

The body of the response includes all of the properties described in section 3.1.5.6.2.2.

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 1426
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
ETag: "-1467239175"
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 06:01:13 GMT

<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
rel="myOnlineMeeting"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/onlineMeetings/myOnlineMeetings/DDECNW
WR">
  <link rel="onlineMeetingExtensions"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/onlineMeetings/myOnlineMeetings/DDECNW
WR/extensions"/>
  <property name="accessLevel">Everyone</property>
  <property name="entryExitAnnouncement">Disabled</property>
  <propertyList name="attendees">
    <item>sip:User3@vdomain.com</item>
    <item>sip:User4@vdomain.com</item>
  </propertyList>
  <property name="automaticLeaderAssignment">Everyone</property>
  <property name="description">Capabilities-based conference for BVT</property>
  <property name="expirationTime">12/18/2012 1:10:48 AM</property>
  <propertyList name="leaders">
    <item>sip:User1@vdomain.com</item>
    <item>sip:User2@vdomain.com</item>
  </propertyList>
  <property name="onlineMeetingId">DDECNWWR</property>
  <property
name="onlineMeetingUri">sip:UcwaUser1@ucwatenant.com;gruu;opaque=app:conf:focus:id:DDECNWWR</
property>
  <property name="etag">123456</property>
  <property name="onlineMeetingRel">myOnlineMeetings</property>
  <property name="organizerUri">sip:UcwaUser1@ucwatenant.com</property>
  <property name="conferenceId">44894</property>
  <property name="lobbyBypassForPhoneUsers">Disabled</property>
  <property name="subject">Dynamic conference scheduling values</property>
  <property name="joinUrl">https://meet.vdomain.com/ucwatenant/ucwauser1/DDECNWWR</property>
</resource>
```

4.3 Getting an Existing Online Conference

In some scenarios the client application may only know the ID of an online conference and may not know the URI to access that online conference. In such scenarios the client application will have to discover the URI of the online conference. The client application can discover the URI of an online conference by getting a listing of all existing online conferences then iterating over each returned online conference comparing the value of the **onlineMeetingId** property of the online conference against the known ID until a match is found.

The following example illustrates the exchange of messages required for a client to retrieve an existing online conference.

4.3.1 Getting the Listing of Existing Online Conferences

The URI to which the request is sent is retrieved from the onlineMeetings embedded resource of the application. The "href" of the link with "rel" equal to myOnlineMeetings contains the relative URI for the resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.3.1.1 HTTP Request

The request is a simple GET with no body.

```
GET
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings
HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 06:09:54 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
```

4.3.1.2 HTTP Response

The body of the response includes all of the properties described in section 3.1.5.6.1.2.

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 868
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 06:09:52 GMT

<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
rel="myOnlineMeetings"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/onlineMeetings/myOnlineMeetings">
  <resource rel="myOnlineMeeting"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/onlineMeetings/myOnlineMeetings/9M2F6P
2S">
    <property name="onlineMeetingId">9M2F6P2S</property>
    <property name="subject"/>
    <property name="etag">123456</property>
```

```
    </resource>
    <resource rel="myOnlineMeeting"
  href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/onlineMeetings/myOnlineMeetings/DDECNW
  WR">
      <property name="onlineMeetingId">DDECNWWR</property>
      <property name="subject">Dynamic conference scheduling values</property>
      <property name="etag">123456</property>
    </resource>
    <resource rel="myAssignedOnlineMeeting"
  href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/onlineMeetings/myOnlineMeetings/8LWNW8
  81">
      <property name="onlineMeetingId">8LWNW881</property>
      <property name="subject">My Meeting</property>
      <property name="etag">123456</property>
    </resource>

</resource>
```

4.3.2 Getting the Online Conference

The client application iterates over each embedded resource in the response obtained in section 4.3.1.2 to find the resource with the matching **onlineMeetingId** property. This embedded resource contains only summary data. It does not contain all of the properties found in the full resource. The client application needs to get the full online conference resource. The URI to which the request is sent is retrieved from the "href" of the found resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.3.2.1 HTTP Request

The request is a simple GET with no body.

```
GET
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/DD
ECNWWR HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 06:12:29 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
```

4.3.2.2 HTTP Response

The body of the response includes all of the properties described in section 3.1.5.5.2.2.

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 1426
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
ETag: "-1467239175"
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 06:12:42 GMT
```

```
<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
rel="myOnlineMeeting"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/DDECNWWR">
  <link rel="onlineMeetingExtensions"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/DDECNWWR/Extensions"/
>
  <property name="accessLevel">Everyone</property>
  <property name="entryExitAnnouncement">Disabled</property>
  <propertyList name="attendees">
    <item>sip:User3@vdomain.com</item>
    <item>sip:User4@vdomain.com</item>
  </propertyList>
  <property name="automaticLeaderAssignment">Everyone</property>
  <property name="description">Capabilities-based conference for BVT</property>
  <property name="expirationTime">12/18/2012 1:10:48 AM</property>
  <propertyList name="leaders">
    <item>sip:User1@vdomain.com</item>
    <item>sip:User2@vdomain.com</item>
  </propertyList>
  <property name="onlineMeetingId">DDECNWWR</property>
  <property
name="onlineMeetingUri">sip:UcwaUser1@ucwatenant.com;gruu;opaque=app:conf:focus:id:DDECNWWR</
property>
  <property name="onlineMeetingRel">MyOnlineMeetings</property>
  <property name="organizerUri">sip:UcwaUser1@ucwatenant.com</property>
  <property name="conferenceId">44894</property>
  <property name="lobbyBypassForPhoneUsers">Disabled</property>
  <property name="subject">Dynamic conference scheduling values</property>
  <property name="etag">"-1467239175</property>
  <property name="joinUrl">https://meet.vdomain.com/ucwatenant/ucwauser1/DDECNWWR</property>
</resource>
```

4.4 Updating an Existing Online Conference

The following example illustrates the exchange of messages required for a client to update an existing online conference. To update a conference, there are many other preliminary steps that the client must go through such as identification and retrieval of the conference to update, getting the policies, eligible values, and so on. For the sake of completeness, the initial sections indicate the reference to relevant examples.

4.4.1 Getting the Listing of Existing Online Conferences

See the example in section 4.3.1.

4.4.2 Getting the Online Conference Policies

See the example in section 4.2.1.

4.4.3 Getting the Online Conference Eligible Values

See the example in section 4.2.2.

4.4.4 Getting the Online Conference Default Values

See the example in section 4.2.3.

4.4.5 Getting the Online Conference

See the example in section 4.3.2.

4.4.6 Updating the Online Conference

The client application prepares the request to update the online conference by copying the value of each unchanged property from the online conference retrieved in section 4.4.5. The client application then fills in the remaining properties with updated values before sending the request. The URI to which the request is sent is retrieved from the "href" of the online conference retrieved in section 4.4.5. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

If the meeting has the potential to be updated from multiple clients, a client should consider conditional update mechanism using **etag** property of the resource. When the conference is retrieved, the etag header in the response contains the etag values for the conference. Any update operation that changes 1 or more properties of the conference resource will result in a new etag value. A client that wants to update a conference only if it has not been updated by other client should supply "if-match" http header with the etag value of the resource it is modifying. This will ensure that the server will fail the operation with 412 response. If the "if-match" header is not supplied, the server can update the conference even if it has been modified from another client after this client retrieved the resource.

4.4.6.1 HTTP Request

The body of the request includes all of the properties described in section 3.1.5.5.3.1.

```
PUT
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/DD
ECNWWR HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
If-Match:"123456"
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 06:25:01 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
Content-Length: 896

<input xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa">
  <property name="accessLevel">SameEnterprise</property>
  <property name="entryExitAnnouncement">Enabled</property>
  <property name="automaticLeaderAssignment">SameEnterprise</property>
  <property name="description">Updated - My first Web API conference</property>
  <property name="expirationTime">2011-12-29T03:03:18Z</property>
  <property name="lobbyBypassForPhoneUsers">Disabled</property>
  <property name="phoneUserAdmission">Enabled</property>
  <property name="subject">Updated - Web API</property>
  <propertyList name="leaders">
    <item>sip:User1@vdomain.com</item>
    <item>sip:User2@vdomain.com</item>
    <item>sip:User3@vdomain.com</item>
  </propertyList>
  <propertyList name="attendees">
    <item>sip:User4@vdomain.com</item>
    <item>sip:User5@vdomain.com</item>
  </propertyList>
</input>
```

4.4.6.2 HTTP Response

The body of the response includes all of the properties described in section 3.1.5.5.3.2.

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 1452
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
ETag: "1664928707"
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 06:24:59 GMT

<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
rel="myOnlineMeeting"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/DDECNWWR">
  <link rel="onlineMeetingExtensions"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/DDECNWWR/Extensions"/
>
  <property name="accessLevel">SameEnterprise</property>
  <property name="entryExitAnnouncement">Enabled</property>
  <propertyList name="attendees">
    <item>sip:User4@vdomain.com</item>
    <item>sip:User5@vdomain.com</item>
  </propertyList>
  <property name="automaticLeaderAssignment">SameEnterprise</property>
  <property name="description">Updated - My first Web API conference</property>
  <property name="expirationTime">12/29/2011 3:03:18 AM</property>
  <propertyList name="leaders">
    <item>sip:User1@vdomain.com</item>
    <item>sip:User2@vdomain.com</item>
    <item>sip:User3@vdomain.com</item>
  </propertyList>
  <property name="onlineMeetingId">DDECNWWR</property>
  <property name="etag">1664928707</property>
  <property
name="onlineMeetingUri">sip:UcwaUser1@ucwatenant.com;gruu;opaque=app:conf:focus:id:DDECNWWR</
property>
  <property name="onlineMeetingRel">MyOnlineMeetings</property>
  <property name="organizerUri">sip:UcwaUser1@ucwatenant.com</property>
  <property name="conferenceId">52677</property>
  <property name="lobbyBypassForPhoneUsers">Disabled</property>
  <property name="subject">Updated - Web API</property>
  <property name="joinUrl">https://meet.vdomain.com/ucwatenant/ucwauser1/DDECNWWR</property>
</resource>
```

4.5 Deleting an Existing Online Conference

The following example illustrates the exchange of messages required for a client to delete an existing online conference. Before a conference can be deleted, the client needs the URL of the conference to be deleted. To retrieve this URL, the client may need to go through preliminary steps to retrieve existing conferences and then find a matching one. For the sake of completeness, some sections refer to relevant examples.

4.5.1 Getting the Listing of Existing Online Conferences

See the example in section 4.3.1.

4.5.2 Deleting the Online Conference

The client application iterates over each embedded resource in the response obtained in section 4.5.1 to find the resource with the matching **onlineMeetingId** property. The URI to which the request is sent is retrieved from the "href" of the found resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.5.2.1 HTTP Request

The request is a simple DELETE with no body.

```
DELETE
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/DD
ECNWWR HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 06:32:30 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
```

4.5.2.2 HTTP Response

A successful response is indicated by the 204 response code. The response contains no body.

```
HTTP/1.1 204 No Content
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Expires: -1
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 06:32:28 GMT
```

4.6 Creating an Online Conference with Extensions

The following example illustrates the exchange of messages required for a client to retrieve the available and recommended default user-specific values required in order to successfully schedule a new online conference with one or more custom extension properties in a single request.

4.6.1 Getting the Online Conference Policies

See the example in section 4.2.1

4.6.2 Getting the Online Conference Eligible Values

See the example in section 4.2.2

4.6.3 Getting the Online Conference Default Values

See the example in section 4.2.3

4.6.4 Creating the Online Conference with Extensions

The URI to which the request is sent is retrieved from the onlineMeetings embedded resource of the application. The "href" of the link with "rel" equal to myOnlineMeetings contains the relative URI for the resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.6.4.1 HTTP Request

The body of the request is formatted as multipart/related content as described in section 3.1.5.6.3.1.

```
POST
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings
HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: multipart/related;boundary=39ed781fede24e76a966bdc9fe5ba848
Date: Thu, 21 Jun 2012 06:38:27 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
Content-Length: 1821
Expect: 100-continue



--39ed781fede24e76a966bdc9fe5ba848
Content-Type: application/vnd.microsoft.com.ucwa+xml

<input xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa">
  <property name="accessLevel">Everyone</property>
  <property name="attendanceAnnouncementsStatus">Disabled</property>
  <property name="automaticLeaderAssignment">Everyone</property>
  <property name="description">Capabilities-based conference for BVT</property>
  <property name="expirationTime">2012-12-17T17:10:48.5520049-08:00</property>
  <property name="lobbyBypassForPhoneUsers">Disabled</property>
  <property name="phoneUserAdmission">Enabled</property>
  <property name="subject">Dynamic conference scheduling values</property>
  <propertyList name="leaders">
    <item>sip:User1@vdomain.com</item>
    <item>sip:User2@vdomain.com</item>
  </propertyList>
  <propertyList name="attendees">
    <item>sip:User3@vdomain.com</item>
    <item>sip:User4@vdomain.com</item>
  </propertyList>
</input>


--39ed781fede24e76a966bdc9fe5ba848
Content-Type: application/vnd.microsoft.com.ucwa+xml
Content-Id: 6921eadf-aac8-48b8-848b-2dc866be00fe


<input xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa">
  <property name="id">e1</property>
  <property name="type">RoamedOrganizerData</property>
  <property name="property1">value1</property>
  <property name="property2">value2</property>
</input>

--39ed781fede24e76a966bdc9fe5ba848
Content-Type: application/vnd.microsoft.com.ucwa+xml
Content-Id: 202ac512-ffa6-475d-8e13-22e0c27d84f0
```

```
<input xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa">
  <property name="id">e3</property>
  <property name="type">RoamedParticipantData</property>
  <property name="property1">value3</property>
  <property name="property2">value4</property>
</input>

--39ed781fede24e76a966bdc9fe5ba848--
```

4.6.4.2 HTTP Response

The response contains an OnlineMeetingResource instance with embedded OnlineMeetingExtensionResources as described in section 3.1.5.6.3.2.

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 2050
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
ETag: "-1467239175"
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 06:38:28 GMT

<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
rel="myOnlineMeeting"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/VM96DE7H">
  <link rel="onlineMeetingExtensions"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/VM96DE7H/Extensions"/
>
  <property name="accessLevel">Everyone</property>
  <property name="entryExitAnnouncement">Disabled</property>
  <propertyList name="attendees">
    <item>sip:User3@vdomain.com</item>
    <item>sip:User4@vdomain.com</item>
  </propertyList>
  <property name="automaticLeaderAssignment">Everyone</property>
  <property name="description">Capabilities-based conference for BVT</property>
  <property name="expirationTime">12/18/2012 1:10:48 AM</property>
  <property name="etag">-1467239175</property>
  <propertyList name="leaders">
    <item>sip:User1@vdomain.com</item>
    <item>sip:User2@vdomain.com</item>
  </propertyList>
  <property name="onlineMeetingId">VM96DE7H</property>
  <property
name="onlineMeetingUri">sip:UcwaUser1@ucwatenant.com;gruu;opaque=app:conf:focus:id:VM96DE7H</
property>
  <property name="onlineMeetingRel">MyOnlineMeetings</property>
  <property name="organizerUri">sip:UcwaUser1@ucwatenant.com</property>
  <property name="conferenceId">56900</property>
  <property name="lobbyBypassForPhoneUsers">Disabled</property>
  <property name="subject">Dynamic conference scheduling values</property>
  <property name="joinUrl">https://meet.vdomain.com/ucwatenant/ucwauser1/VM96DE7H</property>
  <resource rel="onlineMeetingExtension"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/VM96DE7H/Extensions/e
1">
    <property name="id">e1</property>
    <property name="type">RoamedOrganizerData</property>
    <property name="property1">value1</property>
    <property name="property2">value2</property>
```

```
    <property name="etag">123456</property>
  </resource>
  <resource rel="onlineMeetingExtension"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/
myOnlineMeetings/VM96DE7H/Extensions/e3">
    <property name="id">e3</property>
    <property name="type">RoamedParticipantData</property>
    <property name="property3">value3</property>
    <property name="property4">value4</property>
    <property name="etag">123236</property>
  </resource>
</resource>
```

4.7 Creating an Online Conference Extension

The following example illustrates the exchange of messages required for a client to add a new online conference extension to an existing online conference.

4.7.1 Getting the Listing of Existing Online Conferences

See the example in section 4.3.1.

4.7.2 Getting the Online Conference

See the example in section 4.3.2.

4.7.3 Creating the Online Conference Extension

The URI to which the request is sent is retrieved from the OnlineMeetingResource. The "href" of the link with "rel" equal to onlineMeetingExtensions contains the relative URI for the resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.7.3.1 HTTP Request

The body of the request includes all of the properties described in section 3.1.5.10.1.1

```
POST
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/NZ
SLWQAE/Extensions HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 15:50:45 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
Content-Length: 237

<input xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa">
  <property name="type">RoamedParticipantData</property>
  <property name="CustomProperty1">alpha</property>
  <property name="CustomProperty2">omega</property>
</input>
```

4.7.3.2 HTTP Response

The body of the response includes all of the properties described in section 3.1.5.10.1.2

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 442
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
ETag: "-1467239175"
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 15:50:42 GMT

<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
rel="onlineMeetingExtension"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/NZSLWQAE/Extensions/c
om.contoso.conferencing">
  <property name="id">com.contoso.conferencing</property>
  <property name="type">RoamedParticipantData</property>
  <property name="CustomProperty1">alpha</property>
  <property name="CustomProperty2">omega</property>
  <property name="etag">-1467239175</property>
</resource>
```

4.8 Getting an Existing Online Conference Extension

In some scenarios the client application may only know the ID of an online conference extension and may not know the URI to access that online conference extension. In such scenarios the client application will have to discover the URI of the online conference extension. The client application can discover the URI of an online conference extension by getting a listing of all existing online conference extensions then iterating over each returned online conference extension comparing the value of the **id** property of the online conference extension against the known **id** until a match is found.

The following example illustrates the exchange of messages required for a client to retrieve an existing online conference extension.

4.8.1 Getting the Listing of Existing Online Conferences

See the example in section 4.3.1.

4.8.2 Getting the Online Conference

See the example in section 4.3.2.

4.8.3 Getting the Listing of Existing Online Conference Extensions

The URI to which the request is sent is retrieved from the online conference retrieved in section 4.8.2. The "href" of the link with "rel" equal to onlineMeetingExtensions contains the relative URI for the resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.8.3.1 HTTP Request

```
GET
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/VM
96DE7H/Extensions HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 15:09:56 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
```

4.8.3.2 HTTP Response

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 831
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 15:09:56 GMT

<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
rel="onlineMeetingExtensions"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/VM96DE7H/Extensions">
  <resource rel="onlineMeetingExtension"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/VM96DE7H/Extensions/e
1">
    <property name="id">e1</property>
    <property name="type">RoamedOrganizerData</property>
    <property name="property1">value1</property>
    <property name="property2">value2</property>
    <property name="etag">-1467239175</property>
  </resource>
  <resource rel="onlineMeetingExtension"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/VM96DE7H/Extensions/e
3">
    <property name="id">e3</property>
    <property name="type">RoamedParticipantData</property>
    <property name="property3">value3</property>
    <property name="property4">value4</property>
    <property name="etag">2328239175</property>
  </resource>
</resource>
```

4.8.4 Getting the Online Conference Extension

The client application iterates over each embedded resource in the response obtained in section 4.8.3.2 to find the resource with the matching **id** property. The URI to which the request is sent is retrieved from the "href" of the found resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.8.4.1 HTTP Request

The request is a simple GET with no body.

```
GET
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/VM
96DE7H/Extensions/e3 HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 15:10:35 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
```

4.8.4.2 HTTP Response

The body of the response includes all of the properties described in section 3.1.5.9.2.2.

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 376
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
ETag: "-1467239175"
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 15:10:36 GMT

<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
rel="onlineMeetingExtension"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/VM96DE7H/Extensions/e
3">
  <property name="id">e3</property>
  <property name="type">RoamedParticipantData</property>
  <property name="property3">value3</property>
  <property name="property4">value4</property>
  <property name="etag">-1467239175</property>
</resource>
```

4.9 Updating an Existing Online Conference Extension

The following example illustrates the exchange of messages required for a client to update an existing online conference extension.

4.9.1 Getting the Listing of Existing Online Conferences

See the example in section 4.3.1.

4.9.2 Getting the Online Conference

See the example in section 4.3.2.

4.9.3 Getting the Listing of Existing Online Conference Extensions

See the example in section 4.8.3.

4.9.4 Getting the Online Conference Extension

See the example in section 4.8.4.

4.9.5 Updating the Online Conference Extension

The client application iterates over each embedded resource in the response obtained in section 4.9.4 to find the resource with the matching **id** property. The URI to which the request is sent is retrieved from the "href" of the found resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.9.5.1 HTTP Request

The body of the request includes all of the properties described in section 3.1.5.9.3.1.

```
PUT
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/NZ
SLWQAE/Extensions/com.contoso.conferencing HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
If-Match: "-1467239175"
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 15:54:57 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
Content-Length: 288

<input xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa">
  <property name="type">RoamedParticipantData</property>
  <property name="CustomProperty1">phi</property>
  <property name="CustomProperty2">delta</property>
  <property name="CustomProperty3">theta</property>
</input>
```

4.9.5.2 HTTP Response

The body of the response includes all of the properties described in section 3.1.5.9.3.2.

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 489
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
ETag:"7689839175"
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 15:54:54 GMT

<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
rel="onlineMeetingExtension"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/NZSLWQAE/Extensions/c
om.contoso.conferencing">
  <property name="id">com.contoso.conferencing</property>
  <property name="type">RoamedParticipantData</property>
```

```
    <property name="CustomProperty1">phi</property>
    <property name="CustomProperty2">delta</property>
    <property name="CustomProperty3">theta</property>
    <property name="etag">7689839175</property>
  </resource>
```

4.10 Batch Updating an Existing Online Conference and its Extensions

An online conference and its associated online conference extensions can be updated together in one single HTTP request by batching what would be several individual HTTP requests into a single multipart request. The following example illustrates the exchange of messages required for a client to update an existing online conference and its online conference extensions in a single multipart request.

4.10.1 Getting the Listing of Existing Online Conferences

See the example in section 4.3.1.

4.10.2 Getting the Online Conference Policies

See the example in section 4.2.1.

4.10.3 Getting the Online Conference Eligible Values

See the example in section 4.2.2.

4.10.4 Getting the Online Conference Default Values

See the example in section 4.2.3.

4.10.5 Getting the Online Conference

See the example in section 4.3.2.

4.10.6 Getting the Listing of Existing Online Conference Extensions

See the example in section 4.8.3.

4.10.7 Getting the Online Conference Extension

See the example in section 4.8.4.

4.10.8 Batch Updating the Online Conference and its Extensions

The URI to which the request is sent is retrieved from the ApplicationResource. The "href" of the link with "rel" equal to batch contains the relative URI for the resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.10.8.1 HTTP Request

The body of the request is formatted as multipart/related content as described in section 3.1.5.6.3.1.

```
POST https://pool0.vdomain.com/ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-ieq0=/batching
HTTP/1.1
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
Accept: multipart/batching
Content-Type:
multipart/batching;type="application/vnd.microsoft.com.ucwa+xml";boundary=0132913716674296a4b
6cfdd1cb84145
Host: pool0.vdomain.com
Content-Length: 3666
Expect: 100-continue


--0132913716674296a4b6cfdd1cb84145
Content-Type: application/http; msgtype=request

PUT /ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-ieq0=/myOnlineMeetings/I5CM2WOV HTTP/1.1
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
If-Match:"123456"
Content-Type: application/vnd.microsoft.com.ucwa+xml

<?xml version="1.0" encoding="utf-8"?>
<resource rel="myOnlineMeeting" href="/ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-
ieq0=/myOnlineMeetings/I5CM2WOV" xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa">
    <link rel="onlineMeetingExtensions" href="/ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-
ieq0=/myOnlineMeetings/I5CM2WO/Extensions" />
    <property name="accessLevel">SameEnterprise</property>
    <property name="entryExitAnnouncement">Enabled</property>
    <property name="automaticLeaderAssignment">Disabled</property>
    <property name="description">This is meeting for the team</property>
    <property name="expirationTime">2012-08-04T17:25:32.0000000Z</property>
    <property name="onlineMeetingId">I5CM2WOV</property>
    <property
name="onlineMeetingUri">sip:UcwaUser1@ucwatenant.com;gruu;opaque=app:conf:focus:id:I5CM2WOV</
property>
    <property name="onlineMeetingRel">MyOnlineMeetings</property>
    <property name="organizerUri">sip:UcwaUser1@ucwatenant.com</property>
    <property name="conferenceId">50016</property>
    <property name="lobbyBypassForPhoneUsers">Disabled</property>
    <property name="subject">Team MeetingUpdated</property>
    <property
name="joinUrl">https://meet.vdomain.com/ucwatenant/ucwauser1/I5CM2WOV</property>
    <propertyList name="attendees">
        <item>sip:attendee1@contoso.com</item>
        <item>sip:attendee2@contoso.com</item>
    </propertyList>
    <propertyList name="leaders">
        <item>sip:leader1@contoso.com</item>
        <item>sip:leader2@contoso.com</item>
    </propertyList>
    <resource rel="onlineMeetingExtension" href="/ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-
ieq0=/myOnlineMeetings/I5CM2WOV/Extensions/e1">
        <property name="id">e1</property>
        <property name="type">RoamedOrganizerData</property>
        <property name="property1">value1</property>
    </resource>
    <resource rel="onlineMeetingExtension" href="/ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-
ieq0=/myOnlineMeetings/I5CM2WOV/Extensions/e2">
        <property name="id">e2</property>
        <property name="type">RoamedParticipantData</property>
        <property name="property2">value2</property>
    </resource>
</resource>
--0132913716674296a4b6cfdd1cb84145
Content-Type: application/http; msgtype=request

PUT /ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-ieq0=/myOnlineMeetings/I5CM2WOV/Extensions/e1
HTTP/1.1
Host: pool0.vdomain.com
```

```
If-Match:"987654"
Accept: application/vnd.microsoft.com.ucwa+xml
Content-Type: application/vnd.microsoft.com.ucwa+xml

<?xml version="1.0" encoding="utf-8"?>
<resource rel="onlineMeetingExtension" href="/ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-
ieq0=/myOnlineMeetings/I5CM2WOV/Extensions/e1"
xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa">
    <property name="id">e1</property>
    <property name="type">RoamedOrganizerData</property>
    <property name="Updated">true</property>
</resource>
--0132913716674296a4b6cfdd1cb84145
Content-Type: application/http; msgtype=request

PUT /ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-ieq0=/myOnlineMeetings/I5CM2WOV/Extensions/e2
HTTP/1.1
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
If-Match:"345678"
Content-Type: application/vnd.microsoft.com.ucwa+xml

<?xml version="1.0" encoding="utf-8"?>
<resource rel="onlineMeetingExtension" href="/ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-
ieq0=/myOnlineMeetings/I5CM2WOV/Extensions/e2"
xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa">
    <property name="id">e2</property>
    <property name="type">RoamedParticipantData</property>
    <property name="Updated">true</property>
</resource>
--0132913716674296a4b6cfdd1cb84145--
```

4.10.8.2 HTTP Response

The body of the response is formatted as multipart/related content as described in section 3.1.5.6.3.2. Each part contains an embedded HTTP response. There is a one to one mapping between parts in the response and parts in the request.

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 3340
Content-Type: multipart/batching; boundary="50be0057-b115-44c3-ad48-2ffafc07ebe2"
Expires: -1
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Mon, 30 Jul 2012 17:25:32 GMT

--50be0057-b115-44c3-ad48-2ffafc07ebe2
Content-Type: application/http; msgtype=response

HTTP/1.1 200 OK
Cache-Control: no-cache
ETag: "3995411333"
Content-Type: application/vnd.microsoft.com.ucwa+xml

<?xml version="1.0" encoding="utf-8"?>
<resource rel="myOnlineMeeting" href="/ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-
ieq0=/myOnlineMeetings/I5CM2WOV" xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa">
```

```
    <link rel="onlineMeetingExtensions" href="/ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-
ieq0=/myOnlineMeetings/I5CM2WOV/Extensions" />
    <property name="accessLevel">SameEnterprise</property>
    <property name="entryExitAnnouncement">Enabled</property>
    <propertyList name="attendees">
        <item>sip:attendee1@contoso.com</item>
        <item>sip:attendee2@contoso.com</item>
    </propertyList>
    <property name="automaticLeaderAssignment">Disabled</property>
    <property name="description">This is meeting for the team</property>
    <property name="expirationTime">2012-08-04T17:25:32.0000000Z</property>
    <propertyList name="leaders">
        <item>sip:leader1@contoso.com</item>
        <item>sip:leader2@contoso.com</item>
    </propertyList>
    <property name="onlineMeetingId">I5CM2WOV</property>
    <property name="etag">3995411333</property>
    <property
name="onlineMeetingUri">sip:UcwaUser1@ucwatenant.com;gruu;opaque=app:conf:focus:id:I5CM2WOV</
property>
    <property name="onlineMeetingRel">MyOnlineMeetings</property>
    <property name="organizerUri">sip:UcwaUser1@ucwatenant.com</property>
    <property name="conferenceId">50016</property>
    <property name="lobbyBypassForPhoneUsers">Disabled</property>
    <property name="subject">Team MeetingUpdated</property>
    <property
name="joinUrl">https://meet.vdomain.com/ucwatenant/ucwauser1/I5CM2WOV</property>
    <resource rel="onlineMeetingExtension" href="/ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-
ieq0=/myOnlineMeetings/I5CM2WOV/Extensions/e1">
        <property name="id">e1</property>
        <property name="type">RoamedOrganizerData</property>
        <property name="property1">value1</property>
    </resource>
    <resource rel="onlineMeetingExtension" href="/ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-
ieq0=/myOnlineMeetings/I5CM2WOV/Extensions/e2">
        <property name="id">e2</property>
        <property name="type">RoamedParticipantData</property>
        <property name="property2">value2</property>
    </resource>
</resource>
--50be0057-b115-44c3-ad48-2ffafc07ebe2
Content-Type: application/http; msgtype=response

HTTP/1.1 200 OK
Cache-Control: no-cache
ETag: "1486367077"
Content-Type: application/vnd.microsoft.com.ucwa+xml

<?xml version="1.0" encoding="utf-8"?>
<resource rel="onlineMeetingExtension" href="/ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-
ieq0=/myOnlineMeetings/I5CM2WOV/Extensions/e1"
xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa">
    <property name="id">e1</property>
    <property name="type">RoamedOrganizerData</property>
    <property name="Updated">true</property>
    <property name="etag">1486367077</property>
</resource>
--50be0057-b115-44c3-ad48-2ffafc07ebe2
Content-Type: application/http; msgtype=response

HTTP/1.1 200 OK
Cache-Control: no-cache
ETag: "3790105854"
Content-Type: application/vnd.microsoft.com.ucwa+xml

<?xml version="1.0" encoding="utf-8"?>
<resource rel="onlineMeetingExtension" href="/ucwa/applications/BjaCp0FWkgtsFm1UcDlCvN8-
ieq0=/myOnlineMeetings/I5CM2WOV/Extensions/e2"
xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa">
```

```
    <property name="id">e2</property>
    <property name="type">RoamedParticipantData</property>
    <property name="Updated">true</property>
    <property name="etag">3790105854</property>

</resource>
--50be0057-b115-44c3-ad48-2ffafc07ebe2--
```

4.11 Deleting an Existing Online Conference Extension

The following example illustrates the exchange of messages required for a client to delete an existing online conference extension.

4.11.1 Getting the Listing of Existing Online Conferences

See the example in section 4.3.1.

4.11.2 Getting the Online Conference

See the example in section 4.3.2.

4.11.3 Getting the Listing of Existing Online Conference Extensions

See the example in section 4.8.3

4.11.4 Deleting the Online Conference Extension

The client application iterates over each embedded resource in the response obtained in section 4.11.3 to find the resource with the matching **id** property. The URI to which the request is sent is retrieved from the "href" of the found resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.11.4.1 HTTP Request

The request is a simple DELETE with no body.

```
DELETE
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/myOnlineMeetings/NZ
SLWQAE/Extensions/com.contoso.conferencing HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 16:19:09 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
```

4.11.4.2 HTTP Response

A successful response is indicated by the 204 response code. The response contains no body.

```
HTTP/1.1 204 No Content
Cache-Control: no-cache
```

```
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Expires: -1
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 16:19:21 GMT
```

4.12 Getting the Phone Dial-In Information

The following example illustrates the exchange of messages required for a client to retrieve the available phone dial-in information.

The URI to which the request is sent is retrieved from the onlineMeetings embedded resource of the application. The "href" of the link with "rel" equal to phoneDialInInformation contains the relative URI for the resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.12.1 HTTP Request

The request is a simple GET with no body.

```
GET
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/PhoneDialInInformat
ion HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 06:46:53 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
```

4.12.2 HTTP Response

The body of the response includes all of the properties described in section 3.1.5.13.1.2.

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 1398
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 06:47:07 GMT

<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
rel="phoneDialInInformation"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/PhoneDialInInformation">
  <property name="externalDirectoryUri">
https://pool0.vdomain.com/externaldirectory</property>
  <property
name="internalDirectoryUri">https://pool0.vdomain.com/internaldirectory</property>
```

```
  <resource rel="dialInRegion"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/DialInRegion">
    <propertyList name="languages">
      <item>en-US</item>
      <item>en-GB</item>
      <item>es-MX</item>
    </propertyList>
    <property name="number">+14251112222</property>
    <property name="name">Redmond</property>
  </resource>
  <resource rel="dialInRegion"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/DialInRegion">
    <propertyList name="languages">
      <item>en-US</item>
      <item>fr-FR</item>
      <item>es-ES</item>
    </propertyList>
    <property name="number">+14251113333</property>
    <property name="name">Redmond</property>
  </resource>
  <resource rel="dialInRegion"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/DialInRegion">
    <propertyList name="languages">
      <item>en-US</item>
    </propertyList>
    <property name="number">+14251114444</property>
    <property name="name">Redmond</property>
  </resource>
  <resource rel="dialInRegion"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/DialInRegion">
    <propertyList name="languages">
      <item>en-US</item>
    </propertyList>
    <property name="number">+18005551234</property>
    <property name="name">USA</property>
  </resource>
</resource>
```

4.13 Getting the Online Conference Invitation Customization Values

The following example illustrates the exchange of messages required for a client to retrieve the data that can be used to create a customized email invitation to the online conference.

The URI to which the request is sent is retrieved from the onlineMeetings embedded resource of the application. The "href" of the link with "rel" equal to onlineMeetingInvitationCustomization contains the relative URI for the resource. The absolute URI is created by appending the "href" value to the fully qualified domain name of the server.

4.13.1 HTTP Request

The request is a simple GET with no body.

```
GET
https://pool0.vdomain.com/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/OnlineMeetingInvita
tionCustomization HTTP/1.1
User-Agent: curl/7.21.0 (amd64-pc-win32) libcurl/7.21.0 OpenSSL/0.9.8o zlib/1.2.3
Host: pool0.vdomain.com
Accept: application/vnd.microsoft.com.ucwa+xml
Accept-Language: en-US
Content-Type: application/vnd.microsoft.com.ucwa+xml
Date: Thu, 21 Jun 2012 06:51:19 GMT
Authorization: Bearer cwt=AAEBHAEFAAAAAAAFFQAAAPmQRuRgha2wB2cEg...
```

4.13.2 HTTP Response

The body of the response includes all of the properties described in section 3.1.5.11.1.2.

```
HTTP/1.1 200 OK
Cache-Control: no-cache
Pragma: no-cache
Via: 1.1 SERVER.vdomain.com RtcInt
Content-Length: 512
Content-Type: application/vnd.microsoft.com.ucwa+xml
Expires: -1
Server: Microsoft-IIS/7.5
X-MS-Server-Fqdn: SERVER.vdomain.com
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Thu, 21 Jun 2012 06:51:18 GMT

<?xml version="1.0" encoding="utf-8"?>
<resource xmlns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
rel="onlineMeetingInvitationCustomization"
href="/ucwa/applications/BugSBxO22nYVkBrURmbIgLbv95e0=/OnlineMeetingInvitationCustomization">
  <property name="enterpriseHelpUrl">http://entrprisehelpUrl</property>
  <property name="invitationFooterText">SomeFooterText</property>
  <property name="invitationHelpUrl">http://helpUrl</property>
  <property name="invitationLegalUrl">http://legalUrl</property>
  <property name="invitationLogoUrl">http://logoUrl/SampleLogo.bmp</property>
</resource>
```

5 Security

5.1 Security Considerations for Implementers

None.

5.2 Index of Security Parameters

None.

6 Appendix A: Full XML Schema

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema
    targetNamespace="http://schemas.microsoft.com/rtc/2012/03/ucwa"
    xmlns:tns="http://schemas.microsoft.com/rtc/2012/03/ucwa"
    xmlns:xs="http://www.w3.org/2001/XMLSchema"
    elementFormDefault="qualified"
    attributeFormDefault="unqualified">

    <xs:element name="input" type="tns:InputType" />

    <xs:element name="resource" type="tns:ResourceType" />

    <xs:element name="reason" type="tns:ErrorType" />

    <!-- REQUEST-type ELEMENT -->
    <xs:complexType name="InputType">
        <xs:choice minOccurs="0" maxOccurs="unbounded">
            <xs:element name="property" type="tns:PropertyType"/>
            <xs:element name="propertyList" type="tns:CollectionType"/>
        </xs:choice>
        <xs:anyAttribute namespace="##other" processContents="lax"/>
    </xs:complexType>

    <!-- RESPONSE-type ELEMENT -->
    <xs:complexType name="ResourceType">
        <xs:choice minOccurs="0" maxOccurs="unbounded">
            <xs:element name="link" type="tns:LinkType" />
            <xs:element name="property" type="tns:PropertyType" />
            <xs:element name="propertyList" type="tns:CollectionType" />
            <xs:element name="resource" type="tns:EmbeddedResourceType" />
        </xs:choice>

        <!-- The URI of the resource itself -->
        <xs:attribute name="href" type="xs:anyURI" use="required"/>
        <xs:attribute name="rel" type="xs:string" use="optional" />
        <xs:anyAttribute namespace="##other" processContents="lax"/>
    </xs:complexType>

    <!-- EMBEDDED-RESOURCE ELEMENT -->
    <xs:complexType name="EmbeddedResourceType">
        <xs:complexContent>
            <xs:extension base="tns:ResourceType">
                <!-- The rel of the embedded resource itself -->
                <xs:attribute name="rel" type="xs:string" use="required"/>
                <xs:attribute name="etag" type="xs:string" use="optional"/>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>

    <!-- LINK ELEMENT -->
    <xs:complexType name="LinkType">
        <!-- The relationship type of the related resource -->
        <xs:attribute name="rel" type="xs:string" use="required"/>
        <xs:attribute name="href" type="xs:anyURI" use="required"/>
        <xs:attribute name="etag" type="xs:anyURI" use="optional"/>
        <xs:attribute name="title" type="xs:anyURI" use="optional"/>
        <xs:attribute name="revision" type="xs:string" use="optional" />
        <xs:anyAttribute namespace="##other" processContents="lax"/>
    </xs:complexType>

    <!-- PROPERTY ELEMENT -->
    <xs:complexType name="PropertyType">
        <xs:simpleContent>
            <xs:extension base="xs:string">

                <!-- The name of the property -->
```

```
                <xs:attribute name="name" type="xs:string" use="required"/>

                <xs:anyAttribute namespace="##other" processContents="lax"/>

            </xs:extension>
        </xs:simpleContent>
    </xs:complexType>

    <!-- COLLECTION (ARRAY, VECTOR) ELEMENT -->
    <xs:complexType name="CollectionType">
        <xs:sequence>
            <xs:element name="item" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
        </xs:sequence>

        <!-- The name of the property -->
        <xs:attribute name="name" type="xs:string" use="required"/>

        <xs:anyAttribute namespace="##other" processContents="lax"/>
    </xs:complexType>

    <!-- ERROR ELEMENT -->
    <xs:complexType name="ErrorType">
        <xs:sequence>
            <xs:element name="link" type="tns:LinkType" minOccurs="0" maxOccurs="unbounded"
/>
            <xs:element name="code" type="xs:string" minOccurs="1" maxOccurs="1" />
            <xs:element name="subcode" type="xs:string" minOccurs="1" maxOccurs="1" />
            <xs:element name="message" type="xs:string" minOccurs="0" maxOccurs="1" />
            <xs:element name="debugInfo" type="tns:ErrorDebugInfoType" minOccurs="0"
maxOccurs="1" />
            <xs:element name="parameters" type="tns:ErrorParametersType" minOccurs="0"
maxOccurs="1" />
        </xs:sequence>

        <xs:anyAttribute namespace="##other" processContents="lax"/>
    </xs:complexType>

    <!-- ERROR PARAMETERS ELEMENT -->
    <xs:complexType name="ErrorParametersType">


       <xs:sequence>
           <xs:element name="property" type="tns:PropertyType" minOccurs="0"
maxOccurs="unbounded" />
       </xs:sequence>
    </xs:complexType>


<!-- ERROR DEBUG INFO ELEMENT -->
    <xs:complexType name="ErrorDebugInfoType">


       <xs:sequence>
           <xs:element name="property" type="tns:PropertyType" minOccurs="0"
maxOccurs="unbounded" />
       </xs:sequence>
    </xs:complexType>


</xs:schema>
```

7 Appendix B: 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 Lync Server 2013
- Microsoft Skype for Business Server 2015

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.

8 Change Tracking

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

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