



Dialogic® PowerMedia™ XMS RESTful API

User's Guide

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Revision History

Revision	Release Date	Notes
05-2703-011 (Updated)	January 2017	Call Resource: Added the hangup_ack_mode parameter in calls. Call Sub-Resource: Added the hangup_ack_mode parameter for Accept/Answer Incoming Call in call.
05-2703-011 (Updated)	July 2016	Call Sub-Resource: Updated add_party/update_party, remove_party, and join/union to support multiple joins.
05-2703-011 (Updated)	May 2016	Call Sub-Resource and Video Record: Added how to use the input video stream's resolution and framerate as the target encoding resolution and framerate.
05-2703-011 (Updated)	April 2016	Overview: Updated the RESTful API Request/Response Model section to state that the request and response payloads are encoded to UTF-8.
05-2703-011	March 2016	Updated the values for recording_audio_type throughout. Call Sub-Resource: Updated the record examples and added a note to show how to record audio and video on a single file.
05-2703-011	March 2016	Updates to support PowerMedia XMS Release 3.1. Call Resource: - Added a note about the URI parameters for play, record, and playrecord. - Added rtcp_feedback to the Request Payload Attributes table. Call Sub-Resource: - Added rtcp_feedback to the Request Payload Attributes table. Appendix A: Media File Formats: - Added MKV and MP4 Video Play and Video Record capabilities. - Updated the Video Record - Dialogic VID table and the Video Record - 3GP table. Appendix B: Use Case for Dialogic Proprietary Header Tags in a SIP/WebRTC INVITE: - Added the section.

Revision	Release Date	Notes
05-2703-010 (Updated)	October 2015	Call Sub-Resource: - Added "video/3gpp" to the video_type parameter of play_source_attributes. - Updated recording_video_type values. Conference Sub-Resource: - Updated recording_video_type values.
05-2703-010	October 2015	Updates to support PowerMedia XMS Release 3.0. RESTful API Description: - Updated information to include HTTPS. API Resources: - Updated the all resource base URL to include HTTPS. Call Resource: - Updated the Request Payload Attributes table in the HTTP Post section. Call Sub-Resource: - Updated the Request Payload Attributes tables in the HTTP PUT section. - Updated the play_source_attributes, recording_audio_mime_params, recording_video_mime_params, and content_element_attributes tables in the HTTP PUT section. - Removed overlay from the HTTP PUT section. - Added send_event to the HTTP PUT section. - Updated the join/unjoin Request Payload Attributes table in the HTTP PUT section. - Updated the send_info/send_info_ack Request Payload Attributes table in the HTTP PUT section. - Added send_prack/send_prack_ack/send_answer_ack to the HTTP PUT section. - Added dial to the HTTP PUT section. - Updated the get_call_info Response Payload Attributes table in the HTTP PUT section. Conference Resource: - Updated layout_regions and region_overlays in the Request Payload Attributes table in the HTTP Post section.

Revision	Release Date	Notes
		Conference Sub-Resource: - Updated layout_regions and region_overlays in the Modify Conference Attributes in the HTTP PUT section. - Added playcollect, playrecord, send_dtmf, and send_event to the HTTP PUT section. - Updated the update_play Request Payload Attributes table in the HTTP PUT section. Events: - Added start_play and end_event to Media Events. - Updated ringing in Call Events. - Added info and info_ack sections in Call Events. XML Schema Definition of Elements: - Updated the XML definition of elements. Dynamic Text and Image Generation: - Removed section. Text and Image Overlays: - Added section. Appendix A: Media File Formats: - Updated the media file formats.
05-2703-009 (Updated)	June 2015	Call Resource: - Added local_rtp_address and headers to the Request Payload Attributes table for HTTP POST. Call Sub-Resource: - Added local_rtp_address to the Request Payload Attributes table for HTTP PUT.
05-2703-009 (Updated)	April 2015	Call Resource: - Added audio, video, message, setup, content_type, and content to the Request Payload Attributes table for HTTP POST. Call Sub-Resource: - Updated send_message section.

Revision	Release Date	Notes
		Appendix A: Media File Formats: Updated the Video Play - Dialogic VID (proprietary) table in Media File Formats section to correct RESTful attribute format for jpeg codec.
05-2703-009	February 2015	Updates to support PowerMedia XMS Release 2.4. Call Sub-Resource: Updated send_info/send_info_ack section to change content_data to content.
05-2703-008	January 2015	Updates to all the resource response payload example sections for IPv6 support. Call Sub-Resource: - Added note to mode parameter in add_party/update_party section. Conference Resource: - Updated the value auto to automatic for layout_size parameter. Conference Sub-Resource: - Updated the value auto to automatic for layout_size parameter. Event Handler Resource: - Added RESTful Event Streaming Data Format Change section. Events: - Updated end_play, end_playcollect, end_record, and end_playrecord sections in Media Events. - Updated end_recognize section in MRCP Events. - Updated sections to change call_id to id in MRCP Events. Appendix A: Media File Formats: - Updated the Video Record table in Media File Formats section.
05-2703-007	October 2014	Updates to support PowerMedia XMS Release 2.3. Call Sub-Resource: Added add_ice_candidate, send_hangup_ack, and send_message sections.

Revision	Release Date	Notes
		- Added msg_payload attributes, msg_payload_content attribute, and msg_payload_uri attributes tables. - Added content_element parameter to send_message section and added content_element_attributes table. - Added get_last_action and get_last_event sections. Conference Sub-Resource: - Added get_last_action and get_last_event sections. MRCP Sub-Resource: - Added get_last_action and get_last_event sections. Event Handler Resource: - Added speech_marker value to type parameter. Event Handler Sub-Resource: - Added speech_marker value to type parameter. Events: - Added end_send_message section in Media Events. - Updated end_play, end_playcollect, and end_record sections in Media Events. - Added message, alarm, stream, prack, accepted, and answered sections in Call Events. - Updated dtmf and tone sections in Call Events. - Added speech_marker section in MRCP Events. - Added conf_overlay_expired section in Conference Events. XML Schema Definition of Elements: - Added updated schema definition. Appendix A: Media File Formats: - Added new section.
05-2703-006	May 2014	Updates to dtmf event in Call Events section.
05-2703-005	April 2014	Updates to support PowerMedia XMS Release 2.2.

Revision	Release Date	Notes
05-2703-004	October 2013	Updates to support PowerMedia XMS Release 2.1. Global change: - Renamed this document from Developer's Guide to User's Guide. - Reorganized the resource-based elements and payload attributes tables. XML Schema Definition of Elements: - Added updated schema definition.
05-2703-003	January 2013	Updates to support PowerMedia XMS Release 2.0. Call Resource: - Updated http post/put request payload, single call instance response payload, call_action, add_party, and update_party in XML Schema Definitions for Call. - Added new clamp_dtmf, auto_gain_control, echo_cancellation, digits, interval, level, content_type, and content to the <call_action> Parameters table. - Added new send_dtmf, send_info, send_info_ack, transfer, redirect, and hangup to the <call_action> Parameters table. - Added new display_name, accept, early_media, and info_ack_mode to the <call> Element Attributes table. - Added new section for <call> Element Attribute Notes. Conference Resource: - Added new playrecord conference action in XML Schema Definition for Conference. - Added new barge, cleardigits, beep, and recording_uri to the <conf_action> Parameters table. XML Schema Definition of Elements: - Added updated schema definition.
05-2703-002	July 2012	Updated to support PowerMedia XMS Release 1.1. This includes adding additional information to all sections and reorganizing the layout of the Resource sections.

Revision	Release Date	Notes
		Global change: - Renamed PowerMedia XMS RESTful web service to PowerMedia XMS RESTful server. Call Resource: - Added new interdigit_timeout parameter to the <call_action> Parameters table. Conference Resource: - Added new region parameter to the <conf_action> Parameters table. XML Schema Definition of Elements: - Added updated schema definition. Dynamic Text and Image Generation: - Added new section. XMSTool RESTful Utility: - Added new section.
05-2703-001	February 2012	Initial release of this document.
Last modified: January 2017		

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1. Welcome

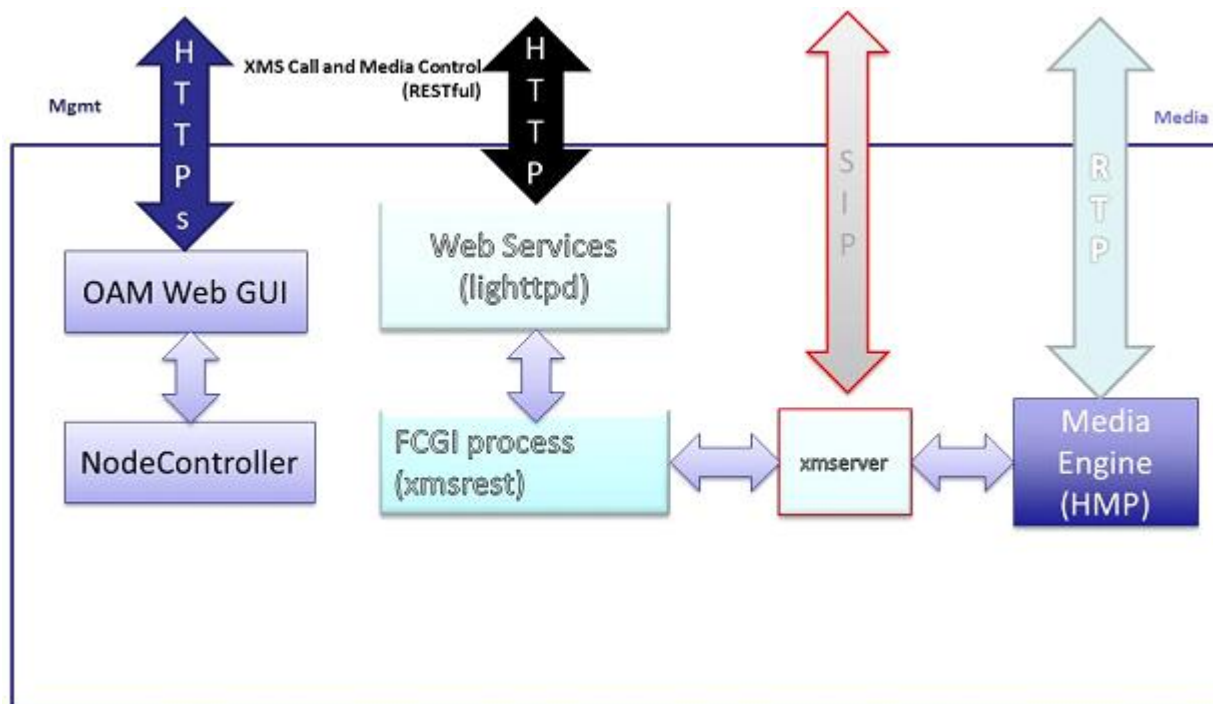
This User's Guide provides information about the Dialogic® PowerMedia™ Extended Media Server (also referred to herein as "PowerMedia XMS" or "XMS") RESTful API interface, including available features and resource-based component definitions.

The PowerMedia XMS RESTful API is one of several APIs that can be used to drive the PowerMedia XMS.

2. Overview

This section provides information about the PowerMedia XMS RESTful API interface, including available features and resource-based component definitions.

The PowerMedia XMS RESTful API is one of several APIs that can be used to drive the PowerMedia XMS. The architectural diagram below shows how the RESTful interface fits into PowerMedia XMS.



Two web servers are used in PowerMedia XMS:

- Apache (httpd) server
Controls a web-based interface for operations, administration and maintenance.
- lighttpd server
Processes call control and media commands delivered via the RESTful API as described in this guide. The lighttpd server includes a Fast Common Gateway Interface (FCGI) process, which allows efficient interfacing between PowerMedia XMS processes.

The PowerMedia XMS translates RESTful commands into the PowerMedia HMP media engine's low-level API. The media engine itself handles SIP calls, plays/records multimedia, and mixes multimedia conferences.

PowerMedia XMS provides two call control models:

- First party call control (1PCC)
The application sends commands to the PowerMedia XMS to establish SIP or WebRTC calls on the application's behalf. In this model, the application does not need to be involved in making or receiving SIP calls and related SDP negotiation.
- Third party call control (3PCC)
The application handles SIP calls or WebRTC signaling and SDP negotiation, and the PowerMedia XMS only performs media processing operations.

RESTful API Description

The PowerMedia XMS RESTful API uses a Representational State Transfer (RESTful) web service. This web service is a software system designed to support interoperable machine-to-machine interactions over a network, using the HTTP or HTTPS protocol. For more information on using HTTPS, refer to [API Resources](#) for port and authentication information.

The RESTful API consists of a series of requests and responses built around the transfer of representations of "resources". These resources are accessed through Universal Resource Indicators (URIs).

RESTful client-server architecture is where clients initiate requests to servers and servers process the requests and return appropriate responses.

In a RESTful application, the http client is the application which contains the business logic and PowerMedia XMS is the http server which handles the client request and processes the media commands.

Client Side Technologies

The "client side" refers to the client that communicates with the PowerMedia XMS and directs the session with the caller. Essentially, any language or operating system may be used to build a client. The main requirement is that the client supports HTTP and XML.

Listed below are some possible examples of client-side development platforms that can be used to command PowerMedia XMS services. Comments are included on multithreading, which is important for the event handler.

Java – This object-oriented, operating system-independent programming environment is fully multithreaded. Several XSD/XML parsers are available, as well as HTTP client class libraries. See the [XML Schema Definition](#) section for information on XSDs.

Note: The Dialogic Verification Demo used with the PowerMedia XMS is a Java application. Refer to the *Dialogic® PowerMedia™ XMS Quick Start Guide* for information about the Demo.

Python – This operating system-independent interpreted scripting language has POSIX threading available. HTTP protocol client library and Python XML/Schema processing tool are also available.

.NET – This Integral Microsoft Windows component supports the building and running of applications and XML web services. HTTP module and XSD schema definition tools are available.

Ruby – This open source scripting language contains a multiprocessing model that may be needed for the event handler. An HTTP client API and XSD validation tools are available.

C/C++ – These general purpose programming languages are fully multithreaded. cURL library (<http://curl.haxx.se>) is used for HTTP processing and Xerces C++ XML parser (<http://xerces.apache.org/xerces-c>) is used for XML. For a proof of concept, see http://www.dialogic.com/support/helpweb/helpweb.aspx/3584/powermedia_xms_restful_C_Sharp_demo/PM_XMS.

RESTful API with HTTP Methods

In the RESTful API, the four HTTP methods are translated to the actions shown in the following table.

HTTP Method	Request	Response
POST	Create a new resource	Contents of a newly created resource
PUT	Modify an existing resource	Contents of an updated resource
GET	Retrieve information for all instances of a specific resource type, or information regarding a specific resource	Contents of resource information
DELETE	Delete an existing resource	N/A

RESTful API Request/Response Model

The HTTP request/response model is the mechanism by which media control functionality is invoked. A RESTful HTTP request is sent to the PowerMedia XMS. The HTTP response carries the resulting response code of the operation, as well as a response body if it applies to the specific operation. The payload type used for the message body is XML. The request and response payloads are encoded to UTF-8.

All Call Resources

If a client wished to retrieve a list of all call resources currently active on the PowerMedia XMS, it would issue an HTTP **GET** request. The HTTP **GET** request would be sent on the web service with the IP address of the PowerMedia XMS <server>. For example:

```
http://<server>/default/calls?appid=app
```

If successful, the response code to the HTTP **GET** would be 200 OK. The response body would resemble the following example:

```
<web_service version="1.0">
  <calls response size="2">
    <call_response appid="master"
      identifier="123zdasdkz"
      href=/default/calls/123zdasdkz
      cpa = "yes"
      signaling = "yes"
      source uri=sip:frank@10.20.34.3
      call type="inbound" />
    <call_response
      identifier="178zdasdkz"
      href=/default/calls/178zdasdkz
      cpa = "no"
      signaling = "no"
      sdp=[sdp]
      call type="3pcc" />
  </calls_response>
</web_service>
```

The above example shows a client requesting information for all calls with a response of two active identifiers along with the attributes of each call resource.

Single Call Resource

If a client wanted to retrieve information for only a single specific call resource, it would invoke the following HTTP **GET** request. The specific call identifier is part of the GET URL.

```
http://<server>/default/calls/1279697438?appid=app
```

If successful, the response code to the HTTP **GET** would be 200 OK. The response body would be as follows:

```
<web_service version="1.0">
  <call response appid="master"
    identifier="1279697438"
    href="/default/calls/1279697438"
    cpa = "yes"
    signaling = "yes"
    source_uri=sip:frank@10.20.34.3
    call_type="inbound">
  </calls_response>
</web_service>
```

Additional request/response examples are contained within Resource-Based Components.

All XML sent to the PowerMedia XMS should have proper XML escape codes within string content. For example, when a <call> contains SDP info in the sdp="" attribute, newlines need to be converted to the proper XML escape code "
" and "".

```
<call sdp="v=0&#xA;o=sipclient 1376422095 1376422096 IN IP4
10.20.129.100&#xA;s=sipclient&#xA;c=IN IP4 10.20.129.100&#xA;t=0
0&#xA;m=audio 49162 RTP/AVP &#xA;a=rtpmap:0 pcmu/8000&#xA;a=sendrecv&#xA;" media="audiovideo"
signaling="no"/>
```

XML Schema Definition

PowerMedia XMS uses an XML schema definition (also referred to herein as "XSD"). The XSD formally describes the structure, content, and semantics of the XML payload for the PowerMedia XMS RESTful API call and media commands.

An XSD may be used to generate client-side code, allowing contents of XML documents to be treated as objects. The generated code usually enforces type-checking, thus supporting client-side validation of the XML payload before it is sent to the PowerMedia XMS.

Definitions of individual elements are referenced throughout this guide. The full XSD is provided in [XML Schema Definition of Elements](#).

PowerMedia XMS RESTful API is designed using the following XML Schema declarations:

Element

An element describes the data it contains. It consists of a name and data type. When an element definition contains additional elements or attributes, it is a complex type.

```
<xs:element name="call_response">
```

Attribute

An attribute is a simple type definition that cannot contain other elements. Attribute names are always within quotation marks.

```
<xs:attribute name="media">
```

Sequence

Specifies the order in which attributes or elements within a complex type must be listed.

```
<xs:element name="call_response">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="call_action" minOccurs="0" />
    </xs:sequence>
    <xs:attribute name="signaling" type="boolean_type" />
    <xs:attribute name="media" type="media_type" />
  </xs:complexType>
</xs:element>
```

Complex Type

Defines an element containing other elements and attributes or mixed content (elements and text).

```
<xs:element name="call_response">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="call_action" minOccurs="0" />
    </xs:sequence>
    <xs:attribute name="signaling" type="boolean_type" />
    <xs:attribute name="destination_uri" type="xs:string" />
    <xs:attribute name="source_uri" type="xs:string" />
    <xs:attribute name="call_type" type="call_type_option" />
    <xs:attribute name="sdp" type="xs:string" />
    <xs:attribute name="cpa" type="boolean_type" />
    <xs:attribute name="media" type="media_type" />
    <xs:attribute name="dtmf_mode" type="dtmf_mode_option" />
    <xs:attribute name="async_dtmf" type="boolean_type" />
    <xs:attribute name="async_tone" type="boolean_type" />
    <xs:attribute name="cleardigits" type="boolean_type" />
    <xs:attributeGroup ref="response_attrgroup" />
  </xs:complexType>
</xs:element>
```

Simple Type

Creates a constrained data type for an element or attribute value.

```
<xs:simpleType name="call_type_option">
  <xs:restriction base="xs:string">
    <xs:enumeration value="inbound" />
    <xs:enumeration value="outbound" />
    <xs:enumeration value="3pcc" />
  </xs:restriction>
</xs:simpleType>
```

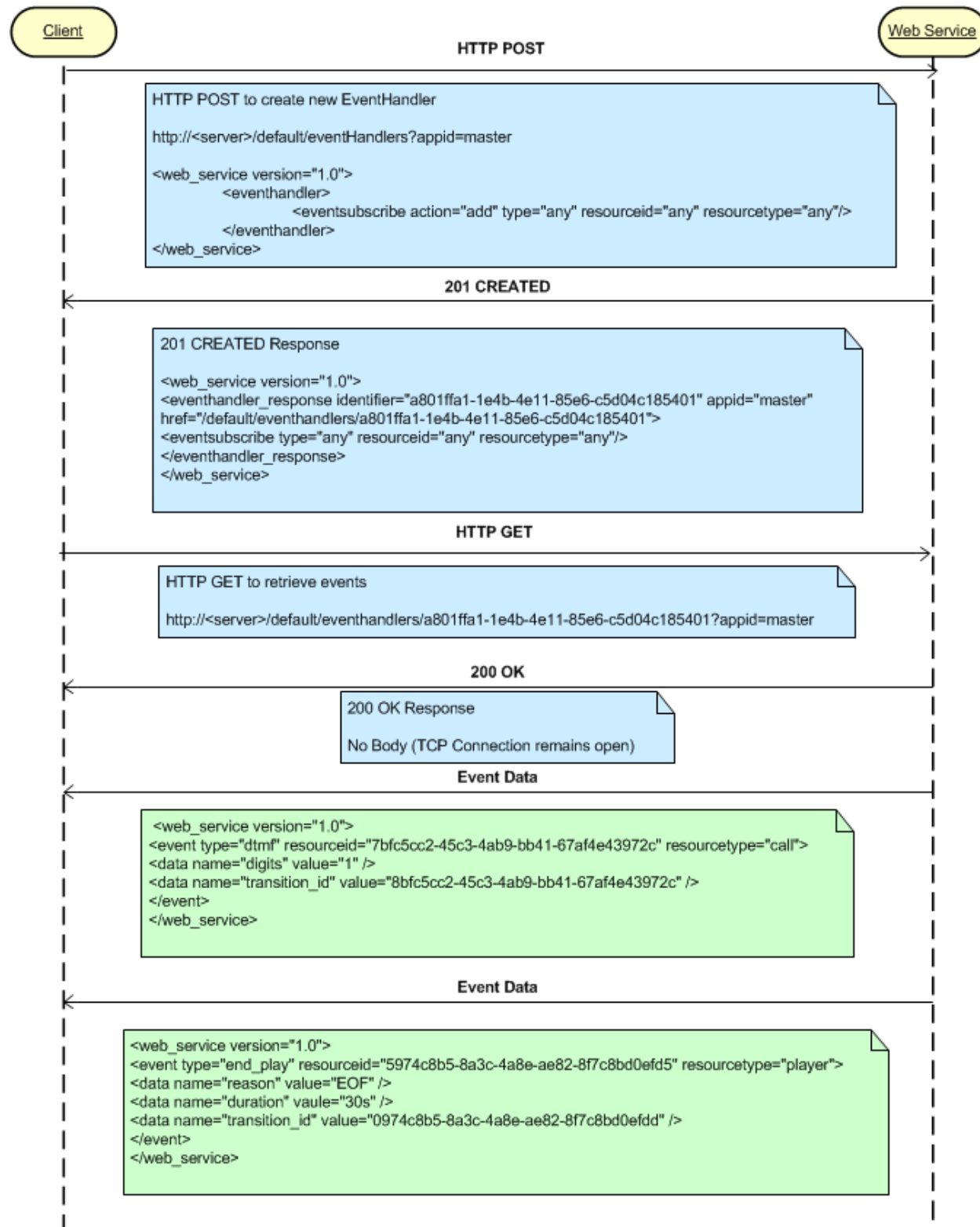
Refer to the specific resource-based element sections for more information.

Event Streaming

While most RESTful applications fit well into the HTTP request/response model, telephony applications must be able to handle unsolicited events such as digit detection and play completion. This concept is called Comet or HTTP event streaming. In a normal HTTP interaction, the client sends a request to the server, which processes it and sends the HTTP response. The connection between the client and server is then closed. This process will take place continuously as long as the web service is running; however, with HTTP event/data streaming, a reliable TCP connection remains open after the response is sent from the server, allowing the server to continue to send raw data to the client without solicitation or without client request.

For PowerMedia XMS, HTTP event streaming is implemented in the eventhandler resource. When the client wishes to receive asynchronous events, it uses an HTTP **POST** to create an eventhandler and subscribe to specific event types. The client then performs an HTTP **GET** on the newly created eventhandler and the PowerMedia XMS RESTful API responds with a 200 OK; however, the TCP connection remains open. Any event data related to resources and event types are pushed to the client until the Eventhandler is deleted by the client.

The following diagram provides an example scenario where a client creates an eventhandler and receives digit detection and play completion events:



3. Resource-Based Element Introduction

There are four resource-based elements used by the PowerMedia XMS RESTful web service:

- [Call Resource](#)
- [Conference Resource](#)
- [Event Handler Resource](#)
- [MRCP Resource](#)

These elements are used in conjunction with one another to direct the PowerMedia XMS to make and receive calls, handle media during a call, manipulate audio and video conferences, invoke ASR/TTS speech services, and to catch events relating to calls, conferences and their media.

Each element makes use of the various HTTP methods POST, PUT, DELETE and GET. The resource-based element chapters in this document contain HTTP method tables that define the request body content type if a request body is allowed. In addition, the tables supply the possible return code values as well as the response body content. The tables also contain an example payload for that specific resource-based element type. This XML content is used in both HTTP requests and responses. Refer to the specific resource-based element sections for information about each of the elements.

Applications and Application IDs (appid)

The *appid* shown in the URL request examples is for identifying the resources used, owned, and created by a specific application. For example:

```
<web_service version="1.0">
  <call response
    appid="[appid]"
    identifier="[call_id]"
    href="/default/calls/[call_id]?appid=[appid]"
    signaling = "yes"
    source_uri=[uri]
    sdp=[sdp]
    call_type="inbound" />
</web_service>
```

Discrete appids are defined so that multiple applications may be simultaneously run on a single PowerMedia XMS. The appid indicates the ownership of a RESTful resource so that each resource that is created has an associated appid. The resources can only be viewed, modified, or deleted by an application with a matching appid. The appid is used throughout the PowerMedia XMS RESTful API to identify the intended application.

Note: The appid is pre-defined on the Routing page of the PowerMedia XMS Admin Console (also referred to herein as "Console"), which is used for post-operating system installation and configuration tasks. New appids may be added, or unwanted appids removed on the Routing page. Refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide* for detailed information about the Console.

Time Values

Values that represent time in the RESTful API are specified in whole numbers of seconds ("s") or milliseconds ("ms") whichever is appropriate. For example:

```
<send dtmf digits="1234" duration="100ms" interval="100ms" level="-10dB"/>
<play offset="2s" repeat="3" delay="0s" terminate_digits="#" max_time="infinite"
skip_interval="10s">
```

4. API Resources

The *appid* shown in the following URL request is for identifying the resources used, owned, and created by the application. All resource base URL:

```
http or https://[ipaddress:port]/default/  
http default port: 81  
https default port: 444  
The authentication (basic method) for HTTPS: username:"admin" password: "admin"
```

Note: "/default/" is a placeholder.

The resources provided by the RESTful API will differ between the various modes.

```
default appid=app
```

The table below lists all available resources, their sub-resources, valid HTTP methods that may be used with them, and attributes for which they are valid.

Clicking on the resource or sub-resource will:

- Provide its definition
- Provide valid values for the parameters that can be set
- Define how each valid method affects the resource
- Give an example of a request and a response payload

Resource	Sub-Resource	HTTP Methods Supported
Call Resource /calls?appid=[app_id]		GET, POST
	Call Sub-Resource /calls/[call_id]?appid=[app_id]	GET, PUT, DELETE
Conference Resource /conferences?appid=[app_id]		GET, POST
	Conference Sub-Resource /conferences/[conference_id]?appid=[app_id]	GET, PUT, DELETE
MRCP Resource /mrcps?appid=[app_id]		GET, POST
	MRCP Sub-Resource /mrcps/[mrcp_id]?appid=[app_id]	GET, PUT, DELETE
Event Handler Resource /eventhandlers?appid=[app_id]		GET, POST
	Event Handler Sub-Resource /eventhandlers/[eventhandler_id]?appid=[app_id]	GET, PUT, DELETE

5. List of Available Resources

Call Resource

The Call Resource creates and manages the media/signal connection between the remote media endpoint (typically a SIP or WebRTC endpoint) and the PowerMedia XMS.

The Call Resource has the following types:

- **Inbound**
This call resource is created by the PowerMedia XMS RESTful server when an incoming call is received. The application is then informed of the inbound call via the [eventhandler](#) resource.
- **Outbound**
This call resource is created by an application that wishes to make a media stream connection from the PowerMedia XMS RESTful server to a SIP or WebRTC endpoint.
- **3PCC**
This call resource is requested by the application without requesting the PowerMedia XMS RESTful server to provide signaling control. The call resource will be created based on the Session Description Protocol (SDP) info that is provided by the application. PowerMedia XMS can handle SDP from standard SIP or WebRTC endpoints. 3PCC outbound calls should have SDP="" so that PowerMedia XMS can generate the SDP for the app to include in the INVITE while 3PCC incoming calls should have SDP set to whatever is in the incoming INVITE.

Note: In order to set the PowerMedia XMS to 3PCC mode, you need to set the signaling="no".

Media-related properties and actions associated with the media connection are defined in this section. These include [play](#), [playcollect](#), [playrecord](#), [join/unjoin](#), and [stop](#).

Note: When using playrecord and record, playrecord executes the play list first. Once all of the specified plays are complete, the record functionality is executed.

For call sub-resources, see the [Call Sub-Resource](#) section.

The following tables show the HTTP methods that can be used with one or more calls.

Note: The payloads shown are examples only as there are many possible variations.

Note: The URI parameters for play, record, and playrecord functions can be both required and optional because a minimum of one URI parameter (audio and/or video) must be included when issuing those functions. For example, you can have one audio URI for play, record, and playrecord implementation; you can have one video URI for play, record, and playrecord implementation; or you can have both audio and video URIs for play, record, and playrecord implementation.

calls

Resource URI

`/calls?appid=[app_id]`

HTTP GET

Retrieves all available call resources.

`GET /calls?appid=[app_id]`

Response Payload Example

```
<web_service version="1.0">
  <calls_response size="2">
    <call_response appid="app" async_dtmf="yes" async_tone="yes" audio="sendrecv"
call_type="inbound"
      cleardigits="no" connected="yes" cpa="no" destination_uri="sip:sip@10.20.129.100"
dtmf_mode="rfc2833"
      href="/default/calls/8ae87129-b334-4d8a-bec6-5d4ddeb5649"
      identifier="8ae87129-b334-4d8a-bec6-5d4ddeb5649" info_ack_mode="automatic"
media="audiovideo" signaling="yes"
      source_uri="sip:Username@10.20.129.113:5060" video="sendrecv">
    </call_response>
    <call_response appid="app" async_dtmf="yes" async_tone="yes" audio="sendrecv"
call_type="inbound"
      cleardigits="no" connected="yes" cpa="no" destination_uri="sip:sip@10.20.129.100"
dtmf_mode="rfc2833"
      href="/default/calls/f1e9040f-4ca2-4dd6-81e6-c665385ffde8"
      identifier="f1e9040f-4ca2-4dd6-81e6-c665385ffde8" info_ack_mode="automatic"
media="audiovideo" signaling="yes"
      source_uri="sip:Username@10.20.129.113:5060" video="sendrecv">
    </call_response>
  </calls_response>
</web_service>
```

HTTP POST

Creates a call resource.

`POST /calls?appid=[app_id]`

Create Call Types

- Outbound
- 3PCC (application handles SIP or WebRTC call signaling)

Request Payload Attributes

Parameter	Default	Optional	Description
signaling	"yes"	*	Specifies if signaling is done by this media server ("yes") or a third party application server ("no").
sdp	Set by system	*	Session Description Protocol data. Only used for third party call control (3PCC). Note: If the data contains newlines or carriage returns, make sure that they are replaced with the XML equivalent of "
" prior to sending.
media	"audio"	*	Sets the media type supported by the call. Values: "audio" "audiovideo"
dtmf_mode	"rfc2833"	*	Specifies the signaling mode for DTMF digits. Values: "inband" "outofband" "rfc2833"
cpa	"no"	*	Specifies if call progress detection is used for an outbound call (signaling only). Values: "yes" "no"
info_ack_mode	"automatic"	*	Specifies how INFO events are acknowledged (signaling only). Values: "automatic" "manual"

Parameter	Default	Optional	Description
rx_volume	(none)	*	Volume adjustments are allowed between +31dB and -32dB. Both absolute (default) and relative adjustments are supported. Values: • "+3dB;relative" • "+3dB;absolute"
tx_volume	(none)	*	Volume adjustments are allowed between +31dB and -32dB. Both absolute (default) and relative adjustments are supported. Values: • "+3dB;relative" • "+3dB;absolute"
async_dtmf	(none)	*	Specifies if DTMF digits should be reported as events instead of being buffered internally (default). When active, the application must ensure that when using the any of the play APIs, any unused digit processing parameters are cleared. This is to avoid digits being processed both internally and by the application. Values: • "yes" • "no"

Parameter	Default	Optional	Description
cleardigits	(none)	*	The parameter is considered when <code>async_dtmf</code> is set to "yes" and specifies whether previous, buffered, input should be discarded. Values: "yes" "no"
async_tone	(none)	*	Specifies if tones are reported as events outside of a <code>playcollect</code> action. Values: "yes" "no"
destination_uri	(none)	*	Destination address. For SIP, this is the Request-URI.
source_uri	(none)	*	Caller address. For SIP, this is the From header.
called_uri	(none)	*	Logical destination address. For SIP, this is the To header.
display_name	(none)	*	Caller's display name.
dial_timeout	"30s"	*	Maximum time to wait for the call to be answered by the called party.
encryption	"none"	*	Media stream (RTP) encryption. Values: "none" "dtls"

Parameter	Default	Optional	Description
ice	"no"	*	Use ICE (Interactive Connectivity Establishment) to configure media streams (RTP). Values: "no" "yes"
audio	"sendrecv"	*	Direction of audio media. Values: "inactive" "sendonly" "recvonly" "sendrecv"
video	"sendrecv"	*	Direction of video media. Values: "inactive" "sendonly" "recvonly" "sendrecv"
message	"sendrecv"	*	Direction of message media (MSRP). Values: "inactive" "sendonly" "recvonly" "sendrecv"
setup	"active"	*	MSRP message role. Values: "active" "passive"
content_type	(none)	*	Mime type describing content (outbound call only).
content	(none)	*	Data (outbound call only).

Parameter	Default	Optional	Description
local_rtp_address	(none)	*	Sets the local IP address to use for RTP.
hangup_ack_mode	"automatic"	*	Specifies how HANGUP events are acknowledged (signaling only). Values: "automatic" "manual" Note: If hangup_ack_mode is set to "manual", the app/user will be responsible for deleting the call resource, and the RESTful service will not automatically delete the call resource after it receives the "hangup" event. Refer to send_hangup_ack.
answer_ack_mode	"automatic"	*	Specifies how CONNECTED events are acknowledged. Values: "automatic" "manual"
prack_mode	"automatic"	*	Specifies how PRACK messages are sent. Values: "automatic" "manual"
prack_level	"automatic"	*	Specifies to the remote if PRACK messages are supported or required. Values: "supported" "required"

Parameter	Default	Optional	Description
headers	(none)	*	Deprecated for XMS 3.0. Use sip_headers instead. Raw SIP headers, delimited by the <CR><LF> end-of-line characters (outbound call only).
sip_headers	(none)	*	Refer to sip_headers_attributes .
rtcp_feedback		*	Specifies the RTCP feedback for media in the offering SDP (AVPF/SAVPF). Leave empty to select the configuration mode. Values: "video" "audio" "audiovideo" "none" Note: RTCP feedback is currently only implemented for video. The audio value has no effect.

Request Payload Example

Outbound

```
<web_service version="1.0">
  <call media="audiovideo" signaling="yes" dtmf_mode="rfc2833" async_dtmf="yes" async_tone="yes"
    rx_delta="+0dB"
      tx_delta="+0dB" destination_uri="sip:xmstool@10.20.129.102"
      source_uri="sip:xmstool@146.152.124.182" cpa="no" />
</web_service>
```

3PCC

```
<web_service version="1.0">
  <call sdp="[sdpinfo]" media="audiovideo" signaling="no"/>
</web_service>
```

Response Payload Example

Outbound

```
<web_service version="1.0">
  <call_response identifier="7f0e358f-5786-41df-bad3-866f73d044a7" appid="app"
    href="/default/calls/7f0e358f-5786-41df-bad3-866f73d044a7"
    connected="no" signaling="yes" cpa="no" call_type="outbound">
```

```
        media="audiovideo"
        dtmf_mode="rfc2833"
        destination_uri="sip:xmstool@10.20.129.102"
        source_uri="sip:xmstool@146.152.124.182"
        async_dtmf="yes" async_tone="yes" cleardigits="no" info_ack_mode="automatic">
    </call_response>
</web_service>
```

3PCC

```
<web_service version="1.0">
<call_response identifier="ca494fe7-17d7-4b6a-a7d0-e89592eef262" appid="app"
href="/default/calls/ca494fe7-17d7-4b6a-a7d0-e89592eef262"
sdp="v=0
o=xmserver 1376426725 1376426726 IN IP4 10.20.129.61
s=xmserver
c=IN IP4 10.20.129.61
t=0 0
m=audio 49152 RTP/AVP 9 0 8 96 97 4 18 98 101
a=rtpmap:9 g722/8000
a=rtpmap:0 pcmu/8000
a=rtpmap:8 pcma/8000
a=rtpmap:96 g726-32/8000
a=rtpmap:97 amr/8000
a=fmtp:97 octet-align=0
a=rtpmap:4 g723/8000
a=fmtp:4 annexa=yes
a=rtpmap:18 g729/8000
a=fmtp:18 annexb=no
a=rtpmap:98 amr-wb/16000
a=fmtp:98 octet-align=0
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv
m=video 57344 RTP/AVP 100 98 34 96 97 102
b=AS:1000
a=rtpmap:100 h264/90000
a=fmtp:100 profile-level-id=42001F; packetization-mode=1; max-br=768
a=rtpmap:98 mp4v-es/90000
a=fmtp:98 profile-level-id=3 MaxBR=3840
a=rtpmap:34 h263/90000
a=fmtp:34 CIF=1; CIF=2; CIF=3; QCIF=1; QCIF=2
a=rtpmap:96 h263-1998/90000
a=fmtp:96 CIF=1; CIF=2; CIF=3; QCIF=1; QCIF=2
a=rtpmap:97 h263-2000/90000
a=fmtp:97 CIF=1; CIF=2; CIF=3; QCIF=1; QCIF=2
a=rtpmap:102 vp8/90000
a=fmtp:102 max-fr=30; max-fs=1200
```

```

a=sendrecv
"
signaling="no" cpa="no" call_type="3pcc"
media="audiovideo"
dtmf_mode="rfc2833"
source_uri="sip:xmstool@146.152.124.182"
async_dtmf="yes" async_tone="yes" cleardigits="no" encryption="none" ice="no"
info_ack_mode="automatic">
</call_response>
</web_service>

```

Note: If you send a request in 3PCC mode with an empty SDP="", PowerMedia XMS will allocate an internal device and return back the SDP. This allows SDP to initiate and outbound call with early media.

Call Concepts

This section contains a higher-level look at various aspects of PowerMedia XMS call behavior.

Asynchronous Tones

- Audio tones can be used to both terminate operations and can also be delivered to the application as asynchronous events.
- To terminate a playrecord or play operation, set `terminate_digits` to the desired DTMF digit value (0-9, * and #). If the operation is terminated this way, the `end_playrecord` or `end_play` event will reference the digit collected to end the operation.
- To have an async DTMF event delivered to your application outside of its use as a play/record termination, `async_dtmf=yes` should be set for a call resource.
- User-defined tone detection is set up using tone templates, which are created in the PowerMedia XMS GUI in the Tones screen (see the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide* for more information). Set `async_tones=yes` for a call resource and detection of the defined tones is activated.
- DTMF events are delivered as event type "dtmf", with a name of "digits" and a value corresponding to the digit collected.
- Async tone events are delivered as event type "tone", with a name of "tone" and a value corresponding to the name assigned when the user-defined tone was created.

Playcollect and User-Defined Tones

A playcollect operation usually is used to collect DTMF tones but may collect user-defined tone as well.

To do this, the attribute `tone_detection=yes` must be set when the playcollect is initiated. The `end_playcollect` event will reference the user-defined name of the tone collected and the reason parameter will be set to tone. Duration (in milliseconds) refers to the length of the play operation, not the duration of the tone.

Early Media

Early media refers to the ability to play media (audio and/or video) on an inbound call to the caller before a call is answered. The call must first be Accepted before the media play

operation can be started. To fully complete the connection, the call must be answered. A PUT should be used for these messages.

Media File Locations

The default location for media files used by the PowerMedia XMS RESTful API is displayed when the Media menu is chosen on the PowerMedia XMS Console. See the Media section in the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide*.

Files for a given RESTful application are usually grouped under a directory reflecting the application name. Directories/applications delivered with the system are "verification" (for the RESTful Verification Demo) and "xmstool", for the XMSTool RESTful Utility.

Thus, the file:// URL used in a RESTful Play command would point at a set of audio and video files named *xmstool_play.wav* and *xmstool_play.vid*, both located in the xmstool directory in the default media location:

```
<play_source audio_uri=file://xmstool/xmstool_play video_uri=file://xmstool/xmstool_play/>
```

Similarly, the location of an audio file for a recording is given in the same way:

```
<playrecord recording_audio_uri="file://xmstool/xmstool_recording" max_time="10s" offset="0s" repeat="0" delay="1s"
```

Call Sub-Resource

For details on call resources, see the [Call Resource](#) section.

call

Resource URI

```
/calls/[call_id]?appid=[app_id]
```

HTTP GET

Retrieves an available call resource.

```
GET /calls/[call_id]?appid=[app_id]
```

Response Payload Example

```
<web_service version="1.0">
  <call_response appid="app" async_dtmf="yes" async_tone="yes" audio="sendrecv"
call_type="inbound"
    cleardigits="no" connected="yes" cpa="no" destination_uri="sip:sip@10.20.129.100"
dtmf_mode="rfc2833"
    href="/default/calls/8ae87129-b334-4d8a-bec6-5d4ddeb5649"
    identifier="8ae87129-b334-4d8a-bec6-5d4ddeb5649" info_ack_mode="automatic"
media="audiovideo" signaling="yes"
    source_uri="sip:Username@10.20.129.113:5060" video="sendrecv">
  </call_response>
</web_service>
```

HTTP PUT

Updates a call resource.

```
PUT /calls/[call_id]?appid=[app_id]
```

Accept/Answer Incoming Call

Request Payload Attributes

Parameter	Default	Optional	Description
answer	(none)	*	Answer an incoming call. Values: "yes" "no"
accept	(none)	*	Accept an incoming call. Values: "yes" "no"
media	"audio"	*	Sets the media type supported by the call. Values: "audio" "audiovideo" "video" "message" "image" This parameter has no effect if the call has been accepted already.
dtmf_mode	"rfc2833"	*	Specifies the signaling mode for DTMF digits. Values: "inband" "outofband" "rfc2833"
early_media	"no"	*	Enable early media. Values: "yes" "no" This parameter has no effect if answer=yes.

Parameter	Default	Optional	Description
info_ack_mode	"automatic"	*	Specifies how INFO events are acknowledged. Values: "automatic" "manual"
hangup_ack_mode	"automatic"	*	Specifies how HANGUP events are acknowledged (signaling only). Values: "automatic" "manual" Note: If hangup_ack_mode is set to "manual", the app/user will be responsible for deleting the call resource, and the RESTful service will not automatically delete the call resource after it receives the "hangup" event. Refer to send_hangup_ack.
async_completion	"no"	*	Values: "yes" the API will return immediately and completion is indicated by an ANSWERED event. "no" the API will block until the call has been fully answered. This parameter has effect if answer=yes.

Parameter	Default	Optional	Description
encryption	(none)	*	Media stream (RTP) encryption. Values: "none" "dtls"
ice	(none)	*	Use ICE (Interactive Connectivity Establishment) to configure media streams (RTP). Values: "no" "yes"
content_type	(none)	*	Mime type describing content (answer only).
content	(none)	*	Data content (answer only).
media	(none)	*	The media types supported by the call. Values: "audio" "audiovideo" "video"
audio	(none)	*	Direction of audio media. Values: "inactive" "sendonly" "recvonly" "sendrecv"
video	(none)	*	Direction of video media. Values: "inactive" "sendonly" "recvonly" "sendrecv"

Parameter	Default	Optional	Description
message	"sendrecv"	*	Direction of message media (MSRP). Values: • "inactive" • "sendonly" • "recvonly" • "sendrecv"
image	"sendrecv"	*	Direction of message media (MSRP). Values: • "inactive" • "sendonly" • "recvonly" • "sendrecv"
local_rtp_address	"sendrecv"	*	Sets the local IP address to use for RTP.
prack_ack_mode	"automatic"	*	Specifies how PRACK events are acknowledged. Values: • "automatic" • "manual" For accepting a call only.
prack_level	"none"	*	Specifies if the prack mode sent in sip 1XX (RINGING or PROGRESS), in response to a remote INVITE with prack mode "supported," is required or not. Values: • "required" • "none" For accepting a call only.

Parameter	Default	Optional	Description
rtcp_feedback		*	Specifies the RTCP feedback for media in the offering SDP (AVPF/SAVPF). Leave empty to select the configuration mode. Values: • "video" • "audio" • "audiovideo" • "none" Note: RTCP feedback is currently only implemented for video. The audio value has no effect.

Request Payload Example

accept

```
<web_service version="1.0">
  <call accept="yes" early_media="yes" />
</web_service>
```

answer

```
<web_service version="1.0">
  <call answer="yes" async_completion="yes"/>
</web_service>
```

Response Payload Example

accept

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
    media="audio"
    dtmf_mode="rfc2833"
    source_uri="sip:Username@10.20.129.113:5060"
    async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
    early_media="yes">
  </call_response>
</web_service>
```

answer

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
```

```

        media="unknown"
        dtmf_mode="rfc2833"
        source_uri="sip:Username@10.20.129.113:5060"
        async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
early_media="yes">
    </call_response>
</web_service>

```

Modify Call Attributes

Request Payload Attributes

Parameter	Default	Optional	Description
sdp	(none)	*	Only used in 3rd party call control (3PCC).
rx_delta	(none)	*	Volume adjustments are allowed between +31dB and -32dB. Both absolute (default) and relative adjustments are supported. Usage: • "+3dB;relative" • "+3dB;absolute"
tx_delta	(none)	*	Volume adjustments are allowed between +31dB and -32dB. Both absolute (default) and relative adjustments are supported. Usage: • "+3dB;relative" • "+3dB;absolute"

Parameter	Default	Optional	Description
async_dtmf	(none)	*	Specifies if DTMF digits should be reported as events instead of being buffered internally (default). When active, the application must ensure that when using any of the play APIs, any unused digit processing parameters are cleared. This is to avoid digits being processed both internally and by the application. Values: • "yes" • "no"
cleardigits	(none)	*	The parameter is considered when <code>async_dtmf</code> is set to "yes" and specifies whether previous, buffered, input should be discarded. Values: • "yes" • "no"
async_tone	(none)	*	Specifies if tones are reported as events outside of a playcollect action. Values: • "yes" • "no"
media	(none)	*	Sets the media type supported by the call. Values: • "audio" • "audiovideo" • "video" • "message" • "image"

Parameter	Default	Optional	Description
audio	(none)	*	Direction of audio media. Values: "inactive" "sendonly" "recvonly" "sendrecv"
video	(none)	*	Direction of video media. Values: "inactive" "sendonly" "recvonly" "sendrecv"
message	(none)	*	Direction of message media (MSRP). Values: "inactive" "sendonly" "recvonly" "sendrecv"
image	"sendrecv"	*	Direction of image media (MSRP). Values: "inactive" "sendonly" "recvonly" "sendrecv"

Request Payload Example

```
<web_service version="1.0">
  <call async_dtmf="yes" async_tone="yes" rx_delta="+3dB" tx_delta="+3dB" />
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
    media="audio">
```

```
        dtmf_mode="rfc2833"
        source_uri="sip:Username@10.20.129.113:5060"
        async_dtmf="yes" async_tone="yes" cleardigits="no" info_ack_mode="automatic"
early_media="yes">
    </call_response>
</web_service>
```

Perform Call Action

- [play](#)
- [update_play](#)
- [record](#)
- [playrecord](#)
- [playcollect](#)
- [send_dtmf](#)
- [send_event](#)
- [stop](#)
- [add_party/update_party](#)
- [remove_party](#)
- [join/unjoin](#)
- [send_info/send_info_ack](#)
- [send_prack/send_prack_ack/send_answer_ack](#)
- [send_message](#)
- [dial](#)
- [transfer](#)
- [redirect](#)
- [hangup](#)
- [send_hangup_ack](#)
- [get_call_info](#)
- [add_ice_candidate](#)
- [get_last_action](#)
- [get_last_event](#)

play_source_attributes

Note: At least one of the following parameters are required: location (deprecated), audio_uri, or video_uri. For example, if a play_source includes audio_uri, location (deprecated) and video_uri are not required.

Parameter	Default	Optional	Description
location	(none)		The URI of the media to be played e.g., "file://...", "rtsp://...", "image:", "http(s)://..." DEPRECATED use audio_uri and video_uri.
base_audio_uri	(none)	*	Use audio_base_uri. Base URI prefix for audio_uri URIs e.g., "file://...", "rtsp://...", "http(s)://...".
audio_base_uri	(none)	*	Base URI prefix for audio_uri URIs e.g., "file://...", "rtsp://...", "http(s)://...".
audio_uri	(none)		The URI of the audio media to be played e.g., "file://...", "rtsp://...", "http(s)://..." or <filename>.<ext> if the base_audio_uri has been set. Multiple URIs can be specified by using the newline character '\n' as a separator. Only URIs of type "file://..." are currently supported when playing multiple files.

Parameter	Default	Optional	Description
audio_type	(none)	*	The mime type of the audio media. Values: • "audio/x-wav" • "audio/basic" • "audio/x-alaw-basic" • "audio/L8" • "audio/L16" • "audio/x-aud" • "audio/AMR" • "audio/AMR-WB" • "audio/3gpp" • "audio/mp4" • "audio/mkv" • "text/uri-list"
audio_rate	(none)	*	The mime type of the audio media. Values: • "8000" • "11025" • "16000"
base_video_uri	(none)	*	Use video_base_uri. Base URI prefix for video_uri URIs e.g., "file://...", "rtsp://...", "http(s)://...".
video_base_uri	(none)	*	Base URI prefix for video_uri URIs e.g., "file://...", "rtsp://...", "http(s)://...".

Parameter	Default	Optional	Description
video_uri	(none)		The URI of the video media to be played e.g., "file://...", "rtsp://...", "http(s)://...or <filename>.<ext> if the base_video_uri has been set. Multiple URIs can be specified by using the newline character '\n' as a separator. Only URIs of type "file://..." are currently supported when playing multiple files.
video_type	(none)	*	The mime type of the video media. Values: • "video/x-vid" • "image/jpeg" • "video/mkv" • "video/mp4" • "video/3gpp"

recording_audio_mime_params

Parameter	Default	Optional	Description
codec	(none)	*	Sets the audio codec. Values: • "L16" • "mulaw" • "alaw" • "L8" • "AMR" • "AMR-WB" • "opus"

Parameter	Default	Optional	Description
rate	(none)	*	Sets the audio rate. Values: "8000" "11025" "16000 (L16 only)"
mode	(none)	*	Audio AMR/AMR-WB mode. Values: "mode=0..7 (AMR only)" "mode=0..8 (AMR-WB only)"

recording_video_mime_params

Parameter	Default	Optional	Description
codec	(none)	*	Sets the video codec. Values: "h263" "h264" "mp4v-es" "vp8" "vp9"
profile	(none)	*	Sets the video profile.
level	(none)	*	Sets the video level.
framerate	(none)	*	Sets the video framerate. If framerate is set to 0 when using the H.264, VP8, or VP9 video codec, all frames are encoded.
maxbitrate	(none)	*	Sets the video maxbitrate.
height	(none)	*	Sets the video height. If height and width are set to 0 when using the H.264, VP8, or VP9 video codec, the input video stream's resolution parameters are identified by the system and used as the recording resolution parameters.

Parameter	Default	Optional	Description
width	(none)	*	Sets the video width. If height and width are set to 0 when using the H.264, VP8, or VP9 video codec, the input video stream's resolution parameters are identified by the system and used as the recording resolution parameters.

dvr_setting_attributes

Parameter	Default	Optional	Description
forward_key	"1"	*	Defines the DTMF key [0-9,*,#] used to skip forwards.
backward_key	"2"	*	Defines the DTMF key [0-9,*,#] used to skip backwards.
pause_key	"3"	*	Defines the DTMF key [0-9,*,#] used to pause playback.
resume_key	"4"	*	Defines the DTMF key [0-9,*,#] used to resume playback.
restart_key	"5"	*	Defines the DTMF key [0-9,*,#] used to restart playback.

param_attributes

Parameter	Default	Optional	Description
name	(none)		Sets parameter name.
value	(none)		Sets parameter value.

content_element_attributes

Parameter	Default	Optional	Description
id	(none)		Content identifier.
type	(none)		Mime type describing content.
content	(none)		Data.

sip_headers_attributes

Parameter	Default	Optional	Description
raw_sip_headers	(none)		Raw SIP headers, delimited by the <CR><LF> end-of-line characters.
params	(none)		Refer to param_attributes and get_call_info for examples.

msg_payload_attributes

Parameter	Default	Optional	Description
msg_payload_content	(none)		Refer to msg_payload_content .
msg_payload_uri	(none)	* (mutually exclusive with msg_payload_content)	Refer to msg_payload_uri .
content_type	(none)		Mime type describing content.
content_disposition	"attachment"	*	The intended disposition of the file. Values: • "attachment" • "render"
content_id	(none)		Content identifier.

msg_payload_content attributes

Parameter	Default	Optional	Description
content	(none)		Data.

msg_payload_uri attributes

Parameter	Default	Optional	Description
uri	(none)		File to transfer ("rfc5547" only) e.g., "file:///tmp/foo.txt".

play

Request Payload Attributes

Parameter	Default	Optional	Description
play_source	(none)		Refer to play_source_attributes and get_call_info for examples.
dvr_setting	(none)	*	Refer to dvr_setting_attributes .
offset	"0"	*	Specifies the time offset from where the play should start. Note, the "offset" is applied to the initial play only.
repeat	"0"	*	Number of times to repeat the play. Use "infinite" to repeat indefinitely. "file:/" URIs only.
delay	"1s"	*	Time delay between repeated plays.
terminate_digits	"#"	*	The digit or digits [0-9,*,#] used to terminate the play (call only).
max_time	"infinite"	*	Limit the playback time to this value.
skip_interval	"1s"	*	Defines the amount of time to skip on the 'forward' and 'backwards' actions (call only).

Parameter	Default	Optional	Description
no_cache		*	Cache-control for HTTP URIs. Values: "yes" does not use caching. "no" uses caching. The default is set by the configuration.
max_age		*	Cache-control for HTTP URIs, the maximum age, in seconds, of a cached file. The default is set by the configuration.
max_stale		*	Cache-control for HTTP URIs, the number of seconds that a cached file may exceed its expiration time by and still be a considered as fresh. The default is set by the configuration.
fetch_timeout	"300s"	*	HTTP URIs, the maximum time in seconds to retrieve the file. This is the overall period of the transaction.

Request Payload Example

```

<web_service version="1.0">
  <call>
    <call_action>
      <play offset="0s" repeat="0" delay="1s" terminate_digits="#" skip_interval="1s">
        <play_source audio_uri="file://verification/play_menu.wav" audio_type="audio/x-wav"
      />
      <dvr_setting forward_key="1" backward_key="2" pause_key="3" resume_key="4"
restart_key="5"/>
    </play>
  </call_action>
</call>
</web_service>

```

Response Payload Example

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
    media="audio"
    dtmf_mode="rfc2833"
    source_uri="sip:Username@10.20.129.113:5060"
    async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
    early_media="yes">
    <call_action>
      <play transaction_id="9d608231-a164-4102-b9e6-3balf0671a53"
        max_time="infinite"
        fetch_timeout="300s"
        offset="0s"
        delay="1s"
        repeat="0"
        skip_interval="1s"
        terminate_digits="#">
        <play_source audio_uri="file://verification/play_menu.wav"
audio_type="audio/x-wav" />
        <dvr_setting forward_key="1"
          backward_key="2"
          pause_key="3"
          resume_key="4"
          restart_key="5"/>
      </play>
    </call_action>
  </call_response>
</web_service>
```

update_play

Request Payload Attributes

Parameter	Default	Optional	Description
transaction_id	(none)		Media identifier, returned by play.

Parameter	Default	Optional	Description
dvr_action	(none)		Values: • "backward" - skip backwards. • "forward" - skip forward. • "pause" - pause playback. • "restart" - jump back to the start. • "resume" - resume paused playback.

Request Payload Example

```

<web_service version="1.0">
  <call>
    <call_action>
      <update_play transaction_id="9d608231-a164-4102-b9e6-3ba1f0671a53" dvr_action="pause"/>
    </call_action>
  </call>
</web_service>

```

Response Payload Example

```

<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
    media="audio"
    dtmf_mode="rfc2833"
    source_uri="sip:Username@10.20.129.113:5060"
    async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
    early_media="yes">
    <call_action>
      <update_play transaction_id="9d608231-a164-4102-b9e6-3ba1f0671a53"
        dvr_action="pause"/>
    </call_action>
  </call_response>
</web_service>

```

record

Request Payload Attributes

Parameter	Default	Optional	Description
recording_audio_mime_params	(none)		Refer to recording_audio_mime_params .
recording_video_mime_params	(none)		Refer to recording_video_mime_params .
terminate_digits	"#"	*	The digit or digits [0-9,*,#] used to terminate the play_record.
recording_uri	(none)		A filename "file://..." which must refer to an existing directory or "http://" ("https://"). DEPRECATED.
recording_audio_uri	(none)		The URL of the audio media to be recorded e.g., "file://...", "http(s)://..."
recording_audio_type	(none)		The mime type of the audio media. Values: • "audio/x-wav" • "audio/basic" • "audio/x-alaw-basic" • "audio/G723" • "audio/G726" • "audio/G729" • "audio/mp4" • "audio/3gpp" • "audio/AMR" • "audio/AMR-WB" • "audio/mkv" • "audio/x-aud" • "audio/L8" • "audio/L16"
recording_video_uri	(none)		The URL of the video media to be recorded e.g., "file://...", "http(s)://..."

Parameter	Default	Optional	Description
recording_video_type	(none)		The mime type of the video media. Values: "video/x-vid" "video/3gpp" "image/jpeg" "video/mp4" "video/mkv"
max_time	"infinite"	*	The maximum length of time to record. Use "infinite" for no limit.
max_silence	"infinite"	*	The maximum length of silence to record after audio has been detected. Use "infinite" for no limit.
noinput_timeout	"infinite"	*	The maximum time to wait for audio to be detected. Use "infinite" for no limit.

Request Payload Example

```

<web_service version="1.0">
  <call>
    <call_action>
      <record terminate_digits="#" max_time="10s"
        recording_audio_uri="file://verification/beta_recorded_file.3gp"
        recording_audio_type="audio/3gpp"
        recording_video_uri=file://verification/beta_recorded_file.3gp
        recording_video_type="video/3gpp" >
        <recording_video_mime_params codec="h264" level="3.1" height="480" width="640"
maxbitrate="768000" framerate="15"/>
        <recording_audio_mime_params codec="AMR" />
      </record>
    </call_action>
  </call>
</web_service>

```

Response Payload Example

```

<web_service version="1.0">
<call_response identifier="4de2358f-4e2e-41c1-ba65-94a6f400f6b6" appid="app"
  href="/default/calls/4de2358f-4e2e-41c1-ba65-94a6f400f6b6"
  connected="yes" signaling="yes" cpa="no" call_type="inbound"
  media="audiovideo"
  dtmf_mode="rfc2833"

```

```

destination_uri="sip:app@10.20.123.100"
source_uri="sip:linphone@10.20.126.15"
  async_dtmf="yes" async_tone="yes" cleardigits="no" encryption="none" ice="no"
info_ack_mode="automatic" hangup_ack_mode="automatic" early_media="no" audio="sendrecv"
video="sendrecv">
  <call_action>
    <record transaction_id="80fa5484-ba92-4446-9d05-0dc58e6b7369"
      terminate_digits="#"
      max_time="10s"
      max_silence="infinite"
      noinput_timeout="infinite"
      recording_audio_uri="file://verification/beta_recorded_file.3gp"
      recording_audio_type="audio/3gpp"
      recording_video_type="video/3gpp"
      recording_video_uri="file://verification/beta_recorded_file.3gp">
        <recording_audio_mime_params codec="AMR"/>
        <recording_video_mime_params codec="h264" level="3.1" framerate="15"
maxbitrate="768000" height="480" width="640"/>
      </record>
    </call_action>
  </call_response>
</web_service>

```

Note: To record audio and video on a single file, recording_audio_uri and recording_video_uri must use the same URI (file name) and type (.3gpp, .mkv, .mp4) as shown in the previous request payload example and response payload example.

playrecord

Request Payload Attributes

Parameter	Default	Optional	Description
play_source	(none)		Refer to play_source_attributes .
recording_audio_mime_params	(none)		Refer to recording_audio_mime_params .
recording_video_mime_params	(none)		Refer to recording_video_mime_params .
offset	"0"	*	Specifies the time offset from where the play should start. Note, the 'offset' is applied to the initial play only.
repeat	"0"	*	Number of times to repeat the play. "file://" URIs only.
delay	"1s"	*	Time delay between repeated plays.

Parameter	Default	Optional	Description
terminate_digits	"#"	*	The digit or digits [0-9,*,#] used to terminate the play_record.
recording_uri	(none)		A filename "file://..." which must refer to an existing directory. DEPRECATED.
recording_audio_uri	(none)		The URL of the audio media to be recorded e.g., "file://...", "http(s)://..."
recording_audio_type	(none)		The mime type of the audio media. Values: • "audio/x-wav" • "audio/basic" • "audio/x-alaw-basic" • "audio/G723" • "audio/G726" • "audio/G729" • "audio/mp4" • "audio/3gpp" • "audio/AMR" • "audio/AMR-WB" • "audio/mkv" • "audio/x-aud" • "audio/L8" • "audio/L16"
recording_video_uri	(none)		The URL of the video media to be recorded e.g., "file://...", "http(s)://..."
recording_video_type	(none)		The mime type of the video media. Values: • "video/x-vid" • "video/3gpp" • "image/jpeg" • "video/mp4" • "video/mkv"

Parameter	Default	Optional	Description
beep	"yes"	*	Play a tone before starting to record. Values: "yes" "no"
max_time	"infinite"	*	The maximum length of time to record. Use "infinite" for no limit.
max_silence	"infinite"	*	The maximum length of silence to record after audio has been detected. Use "infinite" for no limit. This feature is supported for calls only.
noinput_timeout	"infinite"	*	The maximum time to wait for audio to be detected. Use "infinite" for no limit. This feature is supported for calls only.
barge	"yes"	*	Specifies whether dtmf digit input will barge the prompt and force transition to the record phase. Note that if the "barge" attribute is set to "no", the "cleardigits" attribute implicitly has the value "yes". Values: "yes" "no"

Parameter	Default	Optional	Description
cleardigits	"no"	*	Specifies whether previous input should be considered or ignored for the purpose of barge-in. When it is set to "yes", any previously buffered digits are discarded. If it is set to "no", previously buffered digits will be considered. If "cleardigits" is set to "no" and "barge" is set to "yes", previously buffered digits will result in the recording phase starting immediately, and the prompt will not be played. Values: "yes" "no"
no_cache		*	Cache-control for HTTP URIs. Values: "yes" does not use caching. "no" uses caching. The default is set by the configuration.
max_age		*	Cache-control for HTTP URIs, the maximum age, in seconds, of a cached file. The default is set by the configuration.
max_stale		*	Cache-control for HTTP URIs, the number of seconds that a cached file may exceed its expiration time by and still be a considered as fresh. The default is set by the configuration.
fetch_timeout	"300s"	*	HTTP URIs, the maximum time in seconds to retrieve or upload a file. This is the overall period of the transaction.

Request Payload Example

```
<web_service version="1.0">
  <call>
    <call_action>
```

```

        <playrecord recording_audio_uri="file://recorded_file.wav" recording_audio_type="audio/x-
wav" max_time="10s" offset="0s" repeat="0" delay="1s" terminate_digits="#" beep="yes"
barge="yes" cleardigits="yes" >
            <play_source audio_uri="file://verification/play_menu.wav" audio_type="audio/x-wav"/>
        </playrecord>
    </call_action>
</call>
</web_service>

```

Response Payload Example

```

<web_service version="1.0">
    <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
        href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
        connected="yes" signaling="yes" cpa="no" call_type="inbound"
        media="audio"
        dtmf_mode="rfc2833"
        source_uri="sip:Username@10.20.129.113:5060"
        async_dtmf="no" async_tone="no" cleardigits="yes" info_ack_mode="automatic"
early_media="yes">
        <call_action>
            <playrecord transaction_id="a88aac4a-dd73-4a3f-8268-792b90a5efb2"
                fetch_timeout="300s"
                terminate_digits="#"
                max_time="10s"
                beep="yes"
                barge="yes"
                cleardigits="yes"
                max_silence="infinite"
                noinput_timeout="infinite"
                recording_audio_uri="file://recorded_file.wav"
                recording_audio_type="audio/x-wav"
                offset="0s"
                delay="1s"
                repeat="0"
                terminate_digits="">
                <play_source audio_uri="file://verification/play_menu.wav"
                    audio_type="audio/x-wav"/>
            </playrecord>
        </call_action>
    </call_response>
</web_service>

```

playcollect

Request Payload Attributes

Parameter	Default	Optional	Description
play_source	(none)		Refer to play_source_attributes .
offset	"0"	*	Specifies the time offset from where the play should start. Note, the "offset" is applied to the initial play only.
repeat	"0"	*	Number of times to repeat the play. Use "infinite" to repeat indefinitely. "file://" URIs only.
delay	"1s"	*	Time delay between repeated plays.
term_digits	"#"	*	The digit or digits [0-9,*,#] used to terminate the playcollect.
max_digits	Unlimited	*	The maximum number of digits to collect.
timeout	"infinite"	*	The maximum length of time to wait for the first digit or a tone. This time begins when the prompt phase ends.
interdigit_timeout	The value specified by the <i>timeout</i> parameter	*	The maximum length of time to wait for subsequent digits. This timeout is reset after each digit is received.
tone_detection	"no"	*	Enable tone detection. Values: • "yes" • "no"

Parameter	Default	Optional	Description
barge	"yes"	*	Specifies whether dtmf digit input will barge the prompt and force transition to the collect phase. Note that if the "barge" attribute is set to "no", the "cleardigits" attribute implicitly has the value "yes". Values: • "yes" • "no"
cleardigits	"no"	*	Specifies whether previous input should be considered or ignored for the purpose of barge-in and digit matching. When it is set to "yes", any previously buffered digits are discarded. If it is set to "no", previously buffered digits will be considered. If "cleardigits" is set to "no" and "barge" is set to "yes", previously buffered digits will result in the collection phase starting immediately, and the prompt will not be played. Values: • "yes" • "no"

Parameter	Default	Optional	Description
no_cache		*	Cache-control for HTTP URIs. Values: "yes" does not use caching. "no" uses caching. The default is set by the configuration.
max_age		*	Cache-control for HTTP URIs, the maximum age, in seconds, of a cached file. The default is set by the configuration.
max_stale		*	Cache-control for HTTP URIs, the number of seconds that a cached file may exceed its expiration time by and still be considered as fresh. The default is set by the configuration.
fetch_timeout	"300s"	*	HTTP URIs, the maximum time in seconds to retrieve the file. This is the overall period of the transaction.

Request Payload Example

```

<web_service version="1.0">
  <call>
    <call_action>
      <playcollect max_digits="4" timeout="10s" offset="0s" repeat="0" delay="1s"
terminate_digits="#"
      tone_detection="yes" barge="yes" cleardigits="yes">
        <play_source audio_uri="file://verification/play_menu.wav"
audio_type="audio/x-wav"/>
      </playcollect>
    </call_action>
  </call>
</web_service>

```

Response Payload Example

```
<web_service version="1.0">
  <call_response identifier="c87fccal-b2d0-49c5-8b89-baaaae71cf695" appid="app"
    href="/default/calls/c87fccal-b2d0-49c5-8b89-baaaae71cf695"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
    media="audiovideo"
    dtmf_mode="rfc2833"
    destination_uri="sip:sip@10.20.129.100"
    source_uri="sip:Username@10.20.129.113:5060"
    async_dtmf="yes" async_tone="yes" cleardigits="yes"
info_ack_mode="automatic"
    audio="sendrecv" video="sendrecv">
    <call_action>
      <playcollect transaction_id="25608a36-2fd1-43ca-b741-
3420dbc389cb"
        fetch_timeout="300s"
        terminate_digits="#"
        timeout="10s"
        interdigit_timeout=""
        tone_detection="yes"
        max_digits="4"
        barge="yes"
        offset="0s"
        delay="1s"
        repeat="0"
        cleardigits="yes">
        <play_source
audio_uri="file://verification/play_menu.wav"
          audio_type="audio/x-wav"/>
        </playcollect>
      </call_action>
    </call_response>
</web_service>
```

send_dtmf

Request Payload Attributes

Parameter	Default	Optional	Description
digits			Digit(s) to send [1234567890*#ABCD].
duration	100ms	*	Length of time of each digit.
interval	100ms	*	Time between successive digits.
level	-10dB	*	Amplitude of the dtmf digit tones. Range: 0 to -40dB.

Request Payload Example

```
<web_service version="1.0">
  <call>
    <call_action>
      <send_dtmf digits="2345" />
    </call_action>
  </call>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
    media="audio"
    dtmf_mode="rfc2833"
    source_uri="sip:Username@10.20.129.113:5060"
    async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
    early_media="yes">
    <call_action>
      <send_dtmf transaction_id="c4023bb2-4062-415b-ae79-2e708458cfdd"
        digits="2345" duration="100ms" interval="100ms" level="-10dB"/>
    </call_action>
  </call_response>
</web_service>
```

send_event

Send one or more telephony events in RTP packets. This supports RFC 4733.

Request Payload Attributes

Parameter	Default	Optional	Description
events			Event(s) to send [0123456789]. For values higher than 9, use "\$xxx" where "xxx" is the three digit decimal code. For example, to send digits 0, 1, and 4 and event 16, the digits attribute would be set to digits="014\$016".
duration	100ms	*	Length of time of each digit.
interval	100ms	*	Time between successive digits.
level	-10dB	*	Amplitude of the dtmf digit tones. Range: 0 to -40dB.

Request Payload Example

```
<web_service version="1.0">
  <call>
    <call_action>
      <send_event events="2345$016" />
    </call_action>
  </call></web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
    media="audio"
    dtmf_mode="rfc2833"
    source_uri="sip:Username@10.20.129.113:5060"
    async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
    early_media="yes">
    <call_action>
      <send_event transaction_id="c4023bb2-4062-415b-ae79-2e708458cfdd"
        events="2345$016" duration="100ms" interval="100ms" level="-10dB"/>
    </call_action>
  </call_response>
</web_service>
```

stop

Request Payload Attributes

Parameter	Default	Optional	Description
transaction_id	(none)		Identifier returned by play, playcollect, playrecord, or send_dtmf call action.

Request Payload Example

```
<web_service version="1.0">
  <call>
    <call_action>
      <stop transaction_id="c4023bb2-4062-415b-ae79-2e708458cfdd"/>
    </call_action>
  </call>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b">
```

```

connected="yes" signaling="yes" cpa="no" call_type="inbound"
media="audio"
dtmf_mode="rfc2833"
source_uri="sip:Username@10.20.129.113:5060"
async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
early_media="yes">
  <call_action>
    <stop transaction_id="c4023bb2-4062-415b-ae79-2e708458cfdd"/>
  </call_action>
</call_response>
</web_service>

```

add_party/update_party

Request Payload Attributes

Parameter	Default	Optional	Description
conf_id	(none)		Identifier of the conference to join.
caption	(none)	*	Text for caption e.g., caller name.
caption_duration	The value specified in create conference	*	The length of time that the caption is shown. Use "infinite" without the quotation marks to display the caption for the entire call.
region	"0"	*	The ID of the region used to display this participant's video stream. The value "0" means no preference. The current occupant of the region (if any) will be reset to <i>no</i> preference and replaced by this party.

Parameter	Default	Optional	Description
audio	"recvonly"	*	Sets the conference audio participation. Values: • "inactive" - No audio • "sendonly" - Only transmit audio • "recvonly" - Only receive audio • "sendrecv" - Full duplex audio
video	"recvonly"	*	Sets the conference video participation. Values: • "inactive" - No video • "sendonly" - Only transmit video • "recvonly" - Only receive video • "sendrecv" - Full duplex video
clamp_dtmf	The value specified in create conference	*	Determines if dtmf digits are suppressed. Values: • "yes" • "no"
auto_gain_control	The value specified in create conference	*	Determines if automatic gain control should be used. Values: • "yes" • "no"

Parameter	Default	Optional	Description
echo_cancellation	The value specified create conference	*	Determines if echo cancellation should be used. Values: • "yes" • "no"
mute	"no"	*	Mutes or unmutes the audio stream from this party. Values: • "yes" mute the stream. • "no" unmute the stream.
tx_mute	"no"	*	Mutes or unmutes the audio stream to this party. Values: • "yes" mute the stream. • "no" unmute the stream.
privilege	"no"	*	Enables or disables privilege talker. When set to "yes", party is always included in the conference summation output process, providing its speech level is greater than zero. Values: • "yes" • "no"

Parameter	Default	Optional	Description
mode	"normal"	*	Determines the mixing for the party. Values: "normal" "coach" sets party as a coach, the coach is heard by pupil only. Note: Only one coach per conference. "pupil" sets this party as a pupil, the pupil hears everyone including the coach.

Request Payload Example

add_party

```
<web_service version="1.0">
  <call>
    <call_action>
      <add_party conf_id="830b9fda-d89e-495d-b7a1-6a63402bcdcf" caption="Username" region="0"
        audio="sendrecv" video="sendrecv"/>
    </call_action>
  </call>
</web_service>
```

update_party

```
<web_service version="1.0">
  <call>
    <call_action>
      <update_party conf_id="830b9fda-d89e-495d-b7a1-6a63402bcdcf" caption="Frank"/>
    </call_action>
  </call>
</web_service>
```

Response Payload Example

add_party

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b">
```

```

        connected="yes" signaling="yes" cpa="no" call_type="inbound"
        media="audio"
        dtmf_mode="rfc2833"
        source_uri="sip:Username@10.20.129.113:5060"
        async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
early_media="yes">
    <call_action>
        <add_party conf_id="830b9fda-d89e-495d-b7a1-6a63402bcdcf" caption="Username"
region="0"
                audio="sendrecv" video="sendrecv"/>
    </call_action>
</call_response>
</web_service>

```

update_party

```

<web_service version="1.0">
    <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
        href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
        connected="yes" signaling="yes" cpa="no" call_type="inbound"
        media="audio"
        dtmf_mode="rfc2833"
        source_uri="sip:Username@10.20.129.113:5060"
        async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
early_media="yes">
        <call_action>
            <update_party conf_id="830b9fda-d89e-495d-b7a1-6a63402bcdcf" caption="Frank"
region="0"
                    audio="sendrecv" video="sendrecv"/>
        </call_action>
    </call_response>
</web_service>

```

remove_party

Request Payload Attributes

Parameter	Default	Optional	Description
conf_id	(none)		The identifier of the conference to unjoin.

Request Payload

```

<web_service version="1.0">
    <call>
        <call_action>
            <remove_party conf_id="830b9fda-d89e-495d-b7a1-6a63402bcdcf" />
        </call action>
    </call>
</web_service>

```

Response Payload

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
    media="audio"
    dtmf_mode="rfc2833"
    source_uri="sip:Username@10.20.129.113:5060"
    async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
    early_media="yes">
    <call_action>
      <remove_party conf_id="830b9fda-d89e-495d-b7a1-6a63402bcdcf"/>
    </call_action>
  </call_response>
</web_service>
```

join/unjoin

Request Payload Attributes

Parameter	Default	Optional	Description
call_id	(none)		The identifier of the other party call ID.
audio	"sendrecv"	*	Direction of audio media relative to call_id. Values: "inactive" "sendonly" "recvonly" "sendrecv"
video	"sendrecv"	*	Direction of video media relative to call_id. Values: "inactive" "sendonly" "recvonly" "sendrecv"
audio_transcode	"yes"	*	Controls transcoding of audio between the calls. (join only) Values: "yes" "no"

Parameter	Default	Optional	Description
video_transcode	"yes"	*	Controls transcoding of video between the calls. (join only) Values: "yes" "no"
media_path_optimize	"no"	*	When both endpoints are using Dialogic WebRTC JavaScript API, media flow can be made p2p with the help of join API, with additional parameter media_path_optimize set to "yes". Unjoin would reinvoke media back to xms. (join only) Values: "yes" "no"

Request Payload Example

join

```
<web_service version="1.0">
  <call>
    <call_action>
      <join call_id="830b9fda-d89e-495d-b7a1-6a63402bcdcf"/>
    </call_action>
  </call>
</web_service>
```

unjoin

```
<web_service version="1.0">
  <call>
    <call_action>
      <unjoin call_id="830b9fda-d89e-495d-b7a1-6a63402bcdcf"/>
    </call_action>
  </call>
</web_service>
```

Response Payload Example

join

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app">
```

```

href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
connected="yes" signaling="yes" cpa="no" call_type="inbound"
media="audio"
dtmf_mode="rfc2833"
source_uri="sip:Username@10.20.129.113:5060"
async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
early_media="yes">
  <call_action>
    <join call_id="830b9fda-d89e-495d-b7a1-6a63402bcdcf" />
  </call_action>
</call_response>
</web_service>

```

unjoin

```

<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
    media="audio"
    dtmf_mode="rfc2833"
    source_uri="sip:Username@10.20.129.113:5060"
    async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
    early_media="yes">
      <call_action>
        <unjoin call_id="830b9fda-d89e-495d-b7a1-6a63402bcdcf"/>
      </call_action>
    </call_response>
  </web_service>

```

send_info/send_info_ack

Request Payload Attributes

Parameter	Default	Optional	Description
content_type	(none)		Mime type describing content (optional for send_info_ack).
content	(none)		Data content (optional for send_info_ack).
content_element	(none)	*	Refer to content_element_attributes . Can be repeated n times.

Parameter	Default	Optional	Description
enable_info_ack	"no"	*	Should an info_ack be generated for this request (send_info only). Values: "yes" "no"

Request Payload Example

send_info

```
<web_service version="1.0">
  <call>
    <call_action>
      <send_info content_type="text/plain" content="data"/>
    </call_action>
  </call>
</web_service>
```

send_info_ack

```
<web_service version="1.0">
  <call>
    <call_action>
      <send_info_ack/>
    </call_action>
  </call>
</web_service>
```

Response Payload Example

send_info

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
    media="audio"
    dtmf_mode="rfc2833"
    source_uri="sip:Username@10.20.129.113:5060"
    async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
    early_media="yes">
    <call_action>
      <send_info content_type="text/plain" content="data"/>
    </call_action>
  </call_response>
</web_service>
```

send_info_ack

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
```

```

        connected="yes" signaling="yes" cpa="no" call_type="inbound"
        media="audio"
        dtmf_mode="rfc2833"
        source_uri="sip:Username@10.20.129.113:5060"
        async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
early_media="yes">
    <call_action>
        <send_info_ack/>
    </call_action>
</call_response>
</web_service>

```

send_prack/send_prack_ack/send_answer_ack

send_prack

Send a required SIP PRACK message after a RINGING or PROGRESS event. The prack_mode parameter must be set to "manual" by either creating an outbound call or dialing. The RINGING or PROGRESS event "prack_level" parameter must be "required".

send_prack_ack

Acknowledge a previous PRACK event. It requires that prack_ack_mode parameter to be set to "manual" by accepting a call. The RINGING event must contain the prack_level parameter "required".

send_answer_ack

Acknowledge a "connected" event. It requires that answer_ack_mode parameter to be set to "manual" by either creating an outbound call or dialing.

Request Payload Example

send_prack

```

<web_service version="1.0">
    <call>
        <call_action>
            <send_info content_type="text/plain" content_data="data"/>
        </call_action>
    </call>
</web_service>

```

send_prack_ack

```

<web_service version="1.0">
    <call>
        <call_action>
            <send_prack_ack/>
        </call_action>
    </call>
</web_service>

```

send_answer_ack

```

<web_service version="1.0">
    <call>
        <call_action>

```

```

        <send_answer_ack/>
    </call_action>
</call>
</web_service>

```

Response Payload Example

send_prack

```

<web_service version="1.0">
    <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
        href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
        connected="yes" signaling="yes" cpa="no" call_type="inbound"
        media="audio"
        dtmf_mode="rfc2833"
        source_uri="sip:Username@10.20.129.113:5060"
        async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
        early_media="yes"
        prack_mode="manual">
        <call_action>
            <send_prack/>
        </call_action>
    </call_response>
</web_service>

```

send_prack_ack

```

<web_service version="1.0">
    <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
        href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
        connected="yes" signaling="yes" cpa="no" call_type="inbound"
        media="audio"
        dtmf_mode="rfc2833"
        source_uri="sip:Username@10.20.129.113:5060"
        async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
        early_media="yes"
        prack_ack_mode="manual">
        <call_action>
            <send_prack_ack/>
        </call_action>
    </call_response>
</web_service>

```

send_answer_ack

```

<web_service version="1.0">
    <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
        href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
        connected="yes" signaling="yes" cpa="no" call_type="inbound"
        media="audio"
        dtmf_mode="rfc2833"
        source_uri="sip:Username@10.20.129.113:5060"

```

```

        async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
early_media="yes"
        answer_ack_mode="manual">
        <call_action>
            <send_answer_ack/>
        </call_action>
    </call_response>
</web_service>

```

send_message

Send application defined data to the remote party. The data may be related to an existing call or standalone.

Request Payload Attributes

Parameter	Default	Optional	Description
msg_payload	(none)	* (required if mode != "signalling")	Refer to msg_payload . Can be repeated <i>n</i> times.
content_element	(none)	*	Refer to content_element . Can be repeated <i>n</i> times.
mode	"signalling"	*	Message transfer mode. Values: "signalling" rtc or sip (future). "msrp" MRSP instant message (rfc4975). Existing call only. "rfc5547" MSRP file transfer.
uri	(none)	*	Destination address. ("signalling": out-of-call only or "rfc5547")
called_uri	uri	*	Logical destination address. ("signalling": out-of-call only or "rfc5547")
caller_uri	(none)	*	Caller address. ("signalling": out-of-call only or "rfc5547")

Parameter	Default	Optional	Description
content_type	(none)	* (required if mode = "signalling")	Mime type describing content.
content	(none)	* (required if mode = "signalling")	Content data.
msg_multipart_type	(none)	* (required if there is more than 1 msg_payload)	Multi-part mime type for the msg_payload[] pseudo array. rfc4975 only.
report	(none)	*	Specifies the report type in the END_SEND_MESSAGE event. Values: • "success" • "failure" • "both"
headers	(none)	*	Deprecated for XMS 3.0. Use sip_headers instead. Raw SIP headers, delimited by the <CR><LF> end-of-line characters ("rfc5547" only).
sip_headers	(none)	*	Refer to sip_headers_attributes .

Request Payload Example

```

<web_service version="1.0">
  <call>
    <call_action>
      <send_message mode="msrp">
        <msg_payload content_id="idl" content_type="text/plain"
content_disposition="attachment">
          <msg_payload_content content="data"/>
        </msg_payload>
      </send_message>
    </call_action>
  </call>
</web_service>

```

Response Payload Example

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    signaling="no" cpa="no" call_type="3pcc"
    media="message">
    <call_action>
      <send_message mode="msrp" transaction_id="e3510dc1-61c0-489c-b067-5f5c9a9b5b39"
        report="failure" mode="msrp">
        <msg_payload content_id="id1" content_type="text/plain"
content_disposition="attachment">
          <msg_payload_content content="data"/>
        </msg_payload>
      </send_message>
    </call_action>
  </call_response>
</web_service>
```

dial

Dial an outbound call.

Request Payload Attributes

Parameter	Default	Optional	Description
uri	(none)		Destination address. For SIP, this is the Request-Uri.
called_uri	uri	*	Logical destination address. For SIP, this is the To header.
caller_uri	(none)	*	Caller address. For SIP, this is the From header.
caller_display_name	(none)	*	Caller's display name. For SIP, this is prepended to the From header.
cpa	"no"	*	Use call progress detection. Values: • "yes" • "no"
timeout	"30s"	*	Maximum time to wait for the call to be answered by the called party.

Parameter	Default	Optional	Description
content_type	(none)	*	Mime type describing content.
content	(none)	*	Data
answer_ack_mode	"automatic"	*	Specifies how CONNECTED events are acknowledged. Values: "automatic" "manual"
prack_mode	"automatic"	*	Specifies how PRACK messages are sent. Values: "automatic" "manual"
prack_level	"supported"	*	Specifies to the remote if PRACK messages are supported or required. Values: "supported" "required"
sip_headers	(none)	*	Refer to sip_headers_attributes .

Request Payload Example

```

<web_service version="1.0">
  <call>
    <call_action>
      <dial uri="sip:b2bua@146.152.122.145:5070;lr">
        <sip_headers>
          <param name="Route"
value="<sip:b2bua@146.152.122.145:5070;lr>,<sip:b2bua@146.152.122.145:5070;lr>"/>
          <param name="Record-Route" value="<sip:b2bua@146.152.122.145:5070;lr>"/>
        </sip_headers>
      </dial>
    </call_action>
  </call>
</web_service>

```

Response Payload Example

```

<web_service version="1.0">
  <call_response identifier="ef5215fd-7a14-4c60-9e5c-f05fc1a57f26" appid="app"

```

```

href="/default/calls/ef5215fd-7a14-4c60-9e5c-f05fcla57f26"
connected="no" signaling="yes" cpa="no" call_type="outbound"
media="audiovideo"
dtmf_mode="rfc2833"
destination_uri="sip:b2bua@146.152.122.145:5070;lr"
async_dtmf="no" async_tone="no" cleardigits="no" encryption="none"
ice="no" info_ack_mode="automatic"
hangup_ack_mode="automatic" early_media="no" answer_ack_mode="manual"
prack_mode="manual"
prack_level="required">
<!-- sip_headers -->
raw_sip_headers="Route:<sip:b2bua@146.152.122.145:5070;lr>,<sip:b2bua@146.152.122.145:5070;lr>
Record-Route:<sip:b2bua@146.152.122.145:5070;lr>">
<!-- param name="Route" -->
value="<sip:b2bua@146.152.122.145:5070;lr>,<sip:b2bua@146.152.122.145:5070;lr>">
<!-- param name="Record-Route" -->
value="<sip:b2bua@146.152.122.145:5070;lr>">
</sip_headers>
<call_action>
<dial uri = "sip:b2bua@146.152.122.145:5070;lr"
answer_ack_mode="manual"
prack_mode="manual"
prack_level="required"
cpa="no">
</dial>
</call_action>
</call_response>
</web_service>

```

transfer

Transfers a call.

- Unattended. The call resource must in a connected state.
- Attended. The call resource must in a connected state and the call identified by call_id must be in a connected state.

Request Payload Attributes

Parameter	Default	Optional	Description
call_id	(none)	*	The call identifier of the consultation call (attended transfer only).
uri	(none)	*	The URI of the transfer target (unattended transfer only).

Request Payload Example

attended

```
<web_service version="1.0">
  <call>
    <call_action>
      <transfer call_id="7de4c7f4-067c-455d-afee-52f57e00314b" />
    </call_action>
  </call></web_service>
```

unattended transfer

```
<web_service version="1.0">
  <call>
    <call_action>
      <transfer uri="sip:8001@192.168.195.52" />
    </call_action>
  </call></web_service>
```

Response Payload Example

attended transfer

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
    media="audio"
    dtmf_mode="rfc2833"
    source_uri="sip:Username@10.20.129.113:5060"
    async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
    early_media="yes">
    <call_action>
      <transfer call_id="7de4c7f4-067c-455d-afee-52f57e00314b" />
    </call_action>
  </call_response>
</web_service>
```

unattended transfer

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
    media="audio"
    dtmf_mode="rfc2833"
    source_uri="sip:Username@10.20.129.113:5060"
    async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
    early_media="yes">
    <call_action>
      <transfer uri="sip:8001@192.168.195.52" />
    </call_action>
  </call_response>
</web_service>
```

redirect

Redirects an incoming call to another URI.

Request Payload Attributes

Parameter	Default	Optional	Description
uri	(none)		The URI of the redirection target.

Request Payload Example

```
<web_service version="1.0">
  <call>
    <call_action>
      <redirect uri="sip:8001@192.168.195.52"/>
    </call_action>
  </call>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
    media="audio"
    dtmf_mode="rfc2833"
    source_uri="sip:Username@10.20.129.113:5060"
    async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
    early_media="yes">
    <call_action>
      <redirect uri="sip:8001@192.168.195.52"/>
    </call_action>
  </call_response>
</web_service>
```

hangup

Ends a call.

- If the call is *joined* to another call, the other party will be automatically unjoined.
- If the call is in a conference, it will be removed from the conference automatically.

Request Payload Attributes

Parameter	Default	Optional	Description
reason	(none)	*	Why the call is being cleared e.g., "404 Not Found". This is only supported for calls that have not been answered.

Parameter	Default	Optional	Description
content_type	(none)	*	Mime type describing content.
content	(none)	*	Data content.

Request Payload Example

```
<web_service version="1.0">
  <call>
    <call_action>
      <hangup content_type="text/plain" content="data"/>
    </call_action>
  </call>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
    href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
    connected="yes" signaling="yes" cpa="no" call_type="inbound"
    media="audio"
    dtmf_mode="rfc2833"
    source_uri="sip:Username@10.20.129.113:5060"
    async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
    early_media="yes">
    <call_action>
      <hangup content_type="text/plain" content="data"/>
    </call_action>
  </call_response>
</web_service>
```

send_hangup_ack

Acknowledges the previous hangup event. The use of this API requires that hangup_ack_mode is set to *manual* by either create or answer or accept call.

Request Payload Attributes

Parameter	Default	Optional	Description
content_type	(none)	*	Mime type describing content.
content	(none)	*	Data content.

Request Payload Example

```
<web_service version="1.0">
  <call>
    <call_action>
```

```

        <send_hangup_ack content_type="text/plain" content="data"/>
    </call_action>
</call>
</web_service>

```

Response Payload Example

```

<web_service version="1.0">
    <call_response identifier="8fe4c7f4-067c-455d-afee-52f57e00314b" appid="app"
        href="/default/calls/8fe4c7f4-067c-455d-afee-52f57e00314b"
        connected="yes" signaling="yes" cpa="no" call_type="inbound"
        media="audio"
        dtmf_mode="rfc2833"
        source_uri="sip:Username@10.20.129.113:5060"
        async_dtmf="no" async_tone="no" cleardigits="no" info_ack_mode="automatic"
        early_media="yes">
        <call_action>
            <send_hangup_ack content_type="text/plain" content="data"/>
        </call_action>
    </call_response>
</web_service>

```

get_call_info

Queries the call information.

Request Payload Example

```

<web_service version="1.0">
    <call>
        <call_action>
            <get_call_info/>
        </call_action>
    </call>
</web_service>

```

Response Payload Attributes

Parameter	Description
local_sdp	Local session description protocol.
remote_sdp	Remote session description protocol.
media	The media types supported by the call. Values: "audio" "audiovideo" "video"

Parameter	Description
audio	Direction of audio media. Values: • "inactive" • "sendonly" • "recvonly" • "sendrecv"
video	Direction of video media. Values: • "inactive" • "sendonly" • "recvonly" • "sendrecv"
uri	The requested URI.
caller_uri	The callers URI ("To:" header for inbound calls, "From:" header for outbound calls).
called_uri	The called URI ("From:" header for inbound calls, "To:" header for outbound calls).
sip_headers	Refer to sip_headers_attributes .
application_id	ID of the controlling application.
local_seqno	Local SIP sequence number.
remote_seqno	Name of the controlling application.

Response Payload Example

```

<web_service version="1.0">
<call_response identifier="8be5d67d-07c7-4d18-a6ce-d44634a9f048" appid="app"
href="/default/calls/8be5d67d-07c7-4d18-a6ce-d44634a9f048"
  connected="yes" signaling="yes" cpa="no" call_type="inbound"
  media="audiovideo"
  dtmf_mode="rfc2833"
  destination_uri="sip:sip@10.20.129.61"
  source_uri="sip:Username@10.20.129.115:5060"
  async_dtmf="yes" async_tone="yes" cleardigits="no" encryption="none" ice="no"
info_ack_mode="automatic" audio="sendrecv" video="sendrecv">
<call_action>
<get_call_info local_sdp="v=0
o=xmserver 1377282511 1377282512 IN IP4 10.20.129.61
s=xmserver
c=IN IP4 10.20.129.61

```

```

t=0 0
m=audio 49152 RTP/AVP 0 101
a=rtpmap:0 pcmu/8000
a=sendrecv
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
m=video 57344 RTP/AVP 34
b=AS:128
a=rtpmap:34 h263/90000
a=fmtp:34 QCIF=2
a=sendrecv
"
    remote_sdp="v=0
o=Username 1377205528 1377282503 IN IP4 10.20.129.115
s=Kapanga [1377205528]
c=IN IP4 10.20.129.115
t=0 0
m=audio 5106 RTP/AVP 0 8 101
a=rtpmap:0 pcmu/8000
a=sendrecv
a=rtcp:5107
a=maxptime:20
a=ptime:20
a=rtpmap:8 pcma/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15,36
m=video 5108 RTP/AVP 34 105
a=rtpmap:34 h263/90000
a=fmtp:34 QCIF=2
a=sendrecv
a=rtcp:5109
a=rtpmap:105 h263-2000/90000
a=fmtp:105 profile=0; level=10
"
    media="audiovideo"
    audio="sendrecv"
    video="sendrecv"
    uri="sip:sip@10.20.129.61"
    caller_uri=""Your Full
Name"<sip:Username@10.20.129.115:5060>;tag=21ED4D91C0C161B6761C647CD39FBB14"
    called_uri=""<sip:sip@10.20.129.61>;tag=f717d348-3d81140a-13c4-50022-12d04-20c5bb20-
12d04"
    application_id="app" >
    <sip_headers raw_sip_headers="Call-
ID:A58594002950C3322BC918833221434A1267@10.20.129.115
CSeq: 1 INVITE
To: <sip:sip@10.20.129.61>

```

```

From: "Your Full Name"<sip:Username@10.20.129.115:5060>;tag=21ED4D91C0C161B6761C647CD39FBB14
Contact: <sip:Username@10.20.129.115:5060;transport=udp>
Content-Type:application/sdp
Content-Length:454
User-Agent: Kapanga Softphone Desktop Windows
1.00/2182d+1329238479_00FFB0ABE80A_A088B4778D9C_2C4138058FBB_CC52AFCC7D8F_080027006444 (not
registered)
Session-Expires: 1800;refresher=uac
">
    <param name="ack" value="GET_CALL_INFO"/>
    <param name="headers.CSeq" value="1 INVITE"/>
    <param name="headers.Call-ID"
value="A58594002950C3322BC918833221434A1267@10.20.129.115"/>
    <param name="headers.Contact" value="<sip:Username@10.20.129.115:5060;transport=udp>"/>
    <param name="headers.Content-Length" value="454"/>
    <param name="headers.Content-Type" value="application/sdp"/>
    <param name="headers.From" value="Your Full
Name"<sip:Username@10.20.129.115:5060>;tag=21ED4D91C0C161B6761C647CD39FBB14"/>
    <param name="headers.Session-Expires" value="1800;refresher=uac"/>
    <param name="headers.To" value="<sip:sip@10.20.129.61>"/>
    <param name="headers.User-Agent" value="Kapanga Softphone Desktop Windows
1.00/2182d+1329238479_00FFB0ABE80A_A088B4778D9C_2C4138058FBB_CC52AFCC7D8F_080027006444 (not
registered)"/>
    <param name="status" value="0 No Error"/>
    <param name="transaction_id" value="9"/>
    <param name="type" value="ACK"/>
  </sip_headers>
</get_call_info>
</call_action>
</call_response>
</web_service>

```

add_ice_candidate

Add a *trickle-ICE* candidate to the remote SDP (3PCC).

Request Payload Example

```

<web_service version="1.0">
  <call>
    <call_action>
      <add_ice_candidate mline="[media section index]" mid="[media section Id]"
candidate="[candidate attribute]" />
    </call_action>
  </call>
</web_service>

```

Response Payload Attributes

Parameter	Default	Optional	Description
mline			The m-line index used to identify candidate's media section.
mid			The mid attribute used to identify candidate's media section.
candidate			The candidate attribute.

Response Payload Example

```
<web_service version="1.0">
<call_response identifier="8be5d67d-07c7-4d18-a6ce-d44634a9f048" appid="app"
                href="http://10.20.129.61:81/default/calls/8be5d67d-07c7-4d18-a6ce-d44634a9f048">
<call_action>
<add_ice_candidate mline="[media session index]" mid="[media session Id]" candidate="[candidate
attribute]" />
</call_action>
</call_response>
</web_service>
```

get_last_action

To get the last performed action.

Request Payload Example

```
<web_service version="1.0">
<call>
  <call_action>
    <get_last_action/>
  </call_action>
</call>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
<call_response identifier="76618368-ac8a-4288-8bad-8a3ce3d4b1b5" appid="app"
href="/default/calls/76618368-ac8a-4288-8bad-8a3ce3d4b1b5"
  connected="yes" signaling="yes" cpa="no" call_type="inbound"
  media="audiovideo"
  dtmf_mode="rfc2833"
  destination_uri="sip:sip@10.20.129.70"
  source_uri="sip:Username@10.20.129.79:5060"
  async_dtmf="yes" async_tone="yes" cleardigits="no" encryption="none" ice="no"
  info_ack_mode="automatic" hangup_ack_mode="automatic" early_media="no" audio="sendrecv"
  video="sendrecv">
<call_action>
```

```

<get_last_action>
<play transaction_id="351d7173-f774-4c20-a279-8640359fc9f0"
    max_time="10s"
    fetch_timeout="300s"
    offset="0s"
    delay="1s"
    repeat="0"
    skip_interval="1s"
    terminate_digits="#">
<play_source location="file://verification/play_menu"/>
<dvr_setting forward_key="1"
    backward_key="2"
    pause_key="3"
    resume_key="4"
    restart_key="5"/>
</play></get_last_action>
</call_action>
</call_response>
</web_service>

```

get_last_event

To get the last event.

Request Payload Example

```

<web_service version="1.0">
  <call>
    <call_action>
      <get_last_event/>
    </call_action>
  </call>
</web_service>

```

Response Payload Example

```

<web_service version="1.0">
<event type="end_play" resource_id="76618368-ac8a-4288-8bad-8a3ce3d4b1b5" resource_type="call">
<event_data name="duration" value="6180" />
<event_data name="reason" value="end" />
<event_data name="status" value="0 No Error" />
<event_data name="transaction_id" value="351d7173-f774-4c20-a279-8640359fc9f0" />
</event>
</web_service>

```

HTTP DELETE

Deletes a call resource.

```
DELETE /calls/[call_id]?appid=[app_id]
```

Conference Resource

The Conference Resource encapsulates a single instance of a conference resource on PowerMedia XMS. It contains all call resources currently included in the active conference.

Conference-related properties and actions associated with the conference are defined in this section. These include [play](#), [update_play](#), [record](#), and [stop](#).

Note: When using [playrecord](#) and [record](#), [playrecord](#) executes the play list first. Once all of the specified plays are complete, the [record](#) functionality is executed.

For conference sub-resources, see the [Conference Sub-Resource](#) section.

The following tables show the HTTP methods that can be used with a conference.

Note: The payloads shown are examples only as there are many possible variations.

conferences

Resource URI

```
/conferences?appid=[app_id]
```

HTTP GET

Retrieves all available conference resources.

```
GET /conferences?appid=[app_id]
```

Response Payload Example

```
<web_service version="1.0">
  <conferences_response size="1">
    <conference_response appid="app" auto_gain_control="yes" beep="yes" caption="yes"
      caption_duration="30s" clamp_dtmf="yes"
      echo_cancellation="yes"
      href="/default/conferences/830b9fda-d89e-495d-b7a1-6a63402bcdcf"
      identifier="830b9fda-d89e-495d-b7a1-6a63402bcdcf" layout="2"
      layout_size="automatic"
      max_parties="2" reserve="2" type="audiovideo">
    </conference_response>
  </conferences_response>
</web_service>
```

HTTP POST

Creates a conference resource.

POST /conferences?appid=[app_id]

Request Payload Attributes

Parameter	Default	Optional	Description
type	"audio"	*	Sets the media supported by conference. Values: "audio" "audiovideo"
max_parties	"9"	*	Maximum number of parties in a conference. Range: 2 to N.
reserve	"0"	*	Number of party resources to reserve for this conference. Any requests beyond this value are honored on a best-effort basis.
layout	"0"	*	The number of regions displayed in the conference video output using a standard layout. Valid values are "0", "1", "2", "4", "6" and "9". Setting to "0" means that the number of regions displayed is determined by the number of visible parties. Intermediate values are rounded up to the next supported value e.g., 3 => 4, 7 => 9. Values greater than 9 will result in a 9 region layout.
layout_regions		*	Specifies a custom video layout. When defined, this takes precedence over the layout parameter. The layout is defined by a semicolon delimited list of region definitions. Each region is defined using this format: <ID> EQUALS <LEFT> COMMA <TOP> COMMA <RELATIVE_SIZE> COMMA <PRIORITY> [SEMICOLON if adding another region to the layout]. - ID uniquely identifies the region. The value "0" is reserved and may not be used as a region identifier. - The LEFT parameter defines the position of the left region as an offset from the left of the root window. It is expressed as a percentage. - The TOP parameter defines the position of the top region as an offset from the top of the root window. It is expressed as a percentage. - RELATIVE_SIZE defines the size of a region relative to the size of the root window. It is expressed as either a fraction or decimal percentage.

Parameter	Default	Optional	Description
			The PRIORITY parameter is optional and is an integer values from 0 to 10, where 0 means disabled and 1 is the highest priority (default). Example of a 1-party conference: layout_regions="1=5,6,50,2" Example of a 4-party conference (with illustration): layout_regions="1=0,0,50,1;2=50,0,50,1;3=0,50,50,1;4=50,50,50,1" 
layout_size	"automatic"	*	Determines the size of the root window. Values: "automatic" "qcif" "cif" "vga" "720p" The value "automatic" causes the window size to track the size of the largest party.
caption	"yes"	*	Determines if the caller's ID is overlaid on their image. Values: "yes" "no"
caption_duration	"20s"	*	The length of time that the caption is shown. Use "infinite" without the quotes to display the caption for the entire call.
beep	"yes"	*	Determines if a tone is played when a party joins/leaves a conference. Values: "yes" "no"

Parameter	Default	Optional	Description
clamp_dtmf	"yes"	*	Determines if DTMF digits are suppressed. Values: "yes" "no"
auto_gain_control	"yes"	*	Determines if automatic gain control should be used. Values: "yes" "no"
echo_cancellation	"yes"	*	Determines if echo cancellation should be used. Values: "yes" "no"
active_talker_region	(none)	*	Specifies the ID of the region used to display the active talker's video.
active_talker_interval	"0"	*	Specifies the minimum duration of time that must pass before changes to active talkers will be notified. The minimum value is 500ms. A value of "0" disables active talker notifications.
max_active_talkers	"10"	*	Sets the maximum number of active talkers to be included in the audio mix. Range: 2 to 10 (inclusive).
region_overlays	(none)	*	Specifies a set of text and/or image overlays for a conference layout. The overlays are defined by a semicolon delimited list of region definitions where each specifies a set of parameters that completely describes the overlay attributes for the conference layout regions or root window. Each region overlay is defined using this format: <REGION ID> EQUALS <ID> COMMA <PARAMETER> EQUALS <VALUE> COMMA <PARAMETER> EQUALS <VALUE>... - REGION ID uniquely identifies the conference region where the overlays should be applied. Note, "0" is reserved and used ONLY when applying a text or image overlay to the root window of a conference. - PARAMETER identifies the overlay parameter being set. - VALUE identifies the value of the overlay parameter given. Refer to Text and Image Overlays for details.

Request Payload Example

```
<web_service version="1.0">
  <conference type="audiovideo" max_parties="2" reserve="2" layout="2"
    caption="yes" caption_duration="30s" beep="yes" clamp_dtmf="yes"
    auto_gain_control="yes" echo_cancellation="yes"/>
</web_service>
```

Response Payload Example

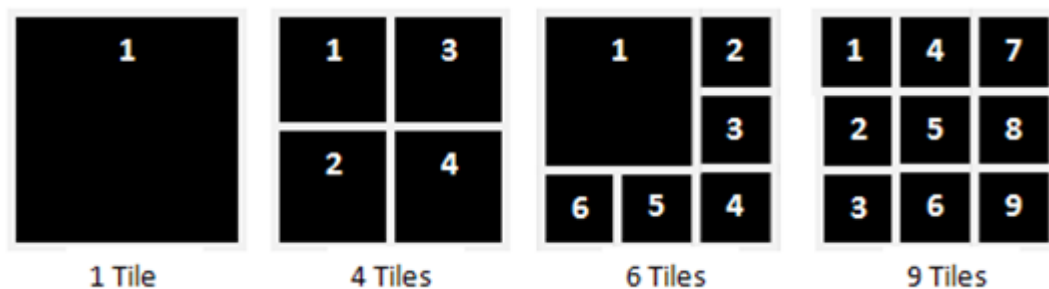
```
<web_service version="1.0">
  <conference_response appid="app" auto_gain_control="yes" beep="yes" caption="yes"
    caption_duration="30s"
    clamp_dtmf="yes" echo_cancellation="yes"
    href="/default/conferences/830b9fda-d89e-495d-b7a1-
6a63402bcdcf"
    identifier="830b9fda-d89e-495d-b7a1-6a63402bcdcf" layout="2"
    layout_size="automatic"
    max_parties="2" reserve="2" type="audiovideo">
  </conference_response>
</web_service>
```

Conference Concepts

This section contains a higher-level look at various aspects of PowerMedia XMS conference behavior.

Screen Layout

The standard video conference tiling layout for 1, 4, 6 and 9 tile conferences and the order in which conferees appear in the tiles is shown below:



Conference Sub-Resource

For details on conference resources, see the [Conference Resource](#) section.

conference

Resource URI

```
/conferences/[conference_id]?appid=[app_id]
```

HTTP GET

Retrieves an available conference resource.

```
GET /conferences/[conference_id]?appid=[app_id]
```

Response Payload Example

```
<web_service version="1.0">
  <conference_response appid="app" auto_gain_control="yes" beep="yes" caption="yes"
caption_duration="30s"
                                clamp_dtmf="yes" echo_cancellation="yes"
6a63402bcdcf"                                href="/default/conferences/830b9fda-d89e-495d-b7a1-
                                identifier="830b9fda-d89e-495d-b7a1-6a63402bcdcf" layout="2"
layout_size="automatic"                                max_parties="2" reserve="2" type="audiovideo">
                                <conf_participant audio="sendrecv" auto_gain_control="yes"
                                call_id="c87fcca1-b2d0-49c5-8b89-
baaae71cf695"                                caption="Username" clamp_dtmf="yes"
                                echo_cancellation="yes"                                mode="normal" mute="no" privilege="no"
                                region="0"                                tx_mute="no" video="sendrecv"/>
                                </conference_response>
</web_service>
```

HTTP PUT

Updates a conference resource.

PUT /conferences/[conference_id]?appid=[app_id]

Modify Conference Attributes

Parameter	Default	Optional	Description
layout	(none)	*	The number of tiles displayed in the conference output. Valid values are "0", "1", "2", "4", "6" and "9". Setting to "0" means that the number of tiles displayed is determined by the number of active presenters.
layout_regions	(none)	*	Specifies a custom video layout. When defined, this takes precedence over the layout parameter. The layout is defined by a semicolon delimited list of region definitions. Each region is defined using this format: <ID> EQUALS <LEFT> COMMA <TOP> COMMA <RELATIVE_SIZE> COMMA <PRIORITY> [SEMICOLON if adding another region to the layout]. - ID uniquely identifies the region. The value "0" is reserved and may not be used as a region identifier. - The LEFT parameter defines the position of the left region as an offset from the left of the root window. It is expressed as a percentage. - The TOP parameter defines the position of the top region as an offset from the top of the root

Parameter	Default	Optional	Description
			window. It is expressed as a percentage. - RELATIVE_SIZE defines the size of a region relative to the size of the root window. It is expressed as either a fraction or decimal percentage. - The PRIORITY parameter is optional and is an integer values from 0 to 10, where 0 means disabled and 1 is the highest priority (default). Example of a 1-party conference: layout_regions="1=5,6,50,2" Example of a 4-party conference (with illustration): layout_regions="1=0,0,50,1;2=50,0,50,1;3=0,50,50,1;4=50,50,50,1" 
layout_size	(none)	*	Determines the size of the root window. Values: "automatic" "qcif" "cif" "vga" "720p" The value "automatic" causes the window size to track the size of the largest party.
active_talker_region	(none)	*	Specifies the ID of the region used to display the active talker's video. Use "0" to disable.
active_talker_interval	(none)	*	Specifies the minimum duration of time that must pass before changes to active talkers will be notified. The minimum value is 500ms. A value of "0" disables active talker notifications.
max_active_talkers	(none)	*	Sets the maximum number of active talkers to be included in the audio mix. Values range from 2 to 10 inclusive. Note, it is an error to set the value lower than the current number of privileged parties.

Parameter	Default	Optional	Description
region_overlays	(none)	*	Specifies a set of text and/or image overlays for a conference layout. The overlays are defined by a semicolon delimited list of region definitions where each specifies a set of parameters that completely describes the overlay attributes for the conference layout regions or root window. Each region overlay is defined using this format: <REGION ID> EQUALS <ID> COMMA <PARAMETER> EQUALS <VALUE> COMMA <PARAMETER> EQUALS <VALUE>... - REGION ID uniquely identifies the conference region where the overlays should be applied. Note, "0" is reserved and used ONLY when applying a text or image overlay to the root window of a conference. - PARAMETER identifies the overlay parameter being set. - VALUE identifies the value of the overlay parameter given. Refer to Text and Image Overlays for details.

Request Payload Example

```
<web_service version="1.0">
  <conference layout_size="vga"/>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <conference_response appid="app" auto_gain_control="yes" beep="yes" caption="yes"
caption_duration="30s"
        clamp_dtmf="yes" echo_cancellation="yes"
        href="/default/conferences/830b9fda-d89e-495d-b7a1-
6a63402bcdcf"
        identifier="830b9fda-d89e-495d-b7a1-6a63402bcdcf" layout="2"
        layout_size="vga"
        max_parties="2" reserve="2" type="audiovideo">
    <conf_participant audio="sendrecv" auto_gain_control="yes"
        call_id="c87fcca1-b2d0-49c5-8b89-
baaae71cf695"
        caption="Username" clamp_dtmf="yes"
        mode="normal" mute="no" privilege="no"
        region="0"
        tx_mute="no" video="sendrecv"/>
  </conference_response>
</web_service>
```

Perform Conference Action

- [play](#)
- [update_play](#)
- [record](#)
- [playcollect](#)
- [playrecord](#)
- [send_dtmf](#)
- [send_event](#)
- [stop](#)
- [get_last_action](#)
- [get_last_event](#)

play

Request Payload Attributes

Parameter	Default	Optional	Description
play_source	(none)		Refer to play_source_attributes.
offset	"0"	*	Specifies the time offset from where the play should start. Note, the "offset" is applied to the initial play only.
repeat	"0"	*	Number of times to repeat the play. Use "infinite" to repeat indefinitely. "file://" URIs only.
delay	"1s"	*	Time delay between repeated plays.
max_time	"infinite"	*	Limit the playback time to this value.
region	"0"	*	The ID of the region that will display the video media. The value "0" causes the video to be shown full-screen with the current layout being restored automatically when the play back completes.

Parameter	Default	Optional	Description
no_cache		*	Cache-control for HTTP URIs. Values: "yes" does not use caching. "no" uses caching. The default is set by the configuration.
max_age		*	Cache-control for HTTP URIs, the maximum age, in seconds, of a cached file. The default is set by the configuration.
max_stale		*	Cache-control for HTTP URIs, the number of seconds that a cached file may exceed its expiration time by and still be considered as fresh. The default is set by the configuration.
fetch_timeout	"300s"	*	HTTP URIs, the maximum time in seconds to retrieve the file. This is the overall period of the transaction.

Request Payload Example

```

<web_service version="1.0">
  <conference>
    <conf_action>
      <play max_time="20s" >
        <play_source audio_uri="file://verification/play_menu.wav" audio_type="audio/x-wav"
      />
    </play>
  </conf_action>
</conference>
</web_service>

```

Response Payload Example

```
<web_service version="1.0">
  <conference_response identifier="830b9fda-d89e-495d-b7a1-6a63402bcdcf" appid="app"
    href="/default/conferences/830b9fda-d89e-495d-b7a1-6a63402bcdcf"
    type="audiovideo" max_parties="2" reserve="2"
    layout="2" caption="yes" caption_duration="30s" beep="yes"
    clamp_dtmf="yes" auto_gain_control="yes" echo_cancellation="yes"
    layout_size="automatic">
    <conf_participant call_id="c87fccal-b2d0-49c5-8b89-baaaae71cf695"
      video="sendrecv" caption="Username" region="0"
      auto_gain_control="yes" echo_cancellation="yes"
      privilege="no" mode="normal"/>
    <conf_action>
      <play transaction_id="acb08f84-afb4-430b-92f2-22083b7638aa"
        max_time="20s"
        fetch_timeout="300s"
        offset="0s"
        delay="1s"
        repeat="0"
        region="0">
        <play_source audio_uri="file://verification/play_menu.wav"
          audio_type="audio/x-wav"/>
      </play>
    </conf_action>
  </conference_response>
</web_service>
```

update_play

Request Payload Attributes

Parameter	Default	Optional	Description
transaction_id	(none)		Media identifier, returned by play.
dvr_action	(none)		Values: "backward" - skip backwards. "forward" - skip forward. "pause" - pause playback. "restart" - jump back to the start. "resume" -

Parameter	Default	Optional	Description
			resume paused playback.
region	(none)	*	Conference only. The ID of the region that will display the video media.

Request Payload Example

```
<web_service version="1.0">
  <conference>
    <conf_action>
      <update_play transaction_id="acb08f84-afb4-430b-92f2-22083b7638aa" dvr_action="pause"/>
    </conf_action>
  </conference>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <conference_response identifier="830b9fda-d89e-495d-b7a1-6a63402bcdcf" appid="app"
    href="/default/conferences/830b9fda-d89e-495d-b7a1-6a63402bcdcf"
    type="audiovideo" max_parties="2" reserve="2"
    layout="2" caption="yes" caption_duration="30s" beep="yes"
    clamp_dtmf="yes" auto_gain_control="yes" echo_cancellation="yes"
    layout_size="automatic">
    <conf_participant call_id="c87fccal-b2d0-49c5-8b89-baaaae71cf695"
      audio="sendrecv"
      video="sendrecv" caption="Username" region="0"
      auto_gain_control="yes" echo_cancellation="yes"
      privilege="no" mode="normal"/>
    <conf_action>
      <update_play transaction_id="acb08f84-afb4-430b-92f2-
        22083b7638aa"
        dvr_action="pause"/>
    </conf_action>
  </conference_response>
</web_service>
```

record

Request Payload Attributes

Parameter	Default	Optional	Description
recording_audio_mime_params	(none)		Refer to recording_audio_mime_params .
recording_video_mime_params	(none)		Refer to recording_video_mime_params .
terminate_digits	"#"	*	The digit or digits [0-9,*,#] used to terminate the play_record.
recording_uri	(none)		A filename "file://..." that must refer to an existing directory or "http://" ("https://"). DEPRECATED.
recording_audio_uri	(none)		The URL of the audio media to be recorded e.g., "file://...", "http(s)://..."
recording_audio_type	(none)		The mime type of the audio media. Values: • "audio/x-wav" • "audio/basic" • "audio/x-alaw-basic" • "audio/G723" • "audio/G726" • "audio/G729" • "audio/mp4" • "audio/3gpp" • "audio/AMR" • "audio/AMR-WB" • "audio/mkv" • "audio/x-aud" • "audio/L8" • "audio/L16"
recording_video_uri	(none)		The URL of the video media to be recorded e.g., "file://...", "http(s)://..."

Parameter	Default	Optional	Description
recording_video_type	(none)		The mime type of the video media. Values: "video/x-vid" "video/3gpp" "image/jpeg" "video/mp4" "video/mkv"
max_time	"infinite"	*	The maximum length of time to record. Use "infinite" for no limit.

Request Payload Example

```
<web_service version="1.0">
  <conference>
    <conf_action>
      <record recording_audio_uri="file://recorded_file.wav"
recording_audio_type="audio/x-wav"
max_time="10s" terminate_digits="#" />
    </conf_action>
  </conference>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <conference_response identifier="830b9fda-d89e-495d-b7a1-6a63402bcdcf" appid="app"
href="/default/conferences/830b9fda-d89e-495d-b7a1-6a63402bcdcf"
type="audiovideo" max_parties="2" reserve="2"
layout="2" caption="yes" caption_duration="30s" beep="yes"
clamp_dtmf="yes" auto_gain_control="yes" echo_cancellation="yes"
layout_size="automatic">
    <conf_participant call_id="c87fccal-b2d0-49c5-8b89-baaaae71cf695"
audio="sendrecv"
video="sendrecv" caption="Username" region="0"
auto_gain_control="yes" echo_cancellation="yes"
privilege="no" mode="normal"/>
  </conference_response>
  <conf_action>
    <record transaction_id="a560cbc1-5674-44e8-bb21-2b34130169c4"
terminate_digits="#"
max_time="10s"
recording_audio_uri="file://recorded_file.wav"
recording_audio_type="audio/x-wav"/>
  </conf_action>
```

```

    </conference_response>
</web_service>

```

playcollect

Request Payload Attributes

Parameter	Default	Optional	Description
play_source	(none)		Refer to play_source_attributes .
offset	"0"	*	Specifies the time offset from where the play should start. Note, the 'offset' is applied to the initial play only.
repeat	"0"	*	Number of times to repeat the play. Use "infinite" to repeat indefinitely. "file://" URIs only.
delay	"1s"	*	Time delay between repeated plays.
term_digits	"#"	*	The digit or digits [0-9,*,#] used to terminate the play_collect.
max_digits	Unlimited	*	The maximum number of digits to collect.
timeout	"infinite"	*	The maximum length of time to wait for the first digit or a tone. This time begins when the prompt phase ends.
interdigit_timeout	The value specified by the <i>timeout</i> parameter	*	The maximum length of time to wait for subsequent digits. This timeout is reset after each digit is received.
tone_detection	"no"	*	Enable tone detection. Values: "yes" "no"

Parameter	Default	Optional	Description
barge	"yes"	*	Specifies whether dtmf digit input will barge the prompt and force transition to the collect phase. Note that if the "barge" attribute is set to "no", the "cleardigits" attribute implicitly has the value "yes". Values: • "yes" • "no"
cleardigits	"no"	*	Specifies whether previous input should be considered or ignored for the purpose of barge-in and digit matching. When it is set to "yes", any previously buffered digits are discarded. If it is set to "no", previously buffered digits will be considered. If "cleardigits" is set to "no" and "barge" is set to "yes", previously buffered digits will result in the collection phase starting immediately, and the prompt will not be played. Values: • "yes" • "no"

Parameter	Default	Optional	Description
no_cache		*	Cache-control for HTTP URIs. Values: "yes" do not use caching "no" use caching The default is set by the configuration.
max_age		*	Cache-control for HTTP URIs, the maximum age, in seconds, of a cached file. The default is set by the configuration.
max_stale		*	Cache-control for HTTP URIs, the number of seconds that a cached file may exceed its expiration time by and still be considered as fresh. The default is set by the configuration.
fetch_timeout	"300s"	*	HTTP URIs, the maximum time in seconds to retrieve the file. This is the overall period of the transaction.

Request Payload Example

```

<web_service version="1.0">
  <conference>
    <conf_action>
      <playcollect max_digits="4" timeout="10s" offset="0s" repeat="0" delay="1s"
terminate_digits="#"
          tone_detection="yes" barge="yes" cleardigits="yes">
        <play_source audio_uri="file://verification/play_menu.wav"
audio_type="audio/x-wav"/>
      </playcollect>
    </conf_action>
  </conference>
</web_service>

```

Response Payload Example

```
<web_service version="1.0">
  <conference_response identifier="830b9fda-d89e-495d-b7a1-6a63402bcdcf" appid="app"
    href="/default/conferences/830b9fda-d89e-495d-b7a1-6a63402bcdcf"
    type="audiovideo" max_parties="2" reserve="2"
    layout="2" caption="yes" caption_duration="30s" beep="yes"
    clamp_dtmf="yes" auto_gain_control="yes" echo_cancellation="yes"
    layout_size="auto">
    <conf_participant call_id="c87fccal-b2d0-49c5-8b89-baaae71cf695"
      audio="sendrecv"
      clamp_dtmf="yes"
      mute="no" tx_mute="no"
      video="sendrecv" caption="Username" region="0"
      auto_gain_control="yes" echo_cancellation="yes"
      privilege="no" mode="normal"/>
    <conf_action>
      <playcollect transaction_id="25608a36-2fd1-43ca-b741-
3420dbc389cb"
        fetch_timeout="300s"
        terminate_digits="#"
        timeout="10s"
        interdigit_timeout=""
        tone_detection="yes"
        max_digits="4"
        barge="yes"
        offset="0s"
        delay="1s"
        repeat="0"
        cleardigits="yes">
        <play_source
          audio_uri="file://verification/play_menu.wav"
          audio_type="audio/x-wav"/>
        </playcollect>
      </conf_action>
    </conference_response>
  </web_service>
```

playrecord

Request Payload Attributes

Parameter	Default	Optional	Description
play_source	(none)		Refer to play_source_attributes .
recording_audio_mime_params	(none)		Refer to recording_audio_mime_params .

Parameter	Default	Optional	Description
recording_video_mime_params	(none)		Refer to recording_video_mime_params .
offset	"0"	*	Specifies the time offset from where the play should start. Note that the offset is applied to the initial play only.
repeat	"0"	*	Number of times to repeat the play. "file://" URIs only.
delay	"1s"	*	Time delay between repeated plays.
terminate_digits	"#"	*	The digit or digits [0-9,*,#] used to terminate the play_record.
recording_uri	(none)		Filename "file://..." This must refer to an existing directory. DEPRECATED.
recording_audio_uri	(none)		The URL of the audio media to be recorded e.g. "file://...", "http(s)://..."
recording_audio_type	(none)		The mime type of the audio media. Values: • "audio/x-wav" • "audio/basic" • "audio/x-alaw-basic" • "audio/G723" • "audio/G726" • "audio/G729" • "audio/mp4" • "audio/3gpp" • "audio/AMR" • "audio/AMR-WB" • "audio/mkv" • "audio/x-aud" • "audio/L8" • "audio/L16"

Parameter	Default	Optional	Description
recording_video_uri	(none)		The URL of the video media to be recorded e.g. "file://...", "http(s)://...".
recording_video_type	(none)		The mime-type of the video media. Values: • "video/x-vid" • "video/3gpp" • "image/jpeg" • "video/mp4" • "video/mkv"
beep	"yes"	*	Play a tone before starting to record. Values: • "yes" • "no"
max_time	"infinite"	*	The maximum length of time to record. Use "infinite" for no limit.
max_silence	"infinite"	*	The maximum length of silence to record after audio has been detected. Use "infinite" for no limit. This feature is supported for calls only.
noinput_timeout	"infinite"	*	The maximum time to wait for audio to be detected. Use "infinite" for no limit. This feature is supported for calls only.

Parameter	Default	Optional	Description
barge	"yes"	*	Specifies whether dtmf digit input will barge the prompt and force transition to the record phase. Note that if the "barge" attribute is set to "no", the "cleardigits" attribute implicitly has the value "yes". Values: • "yes" • "no"
cleardigits	"no"	*	Specifies whether previous input should be considered or ignored for the purpose of barge-in. When it is set to "yes", any previously buffered digits are discarded. If it is set to "no", previously buffered digits will be considered. If "cleardigits" is set to "no" and "barge" is set to "yes", previously buffered digits will result in the recording phase starting immediately, and the prompt will not be played. Values: • "yes" • "no"
no_cache		*	Cache-control for HTTP URIs. Values: • "yes" do not use caching • "no" use caching The default is set by the configuration.
max_age		*	Cache-control for HTTP URIs, the maximum age, in seconds, of a cached file. The default is set by the configuration.

Parameter	Default	Optional	Description
max_stale		*	Cache-control for HTTP URIs, the number of seconds that a cached file may exceed its expiration time by and still be considered as fresh. The default is set by the configuration.
max_silence	"infinite"	*	The maximum length of silence to record after audio has been detected. Use "infinite" for no limit. This feature is supported for calls only.
fetch_timeout	"300s"	*	HTTP URIs. The maximum time in seconds to retrieve or upload a file. This is the overall period of the transaction.

Request Payload Example

```
<web_service version="1.0">
  <conference>
    <conference_action>
      <playrecord recording_audio_uri="file://recorded_file.wav" recording_audio_type="audio/x-wav"
        max_time="10s" offset="0s" repeat="0" delay="1s" terminate_digits="#"
        beep="yes" barge="yes" cleardigits="yes" >
      <play_source audio_uri="file://verification/play_menu.wav" audio_type="audio/x-wav"/>
    </playrecord>
  </conference_action>
</conference>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <conference_response identifier="830b9fda-d89e-495d-b7a1-6a63402bcdcf" appid="app"
    href="/default/conferences/830b9fda-d89e-495d-b7a1-6a63402bcdcf"
    type="audiovideo" max_parties="2" reserve="2"
    layout="2" caption="yes" caption_duration="30s" beep="yes"
    clamp_dtmf="yes" auto_gain_control="yes" echo_cancellation="yes"
    layout_size="auto">
    <conf_participant call_id="c87fcc1-b2d0-49c5-8b89-baaae71cf695"
      audio="sendrecv"
      video="sendrecv" caption="Username" region="0"
      clamp_dtmf="yes"
      mute="no" tx_mute="no"
      auto_gain_control="yes" echo_cancellation="yes"
```

```

        privilege="no" mode="normal"/>
    <conference_action>
        <playrecord transaction_id="a88aac4a-dd73-4a3f-8268-792b90a5efb2"
            fetch_timeout="300s"
            terminate_digits="#"
            max_time="10s"
            beep="yes"
            barge="yes"
            cleardigits="yes"
            max_silence="infinite"
            noinput_timeout="infinite"
            recording_audio_uri="file://recorded_file.wav"
            recording_audio_type="audio/x-wav"
            offset="0s"
            delay="1s"
            repeat="0"
            terminate_digits="">
            <play_source audio_uri="file://verification/play_menu.wav"
                audio_type="audio/x-wav"/>
        </playrecord>
    </conf_action>
</conference_response>
</web_service>

```

send_dtmf

Request Payload Attributes

Parameter	Default	Optional	Description
digits			Digit(s) to send [1234567890*#ABCD].
duration	100ms	*	Length of time of each digit.
interval	100ms	*	Time between successive digits.
level	-10dB	*	Amplitude of DTMF digit tones. Range: 0 to -40dB.

Request Payload Example

```

<web_service version="1.0">
    <conference>
        <conf_action>
            <send_dtmf digits="2345" />
        </conf_action>
    </conference>
</web_service>

```

Response Payload Example

```
<web_service version="1.0">
  <conference_response identifier="830b9fda-d89e-495d-b7a1-6a63402bcdcf" appid="app"
    href="/default/conferences/830b9fda-d89e-495d-b7a1-6a63402bcdcf"
    type="audiovideo" max_parties="2" reserve="2"
    layout="2" caption="yes" caption_duration="30s" beep="yes"
    clamp_dtmf="yes" auto_gain_control="yes" echo_cancellation="yes"
    layout_size="auto">
    <conf_participant call_id="c87fccal-b2d0-49c5-8b89-baaae71cf695"
      audio="sendrecv"
      clamp_dtmf="yes"
      mute="no" tx_mute="no"
      video="sendrecv" caption="Username" region="0"
      auto_gain_control="yes" echo_cancellation="yes"
      privilege="no" mode="normal"/>
    <conf_action>
      <send_dtmf transaction_id="c4023bb2-4062-415b-ae79-2e708458cfdd"
        digits="2345" duration="100ms" interval="100ms" level="-10dB"/>
    </conf_action>
  </conference_response>
</web_service>
```

send_event

Send one or more telephony events in RTP packets.

Request Payload Attributes

Parameter	Default	Optional	Description
digits			Event(s) to send [0123456789]. For values higher than 9, use "\$xxx" where "xxx" is the three digit decimal code. For example, to send digits 0, 1, and 4 and event 16, the digits attribute would be set to digits="014\$016".
duration	100ms	*	Length of time of each digit.
interval	100ms	*	Time between successive digits.
level	-10dB	*	Amplitude of the dtmf digit tones. Range: 0 to -40dB.

Request Payload Example

```
<web_service version="1.0">
  <conference>
    <conf_action>
      <send_event digits="2345$016" />
    </conf_action>
  </conference>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <conference_response identifier="830b9fda-d89e-495d-b7a1-6a63402bcdcf" appid="app"
    href="/default/conferences/830b9fda-d89e-495d-b7a1-6a63402bcdcf"
    type="audiovideo" max_parties="2" reserve="2"
    layout="2" caption="yes" caption_duration="30s" beep="yes"
    clamp_dtmf="yes" auto_gain_control="yes" echo_cancellation="yes"
    layout_size="auto">
    <conf_participant call_id="c87fccal-b2d0-49c5-8b89-baaae71cf695"
      audio="sendrecv"
      video="sendrecv" caption="Username" region="0"
      clamp_dtmf="yes"
      auto_gain_control="yes" echo_cancellation="yes"
      mute="no" tx_mute="no"
      privilege="no" mode="normal"/>
    <conf_action>
      <send_event transaction_id="c4023bb2-4062-415b-ae79-2e708458cfdd"
        digits="2345$016" duration="100ms" interval="100ms" level="-10dB"/>
    </conf_action>
  </conference_response>
</web_service>
```

stop

Request Payload Attributes

Parameter	Default	Optional	Description
transaction_id	(none)		Identifier returned by play or record conference action.

Request Payload Example

```
<web_service version="1.0">
  <conference>
    <conf_action>
      <stop transaction_id="c4023bb2-4062-415b-ae79-2e708458cfdd"/>
    </conf_action>
  </conference>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <conference_response identifier="830b9fda-d89e-495d-b7a1-6a63402bcdcf" appid="app"
    href="/default/conferences/830b9fda-d89e-495d-b7a1-6a63402bcdcf"
    type="audiovideo" max_parties="2" reserve="2"
    layout="2" caption="yes" caption_duration="30s" beep="yes"
    clamp_dtmf="yes" auto_gain_control="yes" echo_cancellation="yes"
    layout_size="automatic">
    <conf_participant call_id="c87fccal-b2d0-49c5-8b89-baaaae71cf695"
      audio="sendrecv"
      video="sendrecv" caption="Username" region="0"
      auto_gain_control="yes" echo_cancellation="yes"
      mute="no" tx_mute="no"
      privilege="no" mode="normal"/>
    <conf_action>
      <stop transaction_id="c4023bb2-4062-415b-ae79-
2e708458cfdd"/>
    </conf_action>
  </conference_response>
</web_service>
```

get_last_action

To get the last performed action.

Request Payload Example

```
<web_service version="1.0">
  <conference>
    <conf_action>
      <get_last_action/>
    </conf_action>
  </conference>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <conference_response identifier="830b9fda-d89e-495d-b7a1-6a63402bcdcf" appid="app"
    href="/default/conferences/830b9fda-d89e-495d-b7a1-6a63402bcdcf"
    type="audiovideo" max_parties="2" reserve="2"
    layout="2" caption="yes" caption_duration="30s" beep="yes"
    clamp_dtmf="yes" auto_gain_control="yes" echo_cancellation="yes"
    layout_size="automatic">
    <conf_participant call_id="c87fccal-b2d0-49c5-8b89-baaaae71cf695"
      audio="sendrecv"
      video="sendrecv" caption="Username" region="0"
      auto_gain_control="yes" echo_cancellation="yes"
      clamp_dtmf="yes"
      mute="no" tx_mute="no"
      privilege="no" mode="normal"/>
    <conf_action>
```

```

        <get_last_action>
            <stop transaction_id="c4023bb2-4062-415b-ae79-
2e708458cfdd"/>
        </get_last_action>
    </conf_action>
</conference_response>
</web_service>

```

get_last_event

To get the last event.

Request Payload Example

```

<web_service version="1.0">
    <conference>
        <conf_action>
            <get_last_event/>
        </conf_action>
    </conference>
</web_service>

```

Response Payload Example

```

<web_service version="1.0">
    <event type="end_play" resourceid="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="conference">
        <event_data name="reason" value="complete" />
        <event_data name="duration" value="30000ms" />
        <event_data name="transaction_id" value="0974c8b5-8a3c-4a8e-ae82-8f7c8bd0efdd" />
    </event>
</web_service>

```

HTTP DELETE

Deletes a conference resource.

```
DELETE /conferences/[conference_id]?appid=[app_id]
```

Event Handler Resource

HTTP event streaming is implemented in the PowerMedia XMS RESTful server as an eventhandler resource. When the client wishes to receive asynchronous events, it uses the web service to create an eventhandler and to subscribe to specific event types.

For example, when the client performs an HTTP **GET** on a newly created eventhandler, the PowerMedia XMS RESTful server responds with a 200 OK; however, the TCP connection remains open until the client destroys the eventhandler. Event data related to resources and subscribed event types are sent to the client until it deletes the eventhandler. Event data related to resources and subscribed event types are sent to the client until it deletes the eventhandler.

An enabled PowerMedia XMS application ID must be included in the URL for the original HTTP POST where the eventhandler is created. This is utilized to assure that clients only have access to resources they create.

For eventhandler sub-resources, see the [Event Handler Sub-Resource](#) section.

The following tables show the HTTP methods that can be used with the eventhandler.

Note: The payloads shown are examples only as there are many possible variations.

RESTful Event Streaming Data Format Change

As of PowerMedia XMS Release 2.3, the RESTful event format has been updated to be compliant with HTTP chunked data formatting (RFC 7230, Section 4.1). The extra carriage return / line feed (CRLF) in previous PowerMedia XMS versions has been removed from the beginning of each chunk. Each chunk returned begins with the size of the XML payload in hex format.

Example:

```
44
<web_service version="1.0">
<event type="keepalive"/></web_service>
```

Note: Existing RESTful applications that make use of event handlers will require updating.

eventhandlers

Resource URI

/eventhandlers?appid=[app_id]

eventssubscribe_attributes

Parameter	Default	Optional	Description
action	add	*	This will add/remove an event subscription. Values: "add" "remove"
type	any	*	Type of events to monitor. Values: "start_play" "end_play" "end_record" "end_playcollect" "end_playrecord" "end_overlay" "end_dtmf" "end_event" "keepalive" "incoming" "ringing" "connected"

Parameter	Default	Optional	Description
			• "hangup" • "info" • "dtmf" • "tone" • "any" • "end_speak" • "start_of_input" • "end_recognize" • "accepted" • "answered" • "updated" • "active_talker" • "alarm" • "prack" • "stream" • "message" • "conf_overlay_expired" • "end_send_message" • "speech_marker" (any: any event type)
resource_id	any	*	Monitor events for a specific resource. (any: any resource id)
resource_type	any	*	Monitor events for a specific resource type. Values: • "call" • "conference" • "mrpc" • "any" (any: any resource type)

HTTP GET

Retrieves all available eventhandler resources.

```
GET /eventhandlers?appid=[app_id]
```

Response Payload Example

```
<web_service version="1.0">
  <eventhandlers_response size="1">
    <eventhandler_response appid="app"
      href="/default/eventhandlers/2d013b6d-c943-46d9-a7d5-8509cfb177ce"
      identifier="2d013b6d-c943-46d9-a7d5-8509cfb177ce">
      <eventssubscribe resource_id="any" resource_type="any"
type="any"/>
    </eventhandler_response>
  </eventhandlers_response>
</web_service>
```

HTTP POST

Creates an eventhandler resource.

POST /eventhandlers?appid=[app_id]

Request Payload Attributes

Parameter	Default	Optional	Description
eventssubscribe		*	Refer to eventssubscribe_attributes .

Request Payload Example

```
<web_service version="1.0">
  <eventhandler>
    <eventssubscribe type="any" resource_id="any" resource_type="any"/>
  </eventhandler>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <eventhandler_response identifier="90ba2f00-e460-4351-9203-1a2fcf25a739" appid="app"
    href="/default/eventhandlers/90ba2f00-e460-4351-9203-1a2fcf25a739">
    <eventssubscribe type="any" resource_id="any" resource_type="any"/>
  </eventhandler_response>
</web_service>
```

Event Handler Sub-Resource

For details on eventhandler resources, see the [Event Handler Resource](#) section.

eventhandler

Resource URI

/eventhandlers/[eventhandler_id]?appid=[app_id]

HTTP GET

Get the events.

GET /eventhandlers/[eventhandler_id]?appid=[app_id]

event_data_attributes

Parameter	Default	Optional	Description
name	(none)		Event data name.
value	(none)		Event data value. Refer to the Events section for details on what is provided in each event.

Response Payload Attributes

Parameter	Default	Optional	Description
type	(none)		Type of events to monitor. Values: • "start_play" • "end_play" • "end_record" • "end_playcollect" • "end_playrecord" • "end_overlay" • "end_dtmf" • "end_event" • "keepalive" • "incoming" • "ringing" • "connected" • "hangup" • "info" • "dtmf" • "tone" • "any" • "end_speak" • "start_of_input" • "end_recognize" • "accepted" • "answered" • "updated" • "active_talker"

Parameter	Default	Optional	Description
			"alarm" "prack" "stream" "message" "conf_overlay_expired" "end_send_message" "speech_marker"
resource_id	(none)	*	Monitor events for a specific resource.
resource_type	(none)	*	Monitor events for a specific resource type. Values: "call" "conference" "mrpc" "any"
event_data	(none)	*	Values (if applicable) for all data that describe each event. Refer to event_data_attributes or the Events section for details on what is provided in each event. This can be repeated 0 ~ n.

Response Payload Example

T1:

200 OK

T2:

256

```
<web_service version="1.0">
  <event type="hangup" resource_id="c87fccal-b2d0-49c5-8b89-baaae71cf695" resource_type="call">
    <event_data name="reason" value="5800 IPEC_SIPReasonStatusBYE" />
  </event>
</web_service>
```

T3:

345

```
<web_service version="1.0">
  <event type="incoming" resource_id="603bf73e-5e74-4c72-865a-6e498a5e2ad5" resource_type="call">
    <event_data name="caller_uri" value="sip:Username@10.20.129.113:5060" />
    <event_data name="uri" value="sip:sip@10.20.129.100" />
  </event>
</web_service>
```

```
</event>
</web_service>
```

T(N):

0

- in T2 time: the first line is the size of payload; in above example size is 256.
- in T(N) time: size is 0; it means no more events and the connection about to close.

HTTP PUT

Adds or removes an event subscription.

```
PUT /eventhandlers/[eventhandler_id]?appid=[app_id]
```

Request Payload Attributes

Parameter	Default	Optional	Description
eventssubscribe	(none)		Refer to eventssubscribe_attributes .

Request Payload Example

```
<web_service version="1.0">
  <eventhandler>
    <eventssubscribe action="add" type="incoming" resource_id="any" resource_type="any"/>
  </eventhandler>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <eventhandler_response identifier="2d013b6d-c943-46d9-a7d5-8509cfb177ce" appid="app"
    href="/default/eventhandlers/2d013b6d-c943-46d9-a7d5-8509cfb177ce">
    <eventssubscribe type="any" resource_id="any" resource_type="any"/>
    <eventssubscribe type="incoming" resource_id="any" resource_type="any"/>
  </eventhandler_response>
</web_service>
```

HTTP DELETE

Deletes an eventhandler resource.

```
DELETE /eventhandlers/[eventhandler_id]?appid=[app_id]
```

Events

This section describes the event data that is associated with event types. Events are asynchronously returned to the application from the [eventhandler](#).

This section describes the events that are provided by PowerMedia XMS to a RESTful application on the open TCP connection maintained between PowerMedia XMS and the RESTful application. Events are asynchronously sent to the application via the [eventhandler](#).

keepalive

Once the application starts to monitor the events, the REST Web Service will send a "keepalive" event periodically.

Event Payload Example

```
<web_service version="1.0">
    <event type="keepalive" />
</web_service>
```

Media Events

start_play

Notification event for conference [play](#) and call [play](#). This is generated each time a play starts, including repeats. Playlists will generate an event for each element.

- **transaction_id**
- **audio_uri**
- **video_uri**

Event Payload Example

```
<web_service version="1.0">
    <event type="start_play" resourceid="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
        <event_data name="audio_uri" value="file://tmp/my.wav" />
        <event_data name="video_uri" value="file://tmp/my.vid" />
        <event_data name="transaction_id" value="0974c8b5-8a3c-4a8e-ae82-8f7c8bd0efdd" />
    </event>
</web_service>
```

end_play

Completion event for conference [play](#) and call [play](#).

- **transaction_id**
- **reason**
 - "end"
 - "term-digit"
 - "stopped"
 - "max-time"
 - "error"
 - "hangup"
- **duration** - in milliseconds.
- **status** - extended error information.

Event Payload Example

```
<web_service version="1.0">
    <event type="end_play" resourceid="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
        <event_data name="reason" value="complete" />
    </event>
</web_service>
```

```

        <event_data name="duration" value="30000ms" />
        <event_data name="transaction_id" value="0974c8b5-8a3c-4a8e-ae82-8f7c8bd0efdd" />
    </event>
</web_service>

```

end_playcollect

Completion event for playcollect ([call_playcollect](#)).

- **transaction_id**
- **reason**
 - "term-digit"
 - "max-time"
 - "max-silence"
 - "stopped"
 - "error"
 - "no-input"
 - "hangup"
- **digits** - digits collected.
- **tone** - tone identifier (if reason is "tone").
- **duration** - in milliseconds.
- **status** - extended error information.

Event Payload Example

```

<web_service version="1.0">
    <event type="end_playcollect" resourceid="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
        <event_data name="reason" value="term-digit" />
        <event_data name="digits" value="1234" />
        <event_data name="transaction_id" value="0974c8b5-8a3c-4a8e-ae82-8f7c8bd0efdd" />
    </event>
</web_service>

```

end_record

Completion event for record ([call_record](#)).

- **transaction_id**
- **reason**
 - "term-digit"
 - "max-time"
 - "max-silence"
 - "stopped"
 - "error"
 - "no-input"
 - "hangup"

- **duration** - in milliseconds.
- **audio_location** - from a response to HTTP PUT, this is the location header value.
- **video_location** - from a response to HTTP PUT, this is the location header value.
- **status** - extended error information.

Event Payload Example

```
<web_service version="1.0">
  <event type="end_record" resource_id="4de2358f-4e2e-41c1-ba65-94a6f400f6b6"
resource_type="call">
    <event_data name="audio_file_size" value="0" />
    <event_data name="duration" value="9960" />
    <event_data name="id" value="4de2358f-4e2e-41c1-ba65-94a6f400f6b6" />
    <event_data name="media_id" value="80fa5484-ba92-4446-9d05-0dc58e6b7369" />
    <event_data name="reason" value="max-time" />
    <event_data name="status" value="0 No Error" />
    <event_data name="transaction_id" value="80fa5484-ba92-4446-9d05-0dc58e6b7369" />
    <event_data name="type" value="END_RECORD" />
    <event_data name="video_file_size" value="0" />
  </event>
</web_service>
```

end_playrecord

Completion event for playrecord ([call_playrecord](#)).

- **transaction_id**
- **reason**
 - "term-digit"
 - "max-time"
 - "max-silence"
 - "stopped"
 - "error"
 - "no-input"
 - "hangup"
- **duration** - in milliseconds.
- **audio_location** - from a response to HTTP PUT, this is the location header value.
- **video_location** - from a response to HTTP PUT, this is the location header value.
- **status** - extended error information.

Event Payload Example

```
<web_service version="1.0">
  <event type="end_playrecord" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
    <event_data name="reason" value="max-time" />
    <event_data name="transaction_id" value="0974c8b5-8a3c-4a8e-ae82-8f7c8bd0efdd" />
  </event>
```

```
</web_service>
```

end_send_message

Completion event for `send_message` ([send_message](#)).

- **media_id**
- **call_id**
- **reason**
 - "success"
 - "failure"
- **result**
- **duration** - in milliseconds.

Event Payload Example

```
<web_service version="1.0">
  <event type="end_send_message" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
    <event_data name="reason" value="success" />
    <event_data name="transaction_id" value="0974c8b5-8a3c-4a8e-ae82-8f7c8bd0efdd"
/>

    <event_data name="result" value="success" />
    <event_data name="duration" value="1" />
  </event>
</web_service>
```

end_dtmf

Completion event for call [send_dtmf](#) and conference [send_dtmf](#).

- **transaction_id**
- **call_id**
- **reason**
 - "end"
 - "stopped"

Event Payload Example

```
<web_service version="1.0">
  <event type="end_send_dtmf" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
    <event_data name="reason" value="end" />
    <event_data name="transaction_id" value="0974c8b5-8a3c-4a8e-ae82-8f7c8bd0efdd"
/>

  </event>
</web_service>
```

end_event

Completion event for call [send_event](#) and conference [send_event](#).

- **transaction_id**
- **call_id**

- **reason**
 - "end"
 - "stopped"

Event Payload Example

```
<web_service version="1.0">
    <event type="end_event" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
        <event_data name="reason" value="end" />
        <event_data name="transaction_id" value="0974c8b5-8a3c-4a8e-ae82-8f7c8bd0efdd"
/>
    </event>
</web_service>
```

Call Events

incoming

A new inbound call.

- **call_id**
- **uri**
- **caller_uri**
- **name** - application name, from routing rule.
- **headers** - raw SIP headers, delimited by the <CR><LF> end-of-line characters.
- **headers.<NAME>** - individual SIP header.
- **content_type** - mime type of content.
- **content** - optional content.

Event Payload Example

```
<web_service version="1.0">
    <event type="incoming" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
        <event_data name="call_id" value=" 5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
        <event_data name="uri" value="sip:sip@10.20.129.8" />
        <event_data name="caller_uri" value="sip:frank@10.20.129.20" />
    </event>
</web_service>
```

ringing

The remote party of an outbound call is ringing.

- **call_id**
- **prack_level** - prack level from remote: "required" or "none".

Event Payload Example

```
<web_service version="1.0">
    <event type="ringing" resource_id="ce926447-8fff-4d4d-bfd9-0ca57c461bfb" resource_type="call">
    <event_data name="call_id" value="ce926447-8fff-4d4d-bfd9-0ca57c461bfb" />
```

```

<event_data name="prack_level" value="required" />
<event_data name="type" value="RINGING" />
</event>
</web_service>

```

connected

The remote party of an outbound call has answered.

- **call_id**
- **reason**
 - "unknown"
 - "answer-machine"
 - "voice"
 - "ced" (fax detection)
 - custom tone name
- **media**
 - "audio"
 - "audiovideo"
- **caller_uri** ('From' header)
- **called_uri** ('To' header)

Event Payload Example

```

<web_service version="1.0">
  <event type="connected" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
    <event_data name="reason" value="voice" />
    <event_data name="media" value="audio" />
  </event>
</web_service>

```

message

A party has sent the message. Generic message. May be related to an existing call or standalone.

- **call_id**
- **uri** (outside of existing call only).
- **caller_uri** (outside of existing call only).
- **called_uri** (outside of existing call only).
- **name** (application name, from the routing rule, outside of existing call only).
- **content_type** - mime type of **content** (alias for **content[0].content_type**).
- **content** - data (alias for **content[0].content**).
- **content_count** - number of elements in the contents[] array.
- **content[n].content_type** - mime type of **content[n].content**.
- **content[n].content** - data.

- **content[n].content_id** - content identifier.
- **multipart_type** - mime type for multi part content.
- **msg_payload_count** - number of elements in the msg_payload[] array.
- **msg_payload[n].content_type** - mime type of **msg_payload[n].content**.
- **msg_payload[n].content** - message data.
- **msg_payload[n].content_id** - content identifier.
- **msg_payload[n].content_disposition** - disposition of **msg_payload[n].uri**.
- **msg_payload[n].uri** - file uri.

Event Payload Example

```
<web_service version="1.0">
    <event type="message" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
        <event_data name="call_id" value="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
        <event_data name="msg_payload_count" value="1" />
        <event_data name="msg_payload[0].content_id" value="id1" />
        <event_data name="msg_payload[0].content_type" value="text/plain" />
        <event_data name="msg_payload[0].content" value="data" />
        <event_data name="msg_payload[0].content_disposition" value="attachment" />
    </event>
</web_service>
```

hangup

An outbound call request has failed or the remote party has ended the call.

All call resources are released automatically, and if the call is joined to another call, the other party will be automatically unjoined. No further actions may be performed on the call.

- **call_id**
- **reason**
 - "busy-tone"
 - "operator-intercept"
 - "no-answer"
- **content_type**
- **content**

Event Payload Example

```
<web_service version="1.0">
    <event type="hangup" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
        <event_data name="reason" value="no-answer" />
    </event>
</web_service>
```

info

Unsolicited user information (for example, SIP INFO).

- **call_id**
- **content_type** - mime type of content (alias for **content[0].content_type**).
- **content** - data (alias for **content[0].content**).
- **content_id** - content identifier (alias of **content[0].content_id**).
- **content_count** - number of elements in the contents[] array.
- **content[n].content_type** - mime type of **content[n].content**.
- **content[n].content** - data.
- **content[n].content_id** - content identifier.
- **multipart_type** - mime type for multi part content.

Event Payload Example

```
<web_service version="1.0">
    <event type="info" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
        <event_data name="call_id" value="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
        <event_data name="content-type" value="sdp" />
        <event_data name="content" value="[sdp]" />
    </event>
</web_service>
```

info_ack

Remote acknowledgement for send_info.

- **call_id**
- **reason**
 - "success"
 - "error"
- **status** - string format: "XMERR-code Code Informative-Only-Text"

XMERR-code	Code	Informative-Only-Text
"11" (XMSERR_SERVER_ERROR)	"481"	"Call/Transaction Does Not Exist"
"11" (XMSERR_SERVER_ERROR)	"0"	"Internal Error"

- **content_type** - mime type of content (alias for **content[0].content_type**).
- **content** - data (alias for **content[0].content**).
- **content_id** - content identifier (alias of **content[0].content_id**).
- **content_count** - number of elements in the contents[] array.
- **content[n].content_type** - mime type of **content[n].content**.
- **content[n].content** - data.

- **content[n].content_id** - content identifier.
- **multipart_type** - mime type for multi part content.

Event Payload Example

```
<web_service version="1.0">
    <event type="info_ack" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
        <event_data name="call_id" value="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
        <event_data name="reason" value="success" />
    </event>
</web_service>
```

dtmf

Unsolicited DTMF digits.

- **call_id** or **conference_id**
- **digits**

Event Payload Example

```
<web_service version="1.0">
    <event type="dtmf" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
        <event_data name="call_id" value=" 5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
        <event_data name="digits" value="4" />
    </event>
</web_service>
```

tone

Unsolicited tone detection events.

- **call_id** or **conference_id**
- **tone**

Event Payload Example

```
<web_service version="1.0">
    <event type="tone" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
        <event_data name="call_id" value="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
        <event_data name="tone" value="[name]" />
    </event>
</web_service>
```

updated

Indicates that the call's media has been updated (for example, SIP reINVITE).

- **call_id**
- **media**
 - "unknown"
 - "audio"

- "video"
- "audiovideo"
- **audio**
 - "inactive"
 - "sendonly"
 - "recvonly"
 - "sendrecv"
- **video**
 - "inactive"
 - "sendonly"
 - "recvonly"
 - "sendrecv"

Event Payload Example

```
<web_service version="1.0">
  <event type="tone" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
    <event_data name="call_id" value="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
    <event_data name="media" value="audiovideo" />
    <event_data name="audio" value="sendrecv" />
    <event_data name="video" value="sendrecv" />
  </event>
</web_service>
```

alarm

Generic alarm notification.

- **call_id**
- **alarm**
 - "rtp-timeout"
 - "rtcp-timeout"
- **state**
 - "on"
 - "off"

Event Payload Example

```
<web_service version="1.0">
  <event type="alarm" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
    <event_data name="call_id" value="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
    <event_data name="alarm" value="rtp-timeout" />
    <event_data name="state" value="off" />
  </event>
</web_service>
```

stream

RTP streaming status notification.

- **call_id**
- **state**
 - "started"
 - "stopped"

Event Payload Example

```
<web_service version="1.0">
  <event type="alarm" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
    <event_data name="call_id" value="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
    <event_data name="state" value="started" />
  </event>
</web_service>
```

prack

Provisional Acknowledgement received on an accepted *inbound* call.

- **call_id**

Event Payload Example

```
<web_service version="1.0">
  <event type="prack" resource_id="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5"
resource_type="call">
    <event_data name="call_id" value="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
  </event>
</web_service>
```

accepted

This event indicates that an asynchronous xms_accept request has completed successfully. It is also signaled while handling an asynchronous xms_answer on an offering call, to indicate the completion of the accept phase.

- **call_id**
- **caller_uri** ("From" header)
- **called_uri** ("To" header)

Event Payload Example

```
<web_service version="1.0">
  <event type="accepted" resource_id="a2c91ebd-074f-4319-8d5d-5f431add31c0"
resource_type="call">
    <event_data name="app_data" value="" />
    <event_data name="called_uri" value="<sip:sip@10.20.129.112>;tag=f7064c00-7081140a-13c4-50022-304f-308fc5d9-304f" />
    <event_data name="caller_uri" value="Your Full
Name"<sip:Username@10.20.129.83:5060>;tag=E08E00D6B4090B7C65DE6AEA4880EA8B" />
  </event>
</web_service>
```

answered

Indicates that an asynchronous answer completed.

- **call_id**
- **media**
 - (none)
 - "audio"
 - "video"
 - "audiovideo"
- **audio**
 - "inactive"
 - "sendonly"
 - "recvonly"
 - "sendrecv"
- **video**
 - "inactive"
 - "sendonly"
 - "recvonly"
 - "sendrecv"
- **caller_uri** ('From' header)
- **called_uri** ('To' header)

Event Payload Example

```
<web_service version="1.0">
  <event type="answered" resource_id="a2c91ebd-074f-4319-8d5d-5f431add31c0"
resource_type="call">
    <event_data name="audio" value="sendrecv" />
    <event_data name="called_uri" value="<sip:sip@10.20.129.112>;tag=f7064c00-7081140a-
13c4-50022-304f-308fc5d9-304f" />
    <event_data name="caller_uri" value="Your Full
Name<sip:Username@10.20.129.83:5060>;tag=E08E00D6B4090B7C65DE6AEA4880EA8B" />
    <event_data name="media" value="audiovideo" />
    <event_data name="message" value="" />
    <event_data name="video" value="sendrecv" />
  </event>
</web_service>
```

prack_ack

Remote acknowledgment of a sent PRACK in an outbound call.

- **call_id**

Event Payload Example

```
<web_service version="1.0">

<event type="prack_ack" resource_id="ce926447-8fff-4d4d-bfd9-0ca57c461bfb" resource_type="call">

<event_data name="type" value="PRACK_ACK" />

</event>

</web_service>
```

progress

Session progress (SIP 183) received from the remote party of an outbound call.

- **call_id**
- **prack_level** (prack level from remote: required or none)

Event Payload Example

```
<web_service version="1.0">

<event type="progress" resource_id="ce926447-8fff-4d4d-bfd9-0ca57c461bfb" resource_type="call">

<event_data name="call_id" value="ce926447-8fff-4d4d-bfd9-0ca57c461bfb" />

<event_data name="prack_level" value="required" />

<event_data name="type" value="RINGING" />

</event>

</web_service>
```

MRCP Events

end_speak

Completion event for [mrcp_speak](#).

- **mrcp_id**
- **id**
- **transaction_id**
- **reason** - raw result from MRCP server.
- **duration** - in milliseconds.

Event Payload Example

```
<web_service version="1.0">

  <event type="tone" resource_id="97d105ae-30b9-45e2-acdf-82e67d9b34aa"
resource_type="mrcp">

    <event_data name="id" value="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />

    <event_data name="mrcp_id" value="97d105ae-30b9-45e2-acdf-82e67d9b34aa" />

    <event_data name="transaction_id" value="0974c8b5-8a3c-4a8e-ae82-
8f7c8bd0efdd" />

    <event_data name="reason" value="anything" />

    <event_data name="duration" value="20s" />

  </event>

</web_service>
```

speech_marker

- **mrcp_id**

- **id**
- **transaction_id**
- **name**
- **timestamp**

Event Payload Example

```
<web_service version="1.0">
  <event type="speech_marker" resource_id="97d105ae-30b9-45e2-acdf-82e67d9b34aa"
resource_type="mrcp">
    <event_data name="id" value="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
    <event_data name="mrcp_id" value="97d105ae-30b9-45e2-acdf-82e67d9b34aa" />
    <event_data name="transaction_id" value="0974c8b5-8a3c-4a8e-ae82-
8f7c8bd0efdd" />
    <event_data name="name" value="xyz" />
    <event_data name="timestamp" value="2014-2-2 1900:00" />
  </event>
</web_service>
```

end_recognize

Completion event for [mrcp_recognize](#).

- **mrcp_id**
- **id**
- **transaction_id**
- **reason** - raw result from MRCP server.
- **duration** - in milliseconds.
- **content**
- **content_type**
- **waveform_uri**

Event Payload Example

```
<web_service version="1.0">
  <event type="tone" resource_id="97d105ae-30b9-45e2-acdf-82e67d9b34aa"
resource_type="mrcp">
    <event_data name="id" value="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
    <event_data name="mrcp_id" value="97d105ae-30b9-45e2-acdf-82e67d9b34aa" />
    <event_data name="transaction_id" value="0974c8b5-8a3c-4a8e-ae82-
8f7c8bd0efdd" />
    <event_data name="reason" value="anything" />
    <event_data name="duration" value="20s" />
    <event_data name="content" value="data" />
    <event_data name="content_type" value="plain/text" />
  </event>
</web_service>
```

start_of_input

Input detected event for [mrcp_recognize](#).

- **mrCP_id**
- **id**
- **transaction_id**

Event Payload Example

```
<web_service version="1.0">
    <event type="tone" resource_id="97d105ae-30b9-45e2-acdf-82e67d9b34aa"
resource_type="mrCP">
        <event_data name="id" value="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
        <event_data name="mrCP_id" value="97d105ae-30b9-45e2-acdf-82e67d9b34aa" />
        <event_data name="transaction_id" value="0974c8b5-8a3c-4a8e-ae82-
8f7c8bd0efdd" />
    </event>
</web_service>
```

Conference Events

active_talker

- **conf_id**
- **talkers** - space delimited list of call IDs.

Event Payload Example

```
<web_service version="1.0">
    <event type="active_talker" resource_id="97d105ae-30b9-45e2-acdf-82e67d9b34aa"
resource_type="conference">
        <event_data name="conf_id" value="97d105ae-30b9-45e2-acdf-82e67d9b34aa" />
        <event_data name="talkers" value="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5
6798c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
    </event>
</web_service>
```

conf_overlay_expired

- **conf_id** - identifies the conference.
- **region** - identifies the region that contained the overlay that expired.
- **overlay_id** - unique identifier for the text or image overlay that expired.
- **content_id** - unique identifier for the content that expired.

Event Payload Example

```
<web_service version="1.0">
    <event type="conf_overlay_expired" resource_id="97d105ae-30b9-45e2-acdf-
82e67d9b34aa" resource_type="conference">
        <event_data name="conf_id" value="97d105ae-30b9-45e2-acdf-82e67d9b34aa" />
        <event_data name="region" value="v2" />
        <event_data name="overlay_id" value="2" />
        <event_data name="content_id" value="2" />
    </event>
</web_service>
```

MRCP Resource

The Media Resource Control Protocol (MRCP), is used by PowerMedia XMS as an interface to Automatic Speech Recognition (ASR) and Text-to-Speech (TTS) systems. MRCP provides an easy way to build voice user interfaces, allowing a grammar to be built for speech input and providing a way to easily translate text into voice prompts without reading and recording them.

For MRCP sub-resources, see the [MRCP Sub-Resource](#) section.

The following tables show the HTTP methods that can be used with MRCP.

Note: The payloads shown are examples only as there are many possible variations.

mrcps

Resource URI

```
/mrcps?appid=[app_id]
```

HTTP GET

Retrieves all available MRCP resources.

```
GET /mrcps?appid=[app_id]
```

Response Payload Example

```
<web_service version="1.0">
  <mrcps_response size="1">
    <mrcps_response size="1">
      <mrcp_response appid="app" asr="yes" tts="yes"
        href="/default/mrcps/8d200e91-8b56-465d-9e0b-6d9f05fb4ee3"
        identifier="8d200e91-8b56-465d-9e0b-6d9f05fb4ee3">
      </mrcp_response>
    </mrcps_response>
  </mrcps_response>
</web_service>
```

HTTP POST

Creates a MRCP resource.

```
POST /mrcps?appid=[app_id]
```

Request Payload Attributes

Parameter	Default	Optional	Description
asr	"yes"	*	Specifies if a speech recognizer resource is required. Values: "yes" "no"

Parameter	Default	Optional	Description
tts	"yes"	*	Specifies if a speech synthesizer resource is required. Values: "yes" "no"

Request Payload Example

```
<web_service version="1.0">
  <mrcp asr="yes" tts="yes"/>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <mrcp_response appid="app" asr="yes" tts="yes"
    href="/default/mrcps/8d200e91-8b56-465d-9e0b-6d9f05fb4ee3"
    identifier="8d200e91-8b56-465d-9e0b-6d9f05fb4ee3">
  </mrcp_response>
</web_service>
```

MRCP Sub-Resource

For details on MRCP resources, see the [MRCP Resource](#) section.

mrcp

Resource URI

```
/mrcps/[mr_cp_id]?appid=[app_id]
```

HTTP GET

Retrieves an available MRCP resource.

```
GET /mrcps/[mr_cp_id]?appid=[app_id]
```

Response Payload Example

```
<web_service version="1.0">
  <mrcp_response appid="app" asr="yes" tts="yes"
    href="/default/mrcps/8d200e91-8b56-465d-9e0b-6d9f05fb4ee3"
    identifier="8d200e91-8b56-465d-9e0b-6d9f05fb4ee3">
  </mrcp_response>
</web_service>
```

HTTP PUT

Updates a MRCP resource.

```
PUT /mrcps/[mr_cp_id]?appid=[app_id]
```

Perform MRCP Action

- [speak](#)
- [recognize](#)
- [set-asr-param/set-tts-param](#)
- [get-asr-param/get-tts-param](#)
- [define-grammar](#)
- [mrCP-update-action](#)
- [get_last_action](#)
- [get_last_event](#)

param_attributes

Parameter	Default	Optional	Description
name	(none)		Parameter name.
value	(none)		Parameter value.

speak

Synthesizes speech (TTS).

Request Payload Attributes

Parameter	Default	Optional	Description
call_id	(none)		The call receiving the synthesized speech.
param	(none)	*	Generic parameter. Refer to param_attributes can be repeated 0 ~ n.
barge	"yes"	*	Sets whether the synthesis can be barged. Values: • "yes" • "no"
locale	"en-US"	*	Language and country code. See RFC 3066.
content	(none)		Content to be synthesized.
content_type	(none)		Mime type of the content.

Request Payload Example

```
<web_service version="1.0">
  <mrCP>
```

```

    <mrcp_action>
      <speak call_id="c87fccal-b2d0-49c5-8b89-baaaae71cf695" barge="yes" content="Hello World"
content_type="text/plain"/>
    </mrcp_action>
  </mrcp>
</web_service>

```

Response Payload Example

```

<web_service version="1.0">
  <mrcp_response identifier="8d200e91-8b56-465d-9e0b-6d9f05fb4ee3" appid="app"
href="/default/mrcps/8d200e91-8b56-465d-9e0b-6d9f05fb4ee3"
asr="yes" tts="yes">
    <mrcp_action>
      <speak transaction_id="b9e5c859-e5ed-44fd-bf91-b636ba8b14f0"
call_id="c87fccal-b2d0-49c5-8b89-baaaae71cf695"
barge="yes"
locale="en-US"
content="Hello World"
content_type="text/plain">
      </speak>
    </mrcp_action>
  </mrcp_response>
</web_service>

```

recognize

Recognizes speech (ASR).

Request Payload Attributes

Parameter	Default	Optional	Description
call_id	(none)		The call sourcing the media to be recognized.
param	(none)	*	Generic parameter. Refer to param_attributes can be repeated 0 ~ n.
grammar	(none)	*	Grammar for recognizer.
grammar_type	(none)	*	Mime type of the grammar.
grammar_id	(none)	*	Application identifier for a previously defined grammar.

Parameter	Default	Optional	Description
timeout	"infinite"	*	The maximum length of time to wait for input.

Request Payload Example

```
<web_service version="1.0">
  <mrcp>
    <mrcp_action>
      <recognize call_id="c87fccal-b2d0-49c5-8b89-baaae71cf695"
        grammar="grammar" grammar_type="type" grammar_id="text/plain"
        timeout="infinite"/>
    </mrcp_action>
  </mrcp>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <mrcp_response identifier="8d200e91-8b56-465d-9e0b-6d9f05fb4ee3" appid="app"
    href="/default/mrcps/8d200e91-8b56-465d-9e0b-6d9f05fb4ee3"
    asr="yes" tts="yes">
    <mrcp_action>
      <recognize transaction_id="842722ef-75d0-407d-9b52-29c5270868bb"
        call_id="c87fccal-b2d0-49c5-8b89-baaae71cf695"
        grammar="grammar"
        grammar_type="type"
        grammar_id="text/plain"
        timeout="infinite">
      </recognize>
    </mrcp_action>
  </mrcp_response>
</web_service>
```

set-asr-param/set-tts-param

Request Payload Attributes

Parameter	Default	Optional	Description
param	(none)	*	Generic parameter. Value has the format: name=value, name2=value2

Request Payload Example

set-asr-param

```
<web_service version="1.0">
  <mrcp>
    <mrcp_action>
```

```

        <set-asr-param>
            <param name="name" value="value"/>
        </set-asr-param>
    </mrcp_action>
</mrcp>
</web_service>

```

set-tts-param

```

<web_service version="1.0">
    <mrcp>
        <mrcp_action>
            <set-tts-param>
                <param name="name" value="value"/>
            </set-tts-param>
        </mrcp_action>
    </mrcp>
</web_service>

```

Response Payload Example

set-asr-param

```

<web_service version="1.0">
    <mrcp_response identifier="8d200e91-8b56-465d-9e0b-6d9f05fb4ee3" appid="app"
        href="/default/mrcps/8d200e91-8b56-465d-9e0b-6d9f05fb4ee3"
        asr="yes" tts="yes">
        <mrcp_action>
            <set-asr-param>
                <param name="name" value="value"/>
            </set-asr-param>
        </mrcp_action>
    </mrcp_response>
</web_service>

```

set-tts-param

```

<web_service version="1.0">
    <mrcp_response identifier="8d200e91-8b56-465d-9e0b-6d9f05fb4ee3" appid="app"
        href="/default/mrcps/8d200e91-8b56-465d-9e0b-6d9f05fb4ee3"
        asr="yes" tts="yes">
        <mrcp_action>
            <set-tts-param>
                <param name="name" value="value"/>
            </set-tts-param>
        </mrcp_action>
    </mrcp_response>
</web_service>

```

get-asr-param/get-tts-param

Request Payload Example

get-asr-param

```

<web_service version="1.0">

```

```

<mrcp>
  <mrcp_action>
    <get-asr-param/>
  </mrcp_action>
</mrcp>
</web_service>

```

get-tts-param

```

<web_service version="1.0">
  <mrcp>
    <mrcp_action>
      <get-tts-param/>
    </mrcp_action>
  </mrcp>
</web_service>

```

Response Payload Example

get-asr-param

```

<web_service version="1.0">
  <mrcp_response identifier="8d200e91-8b56-465d-9e0b-6d9f05fb4ee3" appid="app"
    href="/default/mrcps/8d200e91-8b56-465d-9e0b-6d9f05fb4ee3"
    asr="yes" tts="yes">
    <mrcp_action>
      <get-asr-param>
        <param name="name" value="value"/>
      </get-asr-param>
    </mrcp_action>
  </mrcp_response>
</web_service>

```

get-tts-param

```

<web_service version="1.0">
  <mrcp_response identifier="8d200e91-8b56-465d-9e0b-6d9f05fb4ee3" appid="app"
    href="/default/mrcps/8d200e91-8b56-465d-9e0b-6d9f05fb4ee3"
    asr="yes" tts="yes">
    <mrcp_action>
      <get-tts-param>
        <param name="name" value="value"/>
      </get-tts-param>
    </mrcp_action>
  </mrcp_response>
</web_service>

```

define-grammar

Request Payload Attributes

Parameter	Default	Optional	Description
grammar	(none)	*	Grammar for recognizer.

Parameter	Default	Optional	Description
grammar_type	(none)	*	Mime type of the grammar.
grammar_id	(none)	*	Application identifier for a previously defined grammar.

Request Payload Example

```
<web_service version="1.0">
  <mrcp>
    <mrcp_action>
      <define-grammar grammar="grammar" grammar_type="type" grammar_id="id"/>
    </mrcp_action>
  </mrcp>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <mrcp_response identifier="8d200e91-8b56-465d-9e0b-6d9f05fb4ee3" appid="app"
    href="/default/mrcps/8d200e91-8b56-465d-9e0b-6d9f05fb4ee3"
    asr="yes" tts="yes">
    <mrcp_action>
      <define-grammar grammar="grammar" grammar_type="type"
grammar_id="id"/>
    </mrcp_action>
  </mrcp_response>
</web_service>
```

mrcp-update-action

Request Payload Attributes

Parameter	Default	Optional	Description
action	(none)		Values: • "stop-speak" • "stop-recognize" • "pause" (speak only) • "resume" (speak only) • "barge" (speak only) • "start-input-timers" (recognize only)

Request Payload Example

```
<web_service version="1.0">
  <mrcp>
```

```

    <mrcp_action>
      <mrcp-update-action action="pause"/>
    </mrcp_action>
  </mrcp>
</web_service>

```

Response Payload Example

```

<web_service version="1.0">
  <mrcp_response identifier="8d200e91-8b56-465d-9e0b-6d9f05fb4ee3" appid="app"
    href="/default/mrcps/8d200e91-8b56-465d-9e0b-6d9f05fb4ee3"
    asr="yes" tts="yes">
    <mrcp_action>
      <mrcp-update-action action="pause"/>
    </mrcp_action>
  </mrcp_response>
</web_service>

```

get_last_action

To get the last performed action.

Request Payload Example

```

<web_service version="1.0">
  <mrcp>
    <mrcp_action>
      <get_last_action/>
    </mrcp_action>
  </mrcp>
</web_service>

```

Response Payload Example

```

<web_service version="1.0">
  <mrcp_response identifier="8d200e91-8b56-465d-9e0b-6d9f05fb4ee3" appid="app"
    href="/default/mrcps/8d200e91-8b56-465d-9e0b-6d9f05fb4ee3"
    asr="yes" tts="yes">
    <mrcp_action>
      <get_last_action>
        <mrcp-update-action action="pause"/>
      </get_last_action>
    </mrcp_action>
  </mrcp_response>
</web_service>

```

get_last_event

To get the last event.

Request Payload Example

```

<web_service version="1.0">
  <mrcp>

```

```
<mrcp_action>
  <get_last_event/>
</mrcp_action>
</mrcp>
</web_service>
```

Response Payload Example

```
<web_service version="1.0">
  <event type="start_of_input" resource_id="97d105ae-30b9-45e2-acdf-82e67d9b34aa"
resource_type="mrcp">
    <event_data name="call_id" value="5974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
    <event_data name="mrcp_id" value="97d105ae-30b9-45e2-acdf-82e67d9b34aa" />
    <event_data name="transaction_id" value="0974c8b5-8a3c-4a8e-ae82-8f7c8bd0efd5" />
  </event>
</web_service>
```

HTTP DELETE

Deletes a MRCP resource.

```
DELETE /mrcps/[mrcp_id]?appid=[app_id]
```

6. XML Schema Definition of Elements

This section contains the complete XML schema definition of elements (XSD).

Note: This schema definition may occasionally be updated. Always use the XSD (*xmsrest.xsd*) available with the current PowerMedia XMS version in the */etc/xms* directory.

```
<?xml version="1.0" encoding="UTF-8" ?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">

  <xs:simpleType name="boolean_type">
    <xs:restriction base="xs:string">
      <xs:enumeration value="yes" />
      <xs:enumeration value="no" />
    </xs:restriction>
  </xs:simpleType>

  <xs:simpleType name="action_option">
    <xs:restriction base="xs:string">
      <xs:enumeration value="add" />
      <xs:enumeration value="remove" />
    </xs:restriction>
  </xs:simpleType>

  <xs:simpleType name="call_type_option">
    <xs:restriction base="xs:string">
      <xs:enumeration value="inbound" />
      <xs:enumeration value="outbound" />
      <xs:enumeration value="3pcc" />
    </xs:restriction>
  </xs:simpleType>

  <xs:simpleType name="media_type">
    <xs:restriction base="xs:string">
      <xs:enumeration value="audio" />
      <xs:enumeration value="video" />
      <xs:enumeration value="audiovideo" />
      <xs:enumeration value="message" />
      <xs:enumeration value="image" />
      <xs:enumeration value="unknown" />
    </xs:restriction>
  </xs:simpleType>

  <xs:simpleType name="media_direction">
    <xs:restriction base="xs:string">
      <xs:enumeration value="inactive" />
    </xs:restriction>
  </xs:simpleType>


```

```

        <xs:enumeration value="sendonly" />
        <xs:enumeration value="recvonly" />
        <xs:enumeration value="sendrecv" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="audio_codec_option">
    <xs:restriction base="xs:string">
        <xs:enumeration value="L8" />
        <xs:enumeration value="L16" />
        <xs:enumeration value="mulaw" />
        <xs:enumeration value="alaw" />
        <xs:enumeration value="AMR" />
        <xs:enumeration value="AMR-WB" />
        <xs:enumeration value="OPUS" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="audio_rate_option">
    <xs:restriction base="xs:string">
        <xs:enumeration value="8000" />
        <xs:enumeration value="11025" />
        <xs:enumeration value="16000" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="video_codec_option">
    <xs:restriction base="xs:string">
        <xs:enumeration value="h264" />
        <xs:enumeration value="h263" />
        <xs:enumeration value="h263-1998" />
        <xs:enumeration value="mp4v-es" />
        <xs:enumeration value="jpeg" />
        <xs:enumeration value="vp8" />
        <xs:enumeration value="vp9" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="video_type_option">
    <xs:restriction base="xs:string">
        <xs:enumeration value="video/x-vid" />
        <xs:enumeration value="video/3gpp" />
        <xs:enumeration value="image/jpeg" />
        <xs:enumeration value="video/mp4" />
        <xs:enumeration value="video/mkv" />
    </xs:restriction>

```

```

</xs:simpleType>

<xs:simpleType name="audio_type_option">
  <xs:restriction base="xs:string">
    <xs:enumeration value="audio/x-wav" />
    <xs:enumeration value="audio/basic" />
    <xs:enumeration value="audio/x-alaw-basic" />
    <xs:enumeration value="audio/L8" />
    <xs:enumeration value="audio/L16" />
    <xs:enumeration value="audio/x-aud" />
    <xs:enumeration value="audio/AMR" />
    <xs:enumeration value="audio/AMR-WB" />
    <xs:enumeration value="audio/3gpp" />
    <xs:enumeration value="audio/mp4" />
    <xs:enumeration value="audio/mkv" />
    <xs:enumeration value="text/uri-list" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="recording_video_type_option">
  <xs:restriction base="xs:string">
    <xs:enumeration value="video/x-vid" />
    <xs:enumeration value="video/3gpp" />
    <xs:enumeration value="image/jpeg" />
    <xs:enumeration value="video/mp4" />
    <xs:enumeration value="video/mkv" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="conf_party_mode">
  <xs:restriction base="xs:string">
    <xs:enumeration value="normal" />
    <xs:enumeration value="coach" />
    <xs:enumeration value="pupil" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="layout_size_option">
  <xs:restriction base="xs:string">
    <xs:enumeration value="automatic" />
    <xs:enumeration value="qcif" />
    <xs:enumeration value="cif" />
    <xs:enumeration value="vga" />
    <xs:enumeration value="720p" />
  </xs:restriction>
</xs:simpleType>

```

```

        </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="rtp_encryption_option">
        <xs:restriction base="xs:string">
            <xs:enumeration value="none" />
            <xs:enumeration value="dtls" />
            <xs:enumeration value="srtp" />
        </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="time_value">
        <xs:restriction base="xs:string">
            <xs:pattern value="(\+)?([0-9]*\.)?[0-9]+(ms|s)|infinite"/>
        </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="digit_value">
        <xs:restriction base="xs:string">
            <xs:pattern value="[0-9#*]+|"/>
        </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="rfc2833_digit_value">
        <xs:restriction base="xs:string">
            <xs:pattern value="[0-9#*$a-dA-D]+|"/>
        </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="audio_codec_amr_mode_value">
        <xs:restriction base="xs:string">
            <xs:pattern value="[0-8]"/>
        </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="dtmf_tone_range">
        <xs:restriction base="xs:string">
            <xs:pattern value="(0|(\-)([0-9]|1[0-9]|2[0-9]|3[0-9]|40))(dB|db|DB|Db)"/>
        </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="volume_range">
        <xs:restriction base="xs:string">
            <xs:pattern value="((\+|)([0-9]|1[0-9]|2[0-9]|3[0-1])|(\-)([0-9]|1[0-9]|2[0-9]|3[0-2]))((dB|db|DB|Db)|(dB|db|DB|Db)(;)(relative|absolute))"/>
        </xs:restriction>
    </xs:simpleType>

```

```

</xs:simpleType>

<xs:simpleType name="integer_value">
  <xs:restriction base="xs:string">
    <xs:pattern value="[0-9]+|infinite"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="dtmf_mode_option">
  <xs:restriction base="xs:string">
    <xs:enumeration value="inband" />
    <xs:enumeration value="outofband" />
    <xs:enumeration value="rfc2833" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="ack_mode_option">
  <xs:restriction base="xs:string">
    <xs:enumeration value="automatic" />
    <xs:enumeration value="manual" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="event_type">
  <xs:restriction base="xs:string">
    <xs:enumeration value="end_play" />
    <xs:enumeration value="end_record" />
    <xs:enumeration value="end_playcollect" />
    <xs:enumeration value="end_playrecord" />
    <xs:enumeration value="end_overlay" />
    <xs:enumeration value="end_dtmf" />
    <xs:enumeration value="keepalive" />
    <xs:enumeration value="incoming" />
    <xs:enumeration value="ringing" />
    <xs:enumeration value="connected" />
    <xs:enumeration value="hangup" />
  </xs:restriction>
  <xs:enumeration value="info" />
  <xs:enumeration value="dtmf" />
  <xs:enumeration value="tone" />
  <xs:enumeration value="any" />
  <xs:enumeration value="end_speak" />
  <xs:enumeration value="start_of_input" />
  <xs:enumeration value="end_recognize" />
  <xs:enumeration value="answered" />

```

```

        <xs:enumeration value="accepted" />
        <xs:enumeration value="updated" />
        <xs:enumeration value="active_talker" />
        <xs:enumeration value="alarm" />
        <xs:enumeration value="prack" />
        <xs:enumeration value="conf_overlay_expired" />
        <xs:enumeration value="message" />
        <xs:enumeration value="end_send_message" />
        <xs:enumeration value="stream" />
        <xs:enumeration value="speech_marker" />
        <xs:enumeration value="start_play" />
        <xs:enumeration value="end_event" />
        <xs:enumeration value="progress" />
        <xs:enumeration value="prack_ack" />
        <xs:enumeration value="status" />
        <xs:enumeration value="info_ack" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="event_data_name">
    <xs:restriction base="xs:string">
        <xs:enumeration value="tone" />
        <xs:enumeration value="digits" />
        <xs:enumeration value="info" />
        <xs:enumeration value="reason" />
        <xs:enumeration value="duration" />
        <xs:enumeration value="uri" />
        <xs:enumeration value="caller_uri" />
        <xs:enumeration value="content_type" />
        <xs:enumeration value="content" />
        <xs:enumeration value="transaction_id" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="event_resource_type">
    <xs:restriction base="xs:string">
        <xs:enumeration value="call" />
        <xs:enumeration value="conference" />
        <xs:enumeration value="mrccp" />
        <xs:enumeration value="any" />
    </xs:restriction>
</xs:simpleType>

<xs:element name="dvr_setting">
    <xs:complexType>
        <xs:attribute name="forward_key" type="digit_value" default="1" />

```

```

        <xs:attribute name="backward_key" type="digit_value" default="2" />
        <xs:attribute name="pause_key" type="digit_value" default="3" />
        <xs:attribute name="resume_key" type="digit_value" default="4" />
        <xs:attribute name="restart_key" type="digit_value" default="5" />
    </xs:complexType>
</xs:element>

<xs:simpleType name="dvr_action_option">
    <xs:restriction base="xs:string">
        <xs:enumeration value="forward" />
        <xs:enumeration value="backward" />
        <xs:enumeration value="pause" />
        <xs:enumeration value="resume" />
        <xs:enumeration value="restart" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="mrsp_action_option">
    <xs:restriction base="xs:string">
        <xs:enumeration value="stop-speak" />
        <xs:enumeration value="stop-recognize" />
        <xs:enumeration value="pause" />
        <xs:enumeration value="resume" />
        <xs:enumeration value="barge" />
        <xs:enumeration value="start-input-timers" />
    </xs:restriction>
</xs:simpleType>

<xs:element name="recording_audio_mime_params">
    <xs:complexType>
        <xs:attribute name="codec" type="audio_codec_option" />
        <xs:attribute name="mode" type="audio_codec_amr_mode_value" />
        <xs:attribute name="rate" type="audio_rate_option" />
    </xs:complexType>
</xs:element>

<xs:element name="recording_video_mime_params">
    <xs:complexType>
        <xs:attribute name="codec" type="video_codec_option" />
        <xs:attribute name="profile" type="digit_value" />
        <xs:attribute name="level" type="xs:string" />
        <xs:attribute name="framerate" type="digit_value" />
        <xs:attribute name="maxbitrate" type="digit_value" />
        <xs:attribute name="height" type="digit_value" />
        <xs:attribute name="width" type="digit_value" />
    </xs:complexType>
</xs:element>

```

```

        </xs:complexType>
    </xs:element>

    <xs:element name="param">
        <xs:complexType>
            <xs:attribute name="name" type="xs:string" use="required"/>
            <xs:attribute name="value" type="xs:string"/>
        </xs:complexType>
    </xs:element>

    <xs:element name="content_element">
        <xs:complexType>
            <xs:attribute name="id" type="xs:string" use="required"/>
            <xs:attribute name="type" type="xs:string" use="required"/>
            <xs:attribute name="content" type="xs:string" use="required"/>
        </xs:complexType>
    </xs:element>

    <xs:element name="msg_payload">
        <xs:complexType>
            <xs:choice>
                <xs:element name="msg_payload_content">
                    <xs:complexType>
                        <xs:attribute name="content"
type="xs:string" use="required"/>
                    </xs:complexType>
                </xs:element>
                <xs:element name="msg_payload_uri" >
                    <xs:complexType>
                        <xs:attribute name="uri"
type="xs:string" use="required"/>
                    </xs:complexType>
                </xs:element>
            </xs:choice>
            <xs:attribute name="content_id" type="xs:string" use="required"/>
            <xs:attribute name="content_type" type="xs:string" use="required"/>
            <xs:attribute name="content_disposition" default="attachment">
                <xs:simpleType>
                    <xs:restriction base="xs:string">
                        <xs:enumeration value="attachment"/>
                        <xs:enumeration value="render"/>
                    </xs:restriction>
                </xs:simpleType>
            </xs:attribute>
            <xs:attribute name="uri" type="xs:string"/>
        </xs:complexType>
    </xs:element>

```

```

        </xs:complexType>
    </xs:element>

    <xs:element name="conf_participant">
        <xs:complexType>
            <xs:attribute name="call_id" type="xs:string" />
            <xs:attribute name="audio" type="media_direction" />
            <xs:attribute name="video" type="media_direction" />
            <xs:attribute name="caption" type="xs:string" />
            <xs:attribute name="region" type="xs:string" />
        </xs:complexType>
    </xs:element>

    <xs:element name="get_last_action">
        <xs:complexType>
            <xs:choice minOccurs="0" maxOccurs="1">
                <xs:element ref="play" />
                <xs:element ref="record" />
                <xs:element ref="update_play" />
                <xs:element ref="playcollect" />
                <xs:element ref="playrecord" />
                <xs:element ref="overlay" />
                <xs:element ref="stop" />
                <xs:element ref="join" />
                <xs:element ref="unjoin" />
                <xs:element ref="add_party" />
                <xs:element ref="update_party" />
                <xs:element ref="remove_party" />
                <xs:element ref="send_dtmf" />
                <xs:element ref="send_info" />
                <xs:element ref="send_info_ack" />
                <xs:element ref="transfer" />
                <xs:element ref="redirect" />
                <xs:element ref="hangup" />
                <xs:element ref="get_call_info" />
                <xs:element ref="add_ice_candidate" />
                <xs:element ref="send_message" />
                <xs:element ref="send_hangup_ack" />
                <xs:element ref="get_last_event" />
                <xs:element ref="speak" />
                <xs:element ref="recognize" />
                <xs:element ref="mrcp-update-action" />
                <xs:element ref="set-asr-param" />
                <xs:element ref="get-asr-param" />
                <xs:element ref="set-tts-param" />
                <xs:element ref="get-tts-param" />
            </xs:choice>
        </xs:complexType>
    </xs:element>

```

```

        <xs:element ref="define-grammar" />
        <xs:element ref="send_event" />
        <xs:element ref="dial" />
        <xs:element ref="send_prack" />
        <xs:element ref="send_prack_ack" />
        <xs:element ref="send_answer_ack" />
    </xs:choice>
</xs:complexType>
</xs:element>

<xs:element name="get_last_event">
    <xs:complexType>
        <xs:all minOccurs="0" maxOccurs="1">
            <xs:element ref="event" />
        </xs:all>
    </xs:complexType>
</xs:element>

<xs:element name="add_party">
    <xs:complexType>
        <xs:attribute name="conf_id" type="xs:string" use="required" />
        <xs:attribute name="audio" type="media_direction"
default="recvonly" />
        <xs:attribute name="video" type="media direction"
default="recvonly" />
        <xs:attribute name="caption" type="xs:string" />
        <xs:attribute name="caption_duration" type="time_value" />
        <xs:attribute name="clamp_dtmf" type="boolean_type" />
        <xs:attribute name="auto_gain_control" type="boolean_type" />
        <xs:attribute name="echo_cancellation" type="boolean_type" />
        <xs:attribute name="mute" type="boolean_type" default="no" />
        <xs:attribute name="tx_mute" type="boolean_type" default="no" />
        <xs:attribute name="privilege" type="boolean_type" default="no" />
        <xs:attribute name="mode" type="conf_party_mode" default="normal"
/>
        <xs:attribute name="region" type="xs:string" default="0"/>
    </xs:complexType>
</xs:element>

<xs:element name="update_party">
    <xs:complexType>
        <xs:attribute name="conf_id" type="xs:string" />
        <xs:attribute name="audio" type="media_direction" />
        <xs:attribute name="video" type="media_direction" />
        <xs:attribute name="caption" type="xs:string" />
        <xs:attribute name="caption_duration" type="time_value" />
        <xs:attribute name="clamp_dtmf" type="boolean_type" />

```

```

        <xs:attribute name="auto_gain_control" type="boolean_type"/>
        <xs:attribute name="echo_cancellation" type="boolean_type" />
        <xs:attribute name="mute" type="boolean_type" />
        <xs:attribute name="tx_mute" type="boolean_type" />
        <xs:attribute name="privilege" type="boolean_type" />
        <xs:attribute name="mode" type="conf_party_mode" />
        <xs:attribute name="region" type="xs:string" />
    </xs:complexType>
</xs:element>

<xs:element name="remove_party">
    <xs:complexType>
        <xs:attribute name="conf_id" type="xs:string" />
    </xs:complexType>
</xs:element>

<xs:element name="join">
    <xs:complexType>
        <xs:attribute name="call_id" type="xs:string" use="required" />
        <xs:attribute name="audio" type="media_direction"
default="sendrecv"/>
        <xs:attribute name="video" type="media_direction"
default="sendrecv"/>
        <xs:attribute name="audio_transcode" type="boolean_type"
default="yes"/>
        <xs:attribute name="video_transcode" type="boolean_type"
default="yes"/>
        <xs:attribute name="media_path_optimize" type="boolean_type"
default="no"/>
    </xs:complexType>
</xs:element>

<xs:element name="unjoin">
    <xs:complexType>
        <xs:attribute name="call_id" type="xs:string" />
        <xs:attribute name="audio" type="media_direction"
default="sendrecv"/>
        <xs:attribute name="video" type="media_direction"
default="sendrecv"/>
    </xs:complexType>
</xs:element>

<xs:element name="transfer">
    <xs:complexType>
        <xs:attribute name="call_id" type="xs:string" />
        <xs:attribute name="uri" type="xs:string" />
    </xs:complexType>
</xs:element>

```

```

<xs:element name="redirect">
  <xs:complexType>
    <xs:attribute name="uri" type="xs:string" use="required"/>
  </xs:complexType>
</xs:element>

<xs:element name="hangup">
  <xs:complexType>
    <xs:attribute name="content_type" type="xs:string" />
    <xs:attribute name="content" type="xs:string" />
    <xs:attribute name="reason" type="xs:string" />
  </xs:complexType>
</xs:element>

<xs:element name="dial">
  <xs:complexType>
    <xs:all minOccurs="0">
      <xs:element ref="sip_headers" />
    </xs:all>
    <xs:attribute name="uri" type="xs:string" use="required"/>
    <xs:attribute name="called_uri" type="xs:string" />
    <xs:attribute name="caller_uri" type="xs:string" />
    <xs:attribute name="caller_display_name" type="xs:string" />
    <xs:attribute name="cpa" type="boolean_type" />
    <xs:attribute name="timeout" type="time_value"/>
    <xs:attribute name="content_type" type="xs:string" />
    <xs:attribute name="content" type="xs:string" />
    <xs:attribute name="answer_ack_mode" type="ack_mode_option" />
    <xs:attribute name="prack_mode" type="ack_mode_option" />
    <xs:attribute name="prack_level">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:enumeration value="supported"/>
          <xs:enumeration value="required"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:attribute>
  </xs:complexType>
</xs:element>

<xs:element name="send_info">
  <xs:complexType>
    <xs:sequence>

```

```

maxOccurs="unbounded"/>
        <xs:element ref="content_element" minOccurs="0"
        </xs:sequence>
        <xs:attribute name="content_type" type="xs:string" />
        <xs:attribute name="content" type="xs:string"/>
        <xs:attribute name="enable_info_ack" type="boolean_type"
default="no"/>
    </xs:complexType>
</xs:element>

<xs:element name="send_hangup_ack">
    <xs:complexType>
        <xs:attribute name="content_type" type="xs:string" />
        <xs:attribute name="content" type="xs:string" />
    </xs:complexType>
</xs:element>

<xs:element name="send_dtmf">
    <xs:complexType>
        <xs:attribute name="digits" type="rfc2833_digit_value"
use="required"/>
        <xs:attribute name="duration" type="time_value" default="100ms"/>
        <xs:attribute name="interval" type="time_value" default="100ms"/>
        <xs:attribute name="level" type="dtmf_tone_range" default="-10dB"/>
        <xs:attribute name="transaction_id" type="xs:string" />
    </xs:complexType>
</xs:element>

<xs:element name="get_call_info">
    <xs:complexType>
        <xs:all minOccurs="0">
            <xs:element ref="sip_headers" />
        </xs:all>
        <xs:attribute name="local_sdp" type="xs:string" />
        <xs:attribute name="remote_sdp" type="xs:string" />
        <xs:attribute name="media" type="media_type"/>
        <xs:attribute name="audio" type="media_direction" />
        <xs:attribute name="video" type="media_direction" />
        <xs:attribute name="uri" type="xs:string" />
        <xs:attribute name="caller_uri" type="xs:string" />
        <xs:attribute name="called_uri" type="xs:string" />
        <xs:attribute name="application_id" type="xs:string" />
        <xs:attribute name="local_seqno" type="xs:string" />
        <xs:attribute name="remote_seqno" type="xs:string" />
    </xs:complexType>
</xs:element>

```

```

<xs:element name="add_ice_candidate">
  <xs:complexType>
    <xs:attribute name="mline" type="xs:string" use="required"/>
    <xs:attribute name="mid" type="xs:string" use="required"/>
    <xs:attribute name="candidate" type="xs:string" use="required"/>
  </xs:complexType>
</xs:element>

<xs:element name="send_message">
  <xs:complexType>
    <xs:sequence>
      <xs:choice minOccurs="0" maxOccurs="unbounded">
        <xs:element ref="content_element" />
        <xs:element ref="msg_payload" />
        <xs:element ref="sip_headers" minOccurs="0"
maxOccurs="1" />
      </xs:choice>
    </xs:sequence>
    <xs:attribute name="caller_uri" type="xs:string" />
    <xs:attribute name="called_uri" type="xs:string" />
    <xs:attribute name="uri" type="xs:string" />
    <xs:attribute name="content_type" type="xs:string" />
    <xs:attribute name="content" type="xs:string" />
    <xs:attribute name="mode" default="signalling">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:enumeration value="signalling"/>
          <xs:enumeration value="msrp"/>
          <xs:enumeration value="rfc5547"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:attribute>
    <xs:attribute name="report" >
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:enumeration value="success"/>
          <xs:enumeration value="failure"/>
          <xs:enumeration value="both"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:attribute>
    <xs:attribute name="msg multipart type" type="xs:string" />

    <xs:attribute name="transaction_id" type="xs:string" />
  </xs:complexType>
</xs:element>

```

```

<xs:element name="send_info_ack">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="content element" minOccurs="0"
maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:attribute name="content_type" type="xs:string" />
    <xs:attribute name="content" type="xs:string" />
  </xs:complexType>
</xs:element>

<xs:element name="send_event">
  <xs:complexType>
    <xs:attribute name="events" type="rfc2833_digit_value"
use="required"/>
    <xs:attribute name="duration" type="time_value" default="100ms"/>
    <xs:attribute name="interval" type="time_value" default="100ms"/>
    <xs:attribute name="level" type="dtmf_tone_range" default="-10dB"/>
    <xs:attribute name="transaction_id" type="xs:string" />
  </xs:complexType>
</xs:element>

<xs:element name="send_prack">
  <xs:complexType>
  </xs:complexType>
</xs:element>
<xs:element name="send_prack_ack">
  <xs:complexType>
  </xs:complexType>
</xs:element>
<xs:element name="send_answer_ack">
  <xs:complexType>
  </xs:complexType>
</xs:element>

<xs:element name="call_action">
  <xs:complexType>
    <xs:choice minOccurs="1" maxOccurs="1">
      <xs:element ref="play" />
      <xs:element ref="record" />
      <xs:element ref="update_play" />
      <xs:element ref="playcollect" />
      <xs:element ref="playrecord" />
      <xs:element ref="overlay" />
      <xs:element ref="stop" />
    </xs:choice>
  </xs:complexType>
</xs:element>

```

```

        <xs:element ref="join" />
        <xs:element ref="unjoin" />
        <xs:element ref="add_party" />
        <xs:element ref="update_party" />
        <xs:element ref="remove_party" />
        <xs:element ref="send_dtmf" />
        <xs:element ref="send_info" />
        <xs:element ref="send_info_ack" />
        <xs:element ref="transfer" />
        <xs:element ref="redirect" />
        <xs:element ref="hangup" />
        <xs:element ref="get_call_info" />
        <xs:element ref="add_ice_candidate" />
        <xs:element ref="send_message" />
        <xs:element ref="send_hangup_ack" />
        <xs:element ref="get_last_action" />
        <xs:element ref="get_last_event" />
        <xs:element ref="send_event" />
        <xs:element ref="dial" />
        <xs:element ref="send_prack" />
        <xs:element ref="send_prack_ack" />
        <xs:element ref="send_answer_ack" />
    </xs:choice>
</xs:complexType>
</xs:element>

<xs:element name="conf_action">
    <xs:complexType>
        <xs:choice minOccurs="1" maxOccurs="1">
            <xs:element ref="play" />
            <xs:element ref="record" />
            <xs:element ref="update_play" />
            <xs:element ref="stop" />
            <xs:element ref="get_last_action" />
            <xs:element ref="get_last_event" />
            <xs:element ref="send_dtmf" />
            <xs:element ref="playcollect" />
            <xs:element ref="playrecord" />
            <xs:element ref="send_event" />
        </xs:choice>
    </xs:complexType>
</xs:element>

<xs:element name="speak">
    <xs:complexType>
        <xs:sequence>

```

```

        <xs:element ref="param" minOccurs="0" maxOccurs="unbounded"
/>

        </xs:sequence>
        <xs:attribute name="call_id" type="xs:string" use="required" />
        <xs:attribute name="barge" type="boolean_type" default="yes" />
        <xs:attribute name="locale" type="xs:string" default="en-US" />
        <xs:attribute name="content" type="xs:string" use="required" />
        <xs:attribute name="content type" type="xs:string" use="required"
/>

        <xs:attribute name="transaction_id" type="xs:string" />
    </xs:complexType>
</xs:element>

<xs:element name="recognize">
    <xs:complexType>
        <xs:sequence>
            <xs:element ref="param" minOccurs="0" maxOccurs="unbounded"
/>

            </xs:sequence>
            <xs:attribute name="call_id" type="xs:string" use="required" />
            <xs:attribute name="grammar" type="xs:string" />
            <xs:attribute name="grammar_type" type="xs:string" />
            <xs:attribute name="grammar_id" type="xs:string" />
            <xs:attribute name="timeout" type="time_value" default="infinite"
/>

            <xs:attribute name="transaction_id" type="xs:string" />
        </xs:complexType>
    </xs:element>

<xs:element name="set-asr-param">
    <xs:complexType>
        <xs:sequence>
            <xs:element ref="param" minOccurs="1" maxOccurs="unbounded"
/>

            </xs:sequence>
        </xs:complexType>
    </xs:element>

<xs:element name="get-asr-param">
    <xs:complexType>
        <xs:sequence>
            <xs:element ref="param" minOccurs="0" maxOccurs="unbounded"
/>

            </xs:sequence>
        </xs:complexType>
    </xs:element>

<xs:element name="set-tts-param">

```

```

        <xs:complexType>
            <xs:sequence>
                <xs:element ref="param" minOccurs="1" maxOccurs="unbounded"
/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>

    <xs:element name="define-grammar">
        <xs:complexType>
            <xs:attribute name="grammar" type="xs:string" use="required"/>
            <xs:attribute name="grammar_type" type="xs:string" use="required"/>
            <xs:attribute name="grammar_id" type="xs:string" use="required"/>
        </xs:complexType>
    </xs:element>

    <xs:element name="get-tts-param">
        <xs:complexType>
            <xs:sequence>
                <xs:element ref="param" minOccurs="0" maxOccurs="unbounded"
/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>

    <xs:element name="mrCP-update-action">
        <xs:complexType>
            <xs:attribute name="action" type="mrCP_action_option"
use="required"/>
        </xs:complexType>
    </xs:element>

    <xs:element name="mrCP_action">
        <xs:complexType>
            <xs:choice minOccurs="1" maxOccurs="1">
                <xs:element ref="speak" />
                <xs:element ref="recognize" />
                <xs:element ref="mrCP-update-action" />
                <xs:element ref="set-asr-param" />
                <xs:element ref="get-asr-param" />
                <xs:element ref="set-tts-param" />
                <xs:element ref="get-tts-param" />
                <xs:element ref="define-grammar" />
                <xs:element ref="get_last_action" />
                <xs:element ref="get_last_event" />
            </xs:choice>
        </xs:complexType>

```

```

</xs:element>

<xs:attributeGroup name="response_attrgroup">
  <xs:attribute name="href" type="xs:string" use="required" />
  <xs:attribute name="identifier" type="xs:string" use="required" />
  <xs:attribute name="appid" type="xs:string" use="required" />
</xs:attributeGroup>

<xs:element name="overlay">
  <xs:complexType>
    <xs:attribute name="uri" type="xs:string" use="required"/>
    <xs:attribute name="duration" type="time_value" default="infinite" />
    <xs:attribute name="direction" default="send">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:enumeration value="send"/>
          <xs:enumeration value="recv"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:attribute>
    <xs:attribute name="transaction_id" type="xs:string" />
  </xs:complexType>
</xs:element>

<xs:element name="event_data">
  <xs:complexType>
    <xs:attribute name="name" type="xs:string" use="required" />
    <xs:attribute name="value" type="xs:string" use="required" />
  </xs:complexType>
</xs:element>

<xs:element name="sip_headers">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="param" minOccurs="0" maxOccurs="unbounded" />
    </xs:sequence>
    <xs:attribute name="raw_sip_headers" type="xs:string" />
  </xs:complexType>
</xs:element>

<xs:element name="event">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="event_data" minOccurs="0" maxOccurs="unbounded" />
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

```

        <xs:attribute name="type" type="event_type" use="required" />
        <xs:attribute name="resource_type" type="xs:string" />
        <xs:attribute name="resource_id" type="xs:string" />
    </xs:complexType>
</xs:element>

<xs:element name="stop">
    <xs:complexType>
        <xs:attribute name="transaction_id" type="xs:string" use="required"/>
    </xs:complexType>
</xs:element>

<xs:element name="play_source">
    <xs:complexType>
        <xs:attribute name="location" type="xs:string" />
        <!-- Will be deprecated after xms 3.0  xs:attribute name="base_audio_uri"
type="xs:string" using xs:attribute name="audio_base_uri" type="xs:string" instead/-->
        <xs:attribute name="base_audio_uri" type="xs:string" />
        <xs:attribute name="audio_base_uri" type="xs:string" />
        <xs:attribute name="audio_uri" type="xs:string" />
        <xs:attribute name="audio_type" type="audio_type_option" />
        <xs:attribute name="audio_rate" type="audio_rate_option" />
        <!-- Will be deprecated after xms 3.0  xs:attribute name="base_video_uri"
type="xs:string" using xs:attribute name="video_base_uri" type="xs:string" instead/-->
        <xs:attribute name="base_video_uri" type="xs:string" />
        <xs:attribute name="video_base_uri" type="xs:string" />
        <xs:attribute name="video_uri" type="xs:string" />
        <xs:attribute name="video_type" type="video_type_option" />
    </xs:complexType>
</xs:element>

<xs:element name="play">
    <xs:complexType>
        <xs:sequence>
            <xs:element ref="play_source" minOccurs="1" maxOccurs="1" />
            <xs:element ref="dvr_setting" minOccurs="0" maxOccurs="1" />
        </xs:sequence>
        <xs:attribute name="offset" type="time_value" default="0s" />
        <xs:attribute name="repeat" type="integer_value" default="0" />
        <xs:attribute name="delay" type="time_value" default="1s" />
        <xs:attribute name="skip_interval" type="time_value" default="1s" />
        <xs:attribute name="max_time" type="time_value" default="infinite" />
        <xs:attribute name="terminate_digits" type="digit_value" default="#" />
        <xs:attribute name="region" type="xs:string" />
        <xs:attribute name="transaction_id" type="xs:string" />
        <xs:attribute name="no_cache" type="boolean_type" />
        <xs:attribute name="max_age" type="time_value" />
    </xs:complexType>
</xs:element>

```

```

        <xs:attribute name="max_stale" type="time_value" />
        <xs:attribute name="fetch_timeout" type="time_value" default="300s" />
    </xs:complexType>
</xs:element>

<xs:element name="update_play">
    <xs:complexType>
        <xs:attribute name="dvr_action" type="dvr_action_option" />
        <xs:attribute name="region" type="xs:string" />
        <xs:attribute name="transaction_id" type="xs:string" use="required"/>
    </xs:complexType>
</xs:element>

<xs:element name="record">
    <xs:complexType>
        <xs:all>
            <xs:element ref="recording_audio_mime_params" minOccurs="0"
maxOccurs="1" />
            <xs:element ref="recording_video_mime_params" minOccurs="0"
maxOccurs="1" />
        </xs:all>
        <xs:attribute name="terminate_digits" type="digit_value" default="#" />
        <xs:attribute name="recording_uri" type="xs:string" />
        <xs:attribute name="recording_audio_uri" type="xs:string" />
        <xs:attribute name="recording_audio_type" type="audio_type_option" />
        <xs:attribute name="recording_video_uri" type="xs:string" />
        <xs:attribute name="recording_video_type"
type="recording_video_type_option" default="video/x-vid"/>
        <xs:attribute name="max_silence" type="time_value" default="infinite" />
        <xs:attribute name="max_time" type="time_value" default="infinite" />
        <xs:attribute name="noinput timeout" type="time value" default="infinite"
/>
        <xs:attribute name="transaction_id" type="xs:string" />
    </xs:complexType>
</xs:element>

<xs:element name="playrecord">
    <xs:complexType>
        <xs:all>
            <xs:element ref="play_source" minOccurs="0" maxOccurs="1" />
            <xs:element ref="recording_audio_mime_params" minOccurs="0"
maxOccurs="1" />
            <xs:element ref="recording video mime params" minOccurs="0"
maxOccurs="1" />
        </xs:all>
        <xs:attribute name="barge" type="boolean_type" default="yes" />
        <xs:attribute name="cleardigits" type="boolean_type" default="no" />
        <xs:attribute name="offset" type="time_value" default="0s" />

```

```

        <xs:attribute name="repeat" type="integer_value" default="0" />
        <xs:attribute name="delay" type="time_value" default="1s" />
        <xs:attribute name="recording_uri" type="xs:string" />
        <xs:attribute name="recording_audio_uri" type="xs:string" />
        <xs:attribute name="recording_audio_type" type="audio_type_option" />
        <xs:attribute name="recording_video_uri" type="xs:string" />
        <xs:attribute name="recording_video_type"
type="recording_video_type_option" default="video/x-vid"/>
        <xs:attribute name="beep" type="boolean_type" default="yes" />
        <xs:attribute name="terminate_digits" type="digit_value" default="#" />
        <xs:attribute name="max_time" type="time_value" default="infinite" />
        <xs:attribute name="max_silence" type="time_value" default="infinite" />
        <xs:attribute name="noinput_timeout" type="time_value" default="infinite"
/>

        <xs:attribute name="transaction_id" type="xs:string" />
        <xs:attribute name="no_cache" type="boolean_type" />
        <xs:attribute name="max_age" type="time_value" />
        <xs:attribute name="max_stale" type="time_value" />
        <xs:attribute name="fetch_timeout" type="time_value" default="300s" />
    </xs:complexType>
</xs:element>

<xs:element name="playcollect">
    <xs:complexType>
        <xs:sequence>
            <xs:element ref="play_source" minOccurs="0" maxOccurs="1" />
        </xs:sequence>
        <xs:attribute name="barge" type="boolean_type" default="yes" />
        <xs:attribute name="cleardigits" type="boolean_type" default="no" />
        <xs:attribute name="offset" type="time_value" default="0s" />
        <xs:attribute name="repeat" type="integer_value" default="0" />
        <xs:attribute name="delay" type="time_value" default="1s" />
        <xs:attribute name="max_digits" type="xs:string" />
        <xs:attribute name="timeout" type="time_value" />
        <xs:attribute name="interdigit_timeout" type="time_value" />
        <xs:attribute name="terminate_digits" type="digit_value" default="#" />
        <xs:attribute name="tone_detection" type="boolean_type" default="no" />
        <xs:attribute name="transaction_id" type="xs:string" />
        <xs:attribute name="no_cache" type="boolean_type" />
        <xs:attribute name="max_age" type="time_value" />
        <xs:attribute name="max_stale" type="time_value" />
        <xs:attribute name="fetch_timeout" type="time_value" default="300s" />
    </xs:complexType>
</xs:element>

<xs:element name="error">
    <xs:complexType>

```

```

        <xs:attribute name="code" type="xs:string" use="required" />
        <xs:attribute name="description" type="xs:string" use="required" />
    </xs:complexType>
</xs:element>

<xs:element name="call">
    <xs:complexType>
        <xs:sequence>
            <xs:choice minOccurs="0" maxOccurs="unbounded">
                <xs:element ref="call action" minOccurs="0" maxOccurs="1" />
                <xs:element ref="sip_headers" minOccurs="0" maxOccurs="1" />
            </xs:choice>
        </xs:sequence>

        <xs:attribute name="answer" type="boolean_type"/>
        <xs:attribute name="signaling" type="boolean_type" default="yes" />
        <xs:attribute name="media" type="media_type" />
        <xs:attribute name="source_uri" type="xs:string" />
        <xs:attribute name="destination_uri" type="xs:string" />
        <xs:attribute name="called_uri" type="xs:string" />
        <xs:attribute name="display_name" type="xs:string"/>
        <xs:attribute name="sdp" type="xs:string"/>
        <xs:attribute name="cpa" type="boolean_type" default="no"/>
        <xs:attribute name="dtmf_mode" type="dtmf_mode_option" />
        <xs:attribute name="async_dtmf" type="boolean_type" />
        <xs:attribute name="async_tone" type="boolean_type" />
        <xs:attribute name="rx_delta" type="volume_range" />
        <xs:attribute name="tx_delta" type="volume_range" />
        <xs:attribute name="cleardigits" type="boolean_type" />
        <xs:attribute name="info_ack_mode" type="ack_mode_option" />
        <xs:attribute name="hangup_ack_mode" type="ack_mode_option" />
        <xs:attribute name="early_media" type="boolean_type" />
        <xs:attribute name="audio" type="media_direction" />
        <xs:attribute name="video" type="media_direction" />
        <xs:attribute name="message" type="media_direction" />
        <xs:attribute name="image" type="media_direction" />
        <xs:attribute name="accept" type="boolean_type" />
        <xs:attribute name="async_completion" type="boolean_type" />
        <xs:attribute name="dial_timeout" type="time_value"/>
        <xs:attribute name="encryption" type="rtp_encryption_option" />
        <xs:attribute name="ice" type="boolean_type"/>
        <xs:attribute name="setup" >
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:enumeration value="active"/>

```

```

        <xs:enumeration value="passive"/>
    </xs:restriction>
</xs:simpleType>
</xs:attribute>
<xs:attribute name="content" type="xs:string" />
<xs:attribute name="content_type" type="xs:string" />
<xs:attribute name="local_rtp_address" type="xs:string" />
<xs:attribute name="answer_ack_mode" type="ack_mode_option" />
<xs:attribute name="prack_mode" type="ack_mode_option" />
<xs:attribute name="prack_ack_mode" type="ack_mode_option" />
<xs:attribute name="prack_level">
    <xs:simpleType>
        <xs:restriction base="xs:string">
            <xs:enumeration value="none"/>
            <xs:enumeration value="required"/>
            <xs:enumeration value="supported"/>
        </xs:restriction>
    </xs:simpleType>
</xs:attribute>
</xs:complexType>
</xs:element>

<xs:element name="call_response">
    <xs:complexType>
        <xs:sequence>
            <xs:choice minOccurs="0" maxOccurs="unbounded">
                <xs:element ref="call_action" minOccurs="0" maxOccurs="1" />
                <xs:element ref="sip_headers" minOccurs="0" maxOccurs="1" />
            </xs:choice>
        </xs:sequence>
        <xs:attribute name="signaling" type="boolean_type" />
        <xs:attribute name="media" type="media_type" />
        <xs:attribute name="destination_uri" type="xs:string" />
        <xs:attribute name="display_name" type="xs:string"/>
        <xs:attribute name="source_uri" type="xs:string" />
        <xs:attribute name="called_uri" type="xs:string" />
        <xs:attribute name="call_type" type="call_type_option" />
        <xs:attribute name="connected" type="boolean_type" />
        <xs:attribute name="sdp" type="xs:string"/>
        <xs:attribute name="cpa" type="boolean_type" />
        <xs:attribute name="dtmf_mode" type="dtmf_mode_option" />
        <xs:attribute name="async_dtmf" type="boolean_type"/>
        <xs:attribute name="async_tone" type="boolean_type" />
        <xs:attribute name="rx_delta" type="volume_range" />
        <xs:attribute name="tx_delta" type="volume_range" />
    </xs:complexType>
</xs:element>

```

```

<xs:attribute name="cleardigits" type="boolean_type" />
<xs:attribute name="info_ack_mode" type="ack_mode_option" />
<xs:attribute name="hangup_ack_mode" type="ack_mode_option" />
<xs:attribute name="early_media" type="boolean_type" />
<xs:attribute name="audio" type="media_direction" />
<xs:attribute name="video" type="media_direction" />
<xs:attribute name="message" type="media_direction" />
<xs:attribute name="image" type="media_direction" />
<xs:attribute name="async_completion" type="boolean_type" />
<xs:attribute name="encryption" type="rtp_encryption_option" />
<xs:attribute name="ice" type="boolean_type"/>
<xs:attribute name="setup" >
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:enumeration value="active"/>
      <xs:enumeration value="passive"/>
    </xs:restriction>
  </xs:simpleType>
</xs:attribute>
<xs:attribute name="content" type="xs:string" />
<xs:attribute name="content_type" type="xs:string" />
<xs:attributeGroup ref="response_attrgroup" />
<xs:attribute name="local_rtp_address" type="xs:string" />
<xs:attribute name="answer_ack_mode" type="ack_mode_option" />
<xs:attribute name="prack_mode" type="ack_mode_option" />
<xs:attribute name="prack_ack_mode" type="ack_mode_option" />
<xs:attribute name="prack_level">
  <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:enumeration value="none"/>
      <xs:enumeration value="required"/>
      <xs:enumeration value="supported"/>
    </xs:restriction>
  </xs:simpleType>
</xs:attribute>
</xs:complexType>
</xs:element>

<xs:element name="calls_response">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="call_response" minOccurs="0"
maxOccurs="unbounded"/>
    </xs:sequence>
    <xs:attribute name="size" type="xs:string" use="required" />
  </xs:complexType>

```

```

</xs:element>

<xs:element name="eventhandler">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="eventssubscribe" minOccurs="1"
maxOccurs="unbounded" />
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:element name="eventhandler_response">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="eventssubscribe" minOccurs="1"
maxOccurs="unbounded" />
    </xs:sequence>
    <xs:attributeGroup ref="response_attrgroup" />
  </xs:complexType>
</xs:element>

<xs:element name="eventhandlers_response">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="eventhandler response" minOccurs="0"
maxOccurs="unbounded" />
    </xs:sequence>
    <xs:attribute name="size" type="xs:string" use="required" />
  </xs:complexType>
</xs:element>

<xs:element name="eventssubscribe">
  <xs:complexType>
    <xs:attribute name="type" type="event_type" default="any" />
    <xs:attribute name="action" type="action_option" default="add" />
    <xs:attribute name="resource_id" type="xs:string" default="any" />
    <xs:attribute name="resource type" type="event resource type"
default="any" />
  </xs:complexType>
</xs:element>

<xs:element name="conference">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="conf_action" minOccurs="0" maxOccurs="1" />
    </xs:sequence>
    <xs:attribute name="type" type="media_type" default="audio" />

```

```

        <xs:attribute name="max_parties" type="xs:string" default="9" />
        <xs:attribute name="reserve" type="xs:string" default="0" />
        <xs:attribute name="layout" type="xs:string" />
        <xs:attribute name="layout_regions" type="xs:string" />
        <xs:attribute name="layout_size" type="layout_size_option" />
        <xs:attribute name="caption" type="boolean_type" default="yes" />
        <xs:attribute name="caption_duration" type="time_value" default="20s" />
        <xs:attribute name="beep" type="boolean_type" default="yes" />
        <xs:attribute name="clamp_dtmf" type="boolean_type" default="yes" />
        <xs:attribute name="auto gain control" type="boolean_type" default="yes"
/>

        <xs:attribute name="echo_cancellation" type="boolean_type" default="yes"
/>

        <xs:attribute name="active_talker_region" type="xs:string" />
        <xs:attribute name="active_talker_interval">
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="(\+)?([0-9]*\.)?[0-
9]+(ms|s)|infinite|0"/>
                </xs:restriction>
            </xs:simpleType>
        </xs:attribute>
        <xs:attribute name="max_active_talkers">
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="[2-9]|10"/>
                </xs:restriction>
            </xs:simpleType>
        </xs:attribute>
        <xs:attribute name="region_overlays" type="xs:string" />
    </xs:complexType>
</xs:element>

<xs:element name="conference_response">
    <xs:complexType>
        <xs:sequence>
            <xs:element ref="conf_action" minOccurs="0" maxOccurs="1" />
            <xs:element ref="conf_participant" minOccurs="0"
maxOccurs="unbounded"/>
        </xs:sequence>
        <xs:attribute name="type" type="media_type" />
        <xs:attribute name="max_parties" type="xs:string" />
        <xs:attribute name="reserve" type="xs:string" />
        <xs:attribute name="layout" type="xs:string" />
        <xs:attribute name="layout_regions" type="xs:string" />
        <xs:attribute name="layout_size" type="layout_size_option" />
        <xs:attribute name="caption" type="boolean_type" />

```

```

        <xs:attribute name="caption_duration" type="time_value" />
        <xs:attribute name="beep" type="xs:string" default="yes" />
        <xs:attribute name="clamp_dtmf" type="boolean_type"/>
        <xs:attribute name="auto_gain_control" type="boolean_type"/>
        <xs:attribute name="echo_cancellation" type="boolean_type"/>
        <xs:attribute name="active_talker_region" type="xs:string" />
        <xs:attribute name="active_talker_interval">
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="(\+)?([0-9]*\.)?[0-
9]+(ms|s)|infinite|0"/>
                </xs:restriction>
            </xs:simpleType>
        </xs:attribute>
        <xs:attribute name="max_active_talkers">
            <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:pattern value="[2-9]|10"/>
                </xs:restriction>
            </xs:simpleType>
        </xs:attribute>
        <xs:attribute name="region_overlays" type="xs:string" />
        <xs:attributeGroup ref="response_attrgroup" />
    </xs:complexType>
</xs:element>

<xs:element name="conferences_response">
    <xs:complexType>
        <xs:sequence>
            <xs:element ref="conference_response" minOccurs="0"
maxOccurs="unbounded"/>
        </xs:sequence>
        <xs:attribute name="size" type="xs:string" use="required" />
    </xs:complexType>
</xs:element>

<xs:element name="mr_cp">
    <xs:complexType>
        <xs:sequence>
            <xs:element ref="mr_cp_action" minOccurs="0" maxOccurs="1" />
        </xs:sequence>
        <xs:attribute name="asr" type="boolean_type" default="yes" />
        <xs:attribute name="tts" type="boolean_type" default="yes" />
    </xs:complexType>
</xs:element>

<xs:element name="mr_cp_response">

```

```

        <xs:complexType>
            <xs:sequence>
                <xs:element ref="mrcp_action" minOccurs="0" maxOccurs="1" />
            </xs:sequence>
            <xs:attribute name="asr" type="boolean_type" />
            <xs:attribute name="tts" type="boolean_type" />
            <xs:attributeGroup ref="response_attrgroup" />
        </xs:complexType>
    </xs:element>

    <xs:element name="mrcps_response">
        <xs:complexType>
            <xs:sequence>
                <xs:element ref="mrcp_response" minOccurs="0" maxOccurs="unbounded" />
            </xs:sequence>
            <xs:attribute name="size" type="xs:string" use="required" />
        </xs:complexType>
    </xs:element>

    <xs:element name="web_service">
        <xs:complexType>
            <xs:choice minOccurs="0" maxOccurs="1">
                <xs:element ref="call" />
                <xs:element ref="call_response" />
                <xs:element ref="calls_response" />
                <xs:element ref="conference" />
                <xs:element ref="conference_response" />
                <xs:element ref="conferences_response" />
                <xs:element ref="eventhandler" />
                <xs:element ref="eventhandler_response" />
                <xs:element ref="eventhandlers_response" />
                <xs:element ref="mrcp" />
                <xs:element ref="mrcp_response" />
                <xs:element ref="mrcps_response" />
                <xs:element ref="event" />
                <xs:element ref="error" />
            </xs:choice>
            <xs:attribute name="version" type="xs:NMTOKEN" fixed="1.0" use="required" />
        </xs:complexType>
    </xs:element>
</xs:schema>

```

To simplify PowerMedia XMS RESTful application programming in Java, see the following Tech Note: http://www.dialogic.com/~media/products/media-server-software/download/xms-demos/XMS-XMLBeans_Technote_20130405.pdf.

7. Text and Image Overlays

PowerMedia XMS supports the ability to apply text and images as captions in video conferences. When an overlay is applied to an existing video stream, text and image parameters are required. Each parameter is used as an XML attribute to describe the properties of the image or text overlay to the media engine. All text and image overlay parameters are sent in a string in the [region_overlays](#) parameter.

The `region_overlays` parameter specifies a set of text or image overlays for a conference layout. The overlays are defined by a semicolon delimited list of region definitions where each specifies a set of parameters that completely describes the overlay attributes for the conference layout regions or root window. Each region overlay is defined using this format: `<REGION ID> EQUALS <ID> COMMA <PARAMETER> EQUALS <VALUE> COMMA <PARAMETER> EQUALS <VALUE>...`

- REGION ID uniquely identifies the conference region where the overlays should be applied. Note, "0" is reserved and used ONLY when applying a text or image overlay to the root window of a conference.
- PARAMETER identifies the overlay parameter being set.
- VALUE identifies the value of the overlay parameter given.

Note the following when entering parameters into the `region_overlays` string:

- All parameters take only a single value.
- If a parameter value contains an ampersand (&) or equals (=) character, the character must be passed as a percent escaped hex value (e.g., for an ampersand (&), use %26).
- All parameters must be encoded without spaces between them and passed as a single string to the `region_overlays` field of the `<conference>` element.

Refer to the following example.

```
region_overlays -->
region=1,overlay_id=id1,left=10,top=80,hsize=80,vsize=15,priority=0.4,overlay bgcolor=springgreen,
textstyle_id=TextStyle1,fontFamily=Arial,fontStyle=normal,fontWeight=bold,fontEffects=oblique,fontSize=90,fontColor=firebrick,fontDirection=lr,textstyle_bgcolor=gray,textAlignment=center,wrapOption=noWrap,content_id=body1,applyMode=replace,p_id=textstring1,p_style=TextStyle2,p_duration=30s,encoding=UTF8,text=Region1;region=2,overlay_id=dialogic2,left=10,top=80,hsize=80,vsize=15,priority=0.4,overlay bgcolor=springgreen,textstyle_id=TextStyle2,fontFamily=Arial,fontStyle=normal,fontWeight=bold,fontEffects=oblique,fontSize=90,fontColor=firebrick,fontDirection=lr,textstyle_bgcolor=gray,textAlignment=center,wrapOption=noWrap,content_id=body1,applyMode=replace,p_id=textstring1,p_style=TextStyle2,p_duration=30s,encoding=UTF8,text=Region2;...
```

The following tables list the parameters.

Overlay Bounding Frame Parameters

Parameter	Default	Optional	Description
overlay_id	(none)		Overlay identifier.
left	"0"	*	The position of the overlay from the left side of the reference window, defined as a % of the overall width of the reference window or conference region. Supported values range from 100.0000 to 100.0000 (%).

Parameter	Default	Optional	Description
top	"0"	*	The position of the overlay from the top of the reference window, defined as a % of the overall height of the reference window or conference region. Supported values range from 100.0000 to 100.0000 (%).
hsize	"0"	*	The horizontal size of the layout expressed as a % of the reference window or conference region horizontal size. Supported values range from 100.0000 to 100.0000 (%).
vsize	"0"	*	The vertical size of the layout expressed as a % of the reference window or conference region horizontal size. Supported values range from 100.0000 to 100.0000 (%)
priority		*	A number between 0 and 1 that is used to define the precedence when rendering overlapping layouts. When areas of different layouts overlap, they are layered in order of their "priority" attribute. The layout with the highest value for the "priority" attribute is below all other layouts and may be hidden by overlapping layouts. The layout with the lowest non-zero value for the "priority" attribute is on top of all other layouts and will not be hidden by overlapping layouts. The priority attribute may be assigned values between 0 and 1. A value of zero disables the layout deleting it and freeing any resources associated with the layout.
bwidth	"0 (no border)"	*	Horizontal and vertical border width of the overlay defined as a % of the overall height of the layout window. Supported values range from 0.0000 to 20.0000 (%).
hbwidth	"0 (no border)"	*	Horizontal border width of the overlay defined as a % of the overall height of the layout window. This parameter may be used if there is a desire to have different settings for the horizontal and vertical borders. For example, a vertical border may be desired while a horizontal border may not be desired. Supported values range from 0.0000 to 20.0000 (%).

Parameter	Default	Optional	Description
vbwidth	"0 (no border)"	*	Vertical border width of the overlay defined as a % of the overall height of the layout window. This parameter may be used if there is a desire to have different settings for the horizontal and vertical borders. For example, a vertical border may be desired while a horizontal border may not be desired. Supported values range from 0.0000 to 20.0000 (%).
bcolor	"gray"	*	Color of the overlay border.
bopacity	"100"	*	Defines the opacity of the border of the overlay region. It accepts a percentage value in the range 0-100(%), with 100 meaning fully opaque.
overlay_bgcolor	"blue"	*	Background color of the layout.
overlay_bgopacity	"100"	*	Defines the opacity of the background of the overlay region. It accepts a percentage value in the range 0-100(%), with 100 meaning fully opaque
overlay_duration	"persistent"	*	Specifies the duration for the overlay. Values may be: • persistent - The overlay region will persist until expressly deleted by the application. • lifeOfContent - The overlay region will persist until the content_duration expires.

Text Style Parameters

Parameter	Default	Optional	Description
textstyle_id	(none)		A name that can be used by p_style to refer to a style (style id).
fontfamily		*	Name of the font family. Values are "Arial", "Courier New", "Tahoma", "Times New Roman", "Verdana", etc.
fontstyle	"normal"	*	Font style. Values are "normal" and "italic".
fontweight	"normal"	*	Font weight. Values are "normal" and "bold".
fonteffects	"none"	*	Font effects. Values are "none" and "underlined", and "outlined".

Parameter	Default	Optional	Description
fontsize	"90"	*	Font size. Values are specified as a % of the vertical size of the layout region. Supported values range from 0.0 to 100.0 (%).
fontcolor	"white"	*	Color of text.
fontopacity	"100"	*	This attribute defines the opacity of the font color to be applied to the font when this style is used in p_style. It accepts a percentage value in the range 0-100%, with 100 meaning fully opaque.
fontdirection	"lr"	*	Font direction. Values supported are: lr (left to right), rl (right to left), tb (top to bottom), bt (bottom to top).
textstyle_bgcolor	"blue"	*	Background color to be applied to the layout when this style is applied in p_style.
textstyle_bgopacity	"100"	*	This attribute defines the opacity of the background color to be applied to the layout when this style is used in p_style. It accepts a percentage value in the range 0-100%, with 100 meaning fully opaque.
textalignment	"center"	*	Alignment of text within the layout region. Values supported are: center, centerLeft, centerRight, topLeft, bottomLeft, topRight, bottomRight, topCenter, bottomCenter. For the case where content applied is static, textAlignment refers to the positioning of static text within the overlay window. For the value center, text is centered within the layout window. For the case where content applied is scrolled, textAlignment does not apply.
wrap	"nowrap"	*	Wrap option. Values are: "wrap"(word wrap) and"nowrap. Wrap direction is top to bottom when fontdirection is either lr or rl, and is left to right when fontdirection is either tb or bt

Image Style Parameters

Parameter	Default	Optional	Description
imgstyle_id	(none)		A name that can be used by img to refer to a style (style id).
imgstyle_applymode	"resizeToFit"	*	Fill mode. Specifies how the image will be applied to the overlay window. Values are as follows: • resizeToFit - The image will be resized to fit within the overlay window while maintaining the aspect ratio of the image. • resizeToFill - The image will be resized in both the horizontal and/vertical dimensions if necessary. • maintainSize - The image is not resized. If the overlay image is equal in size or smaller than the overlay window, the image will be displayed in its entirety. If the overlay image is larger than the overlay window, in either the horizontal or vertical dimension, the image will be cropped when displayed.
imgsize	"90"	*	Image size. Values are specified as a % of the vertical size of the layout region. Supported values, when expressed as a percent, range from 0.0 to 100.0
imgstyle_bgcolor	"blue"	*	Background color to be applied to the layout when this style is applied using img.
imgstyle_bgopacity	"nowrap"	*	This attribute defines the opacity of the background color to be applied to the layout when this style is applied using img. It accepts a percentage value in the range 0-100(%), with 100 meaning fully opaque. The default value of this attribute is 0%. A <code>imgstyle_bgopacity=0</code> results in a fully transparent background.

Parameter	Default	Optional	Description
imgalignment	"center"	*	Alignment of the image within the layout region. This attribute does not apply when the <code>imgstyle_applymode</code> is set to <code>resizeToFill</code> . Values supported are: <code>center</code> , <code>centerLeft</code> , <code>centerRight</code> , <code>topLeft</code> , <code>bottomLeft</code> , <code>topRight</code> , <code>bottomRight</code> , <code>topCenter</code> , <code>bottomCenter</code> . For the case where content applied is static, <code>imgalignment</code> refers to the positioning of a static image within the overlay window. For the value <code>center</code> , the image is centered within the layout window. For the case where content applied is scrolled, <code>imgalignment</code> does not apply.

Content Body Parameters

Parameter	Default	Optional	Description
content_id	(none)		A name that can be used to refer to the specified body and its contents
content_applymode	"replace"	*	Defines how the content is to be applied. Values are: <code>replace</code> , <code>append</code> , and <code>delete</code>
content_duration	"0.0"	*	Specifies the minimum length of time to maintain the last content item being displayed prior to completing and terminating the content element. Values are specified in seconds with a resolution of 100 ms.
contentexit	"false"	*	Results in a <code>CONTENT_EXPIRY</code> notification event being sent when the execution of the instruction contained within the <code>content_duration</code> expires, or when there is an error in attempting to overlay the content. Values are <code>true</code> or <code>false</code> .
scroll_mode	"scrollOnce"	*	The scrolling mode. Values are: <code>scrollOnce</code> (scroll content one time) and <code>scrollContinuous</code> (scroll continuously).
speed	"25"	*	Speed of content scrolling in % per second relative to the text layout region. Values supported are from 1 to 100 in increments of 1%.

Parameter	Default	Optional	Description
direction	"rl"	*	Direction of content to be scrolled. Values supported are: lr (left to right), rl (right to left), tb (top to bottom), bt (bottom to top).
padding	"5"	*	Specifies minimum padding to be added before the first content element (p_id or img_id), between each content element, and at the end of the last content element to be scrolled. Values are in % relative to the text layout region in the dimension (width, height) of scrolling and supported values are from 1 to 100 in increments of 1%.

Individual Image Parameters

Parameter	Default	Optional	Description
img_id	(none)		A name that can be used to refer to the image element.
img_style	(none)		Refers to an imgstyle_id to apply to the content.
img_duration	"0"	*	Specifies a time duration for the content to be displayed. Values are specified in seconds and milliseconds. A value of "0" indicates that the content should be displayed indefinitely.
img_uri	(none)	*	Identifies the location of the image to be overlaid. The file:// and http:// or https:// schemes are supported.
img_type	image/png	*	Specifies the image MIME type of the image to be overlaid. Values supported are: image/png and image/jpeg.

Individual Text Parameters

Parameter	Default	Optional	Description
p_id	(none)		A name that can be used to refer to the paragraph element.
p_style	(none)		Refers to a textstyle_id to apply to the content.

Parameter	Default	Optional	Description
p_duration	"0"	*	Specifies time duration for the content to be displayed. Values are specified in seconds and milliseconds. A value of "0" indicates that the paragraph text should be displayed indefinitely. p_duration does not apply when content is scrolled.
p_uri	(none)	*	Identifies the location of the text to be overlaid. The file:// and http:// or https:// schemes are supported. This attribute may be omitted if inline text is specified using the text attribute.
p_type	"text/plain"	*	Used with the p_uri attribute. Specifies the MIME type of the text to be overlaid. Values supported are: text/plain.
encoding	"UTF8"	*	The encoding type of the text. Values are: UTF8, ASCII, or GB18030.
text		*	Inline text (e.g., text=Red Alert).

8. XMSTool RESTful Utility

This section provides details about the XMSTool RESTful Utility (also referred to herein as "XMSTool" or "Utility"). XMSTool is used for developing, debugging, and supporting applications for the PowerMedia XMS using the HTTP RESTful API.

XMSTool is a Java-based test application for passing and receiving RESTful API messages to and from the PowerMedia XMS. It can be used to build and parse individual RESTful messages, and can drive and record simple applications.

The utility provides the following:

- Support for both 1PCC and 3PCC (see the Call Control Models)
- Ability to manually enter and execute the RESTful API commands and observe the results
- Method to record Macros for automated execution of command sequences (Demo mode), enabling users to create simple Demos and debug their applications
- Pre-recorded Macros available for commonly used call scenarios
- Logging capabilities

XMSTool can be run in two different modes:

- **Demo/Simple Mode**
Uses predefined XML scripts; short application scenarios can be executed to demonstrate most of the PowerMedia XMS RESTful functionality. Session logging is available to examine the message interchange. Only sessions using inbound SIP calls are currently available in this mode.
- **Advanced Mode**
Allows individual RESTful commands to be manually entered for full PowerMedia XMS control. This mode is intended to be used by developers who are looking to become familiar with the RESTful API messages used to control PowerMedia XMS. It also allows the individual commands that make up a Macro/Demo to be recorded for replay or to provide an accurate way to reproduce a problem in PowerMedia XMS.

For detailed information about using XMSTool, refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide*.

9. Appendix A: Media File Formats

The following section details the supported media containers and codecs. When selecting appropriate values for the <audio> or <video> element format attribute, refer to the following table.

Media File Formats

	Play	Record	Default File Extension
Audio Container	WAV	WAV	*.wav
	AUD	AUD	*.aud
	Raw (headerless)	Raw (headerless)	*.pcm
	AMR	AMR	*.amr
	AMR-WB	AMR-WB	*.awb
	3GP	3GP	.3gp
Video Container	VID	VID	*.vid
	3GP	3GP	*.3gp
	MKV	MKV	*.mkv
	MP4	MP4	*.mp4

Audio Play

Audio Play - WAV

Codec	Sample Size	Sample Rate	RESTful Attribute format	RESTful Attribute format codecs	RESTful Attribute audiosamplesize	RESTful Attribute audiosamplerate	XMS MIME Type	XMS MIME Parameters
Linear	8 16	8000 11025 16000	audio/x-wav audio/wav audio/vnd.wave	n/a	n/a	n/a	audio/x-wav	n/a
Alaw	8	8000	audio/x-wav audio/wav audio/vnd.wave	n/a	n/a	n/a	audio/x-wav	n/a
Mulaw	8	8000	audio/x-wav audio/wav audio/vnd.wave	n/a	n/a	n/a	audio/x-wav	n/a

Audio Play - Dialogic AUD (proprietary)

Codec	Sample Size	Sample Rate	RESTful Attribute format	RESTful Attribute format codecs	RESTful Attribute audiosamplesize	RESTful Attribute audiosamplerate	XMS MIME Type	XMS MIME Parameters
Linear	8 16	8000 11025 16000	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
Alaw	8	8000	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
Mulaw	8	8000	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-NB (4.75k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-NB (5.15k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-NB (5.90k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-NB (6.70k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-NB (7.40k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-NB (7.95k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-NB (10.20k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-NB (12.20k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-WB (6.6k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-WB (8.85k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-WB (12.65k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-WB (14.25k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-WB (15.85k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-WB (18.25k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-WB (19.85k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-WB (23.05k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a
AMR-WB (23.85k)	n/a	n/a	audio/proprietary audio/x-aud	n/a	n/a	n/a	audio/x-aud	n/a

Audio Play - Raw (headerless)

Codec	Sample Size	Sample Rate	RESTful Attribute format	RESTful Attribute format codecs	RESTful Attribute audiosamplesize	RESTful Attribute audiosamplerate	XMS MIME Type	XMS MIME Parameters
Linear	8 16	8000 11025 16000	audio	linear, pcm	8 16	8 11 16	audio/L8 audio/L16	rate=8000 rate=11025 rate=16000
Alaw	8	8000	audio	alaw	8	8	audio/x-alaw-basic audio/PCMA	n/a
Mulaw	8	8000	audio	mulaw	8	8	audio/basic audio/PCMU	n/a

Audio Play - AMR

Codec	Sample Size	Sample Rate	RESTful Attribute format	RESTful Attribute format codecs	RESTful Attribute audiosamplesize	RESTful Attribute audiosamplerate	XMS MIME Type	XMS MIME Parameters
AMR	n/a	n/a	audio/amr	n/a	n/a	n/a	audio/AMR	n/a

Audio Play - AMR-WB

Codec	Sample Size	Sample Rate	RESTful Attribute format	RESTful Attribute format codecs	RESTful Attribute audiosamplesize	RESTful Attribute audiosamplerate	XMS MIME Type	XMS MIME Parameters
AMR-WB	n/a	n/a	audio/amr-wb	n/a	n/a	n/a	audio/AMR-WB	n/a

Audio Play - 3GP

Codec	Sample Size	Sample Rate	RESTful Attribute format	RESTful Attribute format codecs	RESTful Attribute audiosamplesize	RESTful Attribute audiosamplerate	XMS MIME Type	XMS MIME Parameters
AMR	n/a	n/a	audio/3gpp*	n/a	n/a	n/a	audio/3gpp	n/a
AMR-WB	n/a	n/a	audio/3gpp*	n/a	n/a	n/a	audio/3gpp	n/a

* To play a file with audio and video tracks, specify video/3gpp.

Audio Record

Audio Record - WAV

Codec	Sample Size	Sample Rate	RESTful Attribute format	RESTful Attribute format codecs	RESTful Attribute audiosamplesize	RESTful Attribute audiosamplerate	XMS MIME Type	XMS MIME Parameters
Linear	8 16	8000 11025 16000	audio/x-wav audio/wav audio/vnd.wave	linear, pcm	8 16	8 11 16	audio/x-wav	codec=L8 rate=8000 codec=L8 rate=11025 codec=L8 rate=16000 codec=L16 rate=8000 codec=L16 rate=11025 codec=L16 rate=16000
Alaw	8	8000	audio/x-wav audio/wav audio/vnd.wave	alaw	8	n/a	audio/x-wav	codec=alaw rate=8000
Mulaw	8	8000	audio/x-wav audio/wav audio/vnd.wave	mulaw	8	n/a	audio/x-wav	codec=mulaw rate=8000

Audio Record - Dialogic AUD (proprietary)

Codec	Sample Size	Sample Rate	RESTful Attribute format	RESTful Attribute format codecs	RESTful Attribute audiosamplesize	RESTful Attribute audiosamplerate	XMS MIME Type	XMS MIME Parameters
Linear	8 16	8000 11025 16000	audio/proprietary audio/x-aud	linear, pcm	8 16	8 11 16	audio/x-aud	codec=L8 rate=8000 codec=L8 rate=11025 codec=L8 rate=16000 codec=L16 rate=8000 codec=L16 rate=11025 codec=L16 rate=16000
Alaw	8	8000	audio/proprietary audio/x-aud	alaw	8	8	audio/x-aud	codec=alaw rate=8000
Mulaw	8	8000	audio/proprietary audio/x-aud	mulaw	8	8	audio/x-aud	codec=mulaw rate=8000
AMR-NB (4.75k)	n/a	n/a	audio/proprietary audio/x-aud	amrnb_4_75k	n/a	n/a	audio/x-aud	codec=AMR mode=0

Codec	Sample Size	Sample Rate	RESTful Attribute format	RESTful Attribute format codecs	RESTful Attribute audiosamplesize	RESTful Attribute audiosamplerate	XMS MIME Type	XMS MIME Parameters
AMR-NB (5.15k)	n/a	n/a	audio/proprietary audio/x-aud	amrnb_5_15k	n/a	n/a	audio/x-aud	codec=AMR mode=1
AMR-NB (5.90k)	n/a	n/a	audio/proprietary audio/x-aud	amrnb_5_90k	n/a	n/a	audio/x-aud	codec=AMR mode=2
AMR-NB (6.70k)	n/a	n/a	audio/proprietary audio/x-aud	amrnb_6_70k	n/a	n/a	audio/x-aud	codec=AMR mode=3
AMR-NB (7.40k)	n/a	n/a	audio/proprietary audio/x-aud	amrnb_7_40k	n/a	n/a	audio/x-aud	codec=AMR mode=4
AMR-NB (7.95k)	n/a	n/a	audio/proprietary audio/x-aud	amrnb_7_95k	n/a	n/a	audio/x-aud	codec=AMR mode=5
AMR-NB (10.20k)	n/a	n/a	audio/proprietary audio/x-aud	amrnb_10_20k	n/a	n/a	audio/x-aud	codec=AMR mode=6
AMR-NB (12.20k)	n/a	n/a	audio/proprietary audio/x-aud	amrnb_12_20k	n/a	n/a	audio/x-aud	codec=AMR mode=7
AMR-WB (6.6k)	n/a	n/a	audio/proprietary audio/x-aud	amrwb_6_6k	n/a	n/a	audio/x-aud	codec=AMR-WB mode=0
AMR-WB (8.85k)	n/a	n/a	audio/proprietary audio/x-aud	amrwb_8_85k	n/a	n/a	audio/x-aud	codec=AMR-WB mode=1
AMR-WB (12.65k)	n/a	n/a	audio/proprietary audio/x-aud	amrwb_12_65k	n/a	n/a	audio/x-aud	codec=AMR-WB mode=2
AMR-WB (14.25k)	n/a	n/a	audio/proprietary audio/x-aud	amrwb_14_25k	n/a	n/a	audio/x-aud	codec=AMR-WB mode=3
AMR-WB (15.85k)	n/a	n/a	audio/proprietary audio/x-aud	amrwb_15_85k	n/a	n/a	audio/x-aud	codec=AMR-WB mode=4
AMR-WB (18.25k)	n/a	n/a	audio/proprietary audio/x-aud	amrwb_18_25k	n/a	n/a	audio/x-aud	codec=AMR-WB mode=5
AMR-WB (19.85k)	n/a	n/a	audio/proprietary audio/x-aud	amrwb_19_85k	n/a	n/a	audio/x-aud	codec=AMR-WB mode=6
AMR-WB (23.05k)	n/a	n/a	audio/proprietary audio/x-aud	amrwb_23_05k	n/a	n/a	audio/x-aud	codec=AMR-WB mode=7
AMR-WB (23.85k)	n/a	n/a	audio/proprietary audio/x-aud	amrwb_23_85k	n/a	n/a	audio/x-aud	codec=AMR-WB mode=8

Audio Record - Raw (headerless)

Codec	Sample Size	Sample Rate	RESTful Attribute format	RESTful Attribute format codecs	RESTful Attribute audiosamplesize	RESTful Attribute audiosamplerate	XMS MIME Type	XMS MIME Parameters
Linear	8 16	8000 11025 16000	audio	linear, pcm	8 16	8 11 16	audio/L8 audio/L16	rate=8000 rate=11025 rate=16000
Alaw	8	8000	audio	alaw	8	8	audio/x-alaw-basic audio/PCMA	n/a
Mulaw	8	8000	audio	mulaw	8	8	audio/basic audio/PCMU	n/a

Audio Record - AMR

Codec	Sample Size	Sample Rate	RESTful Attribute format	RESTful Attribute format codecs	RESTful Attribute audiosamplesize	RESTful Attribute audiosamplerate	XMS MIME Type	XMS MIME Parameters
AMR	n/a	n/a	audio/amr	n/a	n/a	n/a	audio/AMR	mode=0-7 (default is 7)

Audio Record - AMR-WB

Codec	Sample Size	Sample Rate	RESTful Attribute format	RESTful Attribute format codecs	RESTful Attribute audiosamplesize	RESTful Attribute audiosamplerate	XMS MIME Type	XMS MIME Parameters
AMR-WB	n/a	n/a	audio/amr-wb	n/a	n/a	n/a	audio/AMR-WB	mode=0-8 (default is 8)

Audio Record - 3GP

Codec	Sample Size	Sample Rate	RESTful Attribute format	RESTful Attribute format codecs	RESTful Attribute audiosamplesize	RESTful Attribute audiosamplerate	XMS MIME Type	XMS MIME Parameters
AMR	n/a	n/a	audio/3gpp	n/a	n/a	n/a	audio/3gpp	codec=amr mode=0-7 (default is 7)
AMR-WB	n/a	n/a	audio/3gpp	n/a	n/a	n/a	audio/3gpp	codec=amr-wb mode=0-8 (default is 8)

Video Play

Video Play - Dialogic VID (proprietary)

Codec	RESTful Attribute format	RESTful Attribute format codecs	XMS MIME Type	XMS MIME Parameters
h263	video/proprietary	n/a	video/x-vid	n/a
h263-1998	video/proprietary	n/a	video/x-vid	n/a
h264	video/proprietary	n/a	video/x-vid	n/a
mp4v_es	video/proprietary	n/a	video/x-vid	n/a
jpeg	image/jpeg	jpeg	image/jpeg	n/a

Video Play – 3GP

Codec	RESTful Attribute format	RESTful Attribute format codecs	XMS MIME Type	XMS MIME Parameters
h263	video/3gpp	n/a	video/3gpp	n/a
h263-1998	video/3gpp	n/a	video/3gpp	n/a
h264	video/3gpp	n/a	video/3gpp	n/a

Video Play - MKV

Codec	RESTful Attribute format	RESTful Attribute format codecs	XMS MIME Type	XMS MIME Parameters
h264	video/mkv	n/a	video/x-matroska	n/a
vp8	video/mkv	n/a	video/x-matroska	n/a

Video Play - MP4

Codec	RESTful Attribute format	RESTful Attribute format codecs	XMS MIME Type	XMS MIME Parameters
h264	video/mp4	n/a	video/mp4	n/a

Video Record

Video Record - Dialogic VID (proprietary)

Video Codec	Resolution	Codecs	RESTful Attribute profile	RESTful Attribute level	RESTful Attribute maxbitrate	RESTful Attribute framerate	RESTful Attribute imagewidth	RESTful Attribute imageheight
H.263 / H.263-1998	CIF	h263	0	10	128000	10	352	288

Video Codec	Resolution	Codecs	RESTful Attribute profile	RESTful Attribute level	RESTful Attribute maxbitrate	RESTful Attribute framerate	RESTful Attribute imagewidth	RESTful Attribute imageheight
	CIF		0	20	128000	15	352	288
	CIF		0	30	384000	30	352	288
	QCIF		0	10	128000	15	176	144
	QCIF		0	20	128000	30	176	144
	n/a	native	n/a	n/a	n/a	n/a	n/a	n/a
H.264	CIF	h264	0	1.2	384000	15	352	288
	CIF		0	1.3	384000	30	352	288
	CIF		0	1.3	768000	30	352	288
	CIF		0	1.3	768000	25	352	288
	HD720p		0	3.1	2000000	15	1280	720
	QCIF		0	1.0	40000	15	176	144
	QCIF		0	1.1	128000	15	176	144
	QCIF		0	1.1	192000	30	176	144
	QVGA		0	1.2	384000	15	320	240
	QVGA		0	1.3	384000	30	320	240
	VGA		0	2.2	384000	15	640	480
	VGA		0	3.0	768000	25	640	480
	VGA		0	3.0	1000000	30	640	480
	n/a	native	n/a	n/a	n/a	n/a	n/a	n/a
H.264 supports Baseline Profile (i.e., 66). This combined with level is used to set the profile_level_id. The level must be entered in "x.x" format (i.e., 10 and 1b are invalid). To use the input video stream's resolution parameters as the target recording parameters, set the frame height and width to 0. To encode all frames without skipping any, set the framerate to 0.								
MPEG-4	CIF	mp4v-es	0	2	128000	15	352	288
	CIF		0	3	384000	15	352	288
	QCIF		0	0	44000	15	176	144
	QCIF		0	1	64000	15	176	144
	QVGA		0	3	384000	30	320	240
	VGA		0	4	800000	30	640	480
	n/a	native	n/a	n/a	n/a	n/a	n/a	n/a
MPEG-4 supports Simple Profile (i.e., SP3).								

Video Record - 3GP

Video Codec	Resolution	Codecs	RESTful Attribute profile	RESTful Attribute level	RESTful Attribute maxbitrate	RESTful Attribute framerate	RESTful Attribute imagewidth	RESTful Attribute imageheight
H.263 / H.263-1998	CIF	h263	0	10	128000	10	352	288
	CIF		0	20	128000	15	352	288
	CIF		0	30	384000	30	352	288
	QCIF		0	10	128000	15	176	144
	QCIF		0	20	128000	30	176	144
	n/a	native	n/a	n/a	n/a	n/a	n/a	n/a
H.264	CIF	h264	0	1.2	384000	15	352	288
	CIF		0	1.3	384000	30	352	288
	CIF		0	1.3	768000	30	352	288
	CIF		0	1.3	768000	25	352	288
	HD720p		0	3.1	2000000	15	1280	720
	QCIF		0	1.0	40000	15	176	144
	QCIF		0	1.1	128000	15	176	144
	QCIF		0	1.1	192000	30	176	144
	QVGA		0	1.2	384000	15	320	240
	QVGA		0	1.3	384000	30	320	240
	QVGA (portrait)		0	1.2	384000	15	240	320
	QVGA (portrait)		0	1.3	384000	30	240	320
	VGA		0	2.2	768000	15	640	480
	VGA		0	3.0	768000	25	640	480
	VGA		0	3.0	1000000	30	640	480
	n/a	native	n/a	n/a	n/a	n/a	n/a	n/a
H.264 supports Baseline Profile (i.e., 66). This combined with level is used to set the profile_level_id. The level must be entered in "x.x" format (i.e., 10 and 1b are invalid). To use the input video stream's resolution parameters as the target recording parameters, set the frame height and width to 0. To encode all frames without skipping any, set the framerate to 0.								

Video Record - MKV

Video Codec	Resolution	Codecs	RESTful Attribute profile	RESTful Attribute level	RESTful Attribute maxbitrate	RESTful Attribute framerate	RESTful Attribute imagewidth	RESTful Attribute imageheight
H.264	CIF	h264	0	1.2	384000	15	352	288
	CIF		0	1.3	384000	30	352	288
	CIF		0	1.3	768000	30	352	288
	CIF		0	1.3	768000	25	352	288

Video Codec	Resolution	Codecs	RESTful Attribute profile	RESTful Attribute level	RESTful Attribute maxbitrate	RESTful Attribute framerate	RESTful Attribute imagewidth	RESTful Attribute imageheight
	HD720p		0	3.1	2000000	15	1280	720
	QCIF		0	1.0	40000	15	176	144
	QCIF		0	1.1	128000	15	176	144
	QCIF		0	1.1	192000	30	176	144
	QVGA		0	1.2	384000	15	320	240
	QVGA		0	1.3	384000	30	320	240
	QVGA (portrait)		0	1.2	384000	15	240	320
	QVGA (portrait)		0	1.3	384000	30	240	320
	VGA		0	2.2	768000	15	640	480
	VGA		0	3.0	768000	25	640	480
	VGA		0	3.0	1000000	30	640	480
	n/a	native	n/a	n/a	n/a	n/a	n/a	n/a

H.264 supports Baseline Profile (i.e., 66). This combined with level is used to set the profile_level_id. The level must be entered in "x.x" format (i.e., 10 and 1b are invalid).

To use the input video stream's resolution parameters as the target recording parameters, set the frame height and width to 0. To encode all frames without skipping any, set the framerate to 0.

vp8	CIF	codecs=vp8	0	n/a	384000	15	352	288
	CIF		0	n/a	384000	30	352	288
	CIF		0	n/a	768000	30	352	288
	CIF		0	n/a	768000	25	352	288
	HD720p		0	n/a	2000000	15	1280	720
	QCIF		0	n/a	40000	15	176	144
	QCIF		0	n/a	128000	15	176	144
	QCIF		0	n/a	192000	30	176	144
	QVGA		0	n/a	384000	15	320	240
	QVGA		0	n/a	384000	30	320	240
	QVGA (portrait)		0	n/a	384000	15	240	320
	QVGA (portrait)		0	n/a	384000	30	240	320
	VGA		0	n/a	768000	15	640	480
	VGA		0	n/a	768000	25	640	480
	VGA		0	n/a	1000000	30	640	480
	n/a	native	n/a	n/a	n/a	n/a	n/a	n/a

To use the input video stream's resolution parameters as the target recording parameters, set the frame height and width to 0. To encode all frames without skipping any, set the framerate to 0.

Video Record - MP4

Video Codec	Resolution	Codecs	RESTful Attribute profile	RESTful Attribute level	RESTful Attribute maxbitrate	RESTful Attribute framerate	RESTful Attribute imagewidth	RESTful Attribute imageheight
H.264	CIF	h264	0	1.2	384000	15	352	288
	CIF		0	1.3	384000	30	352	288
	CIF		0	1.3	768000	30	352	288
	CIF		0	1.3	768000	25	352	288
	HD720p		0	3.1	2000000	15	1280	720
	QCIF		0	1.0	40000	15	176	144
	QCIF		0	1.1	128000	15	176	144
	QCIF		0	1.1	192000	30	176	144
	QVGA		0	1.2	384000	15	320	240
	QVGA		0	1.3	384000	30	320	240
	QVGA (portrait)		0	1.2	384000	15	240	320
	QVGA (portrait)		0	1.3	384000	30	240	320
	VGA		0	2.2	768000	15	640	480
	VGA		0	3.0	768000	25	640	480
	VGA		0	3.0	1000000	30	640	480
	n/a	native	n/a	n/a	n/a	n/a	n/a	n/a

H.264 supports Baseline Profile (i.e., 66). This combined with level is used to set the profile_level_id. The level must be entered in "x.x" format (i.e., 10 and 1b are invalid).

To use the input video stream's resolution parameters as the target recording parameters, set the frame height and width to 0. To encode all frames without skipping any, set the framerate to 0.

10. Appendix B: Use Case for Dialogic Proprietary Header Tags in a SIP/WebRTC INVITE

PowerMedia XMS supports various combinations of SIP header indications to specify NAT and RTP profiles on SIP calls. This feature supports ICE (Lite), SDES, DTLS, AVPF/SAVPF, and combinations in a SIP INVITE when using Dialogic proprietary Supported header tags. The tags are provided to the customer application through the SIP Header in RESTful API calls. The RESTful application can extract the SIP header indications to control the call session response. Refer to the following table for a list of the header tags.

Tag	API Options	Description
dlgc-encryption-sdes	encryption=srtp	Enables sdes-srtp
dlgc-encryption-dtls	encryption=dtls	Enables dtls-srtp
dlgc-ice	ice=yes	Enables ICE (Lite)
dlgc-rtcp-feedback-audio	rtcp_feedback=audio	Enables AVPF/SAVPF for audio (not currently supported)
dlgc-rtcp-feedback-video	rtcp_feedback=video	Enables AVPF/SAVPF for video
dlgc-rtcp-feedback-audiovideo	rtcp_feedback=audiovideo	Enables AVPF/SAVPF for audio and video (only video is currently supported)
dlgc-rtcp-feedback-none	rtcp_feedback=none	Overrides configuration and disables RTCP feedback on audio and video (only video is currently supported) if configured to be enabled by default

Use Case 1

This use case describes how to enable ICE (Lite), SDES, and AVPF/SAVPF with the RESTful API in 1PCC mode. The application receives an incoming call event as follows:

```
<web_service version="1.0">
  <event type="incoming" ... >
    ...
    <event data name="headers.Supported" value="dlgc-encryption-sdes, dlgc-ice, dlgc-rtcp-feedback-video" />
    ...
    <event_data name="uri" value="sip:rest@146.152.122.4" />
  </event>
</web_service>
```

To accept/answer the call:

```
<call answer="yes" encryption="srtp" ice="yes" rtcp_feedback="video" />
```

Use Case 2

This use case describes how to enable ICE (Lite), DTLS, and AVPF/SAVPF with the RESTful API in 1PCC mode. The application receives an incoming call event as follows:

```
<web_service version="1.0">
  <event type="incoming" ... >
    ...
    <event data name="headers.Supported" value="dlgc-encryption-dtls, dlgc-ice, dlgrtcp-feedback-video" />
    ...
    <event_data name="uri" value="sip:rest@146.152.122.4" />
  </event>
</web_service>
```

To accept/answer the call:

```
<call answer="yes" encryption="dtls" ice="yes" rtcp_feedback="video" />
```