RESTful bindings for Parlay X Web Services – Call Notification

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Table 1: Parlay X operations mapping 111

1. Scope

This specification defines a RESTful Call Notification API using an HTTP protocol binding, based on the similar API defined in [3GPP 29.199-03].

2. References

2.1 Normative References

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2.2 Informative References

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3. Terminology and Conventions

3.1 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope” and “Introduction”, are normative, unless they are explicitly indicated to be informative.

3.2 Definitions

For the purpose of this TS, all definitions from the OMA Dictionary apply [OMADICT].

3.3 Abbreviations

API	Application Programming Interface
HTTP	HyperText Transfer Protocol
JSON	JavaScript Object Notation
MIME	Multipurpose Internet Mail Extensions
OMA	Open Mobile Alliance
REST	REpresentational State Transfer
SCR	Static Conformance Requirements
TS	Technical Specification
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
XML	eXtensible Markup Language
XSD	XML Schema Definition

4. Introduction

The ParlayREST Technical Specification for Call Notification contains the HTTP protocol binding for the Parlay X Call Notification Web Services specification, using the REST architectural style. The specification provides resource definitions, the HTTP verbs applicable for each of these resources, and the element data structures, as well as support material including flow diagrams and examples using the various supported message body formats (i.e. XML, JSON, and form-urlencoding).

4.1 Version 1.0

Version 1.0 of Call Notification ParlayREST API specification supports the following:

- Managing subscriptions for Call Notifications, Call Direction Notifications and Media Interaction Notifications
- Notifications about Call Events, Call Direction Events and Media Interaction Events
- Managing Call Event Monitors
- Polling information about Call Events from Call Event Monitors

5. Call Notification API definition

This section is organized to support a comprehensive understanding of the Call Notification API design. It specifies the definition of all resources, definition of all data structures, and definitions of all operations permitted on the specified resources.

Common data types, naming conventions, fault definitions and namespaces are defined in [REST_TS_Common] and [OMA_REST_TS_Common].

The remainder of this document is structured as follows:

Section 5 starts with a table listing all the resources (and their URL) used by this API, along with the data structure and the supported HTTP verbs (section 5.1). What follows are the data structures (section 5.2). A sample of typical use cases is included in section 5.3, described as high level flow diagrams.

The remaining subsections in section 5 contain the detailed specification for each of the resources. Each such subsection defines the resource, the request URI variables that are common for all HTTP commands, the possible HTTP response codes, and the supported HTTP verbs. For each supported HTTP verb, a description of the functionality is provided, along with an example of a request and an example of a response. For each unsupported HTTP verb, the returned HTTP error status is specified, as well as what to return in the Allow header.

All examples in section 5 use XML as the format for the message body. Form-urlencoded examples are provided in Appendix C, while JSON examples are provided in Appendix D. Appendix B provides the Static Conformance Requirements (SCR).

For requests and responses that have a body, the following applies: in the requests received, the server SHALL support JSON and XML encoding of the parameters in the body, and MAY support www-form-urlencoded parameters in the body. The Server SHALL return either JSON or XML encoded parameters in the response body, according to the result of the content type negotiation as specified in [OMA_REST_TS_Common]. In notifications to the Client, the server SHALL use either XML or JSON encoding, depending on which format the client has specified in the related subscription.

Finally, Appendix E lists the Parlay X equivalent method for each supported ParlayREST resource and method combination, where applicable.

Note: Throughout this document client and application can be used interchangeably.

5.1 Resources Summary

This section summarizes all the resources used by the Call Notification API.

The figure below visualizes the resource structure defined by this specification. Note that those nodes in the resource tree which have associated HTTP methods defined in this specification are depicted by solid boxes.

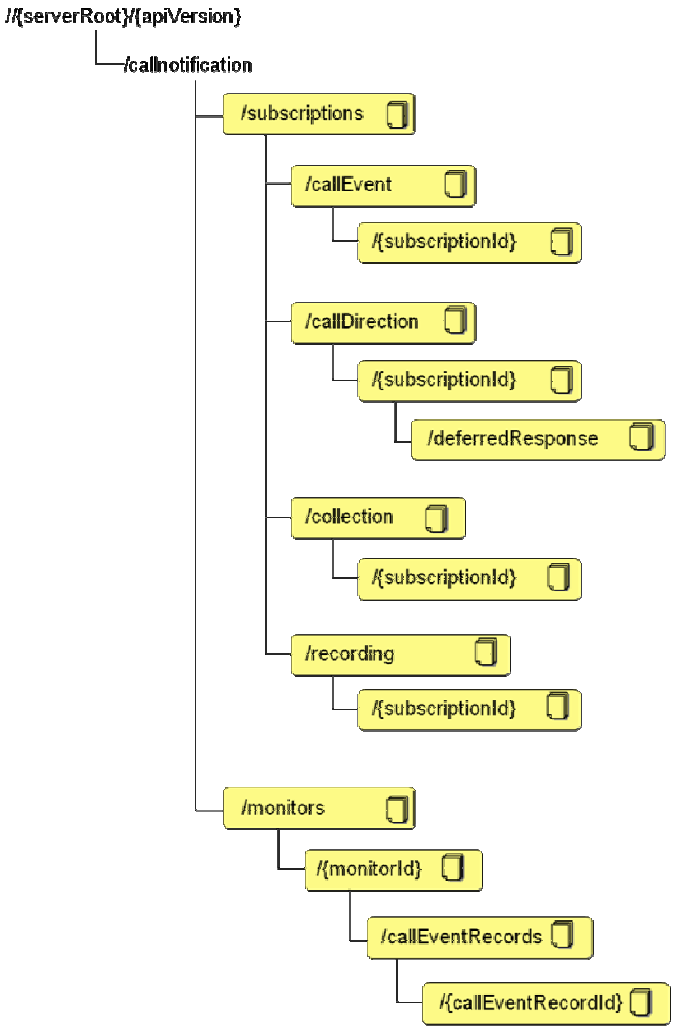

Figure 1 Resource structure defined by this specification

The following tables give a detailed overview of the resources defined in this specification, the data type of their representation and the allowed HTTP methods.

Purpose: To allow the client to retrieve all active subscriptions

Resource	URL Base URL: http://{serverRoot}/{apiVersion}/callnotification	Data Structures	HTTP verbs			
			GET	PUT	POST	DELETE
All Subscriptions related to Call Notification	/subscriptions	CallNotificationSubscriptionList	Read all active subscriptions	no	no	no

Purpose: To allow the client to manage its subscriptions for call notifications

Resource	URL Base URL: http://{serverRoot}/{apiVersion}/callnotification	Data Structures	HTTP verbs			
			GET	PUT	POST	DELETE
All Subscriptions to Call Event Notifications	/subscriptions/callEvent	CallNotificationSubscriptionList (used for GET) CallEventSubscription (used for POST) common:ResourceReference (OPTIONAL alternative for POST response)	Read all active call notification subscriptions	no	Create new subscription for call notifications	no
Individual Subscription to Call Event Notifications	/subscriptions/callEvent/{subscriptionId}	CallEventSubscription	Read individual subscription	no	no	Cancel subscription and stop correspondin g notifications

Purpose: To allow the client to manage its subscriptions for call direction related notifications

Resource	URL Base URL: http://{serverRoot}/{apiVersion}/callnotification	Data Structures	HTTP verbs			
			GET	PUT	POST	DELETE
All Subscriptions to Call Direction Notifications	/subscriptions/callDirection	CallNotificationSubscriptionList (used for GET) CallDirectionSubscription (used for POST) common:ResourceReference (OPTIONAL alternative for POST response)	Read all active call direction subscriptions	no	Create new subscription for call direction notifications	no
Individual Subscription to Call Direction Notifications	/subscriptions/callDirection/{subscriptionId}	CallDirectionSubscription	Read individual subscription	no	no	Cancel subscription and stop correspondin g notifications

Purpose: To allow the client to manage its subscriptions for media interaction related notifications

Resource	URL Base URL: http://{serverRoot}/{apiVersion}/callnotification	Data Structures	HTTP verbs			
			GET	PUT	POST	DELETE
All Subscriptions to Play-And-Collect Media Interaction Notifications	/subscriptions/collection	CallNotificationSubscriptionList (used for GET) PlayAndCollectInteractionSubscription (used for POST) common:ResourceReference (OPTIONAL alternative for POST response)	Read all active play-and-collect subscriptions	no	Create new subscription for play-and-collect notifications	no
Individual Subscription to Play-And-Collect Media Interaction Notifications	/subscriptions/collection/{subscriptionId}	PlayAndCollectInteractionSubscription	Read individual subscription	no	no	Cancel subscription and stop corresponding notifications
All Subscriptions to Play-And-Record Media Interaction Notifications	/subscriptions/recording	CallNotificationSubscriptionList (used for GET) PlayAndRecordInteractionSubscription (used for POST) common:ResourceReference (OPTIONAL alternative for POST response)	Read all active play-and-record subscriptions	no	Create new subscription for play-and-record notifications	no
Individual Subscription to Play-And-Record Media Interaction Notifications	/subscriptions/recording/{subscriptionId}	PlayAndRecordInteractionSubscription	Read individual subscription	no	no	Cancel subscription and stop corresponding notifications

Purpose: To allow the server to inform the client about a call event

Resource	URL <specified by the client>	Data Structures	HTTP verbs			
			GET	PUT	POST	DELETE
Client Notification about Call Events	Specified by client when subscription is created or provisioned	CallEventNotification	no	no	Notify client about a call event	no

Purpose: To allow the server to inform the client about an event related to media interactions

Resource	URL <specified by the client>	Data Structures	HTTP verbs			
			GET	POST	PUT	DELETE
Client Notification about Media Interaction Events	Specified by client when subscription is created or provisioned	MediaInteractionNotification	no	no	Notify client about a media interaction event (play-and-collect or play-and-record)	no

Purpose: To allow the server to inform the client about a call direction event

Resource	URL <specified by the client>	Data Structures	HTTP verbs			
			GET	PUT	POST	DELETE
Client Notification about Call Direction Events	Specified by client when subscription is created or provisioned	CallEventNotification (used for POST request) Action (used for POST response)	no	no	Notify client about a call event and request how to handle that event	no

Purpose: To allow the client to inform the server how to handle a call that has previously been deferred

Resource	URL http://{serverRoot}/{apiVersion}/callnotification	Data Structures	HTTP verbs			
			GET	PUT	POST	DELETE
Deferred responses to previous Call Direction Notifications	/subscriptions/callDirection/{subscriptionId}/deferredResponse	Action	no	no	Inform the server about a decision to handle a call in a deferred way	no

Purpose: To allow the client to manage its call event monitors

Resource	URL Base URL: http://{serverRoot}/{apiVersion}/callnotification	Data Structures	HTTP verbs			
			GET	PUT	POST	DELETE
All Call Event Monitors	/monitors	CallEventMonitorList (used for GET) CallEventMonitor (used for POST) common:ResourceReference (OPTIONAL alternative for POST response)	Read all active call monitors	no	Create new call monitor	no
Individual Call Event Monitor	/monitors/{monitorId}	CallEventMonitor	Read individual call event monitor	no	no	Remove individual call event monitor
List of Call Events per Monitor	/monitors/{monitorId}/callEventRecords	CallEventRecordList	Read all recent call events recorded by a particular monitor	no	no	no
Individual Call Event Information	/monitors/{monitorId}/callEventRecords/{callEventRecordId}	CallEventRecord	Read individual recorded call event information	no	no	Remove individual call event information

5.2 Call Notification ParlayREST API Data Structures

The namespace for the Call Notification data types is:

urn:oma:xml:rest:callnotification:1

The 'xsd' namespace is used in the present document to refer to the XML Schema data types defined in XML Schema [XMLSchema1, XMLSchema2]. The 'common' namespace is used in the present document to refer to the data types defined in [REST_TS_Common]. The use of the names 'xsd' and ‘common’ is not semantically significant.

5.2.1 Type: EventDescription

Contains the details of the event being notified to the application

Element	Type	Optional	Description
callEvent	CallEvents	No	Indicates the type of call event being notified, e.g. Busy
description	xsd:string	Yes	Optional description to give details about the callEvents (for instance the name of the Participant in case of disconnection) or details about the CallEvent when the callEvent subscribed is service specific.

5.2.2 Type: Action

Specifies the action to perform in response to a Call Direction notification

Element name	Element type	Optional	Description
actionToPerform	ActionValues	No	Indicates the action as described in section 5.2.18
routingAddress	xsd:anyURI	Yes	The address to be used in case the action indicates 'Route'
charging	common:ChargingInformation	Yes	Charge to apply to this call session
mediaInfo	common:MediaInfo [0..unbounded]	Yes	The desired media type(s) in case the action indicates 'Route. It identifies one or more media type(s) for the call, i.e. the media type(s) to be applied to the participants in the call session. It includes the media direction: incoming, outgoing or bidirectional. Only to be used if the action indicates 'Route' If the parameter is omitted, the media type(s) SHALL be negotiated by the underlying network.
decisionId	xsd:string	Yes	Identifier unique in the scope of a client to mark related requests and responses. This field SHALL be present in deferred call direction messages (i.e. in case actionToPerform is equal to "Deferred"), and SHALL be absent otherwise.

A root element named action of type Action is allowed in request and response bodies.

5.2.3 Type: CallNotificationSubscriptionList

List of all active call notification subscriptions.

Element	Type	Optional	Description
callEventSubscription	CallEventSubscription [0..unbounded]	Yes	Array of call event subscriptions
callDirectionSubscription	CallDirectionSubscription [0..unbounded]	Yes	Array of call direction subscriptions
playAndCollectInteractionSubscription	PlayAndCollectInteractionSubscription [0..unbounded]	Yes	Array of Play-And-Collect media interaction subscriptions

playAndRecordInteractionSubscription	PlayAndRecordInteractionSubscription [0..unbounded]	Yes	Array of Play-And-Record media interaction subscriptions
resourceURL	xsd:anyURI	Yes	Self referring URL. SHALL NOT be included in POST requests, MUST be included in responses to any HTTP method that returns an entity body, and in PUT requests.

A root element named callNotificationSubscriptionList of type CallNotificationSubscriptionList is allowed in request and response bodies.

5.2.4 Type: CallEventFilter

Contains the details of the call event being subscribed to by the application

Element	Type	Optional	Description
address	xsd:anyURI [1..unbounded]	No	Party addresses to receive notifications on. The address type/direction is determined by the AddressDirection. If the AddressDirection part is not populated this is for notifications on called party addresses.
criteria	CallEvents [0..unbounded]	Yes	List of Call Event values to generate notification.
addressDirection	AddressDirection	Yes	Determine if the address considered is "Called" or "Calling". It applies for all the addresses.

5.2.5 Type: CallNotificationSubscription

Generic subscription to call notification or call direction events.

Element	Type	Optional	Description
callbackReference	common:CallbackReference	No	Client's Notification URL and OPTIONAL callbackData
filter	CallEventFilter	No	Details of the call event being subscribed to.
clientCorrelator	xsd:string	Yes	A correlator that the client MAY use to tag this particular resource representation during a request to create a resource on the server. In case the field is present, the server SHALL not alter its value, and SHALL provide it as part of the representation of this resource. In case the field is not present, the server SHALL NOT generate it.
resourceURL	xsd:anyURI	Yes	Self referring URL. SHALL NOT be included in POST requests, MUST be included in responses to any HTTP method that returns an entity body, and in PUT requests.

Note that the clientCorrelator is used for purposes of error recovery as specified in [REST_TS_Common], and internal client purposes. The server is NOT REQUIRED to use the clientCorrelator value in any form in the creation of the URL of the resource. The document [REST_TS_Common] provides a recommendation regarding the generation of the value of this field.

5.2.6 Type: CallEventSubscription

Subscription to call event notifications.

A root element named callEventSubscription of type CallEventSubscription is allowed in request and response bodies.

It inherits all fields of the type CallNotificationSubscription (see section 5.2.5). There are no fields added in this version of the specification.

Regarding the clientCorrelator field, the note in section 5.2.5 applies.

5.2.7 Type: CallDirectionSubscription

Subscription to call direction notifications.

A root element named callDirectionSubscription of type CallDirectionSubscription is allowed in request and response bodies.

It inherits all fields of the type CallNotificationSubscription (see section 5.2.5). There are no fields added in this version of the specification.

Regarding the clientCorrelator field, the note in section 5.2.5 applies.

5.2.8 Type:MediaInteractionSubscription

Generic structure containing the details of the media interaction event being subscribed to by the application

Element	Type	Optional	Description
callbackReference	common:CallbackReference	No	Client's Notification URL and OPTIONAL callbackData
callSessionIdentifier	xsd:string	Choice	Identifies the existing call session via a Parlay X call session identifier.
link	common:Link	Choice	Identifies the existing call session via a ParlayREST resource URL. The “rel” attribute MUST be equal to “CallSessionInformation”, and the link MUST point to a resource of that type.
clientCorrelator	xsd:string	Yes	A correlator that the client MAY use to tag this particular resource representation during a request to create a resource on the server. In case the field is present, the server SHALL not alter its value, and SHALL provide it as part of the representation of this resource. In case the field is not present, the server SHALL NOT generate it.
resourceURL	xsd:anyURI	Yes	Self referring URL. SHALL NOT be included in POST requests, MUST be included in responses to any HTTP method that returns an entity body, and in PUT requests.

Regarding the clientCorrelator field, the note in section 5.2.5 applies.

XSD modelling uses a “choice” to select either callSessionIdentifier or link to refer to a call session.

5.2.9 Type: PlayAndCollectInteractionSubscription

Contains the details of the Play-And-Collect interaction event being subscribed to by the application.

A root element named playAndCollectInteractionSubscription of type PlayAndCollectInteractionSubscription is allowed in request and response bodies.

It inherits all fields of the type MediaInteractionSubscription (see section 5.2.8). There are no fields added in this version of the specification.

Regarding the clientCorrelator field, the note in section 5.2.5 applies.

5.2.10 Type: PlayAndRecordInteractionSubscription

Contains the details of the Play-And-Record interaction event being subscribed to by the application.

A root element named playAndRecordInteractionSubscription of type PlayAndRecordInteractionSubscription is allowed in request and response bodies.

It inherits all fields of the type MediaInteractionSubscription (see section 5.2.8). There are no fields added in this version of the specification.

Regarding the clientCorrelator field, the note in section 5.2.5 applies.

5.2.11 Type: CallEventNotification

Contains the details of the call event notified by the application for purposes of Call Direction or Call Notification handling.

Element	Type	Optional	Description
callbackData	xsd:string	Yes	CallbackData if passed by the application during the associated subscription. See [REST_TS_Common]
notificationType	CallEventNotificationTypes	No	Indicates whether this is a call event notification or a call direction notification.
eventDescription	EventDescription	No	Call Event values to generate notification and optional description to give details about the callEvents (for instance the name of the newParticipant) or service-specific details about the CallEvent.
callingParticipant	xsd:anyURI	No	It contains the address of the caller
callingParticipantName	xsd:string	Yes	It contains the name of the caller
calledParticipant	xsd:anyURI	No	It contains the address of the called participant
callSessionIdentifier	xsd:string	Yes	Identifies the call session. If provided allows applications to avail of additional web service features and capabilities that rely upon a callSessionIdentifier.
link	common:Link [0..unbounded]	Yes	Links to other resources that are in relationship to the current resource (e.g. related subscription, related call session).

			In case the Server provides the "callSessionIdentifier" element, and exposes via the Third Party Call API [REST_TS_3PCall] a resource representing the corresponding call session to the Client that receives the notification, it SHOULD include a link to that resource using the "link" element.

A root element named callEventNotification of type CallEventNotification is allowed in event notification request bodies.

5.2.12 Type: MediaInteractionNotification

Provides the result of a media interaction (play and collect or play and record).

Element	Type	Optional	Description
callbackData	xsd:string	Yes	CallbackData if passed by the application during the associated subscription. See [REST_TS_Common]
notificationType	MediaInteractionNotificationTypes	No	Indicates whether this is a play-and-collect notification or play-and-record notification.
callParticipant	xsd:anyURI	No	The call participant who has generated the Media Interaction Event
mediaInteractionResult	xsd:string	No	The result of the media interaction. In case of play-and-collect, this SHALL include the digits collected. In case of play-and-record, this SHALL include the location of the recorded information.
link	common:Link [0..unbounded]	Yes	Links to other resources that are in relationship to the current resource (e.g. related subscription, related call session, related call session participant). In case the Server exposes via the Third Party Call API [REST_TS_3PCall] a resource representing the underlying call session to the Client that receives the notification, it SHOULD include a link to that resource using the "link" element, and SHOULD further include a link to the call participant who generated the interaction result.

A root element named mediaInteractionNotification of type MediaInteractionNotification is allowed in event notification request bodies.

5.2.13 Type: CallEventMonitorList

List of all active call monitors.

Element	Type	Optional	Description
callEventMonitor	CallEventMonitor [0..unbounded]	Yes	Array of call event monitors
resourceURL	xsd:anyURI	Yes	Self referring URL. SHALL NOT be included in POST requests, MUST be included in responses to any HTTP method that returns an entity body, and in PUT requests.

A root element named callEventMonitorList of type CallEventMonitorList is allowed in request and response bodies.

5.2.14 Type: CallEventMonitor

Monitor for call events.

Element	Type	Optional	Description
filter	CallEventFilter	No	Details of the call event being monitored.
callEventRecordList	CallEventRecordList	Yes	List of call event records recorded by this monitor.
clientCorrelator	xsd:string	Yes	A correlator that the client MAY use to tag this particular resource representation during a request to create a resource on the server. In case the field is present, the server SHALL not alter its value, and SHALL provide it as part of the representation of this resource. In case the field is not present, the server SHALL NOT generate it.
resourceURL	xsd:anyURI	Yes	Self referring URL. SHALL NOT be included in POST requests, MUST be included in responses to any HTTP method that returns an entity body, and in PUT requests.

A root element named callEventMonitor of type CallEventMonitor is allowed in request and response bodies.

Regarding the clientCorrelator field, the note in section 5.2.5 applies.

5.2.15 Type: CallEventRecordList

List of call event records.

Element	Type	Optional	Description
callEventRecord	CallEventRecord [0..unbounded]	Yes	Array of call event records
resourceURL	xsd:anyURI	Yes	Self referring URL. SHALL NOT be included in POST requests, MUST be included in responses to any HTTP method that returns an entity

			body, and in PUT requests.

A root element named callEventRecordList of type CallEventRecordList is allowed in request and response bodies.

5.2.16 Type: CallEventRecord

Contains the details of a call event as recorded by a call event monitor.

Element	Type	Optional	Description
eventDescription	EventDescription	No	Call Event type and optional description to give details about the callEvents (for instance the name of the newParticipant) or service-specific details about the CallEvent.
callingParticipant	xsd:anyURI	No	It contains the address of the caller
callingParticipantName	xsd:string	Yes	It contains the name of the caller
calledParticipant	xsd:anyURI	No	It contains the address of the called participant
callSessionIdentifier	xsd:string	Yes	Identifies the call session. If provided allows applications to avail of additional web service features and capabilities that rely upon a callSessionIdentifier.
timestamp	xsd:dateTime	No	Time when the event occurred
resourceURL	xsd:anyURI	Yes	Self referring URL. SHALL NOT be included in POST requests, MUST be included in responses to any HTTP method that returns an entity body, and in PUT requests.
link	common:Link [0..unbounded]	Yes	Links to other resources that are in relationship to the current resource (e.g. related call session). In case the Server provides the “callSessionIdentifier” element, and exposes via the Third Party Call API [REST_TS_3PCall] a resource representing the corresponding call session to the Client that receives the notification, it SHOULD include a link to that resource using the “link” element.

A root element named callEventRecord of type CallEventRecord is allowed in request and response bodies.

5.2.17 Enumeration: CallEvents

CallEvents is an enumeration which lists the possible call events about which the application could be notified.

Enumeration value	Description
Busy	Called party is busy. This value is allowed for both Call Direction and Call Notification.
NotReachable	Called party is not reachable. This value is allowed for both Call Direction and Call Notification.
NoAnswer	Called party doesn’t answer. This value is allowed for both Call Direction and Call Notification.

CalledNumber	A call session between two parties, a calling participant and a called participant (called number) is being attempted. This value is allowed for both Call Direction and Call Notification.
Answer	Called Participant has confirmed (answered) the call. This value is only allowed for Call Notification but not for Call Direction.
Disconnected	Called (or calling) party disconnected. This value is allowed for both Call Direction and Call Notification.

5.2.18 Enumeration: ActionValues

The ActionValues data type is an enumeration with the following values.

Enumeration value	Description
Route	Request to (re-)route the call to the address indicated with routingAddress.
Continue	Request to continue the call without any changes. This will result in normal handling of the event in the network.
EndCall	Request to end the call. This will result in termination of the call. The callingParty will receive a tone or announcement.
Deferred	Indicates that the action can not be determined immediately, and the decision will be communicated in a later request from the Client to the Server.

5.2.19 Enumeration: CallEventNotificationTypes

The CallEventSubscriptionNotificationTypes data type is an enumeration that defines the allowed values for types of subscriptions and the associated notifications for call events.

Enumeration value	Description
CallEvent	Subscription to and notification of call events
CallDirection	Subscription to and notification of call direction requests

5.2.20 Enumeration: MediaInteractionNotificationTypes

The MediaInteractionSubscriptionNotificationTypes data type is an enumeration that defines the allowed values for types of subscriptions and the associated notifications.

Enumeration value	Description
PlayAndCollect	Subscription to and notification of play and collect requests
PlayAndRecord	Subscription to and notification of play and record requests

5.2.21 Enumeration: AddressDirection

The AddressDirection data type is an enumeration that defines the allowed values for address directions in call event filters.

Enumeration value	Description
Called	The associated address indicates a called party.
Calling	The associated address indicates a calling party.

5.2.22 Values of the Link "rel" attribute

The "rel" attribute of the Link element (see [REST_TS_Common]) is a free string set by the server implementation, to indicate a relationship between the current resource and an external resource. The following are possible strings, indicating resources that are defined in this specification which the "link" element can point to (list is non-exhaustive, and can be extended):

- Action
- CallNotificationSubscriptionList
- CallEventSubscription
- CallDirectionSubscription
- PlayAndCollectInteractionSubscription
- PlayAndRecordInteractionSubscription
- CallEventMonitorList
- CallEventMonitor
- CallEventRecordList
- CallEventRecord

These values indicate the kind of resource that the link points to.

5.3 Sequence Diagrams

5.3.1 Subscription to call event notifications

This figure below shows a scenario for an application subscribing to call event notifications.

The resources:

- In order to subscribe to call event notifications, create a new resource under **http://{serverRoot}/{apiVersion}/callnotification/subscriptions/callEvent**
- In order to cancel a previously-created subscription to call event notifications, delete the resource created in the subscription **http://{serverRoot}/{apiVersion}/callnotification/subscriptions/callEvent/{subscriptionId}**

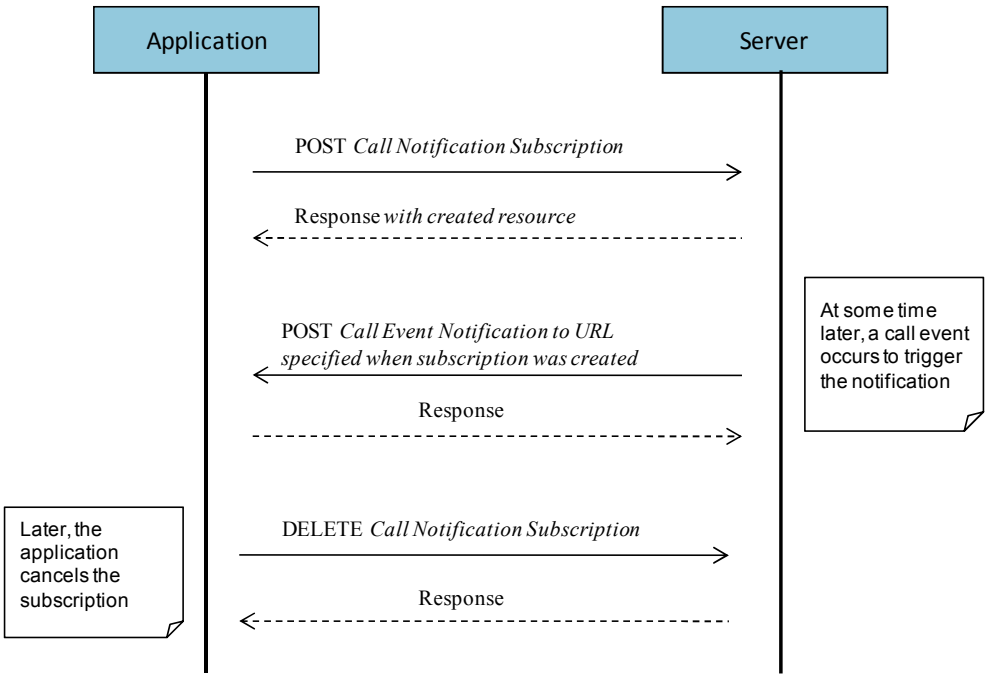

Figure 2 Subscribing to Call Event Notifications

Outline of the flows:

1. An application subscribes to notifications for call events using POST and receives the result resource URL containing the subscriptionId.
2. When the event which satisfies the specified criteria occurs, the Server notifies the Application by using POST to the specified endpoint.
3. The application stops the notification using DELETE with a resource URL containing the subscriptionId.

5.3.2 Subscription to call direction notifications

This figure below shows a scenario for an application subscribing to call direction notifications.

The resources:

- In order to subscribe to call direction notifications, create a new resource under **http://{serverRoot}/{apiVersion}/callnotification/subscriptions/callDirection**
- In order to cancel a previously-created subscription to call direction notifications, delete the resource created in the subscription **http://{serverRoot}/{apiVersion}/callnotification/subscriptions/callDirection/{subscriptionId}**

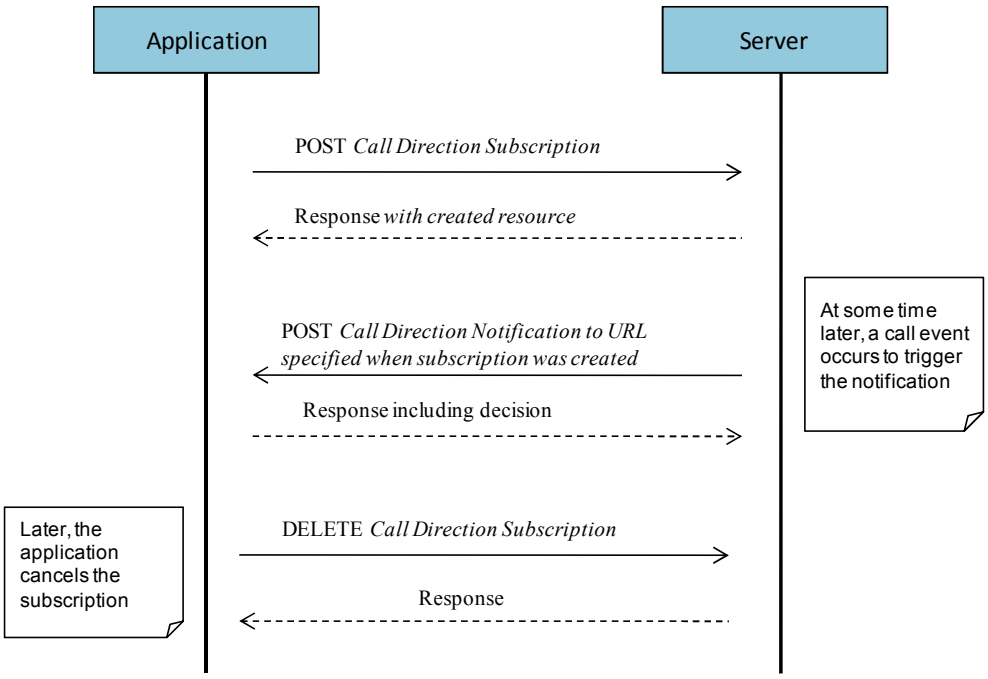

Figure 3 Subscribing to Call Direction Notifications

Outline of the flows:

1. An application subscribes to call direction notifications using POST and receives the result resource URL containing the subscriptionId.
2. When the event which satisfies the specified criteria occurs, the Server notifies the Application by using POST to the specified endpoint. The Application needs to respond with a decision which action to be performed.
3. The application stops the notification using DELETE with a resource URL containing the subscriptionId.

5.3.3 Resource: Subscription to media interaction notifications

This figure below shows a scenario for an application subscribing to media interaction notifications with the user, e.g. when an announcement is played before entering a call and the user is asked to press a digit to continue.

Note that playing of the announcement and collection of the digits is handled by the Audio Call service [REST_TS_AudioCall].

The resources:

- In order to subscribe to media interaction notifications, create a new resource under **http://{serverRoot}/{apiVersion}/callnotification/subscriptions/collection**
- In order to cancel a previously-created subscription to media interaction notifications, delete the resource created in the subscription **http://{serverRoot}/{apiVersion}/callnotification/subscriptions/collection/{subscriptionId}**

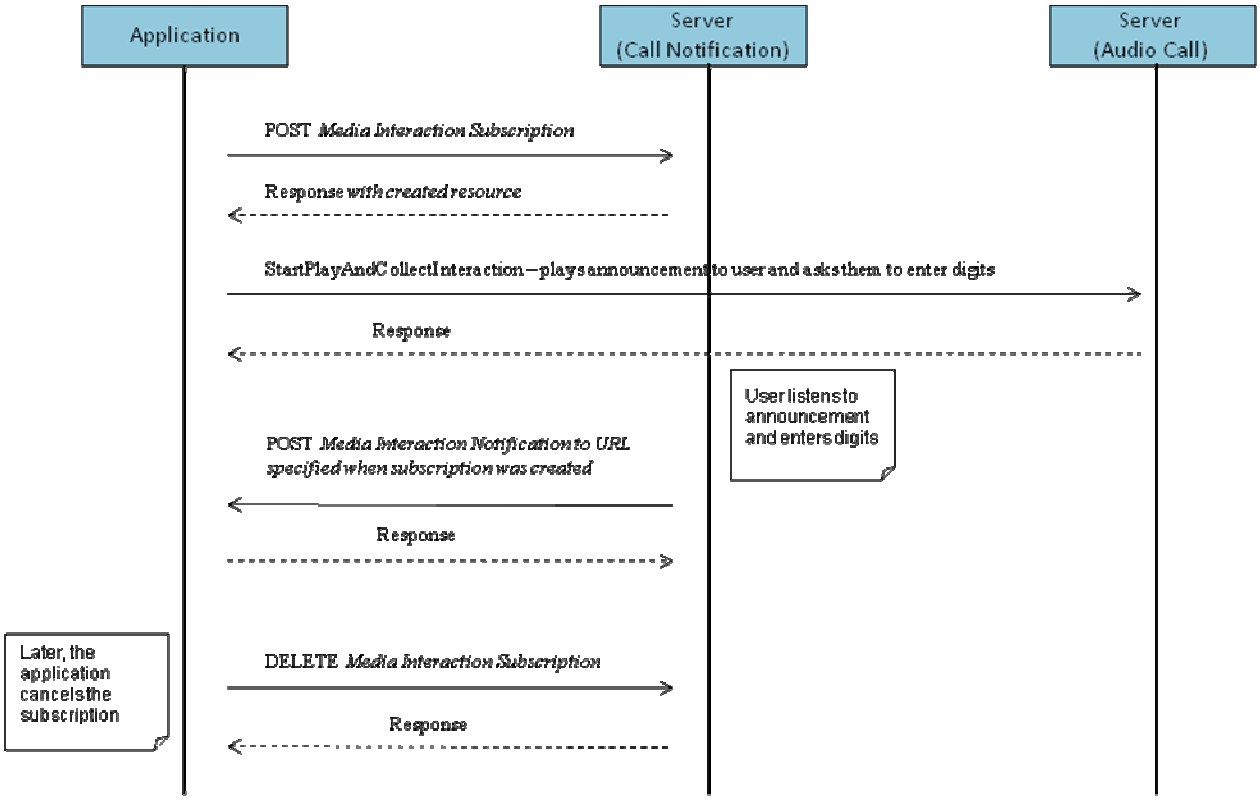

Figure 4 Subscribing to Media Interaction Notifications

Outline of the flows:

1. An application subscribes to media interaction notifications using POST and receives the result resource URL containing the subscriptionId.
2. When an event which satisfies the specified criteria occurs, the Server notifies the Application by using POST to the specified endpoint.
3. The application stops the notification using DELETE with a resource URL containing the subscriptionId.

5.4 Resource: All Subscriptions related to CallNotification

The resource used is:

http://{serverRoot}/{apiVersion}/callnotification/subscriptions

This resource is used as a container for all subscriptions to notifications about call events.

5.4.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com/exampleAPI
apiVersion	version of the ParlayREST API clients want to use (e.g. 1 for version 1.x)

5.4.2 Response Codes

5.4.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.4.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Call Notification, see [3GPP 29.199-03].

5.4.3 GET

This operation is used to read all subscriptions to notifications about call events.

5.4.3.1 Example: Retrieving all subscriptions (Informative)

5.4.3.1.1 Request

```
GET /exampleAPI/1/callnotification/subscriptions HTTP/1.1
Accept: application/xml
Host: example.com
```

5.4.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callNotificationSubscriptionList xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callEventSubscription>
    <callbackReference>
      <notifyURL>http://application.example.com/notifications/CallNotificationURL</notifyURL>
    </callbackReference>
    <filter>
      <address>tel:+15555550101</address>
      <address>tel:+15555550102</address>
      <criteria>Answer</criteria>
      <criteria>Busy</criteria>
      <addressDirection>Called</addressDirection>
    </filter>
    <clientCorrelator>112345</clientCorrelator>
    <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001</resourceURL>
  </callEventSubscription>
  <callEventSubscription>
    <callbackReference>
      <notifyURL>http://application.example.com/notifications/CallNotificationURL</notifyURL>
    </callbackReference>
    <filter>
      <address>tel:+15555550103</address>
      <address>tel:+15555550104</address>
      <criteria>Busy</criteria>
      <addressDirection>Called</addressDirection>
    </filter>
```

```
    <clientCorrelator>012345</clientCorrelator>
    <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub002</resourceURL>
  </callEventSubscription>
  <callDirectionSubscription>
    <callbackReference>
      <notifyURL>http://application.example.com/notifications/CallDirectionURL</notifyURL>
    </callbackReference>
    <filter>
      <address>tel:+15555550101</address>
      <address>tel:+15555550102</address>
      <criteria>Busy</criteria>
      <addressDirection>Called</addressDirection>
    </filter>
    <clientCorrelator>212345</clientCorrelator>
    <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001</resourceURL>
  </callDirectionSubscription>
  <playAndCollectInteractionSubscription>
    <callbackReference>
      <notifyURL>http://application.example.com/notifications/MediaInteractionNotificationURL</notifyURL>
    </callbackReference>
    <callSessionIdentifier>A1234</callSessionIdentifier>
    <clientCorrelator>312345</clientCorrelator>
    <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/collection/sub001</resourceURL>
  </playAndCollectInteractionSubscription>
  <playAndCollectInteractionSubscription>
    <callbackReference>
      <notifyURL>http://application.example.com/notifications/MediaInteractionNotificationURL</notifyURL>
    </callbackReference>
    <callSessionIdentifier>A5678</callSessionIdentifier>
    <clientCorrelator>412345</clientCorrelator>
    <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/recording/sub001</resourceURL>
  </playAndCollectInteractionSubscription>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions</resourceURL>
</cn:callNotificationSubscriptionList>
```

5.4.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the ‘Allow: GET,’ field in the response as per section 14.7 of [RFC 2616].

5.4.5 POST

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the ‘Allow: GET,’ field in the response as per section 14.7 of [RFC 2616].

5.4.6 DELETE

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the ‘Allow: GET,’ field in the response as per section 14.7 of [RFC 2616].

5.5 Resource: All Subscriptions to Call Event Notifications

The resource used is:

http://{serverRoot}/{apiVersion}/callnotification/subscriptions/callEvent

This resource is used as a container for all subscriptions to call event notifications.

5.5.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com/exampleAPI
apiVersion	version of the ParlayREST API clients want to use (e.g. 1 for version 1.x)

5.5.2 Response Codes

5.5.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.5.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Call Notification, see [3GPP 29.199-03].

5.5.3 GET

This operation is used to read all subscriptions to call event notifications.

5.5.3.1 Example: Retrieving all subscriptions to call event notifications (Informative)

5.5.3.1.1 Request

```
GET /exampleAPI/1/callnotification/subscriptions/callEvent HTTP/1.1
Accept: application/xml
Host: example.com
```

5.5.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callNotificationSubscriptionList xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callEventSubscription>
    <callbackReference>
      <notifyURL>http://application.example.com/notifications/CallNotificationURL</notifyURL>
    </callbackReference>
    <filter>
```

```
      <address>tel:+15555550101</address>
      <address>tel:+15555550102</address>
      <criteria>Answer</criteria>
      <criteria>Busy</criteria>
      <addressDirection>Called</addressDirection>
    </filter>
    <clientCorrelator>112345</clientCorrelator>
    <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001</resourceURL>
  </callEventSubscription>
  <callEventSubscription>
    <callbackReference>
      <notifyURL>http://application.example.com/notifications/CallNotificationURL</notifyURL>
    </callbackReference>
    <filter>
      <address>tel:+15555550103</address>
      <address>tel:+15555550104</address>
      <criteria>Busy</criteria>
      <addressDirection>Called</addressDirection>
    </filter>
    <clientCorrelator>012345</clientCorrelator>
    <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub002</resourceURL>
  </callEventSubscription>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions</resourceURL>
</cn:callNotificationSubscriptionList>
```

5.5.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET,' field in the response as per section 14.7 of [RFC 2616].

5.5.5 POST

This operation is used for creating a new subscription to call event notifications.

5.5.5.1 Example 1: Creating a new subscription to call event notifications, response with copy of created resource (Informative)

5.5.5.1.1 Request

```
POST /exampleAPI/1/callnotification/subscriptions/callEvent HTTP/1.1
Content-Type: application/xml
Content-Length: nnnn
Accept: application/xml
Host: example.com

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/CallNotificationURL</notifyURL>
  </callbackReference>
  <filter>
    <address>tel:+15555550101</address>
    <address>tel:+15555550102</address>
    <criteria>Answer</criteria>
```

```
    <criteria>Busy</criteria>
    <addressDirection>Called</addressDirection>
  </filter>
  <clientCorrelator>112345</clientCorrelator>
</cn:callEventSubscription>
```

5.5.5.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/CallNotificationURL</notifyURL>
  </callbackReference>
  <filter>
    <address>tel:+15555550101</address>
    <address>tel:+15555550102</address>
    <criteria>Answer</criteria>
    <criteria>Busy</criteria>
    <addressDirection>Called</addressDirection>
  </filter>
  <clientCorrelator>112345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001</resourceURL>
</cn:callEventSubscription>
```

5.5.5.2 Example 2: Creating a new subscription to call event notifications, response with location of created resource (Informative)

5.5.5.2.1 Request

```
POST /exampleAPI/1/callnotification/subscriptions/callEvent HTTP/1.1
Content-Type: application/xml
Content-Length: nnnn
Accept: application/xml
Host: example.com

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/CallNotificationURL</notifyURL>
  </callbackReference>
  <filter>
    <address>tel:+15555550101</address>
    <address>tel:+15555550102</address>
    <criteria>Answer</criteria>
    <criteria>Busy</criteria>
    <addressDirection>Called</addressDirection>
  </filter>
```

```
  <clientCorrelator>112345</clientCorrelator>
</cn:callEventSubscription>
```

5.5.5.2.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<common:resourceReference xmlns:common="urn:oma:xml:rest:common:1">
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001</resourceURL>
</common:resourceReference>
```

5.5.6 DELETE

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET,' field in the response as per section 14.7 of [RFC 2616].

5.6 Resource: Individual Subscription to Call Event Notifications

The resource used is:

http://{serverRoot}/{apiVersion}/callnotification/subscriptions/callEvent/{subscriptionId}

This resource represents an individual subscription to call event notifications.

5.6.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com/exampleAPI
apiVersion	version of the ParlayREST API clients want to use (e.g. 1 for version 1.x)
subscriptionId	identifier of the subscription

5.6.2 Response Codes

5.6.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.6.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Call Notification, see [3GPP 29.199-03].

5.6.3 GET

This operation is used for reading an individual subscription to call event notifications.

5.6.3.1 Example: Retrieving an individual subscription to call event notifications (Informative)

This example shows also an alternative way to indicate desired content type in response from the server, by using URL query parameter "?resFormat" which is described in [OMA_REST_TS_Common].

5.6.3.1.1 Request

```
GET /exampleAPI/1/callnotification/subscriptions/callEvent/sub001?resFormat=XML HTTP/1.1

Host: example.com
```

5.6.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/CallNotificationURL</notifyURL>
  </callbackReference>
  <filter>
    <address>tel:+15555550101</address>
    <address>tel:+15555550102</address>
    <criteria>Answer</criteria>
    <criteria>Busy</criteria>
    <addressDirection>Called</addressDirection>
  </filter>
  <clientCorrelator>112345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001</resourceURL>
</cn:callEventSubscription>
```

5.6.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET, DELETE' field in the response as per section 14.7 of [RFC 2616].

5.6.5 POST

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET, DELETE' field in the response as per section 14.7 of [RFC 2616].

5.6.6 DELETE

This operation is used to cancel a subscription to call event notifications and to stop corresponding notification messages.

5.6.6.1 Example: Removing a subscription to call event notifications(Informative)

5.6.6.1.1 Request

```
DELETE /exampleAPI/1/callnotification/subscriptions/callEvent/sub001 HTTP/1.1
Accept: application/xml
Host: example.com
```

5.6.6.1.2 Response

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 17:51:59 GMT
```

5.7 Resource: All Subscriptions to Call Direction Notifications

The resource used is:

http://{serverRoot}/{apiVersion}/callnotification/subscriptions/callDirection

This resource is used as a container for all subscriptions to call direction notifications.

5.7.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com/exampleAPI
apiVersion	version of the ParlayREST API clients want to use (e.g. 1 for version 1.x)

5.7.2 Response Codes

5.7.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.7.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Call Notification, see [3GPP 29.199-03].

5.7.3 GET

This operation is used to read all subscriptions to call direction notifications.

5.7.3.1 Example: Retrieving all subscriptions to call direction notifications (Informative)

5.7.3.1.1 Request

```
GET /exampleAPI/1/callnotification/subscriptions/callDirection HTTP/1.1
Accept: application/xml
Host: example.com
```

5.7.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callNotificationSubscriptionList xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callDirectionSubscription>
    <callbackReference>
      <notifyURL>http://application.example.com/notifications/CallDirectionURL</notifyURL>
    </callbackReference>
    <filter>
      <address>tel:+15555550101</address>
      <address>tel:+15555550102</address>
      <criteria>Busy</criteria>
      <addressDirection>Called</addressDirection>
    </filter>
    <clientCorrelator>212345</clientCorrelator>
    <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001</resourceURL>
  </callDirectionSubscription>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection</resourceURL>
</cn:callNotificationSubscriptionList>
```

5.7.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET,' field in the response as per section 14.7 of [RFC 2616].

5.7.5 POST

This operation is used for creating a new subscription to call direction notifications.

5.7.5.1 Example: Creating a new subscription to call direction notifications (Informative)

5.7.5.1.1 Request

```
POST /exampleAPI/1/callnotification/subscriptions/callDirection HTTP/1.1
Content-Type: application/xml
Content-Length: nnnn
Accept: application/xml
Host: example.com
```

```
<?xml version="1.0" encoding="UTF-8"?>
<cn:callDirectionSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/CallDirectionURL</notifyURL>
  </callbackReference>
  <filter>
    <address>tel:+15555550101</address>
    <address>tel:+15555550102</address>
    <criteria>Busy</criteria>
    <addressDirection>Called</addressDirection>
  </filter>
  <clientCorrelator>212345</clientCorrelator>
</cn:callDirectionSubscription>
```

5.7.5.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callDirectionSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/CallDirectionURL</notifyURL>
  </callbackReference>
  <filter>
    <address>tel:+15555550101</address>
    <address>tel:+15555550102</address>
    <criteria>Busy</criteria>
    <addressDirection>Called</addressDirection>
  </filter>
  <clientCorrelator>212345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001</resourceURL>
</cn:callDirectionSubscription>
```

Note that alternatively, a ‘resourceReference’ root element can be returned, as illustrated in section 5.5.5.2.2.

5.7.6 DELETE

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the ‘Allow: GET,’ field in the response as per section 14.7 of [RFC 2616].

5.8 Resource: Individual subscription to call direction notifications

The resource used is:

http://{serverRoot}/{apiVersion}/callnotification/subscriptions/callDirection/{subscriptionId}

This resource represents an individual subscription to call direction notifications.

5.8.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com/exampleAPI
apiVersion	version of the ParlayREST API clients want to use (e.g. 1 for version 1.x)
subscriptionId	identifier of the subscription

5.8.2 Response Codes

5.8.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.8.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Call Notification, see [3GPP 29.199-03].

5.8.3 GET

This operation is used for reading an individual subscription to call direction notifications.

5.8.3.1 Example: Retrieving an individual subscription to call direction notifications (Informative)

5.8.3.1.1 Request

```
GET /exampleAPI/1/callnotification/subscriptions/callDirection/sub001 HTTP/1.1
Accept: application/xml
Host: example.com
```

5.8.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callDirectionSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
```

```
    <notifyURL>http://application.example.com/notifications/CallDirectionURL</notifyURL>
  </callbackReference>
  <filter>
    <address>tel:+15555550101</address>
    <address>tel:+15555550102</address>
    <criteria>Busy</criteria>
    <addressDirection>Called</addressDirection>
  </filter>
  <clientCorrelator>212345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001</resourceURL>
</cn:callDirectionSubscription>
```

5.8.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET, DELETE' field in the response as per section 14.7 of [RFC 2616].

5.8.5 POST

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET, DELETE' field in the response as per section 14.7 of [RFC 2616].

5.8.6 DELETE

This operation is used to cancel a subscription to CallDirection events and to stop corresponding notification messages.

5.8.6.1 Example: Removing a subscription to call direction notifications (Informative)

5.8.6.1.1 Request

```
DELETE /exampleAPI/1/callnotification/subscriptions/callDirection/sub001 HTTP/1.1
Accept: application/xml
Host: example.com
```

5.8.6.1.2 Response

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 17:51:59 GMT
```

5.9 Resource: All Subscriptions to Play-And-Collect Media Interaction Notifications

The resource used is:

http://{serverRoot}/{apiVersion}/callnotification/subscriptions/collection

This resource is used as a container for all subscriptions to Play-And-Collect interaction notifications.

5.9.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com/exampleAPI
apiVersion	version of the ParlayREST API clients want to use (e.g. 1 for version 1.x)

5.9.2 Response Codes

5.9.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.9.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Call Notification, see [3GPP 29.199-03].

5.9.3 GET

This operation is used to read all subscriptions to Play-And-Collect Media Interaction notifications.

5.9.3.1 Example: Retrieving all subscriptions to Play-And-Collect media interaction notifications (Informative)

5.9.3.1.1 Request

```
GET /exampleAPI/1/callnotification/subscriptions/collection HTTP/1.1
Accept: application/xml
Host: example.com
```

5.9.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callNotificationSubscriptionList xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <playAndCollectInteractionSubscription>
    <callbackReference>
      <notifyURL>http://application.example.com/notifications/MediaInteractionNotificationURL</notifyURL>
    </callbackReference>
    <callSessionIdentifier>A1234</callSessionIdentifier>
    <clientCorrelator>312345</clientCorrelator>
    <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/collection/sub001</resourceURL>
  </playAndCollectInteractionSubscription>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/collection</resourceURL>
</cn:callNotificationSubscriptionList>
```

5.9.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET,' field in the response as per section 14.7 of [RFC 2616].

5.9.5 POST

This operation is used for creating a new subscription to Play-And-Collect media interaction notifications.

5.9.5.1 Example: Creating a new subscription to Play-And-Collect media interaction notifications (Informative)

5.9.5.1.1 Request

```
POST /exampleAPI/1/callnotification/subscriptions/collection HTTP/1.1
Content-Length: nnnn
Content-Type: application/xml
Accept: application/xml
Host: example.com

<?xml version="1.0" encoding="UTF-8"?>
<cn:playAndCollectInteractionSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/MediaInteractionNotificationURL</notifyURL>
  </callbackReference>
  <callSessionIdentifier>A1234</callSessionIdentifier>
  <clientCorrelator>312345</clientCorrelator>
</cn:playAndCollectInteractionSubscription>
```

5.9.5.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/callnotification/subscriptions/collection/sub001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:playAndCollectInteractionSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/MediaInteractionNotificationURL</notifyURL>
  </callbackReference>
  <callSessionIdentifier>A1234</callSessionIdentifier>
  <clientCorrelator>312345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/collection/sub001</resourceURL>
</cn:playAndCollectInteractionSubscription>
```

Note that alternatively, a 'resourceReference' root element can be returned, as illustrated in section 5.5.5.2.2.

Note further, that instead of the 'callSessionIdentifier' element, a 'link' element can be provided that points to the ParlayREST representation of the call session.

5.9.6 DELETE

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET,' field in the response as per section 14.7 of [RFC 2616].

5.10 Resource: Individual Subscription to Play-And-Collect Media Interaction Notifications

The resource used is:

http://{serverRoot}/{apiVersion}/callnotification/subscriptions/collection/{subscriptionId}

This resource represents an individual subscription to Play-And-Collect media interaction notifications.

5.10.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com/exampleAPI
apiVersion	version of the ParlayREST API clients want to use (e.g. 1 for version 1.x)
subscriptionId	identifier of the subscription

5.10.2 Response Codes

5.10.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.10.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Call Notification, see [3GPP 29.199-03].

5.10.3 GET

This operation is used for reading an individual subscription to Play-And-Collect media interaction notifications.

5.10.3.1 Example: Retrieving an individual subscription to Play-And-Collect media interaction notifications (Informative)

5.10.3.1.1 Request

```
GET /exampleAPI/1/callnotification/subscriptions/collection/sub001 HTTP/1.1
Accept: application/xml
Host: example.com
```

5.10.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
```

```
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:playAndCollectInteractionSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/MediaInteractionNotificationURL</notifyURL>
  </callbackReference>
  <callSessionIdentifier>A1234</callSessionIdentifier>
  <clientCorrelator>312345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/collection/sub001</resourceURL>
</cn:playAndCollectInteractionSubscription>
```

5.10.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET, DELETE' field in the response as per section 14.7 of [RFC 2616].

5.10.5 POST

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET, DELETE' field in the response as per section 14.7 of [RFC 2616].

5.10.6 DELETE

This operation is used to cancel a subscription to Play-And-Collect media interaction notifications and to stop corresponding notification messages.

5.10.6.1 Example: Removing a subscription to Play-And-Collect media interaction notifications (Informative)

5.10.6.1.1 Request

```
DELETE /exampleAPI/1/callnotification/subscriptions/collection/sub001 HTTP/1.1
Accept: application/xml
Host: example.com
```

5.10.6.1.2 Response

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 17:51:59 GMT
```

5.11 Resource: All Subscriptions to Play-And-Record Media Interaction Notifications

The resource used is:

http://{serverRoot}/{apiVersion}/callnotification/subscriptions/recording

This resource is used as a container for all subscriptions to Play-And-Record media interaction notifications.

5.11.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com/exampleAPI
apiVersion	version of the ParlayREST API clients want to use (e.g. 1 for version 1.x)

5.11.2 Response Codes

5.11.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.11.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Call Notification, see [3GPP 29.199-03].

5.11.3 GET

This operation is used to read all subscriptions to Play-And-Record media interaction notifications.

5.11.3.1 Example: Retrieving all subscriptions to Play-And-Record interaction notifications (Informative)

5.11.3.1.1 Request

```
GET /exampleAPI/1/callnotification/subscriptions/recording HTTP/1.1
Accept: application/xml
Host: example.com
```

5.11.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callNotificationSubscriptionList xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <playAndRecordInteractionSubscription>
    <callbackReference>
      <notifyURL>http://application.example.com/notifications/MediaInteractionNotificationURL</notifyURL>
    </callbackReference>
    <callSessionIdentifier>A5678</callSessionIdentifier>
    <clientCorrelator>412345</clientCorrelator>
    <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/recording/sub001</resourceURL>
  </playAndRecordInteractionSubscription>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/recording</resourceURL>
</cn:callNotificationSubscriptionList>
```

5.11.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET,' field in the response as per section 14.7 of [RFC 2616].

5.11.5 POST

This operation is used for creating a new subscription to Play-And-Record media interaction notifications.

5.11.5.1 Example: Creating a new subscription to Play-And-Record media interaction notifications (Informative)

5.11.5.1.1 Request

```
POST /exampleAPI/1/callnotification/subscriptions/recording HTTP/1.1
Content-Type: application/xml
Content-Length: nnnn
Accept: application/xml
Host: example.com

<?xml version="1.0" encoding="UTF-8"?>
<cn:playAndRecordInteractionSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/MediaInteractionNotificationURL</notifyURL>
  </callbackReference>
  <callSessionIdentifier>A5678</callSessionIdentifier>
  <clientCorrelator>412345</clientCorrelator>
</cn:playAndRecordInteractionSubscription>
```

5.11.5.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/callnotification/subscriptions/recording/sub001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:playAndRecordInteractionSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/MediaInteractionNotificationURL</notifyURL>
  </callbackReference>
  <callSessionIdentifier>A5678</callSessionIdentifier>
  <clientCorrelator>412345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/recording/sub001</resourceURL>
</cn:playAndRecordInteractionSubscription>
```

Note that alternatively, a 'resourceReference' root element could be returned, as illustrated in section 5.5.5.2.2.

5.11.6 DELETE

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET,' field in the response as per section 14.7 of [RFC 2616].

5.12 Resource: Individual Subscription to Play-And-Record Media Interaction Notifications

The resource used is:

http://{serverRoot}/{apiVersion}/callnotification/subscriptions/recording/{subscriptionId}

This resource represents an individual subscription to Play-And-Record media interaction notifications.

5.12.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com/exampleAPI
apiVersion	version of the ParlayREST API clients want to use (e.g. 1 for version 1.x)
subscriptionId	identifier of the subscription

5.12.2 Response Codes

5.12.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.12.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Call Notification, see [3GPP 29.199-03].

5.12.3 GET

This operation is used for reading an individual subscription to Play-And-Record media interaction notifications.

5.12.3.1 Example: Retrieving an individual subscription to Play-And-Record media interaction notification (Informative)

5.12.3.1.1 Request

```
GET /exampleAPI/1/callnotification/subscriptions/recording/sub001 HTTP/1.1
Accept: application/xml
Host: example.com
```

5.12.3.1.2 Response

```
HTTP/1.1 200 OK
```

```
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:playAndRecordInteractionSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/MediaInteractionNotificationURL</notifyURL>
  </callbackReference>
  <callSessionIdentifier>A5678</callSessionIdentifier>
  <clientCorrelator>412345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/recording/sub001</resourceURL>
</cn:playAndRecordInteractionSubscription>
```

5.12.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET, DELETE' field in the response as per section 14.7 of [RFC 2616].

5.12.5 POST

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET, DELETE' field in the response as per section 14.7 of [RFC 2616].

5.12.6 DELETE

This operation is used to cancel a subscription to Play-And-Record media interaction notifications and to stop corresponding notification messages.

5.12.6.1 Example: Removing a subscription to Play-And-Record media interaction notifications (Informative)

5.12.6.1.1 Request

```
DELETE /exampleAPI/1/callnotification/subscriptions/recording/sub001 HTTP/1.1
Accept: application/xml
Host: example.com
```

5.12.6.1.2 Response

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 17:51:59 GMT
```

5.13 Resource: Client Notification about Call Events

This resource is a client provided callback URL for notification about call events. ParlayREST does not make any assumption about the structure of this URL.

5.13.1 Request URI variables

Client-provided if any.

5.13.2 Response Codes

5.13.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.13.3 GET

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

5.13.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

5.13.5 POST

This operation is used to notify a Client about a call event. No decision or response is expected from the client.

5.13.5.1 Example: Notifying a client about a call event (Informative)

5.13.5.1.1 Request

```
POST /notifications/CallNotificationURL HTTP/1.1
Accept: application/xml
Content-Type: application/xml
Content-Length: nnnn
Host: application.example.com

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventNotification xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <notificationType>CallEvent</notificationType>
  <eventDescription>
    <callEvent>Busy</callEvent>
    <description>optional service-specific information</description>
  </eventDescription>
  <callingParticipant>tel:+15555550102</callingParticipant>
  <callingParticipantName>Peter E. Xample</callingParticipantName>
  <calledParticipant>tel:+15555550101</calledParticipant>
  <callSessionIdentifier>B12345</callSessionIdentifier>
  <link rel="CallEventSubscription" href="http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001"/>
  <link rel="CallSessionInformation" href="http://example.com/exampleAPI/1/thirdpartycall/callSessions/cs001"/>
</cn:callEventNotification>
```

Note that this example does contain a link to an underlying call session because it is assumed that a REST-layer representation of that session is available for the Client that receives the notification, for instance because that Client is the one that has created the session.

5.13.5.1.2 Response

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 18:21:59 GMT
```

5.13.6 DELETE

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

5.14 Resource: Client Notification about Media Interaction Events

This resource is a client provided callback URL for notification about media interaction events that communicate to the client the information input by the user in a play-and-collect or play-and-record operation. ParlayREST does not make any assumption about the structure of this URL.

5.14.1 Request URI variables

Client-provided if any.

5.14.2 Response Codes

5.14.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.14.3 GET

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

5.14.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

5.14.5 POST

This operation is used to notify a Client about a media interaction event.

Note: Depending on the content of the 'notificationType' field in the 'mediaInteractionNotification' data structure, this notification either represents a Play-And-Collect event (notificationType="PlayAndCollect") or a Play-And-Record event (notificationType="PlayAndRecord").

5.14.5.1 Example 1: Notifying a client about a Play-And-Collect media interaction event (Informative)

5.14.5.1.1 Request

```
POST /notifications/MediaInteractionNotificationURL HTTP/1.1
Accept: application/xml
Content-Type: application/xml
Content-Length: nnnn
Host: application.example.com
```

```
<?xml version="1.0" encoding="UTF-8"?>
<cn:mediaInteractionNotification xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <notificationType>PlayAndCollect</notificationType>
  <callParticipant>tel:+15555550101</callParticipant>
  <mediaInteractionResult>1234#</mediaInteractionResult>
  <link rel="MediaInteractionSubscription"
        href="http://example.com/exampleAPI/1/callnotification/subscriptions/collection/sub001"/>
</cn:mediaInteractionNotification>
```

5.14.5.1.2 Response

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 18:21:59 GMT
```

5.14.5.2 Example 2: Notifying a client about a Play-And-Record media interaction event (Informative)

5.14.5.2.1 Request

```
POST /notifications/MediaInteractionNotificationURL HTTP/1.1
Accept: application/xml
Content-Type: application/xml
Content-Length: nnnn
Host: application.example.com

<?xml version="1.0" encoding="UTF-8"?>
<cn:mediaInteractionNotification xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <notificationType>PlayAndRecord</notificationType>
  <callParticipant>tel:+15555550101</callParticipant>
  <mediaInteractionResult>http://media.example.com/recordings/1234.wav</mediaInteractionResult>
  <link rel="MediaInteractionSubscription"
        href="http://example.com/exampleAPI/1/callnotification/subscriptions/recording/sub001"/>
</cn:mediaInteractionNotification>
```

5.14.5.2.2 Response

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 18:21:59 GMT
```

5.14.6 DELETE

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

5.15 Resource: Client Notification about Call Direction Events

This resource is a client provided callback URL for notification about call direction events. ParlayREST does not make any assumption about the structure of this URL.

A call direction notification requires the client to make a decision about how to handle the call, and to return that decision either immediately in the response to the event notification (as specified in this section), or in a deferred way (as specified in section 5.16).

5.15.1 Request URI variables

Client-provided if any.

5.15.2 Response Codes

5.15.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.15.3 GET

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

5.15.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

5.15.5 POST

This operation is used to notify a Client about a Call Direction Event.

In case the server supports deferred responses, it SHOULD include in the request a 'link' element pointing to the instance of the subscription that triggered the notification. Note that this allows the client to address the subscription with a deferred response.

The client MUST include in the HTTP response an 'action' element with information how to handle the call, or with 'actionToPerform' set to "Deferred" to indicate that a deferred response will be provided later as specified in section 5.16. In case 'actionToPerform' has been set to "Deferred", the client MUST further set the field 'decisionId' to a value that uniquely identifies the received notification in the scope of the client.

5.15.5.1 Example 1: Notifying a client about a call direction event with immediate response (Informative)

In the case of immediate response, the decision how to handle the call is indicated by the client in the HTTP response to the notification.

5.15.5.1.1 Request

```
POST /notifications/CallDirectionNotificationURL HTTP/1.1
Accept: application/xml
Content-Type: application/xml
Content-Length: nnnn
Host: application.example.com

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventNotification xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <notificationType>CallDirection</notificationType>
  <eventDescription>
    <callEvent>Busy</callEvent>
  </eventDescription>
```

```
  <callingParticipant>tel:+15555550102</callingParticipant>
  <callingParticipantName>Peter E. Xample</callingParticipantName>
  <calledParticipant>tel:+15555550101</calledParticipant>
  <callSessionIdentifier>B6789</callSessionIdentifier>
  <link rel="callEventSubscription" href="http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001"/>
</cn:callEventNotification>
```

Note that this example does *not* contain a link to an underlying call session because it is assumed that no REST-layer representation of that session is available for the Client that receives the notification, for instance because that Client has not created the session.

5.15.5.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 18:40:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:action xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <actionToPerform>Route</actionToPerform>
  <routingAddress>tel:+15555550104</routingAddress>
</cn:action>
```

5.15.5.2 Example 2: Notifying a client about a call direction event with deferred response (Informative)

In the case of deferred response, the decision how to handle the call is indicated by the client separately as illustrated in the example in section 5.16.5.1. In the HTTP response to the notification, the client announces the deferral of the decision, and provides an identifier ‘decisionId’ for the deferred communication of the decision. Note that this method can be used to reduce the number of open HTTP connections in case of longer decision times.

5.15.5.2.1 Request

```
POST /notifications/MediaInteractionNotificationURL HTTP/1.1
Accept: application/xml
Content-Type: application/xml
Content-Length: nnnn
Host: application.example.com

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventNotification xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <notificationType>CallDirection</notificationType>
  <eventDescription>
    <callEvent>Busy</callEvent>
  </eventDescription>
  <callingParticipant>tel:+15555550102</callingParticipant>
  <callingParticipantName>Peter E. Xample</callingParticipantName>
  <calledParticipant>tel:+15555550101</calledParticipant>
  <callSessionIdentifier>B6789</callSessionIdentifier>
  <link rel="callEventSubscription" href="http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001"/>
</cn:callEventNotification>
```

For a note on the "link" element, see section 5.15.5.1.1.

5.15.5.2.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 18:40:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:action xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <actionToPerform>Deferred</actionToPerform>
  <decisionId>ABC-776655</decisionId>
</cn:action>
```

5.15.6 DELETE

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

5.16 Resource: Deferred Responses to Previous Call Direction Notifications

The resource used is:

http://{serverRoot}/{apiVersion}/callnotification//subscriptions/callDirection/{subscriptionId}/deferredResponse

This resource is an endpoint to which the client can send deferred responses to previous call direction notifications.

5.16.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com/exampleAPI
apiVersion	version of the ParlayREST API clients want to use (e.g. 1 for version 1.x)
subscriptionId	identifier of the subscription

5.16.2 Response Codes

5.16.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

In case the client delivers a deferred response later than a server-defined timeout, the server SHALL respond with "408 Request Timeout".

5.16.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Call Notification, see [3GPP 29.199-03].

5.16.3 GET

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

5.16.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

5.16.5 POST

This operation is used by the Client to send a deferred response to a Call Direction notification to the Server by POSTing an 'action' XML structure.

The client MUST provide the same value in the field 'decisionId' as in the HTTP response to the related notification, and MUST NOT use the value "Deferred" in the actionToPerform field.

5.16.5.1 Example: Deferred response to a previous call direction notification (Informative)

This example illustrates the deferred response to the Call Direction notification from example 5.15.5.2.

5.16.5.1.1 Request

```
POST /exampleAPI/1/callnotification/subscriptions/callDirection/sub001/deferredResponse HTTP/1.1
Content-Type: application/xml
Content-Length: nnnn
Accept: application/xml
Host: example.com

<?xml version="1.0" encoding="UTF-8"?>
<cn:action xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <actionToPerform>Route</actionToPerform>
  <routingAddress>tel:+15555550105</routingAddress>
  <decisionId>ABC-776655</decisionId>
</cn:action>
```

5.16.5.1.2 Response

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 17:51:59 GMT
```

5.16.5.2 Example: Timed-out deferred response to a previous call direction notification (Informative)

This example illustrates a deferred response to the Call Direction notification from example 5.15.5.2 that is sent by the Application too late and therefore triggers a timeout error.

5.16.5.2.1 Request

```
POST /exampleAPI/1/callnotification/subscriptions/callDirection/sub001/deferredResponse HTTP/1.1
Content-Type: application/xml
```

```
Content-Length: nnnn
Accept: application/xml
Host: example.com

<?xml version="1.0" encoding="UTF-8"?>
<cn:action xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <actionToPerform>Route</actionToPerform>
  <routingAddress>tel:+15555550105</routingAddress>
  <decisionId>ABC-776655</decisionId>
</cn:action>
```

5.16.5.2.2 Response

```
HTTP/1.1 408 Request Timeout
Date: Mon, 28 Jun 2010 17:51:59 GMT
Content-Type: application/xml
Content-Length: nnnn

<?xml version="1.0" encoding="UTF-8"?>
<common:requestError xmlns:common="urn:oma:xml:rest:common:1">
 <policyException>
  <messageId>POL0010</messageId>
  <text>Requested information unavailable as the retention time interval has expired.</text>
 </policyException>
</common:requestError>
```

5.16.6 DELETE

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

5.17 Resource: All Call Event Monitors

The resource used is:

http://{serverRoot}/{apiVersion}/callnotification/monitors

This resource represents all call event monitors.

5.17.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com/exampleAPI
apiVersion	version of the ParlayREST API clients want to use (e.g. 1 for version 1.x)

5.17.2 Response Codes

5.17.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.17.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Call Notification, see [3GPP 29.199-03].

5.17.3 GET

This operation is used for retrieving all call event monitors.

5.17.3.1 Example: Retrieving all call event monitors (Informative)

5.17.3.1.1 Request

```
GET /exampleAPI/1/callnotification/monitors HTTP/1.1
Accept: application/xml
Host: example.com
```

5.17.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 18:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventMonitorList xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callEventMonitor>
    <filter>
      <address>tel:+15555550101</address>
      <address>tel:+15555550102</address>
      <criteria>Answer</criteria>
      <criteria>Busy</criteria>
      <addressDirection>Called</addressDirection>
    </filter>
    <callEventRecordList>
      <callEventRecord>
        <eventDescription>
          <callEvent>Busy</callEvent>
        </eventDescription>
        <callingParticipant>tel:+15555550102</callingParticipant>
        <callingParticipantName>Peter E. Xample</callingParticipantName>
        <calledParticipant>tel:+15555550101</calledParticipant>
        <callSessionIdentifier>B12345</callSessionIdentifier>
        <timestamp>2010-06-28T18:21:55</timestamp>
        <resourceURL>http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer001</resourceURL>
        <link rel="CallSessionInformation" href="http://example.com/exampleAPI/1/thirdpartycall/callSessions/cs001"/>
      </callEventRecord>
      <callEventRecord>
        <eventDescription>
          <callEvent>Answer</callEvent>
```

```
        </eventDescription>
        <callingParticipant>tel:+15555550101</callingParticipant>
        <callingParticipantName>Max Muster</callingParticipantName>
        <calledParticipant>tel:+15555550102</calledParticipant>
        <callSessionIdentifier>B23456</callSessionIdentifier>
        <timestamp>2010-06-28T18:27:02</timestamp>
        <resourceURL>http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer002</resourceURL>
      </callEventRecord>
      <resourceURL>http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords</resourceURL>
    </callEventRecordList>
    <clientCorrelator>612345</clientCorrelator>
    <resourceURL>http://example.com/exampleAPI/1/callnotification/monitors/mon001</resourceURL>
  </callEventMonitor>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/monitors</resourceURL>
</cn:callEventMonitorList>
```

Note that the first call event record in this example does contain a link to an underlying call session because it is assumed that a REST-layer representation of that session is available for the Client that owns the monitor, for instance because that Client is the one that has created the session. For the second call event record, no link is contained, because it is assumed that no REST-layer representation of that session is available for the Client that owns the monitor, for instance because that Client has not created the session.

5.17.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET, POST' field in the response as per section 14.7 of [RFC 2616].

5.17.5 POST

This operation is used for creating a call event monitor.

5.17.5.1 Example 1: Creating a new call event monitor, response with a copy of the created resource (Informative)

5.17.5.1.1 Request

```
POST /exampleAPI/1/callnotification/monitors HTTP/1.1
Content-Type: application/xml
Content-Length: nnnn
Accept: application/xml
Host: example.com

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventMonitor xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <filter>
    <address>tel:+15555550101</address>
    <address>tel:+15555550102</address>
    <criteria>Answer</criteria>
    <criteria>Busy</criteria>
    <addressDirection>Called</addressDirection>
  </filter>
  <clientCorrelator>612345</clientCorrelator>
</cn:callEventMonitor>
```

5.17.5.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/callnotification/monitors/mon001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventMonitor xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <filter>
    <address>tel:+15555550101</address>
    <address>tel:+15555550102</address>
    <criteria>Answer</criteria>
    <criteria>Busy</criteria>
    <addressDirection>Called</addressDirection>
  </filter>
  <callEventRecordList></callEventRecordList>
  <clientCorrelator>612345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/monitors/mon001</resourceURL>
</cn:callEventMonitor>
```

5.17.5.2 Example 2: Creating a new call event monitor, response with location of the created resource (Informative)

5.17.5.2.1 Request

```
POST /exampleAPI/1/callnotification/monitors HTTP/1.1
Content-Type: application/xml
Content-Length: nnnn
Accept: application/xml
Host: example.com

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventMonitor xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <filter>
    <address>tel:+15555550101</address>
    <address>tel:+15555550102</address>
    <criteria>Answer</criteria>
    <criteria>Busy</criteria>
    <addressDirection>Called</addressDirection>
  </filter>
  <clientCorrelator>612345</clientCorrelator>
</cn:callEventMonitor>
```

5.17.5.2.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/callnotification/monitors/mon001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT
```

```
<?xml version="1.0" encoding="UTF-8"?>
<common:resourceReference xmlns:common="urn:oma:xml:rest:common:1">
  <resourceURL> http://example.com/exampleAPI/1/callnotification/monitors/mon001</resourceURL>
</common:resourceReference>
```

5.17.6 DELETE

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET, POST' field in the response as per section 14.7 of [RFC 2616].

5.18 Resource: Individual Call Event Monitor

The resource used is:

http://{serverRoot}/{apiVersion}/callnotification/monitors/{monitorId}

This resource is represents an individual call event monitor. A call event monitor collects call events and stores them for polling.

5.18.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com/exampleAPI
apiVersion	version of the ParlayREST API clients want to use (e.g. 1 for version 1.x)
monitorId	identifier of the call event monitor resource

5.18.2 Response Codes

5.18.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.18.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Call Notification, see [3GPP 29.199-03].

5.18.3 GET

This operation is used for retrieving an individual call event monitor.

5.18.3.1 Example: Retrieving an individual call event monitor (Informative)

5.18.3.1.1 Request

```
GET /exampleAPI/1/callnotification/monitors/mon001 HTTP/1.1
Accept: application/xml
Host: example.com
```

5.18.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 18:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventMonitor xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <filter>
    <address>tel:+15555550101</address>
    <address>tel:+15555550102</address>
    <criteria>Answer</criteria>
    <criteria>Busy</criteria>
    <addressDirection>Called</addressDirection>
  </filter>
  <callEventRecordList></callEventRecordList>
  <clientCorrelator>612345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/monitors/mon001</resourceURL>
</cn:callEventMonitor>
```

5.18.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET, DELETE' field in the response as per section 14.7 of [RFC 2616].

5.18.5 POST

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET, DELETE' field in the response as per section 14.7 of [RFC 2616].

5.18.6 DELETE

This operation is used for deleting a call event monitor.

5.18.6.1 Example: Deleting a call event monitor (Informative)

5.18.6.1.1 Request

```
DELETE /exampleAPI/1/callnotification/monitors/mon001 HTTP/1.1
Accept: application/xml
Host: example.com
```

5.18.6.1.2 Response

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 18:51:59 GMT
```

5.19 Resource: List of Call Events per Monitor

The resource used is:

http://{serverRoot}/{apiVersion}/callnotification//monitors/{monitorId}/callEventRecords

This resource represents the list of call events collected by a call event monitor.

5.19.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com/exampleAPI
apiVersion	version of the ParlayREST API clients want to use (e.g. 1 for version 1.x)
monitorId	identifier of the call event monitor resource

5.19.2 Response Codes

5.19.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.19.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Call Notification, see [3GPP 29.199-03].

5.19.3 GET

This operation is used for retrieving the list of call events collected by a call event monitor.

5.19.3.1 Example: Retrieving the list of call events collected by a call event monitor (Informative)

5.19.3.1.1 Request

```
GET /exampleAPI/1/callnotification/monitors/mon001/callEventRecords HTTP/1.1
Accept: application/xml
Host: example.com
```

5.19.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 18:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventRecordList xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callEventRecord>
    <eventDescription>
      <callEvent>Busy</callEvent>
    </eventDescription>
    <callingParticipant>tel:+15555550102</callingParticipant>
    <callingParticipantName>Peter E. Xample</callingParticipantName>
    <calledParticipant>tel:+15555550101</calledParticipant>
```

```
    <callSessionIdentifier>B12345</callSessionIdentifier>
    <timestamp>2010-06-28T18:21:55</timestamp>
    <resourceURL>http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer001</resourceURL>
    <link rel="CallSessionInformation" href="http://example.com/exampleAPI/1/thirdpartycall/callSessions/cs001"/>
  </callEventRecord>
  <callEventRecord>
    <eventDescription>
      <callEvent>Answer</callEvent>
    </eventDescription>
    <callingParticipant>tel:+15555550101</callingParticipant>
    <callingParticipantName>Max Muster</callingParticipantName>
    <calledParticipant>tel:+15555550102</calledParticipant>
    <callSessionIdentifier>B23456</callSessionIdentifier>
    <timestamp>2010-06-28T18:27:02</timestamp>
    <resourceURL>http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer002</resourceURL>
  </callEventRecord>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords</resourceURL>
</cn:callEventRecordList>
```

For a note on the "link" element, see section 5.17.3.1.2.

5.19.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET' field in the response as per section 14.7 of [RFC 2616].

5.19.5 POST

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET' field in the response as per section 14.7 of [RFC 2616].

5.19.6 DELETE

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET' field in the response as per section 14.7 of [RFC 2616].

5.20 Resource: Individual Call Event

The resource used is:

http://{serverRoot}/{apiVersion}/callnotification/monitors/{monitorId}/callEventRecords/{callEventRecordId}

This resource represents information about a call event that has been collected by a call event monitor.

Information about a call event MAY be removed explicitly by the client using the DELETE operation, or MAY be removed from the server automatically after a certain time interval, depending on service policy.

5.20.1 Request URI variables

The following request URI variables are common for all HTTP commands:

Name	Description
serverRoot	server base url: hostname+port+base path. Example: http://example.com/exampleAPI
apiVersion	version of the ParlayREST API clients want to use (e.g. 1 for version 1.x)

monitorId	identifier of the call event monitor resource
callEventRecordId	identifier of the call event resource

5.20.2 Response Codes

5.20.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

5.20.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Call Notification, see [3GPP 29.199-03].

5.20.3 GET

This operation is used for retrieving the information about an individual call event.

5.20.3.1 Example: Retrieving individual call event information (Informative)

5.20.3.1.1 Request

```
GET /exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer001 HTTP/1.1
Accept: application/xml
Host: example.com
```

5.20.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 18:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventRecord xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <eventDescription>
    <callEvent>Busy</callEvent>
  </eventDescription>
  <callingParticipant>tel:+15555550102</callingParticipant>
  <callingParticipantName>Peter E. Xample</callingParticipantName>
  <calledParticipant>tel:+15555550101</calledParticipant>
  <callSessionIdentifier>B12345</callSessionIdentifier>
  <timestamp>2010-06-28T18:21:55</timestamp>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer001</resourceURL>
  <link rel="CallSessionInformation" href="http://example.com/exampleAPI/1/thirdpartycall/callSessions/cs001"/>
</cn:callEventRecord>
```

Note that the call event in this example does contain a link to an underlying call session because it is assumed that a REST-layer representation of that session is available for the Client that owns the monitor, for instance because that Client is the one that has created the session.

5.20.4 PUT

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET, DELETE' field in the response as per section 14.7 of [RFC 2616].

5.20.5 POST

Method not allowed by the resource. The returned HTTP error status is 405. The server SHOULD also include the 'Allow: GET, DELETE' field in the response as per section 14.7 of [RFC 2616].

5.20.6 DELETE

This operation is used to delete the information about a particular call event. Removing information about the call event does not affect in any way the underlying call session. The server MUST return in the response body the representation of the resource.

5.20.6.1 Example: Deleting an individual call event (Informative)

5.20.6.1.1 Request

```
DELETE /exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer001 HTTP/1.1
Accept: application/xml
Host: example.com
```

5.20.6.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 18:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventRecord xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <eventDescription>
    <callEvent>Busy</callEvent>
  </eventDescription>
  <callingParticipant>tel:+15555550102</callingParticipant>
  <callingParticipantName>Peter E. Xample</callingParticipantName>
  <calledParticipant>tel:+15555550101</calledParticipant>
  <callSessionIdentifier>B12345</callSessionIdentifier>
  <timestamp>2010-06-28T18:21:55</timestamp>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer001</resourceURL>
  <link rel="CallSessionInformation" href="http://example.com/exampleAPI/1/thirdpartycall/callSessions/cs001"/>
</cn:callEventRecord>
```

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
n/a	n/a	No prior version –or- No previous version within OMA

A.2 Draft/Candidate Version 1.0 History

Document Identifier	Date	Sections	Description
Draft Versions: OMA-TS-ParlayREST_CallNotification-V1_0	15 Apr 2010	Many	Skeleton document
	29 Apr 2010	Many	Implemented OMA-ARC-REST-2010-0176
	06 May 2010	5.1, 5.2	ImplementedOMA-ARC-REST-2010-0209-CR_CallNotification_small_fixes Changes affect XML schema (20100506)
	26 May 2010	Many	CRs implemented - OMA-ARC-REST-2010-0234-CR_CallNotification_alignment_Audiocall - OMA-ARC-REST-2010-0242R01-CR_Call_Direction_Deferred_Answer - OMA-ARC-REST-2010-0243-CR_Call_Notification_Polling Editorial: Fixed the format of the Flow figures in section 5.3,: replaced "Audio Call Service" with "Server (Audio Call) etc. in fig. 4 Changes affect XML schema (20100526)
	02 July 2010	Many	CRs implemented - OMA-ARC-REST-2010-0315R01-CR_CallNotification_link - O MA-ARC-REST-2010-0281R01-CR_CallNotification_examples Changes affect XML schema (20100624)
	07 July 2010	Many	Editorial: replaced phone numbers and names in examples by fictitious ones; fixed TS name in history box.
	08 Sep 2010	Many	CRs implemented - OMA-ARC-REST-2010-0343R02-CR_Redundancy_fix_CallNotification - OMA-ARC-REST-2010-0344-CR_JSON_for_CallNotification - OMA-ARC-REST-2010-0345-CR_FormUrlEncoded_for_CallNotification - OMA-ARC-REST-2010-0346R02-CR_SCRs_for_CallNotification - OMA-ARC-REST-2010-0389-CR_CallNotification_Monitor_single_RetrieveAndDelete_RESTful - OMA-ARC-REST-2010-0481R01-CR_CallNotification_optional_resourceReference_in_resource_table_resolution_A063 Action Items implemented - REST-2010-A085: To implement OMA-ARC-REST-2010-0445-CR_DevCap_add_to_resourceURL_description in the next baseline. No CRs required. - REST-2010-A077: To fix this as a clerical. Ref OMA-ARC-REST-2010-0394-INP_Fixing_JSON_references. - Editing instructions removed
	23 Sep 2010	Many	Implemented change proposed by CR OMA-ARC-REST-2010-0516R01 analogously to this TS as an editorial, closing action REST-2010-A102.
	24 Sep 2010	Many	Some editorial fixes.
	07 Oct 2010	All	Editorial fixes: styles
	29 Oct 2010	Many	Implemented CR OMA-ARC-REST-2010-0592-CR_CONRR_editorials_CallNotification
	05 Nov 2010	5	Editorial: fixed one reference

Document Identifier	Date	Sections	Description
	06 Nov 2010	Some	Fixed more editorials, closing the following action items assigned during CONRR: REST-2010-A136, REST-2010-A140, REST-2010-A172, REST-2010-A145
	19 Nov 2010	Some	CRs implemented: OMA-ARC-REST-2010-0617R01-CR_Term_Enabler_CallNotif OMA-ARC-REST-2010-0620R02-CR_resFormat_CallNotif OMA-ARC-REST-2010-0632R01-CR_A131_CONRR_comment_D006_Call_Notifications OMA-ARC-REST-2010-0638-CR_CONRR_resolutions_CallNotif
	01 Dec 2010	Some	CR implemented: OMA-ARC-REST-2010-0672R01
	10 Dec 2010	All	TS prepared for Candidate after CONRR. Editorial changes performed to close action items: REST-2010-A283, REST-2010-A298, REST-2010-A312
Candidate Version: OMA-TS-ParlayREST_CallNotification-V1_0	11 Jan 2011	All	Status changed to Candidate by TP: OMA-TP-2010-0531R01-INP_ParlayREST_2_0_for_Candidate_approval

Appendix B. Static Conformance Requirements (Normative)

The notation used in this appendix is specified in [SCRRULES].

B.1 SCR for ParlayREST.CN Server

Item	Function	Reference	Requirement
PARLAYREST-CN-SUPPORT-S-001-M	Support for the Call Notification REST API	5	
PARLAYREST-CN-SUPPORT-S-002-M	Support for the XML request & response format	5	
PARLAYREST-CN-SUPPORT-S-003-M	Support for the JSON request & response format	5	
PARLAYREST-CN-SUPPORT-S-004-O	Support for the application/form-urlencoded format	Appendix C	

B.1.1 SCR for ParlayREST.CN.Subscriptions Server

Item	Function	Reference	Requirement
PARLAYREST-CN-SUBSCR-S-001-O	Support for access to the list of all subscriptions to call notifications	5.4	PARLAYREST-CN-SUBSCR-S-002-O
PARLAYREST-CN-SUBSCR-S-002-O	Retrieving a list of all subscriptions – GET	5.4.3	

B.1.2 SCR for ParlayREST.CN.Subscriptions.CallEvent Server

Item	Function	Reference	Requirement
PARLAYREST-CN-SUBSCR-CALLEVENT-S-001-M	Support for access to the list of subscriptions to call event notifications	5.5	
PARLAYREST-CN-SUBSCR-CALLEVENT-S-002-O	Retrieving a list of subscriptions to call event notifications – GET	5.5.3	
PARLAYREST-CN-SUBSCR-CALLEVENT-S-003-M	Creating a new subscription to call event notifications – POST (XML or JSON)	5.5.5	
PARLAYREST-CN-SUBSCR-CALLEVENT-S-004-O	Creating a new subscription to call event notifications – POST (www-form-urlencoded)	C.1	

B.1.3 SCR for ParlayREST.CN.Subscriptions.IndividualCallEvent Server

Item	Function	Reference	Requirement
PARLAYREST-CN-SUBSCR-INDCALLEVENT-S-001-M	Support for access to an individual subscription to call event notifications	5.6	
PARLAYREST-CN-SUBSCR-INDCALLEVENT-S-002-M	Retrieving an individual subscription to call event notifications – GET	5.6.3	
PARLAYREST-CN-SUBSCR-INDCALLEVENT-S-003-M	Deleting an individual subscription to call event notifications – DELETE	5.6.6	

B.1.4 SCR for ParlayREST.CN.Subscriptions.CallDirection Server

Item	Function	Reference	Requirement
PARLAYREST-CN-SUBSCR-CALLDIR-S-001-O	Support for access to the list of subscriptions to call direction notifications	5.7	PARLAYREST-CN-SUBSCR-CALLDIR-S-003-O AND PARLAYREST-CN-SUBSCR-INDCALLDIR-S-001-O
PARLAYREST-CN-SUBSCR-CALLDIR-S-002-O	Retrieving a list of subscriptions to call direction notifications – GET	5.7.3	
PARLAYREST-CN-SUBSCR-CALLDIR-S-003-O	Creating a new subscription to call direction notifications – POST (XML or JSON)	5.7.5	
PARLAYREST-CN-SUBSCR-CALLDIR-S-004-O	Creating a new subscription to call direction notifications – POST (www-form-urlencoded)	C.2	

B.1.5 SCR for ParlayREST.CN.Subscriptions.IndividualCallDirection Server

Item	Function	Reference	Requirement
PARLAYREST-CN-SUBSCR-INDCALLDIR-S-001-O	Support for access to an individual subscription to call direction notifications	5.8	PARLAYREST-CN-SUBSCR-INDCALLDIR-S-002-O AND PARLAYREST-CN-SUBSCR-INDCALLDIR-S-003-O
PARLAYREST-CN-SUBSCR-INDCALLDIR-S-002-O	Retrieving an individual subscription to call direction notifications – GET	5.8.3	
PARLAYREST-CN-SUBSCR-	Deleting an individual subscription to call	5.8.6	

Item	Function	Reference	Requirement
INDCALLDIR-S-003-O	direction notifications – DELETE		

B.1.6 SCR for ParlayREST.CN.Subscriptions.PlayAndCollect Server

Item	Function	Reference	Requirement
PARLAYREST-CN-SUBSCR-PAC-S-001-M	Support for access to the list of subscriptions to play-and-collect media interaction notifications	5.9	
PARLAYREST-CN-SUBSCR-PAC-S-002-O	Retrieving a list of subscriptions to play-and-collect media interaction notifications – GET	5.9.3	
PARLAYREST-CN-SUBSCR-PAC-S-003-M	Creating a new subscription to play-and-collect media interaction notifications – POST (XML or JSON)	5.9.5	
PARLAYREST-CN-SUBSCR-PAC-S-004-O	Creating a new subscription to play-and-collect media interaction notifications – POST (www-form-urlencoded)	C.3	

B.1.7 SCR for ParlayREST.CN.Subscriptions.IndividualPlayAndCollect Server

Item	Function	Reference	Requirement
PARLAYREST-CN-SUBSCR-INDPAC-S-001-M	Support for access to an individual subscription to play-and-collect media interaction notifications	5.10	
PARLAYREST-CN-SUBSCR-INDPAC-S-002-M	Retrieving an individual subscription to play-and-collect media interaction notifications – GET	5.10.3	
PARLAYREST-CN-SUBSCR-INDPAC-S-003-M	Deleting an individual subscription to play-and-collect media interaction notifications – DELETE	5.10.6	

B.1.8 SCR for ParlayREST.CN.Subscriptions.PlayAndRecord Server

Item	Function	Reference	Requirement
PARLAYREST-CN-SUBSCR-PAR-S-001-O	Support for access to the list of subscriptions to play-and-record media interaction notifications	5.11	PARLAYREST-CN-SUBSCR-PAR-S-003-O AND PARLAYREST-CN- SUBSCR-INDPAR-S-001-O
PARLAYREST-CN-SUBSCR-PAR-S-002-O	Retrieving a list of subscriptions to play-and-record media interaction notifications – GET	5.11.3	
PARLAYREST-CN-SUBSCR-PAR-S-003-O	Creating a new subscription to play-and-record media interaction notifications – POST (XML or JSON)	5.11.5	
PARLAYREST-CN-SUBSCR-PAR-S-004-O	Creating a new subscription to play-and-record media interaction notifications – POST (www-form-urlencoded)	C.4	

B.1.9 SCR for ParlayREST.CN.Subscriptions.PlayAndRecord.Individual Server

Item	Function	Reference	Requirement
PARLAYREST-CN-SUBSCR-INDPAR-S-001-O	Support for access to an individual subscription to play-and-record media interaction notifications	5.12	PARLAYREST-CN-SUBSCR-INDPAR-S-002-O AND PARLAYREST-CN-SUBSCR-INDPAR-S-003-O
PARLAYREST-CN-SUBSCR-INDPAR-S-002-O	Retrieving an individual subscription to play-and-record media interaction notifications – GET	5.12.3	
PARLAYREST-CN-SUBSCR-INDPAR-S-003-O	Deleting an individual subscription to play-and-record media interaction notifications – DELETE	5.12.6	

B.1.10 SCR for ParlayREST.CN.Notifications.CallEvent Server

Item	Function	Reference	Requirement
PARLAYREST-CN-NOTIF-CALLEVENT-S-001-M	Support for notifying a client about a call event	5.13	
PARLAYREST-CN-NOTIF-CALLEVENT-S-002-M	Notifying a client about a call event – POST (XML or JSON)	5.13.5	

B.1.11 SCR for ParlayREST.CN.Notifications.MediaInteraction Server

Item	Function	Reference	Requirement
PARLAYREST-CN-NOTIF-MEDINT-S-001-M	Support for notifying a client about a media interaction event	5.14	
PARLAYREST-CN-NOTIF-MEDINT-S-002-M	Notifying a client about a media interaction event – POST (XML or JSON)	5.14.5	

B.1.12 SCR for ParlayREST.CN.Notifications.CallDirection Server

Item	Function	Reference	Requirement
PARLAYREST-CN-NOTIF-CALLDIR-S-001-O	Support for notifying a client about a call direction event	5.15	PARLAYREST-CN-NOTIF-CALLDIR-S-002-O AND PARLAYREST-CN-NOTIF-CALLDIR-S-003-O
PARLAYREST-CN-NOTIF-CALLDIR-S-002-O	Notifying a client about a call direction event – Sending POST Request (XML or JSON)	5.15.5	
PARLAYREST-CN-NOTIF-CALLDIR-S-003-O	Receiving from a client the decision regarding the call direction event – receiving POST Response (XML or JSON)	5.15.5	
PARLAYREST-CN-NOTIF-CALLDIR-S-004-O	Receiving from a client the proposal of sending a deferred response regarding the call direction event – receiving POST Response (XML or JSON)	5.15.5	PARLAYREST-CN-NOTIF-CALLDIR-DEFER-S-001-O

B.1.13 SCR for ParlayREST.CN.Notifications.CallDirection.Deferred Server

Item	Function	Reference	Requirement
PARLAYREST-CN-NOTIF-CALLDIR-DEFER-S-001-O	Support for deferred responses to notifications about call direction events	5.16	PARLAYREST-CN-NOTIF-CALLDIR-DEFER-S-002-O
PARLAYREST-CN-NOTIF-CALLDIR-DEFER-S-002-O	Receiving the deferred response to a notification about a call direction event POST (XML or JSON)	5.16.5	
PARLAYREST-CN-NOTIF-CALLDIR-DEFER-S-003-O	Receiving the deferred response to a notification about a call direction event POST (www-form-urlencoded)	C.5	

B.1.14 SCR for ParlayREST.CN.Monitors Server

Item	Function	Reference	Requirement
PARLAYREST-CN-MON-S-001-O	Support for access to the list of call event monitors	5.17	PARLAYREST-CN-MON-S-003-O AND PARLAYREST-CN-INDMON- S-001-O
PARLAYREST-CN-MON-S-002-O	Retrieving a list of call event monitors – GET	5.17.3	
PARLAYREST-CN-MON-S-003-O	Creating a new call event monitor – POST (XML or JSON)	5.17.5	
PARLAYREST-CN-MON-S-004-O	Creating a new call event monitor – POST (www-form-urlencoded)	C.6	

B.1.15 SCR for ParlayREST.CN.IndividualMonitor Server

Item	Function	Reference	Requirement
PARLAYREST-CN-INDMON-S-001-O	Support for access to an individual call event monitor	5.18	PARLAYREST-CN-INDMON-S-002-O AND PARLAYREST-CN-INDMON-S-003-O AND PARLAYREST-CN-INDMON-Events-S-001-O
PARLAYREST-CN-INDMON-S-002-O	Retrieving an individual call event monitor – GET	5.18.3	
PARLAYREST-CN-INDMON-S-003-O	Deleting an individual call event monitor – DELETE	5.18.6	

B.1.16 SCR for ParlayREST.CN.IndividualMonitor.Events Server

Item	Function	Reference	Requirement
PARLAYREST-CN-INDMON-EVENTS-S-001-O	Support for access to the list of call events in a call event monitor	5.19	PARLAYREST-CN-INDMON-EVENTS-S-002-O AND PARLAYREST-CN-INDMON-INDEVENT-S-001-O
PARLAYREST-CN-INDMON-EVENTS-S-002-O	Retrieving a list of call events – GET	5.19.3	

B.1.17 SCR for ParlayREST.CN.IndividualMonitor.IndividualEvent Server

Item	Function	Reference	Requirement
PARLAYREST-CN-INDMON-INDEVENT-S-001-O	Support for access to information about an individual call event in a call event monitor	5.20	PARLAYREST-CN-INDMON-INDEVENT-S-002-O AND PARLAYREST-CN-INDMON-INDEVENT-S-003-O
PARLAYREST-CN-INDMON-INDEVENT-S-002-O	Retrieving information about an individual call event – GET	5.20.3	
PARLAYREST-CN-INDMON-INDEVENT-S-003-O	Removing information about an individual call event – DELETE	5.20.6	

Appendix C. Application/x-www-form-urlencoded Request Format for POST Operations (Normative)

This section defines a format for the Call Notification REST API requests where the body of the request is encoded using the application/x-www-form-urlencoded MIME type.

Note: only the request body is encoded as application/x-www-form-urlencoded, the response is still encoded as XML or JSON depending on the preference of the client and the capabilities of the server.

The encoding is defined below for all Call Notification REST operations which are based on POST requests.

C.1 Creating a new subscription to call event notifications

This operation is used for creating a new subscription to call event notifications, see section 5.5.5.

The request parameters are as follows:

Name	Type/Values	Optional	Description
notifyURL	xsd:anyURI	No	Notification endpoint definition
callbackData	xsd:string	Yes	Data the application can register with the server when subscribing to notifications, and that are passed back unchanged in each of the related notifications.
notificationFormat	common:NotificationFormat	Yes	Default: XML Application can specify format of the resource representation in notifications that are related to this subscription. The choice is between {XML, JSON}
filterAddress	xsd:anyURI[1..unbounded]	No	Party addresses to receive notifications on. The address type/direction is determined by the AddressDirection. If the AddressDirection part is not populated this is for notifications on called party addresses.
filterCriteria	CallEvents[0..unbounded]	Yes	List of Call Event values to generate notification.
addressDirection	AddressDirection	Yes	Determine if the address considered is "Called" or "Calling". It applies for all the addresses.
clientCorrelator	xsd:string	Yes	A correlator that the client MAY use to tag this particular resource representation during a request to create a resource on the server. In case the field is present, the server SHALL not alter its value, and SHALL provide it as part of the representation of this resource. In case the field is not

			present, the server SHALL NOT generate it.

If the operation was successful, it returns an HTTP Status of “201 Created”.

C.1.1 Example (Informative)

C.1.1.1 Request

```
POST /exampleAPI/1/callnotification/subscriptions/callEvent HTTP/1.1
Content-Type: application/x-www-form-urlencoded
Content-Length: nnnn
Accept: application/xml
Host: example.com

notifyURL=http%3A%2F%2Fapplication.example.com%2Fnotifications%2FCallNotificationURL&
filterAddress=tel%3A%2B15555550101&
filterAddress=tel%3A%2B15555550102&
filterCriteria=Answer&
filterCriteria=Busy&
addressDirection=Called&
clientCorrelator=112345
```

C.1.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/CallNotificationURL</notifyURL>
  </callbackReference>
  <filter>
    <address>tel:+15555550101</address>
    <address>tel:+15555550102</address>
    <criteria>Answer</criteria>
    <criteria>Busy</criteria>
    <addressDirection>Called</addressDirection>
  </filter>
  <clientCorrelator>112345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001</resourceURL>
</cn:callEventSubscription>
```

Note that alternatively, a ‘resourceReference’ root element can be returned, as illustrated in section 5.5.5.2.2.

C.2 Creating a new subscription to call direction notifications

This operation is used for creating a new subscription to call direction notifications, see section 5.7.5.

The request parameters are as follows:

Name	Type/Values	Optional	Description
notifyURL	xsd:anyURI	No	Notification endpoint definition
callbackData	xsd:string	Yes	Data the application can register with the server when subscribing to notifications, and that are passed back unchanged in each of the related notifications.
notificationFormat	common:NotificationFormat	Yes	Default: XML Application can specify format of the resource representation in notifications that are related to this subscription. The choice is between {XML, JSON}
filterAddress	xsd:anyURI[1..unbounded]	No	Party addresses to receive notifications on. The address type/direction is determined by the AddressDirection. If the AddressDirection part is not populated this is for notifications on called party addresses.
filterCriteria	CallEvents[0..unbounded]	Yes	List of Call Event values to generate notification.
addressDirection	AddressDirection	Yes	Determine if the address considered is "Called" or "Calling". It applies for all the addresses.
clientCorrelator	xsd:string	Yes	A correlator that the client MAY use to tag this particular resource representation during a request to create a resource on the server. In case the field is present, the server SHALL not alter its value, and SHALL provide it as part of the representation of this resource. In case the field is not present, the server SHALL NOT generate it.

If the operation was successful, it returns an HTTP Status of “201 Created”.

C.2.1 Example (Informative)

C.2.1.1 Request

```
POST /exampleAPI/1/callnotification/subscriptions/callDirection HTTP/1.1
Content-Type: application/x-www-form-urlencoded
Content-Length: nnnn
Accept: application/xml
Host: example.com

notifyURL=http%3A%2F%2Fapplication.example.com%2Fnotifications%2FCallDirectionURL&
filterAddress=tel%3A%2B15555550101&
filterAddress=tel%3A%2B15555550102&
filterCriteria=Busy&
addressDirection=Called&
clientCorrelator=212345
```

C.2.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callDirectionSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/CallDirectionURL</notifyURL>
  </callbackReference>
  <filter>
    <address>tel:+15555550101</address>
    <address>tel:+15555550102</address>
    <criteria>Busy</criteria>
    <addressDirection>Called</addressDirection>
  </filter>
  <clientCorrelator>212345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001</resourceURL>
</cn:callDirectionSubscription>
```

Note that alternatively, a ‘resourceReference’ root element can be returned, as illustrated in section 5.5.5.2.2.

C.3 Creating a new subscription to Play-And-Collect notifications

This operation is used for creating a new subscription to Play-And-Collect media interaction notifications, see section 5.9.5.

The request parameters are as follows:

Name	Type/Values	Optional	Description
notifyURL	xsd:anyURI	No	Notification endpoint definition

callbackData	xsd:string	Yes	Data the application can register with the server when subscribing to notifications, and that are passed back unchanged in each of the related notifications.
notificationFormat	common:NotificationFormat	Yes	Default: XML Application can specify format of the resource representation in notifications that are related to this subscription. The choice is between {XML, JSON}
callSessionIdentifier	xsd:string	Yes	Identifies the existing call session via a Parlay X call session identifier. If this parameter is not present, the "linkHref" parameter MUST be present.
linkHref	Xsd:anyURI	Yes	Identifies the existing call session via a ParlayREST resource URL which MUST point to a resource of type "CallSessionInformation". If this parameter is not present, the "callSessionIdentifier" parameter MUST be present.
clientCorrelator	xsd:string	Yes	A correlator that the client MAY use to tag this particular resource representation during a request to create a resource on the server. In case the field is present, the server SHALL not alter its value, and SHALL provide it as part of the representation of this resource. In case the field is not present, the server SHALL NOT generate it.

If the operation was successful, it returns an HTTP Status of "201 Created".

C.3.1 Example (Informative)

C.3.1.1 Request

```
POST /exampleAPI/1/callnotification/subscriptions/collection HTTP/1.1
Content-Type: application/x-www-form-urlencoded
Content-Length: nnnn
Accept: application/xml
Host: example.com

notifyURL=http%3A%2F%2Fapplication.example.com%2Fnotifications%2FMediaInteractionNotificationURL&
callSessionIdentifier=A1234&
clientCorrelator=312345
```

C.3.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/callnotification/subscriptions/collection/sub001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:playAndCollectInteractionSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/MediaInteractionNotificationURL</notifyURL>
  </callbackReference>
  <callSessionIdentifier>A1234</callSessionIdentifier>
  <clientCorrelator>312345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/collection/sub001</resourceURL>
</cn:playAndCollectInteractionSubscription>
```

The notes in section 5.9.5.1.2 apply.

C.4 Creating a new subscription to Play-And-Record notifications

This operation is used for creating a new subscription to Play-And-Record media interaction notifications, see section 5.11.5.

The request parameters are as follows:

Name	Type/Values	Optional	Description
notifyURL	xsd:anyURI	No	Notification endpoint definition
callbackData	xsd:string	Yes	Data the application can register with the server when subscribing to notifications, and that are passed back unchanged in each of the related notifications.
notificationFormat	common:NotificationFormat	Yes	Default: XML Application can specify format of the resource representation in notifications that are related to this subscription. The choice is between {XML, JSON}
callSessionIdentifier	xsd:string	Yes	Identifies the existing call session via a Parlay X call session identifier. If this parameter is not present, the “linkHref” parameter MUST be present.
linkHref	Xsd:anyURI	Yes	Identifies the existing call session via a ParlayREST resource URL which MUST point to a resource of type “CallSessionInformation”. If this parameter is not present, the “callSessionIdentifier” parameter MUST be present.

clientCorrelator	xsd:string	Yes	A correlator that the client MAY use to tag this particular resource representation during a request to create a resource on the server. In case the field is present, the server SHALL not alter its value, and SHALL provide it as part of the representation of this resource. In case the field is not present, the server SHALL NOT generate it.

If the operation was successful, it returns an HTTP Status of "201 Created".

C.4.1 Example (Informative)

C.4.1.1 Request

```
POST /exampleAPI/1/callnotification/subscriptions/recording HTTP/1.1
Content-Type: application/x-www-form-urlencoded
Content-Length: nnnn
Accept: application/xml
Host: example.com

notifyURL=http%3A%2F%2Fapplication.example.com%2Fnotifications%2FMediaInteractionNotificationURL&
callSessionIdentifier=A5678&
clientCorrelator=412345
```

C.4.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/callnotification/subscriptions/recording/sub001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:playAndRecordInteractionSubscription xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/MediaInteractionNotificationURL</notifyURL>
  </callbackReference>
  <callSessionIdentifier>A5678</callSessionIdentifier>
  <clientCorrelator>412345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/subscriptions/recording/sub001</resourceURL>
</cn:playAndRecordInteractionSubscription>
```

Note that alternatively, a 'resourceReference' root element could be returned, as illustrated in section 5.5.5.2.2.

C.5 Deferred response to a previous call direction notification

This operation is used This operation is used by the Client to send a deferred response to a Call Direction notification to the Server, see section 5.16.5.

The request parameters are as follows:

Name	Type/Values	Optional	Description
actionToPerform	ActionValues	No	Indicates the action the server is expected to perform.
routingAddress	xsd:anyURI	Yes	The address to be used in case the action indicates 'Route'.
chargingDescription	xsd:string [0..unbounded]	Yes	Description of charge to apply to this message. In case charging is required, this parameter MUST be present.
chargingCurrency	xsd:string	Yes	Currency of charge to apply to this message. In case chargingDescription is not present, this parameter MUST NOT be present.
chargingAmount	xsd:decimal	Yes	Charging amount to apply to this message. In case chargingDescription is not present, this parameter MUST NOT be present.
chargingCode	xsd:string	Yes	Charging code to apply to this message. In case chargingDescription is not present, this parameter MUST NOT be present.
media	common:Media[0..unbounded]	Yes	Identifies the desired media type(s) for the call, i.e. the media type(s) to be applied to the participants in the call session. Only to be used in case the action indicates ‘Route’. If the parameter is omitted, the media type(s) SHALL be negotiated by the underlying network.
mediaDirection	common:MediaDirection [0..unbounded]	Yes	Identifies the desired media direction for each of the media types. Only to be used if the action indicates ‘Route’. The number of occurrences of this parameter MUST match the number of occurrences of the ‘media’ parameter.
decisionId	xsd:string	No	Identifier unique in the scope of a client to mark related requests and responses, for use in deferred call direction response messages.

If the operation was successful, it returns an HTTP Status of "204 No Content".

C.5.1 Example (Informative)

C.5.1.1 Request

```
POST /exampleAPI/1/callnotification/subscriptions/callDirection/sub001/deferredResponse HTTP/1.1
Content-Type: application/x-www-form-urlencoded
Content-Length: nnnn
Accept: application/xml
Host: example.com

actionToPerform=Route&
routingAddress=tel%3A%2B15555550105&
decisionId=ABC-776655
```

C.5.1.2 Response

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 17:51:59 GMT
```

C.6 Creating a call event monitor

This operation is used for creating a call event monitor, see section 5.17.5.

The request parameters are as follows:

Name	Type/Values	Optional	Description
filterAddress	xsd:anyURI[1..unbounded]	No	Party addresses to receive notifications on. The address type/direction is determined by the AddressDirection. If the AddressDirection part is not populated this is for notifications on called party addresses.
filterCriteria	CallEvents[0..unbounded]	Yes	List of Call Event values to generate notification.
addressDirection	AddressDirection	Yes	Determine if the address considered is "Called" or "Calling". It applies for all the addresses.
clientCorrelator	xsd:string	Yes	A correlator that the client MAY use to tag this particular resource representation during a request to create a resource on the server. In case the field is present, the server SHALL not alter its value, and SHALL provide it as part of the representation

			of this resource. In case the field is not present, the server SHALL NOT generate it.

If the operation was successful, it returns an HTTP Status of "201 Created".

C.6.1 Example (Informative)

C.6.1.1 Request

```
POST /exampleAPI/1/callnotification/monitors HTTP/1.1
Content-Type: application/x-www-form-urlencoded
Content-Length: nnnn
Accept: application/xml
Host: example.com

filterAddress=tel%3A%2B15555550101&
filterAddress=tel%3A%2B15555550102&
filterCriteria=Answer&
filterCriteria=Busy&
addressDirection=Called&
clientCorrelator=612345
```

C.6.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/callnotification/monitors/mon001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<cn:callEventMonitor xmlns:cn="urn:oma:xml:rest:callnotification:1">
  <filter>
    <address>tel:+15555550101</address>
    <address>tel:+15555550102</address>
    <criteria>Answer</criteria>
    <criteria>Busy</criteria>
    <addressDirection>Called</addressDirection>
  </filter>
  <callEventRecordList></callEventRecordList>
  <clientCorrelator>612345</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/callnotification/monitors/mon001</resourceURL>
</cn:callEventMonitor>
```

Note that alternatively, a 'resourceReference' root element could be returned, as illustrated in section 5.17.5.2.2.

Appendix D. JSON examples (Informative)

JSON (JavaScript Object Notation) is a lightweight, text-based, language-independent data interchange format. It provides a simple means to represent basic name-value pairs, arrays and objects. JSON is relatively trivial to parse and evaluate using standard JavaScript libraries, and hence is suited for Parlay REST invocations from browsers or other processors with JavaScript engines. Further information on JSON can be found at [RFC 4627].

The following examples show the request and response for various operations using a JSON binding. The examples follow the XML to JSON serialization rules in [OMA_REST_TS_Common]. A JSON response can be obtained by using the content type negotiation mechanism specified in [OMA_REST_TS_Common].

For full details on the operations themselves please refer to the section number indicated.

D.1 Retrieving all subscriptions (section 5.4.3.1)

Request:

```
GET /exampleAPI/1/callnotification/subscriptions HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"callNotificationSubscriptionList": {
   "callDirectionSubscription": {
      "callbackReference": {"notifyURL": "http://application.example.com/notifications/CallDirectionURL"},
      "clientCorrelator": "212345",
      "filter": {
         "address": [
            "tel:+15555550101",
            "tel:+15555550102"
         ],
         "addressDirection": "Called",
         "criteria": "Busy"
      },
      "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001"
   },
   "callEventSubscription": [
      {
         "callbackReference": {"notifyURL": "http://application.example.com/notifications/CallNotificationURL"},
         "clientCorrelator": "112345",
         "filter": {
            "address": [
               "tel:+15555550101",
               "tel:+15555550102"
            ],
            "addressDirection": "Called",
            "criteria": [
               "Answer",
```

```
                "Busy"
            ]
        },
        "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001"
    },
    {
        "callbackReference": {"notifyURL": "http://application.example.com/notifications/CallNotificationURL"},
        "clientCorrelator": "012345",
        "filter": {
            "address": [
                "tel:+15555550103",
                "tel:+15555550104"
            ],
            "addressDirection": "Called",
            "criteria": "Busy"
        },
        "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub002"
    }
  ],
  "playAndCollectInteractionSubscription": [
    {
        "callSessionIdentifier": "A1234",
        "callbackReference": {"notifyURL": "http://application.example.com/notifications/MediaInteractionNotificationURL"},
        "clientCorrelator": "312345",
        "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/collection/sub001"
    },
    {
        "callSessionIdentifier": "A5678",
        "callbackReference": {"notifyURL": "http://application.example.com/notifications/MediaInteractionNotificationURL"},
        "clientCorrelator": "412345",
        "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/recording/sub001"
    }
  ],
  "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions"
}}
```


D.2 Retrieving all subscriptions to call event notifications (section 5.5.3.1)

Request:

```
GET /exampleAPI/1/callnotification/subscriptions/callEvent HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT
```

```
{"callNotificationSubscriptionList": {
   "callEventSubscription": [
      {
         "callbackReference": {"notifyURL": "http://application.example.com/notifications/CallNotificationURL"},
         "clientCorrelator": "112345",
         "filter": {
            "address": [
               "tel:+15555550101",
               "tel:+15555550102"
            ],
            "addressDirection": "Called",
            "criteria": [
               "Answer",
               "Busy"
            ]
         },
         "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001"
      },
      {
         "callbackReference": {"notifyURL": "http://application.example.com/notifications/CallNotificationURL"},
         "clientCorrelator": "012345",
         "filter": {
            "address": [
               "tel:+15555550103",
               "tel:+15555550104"
            ],
            "addressDirection": "Called",
            "criteria": "Busy"
         },
         "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub002"
      }
   ],
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions"
}}
```


D.3 Creating a new subscription to call event notifications, response with copy of created resource (section 5.5.5.1)

Request:


```
POST /exampleAPI/1/callnotification/subscriptions/callEvent HTTP/1.1
Content-Type: application/json
Content-Length: nnnn
Accept: application/json
Host: example.com

{"callEventSubscription": {
   "callbackReference": {"notifyURL": "http://application.example.com/notifications/CallNotificationURL"},
   "clientCorrelator": "112345",
   "filter": {
      "address": [
         "tel:+15555550101",
```

```
            "tel:+15555550102"
        ],
        "addressDirection": "Called",
        "criteria": [
            "Answer",
            "Busy"
        ]
    }
}}
```

Response:

```
HTTP/1.1 201 Created
Content-Type: application/json
Location: http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"callEventSubscription": {
    "callbackReference": {"notifyURL": "http://application.example.com/notifications/CallNotificationURL"},
    "clientCorrelator": "112345",
    "filter": {
        "address": [
            "tel:+15555550101",
            "tel:+15555550102"
        ],
        "addressDirection": "Called",
        "criteria": [
            "Answer",
            "Busy"
        ]
    },
    "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001"
}}
```

D.4 Creating a new subscription to call event notifications, response with location of created resource (section 5.5.5.2)

Request:

```
POST /exampleAPI/1/callnotification/subscriptions/callEvent HTTP/1.1
Content-Type: application/json
Content-Length: nnnn
Accept: application/json
Host: example.com

{"callEventSubscription": {
    "callbackReference": {"notifyURL": "http://application.example.com/notifications/CallNotificationURL"},
    "clientCorrelator": "112345",
```

```
   "filter": {
      "address": [
         "tel:+15555550101",
         "tel:+15555550102"
      ],
      "addressDirection": "Called",
      "criteria": [
         "Answer",
         "Busy"
      ]
   }
}}
```

Response:

```
HTTP/1.1 201 Created
Content-Type: application/json
Location: http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"resourceReference": {"resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001"}}
```

D.5 Retrieving an individual subscription to call event notifications (section 5.6.3.1)

Request:

```
GET /exampleAPI/1/callnotification/subscriptions/callEvent/sub001?resFormat=JSON HTTP/1.1

Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"callEventSubscription": {
   "callbackReference": {"notifyURL": "http://application.example.com/notifications/CallNotificationURL"},
   "clientCorrelator": "112345",
   "filter": {
      "address": [
         "tel:+15555550101",
         "tel:+15555550102"
      ],
      "addressDirection": "Called",
      "criteria": [
```

```
            "Answer",
            "Busy"
        ]
    },
    "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001"
}}
```

D.6 Removing a subscription to call event notifications (section 5.6.6.1)

Request:

```
DELETE /exampleAPI/1/callnotification/subscriptions/callEvent/sub001 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 17:51:59 GMT
```

D.7 Retrieving all subscriptions to call direction notifications (section 5.7.3.1)

Request:

```
GET /exampleAPI/1/callnotification/subscriptions/callDirection HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"callNotificationSubscriptionList": {
    "callDirectionSubscription": {
        "callbackReference": {"notifyURL": "http://application.example.com/notifications/CallDirectionURL"},
        "clientCorrelator": "212345",
        "filter": {
            "address": [
                "tel:+15555550101",
                "tel:+15555550102"
```

```
            ],
            "addressDirection": "Called",
            "criteria": "Busy"
        },
        "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001"
    },
    "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection"
}}
```

D.8 Creating a new subscription to call direction notifications (section 5.7.5.1)

Request:

```
POST /exampleAPI/1/callnotification/subscriptions/callDirection HTTP/1.1
Content-Type: application/json
Content-Length: nnnn
Accept: application/json
Host: example.com

{"callDirectionSubscription": {
    "callbackReference": {"notifyURL": "http://application.example.com/notifications/CallDirectionURL"},
    "clientCorrelator": "212345",
    "filter": {
        "address": [
            "tel:+15555550101",
            "tel:+15555550102"
        ],
        "addressDirection": "Called",
        "criteria": "Busy"
    }
}}
```

Response:

```
HTTP/1.1 201 Created
Content-Type: application/json
Location: http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"callDirectionSubscription": {
    "callbackReference": {"notifyURL": "http://application.example.com/notifications/CallDirectionURL"},
    "clientCorrelator": "212345",
    "filter": {
        "address": [
            "tel:+15555550101",
            "tel:+15555550102"
        ],
        "addressDirection": "Called",
        "criteria": "Busy"
```

```
   },
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001"
}}
```

D.9 Retrieving an individual subscription to call direction notifications (section 5.8.3.1)

Request:

```
GET /exampleAPI/1/callnotification/subscriptions/callDirection/sub001 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"callDirectionSubscription": {
   "callbackReference": {"notifyURL": "http://application.example.com/notifications/CallDirectionURL"},
   "clientCorrelator": "212345",
   "filter": {
      "address": [
         "tel:+15555550101",
         "tel:+15555550102"
      ],
      "addressDirection": "Called",
      "criteria": "Busy"
   },
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001"
}}
```

D.10 Removing a subscription to call direction notifications (section 5.8.6.1)

Request:

```
DELETE /exampleAPI/1/callnotification/subscriptions/callDirection/sub001 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 17:51:59 GMT
```

D.11 Retrieving all subscriptions to Play-And-Collect media interaction notifications (section 5.9.3.1)

Request:

```
GET /exampleAPI/1/callnotification/subscriptions/collection HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"callNotificationSubscriptionList": {
   "playAndCollectInteractionSubscription": {
      "callSessionIdentifier": "A1234",
      "callbackReference": {"notifyURL": "http://application.example.com/notifications/MediaInteractionNotificationURL"},
      "clientCorrelator": "312345",
      "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/collection/sub001"
   },
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/collection"
}}
```

D.12 Creating a new subscription to Play-And-Collect media interaction notifications (section 5.9.5.1)

Request:

```
POST /exampleAPI/1/callnotification/subscriptions/collection HTTP/1.1
Content-Type: application/json
Content-Length: nnnn
Accept: application/json
Host: example.com

{"playAndCollectInteractionSubscription": {
   "callSessionIdentifier": "A1234",
   "callbackReference": {"notifyURL": "http://application.example.com/notifications/MediaInteractionNotificationURL"},
   "clientCorrelator": "312345"
}}
```

Response:

```
HTTP/1.1 201 Created
Content-Type: application/json
Location: http://example.com/exampleAPI/1/callnotification/subscriptions/collection/sub001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"playAndCollectInteractionSubscription": {
   "callSessionIdentifier": "A1234",
   "callbackReference": {"notifyURL": "http://application.example.com/notifications/MediaInteractionNotificationURL"},
   "clientCorrelator": "312345",
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/collection/sub001"
}}
```

D.13 Retrieving an individual subscription to Play-And-Collect media interaction notifications (section 5.10.3.1)

Request:

```
GET /exampleAPI/1/callnotification/subscriptions/collection/sub001 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"playAndCollectInteractionSubscription": {
   "callSessionIdentifier": "A1234",
   "callbackReference": {"notifyURL": "http://application.example.com/notifications/MediaInteractionNotificationURL"},
   "clientCorrelator": "312345",
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/collection/sub001"
}}
```

D.14 Removing a subscription to Play-And-Collect media interaction notifications (section 5.10.6.1)

Request:

```
DELETE /exampleAPI/1/callnotification/subscriptions/collection/sub001 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 17:51:59 GMT
```

D.15 Retrieving all subscriptions to Play-And-Record interaction notifications (section 5.11.3.1)

Request:

```
GET /exampleAPI/1/callnotification/subscriptions/recording HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"callNotificationSubscriptionList": {
   "playAndRecordInteractionSubscription": {
      "callSessionIdentifier": "A5678",
      "callbackReference": {"notifyURL": "http://application.example.com/notifications/MediaInteractionNotificationURL"},
      "clientCorrelator": "412345",
      "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/recording/sub001"
   },
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/recording"
}}
```

D.16 Creating a new subscription to Play-And-Record media interaction notifications (section 5.11.5.1)

Request:

```
POST /exampleAPI/1/callnotification/subscriptions/recording HTTP/1.1
Content-Type: application/json
Content-Length: nnnn
Accept: application/json
Host: example.com

{"playAndRecordInteractionSubscription": {
   "callSessionIdentifier": "A5678",
   "callbackReference": {"notifyURL": "http://application.example.com/notifications/MediaInteractionNotificationURL"},
   "clientCorrelator": "412345"
}}
```

Response:

```
HTTP/1.1 201 Created
Content-Type: application/json
Location: http://example.com/exampleAPI/1/callnotification/subscriptions/recording/sub001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"playAndRecordInteractionSubscription": {
   "callSessionIdentifier": "A5678",
   "callbackReference": {"notifyURL": "http://application.example.com/notifications/MediaInteractionNotificationURL"},
   "clientCorrelator": "412345",
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/recording/sub001"
}}
```

D.17 Retrieving an individual subscription to Play-And-Record media interaction notification (section 5.12.3.1)

Request:

```
GET /exampleAPI/1/callnotification/subscriptions/recording/sub001 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"playAndRecordInteractionSubscription": {
   "callSessionIdentifier": "A5678",
   "callbackReference": {"notifyURL": "http://application.example.com/notifications/MediaInteractionNotificationURL"},
   "clientCorrelator": "412345",
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/subscriptions/recording/sub001"
}}
```

D.18 Removing a subscription to Play-And-Record media interaction notifications (section 5.12.6.1)

Request:

```
DELETE /exampleAPI/1/callnotification/subscriptions/recording/sub001 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 17:51:59 GMT
```

D.19 Notifying a client about a call event (section 5.13.5.1)

Request:

```
POST /notifications/CallNotificationURL HTTP/1.1
Accept: application/json
Content-Type: application/json
Content-Length: nnnn
Host: application.example.com

{"callEventNotification": {
   "callSessionIdentifier": "B12345",
   "calledParticipant": "tel:+15555550101",
   "callingParticipant": "tel:+15555550102",
   "callingParticipantName": "Peter E. Xample",
   "eventDescription": {
      "callEvent": "Busy",
      "description": "optional service-specific information"
   },
   "link": [
      {
         "href": "http://example.com/exampleAPI/1/callnotification/subscriptions/callEvent/sub001",
         "rel": "CallEventSubscription"
      },
      {
         "href": "http://example.com/exampleAPI/1/thirdpartycall/callSessions/cs001",
         "rel": "CallSessionInformation"
      }
   ],
   "notificationType": "CallEvent"
}}
```

Response:

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 18:21:59 GMT
```

D.20 Notifying a client about a Play-And-Collect media interaction event (section 5.14.5.1)

Request:

```
POST /notifications/MediaInteractionNotificationURL HTTP/1.1
Accept: application/json
```

```
Content-Type: application/json
Content-Length: nnnn
Host: application.example.com

{"mediaInteractionNotification": {
   "callParticipant": "tel:+15555550101",
   "link": {
      "href": "http://example.com/exampleAPI/1/callnotification/subscriptions/collection/sub001",
      "rel": "MediaInteractionSubscription"
   },
   "mediaInteractionResult": "1234#",
   "notificationType": "PlayAndCollect"
}}
```

Response:

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 18:21:59 GMT
```

D.21 Notifying a client about a Play-And-Record media interaction event (section 5.14.5.2)

Request:

```
POST /notifications/MediaInteractionNotificationURL HTTP/1.1
Accept: application/json
Content-Type: application/json
Content-Length: nnnn
Host: application.example.com

{"mediaInteractionNotification": {
   "callParticipant": "tel:+15555550101",
   "link": {
      "href": "http://example.com/exampleAPI/1/callnotification/subscriptions/recording/sub001",
      "rel": "MediaInteractionSubscription"
   },
   "mediaInteractionResult": "http://media.example.com/recordings/1234.wav",
   "notificationType": "PlayAndRecord"
}}
```

Response:

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 18:21:59 GMT
```

D.22 Notifying a client about a call direction event with immediate response (section 5.15.5.1)

Request:

```
POST /notifications/CallDirectionNotificationURL HTTP/1.1
Accept: application/json
Content-Type: application/json
Content-Length: nnnn
Host: application.example.com

{"callEventNotification": {
   "callSessionIdentifier": "B6789",
   "calledParticipant": "tel:+15555550101",
   "callingParticipant": "tel:+15555550102",
   "callingParticipantName": "Peter E. Xample",
   "eventDescription": {"callEvent": "Busy"},
   "link": {
      "href": "http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001",
      "rel": "callEventSubscription"
   },
   "notificationType": "CallDirection"
}}
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 18:40:59 GMT

{"action": {
   "actionToPerform": "Route",
   "routingAddress": "tel:+15555550105"
}}
```

D.23 Notifying a client about a call direction event with deferred response (section 5.15.5.2)

Request:

```
POST /notifications/MediaInteractionNotificationURL HTTP/1.1
Accept: application/json
Content-Type: application/json
Content-Length: nnnn
Host: application.example.com

{"callEventNotification": {
   "callSessionIdentifier": "B6789",
   "calledParticipant": "tel:+15555550101",
```

```
   "callingParticipant": "tel:+15555550102",
   "callingParticipantName": "Peter E. Xample",
   "eventDescription": {"callEvent": "Busy"},
   "link": {
      "href": "http://example.com/exampleAPI/1/callnotification/subscriptions/callDirection/sub001",
      "rel": "callEventSubscription"
   },
   "notificationType": "CallDirection"
}}
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 18:40:59 GMT

{"action": {
   "actionToPerform": "Deferred",
   "decisionId": "ABC-776655"
}}
```

D.24 Deferred response to a previous call direction notification (section 5.16.5.1)

Request:

```
POST /exampleAPI/1/callnotification/subscriptions/callDirection/sub001/deferredResponse HTTP/1.1
Content-Type: application/json
Content-Length: nnnn
Accept: application/json
Host: example.com

{"action": {
   "actionToPerform": "Route",
   "decisionId": "ABC-776655",
   "routingAddress": "tel:+15555550105"
}}
```

Response:

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 17:51:59 GMT
```

D.25 Deferred response to a previous call direction notification (section 5.16.5.2)

Request:

```
POST /exampleAPI/1/callnotification/subscriptions/callDirection/sub001/deferredResponse HTTP/1.1
Content-Type: application/json
Content-Length: nnnn
Accept: application/json
Host: example.com

{"action": {
   "actionToPerform": "Route",
   "decisionId": "ABC-776655",
   "routingAddress": "tel:+15555550105"
}}
```

Response

```
HTTP/1.1 408 Request Timeout
Date: Mon, 28 Jun 2010 17:51:59 GMT
Content-Type: application/json
Content-Length: nnnn

{"requestError": {"policyException": {
   "messageId": "POL0010",
   "text": "Requested information unavailable as the retention time interval has expired."
}}}
```

D.26 Retrieving all call event monitors (section 5.17.3.1)

Request:

```
GET /exampleAPI/1/callnotification/monitors HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 18:51:59 GMT


{"callEventMonitorList": {
   "callEventMonitor": {
      "callEventRecordList": {
         "callEventRecord": [
```

```
            {
               "callSessionIdentifier": "B12345",
               "calledParticipant": "tel:+15555550101",
               "callingParticipant": "tel:+15555550102",
               "callingParticipantName": "Peter E. Xample",
               "eventDescription": {"callEvent": "Busy"},
               "link": {
                  "href": "http://example.com/exampleAPI/1/thirdpartycall/callSessions/cs001",
                  "rel": "CallSessionInformation"
               },
               "resourceURL": "http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer001",
               "timestamp": "2010-06-28T18:21:55"
            },
            {
               "callSessionIdentifier": "B23456",
               "calledParticipant": "tel:+15555550102",
               "callingParticipant": "tel:+15555550101",
               "callingParticipantName": "Max Muster",
               "eventDescription": {"callEvent": "Answer"},
               "resourceURL": "http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer002",
               "timestamp": "2010-06-28T18:27:02"
            }
         ],
         "resourceURL": "http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords"
      },
      "clientCorrelator": "612345",
      "filter": {
         "address": [
            "tel:+15555550101",
            "tel:+15555550102"
         ],
         "addressDirection": "Called",
         "criteria": [
            "Answer",
            "Busy"
         ]
      },
      "resourceURL": "http://example.com/exampleAPI/1/callnotification/monitors/mon001"
   },
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/monitors"
}}
```


D.27 Creating a new call event monitor, response with a copy of the created resource (section 5.17.5.1)

Request:

```
POST /exampleAPI/1/callnotification/monitors HTTP/1.1
Content-Type: application/json
Content-Length: nnnn
Accept: application/json
Host: example.com
```

```
{"callEventMonitor": {
   "clientCorrelator": "612345",
   "filter": {
      "address": [
         "tel:+15555550101",
         "tel:+15555550102"
      ],
      "addressDirection": "Called",
      "criteria": [
         "Answer",
         "Busy"
      ]
   }
}}
```

Response:

```
HTTP/1.1 201 Created
Content-Type: application/json
Location: http://example.com/exampleAPI/1/callnotification/monitors/mon001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"callEventMonitor": {
   "callEventRecordList": null,
   "clientCorrelator": "612345",
   "filter": {
      "address": [
         "tel:+15555550101",
         "tel:+15555550102"
      ],
      "addressDirection": "Called",
      "criteria": [
         "Answer",
         "Busy"
      ]
   },
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/monitors/mon001"
}}
```

D.28 Creating a new call event monitor, response with location of the created resource (section 5.17.5.2)

Request:

```
POST /exampleAPI/1/callnotification/monitors HTTP/1.1
Content-Type: application/json
Content-Length: nnnn
Accept: application/json
Host: example.com
```

```
{"callEventMonitor": {
   "clientCorrelator": "612345",
   "filter": {
      "address": [
         "tel:+15555550101",
         "tel:+15555550102"
      ],
      "addressDirection": "Called",
      "criteria": [
         "Answer",
         "Busy"
      ]
   }
}}
```

Response:

```
HTTP/1.1 201 Created
Content-Type: application/json
Location: http://example.com/exampleAPI/1/callnotification/monitors/mon001
Content-Length: nnnn
Date: Mon, 28 Jun 2010 17:51:59 GMT

{"resourceReference": {"resourceURL": " http://example.com/exampleAPI/1/callnotification/monitors/mon001"}}
```

D.29 Retrieving an individual call event monitor (section 5.18.3.1)

Request:

```
GET /exampleAPI/1/callnotification/monitors/mon001 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 18:51:59 GMT

{"callEventMonitor": {
   "callEventRecordList": null,
   "clientCorrelator": "612345",
   "filter": {
      "address": [
         "tel:+15555550101",
         "tel:+15555550102"
      ],
      "addressDirection": "Called",
```

```
      "criteria": [
         "Answer",
         "Busy"
      ]
   },
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/monitors/mon001"
}}
```

D.30 Deleting a call event monitor (section 5.18.6.1)

Request:

```
DELETE /exampleAPI/1/callnotification/monitors/mon001 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 204 No Content
Date: Mon, 28 Jun 2010 18:51:59 GMT
```

D.31 Retrieving the list of call events collected by a call event monitor (section 5.19.3.1)

Request:

```
GET /exampleAPI/1/callnotification/monitors/mon001/callEventRecords HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 18:51:59 GMT

{"callEventRecordList": {
   "callEventRecord": [
      {
         "callSessionIdentifier": "B12345",
         "calledParticipant": "tel:+15555550101",
         "callingParticipant": "tel:+15555550102",
         "callingParticipantName": "Peter E. Xample",
         "eventDescription": {"callEvent": "Busy"},
         "link": {
```

```
            "href": "http://example.com/exampleAPI/1/thirdpartycall/callSessions/cs001",
            "rel": "CallSessionInformation"
         },
         "resourceURL": "http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer001",
         "timestamp": "2010-06-28T18:21:55"
      },
      {
         "callSessionIdentifier": "B23456",
         "calledParticipant": "tel:+15555550102",
         "callingParticipant": "tel:+15555550101",
         "callingParticipantName": "Max Muster",
         "eventDescription": {"callEvent": "Answer"},
         "resourceURL": "http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer002",
         "timestamp": "2010-06-28T18:27:02"
      }
   ],
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords"
}}
```


D.32 Retrieving individual call event information (section 5.20.3.1)

Request:

```
GET /exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer001 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:


```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Mon, 28 Jun 2010 18:51:59 GMT

{"callEventRecord": {
   "callSessionIdentifier": "B12345",
   "calledParticipant": "tel:+15555550101",
   "callingParticipant": "tel:+15555550102",
   "callingParticipantName": "Peter E. Xample",
   "eventDescription": {"callEvent": "Busy"},
   "link": {
      "href": "http://example.com/exampleAPI/1/thirdpartycall/callSessions/cs001",
      "rel": "CallSessionInformation"
   },
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer001",
   "timestamp": "2010-06-28T18:21:55"
}}
```

D.33 Deleting an individual call event (section 5.20.6.1)

Request:

```
DELETE /exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer001 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Mon, 28 Jun 2010 18:52:00 GMT

{"callEventRecord": {
   "callSessionIdentifier": "B12345",
   "calledParticipant": "tel:+15555550101",
   "callingParticipant": "tel:+15555550102",
   "callingParticipantName": "Peter E. Xample",
   "eventDescription": {"callEvent": "Busy"},
   "link": {
      "href": "http://example.com/exampleAPI/1/thirdpartycall/callSessions/cs001",
      "rel": "CallSessionInformation"
   },
   "resourceURL": "http://example.com/exampleAPI/1/callnotification/monitors/mon001/callEventRecords/cer001",
   "timestamp": "2010-06-28T18:21:55"
}}
```

Appendix E. Parlay X operations mapping (Informative)

The table below illustrates the mapping between REST resources/methods and Parlay X equivalent operations.

ParlayREST resource	ParlayREST method	ParlayREST section reference	Parlay X equivalent operation
Subscriptions to call event notifications	POST	5.5.5	startCallNotification
Individual subscription to call event notifications	DELETE	5.6.6	stopCallNotification
Subscriptions to call direction notifications	POST	5.7.5	startCallDirectionNotification
Individual subscription to call direction notifications	DELETE	5.8.6	stopCallDirectionNotification
Subscriptions to Play-And-Collect media interaction notifications	POST	5.9.5	startPlayAndCollectNotification
Individual subscription to Play-And-Collect media interaction notifications	DELETE	5.10.6	stopMediaInteractionNotification
Subscriptions to Play-And-Record media interaction notifications	POST	5.11.5	startPlayAndRecordNotification
Individual subscription to Play-And-Record media interaction notifications	DELETE	5.12.6	stopMediaInteractionNotification
Client Notification about Call Events	POST	5.13.5	notifyCallEvent
Client Notification about Media Interaction Events	POST	5.14.5	notifyPlayAndCollectEvent, notifyPlayAndRecordEvent
Client Notification about Call Direction Events	POST	5.15.5	handleCallEvent

Table 1: Parlay X operations mapping