API User Guide for the Cisco TelePresence Exchange System Release 1.2

Revised June 28, 2013

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CONTENTS

Preface

This preface describes the audience for the *Cisco TelePresence Exchange System API User Guide*, and the document organization and conventions.

See the following sections:

Audience

This guide is a technical resource for application developers who build custom applications that use the Cisco TelePresence Exchange System Application Programming Interface (API).

You should have an advanced level of understanding of web services technology and be familiar with the functionality offered by the Cisco TelePresence Exchange System.

Book Organization

The *Cisco TelePresence Exchange System API User Guide* includes the following chapters:

Chapter	Contents
Overview	Provides an overview of the Cisco TelePresence Exchange System APIs.
Scheduling API	Describes the API services for scheduling and managing meetings.
Active Meeting Management API	Describes the API services for managing active meetings.
Call Detail Record API	Describes the API services for retrieving and managing call detail records.
Appendix A: Backward Compatibility	Provides notes on using a previous version of the Cisco TelePresence Exchange System APIs with this release.

Conventions

This document uses the following conventions:

Convention	Description
boldface font	Commands, command options, and keywords are in **boldface**.
italic font	Arguments for which you supply values are in *italics*.
[ ]	Elements in square brackets are optional.
{ x | y | z }	Alternative keywords are grouped in braces and separated by vertical bars.
[x | y | z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
`screen` font	Terminal sessions and information the system displays are in `screen` font.
`boldface screen` font	Information you must enter is in **`boldface screen`** font.
`italic screen` font	Arguments for which you supply values are in *`italic screen`* font.
⟶	`This pointer highlights an important line of text in an example.`
^	The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key.
< >	Non-printing characters, such as passwords are in angle brackets.

This document also uses the following conventions:

Note Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

Caution Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Related Documentation

The *API User Guide for the Cisco TelePresence Exchange System Release 1.2* is intended to be used in conjunction with the *Administration Guide for the Cisco TelePresence Exchange System Release 1.2*. To access the full documentation suite for the Cisco TelePresence Exchange System, go to the following URL: http://www.cisco.com/go/ctx-docs

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

Subscribe to the *What's New in Cisco Product Documentation* as an RSS feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service. Cisco currently supports RSS Version 2.0.

CHAPTER 1

Overview

The Cisco TelePresence Exchange System is an integrated video service-creation platform that enables service providers and strategic partners to offer secure cloud-based managed and hosted Cisco TelePresence and business video services. The Cisco TelePresence Exchange System is a software environment that simplifies end-to-end subscriber service provisioning; optimizes intelligent call routing for endpoints and network bandwidth; manages the call processing and allocation of media resources for conferencing; consolidates a centralized control point for management, billing, and administration; and exposes a set of application programming interface (API) for integration across business and operational support systems. These standards-based web services APIs facilitate application integration by providing access to functions such as meeting scheduling, management of active meetings, and billing.

This chapter provides a general description of the APIs and includes the following sections:

API Overview

The Cisco TelePresence Exchange System provides the following APIs:

- Scheduling

  The Scheduling API provides web services to control scheduling of services such as Meet-Me and two-party scheduled meetings on the Cisco TelePresence Exchange System.

By using the Scheduling API, you can schedule, modify, or cancel meetings and retrieve information about meetings and other objects required during scheduling.

- Active Meeting Management

  The Active Meeting Management API enables real-time management of meetings that are currently in progress. (In contrast, the Scheduling API enables you to schedule and modify future meetings.)

  By using the Active Meeting Management API, you can develop client applications for monitoring and controlling active meetings, typically by concierge or service desk personnel.

- Call Detail Record (CDR)

  The CDR API provides web services to retrieve and manage call detail records for services provided by the Cisco TelePresence Exchange System.

For more information about the APIs, see the Cisco TelePresence Exchange page on the Cisco Developer Network at http://developer.cisco.com/web/ctx/home.

The Cisco TelePresence Exchange System software image includes all components that are required to use the APIs. The APIs require no additional software download or installation.

Development Guidelines

Cisco requires Cisco Technology Developer Program member applications to be retested and updated as necessary to maintain compatibility with each new major release of Cisco TelePresence Exchange System.

Cisco recommends the following practices to reduce the number and extent of any updates that may be necessary:

- New interface events, methods, responses, headers, parameters, attributes, elements, or new values of existing elements, will most likely be introduced in new versions of the APIs. Each new version of the API includes a separate Web Services Description Language (WSDL). When developers upgrade to the new API version, they may need to provide additional generic or null parameters to existing service methods or call additional methods to achieve the same result.
- Previous interface events, methods, responses, headers, parameters, attributes, and other elements will remain defined in the API, and will appear in the API in the form of separate WSDLs for each supported release.
- Applications must not be dependent on interface behavior that is the result of defects (behavior not consistent with published interface specifications) because the behavior can change when the defect is fixed.
- Cisco recommends that developers have a strategy for migration to newer Cisco TelePresence Exchange System API versions. Developers must note cases in which Cisco removes items such as methods, parameters, responses, and attributes in newer API versions, and ensure that they remove these from their application as soon as possible.

About Web Services

The web services standards define a framework for clients to request services over a network by using XML-based messaging. Web services operations use an XML-based protocol such as Simple Object Access Protocol (SOAP), which defines the envelope structure, encoding rules, and conventions for representing web service requests and responses. These requests and responses are transmitted as XML-based SOAP messages over HTTP.

Although SOAP messages can be complex, a web services framework hides the complexity from the client developer. A client creates a proxy (a local object that represents the service) and then invokes methods on the proxy. The web services framework converts the API method calls and responses to and from SOAP messages. Cisco recommends that developers use powerful web services frameworks such as Axis for Java developers to simplify development and avoid direct XML document manipulation.

About the API Architecture

API clients access the Cisco TelePresence Exchange System APIs by using a standards-based web services infrastructure that is implemented on the administration server. These clients, which can run on different OS platforms, communicate with the administration server by using SOAP-based web services.

The CTX API conforms to the SOAP Specification 1.1 and the WSDL Specification 1.1.

The SOAP messages (between client and server) are transported over HTTP to a unique URL that is associated with each of the APIs.

The web services provided by the API are specified by a set of WSDL files. Each web service is defined as a request-response operation (each request results in a correlated response message from the Cisco TelePresence Exchange System). The response message contains information that is relevant to the requested action or data query.

Each request (and the associated response) is a complete transaction. There is no requirement for session or state information to be maintained on the server between requests from a given client.

Security

The current API uses HTTP basic access authentication. API clients must include authentication credentials with each API request. The mechanism is HTTP basic access authentication, using Base64 encoding of username and password.

API Versions

The Cisco implementation of Cisco TelePresence Exchange System APIs may change over time in response to the evolving needs of our partner community.

The APIs provide a unique URL for each supported version of the API, so that clients can control the timing of their migration to newer versions of the API.

Error Handling

The Cisco TelePresence Exchange System API communicates an error condition to the client by returning an exception message instead of a response message. The exception message is an HTTP 500 response that contains a SOAP fault. The fault contains an error code and string field that provide additional details about the exception.

Note The error message is in English (non-localized) and is not guaranteed to remain constant in future releases. API clients should use the more strongly-typed error codes (ERC_*) and cause codes, rather than relying on the text of the error message, for programmatic handling of exceptions.

Queries

For services that retrieve information about data objects in the Cisco TelePresence Exchange System (such as endpoints or meetings), the API provides a generalized query mechanism to allow clients to flexibly construct the desired queries. Simple and complex queries are supported. A null query is interpreted as a request to return all of the entities.

Required Parameters

Most API methods have one or more required parameters. When the client provides an empty or null value for any required parameter, the Cisco TelePresence Exchange System will throw a missing-parameter exception, which notes the missing parameter.

Date/Time Fields

In each API, the date and time fields are in ISO 8601 format. Specifically, a calendar date has the following format: YYYY-MM-DD and the time of day employs a 24-hour time period. The letter T is used to separate the date and time fields. The time zone information is represented as an offset to UTC.

For example, an API would store the date of November 22, 2011 and the time of 7:00 PM PST as follows:

```
2011-11-22T19:00:00-08:00
```

Pagination

For many methods where large numbers of records may be returned, you can define pagination parameters to limit the number of records that the Cisco TelePresence Exchange System returns to the API client, to adapt to a web display or a client buffer.

For example, in the CDR API to limit the system to return only 100 records per response to the API client, you would set the numberOfRecords parameter to 100 and set the firstIndex to the following sequence:

> firstIndex = 0 for the first group of records, 100 for the second group of records, 200 for the third group of records, and so on for each subsequent group of records.

As long as the Cisco TelePresence Exchange System returns the 100 records in the response as the API client expects, the client will request the next portion of records. When the system returns fewer than 100 records in the response, the client can assume that it has received the last block of records and that no more requests are necessary.

If the pagination parameters are not specified in a request that supports them, the query will default to the first 100 entries in the result set.

Common API Methods

Each of the Cisco TelePresence Exchange System APIs supports a common set of methods, which are described in the following sections:

- echo, page 1-5
- getVersion, page 1-5

echo

The Echo service allows the system to confirm that the requested API service is active. The client includes an arbitrary string in the echo request and the response message includes the same string.

Table 1-1 describes the input parameters for the Echo service request.

Table 1-1 Echo Request Parameters

Parameter	Type	Description
echoString	String	Enter an arbitrary string. The same string is returned in the response message.

Table 1-2 describes the parameters in the Echo service response.

Table 1-2 Echo Response Parameters

Parameter	Type	Description
return	String	The value of the string is identical to the string that was sent in the request message.

getVersion

The Get Version service returns the software version of the Cisco TelePresence Exchange System. The service request contains no input parameters.

Table 1-3 describes the parameters in the service response.

Table 1-3 Get Version Response Parameters

Parameter	Type	Description
return	String	The value of the string is the build version of the Cisco TelePresence Exchange System.

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CHAPTER 2

Scheduling API

Revised June 28, 2013

The Cisco TelePresence Exchange System provides the Scheduling Application Programming Interface (API) to facilitate the development of scheduling portals and other software applications.

This chapter provides a description of the Scheduling API and includes the following sections:

Getting Started

This section describes how to get started with the Scheduling API and includes the following topics:

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Scheduling API Overview

The Scheduling API provides services to accomplish the following tasks:

- Obtain configured information

  The API provides a selection of Get methods to obtain information about the regions, organizations, endpoints, and so on, that are configured on the Cisco TelePresence Exchange System. These methods are described in the "Obtaining Configured Information" section on page 2-11.

- Obtain status and usage information

  The API provides additional methods to obtain status, availability, and usage information about elements in the system. These methods are described in the "Obtaining Status and Usage Information" section on page 2-30.

- Schedule and manage meetings

  The API provides methods to schedule new meetings, modify existing meetings, and cancel meetings. For more details see the "Scheduling and Managing Meetings" section on page 2-34.

- Perform tasks that are related to the API

  The API provides services that are related to managing the Scheduling API. These methods are described in the "Performing API-Related Tasks" section on page 2-65.

Information Model

The API uses a number of information elements. These elements are described in the following sections:

Service Provider

A service provider offers telepresence services to a set of business customers (organizations) by using media resources that are provisioned in one or more regions in their network.

The Cisco TelePresence Exchange System provides the ability to customize the service greetings and IVR prompts for each service provider.

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Region

A region represents a major geographic area in which a service provider operates.

The region contains one or more resource clusters that generally include either a Cisco TelePresence Multipoint Switch and/or Cisco TelePresence MSE 8000 Series, a Cisco router with integrated voice response (IVR) records, and a Cisco Session Border Controller (SBC). A resource cluster is a connected set of resources in one physical data center and is also known as a point of presence (POP).

All media resources in a region are considered to be equivalent for resource allocation purposes, even if the resources span multiple POPs.

A service provider can be associated with multiple regions that are configured on a Cisco TelePresence Exchange System, and it is possible for a given region to contain resources for different service providers.

Resource Groups and Reservation Types

Resource groups and reservation types provide greater flexibility and control of how media bridge resources are allocated for Meet-Me and Rendezvous meetings. Before adding Meet-Me or Rendezvous meetings, you must define resource groups and reservation types. The reservation type determines whether the Cisco TelePresence Exchange System provides a guaranteed or best-effort level of service when allocating media bridge resources for a Meet-Me or Rendezvous meeting. The reservation type levels of service are defined as follows:

- Guaranteed Meet-Me meeting—The system pre-allocates all of the resources for the meeting up to 15 minutes before the scheduled start of the meeting.

  The system de-allocates the resources at the end time of the meeting, regardless of whether all participants have left the meeting. If the idle meeting cleanup feature is enabled, the system de-allocates the resources when the idle meeting cleanup timer expires.
- Guaranteed Rendezvous meeting—The system pre-allocates all of the resources immediately upon creation of the meeting and does not de-allocate them unless the meeting is cancelled.

Note For a Rendezvous meeting with a guaranteed reservation type, the system permanently allocates resources to the meeting, even when the meeting is not active. Consequently, guaranteed Rendezvous meetings are an expensive use of resources and are generally not recommended.

- Best-effort Meet-Me and Rendezvous meeting—You can configure the minimum number of screens that the system will use to determine a minimum bridge capacity (this value is a fraction of the total meeting capacity that was calculated when the meeting was scheduled) to allocate when the first participant joins a best-effort Meet-Me or Rendezvous meeting. After the minimum amount of bridge capacity is consumed by meeting participants, more resources will be dynamically allocated as needed until the total meeting capacity is reached. As each participant leaves the meeting, their associated resources will be dynamically de-allocated until the meeting capacity reaches the specified minimum bridge capacity for the meeting. The system de-allocates the remaining resources when all the participants leave the meeting or when the meeting reaches its configured end time.

You configure specific media bridge resources to be associated with a specific resource group. Based on the set of requirements configured for a Meet-Me or Rendezvous meeting (such as service provider, region, reservation type, and endpoint requirements), the system selects the best-fit resource group and associated media bridge resources to use for the meeting.

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When configuring a resource group, you choose a specific service provider and region and one or more reservation types to be associated with the group. You then configure the allowable amount of dedicated media resources and meeting booking capacity for each reservation type chosen. Assigning both a guaranteed and best-effort reservation type to a single resource group allows you to dedicate a specific percentage of the resources to guaranteed meetings and another percentage to best-effort meetings. For best-effort meetings, you have the capability to overbook the media bridge resources. Overbooking assumes that all Meet-Me and Rendezvous meetings associated with a specific reservation type will not be active at the same time. By having different levels of overbookings, you can provide different service levels (for example, Gold, Silver, and Bronze) whereby the higher service levels have lower overbooking and thus have a lower probability of resource allocation failure.

Organization

An organization is a business customer that is served by a service provider. An organization controls one or more telepresence endpoints that can be included in a meeting. An organization can choose hosted endpoint service or enterprise endpoint service.

With hosted endpoint service, the service provider operates the telepresence service on behalf of the business customer. Endpoints are managed by a Cisco TelePresence Manager that is owned by the service provider.

With enterprise endpoint service, the enterprise organization operates their conferencing services and the service provider provides inter-company connectivity. Enterprise endpoints are managed by a Cisco TelePresence Manager that is owned by the organization. One-Button-to-Push (OBTP) functionality, which provides easy access to meetings, is not supported for enterprise endpoint service.

Organization Ports Management

Organization ports management allows each organization to optionally control the amount of organization bandwidth that is consumed by telepresence traffic on the network between the organization and the Cisco TelePresence Exchange System.

You specify the maximum number of ports when you configure an organization. The units are segments (screens). The ports required for each endpoint are specified in the endpoint table. If you wish to use organization port management, you can specify the ports that are required by endpoints when you schedule a Meet-Me or remote meeting. (See the "Meeting Types" section on page 2-6 for a description of the meeting types.)

When the system schedules a Meet-Me or remote meeting, the port requirement for each organization is calculated, based on the endpoints that are included in the meeting. If the total port capacity for the organization (for all meetings that are scheduled in this time slot) exceeds the maximum value, the system rejects the attempt to schedule this meeting.

Endpoint Types

The Cisco TelePresence Exchange System supports SIP, TIP, and standards-based endpoints from Cisco Systems and third-party suppliers. The system provides full dial-in and dial-out capabilities for SIP and TIP endpoints. The system provides dial-out service to standards-based H.323 and ISDN endpoints.

The Cisco TelePresence Exchange System supports the following types of endpoints:

- Provisioned endpoints—Endpoints for which all configuration details (such as name, phone number, media protocol(s), number of screens, and organization) are known by the administrator and configured on the Cisco TelePresence Exchange System. Meet-Me and direct dial calls are placed on provisioned endpoints.

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- Unprovisioned endpoints—Endpoints for which limited configuration details are known by the administrator. Through the administration console, you can add unprovisioned endpoints to participate in meetings hosted by the Cisco TelePresence Exchange System.
- Remote endpoints—Endpoints for which no configuration details are known by the administrator. Remote endpoints are endpoints that join the meeting from another service provider network. Through the administration console, you can add remote endpoints to participate in meetings hosted by the Cisco TelePresence Exchange System.

Note Organization port management does not manage remote endpoints.

Endpoint Protocols

The Cisco TelePresence Exchange System supports endpoints that use the following protocols:

- ISDN—Integrated Services Digital Network.
- H.323—ITU Specifications for Voice over IP networks and endpoints.
- SIP—Session Initiation Protocol.
- TIP—TelePresence Interoperability Protocol.
- MUX—A Cisco proprietary protocol, which was a predecessor of TIP.

Endpoint Capacity

Several factors determine how many segments the Cisco TelePresence Exchange System reserves for an endpoint, including:

- The bridge type that handles the call (Cisco TelePresence Multipoint Switch or Cisco TelePresence MSE 8000 Series)
- The type of call (dial in or dial out)
- The number of endpoint screens

For more details on endpoint capacity calculation, see the "Media Bridge Resource and Network Protocol Selection, and Capacity Reservation and Allocation" appendix of the *Administration Guide for the Cisco TelePresence Exchange System Release 1.2,* at http://www.cisco.com/en/US/products/ps11276/products_installation_and_configuration_guides_list.html.

Custom Layouts

When you create or modify a meeting, you can optionally enter a value for the screen layout. This value will be used if the meeting is hosted on a Cisco TelePresence MCU MSE 8510, which supports a variety of screen layout options.

For details about the layout values, see the "Conference Layouts" section of the Cisco TelePresence MCU API reference guide, at http://www.cisco.com/en/US/products/ps11447/products_programming_reference_guides_list.html.

When the conference is not hosted on a Cisco TelePresence MCU MSE 8510, the customLayout parameter is ignored.

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Meeting Types

The Cisco TelePresence Exchange System supports the following types of meetings:

- Meet-Me meeting—A scheduled meeting that is hosted by this Cisco TelePresence Exchange System. The Cisco TelePresence Exchange System reserves media resources based on the parameters that you configure for the meeting. You can configure a Meet-Me meeting to provide One-Button-to-Push functionality for the provisioned endpoints and to reserve organization bandwidth. You can also designate the host participant role to one or more endpoints to control access to a Meet-Me meeting.
- Rendezvous meeting—A predefined meeting that can occur at any time (not scheduled for a specific start time). A Rendezvous meeting instance starts when any participant dials into the meeting. OBTP is not applicable for Rendezvous meetings. A Rendezvous meeting may optionally assign the host role to one or more endpoints, to control access to the meeting. If a host is assigned, the meeting starts only when the host (or alternate host) dials into the meeting.
- Remote meeting—A scheduled meeting that is hosted by a remote Cisco TelePresence Exchange System. The Cisco TelePresence Exchange System does not reserve any media resources for a remote meeting. You schedule remote meetings to provide OBTP functionality in the provisioned endpoints and to reserve the bandwidth, if requested.
- Scheduled two-party direct meeting—A scheduled direct dialed meeting between two hosted provisioned endpoints. The Cisco TelePresence Exchange System does not reserve any media resources for a direct dialed meeting. Two-party direct meetings are scheduled to provide OBTP functionality for those endpoints within the same organization.

Inherited Meeting Attributes

You can configure some meeting attributes at either the service provider level, organization level, or meeting level. These meeting attributes are hierarchical, so you can configure a meeting to inherit its attributes from the organization of the meeting scheduler. In addition, you can configure an organization to inherit its attributes from the service provider. If you want a meeting to inherit its attributes from the organization, you must enable the inheritance option at the meeting level. If you want a meeting to inherit its attributes from the service provider, you must enable the inheritance option at both the meeting and organization level. In the latter case, however, if no organization is specified for the meeting, then you must enable inheritance at the meeting level only.

The meetingExtensionDefinitionType, hostExitBehaviorDefinitionType, idleMeetingCleanupDefinitionType, and minScreensDefinitionType elements are examples of enumerated types which allow a value of INHERITED or LOCAL.

Table 2-1 shows the relationship between inheritance settings and meeting attributes.

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Table 2-1 Inheritance Settings and Meeting Attributes

Meeting Level Inheritance Setting	Organization Level Inheritance Setting	Is an organization specified for the meeting?	Meeting Attributes
LOCAL	Value ignored	Value ignored	• You define meeting attributes at the meeting level. • System ignores any meeting attributes defined at the service provider or organization level.
INHERITED	LOCAL	Yes	• Meeting inherits the meeting attributes from the organization of the meeting scheduler. • You define meeting attributes at the organization level. • System ignores any meeting attributes defined at the service provider level.
INHERITED	Value ignored	No	• Meeting inherits the meeting attributes from the service provider because no organization is specified for the meeting. • You define meeting attributes at the service provider level.
INHERITED	INHERITED	Yes	• Meeting inherits the meeting attributes from the service provider. • You define meeting attributes at the service provider level.

Host PINs

You can optionally configure a host PIN for a Meet-Me or Rendezvous meeting in order to restrict which participant can start the meeting. More than one participant can be designated as a host. The system categorizes participants as either a host or a guest.

If a guest participant tries to join the meeting before a host, the system places the participant in a queue and prevents the participant from joining the meeting. The participants waiting in the queue do not consume media bridge resources. Once a host participant joins, the meeting starts and the guests in the queue automatically join the meeting. You can configure whether or not to drop all participants when all the hosts leave the meeting.

Meeting Extensions for Meet-Me Meetings

You can optionally configure a Meet-Me meeting to extend its duration automatically. The meeting will only be extended if there are any active participants at the time that the system checks for available resources for the extension, which happens shortly before the two minute end-of-meeting warning.

You can allow one or more extensions of the meeting. You can also specify the length of the meeting extension (in minutes). This value must be a multiple of 15 (i.e. extensions are allowed in 15-minute increments).

The maximum number of extensions times the extension length must not exceed 24 hours.

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Idle Meeting Cleanup for Guaranteed Meet-Me Meetings

For a guaranteed Meet-Me meeting that is empty (no participants are consuming bridge resources for the meeting), you can optionally configure the number of minutes that the system will wait before automatically ending or cancelling the meeting so that the bridge resources associated with the meeting can be made available for use by other guaranteed meetings.

If no participants join a guaranteed Meet-Me meeting at the scheduled meeting start time, the idle meeting cleanup timer begins at the meeting start time. In this case, if the timer expires before the scheduled meeting end time, the system will end the meeting when the timer expires. Participants can no longer join the meeting and the bridge resources associated with the meeting are made available for use by other guaranteed meetings.

If participants join a guaranteed Meet-Me meeting and the scheduled meeting end time has not been reached, the idle meeting cleanup timer begins when all participants have left the meeting. In this case, participants can rejoin the meeting before the timer ends. If all participants leave the meeting again and the scheduled meeting end time still has not been reached, the idle meeting cleanup timer will restart at zero. If the timer expires before the scheduled meeting end time and the meeting is still empty, the system will cancel the meeting. Participants can no longer join the meeting and the bridge resources associated with the meeting are made available for use by other guaranteed meetings.

Routes

To route direct dial and SIP dial out calls, the Cisco TelePresence Exchange System first needs to identify the organization or remote service provider for which the call is intended. The system can identify a destination organization if the dial number of the call exactly matches the number of a provisioned endpoint. If the dial number does not match the number of a provisioned endpoint, the system systematically tries to match the dial number of the call with the dial patterns configured on the system for remote service providers and organizations. If a match is found, the system identifies the associated organization or remote service provider as the destination for the call. If no match is found, the system sends the call to a default route. If you have not configured an active default route, then the system rejects the call.

After the system identifies the destination organization or remote service provider, the system finds the first active route that is online and associated with the destination for the call. The route provides a pointer to a SIP resource. The system then forwards the call to the SIP resource associated with the active route. The route also provides a unique Carrier Information Code (CIC) that is added to the outgoing SIP message.

The SIP resource associated with the active route can be either a Cisco Session Border Controller (SBC) or a Cisco VCS Expressway. When configured properly, each adjacency (on the SBC) or zone (on the Cisco VCS Expressway) is also assigned a unique tag value. When the resource receives a SIP message from the Cisco TelePresence Exchange System, the call is routed to the adjacency or zone whose tag matches the CIC on the message.

Obtaining the WSDL

You can access the WSDL file for the Scheduling API at
http://*<DNS name or IP address for your admin server>*:8080/ctxapi/api/v1_2/sched?wsdl

The WSDL file provides a complete and accurate definition of the API that is supported by your Cisco TelePresence Exchange System. In the event of any discrepancies between the WSDL file and this document, you should follow the WSDL file definition.

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API Versions

At time of publication, the latest version of the Scheduling API is version 1.2, which is accessed by using the WSDL URL listed above.

Cisco TelePresence Exchange System also supports version 1.1 of the Scheduling API, which you can access by using the following URL:

http://*<DNS name or IP address for your admin server>*:8080/ctxapi/api/v1_1/sched?wsdl

For notes on backward compatibility with the version 1.1 API, see Appendix A, "Backward Compatibility."

Note This document describes version 1.2 of the API. The documentation for previous versions of the API is available from Cisco.com at the following URL:
http://www.cisco.com/en/US/products/ps11276/products_programming_reference_guides_list.html

Required and Optional Parameters

In the parameter tables throughout this chapter, we identify optional parameters by starting the description field with the following notation: (Optional). All other parameters are required.

API Parameter Naming Conventions

The API uses the following conventions for parameter names.

Key

The Scheduling API assigns a unique string identifier (called a key) to entities in the object model, such as service provider, organization, endpoint, and meeting.

You use the key in subsequent API requests to ensure that the service selects the correct item.

Name

In addition to the unique key, the API returns the name string for the entity if the entity was provisioned with a name. The name provides a human-readable identifier for the item (for use in a UI display or a report).

Description

Like the name, the API returns a description string for the entity if the entity was provisioned with a description. The description provides a human-readable description for the item (for use in a UI display or a report).

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Endpoint Elements

The endpoint definitions are common to all requests and responses in the Scheduling API that contain endpoints. The fields in the endpoint element vary depending on the type of endpoint.

The following sections describe the fields for each type of endpoint:

- Provisioned Endpoint Fields, page 2-10
- Unprovisioned Endpoint Fields, page 2-10
- Remote Endpoint Fields, page 2-11

Provisioned Endpoint Fields

Provisioned endpoints are managed by the Cisco TelePresence Manager of the service provider. This enables the Cisco TelePresence Exchange System to offer One-Button-to-Push (OBTP) functionality for provisioned endpoints.

Table 2-2 describes the provisioned endpoint element.

Table 2-2 Provisioned Element Fields

Parameter	Type	Description
dialOut	Boolean	(Optional) Indicates whether the system can dial out to this provisioned endpoint at the start of the meeting. The dialOut default value is FALSE.
endpointKey	String	The unique key of the endpoint.
isHost	Boolean	Set to true of this endpoint is a designated host for the meeting.
ports	Integer	(Optional) The network bandwidth number for this endpoint. Units must be consistent with the maximum ports field that is configured for the organization.

Unprovisioned Endpoint Fields

Unprovisioned endpoints are not hosted by the service provider, so the Cisco TelePresence Exchange System does not provide One-Button-to-Push (OBTP) functionality for these endpoints.

Table 2-3 describes the unprovisioned endpoint element.

Table 2-3 Unprovisioned Element Fields

Parameter	Type	Description
dialOut	Boolean	(Optional) Indicates whether the system can dial out to this unprovisioned endpoint at the start of the meeting. The dialOut default value is FALSE. **Note** This field is required only for guest outdials; it can otherwise be left blank.
mediaProfileKey	String	Specifies the media profile to use for this endpoint when dialing out.

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Table 2-3 Unprovisioned Element Fields (continued)

Parameter	Type	Description
number	String	The E.164 number for the guest dial out participant. **Note** When the dialOut parameter has a value of TRUE, the number is required. Otherwise the number is ignored. **Note** This field is required only for guest outdials; it can otherwise be left blank.
organizationKey	String	The unique key of the organization that is associated with this endpoint.
ports	Integer	(Optional) The network bandwidth number for this endpoint. Units must be consistent with the maximum bandwidth field that is configured for the organization.

Remote Endpoint Fields

Remote endpoints are not hosted by the service provider; therefore, the Cisco TelePresence Exchange System does not send any One-Button-to-Push (OBTP) information to remote endpoints. You do not need to specify any additional information for each remote endpoint in a meeting.

Obtaining Configured Information

The Scheduling API provides "Get" methods for retrieving configured information about endpoints, regions, organizations, and so on, that are configured on the Cisco TelePresence Exchange System. The methods are described in the following sections:

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getEndpoints

The Get Endpoints service returns a list of endpoints that meet the criteria that are supplied in the request.

Table 2-4 describes the parameters in the service request.

For additional information about the parameters that control pagination (startingIndex, numberToReturn), see the "Pagination" section on page 1-4.

Table 2-4 Get Endpoints Request

Parameter	Type	Description
queryString	String	(Optional) Enter a query to select the desired set of endpoints. For information about building queries, see the "Query Syntax" section on page 2-72.
startingIndex	Integer	(Optional) Specify the index of the first entry to be returned.
numberToReturn	Integer	(Optional) Specify the number of entries to be returned.

The service returns a Get Endpoints Result in the service response. Table 2-5 describes the Get Endpoints Result.

Table 2-5 Get Endpoints Result

Parameter	Type	Description
endpoints	Complex	List of apiEndpoint elements. See Table 2-6 for a description of apiEndpoint element.
totalNumberFound	Integer	The total number of records that are returned in the response message. The value is zero if the query did not match any results.

Table 2-6 describes the apiEndpoint element.

Table 2-6 apiEndpoint Element

Parameter	Type	Description
ctsManIpAddress	String	IP address of the CTS Manager associated with this endpoint.
ctsManRoomId	String	Unique room name stored in the CTS Manager associated with this endpoint.
description	String	Text description of the endpoint.
isActive	Boolean	Returns true if the endpoint is active.
key	String	The key is a unique identifier for the endpoint
mediaProfileKey	String	Key value of the media profile that is configured for this endpoint.
name	String	Text name of the endpoint.
number	String	Provides the directory number for the endpoint.
organizationKey	String	Key value of this endpoint's organization
supportOBTP	Boolean	Indicates that the endpoint supports OBTP functionality.

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getEndpointsForOrganization

The Get Endpoints for Organization service returns a list of endpoints that are defined for the specified organization. An endpoint is active if it has been associated with an organization and is configured as available for scheduling (in the administration console Endpoints table).

Table 2-7 describes the parameters for the service request.

For additional information about the parameters that control pagination (startingIndex, numberToReturn), see the "Pagination" section on page 1-4.

Table 2-7 Get Endpoints for Organization Request

Parameter	Type	Description
serviceProviderKey	String	Enter the key of the service provider that is associated with the organization.
organizationKey	String	Enter the key of the organization.
startingIndex	Integer	(Optional) Specify the index of the first entry to be returned.
numberToReturn	Integer	(Optional) Specify the number of entries to be returned.

The service response contains a Get Endpoints Result. The Get Endpoints Result is described in Table 2-5.

getMediaProfiles

The Get Media Profiles service returns a list of media profiles that meet the criteria that are supplied in the request. Table 2-8 describes the parameters in the service request.

Table 2-8 Get Media Profiles Request

Parameter	Type	Description
queryString	String	(Optional) Enter a query to select the desired set of media profiles. For information about building queries, see the "Query Syntax" section on page 2-72.

The service returns a Get Media Profiles Result in the service response.Table 2-9 describes the Get Media Profiles Result.

Table 2-9 Get Media Profiles Result

Parameter	Type	Description
mediaProfiles	Complex	List of apiMediaProfileResult elements. See Table 2-10 for a description of this element.
totalNumberFound	Integer	The total number of records that are returned in the response message. The value is zero if the query did not match any results.

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Table 2-10 describes the apiMediaProfileResult element.

Table 2-10 apiMediaProfileResult Element

Parameter	Type	Description
description	String	Text description of the media profile.
endpointProtocols	Complex	One or more endpointProtocol elements. The endpointProtocol is an enumeration, with the following string values: • ISDN—Integrated Services Digital Network. • H.323—ITU Specifications for Voice over IP networks and endpoints. • SIP—Session Initiation Protocol • TIP—TelePresence Interoperability Protocol • MUX—A Cisco proprietary protocol, which was a predecessor of TIP.
isBuiltin	Boolean	Set to true if this media profile is one of the media profiles that is pre-defined. The parameter is set to false if the media profile is user-defined.
key	String	The key is a unique string identifier for this media profile
name	String	Text name of the media profile.
numberOfScreens	int	Number of video screens that the endpoint supports. Most endpoints provide either one screen or three screens.
supports30fps	Boolean	Set to true if the endpoints using this media profile provide support for 30 frames-per-second presentation sharing.

getOrganizations

The Get Organizations service returns a list of all organizations that meet the criteria that are supplied in the request. Table 2-11 describes the parameters for the service request.

For additional information about the parameters that control pagination (startingIndex, numberToReturn), see the "Pagination" section on page 1-4.

Table 2-11 Get Organizations Request

Parameter	Type	Description
queryString	String	(Optional) Enter a query to select the desired set of organizations. For information about building queries, see the "Query Syntax" section on page 2-72.
startingIndex	Integer	(Optional) Specify the index of the first entry to be returned.
numberToReturn	Integer	(Optional) Specify the number of entries to be returned.

Table 2-12 describes the parameters for the service response.

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Table 2-12 Get Organizations Result

Parameter	Type	Description
organizations	Complex	List of zero or more apiOrganization elements that meet the query criteria. The apiOrganization type is described in Table 2-13.
totalNumberFound	Integer	The total number of records that are returned in the response message. The value is zero if the query did not match any results.

Table 2-13 describes the apiOrganization type.

Table 2-13 apiOrganization Type

Parameter	Type	Description
allowInterSPIncomingDirectDialCalls	Boolean	Set to TRUE if inter-service-provider incoming direct dial calls are allowed.
allowInterSPIncomingMeetMeCalls	Boolean	Set to TRUE if inter-service-provider incoming Meet-Me calls are allowed.
allowInterSPOutgoingCalls	Boolean	Set to TRUE if inter-service-provider outgoing calls are allowed.
description	String	Text description of the organization.
enforceWhitelisting	Boolean	Set to TRUE if the Whitelist is enforced for this organization.
hostExitBehaviorDefinitionType	Enumeration	Indicates whether the behavior to drop participants when the host leaves a meeting is inherited from the service provider or this organization. Enter one of the following values: • INHERITED—Meeting inherits the meeting attribute from the service provider. • LOCAL—Meeting inherits the meeting attribute from this organization. You enable or disable the meeting attribute using the isDropParticipantsOnHostExitEnabled parameter. For more information about the meeting host options, see the "Host PINs" section on page 2-7.

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Table 2-13 apiOrganization Type (continued)

Parameter	Type	Description
idleMeetingCleanupDefinitionType	Enumeration	*Applicable only when specified reservation type is guaranteed, not best-effort.* Indicates whether the idle meeting cleanup attributes are inherited from the service provider or this organization. Enter one of the following values: • INHERITED—Meeting inherits the idle meeting cleanup attributes from the service provider. • LOCAL—Meeting inherits the idle meeting cleanup attributes from this organization. You enable or disable the attributes using the isIdleMeetingCleanupEnabled parameter. For more information about the idle meeting cleanup attributes, see the "Idle Meeting Cleanup for Guaranteed Meet-Me Meetings" section on page 2-8.
idleMeetingCleanupTimerDuration	Integer	*Applicable only if idle meeting cleanup is enabled at the organization level, and the meeting is set to inherit this meeting attribute from this organization.* Enter number of minutes that a guaranteed Meet-Me meeting is allowed to be empty. When this timer expires, the system will end or cancel the meeting.
isDropParticipantsOnHostExitEnabled	Boolean	*Applicable only if the host role is enabled for the meeting, and the meeting is set to inherit this meeting attribute from this organization. If the host role is disabled, participants will remain on the call regardless of who drops from the call before them.* Defines the default action for participants when the host exits a meeting. Enter one of the following values: • TRUE—Participants are disconnected from the meeting. • FALSE—Participants remain in the meeting.

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Table 2-13 apiOrganization Type (continued)

Parameter	Type	Description
isIdleMeetingCleanupEnabled	Boolean	*Applicable only if the meeting is set to inherit this meeting attribute from this organization.* Defines whether the system will automatically end or cancel a guaranteed Meet-Me meeting when it has been empty (no participants are consuming bridge resources for the meeting) for a configurable amount of time so that the bridge resources associated with the meeting can be made available for use by other guaranteed meetings. Enter one of the following values: • TRUE—Enables idle meeting cleanup. • FALSE—Disables idle meeting cleanup.
isMeetingExtensionEnabled	Boolean	*Applicable only if the meeting is set to inherit this meeting attribute from this organization.* Defines whether the meeting will be automatically extended if resources are available when the meeting nears the configured duration. Enter one of the following values: • TRUE—Enables meeting extensions. • FALSE—Disables meeting extensions.
key	String	The key is a unique identifier for the organization.
maxBandwidth	Integer	Maximum bandwidth that can be used by this organization across all calls simultaneously. Unit is number of screens.
maxMeetingExtensionsAllowed	Integer	*Applicable only if meeting extension is enabled at the organization level, and the meeting is set to inherit this meeting attribute from this organization.* Enter the maximum number of meeting extensions allowed for any given meeting. The maximum number of extensions times the extension period must not exceed 24 hours.

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Table 2-13 apiOrganization Type (continued)

Parameter	Type	Description
meetingExtensionDefinitionType	Enumeration	Indicates whether the meeting extension attributes are inherited from the service provider or this organization. Enter one of the following values: • INHERITED—Meeting inherits the meeting extension attributes from the service provider. • LOCAL—Meeting inherits the meeting extension attributes from this organization. You enable or disable the attributes using the isMeetingExtensionEnabled parameter. For more information about the meeting extension attributes, see the "Meeting Extensions for Meet-Me Meetings" section on page 2-7.
meetingExtensionPeriod	Integer	*Applicable only if meeting extension is enabled at the organization level, and the meeting is set to inherit this meeting attribute from this organization.* Enter the length of time (in minutes) of a meeting extension period. This value must be a multiple of 15.
minimizeCapacity	Boolean	Default value is TRUE. If set to TRUE, the system reserves fewer ports of bridge capacity for the single-screen endpoints that are invited to Meet-me meetings. Instead of assuming the worst-case capacity for invited endpoints, the system reserves the actual capacity associated with the endpoint. This feature allows an increase in the number of meetings that can be scheduled using the bridge resources. However, each meeting will have fewer reserved ports to accommodate additional participants (or unregistered participants with multi-screen endpoints).

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Table 2-13 apiOrganization Type (continued)

Parameter	Type	Description
minScreensDefinitionType	Enumeration	*Applicable only to best-effort meetings.* Indicates whether the minimum best-effort allocation attribute is inherited from the service provider or this organization. Enter one of the following values: • INHERITED—Meeting inherits the minimum best-effort allocation attribute from the service provider. • LOCAL—Meeting inherits the minimum best-effort allocation attribute from this organization. For more information about the minimum best-effort allocation attribute, see the "Resource Groups and Reservation Types" section on page 2-3.
minScreens	Integer	*Applicable only if the meeting is set to inherit this meeting attribute from this organization.* Enter the number of screens the system will use to determine the minimum amount of bridge capacity to allocate to the best-effort meeting when the first participant joins.
name	String	Text name of the organization,
serviceProviderKey	String	The key value of the service provider that is associated with this organization.

getOrganizationsForServiceProvider

The Get Organizations for Service Provider service returns a list of organizations that are configured for the specified service provider. Table 2-14 describes the parameters for the service request.

For additional information about the parameters that control pagination (startingIndex, numberToReturn), see the "Pagination" section on page 1-4.

Table 2-14 Get Organizations for Service Provider Request

Parameter	Type	Description
serviceProviderKey	String	Enter the unique key of the service provider.
startingIndex	Integer	(Optional) Specify the index of the first entry to be returned.
numberToReturn	Integer	(Optional) Specify the number of entries to be returned.

The service response contains the Get Organizations Result element, which is described in Table 2-12.

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getRegions

The Get Regions service returns a list of regions that meet the query criteria that are supplied in the request. Table 2-15 describes the parameters for the service request.

Table 2-15 Get Regions Request

Parameter	Type	Description
queryString	String	(Optional) Enter a query to select the desired set of regions. For information about building queries, see the "Query Syntax" section on page 2-72.

Table 2-16 describes the Get Regions service response.

Table 2-16 Get Regions Result

Parameter	Type	Description
regions	Complex	List of zero or more apiRegion elements. The apiRegion element is described in Table 2-17.
totalNumberFound	Integer	The total number of records that are returned in the response message. The value is zero if the query did not match any results.

Table 2-17 describes the apiRegion element.

Table 2-17 apiRegionElement

Parameter	Type	Description
description	String	Text description of the region
key	String	The key is a unique identifier for the region
name	String	Text name of the region.

getRegionsForServiceProvider

The Get Regions for Service Provider service returns a list of regions that are configured for the specified service provider. Table 2-18 describes the parameters for the service request.

Table 2-18 Get Regions for Service Provider Request

Parameter	Type	Description
serviceProviderKey	String	Enter the key of the service provider that is associated with the region.

The service response contains a Get Regions Result, which is described in Table 2-16.

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getReservationTypes

The Get Reservation Types service returns the reservation types that meet the criteria that are supplied in the request.

Table 2-19 describes the parameters in the service request.

Table 2-19 Get Reservation Types Request

Parameter	Type	Description
queryString	String	(Optional) Enter a query to select the desired set of reservation types. For information about building queries, see the "Query Syntax" section on page 2-72.

The service returns a Get Reservation Types Result in the service response. Table 2-20 describes the result.

Table 2-20 Get Reservation Types Result

Parameter	Type	Description
reservationTypes	Complex	List of zero or more apiReservationType elements. See Table 2-21 for a description of this element.
totalNumberFound	Integer	The total number of records that are returned in the response message. The value is zero if the query did not match any results.

Table 2-21 describes the apiReservationType element.

Table 2-21 apiReservationType Element

Parameter	Type	Description
description	String	Text description of the reservation type.
isGuaranteed	Boolean	Set to true if the reservation is guaranteed, which means that the system has reserved bridge resources for the meeting. If the reservation is not guaranteed, the system attempts to allocate resources at the start of the meeting. This attempt may fail if the system is heavily loaded.
key	String	The key is a unique identifier for the reservation type.
name	String	Text name of the reservation type.
regions	Complex	List of zero or more apiRegion elements associated with the reservation type. The apiRegion element is described in Table 2-17.

getResourceGroups

The Get Resource Groups service returns the resource groups that meet the criteria that are supplied in the request.

Table 2-22 describes the parameters in the service request.

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Table 2-22 Get Resource Groups Request

Parameter	Type	Description
queryString	String	(Optional) Enter a query to select the desired set of resource groups. For information about building queries, see the "Query Syntax" section on page 2-72.

The service returns a Get Resource Groups Result in the service response. Table 2-23 describes the result.

Table 2-23 Get Resource Groups Result

Parameter	Type	Description
resourceGroups	Complex	List of zero or more apiResourceGroup elements. See Table 2-24 for a description of this element.
totalNumberFound	Integer	The total number of records that are returned in the response message. The value is zero if the query did not match any results.

Table 2-24 describes the apiResourceGroup element.

Table 2-24 apiResourceGroup Element

Parameter	Type	Description
description	String	Text description of the resource group.
key	String	The key is a unique identifier for the resource group.
name	String	Text name of the resource group.
regionKey	String	The key value of the region that is associated with this resource group.
reservationTypes	Complex	List of zero or more apiResourceGroupReservationType elements associated with the resource group. The apiResourceGroupReservationType element is described in Table 2-25.
resources	Complex	List of zero or more apiResource elements associated with the resource group. The apiResource element is described in Table 2-25.
serviceProviderKey	Complex	The key value of the service provider that is associated with this resource group.

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Table 2-25 apiResourceGroupReservationType Element

Parameter	Type	Description
bookingPercentage	Integer	Percentage of the dedicated media bridge resources within the resource group that can be used to create meetings for this reservation type.
dedicationPercentage	Integer	Percentage of the total media bridge resources within the resource group that is reserved for this reservation type.
reservationTypeKey	String	The key value of the reservation type.

Table 2-26 apiResource Element

Parameter	Type	Description
bridgeResourceType	Enumeration	Media bridge resource type. One of the following values: • **CTMS**—Cisco TelePresence Multipoint Switch • **TPS**—Cisco TelePresence Server MSE 8710 • **TPS_8510**—Cisco TelePresence MCU MSE 8510
description	String	Text description of the media bridge resource.
ipAddress	String	The IP address of the media bridge resource.
ipPort	Integer	The port number used for Session Initiation Protocol (SIP) signaling with the media bridge resource.
isOnline	Boolean	Indicates whether the system is responding to polling from the Cisco TelePresence Exchange System. • TRUE—The system is responding to polling. • FALSE—The system is not responding to polling or has been manually placed in maintenance state. The system continues to poll an offline resource until it receives a response, and sets the operational state to online after receiving three consecutive responses. The system does not poll resources that are in maintenance state.
key	String	The key is a unique identifier for the resource.
maxCapacity	Integer	The maximum number of segments that can participate concurrently in a meeting on this resource.
name	String	Text string identifying the resource.

getRoutes

The Get Routes service returns the routes that meet the criteria that are supplied in the request.

Table 2-27 describes the parameters in the service request.

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Table 2-27 Get Routes Request

Parameter	Type	Description
queryString	String	(Optional) Enter a query to select the desired set of routes. For information about building queries, see the "Query Syntax" section on page 2-72.

The service returns a Get Routes Result in the service response. Table 2-28 describes the result.

Table 2-28 Get Routes Result

Parameter	Type	Description
routes	Complex	List of zero or more apiRoute elements. See Table 2-29 for a description of this element.
totalNumberFound	Integer	The total number of records that are returned in the response message. The value is zero if the query did not match any results.

Table 2-29 describes the apiRoute element.

Table 2-29 apiRoute Element

Parameter	Type	Description
description	String	Text description of the route.
isActive	Boolean	Indicates whether the route is active for the purposes of outbound call routing. If FALSE, the Cisco TelePresence Exchange System will not send outgoing calls to this route. **Note** For routes of type INCOMING or BOTH, the system uses the route for identification of incoming calls regardless of the state of the isActive parameter.
key	String	The key is a unique identifier for the route.
name	String	Text name of the route.
organizationKeyList	String	String list of zero or more key values of the organizations that use this route.
remoteSP	Complex	List of zero or more apiRemoteSP elements associated with the route. The apiRemoteSP element is described in Table 2-30.

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Table 2-29 apiRoute Element (continued)

Parameter	Type	Description
routeType	Enumeration	The direction of calls for which the system applies the route. The routeType is an enumeration, with the following values: • INCOMING—The system uses the route to identify the organization that an incoming call is coming from. The system attempts to match the Carrier Information Code (CIC) of the incoming call with one of the provisioned routes of type INCOMING or BOTH. Once the organization is identified, any policy specific to that organization (for example, whitelisting) can be applied to that call. • OUTGOING—The system evaluates the route for outgoing calls, as follows: 1. If the outdial number of the outgoing call matches a provisioned endpoint, the system evaluates the list of routes of type OUTGOING or BOTH that are configured for the organization of the endpoint. The system uses the first active route from the list. 2. If the outdial number does not match a provisioned endpoint but matches a dial pattern configured for an organization or remote service provider, the system evaluates the list of routes of type OUTGOING or BOTH that are configured for the organization or remote service provider. The system uses the first active route from the list. 3. If the system cannot match the outdial number to an endpoint or dial pattern, the system routes the call by using the default route for the service provider that is hosting the meeting. • BOTH—The system uses the route for both incoming and outgoing calls, as outlined above.
serviceProviderHelpDeskKeyList	String	String list of zero or more key values of service provider help desk routes that use this route.
serviceProviderKeyList	String	String list of zero or more key values of service provider default routes that use this route.
sipResource	Complex	The apiResource element is described in Table 2-25.
cic	String	The Carrier Information Code (CIC) for the route.

Table 2-30 apiRemoteSP Element

Parameter	Type	Description
description	String	Text description of the remote service provider.
key	String	The key is a unique identifier for the remote service provider.
name	String	Text name of the remote service provider.

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getServiceNumbers

The Get Service Numbers service returns the service numbers that meet the criteria that are supplied in the request. Typically, a different service number is defined for each IVR language that a service supports.

Table 2-31 describes the parameters in the service request.

Table 2-31 Get Service Numbers Request

Parameter	Type	Description
queryString	String	(Optional) Enter a query to select the desired set of service numbers. For information about building queries, see the "Query Syntax" section on page 2-72.

The service returns a Get Service Numbers Result in the service response. Table 2-32 describes the result.

Table 2-32 Get Service Numbers Result

Parameter	Type	Description
serviceNumbers	Complex	List of apiServiceNumber elements. See Table 2-6 for a description of this element.
totalNumberFound	int	The total number of records that are returned in the response message. The value is zero if the query did not match any results.

Table 2-33 describes the apiServiceNumber element.

Table 2-33 apiServiceNumber Element

Parameter	Type	Description
description	String	Text description of the service number.
ivrConfigName	String	Text name of the IVR resource that provides the voice prompts for this service number.
key	String	The key is a unique identifier for the service number.
name	String	Text name for the service number.
number	String	Digit string that the user dials for this service number.
serviceName	String	Text name of the service associated with this service number.
serviceProviderKey	String	The key value of the service provider that is associated with this service number.

getServiceProviders

The Get Service Provider service returns a list of service providers that meet the criteria that are supplied in the request. Table 2-34 describes the parameters for the service request.

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Table 2-34 Get Service Providers Request

Parameter	Type	Description
queryString	String	(Optional) Enter a query to select the desired set of service providers. For information about building queries, see the "Query Syntax" section on page 2-72.

Table 2-35 describes the service response.

Table 2-35 Get Service Providers Response

Parameter	Type	Description
serviceProviders	Complex	List of apiServiceProvider elements. The apiServiceProvider type is described in Table 2-36. Each apiServiceProvider provides the unique key and name of a service provider.
totalNumberFound	Integer	The total number of records that are returned in the response message. The value is zero if the query did not match any results.

Table 2-36 describes the apiServiceProvider element.

Table 2-36 apiServiceProvider Element

Parameter	Type	Description
description	String	Text description of the service provider.
helpDeskNumber	String	Service desk phone number for the service provider.
idleMeetingCleanupTimerDuration	Integer	*Applicable only if idle meeting cleanup is enabled at the service provider level, and the meeting is set to inherit this meeting attribute from the service provider.* The number of minutes that a guaranteed Meet-Me meeting is allowed to be empty. When this timer expires, the system will end or cancel the meeting.

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Table 2-36 apiServiceProvider Element

Parameter	Type	Description
isDropParticipantsOnHostExitEnabled	Boolean	*Applicable only if the host role is enabled for the meeting, and the meeting is set to inherit this meeting attribute from the service provider. If the host role is disabled, participants will remain on the call regardless of who drops from the call before them.* Defines the default action for participants when the host exits a meeting. Can be one of the following values: • TRUE—Participants are disconnected from the meeting. • FALSE—Participants remain in the meeting. For more information about the meeting host options, see the "Host PINs" section on page 2-7.
isIdleMeetingCleanupEnabled	Boolean	*Applicable only to guaranteed Meet-Me meetings set to inherit this meeting attribute from the service provider.* Defines whether the system will automatically end or cancel a guaranteed Meet-Me meeting when it has been empty (no participants are consuming bridge resources for the meeting) for a configurable amount of time so that the bridge resources associated with the meeting can be made available for use by other guaranteed meetings. Can be one of the following values: • TRUE—Enables idle meeting cleanup. • FALSE—Disables idle meeting cleanup. For more information about the idle meeting cleanup attributes, see the "Idle Meeting Cleanup for Guaranteed Meet-Me Meetings" section on page 2-8.
isMeetingExtensionEnabled	Boolean	*Applicable only if the meeting is set to inherit this meeting attribute from the service provider.* Defines whether the meeting will be automatically extended if resources are available when the meeting nears the configured duration. Can be one of the following values: • TRUE—Enables meeting extensions. • FALSE—Disables meeting extensions. For more information about the meeting extension attributes, see the "Meeting Extensions for Meet-Me Meetings" section on page 2-7.

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Table 2-36 apiServiceProvider Element

Parameter	Type	Description
key	String	The key is a unique identifier for the service provider.
maxIvrQueueTime	Integer	The maximum amount of time, in minutes, that callers will remain in the IVR waiting for a host-enabled meeting to start.
maxMeetingExtensionsAllowed	Integer	*Applicable only if meeting extension is enabled at the service provider level, and the meeting is set to inherit this meeting attribute from the service provider.* The maximum number of meeting extensions allowed for any given meeting. The maximum number of extensions times the extension period must not exceed 24 hours.
meetingExtensionPeriod	Integer	*Applicable only if meeting extension is enabled at the service provider level, and the meeting is set to inherit this meeting attribute from the service provider.* The length of time (in minutes) of a meeting extension period. This value must be a multiple of 15.
minScreens	Integer	*Applicable only to best-effort meetings set to inherit this meeting attribute from the service provider.* The number of screens the system will use to determine the minimum amount of bridge capacity to allocate to the best-effort meeting when the first participant joins. For more information about the minimum best-effort allocation attribute, see the "Resource Groups and Reservation Types" section on page 2-3.
name	String	Text name of the service provider.

getWhiteListGroups

The Get WhiteList Groups service returns a list of all whitelist groups that meet the criteria that are supplied in the request. Table 2-37 describes the parameters for the service request.

For additional information about the parameters that control pagination (startingIndex, numberToReturn), see the "Pagination" section on page 1-4.

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Table 2-37 Get WhiteList Groups Request

Parameter	Type	Description
queryString	String	(Optional) Enter a query to select the desired set of whitelist groups. For information about building queries, see the "Query Syntax" section on page 2-72.
startingIndex	Integer	(Optional) Specify the index of the first entry to be returned.
numberToReturn	Integer	(Optional) Specify the number of entries to be returned.

Table 2-38 describes the parameters for the service response.

Table 2-38 Get WhiteList Groups Result

Parameter	Type	Description
whiteListGroups	Complex	List of zero or more apiWhiteListGroup elements that meet the query criteria. The apiWhiteListGroup type is described in Table 2-39.
totalNumberFound	Integer	The total number of records that are returned in the response message. The value is zero if the query did not match any results.

Table 2-39 describes the apiWhiteListGroup type.

Table 2-39 apiWhiteList Group Type

Parameter	Type	Description
description	String	Text description of the whitelist group.
key	String	The key is a unique identifier for the whitelist group.
name	String	Text name of the whitelist group,
organizationKeyList	Complex	Keys for one or more organizations that belong to this whitelist group.
serviceProviderKey	String	The key value of the service provider that is associated with the organizations in this whitelist group.

Obtaining Status and Usage Information

The Scheduling API provides several methods for retrieving status, availability, and usage information about elements in the system. The methods are described in the following sections:

- checkPorts, page 2-31
- getEndpointAvailability, page 2-31
- getPortsByOrganization, page 2-32
- isEndpointFree, page 2-33

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checkPorts

The Check Ports service queries availability of sufficient organization port bandwidth for the specified meeting or period of time. Table 2-40 describes the fields in the Check Port request.

Table 2-40 Check Port Request

Parameter	Type	Description
meetingKey	String	(Optional) Enter the meeting key, which is the unique identifier of a specific meeting. If the meeting key is present, the bandwidth is calculated for the existing meeting plus the specified endpoints. For example, enter the meeting key to check for bandwidth availability when adding endpoints to an existing meeting. If the meeting key is not present, the bandwidth is calculated based on the start time, service provider, duration, and endpoints. For example, you may check to see if bandwidth is available for a particular time slot when creating a new meeting, before the meeting key is available.
startTime	Date/Time, ISO 8601	Enter the date and time of the start of the meeting.
duration	Integer	Enter the duration of the meeting in minutes.
serviceProviderKey	String	Enter the unique key for the service provider.
provisionedEndpointList	Complex	Enter a list of the apiProvisionedEndpoint elements. See the "Provisioned Endpoint Fields" section on page 2-10.

The Check Ports service returns a success or fault message. There is no response data returned.

getEndpointAvailability

The Get Endpoint Availability service returns the availability status for a list of endpoints that meet the criteria that are supplied in the request.

Table 2-41 describes the parameters in the service request.

Table 2-41 Get Endpoint Availability Request

Parameter	Type	Description
endpointKeys	String	Enter the key for one or more endpoints.
startTime	Date/Time, ISO 8601	Enter the starting date and time for which endpoint availability will be reported.

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Table 2-41 Get Endpoint Availability Request (continued)

Parameter	Type	Description
duration	int	Enter the length of time (in minutes) for which endpoint availability will be reported. For example, to determine endpoint availability for the hour starting at 7:00 PM PST on December 11th, 2013, enter a startTime of 2013-12-11T19:00:00-08:00 and a duration of 60.
searchGranularity	int	Enter the granularity (in minutes) of the period for each availability status. For example, a value of 15 means that the endpoint availability will be reported for each 15-minute period in the duration.

The service returns a Get Endpoint Availability Result in the service response. Table 2-42 describes the Get Endpoints Result.

Table 2-42 Get Endpoint Availability Result

Parameter	Type	Description
endpointAvailability	Complex	List of endpointAvailability elements. See Table 2-43 for a description of endpointAvailability element.

Table 2-43 describes the endpointAvailability element.

Table 2-43 endpointAvailability Element

Parameter	Type	Description
endpointKey	String	Unique identifier for the endpoint.
freeBusy	Enumeration	Availability is an enumeration, which allows the string values of “FREE” or “BUSY”. The endpointAvailability element will include multiple values of freeBusy (one for each period in the duration that was specified in the request). For example, if duration is 60 and searchGranularity is 15, there will be four values of freeBusy (one for each 15-minute period).

getPortsByOrganization

The Get Ports by Organization service returns the port bandwidth allocation for each organization (or for the specified organization). The information covers each 15-minute interval for the start time and duration that are specified in the request.

Table 2-44 describes the parameters for the service request.

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Table 2-44 Get Ports by Organization Request

Parameter	Type	Description
organizationKey	String	Enter the unique key of the organization. Enter a null string to get information for all organizations.
startTime	Date/Time, ISO 8601	Enter the starting date and time for the port allocation. The default value is the date and time that the server receives the request.
duration	Integer	Enter the duration for the port allocation. The service response will include a value for each 15-minute interval in the duration that is specified. The first interval starts at the starting time and date.

Table 2-45 describes the Get Ports by Organization response.

Table 2-45 Get Ports by Organization Response

Parameter	Type	Description
APIPortsList	Complex	List of apiPorts elements. The apiPorts elements are described in Table 2-46. For each organization (or the specified organization), the service returns one apiPorts element for each 15-minute interval in the requested duration.

Table 2-46 describes the apiPorts element.

Table 2-46 apiPorts Element

Parameter	Type	Description
date	Date/Time, ISO 8601	Start date and time.
lane	String	Values are limited to CTS, ISDN, or IP.
organization	String	Name of the organization.
value	int	Bandwidth value.

isEndpointFree

The Is Endpoint Free service queries the availability of the specified endpoint during the duration between the specified start time and end time. This service is analogous to a simplified version of getEndpointAvailability, where you specify only one endpoint and receive only one status response (for the entire period specified in the request).

Table 2-47 describes the fields in the Is Endpoint Free request.

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Table 2-47 Is Endpoint Free Request Parameters

Parameter	Type	Description
startTime	Date/Time, ISO 8601	Start date and time for checking the endpoint availability.
endTime	Date/Time, ISO 8601	End date and time for checking the endpoint availability.
serviceProviderKey	String	Enter the unique key for the service provider of the endpoint.
provisionedEndpointKey	String	Enter the unique key for the endpoint.

Table 2-48 describes the Is Endpoint Free Result service response.

Table 2-48 Is Endpoint Free Result

Parameter	Type	Description
free	Boolean	The boolean is set to true if the endpoint is available for the entire duration that is specified in the request.

Scheduling and Managing Meetings

The following sections describe the services for scheduling, modifying and cancelling meetings:

scheduleMeeting

The Schedule Meeting service creates a new Meet-Me meeting, based on the parameter values that are supplied in the request. The response includes a meeting key, which must be supplied in all subsequent requests to view, modify or cancel the meeting.

Table 2-49 describes the parameters for the service request.

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Table 2-49 Schedule Meeting Request

Parameter	Type	Description
conferenceID	String	(Optional) If you provide a null string for this field, the system generates a unique conference ID for the meeting. If you provide a conference ID in this parameter, the system will use this value. **Note** The service request will fail if you provide a conference ID that is not unique.
auditID	String	(Optional) You can set this identifier to tag meetings, for example, with categories. The auditID field is saved but not processed by the API.
schedulerEmail	String	Enter the email address of the contact person for the meeting. When OBTP is enabled, the email address is displayed on the IP phone in the meeting room.
schedulerOrganizationKey	String	(Optional) Enter the key value for the organization of the meeting scheduler. If you specify the scheduler organization, meeting parameters specified as INHERITED will be inherited from this organization. If you do not specify the scheduler organization, the following behaviors apply: • Meeting parameters specified as INHERITED will be inherited from the service provider. • Any configured whitelist policies will not be applied when attendees join the meeting.
subject	String	Enter the subject of the meeting.
startTime	Date/Time, ISO 8601	Enter the date and time for the start of the meeting.
duration	Integer	Enter the duration of the meeting in minutes.
serviceProviderKey	String	Enter the unique key of the service provider that will host the meeting.
regionKey	String	Enter the key of the region for the meeting. The region contains the resources that will be used for this meeting.

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Table 2-49 Schedule Meeting Request (continued)

Parameter	Type	Description
requireOBTP	Boolean	(Optional) Set to TRUE when you want to display One-Button-to-Push (OBTP) information on the IP phone that is associated with the provisioned endpoint. Set to FALSE when you do not want to use OBTP for privacy reasons or when the Cisco TelePresence Manager is temporarily unavailable. When no value is set, a default of TRUE is set.
provisionedEndpointList	Complex	(Optional) Enter a list of apiProvisionedEndpoint elements. See the "Provisioned Endpoint Fields" section on page 2-10.
unprovisionedEndpointList	Complex	(Optional) Enter a list of apiUnprovisionedEndpoint elements. See the "Unprovisioned Endpoint Fields" section on page 2-10.
remoteEndpointList	Complex	(Optional) Enter a list of apiRemoteEndpoint elements. See the "Remote Endpoint Fields" section on page 2-11.
additionalCapacity	Integer	(Optional) Enter the additional capacity to reserve for unprovisioned and remote endpoints in the meeting. Units are segments.
additionalMediaProfiles	Complex	(Optional) Enter one or more media profile keys, which define the additional endpoint types that this meeting needs to support.
customLayout	Integer	(Optional) Enter a default value for the screen layout. This value will be used if the meeting is hosted on a Cisco TelePresence MCU MSE 8510, which supports a variety of screen layout options. For details on the layout values, see the "Custom Layouts" section on page 2-5
isHostRoleEnabled	Boolean	(Optional) Set to TRUE to define a host for this meeting.
hostPin	String	*Available only when host role is enabled.* (Optional) Enter a six-digit numerical host PIN for the meeting. By default, the system will create a random PIN.

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Table 2-49 Schedule Meeting Request (continued)

Parameter	Type	Description
hostExitBehaviorDefinitionType	Enumeration	Indicates whether the behavior to drop participants when the host leaves a meeting is inherited from the service provider or organization of the meeting scheduler. Enter one of the following values: • INHERITED—Meeting inherits the meeting attribute from the organization of the meeting scheduler. If no organization is specified for the meeting, then the meeting attribute is inherited from the service provider. • LOCAL—Meeting does not inherit the meeting attribute. You enable or disable the meeting attribute using the isDropParticipantsOnHostExitEnabled parameter. For more information about meeting host options, see the "Host PINs" section on page 2-7.
isDropParticipantsOnHostExitEnabled	Boolean	*Applicable only if the host role is enabled for the meeting, and the meeting attribute definition type is specified as LOCAL. If the host role is disabled, participants will remain on the call regardless of who drops from the call before them.* Defines the default action for participants when the host exits a meeting. Enter one of the following values: • TRUE—Participants are disconnected from the meeting. • FALSE—Participants remain in the meeting.
serviceNumberKey	String	Enter the key value of the service number that users will dial to join this meeting. Typically, a different service number is defined for each supported language.
reservationTypeKey	String	Enter the key value of the reservation type for this meeting.

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Table 2-49 Schedule Meeting Request (continued)

Parameter	Type	Description
meetingExtensionDefinitionType	Enumeration	Indicates whether the meeting extension attributes are inherited from the service provider or organization of the meeting scheduler. Enter one of the following values: • INHERITED—Meeting inherits the meeting extension attributes from the organization of the meeting scheduler. If no organization is specified for the meeting, then the meeting extension attributes are inherited from the service provider. • LOCAL—Meeting does not inherit the meeting extension attributes. You enable or disable the attributes using the isMeetingExtensionEnabled parameter. For more information about the meeting extension attributes, see the "Meeting Extensions for Meet-Me Meetings" section on page 2-7.
isMeetingExtensionEnabled	Boolean	*Applicable only if the meeting attribute definition type is specified as LOCAL.* Defines whether the meeting will be automatically extended if resources are available when the meeting nears the configured duration. Enter one of the following values: • TRUE—Enables meeting extensions. • FALSE—Disables meeting extensions.
meetingExtensionPeriod	Integer	*Applicable only if meeting extension is enabled at the meeting level, and the meeting attribute definition type is specified as LOCAL.* Enter the length of time (in minutes) of a meeting extension period. This value must be a multiple of 15.
maxMeetingExtensionsAllowed	Integer	*Applicable only if meeting extension is enabled at the meeting level, and the meeting attribute definition type is specified as LOCAL.* Enter the maximum number of meeting extensions allowed for any given meeting. The maximum number of extensions times the extension period must not exceed 24 hours.

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Table 2-49 Schedule Meeting Request (continued)

Parameter	Type	Description
idleMeetingCleanupDefinitionType	Enumeration	*Applicable only when specified reservation type is guaranteed, not best-effort.* Indicates whether the idle meeting cleanup attributes are inherited from the service provider or organization of the meeting scheduler. Enter one of the following values: • INHERITED—Meeting inherits the idle meeting cleanup attributes from the organization of the meeting scheduler. If no organization is specified for the meeting, then the idle meeting cleanup attributes are inherited from the service provider. • LOCAL—Meeting does not inherit the idle meeting cleanup attributes. You enable or disable the attributes using the isIdleMeetingCleanupEnabled parameter. For more information about the idle meeting cleanup attributes, see the "Idle Meeting Cleanup for Guaranteed Meet-Me Meetings" section on page 2-8.
isIdleMeetingCleanupEnabled	Boolean	*Applicable only if the meeting attribute definition type is specified as LOCAL.* Defines whether the system will automatically end or cancel a guaranteed meeting when it has been empty (no participants are consuming bridge resources for the meeting) for a configurable amount of time so that the bridge resources associated with the meeting can be made available for use by other guaranteed meetings. Enter one of the following values: • TRUE—Enables idle meeting cleanup. • FALSE—Disables idle meeting cleanup.
idleMeetingCleanupTimerDuration	Integer	*Applicable only if idle meeting cleanup is enabled at the meeting level, and the meeting attribute definition type is specified as LOCAL.* Enter the number of minutes that this guaranteed meeting is allowed to be empty. When this timer expires, the system will end or cancel the meeting.

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Table 2-49 Schedule Meeting Request (continued)

Parameter	Type	Description
minScreensDefinitionType	Enumeration	*Applicable only to best-effort meetings.* Indicates whether the minimum best-effort allocation attribute is inherited from the service provider or organization of the meeting scheduler. Enter one of the following values: • INHERITED—Meeting inherits the minimum best-effort allocation attribute from the organization of the meeting scheduler. If no organization is specified for the meeting, then the minimum best-effort allocation attribute is inherited from the service provider. • LOCAL—Meeting does not inherit the minimum best-effort allocation attribute. For more information about the minimum best-effort allocation attribute, see the "Resource Groups and Reservation Types" section on page 2-3.
minScreens	Integer	*Applicable only if the meeting attribute definition type is specified as LOCAL.* Enter the number of screens the system will use to determine the minimum amount of bridge capacity to allocate to the best-effort meeting when the first participant joins.

The service responds with a scheduleMeetingResult, which contains an apiMeeting element. The apiMeeting element is described in Table 2-61.

scheduleRendezvousMeeting

The Schedule Rendezvous Meeting service creates a new Rendezvous meeting, based on the parameter values that are supplied in the request. A Rendezvous meeting instance starts whenever the first participant joins the meeting, and the instance ends when all participants leave or when the meeting reaches the maximum instance duration. Thus, there can be an unlimited number of instances of the same Rendezvous meeting.

The response includes a meeting key, which must be supplied in any subsequent request to view, modify or delete the meeting.

Table 2-50 describes the parameters for the service request.

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Table 2-50 Schedule Rendezvous Meeting Request

Parameter	Type	Description
conferenceID	String	(Optional) If you provide a null string for this field, the system generates a unique conference ID for the meeting. If you provide a conference ID in this parameter, the system will use this value. **Note** If you provide conference IDs, you must provide a unique conference ID for each meeting.
auditID	String	(Optional) You can set this identifier to tag meetings, for example, with categories. The auditID field is saved but not processed by the API.
schedulerEmail	String	Enter the email address of the contact person for the meeting.
schedulerOrganizationKey	String	(Optional) Enter the key value for the organization of the meeting scheduler. If you specify the scheduler organization, meeting parameters specified as INHERITED will be inherited from this organization. If you do not specify the scheduler organization, the following behaviors apply: • Meeting parameters specified as INHERITED will be inherited from the service provider. • Any configured whitelist policies will not be applied when attendees join the meeting.
subject	String	Enter the subject of the meeting.
serviceProviderKey	String	Enter the key of the service provider that will host the meeting.
regionKey	String	Enter the key of the region for the meeting. The region contains the resources that will be used for this meeting.
numberOfScreens	Integer	Enter the number of screens to reserve for the endpoints that can join the meeting.
additionalCapacity	Integer	Enter the number of additional segments of media bridge capacity to reserve for the meeting. The additional capacity value is added to the meeting capacity that is determined from the numberOfScreens value.
additionalMediaProfiles	Complex	(Optional) Enter one or more media profile keys, which define the additional endpoint types that this meeting needs to support.

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Table 2-50 Schedule Rendezvous Meeting Request (continued)

Parameter	Type	Description
customLayout	Integer	(Optional) Enter a default value for the screen layout. This value will be used if the meeting is hosted on a Cisco TelePresence MCU MSE 8510, which supports a variety of screen layout options. For details on the layout values, see the "Custom Layouts" section on page 2-5.
maxInstanceDuration	Integer	Enter the maximum meeting duration (in minutes).
isHostRoleEnabled	Boolean	(Optional) Set to TRUE to define a host for this meeting.
hostPin	String	*Available only when host role is enabled.* (Optional) Enter a six-digit numerical host PIN for the meeting. By default, the system will create a random PIN.
hostExitBehaviorDefinitionType	Enumeration	Indicates whether the behavior to drop participants when the host leaves a meeting is inherited from the service provider or organization of the meeting scheduler. Enter one of the following values: • INHERITED—Meeting inherits the meeting attribute from the organization of the meeting scheduler. If no organization is specified for the meeting, then the meeting attribute is inherited from the service provider. • LOCAL—Meeting does not inherit the meeting attribute. You enable or disable the meeting attribute using the isDropParticipantsOnHostExitEnabled parameter. For more information about the meeting host options, see the "Host PINs" section on page 2-7.

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Table 2-50 Schedule Rendezvous Meeting Request (continued)

Parameter	Type	Description
isDropParticipantsOnHostExitEnabled	Boolean	*Applicable only if the host role is enabled for the meeting, and the meeting attribute definition type is specified as LOCAL. If the host role is disabled, participants will remain on the call regardless of who drops from the call before them.* Defines the default action for participants when the host exits a meeting. Enter one of the following values: • TRUE—Participants are disconnected from the meeting. • FALSE—Participants remain in the meeting.
allowedHostEndpoints	Complex	(Optional) If you have enabled the host role, provide a list of one or more endpointKey elements (for the host endpoint and any alternate hosts).
serviceNumberKey	String	Enter the key of the service number for this meeting. Typically, a different service number is defined for each supported language.
reservationTypeKey	String	Enter the key of the reservation type for this meeting.

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Table 2-50 Schedule Rendezvous Meeting Request (continued)

Parameter	Type	Description
minScreensDefinitionType	Enumeration	*Applicable only to best-effort meetings.* Indicates whether the minimum best-effort allocation attribute is inherited from the service provider or organization of the meeting scheduler. Enter one of the following values: • INHERITED—Meeting inherits the minimum best-effort allocation attribute from the organization of the meeting scheduler. If no organization is specified for the meeting, then the minimum best-effort allocation attribute is inherited from the service provider. • LOCAL—Meeting does not inherit the minimum best-effort allocation attribute. For more information about the minimum best-effort allocation attribute, see the "Resource Groups and Reservation Types" section on page 2-3.
minScreens	Integer	*Applicable only if the meeting attribute definition type is specified as LOCAL.* Enter the number of screens the system will use to determine the minimum amount of bridge capacity to allocate to the best-effort meeting when the first participant joins.

The service responds with a scheduleMeetingResult, which contains an apiMeeting element. The apiMeeting element is described in Table 2-61.

scheduleRemoteMeeting

The Schedule Remote Meeting service creates a new remote Meet-Me meeting based on the parameter values that are supplied in the request. The response includes a meeting key, which must be supplied in any subsequent request to view, modify or delete the meeting.

A remote meeting implies that another Cisco TelePresence Exchange System will schedule and manage the media resources for the meeting. No media resources are reserved on this Cisco TelePresence Exchange System for a remote meeting. You schedule remote meetings for the system to provide One-Button-to-Push (OBTP) functionality for the local provisioned endpoints and to reserve bandwidth for the meeting. This is required for organizations that are using the bandwidth port management feature.

Table 2-51 describes the parameters for the Schedule Remote Meeting service request.

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Table 2-51 Schedule Remote Meeting Request

Parameter	Type	Description
accessNumber	Digit string	Enter the number that the participants dial to access the remote system's IVR. This is also known as the Service Number.
conferenceID	String	Enter the conference ID for the participants to input when they join the meeting.
schedulerEmail	String	Enter the email address of the contact person for the meeting.
subject	String	Enter the subject of the meeting.
startTime	Date/Time, ISO 8601	Enter the date and time for the start of the meeting.
duration	Integer	Enter the duration of the meeting in minutes.
serviceProviderKey	String	Enter the unique key of the service provider that hosts the meeting.
requireOBTP	Boolean	(Optional) Set to TRUE when you want to display One-Button-to-Push (OBTP) information on the IP phone that is associated with the provisioned endpoint. Set to FALSE when you do not want to use OBTP for privacy reasons or when the Cisco TelePresence Manager is temporarily unavailable. When no value is set, a default of TRUE is set.
provisionedEndpointList	Complex	Enter a list of apiProvisionedEndpoint elements. See the "Provisioned Endpoint Fields" section on page 2-10. **Note** For this request, there must be at least one endpoint in either the provisioned or unprovisioned list.
unprovisionedEndpointList	Complex	Enter a list of apiUnprovisionedEndpoint elements. See the "Unprovisioned Endpoint Fields" section on page 2-10. **Note** For this request, there must be at least one endpoint in either the provisioned or unprovisioned list.

The service responds with a scheduleMeetingResult, which contains an apiMeeting element. The apiMeeting element is described in Table 2-61.

scheduleTwoPartyDirectMeeting

The Schedule Two Party Direct Meeting service creates a new direct meeting between two One-Button-to-Push (OBTP)-enabled provisioned endpoints within organizations under the same service provider and associated with the same Cisco TelePresence Manager, by using the parameter values that are supplied in the request. The response includes a meeting key, which must be supplied in any subsequent request to view, modify or delete the meeting.

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The Cisco TelePresence Exchange System does not reserve any media resources or ports of organization bandwidth for a two party meeting. Two party meetings are scheduled to provide OBTP functionality for the endpoints.

Table 2-52 describes the parameters for the service request.

Table 2-52 Schedule Two Party Meeting Request

Parameter	Type	Description
schedulerEmail	String	Enter the email address of the contact person for the meeting. When OBTP is enabled, the email address is displayed on the IP phone in the meeting room.
subject	String	Enter the subject of the meeting.
startTime	Date/Time, ISO 8601	Enter the date and time for the start of the meeting.
duration	Integer	Enter the duration of the meeting in minutes.
serviceProviderKey	String	Enter the unique key of the service provider that hosts the meeting.
requireOBTP	Boolean	(Optional) Set to TRUE when you want to display One-Button-to-Push (OBTP) information on the IP phone that is associated with the provisioned endpoint. Set to FALSE when you do not want to use OBTP for privacy reasons or when the Cisco TelePresence Manager is temporarily unavailable. When no value is set, a default of TRUE is set.
provisionedEndpoint1	Complex	Enter an apiProvisionedEndpoint element. See the "Provisioned Endpoint Fields" section on page 2-10. **Note** The two endpoints must belong to organizations under the same service provider, and must be associated with the same Cisco TelePresence Manager resource.
provisionedEndpoint2	Complex	Enter an apiProvisionedEndpoint element. See the "Provisioned Endpoint Fields" section on page 2-10.

The service responds with a scheduleMeetingResult, which contains an apiMeeting element. The apiMeeting element is described in Table 2-61.

modifyMeeting

The Modify Meeting service modifies the information for a meeting based on the parameter values that are supplied in the request.

Meeting details cannot be modified after a meeting starts.

Note The Modify Meeting service request must include the meeting key of the meeting that you want to modify.

Table 2-53 describes the parameters for the service request. Except where otherwise specifically noted in the table, null parameter values are set for fields that you do not want to change.

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Table 2-53 Modify Meeting Request

Parameter	Type	Description
meetingKey	String	Enter the meeting key, which is the unique identifier of a specific meeting.
subject	String	(Optional) Enter the subject of the meeting.
startTime	Date/Time, ISO 8601	Enter the date and time for the start of the meeting.
duration	Integer	(Optional) Enter the duration of the meeting in minutes.
regionKey	String	(Optional) Enter the key of the region for the meeting. The region contains the resources that will be used for this meeting.
requireOBTP	Boolean	(Optional) Set to TRUE when you want to display One-Button-to-Push (OBTP) information on the IP phone that is associated with the provisioned endpoint. Set to FALSE when you do not want to use OBTP for privacy reasons or when the Cisco TelePresence Manager is temporarily unavailable. When no value is set, a default of TRUE is set.
provisionedEndpointList	Complex	Enter a list of apiProvisionedEndpoint elements. See the "Provisioned Endpoint Fields" section on page 2-10.
unprovisionedEndpointList	Complex	Enter a list of apiUnprovisionedEndpoint elements. See the "Unprovisioned Endpoint Fields" section on page 2-10.
remoteEndpointList	Complex	Enter a list of apiRemoteEndpoint elements. See the "Remote Endpoint Fields" section on page 2-11.
additionalCapacity	Integer	(Optional) Enter the additional capacity to reserve for unprovisioned and remote endpoints in the meeting. Units are segments.
additionalMediaProfiles	Complex	Enter one or more media profile keys, which define the additional endpoint types that this meeting needs to support.
customLayout	Integer	(Optional) Enter a default value for the screen layout. This value will be used if the meeting is hosted on a Cisco TelePresence MCU MSE 8510, which supports a variety of screen layout options. For details on the layout values, see the "Custom Layouts" section on page 2-5.
isHostRoleEnabled	Boolean	(Optional) Set this element to TRUE to define a host for this meeting.

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Table 2-53 Modify Meeting Request (continued)

Parameter	Type	Description
hostPin	String	*Available only when host role is enabled.* (Optional) Enter a six-digit numerical host PIN for the meeting. By default, the system will create a random PIN.
hostExitBehaviorDefinitionType	Enumeration	Indicates whether the behavior to drop participants when the host leaves a meeting is inherited from the service provider or organization of the meeting scheduler. Enter one of the following values: • INHERITED—Meeting inherits the meeting attribute from the organization of the meeting scheduler. If no organization is specified for the meeting, then the meeting attribute is inherited from the service provider. • LOCAL—Meeting does not inherit the meeting attribute. You enable or disable the meeting attribute using the isDropParticipantsOnHostExitEnabled parameter. For more information about the meeting host options, see the "Host PINs" section on page 2-7.
isDropParticipantsOnHostExitEnabled	Boolean	*Applicable only if the host role is enabled for the meeting, and the meeting attribute definition type is specified as LOCAL. If the host role is disabled, participants will remain on the call regardless of who drops from the call before them.* Defines the default action for participants when the host exits a meeting. Enter one of the following values: • TRUE—Participants are disconnected from the meeting. • FALSE—Participants remain in the meeting.
serviceNumberKey	String	(Optional) Enter a service number key value for this meeting. Typically, a different service number is defined for each supported language.
reservationTypeKey	String	(Optional) Enter a reservation type key value for this meeting.

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Table 2-53 Modify Meeting Request (continued)

Parameter	Type	Description
meetingExtensionDefinitionType	Enumeration	Indicates whether the meeting extension attributes are inherited from the service provider or organization of the meeting scheduler. Enter one of the following values: • INHERITED—Meeting inherits the meeting extension attributes from the organization of the meeting scheduler. If no organization is specified for the meeting, then the meeting extension attributes are inherited from the service provider. • LOCAL—Meeting does not inherit the meeting extension attributes. You enable or disable the attributes using the isMeetingExtensionEnabled parameter. For more information about the meeting extension attributes, see the "Meeting Extensions for Meet-Me Meetings" section on page 2-7.
isMeetingExtensionEnabled	Boolean	*Applicable only if the meeting attribute definition type is specified as LOCAL.* Defines whether the meeting will be automatically extended if resources are available when the meeting nears the configured duration. Enter one of the following values: • TRUE—Enables meeting extensions. • FALSE—Disables meeting extensions.
meetingExtensionPeriod	Integer	*Applicable only if meeting extension is enabled at the meeting level, and the meeting attribute definition type is specified as LOCAL.* Enter the length of time (in minutes) of a meeting extension period. This value must be a multiple of 15.
maxMeetingExtensionsAllowed	Integer	*Applicable only if meeting extension is enabled at the meeting level, and the meeting attribute definition type is specified as LOCAL.* Enter the maximum number of meeting extensions allowed for any given meeting. The maximum number of extensions times the extension period must not exceed 24 hours.

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Table 2-53 Modify Meeting Request (continued)

Parameter	Type	Description
schedulerOrganizationKey	String	(Optional) Enter the key value for the organization of the meeting scheduler. If you specify the scheduler organization, meeting parameters specified as INHERITED will be inherited from this organization. If you do not specify the scheduler organization, the following behaviors apply: • Meeting parameters specified as INHERITED will be inherited from the service provider. • Any configured whitelist policies will not be applied when attendees join the meeting. **Note** If you specify a null value for the schedulerOrganizationKey, the organization will be removed from the meeting.
idleMeetingCleanupDefinitionType	Enumeration	*Applicable only when specified reservation type is guaranteed, not best-effort.* Indicates whether the idle meeting cleanup attributes are inherited from the service provider or organization of the meeting scheduler. Enter one of the following values: • INHERITED—Meeting inherits the idle meeting cleanup attributes from the organization of the meeting scheduler. If no organization is specified for the meeting, then the idle meeting cleanup attributes are inherited from the service provider. • LOCAL—Meeting does not inherit the idle meeting cleanup attributes. You enable or disable the attributes using the isIdleMeetingCleanupEnabled parameter. For more information about the idle meeting cleanup attributes, see the "Idle Meeting Cleanup for Guaranteed Meet-Me Meetings" section on page 2-8.

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Table 2-53 Modify Meeting Request (continued)

Parameter	Type	Description
isIdleMeetingCleanupEnabled	Boolean	*Applicable only if the meeting attribute definition type is specified as LOCAL.* Defines whether the system will automatically end or cancel a guaranteed meeting when it has been empty (no participants are consuming bridge resources for the meeting) for a configurable amount of time so that the bridge resources associated with the meeting can be made available for use by other guaranteed meetings. Enter one of the following values: • TRUE—Enables idle meeting cleanup. • FALSE—Disables idle meeting cleanup.
idleMeetingCleanupTimerDuration	Integer	*Applicable only if idle meeting cleanup is enabled at the meeting level, and the meeting attribute definition type is specified as LOCAL.* Enter the number of minutes that this guaranteed meeting is allowed to be empty. When this timer expires, the system will end or cancel the meeting.
minScreensDefinitionType	Enumeration	*Applicable only to best-effort meetings.* Indicates whether the minimum best-effort allocation attribute is inherited from the service provider or organization of the meeting scheduler. Enter one of the following values: • INHERITED—Meeting inherits the minimum best-effort allocation attribute from the organization of the meeting scheduler. If no organization is specified for the meeting, then the minimum best-effort allocation attribute is inherited from the service provider. • LOCAL—Meeting does not inherit the minimum best-effort allocation attribute. For more information about the minimum best-effort allocation attribute, see the "Resource Groups and Reservation Types" section on page 2-3.
minScreens	Integer	*Applicable only if the meeting attribute definition type is specified as LOCAL.* Enter the number of screens the system will use to determine the minimum amount of bridge capacity to allocate to the best-effort meeting when the first participant joins.

The service responds with a modifyMeetingResult, which contains an apiMeeting element. The apiMeeting element is described in Table 2-61.

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modifyRendezvousMeeting

The Modify Rendezvous Meeting service updates a meeting, based on the parameter values that are supplied in the request.

Rendezvous meeting details cannot be modified while there are active participants in the meeting.

Note The Modify Rendezvous Meeting service request must include the meeting key of the meeting that you want to modify.

Table 2-54 describes the parameters for the service request. Except where otherwise specifically noted in the table, null parameter values are set for fields that you do not want to change.

Table 2-54 Modify Rendezvous Meeting Request

Parameter	Type	Description
meetingKey	String	Enter the meeting key, which is the unique identifier of a specific meeting.
subject	String	(Optional) Enter the subject of the meeting.
regionKey	String	(Optional) Enter the key of the region for the meeting. The region contains the resources that will be used for this meeting.
numberOfScreens	Integer	Enter the number of screens to reserve for the endpoints that can join the meeting.
additionalCapacity	Integer	(Optional) Enter the number of additional segments of media bridge capacity to reserve for the meeting. The additional capacity value is added to the meeting capacity that is determined from the numberOfScreens value.
additionalMediaProfiles	Complex	Enter one or more media profile keys, which define the additional endpoint types that this meeting needs to support.
customLayout	Integer	(Optional) Enter a default value for the screen layout. This value will be used if the meeting is hosted on a Cisco TelePresence MCU MSE 8510, which supports a variety of screen layout options. **Note** For details on the layout values, see the "Custom Layouts" section on page 2-5.
maxInstanceDuration	Integer	(Optional) Enter the maximum meeting duration (in minutes).
isHostRoleEnabled	Boolean	(Optional) Set to TRUE to define a host for this meeting.
hostPin	String	*Available only when host role is enabled.* (Optional) Enter a six-digit numerical host PIN for the meeting. By default, the system will create a random PIN.

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Table 2-54 Modify Rendezvous Meeting Request (continued)

Parameter	Type	Description
hostExitBehaviorDefinitionType	Enumeration	Indicates whether the behavior to drop participants when the host leaves a meeting is inherited from the service provider or organization of the meeting scheduler. Enter one of the following values: • INHERITED—Meeting inherits the meeting attribute from the organization of the meeting scheduler. If no organization is specified for the meeting, then the meeting attribute is inherited from the service provider. • LOCAL—Meeting does not inherit the meeting attribute. You enable or disable the meeting attribute using the isDropParticipantsOnHostExitEnabled parameter. For more information about the meeting host options, see the "Host PINs" section on page 2-7.
isDropParticipantsOnHostExitEnabled	Boolean	*Applicable only if the host role is enabled for the meeting, and the meeting attribute definition type is specified as LOCAL. If the host role is disabled, participants will remain on the call regardless of who drops from the call before them.* Defines the default action for participants when the host exits a meeting. Enter one of the following values: • TRUE—Participants are disconnected from the meeting. • FALSE—Participants remain in the meeting.
allowedHostEndpoints	Complex	If you have enabled the host role, you may provide a list of one or more endpointKey elements (for the host endpoint and any alternate hosts).
serviceNumberKey	String	(Optional) Enter the key of the service number for this meeting. Typically, a different service number is defined for each supported language.
reservationTypeKey	String	(Optional) Enter the key of the reservation type for this meeting.

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Table 2-54 Modify Rendezvous Meeting Request (continued)

Parameter	Type	Description
schedulerOrganizationKey	String	(Optional) Enter the key value for the organization of the meeting scheduler. If you specify the scheduler organization, meeting parameters specified as INHERITED will be inherited from this organization. If you do not specify the scheduler organization, the following behaviors apply: • Meeting parameters specified as INHERITED will be inherited from the service provider. • Any configured whitelist policies will not be applied when attendees join the meeting. **Note** If you specify a null value for the schedulerOrganizationKey, the organization will be removed from the meeting.
minScreensDefinitionType	Enumeration	*Applicable only to best-effort meetings.* Indicates whether the minimum best-effort allocation attribute is inherited from the service provider or organization of the meeting scheduler. Enter one of the following values: • INHERITED—Meeting inherits the minimum best-effort allocation attribute from the organization of the meeting scheduler. If no organization is specified for the meeting, then the minimum best-effort allocation attribute is inherited from the service provider. • LOCAL—Meeting does not inherit the minimum best-effort allocation attribute. For more information about the minimum best-effort allocation attribute, see the "Resource Groups and Reservation Types" section on page 2-3.
minScreens	Integer	*Applicable only if the meeting attribute definition type is specified as LOCAL.* Enter the number of screens the system will use to determine the minimum amount of bridge capacity to allocate to the best-effort meeting when the first participant joins.

The service responds with a modifyMeetingResult, which contains an apiMeeting element. Table 2-61 describes the apiMeeting element.

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modifyRemoteMeeting

The Modify Remote Meeting service modifies the information for a remote meeting based on the parameter values that are supplied in the request.

Note The Modify Remote Meeting service request must include the meeting key of the meeting to be modified.

Table 2-55 describes the parameters for the Modify Remote Meeting request. Null parameter values are set for fields that you do not want to change.

Table 2-55 Modify Remote Meeting Request

Parameter	Type	Description
meetingKey	String	Enter the meeting key, which is the unique identifier of a specific meeting.
accessNumber	String	(Optional) Enter the number that the participants dial to access the remote system's IVR. This is also known as the Service Number.
conferenceID	String	(Optional) Enter the conference ID for the participants to input when they join the meeting.
subject	String	(Optional) Enter the subject of the meeting.
startTime	Date/Time, ISO 8601	Enter the date and time for the start of the meeting.
duration	Integer	(Optional) Enter the duration of the meeting in minutes.
requireOBTP	Boolean	(Optional) Set to TRUE when you want to display One-Button-to-Push (OBTP) information on the IP phone that is associated with the provisioned endpoint. Set to FALSE when you do not want to use OBTP for privacy reasons or when the Cisco TelePresence Manager is temporarily unavailable. When no value is set, a default of TRUE is set.
provisionedEndpointList	Complex	Enter a list of apiProvisionedEndpoint elements. See the "Provisioned Endpoint Fields" section on page 2-10.
unprovisionedEndpointList	Complex	Enter a list of apiUnprovisionedEndpoint elements. See the "Unprovisioned Endpoint Fields" section on page 2-10.

The service responds with a modifyMeetingResult, which contains an apiMeeting element. The apiMeeting element is described in Table 2-61.

modifyTwoPartyDirectMeeting

The Modify Two Party Direct Meeting service modifies the information for a two-party meeting based on the parameter values that are supplied in the request.

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Note The Modify Two Party Direct Meeting service request must include the meeting key of the meeting that you want to modify.

Table 2-56 describes the parameters for the Modify Two Party Direct Meeting request. Except where otherwise specifically noted in the table, null parameter values are set for fields that you do not want to change.

Note When modifying a two-party direct meeting, either both of the endpoints need to be specified or both of the endpoints need to be set to null to indicate no changes.

Table 2-56 Modify Two Party Meeting Request

Parameter	Type	Description
meetingKey	String	Enter the meeting key, which is the unique identifier of a specific meeting.
subject	String	(Optional) Enter the new subject of the meeting.
startTime	Date/Time, ISO 8601	Enter the date and time for the start of the meeting.
duration	Integer	(Optional) Enter the new duration of the meeting in minutes.
requireOBTP	Boolean	(Optional) Set to TRUE if you want to display One-Button-to-Push (OBTP) information on the IP phone that is associated with the provisioned endpoints. Set to FALSE when you do not want to use OBTP for privacy reasons or when the Cisco TelePresence Manager is temporarily unavailable. When no value is set, a default of TRUE is set.
provisionedEndpoint1	Complex	Enter an apiProvisionedEndpoint element. See the "Provisioned Endpoint Fields" section on page 2-10. **Note** To indicate no change, set both this parameter and provisionedEndpoint2 to null.
provisionedEndpoint2	Complex	Enter a apiProvisionedEndpoint element. See the "Provisioned Endpoint Fields" section on page 2-10. **Note** To indicate no change, set both this parameter and provisionedEndpoint1 to null.

The service responds with a modifyMeetingResult, which contains an apiMeeting element. The apiMeeting element is described in Table 2-61.

cancelMeeting

This service cancels a scheduled meeting. The service request must include the meeting key of the meeting that you want to cancel.

Note You cannot cancel a meeting that is currently active.

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Table 2-57 describes the fields in the Cancel Meeting request.

Table 2-57 Cancel Meeting Request Parameters

Parameter	Type	Description
meetingKey	String	Enter the meeting key, which is the unique identifier of a specific meeting.
cancelOBTP	Boolean	(Optional) Set to true if you want to remove the One-Button-to-Push (OBTP) entry from the IP phones in the rooms.

The Cancel Meeting service request has no response.

Retrieving Meeting Data

The following sections describe the services for obtaining information about meetings that are configured on the Cisco TelePresence Exchange System:

- getMeetings, page 2-57
- getMeeting, page 2-58

getMeetings

The service returns the details for the meetings that are specified by the parameters supplied in the request.

Table 2-58 describes the fields in the Get Meetings request. For additional information about the parameters that control pagination (startingIndex, numberToReturn), see the "Pagination" section on page 1-4. For additional information about using getMeetings to periodically retrieve meeting data, see the "Best Practices for Retrieving Meeting Data" section on page 2-64.

Table 2-58 Get Meetings Request Parameters

Parameter	Type	Description
queryString	String	(Optional) Enter a query to select the desired set of meetings. For information about building queries, see the "Query Syntax" section on page 2-72.
startingIndex	Integer	(Optional) Specify the index of the first entry to be returned.
numberToReturn	Integer	(Optional) Specify the number of entries to be returned.

The service returns a Get Meetings Result in the service response.Table 2-59 describes the Get Meetings Result.

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Table 2-59 Get Meetings Result

Parameter	Type	Description
meetings	Complex	List of apiMeeting elements. Table 2-61 describes the apiMeeting element.
totalNumberFound	Integer	The total number of records that are returned in the response message. The value is zero if the query did not match any results.

getMeeting

The service returns the details for the meeting that are specified by the meeting key that is supplied in the request.

Table 2-60 describes the fields in the Get Meeting request.

Table 2-60 Get Meeting Request Parameters

Parameter	Type	Description
meetingKey	String	Enter the meeting key, which is the unique identifier of a specific meeting.

The Get Meeting Response returns a list of apiMeeting elements. Table 2-61 describes the apiMeeting element.

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Table 2-61 apiMeeting Element

Parameter	Type	Description
accessNumber	String	The number that the participants dial to join the meeting. (For Meet-Me and Rendezvous meetings, this is also known as the service number. Remote meetings do not have a service number. Instead, you specify the accessNumber directly for remote meetings.) **Note** For Meet-Me and Rendezvous meetings, the serviceNumberKey element returns the unique key for the service number assigned to the meeting. For those meetings, the accessNumber element returns the dial number configured for that service number object.
additionalCapacity	Integer	Number of additional segments of media bridge capacity to allocate for the meeting. Use this parameter to reserve media bridge resources for endpoints that you do not add to the meeting but that you expect to join the meeting. To determine how many segments to add for each endpoint, use the following guidelines, depending on which media resource provides the meeting bridge: • Cisco TelePresence Multipoint Switch—Add 4 segments for each three-screen endpoint and 2 segments for each single-screen endpoint. • Cisco TelePresence MCU MSE 8510—Add 1 segment for each endpoint. Only single-screen endpoints are supported. • Cisco TelePresence Server MSE 8710—Add 3 segments for each three-screen endpoint and 1 segment for each single-screen endpoint.
additionalMediaProfileList	Complex	List of apiMediaProfileResult elements. See Table 2-10 for a description of this element
allowedHostEndpointList	Complex	List of apiAllowedHostEndpointResult elements (for the host endpoint and any alternate hosts). See Table 2-62 for a description of this element.
bridgeResourceType	Enumeration	CTMS, TPS, TPS_8510
conferenceId	String	The conference ID for the participants to input when they join the meeting.
didOBTP	Boolean	This element is set to TRUE if OBTP capability was provided for this meeting.
duration	Integer	The duration of the meeting in minutes.

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Table 2-61 apiMeeting Element (continued)

Parameter	Type	Description
endTime	Date/Time, ISO 8601	The date and time for the end of the meeting.
hostExitBehaviorDefinitionType	Enumeration	Indicates whether the behavior to drop participants when the host leaves a meeting is inherited from the service provider or organization of the meeting scheduler. One of the following values: • INHERITED—Meeting inherits the meeting attribute from the organization of the meeting scheduler. If no organization is specified for the meeting, then the meeting attribute is inherited from the service provider. • LOCAL—Meeting does not inherit the meeting attribute. You enable or disable the meeting attribute using the isDropParticipantsOnHostExitEnabled parameter. For more information about the meeting host options, see the "Host PINs" section on page 2-7.
hostPin	String	The 6-digit string that the host enters via the phone keypad to start the meeting when the host role is enabled.
idleMeetingCleanupDefinitionType	Enumeration	*Applicable only when specified reservation type is guaranteed, not best-effort.* Indicates whether the idle meeting cleanup attributes are inherited from the service provider or organization of the meeting scheduler. One of the following values: • INHERITED—Meeting inherits the idle meeting cleanup attributes from the organization of the meeting scheduler. If no organization is specified for the meeting, then the idle meeting cleanup attributes are inherited from the service provider. • LOCAL—Meeting does not inherit the idle meeting cleanup attributes. You enable or disable the attributes using the isIdleMeetingCleanupEnabled parameter. For more information about the idle meeting cleanup attributes, see the "Idle Meeting Cleanup for Guaranteed Meet-Me Meetings" section on page 2-8.

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Table 2-61 apiMeeting Element (continued)

Parameter	Type	Description
idleMeetingCleanupTimerDuration	Integer	*Applicable only if idle meeting cleanup is enabled at the meeting level, and the meeting attribute definition type is specified as LOCAL.* Number of minutes that a guaranteed Meet-Me meeting is allowed to be empty. When this timer expires, the system will end or cancel the meeting.
isCancelled	Boolean	This element is set to TRUE if the meeting is cancelled.
isDropParticipantsOnHostExitEnabled	Boolean	*Applicable only if the host role is enabled for the meeting, and the meeting attribute definition type is specified as LOCAL. If the host role is disabled, participants will remain on the call regardless of who drops from the call before them.* Defines the default action for participants when the host exits a meeting. One of the following values: • TRUE—Participants are disconnected from the meeting. • FALSE—Participants remain in the meeting.
isHostRoleEnabled	Boolean	This element is set to TRUE if the host role is enabled for this meeting.
isIdleMeetingCleanupEnabled	Boolean	*Applicable only if the meeting attribute definition type is specified as LOCAL.* Defines whether the system will automatically end or cancel a guaranteed Meet-Me meeting when it has been empty (no participants are consuming bridge resources for the meeting) for a configurable amount of time so that the bridge resources associated with the meeting can be made available for use by other guaranteed meetings. One of the following values: • TRUE—Enables idle meeting cleanup. • FALSE—Disables idle meeting cleanup.
isMeetingExtensionEnabled	Boolean	*Applicable only if the meeting attribute definition type is specified as LOCAL.* Defines whether the meeting will be automatically extended if resources are available when the meeting nears the configured duration. One of the following values: • TRUE—Enables meeting extensions. • FALSE—Disables meeting extensions.

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Table 2-61 apiMeeting Element (continued)

Parameter	Type	Description
isRemote	Boolean	This element is set to TRUE if the meeting is remote.
isRendezvous	Boolean	This element is set to TRUE if the meeting is a Rendezvous meeting.
isTwoPartyDirect	Boolean	This element is set to TRUE if the meeting is a two party direct meeting.
lastModified	Date/Time, ISO 8601	Date and time that the meeting record was last modified.
maxInstanceDuration	Integer	Maximum duration (in minutes) for the Rendezvous meeting.
maxMeetingExtensionsAllowed	Integer	*Applicable only if meeting extension is enabled at the meeting level, and the meeting attribute definition type is specified as LOCAL.* Maximum number of meeting extensions allowed for any given meeting. The maximum number of extensions times the extension period must not exceed 24 hours.
meetingExtensionDefinitionType	Enumeration	Indicates whether the meeting extension attributes are inherited from the service provider or organization of the meeting scheduler. One of the following values: • INHERITED—Meeting inherits the meeting extension attributes from the organization of the meeting scheduler. If no organization is specified for the meeting, then the meeting extension attributes are inherited from the service provider. • LOCAL—Meeting does not inherit the meeting extension attributes. You enable or disable the attributes using the isMeetingExtensionEnabled parameter. For more information about the meeting extension attributes, see the "Meeting Extensions for Meet-Me Meetings" section on page 2-7.
meetingExtensionPeriod	Integer	*Applicable only if meeting extension is enabled at the meeting level, and the meeting attribute definition type is specified as LOCAL.* Length of time (in minutes) of a meeting extension period. This value must be a multiple of 15.
meetingKey	String	The meeting key is a unique identifier of a specific meeting.

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Table 2-61 apiMeeting Element (continued)

Parameter	Type	Description
minScreensDefinitionType	Enumeration	*Applicable only to best-effort meetings.* Indicates whether the minimum best-effort allocation attribute is inherited from the service provider or organization of the meeting scheduler. One of the following values: • INHERITED—Meeting inherits the minimum best-effort allocation attribute from the organization of the meeting scheduler. If no organization is specified for the meeting, then the minimum best-effort allocation attribute is inherited from the service provider. • LOCAL—Meeting does not inherit the minimum best-effort allocation attribute. For more information about the minimum best-effort allocation attribute, see the "Resource Groups and Reservation Types" section on page 2-3.
minScreens	Integer	*Applicable only if the meeting attribute definition type is specified as LOCAL.* Number of screens the system will use to determine the minimum amount of bridge capacity to allocate to the best-effort meeting when the first participant joins.
numberOfRendezvousScreens	Integer	The number of screens to reserve for the endpoints that can join the Rendezvous meeting.
provisionedEndpointList	Complex	List of apiProvisionedEndpoint elements. See the "Provisioned Endpoint Fields" section on page 2-10.
regionKey	String	Key value of the region in which the meeting is hosted.
remoteEndpointList	Complex	List of apiRemoteEndpoint elements. See the "Remote Endpoint Fields" section on page 2-11.
requiredCapacity	Integer	The maximum number of media bridge resource segments that the Cisco TelePresence Exchange System reserved for the meeting.
reservationTypeKey	String	Key value of the reservation type for this meeting.
scheduler	String	Email address of the meeting scheduler.
schedulerOrgKey	String	Key value of the scheduler's organization.

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Table 2-61 apiMeeting Element (continued)

Parameter	Type	Description
serviceNumberKey	String	Key value of the service number assigned to the meeting. **Note** The accessNumber element returns the number configured for this service number object.
startTime	Date/Time, ISO 8601	The date and time for the start of the meeting.
subject	String	Subject of the meeting.
unprovisionedEndpointList	Complex	List of apiUnprovisionedEndpoint elements. See the "Unprovisioned Endpoint Fields" section on page 2-10.
useBestEffortAllocation	Boolean	If set to TRUE, no bridge resources are reserved for this meeting. If set to FALSE, the system uses guaranteed allocation (bridge resources are reserved for the meeting).

Table 2-62 describes the apiAllowedHostEndpointResult element.

Table 2-62 apiAllowedHostEndpointResult Element

Parameter	Type	Description
mediaProfileKey	String	Key value of the media profile that is configured for this endpoint.
endpointName	String	Text name of the endpoint.
number	String	Provides the directory number for the endpoint.

Best Practices for Retrieving Meeting Data

By default, the Cisco TelePresence Exchange System retains past meeting data for 30 days from the recorded end time of the meeting. The retention period is configurable with a possible range of 1 to 60 days. The system automatically purges past meeting records that exceed the retention period. Past meeting data that are purged include those for scheduled meetings that have ended, and scheduled and Rendezvous meetings that have been cancelled.

Use the information in this section to set up a retrieval strategy for meeting data:

- Retrieving Past Meeting Data Prior to Automatic Data Purging, page 2-65
- Retrieving Cancelled Meeting Data, page 2-65

Note When you upgrade from Release 1.1 to 1.2, the new automatic data purging policy takes effect, and the system automatically purges Meet-Me meetings that occurred 30 or more days in the past (based on the default data retention period), future Meet-Me meetings that have been cancelled, and Rendezvous meetings that have been cancelled. In addition, during the upgrade, the system purges all CDR records.

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For this reason, it is important that you develop and implement a regular retrieval strategy for both CDR records and meeting data, perform the retrieval prior to the upgrade, and continue to perform regular retrievals of both types of data after upgrading.

For more information on creating queries, see the "Creating Queries" section on page 2-72.

Retrieving Past Meeting Data Prior to Automatic Data Purging

For past meeting data record-keeping beyond the default limits, you can use a retrieval strategy that involves periodically downloading records for a rolling window of time using the getMeetings method. The following example query string illustrates a client portal polling once every hour to download the past meeting details that have not yet been purged from the system.

(AND (endTime ge 2012-09-16T11:00-07:00) (endTime lt 2012-09-16T12:00-07:00))

This query specifies to retrieve all completed Meet-Me meetings for September 16, 2012 that ended on or after 11 am and before 12 pm (noon) PDT. You would typically issue this query at some point past the end time, for example, at 14:17. Assuming that this retrieval was successful, the next time the client portal polls (at 15:17), it would ask for records from 12:00 to 13:00. Each subsequent query should request records starting from the last successful poll. Therefore, if there are a few network glitches or other reasons why the previous polls failed, then the subsequent query needs to span more than one hour. If in the above example, the network was dead for a few hours and the last successful poll collected records up to 9 am PDT, then the client portal would do the following to "cast a wider net" and retrieve records starting from 09:00:

(AND (endTime ge 2012-09-16T09:00-07:00) (endTime lt 2012-09-16T12:00-07:00))

The formula for this retrieval strategy is summarized as follows:

At XX:17, retrieve meeting details with end times between [last successful retrieval time] and [XX-2]:00

If there are ongoing concerns about retrieval failures, consider adjusting to a wider buffer of time between the end of the period being retrieved and the time of the query (for example, XX-4 rather than XX-2).

Retrieving Cancelled Meeting Data

The following example illustrates a client portal using the getMeetings method to download the meeting details for meetings that were scheduled in the Cisco TelePresence Exchange System but were later cancelled as of a certain time. This query retrieves any Meet-Me or Rendezvous meetings that are currently in cancelled state and were cancelled prior to noon on September 16, 2012:

(AND (isCancelled eq true) (lastModified lt 2012-09-16T12:00))

You can use this query in conjunction with a retrieval strategy similar to the one you use for past meeting details.

Performing API-Related Tasks

Each of the Cisco TelePresence Exchange System APIs supports a common set of methods, which are described in the following sections:

- echo, page 2-66

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- getVersion, page 2-66

echo

The Echo service allows the system to confirm that the Scheduling API service is active.

For additional details about this service, see the "echo" section on page 1-5.

getVersion

The Get Version service returns the product software version. For additional details about this service, see the "getVersion" section on page 1-5.

Error Handling

The Cisco TelePresence Exchange System API communicates an error condition to the client by returning a SOAP fault message. The fault message contains an API scheduling exception, which is described in Table 2-63.

Table 2-63 API Scheduling Exception

Parameter	Type	Description
cause code	String	(Optional) Provides more detailed information about an exception return code. The cause codes are listed in the "Cause Codes" section on page 2-69.
erc	String	Exception return code. **Note** For information on Scheduling Exception values, see Table 2-64.
message	String	English text message that provides additional information about the exception code. The content of the message varies depending on the exception code. **Note** This message is not localized. Therefore, Cisco recommends that the message string not be displayed to the end user directly, due to the possibility that the portal may cater to multiple languages.

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Table 2-63 API Scheduling Exception (continued)

Parameter	Type	Description
value map	String	(Optional) A name/value map in which each element is a pair of strings (a key and a value). The key identifies the type of entity, and the value identifies the specific instance that caused the exception. Possible key values are as follows: MEETING_KEY ENDPOINT_KEY ORGANIZATION_KEY SERVICE_PROVIDER_KEY REGION_KEY MEETING_ENDPOINT_KEY SERVICE_NUMBER_KEY RESERVATION_TYPE_KEY MEDIA_PROFILE_KEY SUBSCRIPTION_KEY

The following example shows an error message caused by an unknown endpoint:

```
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
   <env:Header/>
   <env:Body>
      <env:Fault>
         <faultcode>env:Server</faultcode>
        <faultstring>Provisioned endpoint with key "00eb0d9b2b6007c7012b60207b8e01b9" not
found</faultstring>
         <detail>
            <ns2:APISchedulingException xmlns:ns2="http://sched.api.ctc.txbu.cisco.com">
               <erc>ERC_NOT_FOUND</erc>
               <message>Provisioned endpoint with key "00eb0d9b2b6007c7012b60207b8e01b9"
not found</message>
               <valueMap>
                  <map>
                     <entry key="ENDPOINT_KEY">00eb0d9b2b6007c7012b60207b8e01b9</entry>
                  </map>
               </valueMap>
            </ns2:APISchedulingException>
         </detail>
      </env:Fault>
   </env:Body>
</env:Envelope>
```

Table 2-64 describes the scheduling exception values.

Table 2-64 Scheduling Exception Values

Exception Value	Description
ERC_EXCEPTION	General exception. See the message element for more information about the exception.
ERC_MISSING_PARAMETER	One or more of the required parameters is missing.
ERC_INVALID_VALUE	Generic exception for a bad parameter value from the client.

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Table 2-64 Scheduling Exception Values (continued)

Exception Value	Description
ERC_INTERNAL_SCHEDULING_EXCEPTION	General scheduling failure. See the message element for more information about the exception.
ERC_SCHEDULING_VALIDATION_EXCEPTION	At least one of the supplied parameters is invalid or the specified combination of parameters is invalid. A cause code is returned. The causeCode type is an enumeration, which is described in the "Cause Codes" section on page 2-69.
ERC_INVALID_DATE_TIME	The supplied date and time string is invalid.
ERC_INVALID_QUERY	The supplied query is badly-formed or contains an invalid property.
ERC_CTSMAN_COMMUNICATION_FAILURE	The Cisco TelePresence Manager might be unavailable or the supplied login credentials are invalid. See specific cause codes below: CTSMAN_SCHEDULING_ERROR CTSMAN_CONNECTION_ERROR CTSMAN_INTERCOMPANY_NOT_CONFIGURED
ERC_CONCURRENCY_FAILURE	This is a transient exception that often resolves itself on retry. The client is encouraged to retry the request.
ERC_STRING_TOO_LONG	The parameter string is too long.
ERC_CAPACITY_NOT_AVAILABLE	There is not enough capacity at the specified time for the meeting to be reserved.
ERC_NOT_FOUND	The provided key does not resolve to a valid item.
ERC_MISMATCHED_SERVICE_PROVIDER	The service provider that is supplied in the request does not match the stored service provider that is associated with the specified resource (endpoint or region).
ERC_LICENSE_ERROR	The Cisco TelePresence Exchange System requires a valid meeting service license. See specific cause codes below. LICENSE_NOT_VALID LICENSE_SERVER_NOT_ACCESSIBLE
ERC_ORG_BANDWIDTH_NOT_AVAILABLE	There is insufficient organization bandwidth for the meeting to be reserved.
ERC_RESOURCE_UNAVAILABLE	There is insufficient resource capacity at the specified time on the specified resource type. See specific cause codes below: BRIDGE_RESOURCE_NOT_AVAILABLE CTSMAN_RESOURCE_NOT_AVAILABLE
ERC_RESTORE_IN_PROGRESS	A database restore is in progress; therefore, no requests can be handled. When the restore is complete, requests can be handled. (A database restore may take several minutes.)
ERC_BACKWARDS_COMPATIBILITY_ERROR	Error related to API backwards-compatibility behavior.
ERC_EXTERNAL_SCHEDULING_EXCEPTION	Error detected when scheduling an external meeting.
ERC_INVALID_DURATION	The request included an invalid time duration.
ERC_INVALID_GRANULARITY	The endpoint availability request included an invalid granularity for the period duration.

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Table 2-64 Scheduling Exception Values (continued)

Exception Value	Description
ERC_TOO_MANY_ENDPOINTS	The endpoint availability request included too many endpoints in the request.
ERC_CANNOT_EXPAND_MEETING_ON_SAME_BRIDGE	The meeting cannot be expanded with additional endpoints or capacity on the current bridge. This only applies to active meetings.

getPossibleCauseCodes

The Get Possible Cause Codes service returns a list of possible cause codes for the specified ERC (Exception Return Code). If no ercName parameter is provided, the service returns all possible cause codes that the scheduling API could use in an error message. Table 2-65 describes the parameters for the service request.

Table 2-65 Get Possible Cause Codes Request

Parameter	Type	Description
ercName	String	Name of the ERC (Exception Return Code).

Table 2-66 describes the service response.

Table 2-66 Get Possible Cause Codes Response

Parameter	Type	Description
return	Complex	List of causeCode elements. The causeCode type is an enumeration, which is described in the "Cause Codes" section on page 2-69.

Cause Codes

Table 2-67 describes the possible cause codes.

Table 2-67 API Scheduling Cause Codes

Cause Code	Description
BRIDGE_RESOURCE_NOT_AVAILABLE	The required bridge resource is not available for the meeting.
CANNOT_ENABLE_HOST_FOR_ACTIVE_MEETING	The system cannot enable the endpoint as a host because the meeting is active.
CANNOT_SCHEDULE_IN_PAST	You cannot schedule a meeting in the past.
CTSMAN_CONNECTION_ERROR	The system is unable to connect to the Cisco TelePresence Manager.

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Table 2-67 API Scheduling Cause Codes (continued)

Cause Code	Description
CTSMAN_INTERCOMPANY_NOT_CONFIGURED	One-Button-to-Push functionality is not available because intercompany is not configured.
CTSMAN_RESOURCE_NOT_AVAIILABLE	The Cisco TelePresence Manager resource is not available.
CTSMAN_SCHEDULING_ERROR	The system is unable to schedule the meeting on the Cisco TelePresence Manager. One-Button-to-Push functionality will not be present on the endpoints.
DUPLICATE_CONFERENCE_ID	The specified conference ID is not unique.
DUPLICATE_ENDPOINT	The endpoint has already been scheduled.
DUPLICATE_GUEST_DIALOUT_NUMBER	The guest dialout number is already in use.
DUPLICATE_GUEST_DIALOUTS_OF_PROVISIONED_ENDPOINTS	The provisioned endpoint number is already in use.
EMPTY_MEDIA_PROFILES_FOR_NON_PROVISIONED_ENDPOINT_MEETING	No media profiles were specified for non-provisioned endpoints.
ENDPOINT_DOES_NOT_BELONG_TO_SERVICE_PROVIDER	The specified endpoint does not belong to the service provider.
ENDPOINT_DOES_NOT_SUPPORT_OBTP	The endpoint does not support One-Button-to-Push functionality.
ENDPOINT_NOT_ACTIVE	The specified endpoint is not active.
ENDPOINT_WITHOUT_ORGANIZATION_ASSIGNED	The specified endpoint has no organization assigned.
ENDPOINTS_FROM_DIFFERENT_CTSMANS	The specified endpoints are not on the same Cisco TelePresence Manager system.
ENDPOINTS_FROM_DIFFERENT_ORGANIZATIONS	The specified endpoints are assigned to different organizations.
INVALID_DIALIN_PROTOCOL	The specified dial-in protocol is not valid.
INVALID_CAPACITY_VALUE	The capacity value specified is not valid.
INVALID_CONFERENCE_ID	The conference ID is not valid.
INVALID_DURATION	The specified duration is not valid.
INVALID_E164_NUMBER	The specified E.164 number is not valid.
INVALID_HOST_PIN	The host PIN is not valid.
INVALID_HOST_PIN_ENDPOINT_CONFIGURATION	The specified meeting host endpoint configuration is not valid.
INVALID_IDLE_MEETING_CLEANUP_TIMER_DURATION	The specified idle meeting cleanup timer duration is not valid.
INVALID_MEETING_EXTENSION_PERIOD	The specified meeting extension period is not valid.
INVALID_MIN_SCREENS	The specified value for minimum screens is not valid.
INVALID_NUMBER_OF_MEETING_EXTENSIONS	The specified number of meeting extensions is not valid.
INVALID_TOTAL_MEETING_EXTENSION_TIME	The total meeting extension time specified is not valid.
INVALID_STRING_LENGTH	An invalid string length was specified.

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Table 2-67 API Scheduling Cause Codes (continued)

Cause Code	Description
INVALID_UNPROVISIONED_DIALOUT_ENDPOINT_DOMAIN	The domain specified for an unprovisioned dial-out endpoint is invalid.
LICENSE_NOT_VALID	The system cannot perform the action because the license file is not valid.
LICENSE_SERVER_NOT_ACCESSIBLE	The system cannot perform the action because the license server is not accessible.
REGION_DOES_NOT_BELONG_TO_SERVICE_PROVIDER	The specified region does not belong to the specified service provider.
MAXIMUM_MEETING_DURATION_EXCEEDED	The system cannot perform the action because the maximum meeting duration would be exceeded.
MEETING_ALREADY_ENDED	The system cannot perform the action because the meeting is already ended.
MEETING_IS_CANCELLED	The specified meeting has been cancelled.
MEETING_START_TIME_IN_PAST	The system cannot perform the action because the meeting start time occurs in the past.
MEETING_TYPE_ONLY_SUPPORTS_DIALIN	The meeting only supports dial-in calls.
MISSING_ENDPOINT_NUMBER	The endpoint number is missing from the request.
MISSING_ENDPOINT_PROTOCOL	The endpoint protocol is missing from the request.
MISMATCHED_MEETING_TYPE	The meeting type specified does not match the original meeting type.
NEED_HOST_ROLE_ENABLED_AND_PIN	The host role and PIN must be enabled.
NOT_ENOUGH_ENDPOINTS_OR_EQUIVALENT_CAPACITY	There are not enough endpoints or equivalent capacity specified.
ORGANIZATION_DOES_NOT_BELONG_TO_SERVICE_PROVIDER	The specified organization does not belong to the service provider.
REMOTE_ACCESS_NUMBER_NOT_VALID	The specified remote access number is not valid.
REQUIRED_CONFIGURATION_MISSING	Required configuring is missing from the request.
REQUIRED_PARAMETER_MISSING	A required parameter is missing from the request.
SCHEDULER_EMAIL_NOT_VALID	The specified meeting scheduler email is not a valid. email address.
TOO_LONG_ENDPOINT_NUMBER	The endpoint number exceeds the allowable length.
PORTS_CANNOT_BE_NEGATIVE	The number of ports specified for the meeting cannot be less than zero.
SCHEDULER_ORGANIZATION_IS_REQUIRED	The scheduler's organization must be specified.
INVALID_PARAMETER_COMBINATION	The request includes conflicting parameters.
INVALID_NUMBER_OF_ RENDEZVOUS_SCREENS	The specified number of screens is not valid for a Rendezvous meeting.

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Creating Queries

For services that retrieve information about data objects (such as endpoints or meetings) in the Cisco TelePresence Exchange System, the API provides a generalized query mechanism to allow clients to flexibly construct the desired queries. The API supports simple and complex queries. A null query is interpreted as a request to get all of the requested data objects.

This section provides a description of the queries and includes the following topics:

Query Syntax

A simple query follows the following syntax:

(<*property*> <*operator*> <*value*>)

as shown in the following example:

```
(name sw Building31)
```

where

name is the *property*

sw is the *operator*

Building 31 is the *value*

Table 2-68 describes query parameters.

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Table 2-68 Query Parameters

Parameter	Description
property	Name of the property of the object to be queried. Examples include: • name • id • region.name • organization.serviceProvider.serviceProviderKey You can specify the property in dotted notation format, which is shown in the above example. The property string is case-sensitive.
operator	The operator is a comparator or string match operator between the property and the value. Comparator operators include the following: • eq — equals • lt — less than • le — less than or equal • gt — greater than • ge — greater than or equal The string match mode operators include the following: • sw — string starts with • ew — string ends with • contains — string contains • null — is null • notnull — is not null
value	Numeric or string value. String values are case sensitive and can contain spaces. When the operator is null or notnull, no value parameter is specified in the query.

Complex Queries

Simple queries can be combined by using the conjunctive operator (AND) and the disjunctive operator (OR) to make complex queries. For conjunctive operations, the syntax is as follows:

(AND (query) (query') (query'') …)

The following is an example query for selecting specific endpoints:

(AND (name contains sjc) (lastModified gt 2011-0-04) (isActive eq true))

For disjunctive operations, the syntax is as follows:

(OR (query) (query') (query'') …)

The complex query syntax is fully recursive, so that each query in a complex query can also be a conjunctive query (by using the AND keyword) or a disjunctive query (by using the OR keyword).

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Null Queries

If you send a null or blank query in a request, the scheduling API interprets it as a request to get all of the requested objects.

Endpoint Query Properties

Table 2-69 provides a summary of query properties for endpoints.

Table 2-69 Endpoint Query Properties

Property	Description	Query String Example
key	Unique identifier	`(key eq 0a4fa39d9c2d11df98187da9da46d147)`
name	Endpoint name	`(name sw Cisco)`
description	Endpoint description	`(description notnull)`
number	Directory number	`(number eq 7206)`
isActive	Is endpoint activated	`(isActive eq true)`
isSupportsOBTP	Does endpoint support One-Button-to-Push (OBTP)	`(isSupportsOBTP eq true)`
organization.name	Organization name	`(organization.name sw Cisco)`
organization.description	Organization description	`(organization.description contains Ireland)`
mediaProfile.name	Media profile name	`(mediaProfile.name contains CTS-1000)`
mediaProfile.description	Media profile name description	`(mediaProfile.description sw Default CTS)`
mediaProfile.numberOfScreens	Media profile number of screens	`(mediaProfile.numberOfScreens gt 1)`
organization.serviceProvider.name	Service provider name	`(organization.serviceProvider.name sw Building31)`
organization.serviceProvider. description	Service provider description	`(organization.serviceProvider.description contains telepresence)`

Meeting Query Properties

Table 2-70 provides a summary of query properties for meetings.

Table 2-70 Meeting Query Properties

Property	Description	Query String Example
meetingKey	Unique identifier	`(meetingKey eq 0a4fa39d9c2d11df98187da9da46d147)`
subject	Meeting subject	`(subject contains weekly staff)`
scheduler	Meeting scheduler	`(scheduler eq john@cisco.com)`
conferenceID	Meeting ID or access code	`(conferenceID eq 11456271)`

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Table 2-70 Meeting Query Properties (continued)

Property	Description	Query String Example
startTime	Starting time of the meeting	`(startTime ge 2011-02-01)`
endTime	Ending time of the meeting	`(endTime gt 2011-04-16T12:00)`
duration	Duration of the meeting	`(duration le 30)`
isRemote	Is this a remote meeting	`(isRemote eq true)`
isTwoPartyDirect	Is this a direct dial meeting	`(isTwoPartyDirect eq true)`
isCancelled	Was the meeting cancelled	`(isCancelled eq true)`
serviceProvider.name	Service provider name	`(serviceProvider.name sw Building31)`
serviceProvider.description	Service provider description	`(serviceProvider.description contains telepresence)`
isTimeless	Is this a Rendezvous meeting?	`(isTimeless eq true)`
conference.isHostRoleEnabled	Does this meeting require host pins?	`(conference.isHostRoleEnabled eq true)`
schedulerOrg.name	Scheduler's organization name	`(schedulerOrg.name sw Cisco)`
conference.hostPIN	Host PIN number	`(conference.hostPIN eq 123456)`

Organization Query Properties

Table 2-71 provides a summary of query properties for organizations.

Table 2-71 Organization Query Properties

Property	Description	Query String Example
key	Unique identifier	`(key eq 0a4fa39d9c2d11df98187da9da46d147)`
name	Organization name	`(name sw Cisco)`
description	Organization description	`(description contains Ireland)`
maxBandwidth	Maximum bandwidth	`(maxBandwidth ge 20)`
directDialEnabled	Is direct dial enabled	`(directDialEnabled eq true)`
serviceProvider.name	Service provider name	`(serviceProvider.name sw Building31)`
serviceProvider.description	Service provider description	`(serviceProvider.description contains telepresence)`

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Regions Query Properties

Table 2-72 provides a summary of query properties for regions.

Table 2-72 Regions Query Properties

Property	Description	Query String Example
key	Unique identifier	`(key eq 0a4fa39d9c2d11df98187da9da46d147)`
name	Region name	`(name sw WestCoast)`
description	Region description	`(description notnull)`
serviceProvider.name	Service provider name	`(serviceProvider.name sw Building31)`
serviceProvider.description	Service provider description	`(serviceProvider.description contains telepresence)`

Resource Group Query Properties

Table 2-73 provides a summary of query properties for resource groups.

Table 2-73 Resource Group Query Properties

Property	Description	Query String Example
key	Unique identifier	`(key eq 0a4fa39d9c2d11df98187da9da46d147)`
name	Resource group name	`(name sw WestCoast)`
description	Resource group description	`(description notnull)`
location.name	Region name	`(location.name eq San Francisco)`
location.description	Region description	`(location.description notnull)`
serviceProvider.name	Service provider name	`(serviceProvider.name sw AT)`
serviceProvider.description	Service provider description	`(serviceProvider.description contains telepresence)`

Route Query Properties

Table 2-74 provides a summary of query properties for routes.

Table 2-74 Route Query Properties

Property	Description	Query String Example
key	Unique identifier	`(key eq 0a4fa39d9c2d11df98187da9da46d147)`
name	Route name	`(name sw WestCoast)`
description	Route description	`(description notnull)`

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Table 2-74 Route Query Properties (continued)

Property	Description	Query String Example
routeType	Type of route	`(routeType eq INCOMING)`
tag	Carrier Information Code (CIC)	`(tag eq 1122)`
isActive	Is this route active?	`(isActive eq true)`

Service Provider Query Properties

Table 2-75 provides a summary of query properties for service providers.

Table 2-75 Service Provider Query Properties

Property	Description	Query String Example
key	Unique identifier	`(key eq 0a4fa39d9c2d11df98187da9da46d147)`
name	Service provider name	`(name sw Building31)`
description	Service provider description	`(description contains telepresence)`
helpDeskNumber	Help desk phone number	`(helpDeskNumber eq 1000)`

Service Number Query Properties

Table 2-76 provides a summary of query properties for service numbers.

Table 2-76 Service Number Query Properties

Property	Description	Query String Example
key	Unique identifier	`(key eq 0a4fa39d9c2d11df98187da9da46d147)`
name	Service number name	`(name contains English)`
description	Service number description	`(description contains English)`
number	Service number	`(number sw 408)`

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Media Profile Query Properties

Table 2-77 provides a summary of query properties for media profiles.

Table 2-77 Media Profile Query Properties

Property	Description	Query String Example
key	Unique identifier	`(key eq 0a4fa39d9c2d11df98187da9da46d147)`
name	Media profile name	`(name sw CTS)`
description	Media profile description	`(description contains CTS)`

Reservation Type Queries

Table 2-78 provides a summary of query properties for reservation types.

Table 2-78 Reservation Type Query Properties

Property	Description	Query String Example
key	Unique identifier	`(key eq 0a4fa39d9c2d11df98187da9da46d147)`
name	Reservation type name	`(name sw Standard)`
description	Reservation type description	`(description contains guaranteed)`
isGuaranteed	Is reservation guaranteed	`(isGuaranteed eq true)`

WhiteList Groups Query Properties

Table 2-79 provides a summary of query properties for whitelist groups.

Table 2-79 Whitelist Group Query Properties

Property	Description	Query String Example
key	Unique identifier	`(key eq 0a4fa39d9c2d11df98187da9da46d147)`
name	Whitelist group name	`(name sw Open)`
description	Whitelist group description	`(description contains English)`

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CHAPTER 3

Active Meeting Management API

Revised June 28, 2013

The active meeting management API enables real-time management of Meet-Me and Rendezvous meetings that are currently in progress. In contrast, the *scheduling* API enables you to schedule and modify *future* meetings.

With the active meeting management API, you can develop client applications for monitoring and controlling active meetings, typically by concierge or service desk personnel.

Topics in this section include:

Getting Started

This section describes how to get started with the active meeting management API and includes the following topics:

Active Meeting Management API Overview

The active meeting management API enables you to accomplish the following tasks:

- Manage Meet-Me and Rendezvous meetings that are currently in progress

  The API provides methods to get information about active meetings and to make changes to active meetings in real time, including functions such as muting or unmuting participants, modifying the meeting details, and so on. These methods are described in the "Active Meeting Management Methods" section on page 3-2.

Note The active meeting management API is not applicable to two-party direct or remote meetings.

- Perform tasks that are related to the API

  The API provides services that are related to managing the active meeting management API. These services are described in the "Performing API-Related Tasks" section on page 3-16.

Obtaining the WSDL File

You can access the WSDL file for the active meeting management API at **http://***administration-server-hostname-or-IP-address***:8080/ctxapi/api/v1_2/amm?wsdl**

The WSDL file provides a complete and accurate definition of the API that is supported by your Cisco TelePresence Exchange System. In the event of any discrepancies between the WSDL file and this document, you should follow the WSDL file definition.

API Versions

At time of publication, the latest version of the active meeting management API is version 1.2, which is accessed by using the WSDL URL listed above.

Cisco TelePresence Exchange System release 1.2 also supports version 1.1 of the active meeting management API, which you can access by using the following URL:

1.1—http://<*DNS name or IP address for your admin server*>:8080/ctxapi/api/v1_1/amm?wsdl

For notes on backward compatibility with version 1.1, see Appendix A, "Backward Compatibility."

Note This document describes version 1.2 of the API. The documentation for previous versions of the API is available from Cisco.com at the following URL:
http://www.cisco.com/en/US/products/ps11276/products_programming_reference_guides_list.html

Active Meeting Management Methods

The methods specific to the active meeting management API are described in alphabetical order in the following sections:

dropParticipant

This method removes a specified participant from an active meeting and hangs up on the endpoint of the participant.

Table 3-1 describes the input parameters for the Drop Participant service request.

Table 3-1 Drop Participant Request Parameters

Parameter	Type	Description
meetingKey	String	Unique key that the system uses to identify the meeting. **Note** The most convenient way to obtain the meeting key is by using the response to the getActiveMeetings method.
participant	String	E.164 number or URI of the endpoint.

The Drop Participant service returns a success or fault message. There is no response data returned.

endSubscribeMeetingEvents

The endSubscribeMeetingEvents method is not supported.

getActiveMeetings

This method provides information about all active meetings. You can filter results by including values for the optional parameters in the request.

Table 3-2 describes the fields in the Get Active Meetings request.

Table 3-2 Get Active Meetings Request Parameters

Parameter	Type	Description
meetingId	String	(Optional) Meeting identifier that the meeting participant enters to join the meeting after dialing the access number.
accessNumber	String	(Optional) Dial-in number that meeting participants call to join the meeting.
scheduler	String	(Optional) Email address of the meeting scheduler.
startingTimeWindowFrom	String	(Optional) Earliest start time of meetings that you want the system to return in the response.

Table 3-2 Get Active Meetings Request Parameters (continued)

Parameter	Type	Description
startingTimeWindowTo	String	(Optional) Latest start time of meetings that you want the system to return in the response.
startingIndex	Integer	(Optional) Specify the index of the first entry to be returned.
numberToReturn	Integer	(Optional) Specify the number of entries to be returned.

The service response returns a Get Active Meetings Result, which includes a list of activeMeeting elements. Table 3-3 describes the activeMeeting element.

Table 3-3 activeMeeting Element

Parameter	Type	Description
bridgeResource	String	Provisioned name of the media resource that is providing the meeting bridge and media bridge resources for a meeting.
bridgeResourceType	Enumeration	Media bridge resource type. One of the following values: • **CTMS**—Cisco TelePresence Multipoint Switch • **TPS**—Cisco TelePresence Server MSE 8710 • **TPS_8510**—Cisco TelePresence MCU MSE 8510
endTime	Date/Time, ISO 8601	Scheduled end time of the meeting.
meetingId	String	Meeting identifier that the meeting participant enters to join the meeting after dialing the access number.
meetingKey	String	Unique key that the system uses to identify the meeting.
numberOfParticipants	Integer	The number of participants that are currently attending the meeting.
schedulerOrganizationKey	Integer	Unique key that the system assigned to the organization of the meeting scheduler.
startTime	String	Start time of the meeting. For a Rendezvous meeting, this is the start time of the current meeting *instance*.
subject	String	Text subject of the meeting.

getCurrentMeetingStatus

This method obtains status information about the specified active meeting.

Table 3-4 describes the fields in the Get Current Meetings request.

Table 3-4 Get Current Meetings Request Parameters

Parameter	Type	Description
meetingKey	String	Enter the unique key that the system uses to identify the meeting. **Note** The most convenient way to obtain the meeting key is by using the response to the getActiveMeetings method. You can also get the key from the apiMeeting object in the Scheduling API. (The apiMeeting object is returned when scheduling a meeting or in the response to the getMeeting or getMeetings methods.)

The service returns a GetCurrentMeetingStatusResult in the service response, which includes a list of apiMeetingStatus elements. Table 3-5 describes the apiMeetingStatus element.

Table 3-5 apiMeetingStatus Element

Parameter	Type	Description
activeParticipants	Complex	Contains one or more participantsInCurrentMeeting elements. This element is described in Table 3-6.
bridgeResourceName	String	Provisioned name of the media resource that is providing the meeting bridge and media bridge resources for a meeting.
bridgeResourceType	Enumeration	Media bridge resource type. One of the following values: • **CTMS**—Cisco TelePresence Multipoint Switch • **TPS**—Cisco TelePresence Server MSE 8710 • **TPS_8510**—Cisco TelePresence MCU MSE 8510
endTime	Date/Time, ISO 8601	Scheduled end time of the meeting.
isLocked	Boolean	Set to TRUE if the meeting is currently locked. When locked, users cannot dial in to the meeting. Dial-out endpoints are not affected by whether a meeting is locked or unlocked.
meetingId	String	Meeting identifier that the meeting participant enters to join the meeting after dialing the access number.
organizationKey	Integer	Unique key that the system uses to identify the organization.
scheduledProvisionedEndpoints	Complex	Contains one or more apiProvisionedEndpoint elements. This element is described in Table 3-7.
unscheduledProvisionedEndpoints	Complex	Contains one or more apiUnprovisionedEndpoint elements. This element is described in Table 3-8.

Table 3-5 apiMeetingStatus Element (continued)

Parameter	Type	Description
startTime	String	Start time of the meeting. For a Rendezvous meeting, this is the start time of the current meeting *instance*.
subject	String	Text subject of the meeting.

Table 3-6 describes the participantsInCurrentMeeting element.

Table 3-6 participantsInCurrentMeeting Element

Parameter	Type	Description
numScreens	Integer	Number of media bridge resource segments that are reserved for a scheduled participant or that are allocated for an active participant. Each segment represents one screen of video transmission or one 30-fps data channel.
number	String	E.164 number or URI of the endpoint.
videoBandwidth	Integer	Video bandwidth used by the participant, in bits per second. This parameter is relevant only for Meet-Me meeting calls. For a SIP endpoint, the value is determined based on the last maximum negotiated bandwidth from the SIP messages exchanged between the client and MCU. For an H323 or ISDN endpoints, the value is reported from the MCU.
isMuted	Boolean	Set to TRUE if the active participant is currently muted. **Note** Mute status is not available for participants on the Cisco TelePresence Multipoint Switch (CTMS).
isHost	Boolean	Set to TRUE if the participant joined the meeting as the host.
joinTime	String	Time that the meeting participant joined the meeting. The time is in ISO8601 format. **Note** The Cisco TelePresence Exchange System does not consider the participant as having joined the meeting until after any interaction with the IVR prompts is complete.
isDialout	Boolean	Set to TRUE if the Cisco TelePresence Exchange System dialed out to reach the endpoint.
cic	String	The Carrier Information Code (CIC) for the route.
requiredCapacity	Integer	The number of media bridge resource segments that the Cisco TelePresence Exchange System allocated to the endpoint when it joined the meeting.

Table 3-7 describes the apiProvisionedEndpoint element.

Table 3-7 apiProvisionedEndpoint Element

Parameter	Type	Description
endpointName	String	Endpoint name.
mediaProfileKey	String	Unique key of the media profile associated with this endpoint.
number	String	E.164 number or URI of the endpoint.
dialOut	Boolean	Set to TRUE if the system dialed out to the participant.
endpointKey	String	The unique key of the endpoint.
isHost	Boolean	Set to true if this endpoint is a designated host for the meeting.
ports	Integer	(Optional) The network bandwidth number for this endpoint. Units must be consistent with the maximum ports field that is configured for the organization.

Table 3-8 describes the apiUnprovisionedEndpoint element.

Table 3-8 apiUnprovisionedEndpoint Element

Parameter	Type	Description
dialOut	Boolean	Set to TRUE if the system dialed out to the participant.
mediaProfileKey	String	Unique key of the media profile associated with this endpoint.
number	String	E.164 number or URI of the endpoint.
organizationKey	String	Unique key of the organization associated with this endpoint.
ports	Int	Number of ports of bandwidth to allocate for the endpoint.

lockMeeting

This method blocks any more users from dialing into a specified meeting. Dial-out endpoints are not affected by whether a meeting is locked or unlocked.

Table 3-9 describes the input parameters for the Lock Meeting service request.

Table 3-9 Lock Meeting Request Parameters

Parameter	Type	Description
meetingKey	String	Unique key that the system uses to identify the meeting. **Note** The most convenient way to obtain the meeting key is by using the response to the getActiveMeetings method.

The Lock Meeting service returns a success or fault message. There is no response data returned.

modifyActiveMeeting

This method modifies a specified meeting that is currently in progress. Table 3-10 describes the input parameters for the Modify Active Meeting service request. Null parameter values are set for fields that you do not want to change.

Note The Modify Active Meeting service request must include the meeting key of the meeting that you want to modify.

Table 3-10 modifyActiveMeeting Element

Parameter	Type	Description
meetingKey	String	Unique key that the system uses to identify the meeting. **Note** The most convenient way to obtain the meeting key is by using the response to the getActiveMeetings method. You can also get the key from the apiMeeting object in the Scheduling API. (The apiMeeting object is returned when scheduling a meeting or in the response to the getMeeting or getMeetings methods.)
newDuration	String	(Optional) New duration of meeting, in minutes.
newProvisionedEndpoints	Complex	(Optional) Contains one or more apiProvisionedEndpoint elements. This element is described in Table 3-7.
newUnprovisionedEndpoints	Complex	(Optional) Contains one or more apiUnprovisionedEndpoint elements. This element is described in Table 3-8.
newRemoteEndpointList	Complex	(Optional) Contains one or more endpoints from a remote system.

Table 3-10 modifyActiveMeeting Element (continued)

Parameter	Type	Description
newAdditionalCapacity	Integer	(Optional) Number of additional segments of media bridge capacity to allocate for the meeting. If you set a value for this parameter, it replaces the previous AdditionalCapacity value. Use this parameter to reserve media bridge resources for endpoints that you do not add to the meeting but that you expect to join the meeting. To determine how many segments to add for each endpoint, use the following guidelines, depending on which media resource provides the meeting bridge: • Cisco TelePresence Multipoint Switch—Add 4 segments for each three-screen endpoint and 2 segments for each single-screen endpoint. • Cisco TelePresence MCU MSE 8510—Add 1 segment for each endpoint. Only single-screen endpoints are supported. • Cisco TelePresence Server MSE 8710—Add 3 segments for each three-screen endpoint and 1 segment for each single-screen endpoint.
newLayoutID	Integer	(Optional) Enter a default value for the screen layout. This value will be used if the meeting is hosted on a Cisco TelePresence MCU MSE 8510, which supports a variety of screen layout options. For details on the layout values, see the "Custom Layouts" section on page 2-5.
newIsHostRoleEnabled	Boolean	(Optional) If TRUE, set to FALSE during an active meeting to disable host options for the meeting. **Note** You cannot use this field to enable host options on an active meeting. In order for the options to be available for a meeting, you must enable the options before the meeting becomes active.
newHostPin	String	*Available only when host role is enabled.* (Optional) Enter a numerical host PIN for the meeting. By default, the system will create a random PIN.

Table 3-10 modifyActiveMeeting Element (continued)

Parameter	Type	Description
newNumberOfRendezvousScreens	Integer	(Optional) Enter the number of screens to reserve for the endpoints that can join the Rendezvous meeting.
newMeetingExtensionDefinitionType	Enumeration	Indicates whether the meeting extension attributes are inherited from the service provider or organization of the meeting scheduler. One of the following values: • INHERITED • LOCAL You can modify the value from INHERITED to LOCAL but not from LOCAL to INHERITED. For more information about the meeting extension attribute, see the "Meeting Extensions for Meet-Me Meetings" section on page 2-7.
newIsMeetingExtensionEnabled	Boolean	*Applicable only if the meeting attribute definition type is specified as LOCAL.* Defines whether the meeting will be automatically extended if resources are available when the meeting nears the configured duration. One of the following values: • TRUE • FALSE You can modify the value from TRUE to FALSE and from FALSE to TRUE.
newIdleMeetingCleanupDefinitionType	Enumeration	*Applicable only to guaranteed Meet-Me meetings, not best-effort.* Indicates whether the idle meeting cleanup attributes are inherited from the service provider or organization of the meeting scheduler. One of the following values: • INHERITED • LOCAL You can modify the value from INHERITED to LOCAL but not from LOCAL to INHERITED. For more information about the idle meeting cleanup attribute, see the "Idle Meeting Cleanup for Guaranteed Meet-Me Meetings" section on page 2-8.

Table 3-10 modifyActiveMeeting Element (continued)

Parameter	Type	Description
newIsIdleMeetingCleanupEnabled	Boolean	*Applicable only if the meeting attribute definition type is specified as LOCAL.* Defines whether the system will automatically end or cancel a guaranteed Meet-Me meeting when it has been empty (no participants are consuming bridge resources for the meeting) for a configurable amount of time so that the bridge resources associated with the meeting can be made available for use by other guaranteed meetings. One of the following values: • TRUE • FALSE You can modify the value from TRUE to FALSE but not from FALSE to TRUE.
newIdleMeetingCleanupTimerDuration	Integer	*Applicable only if idle meeting cleanup is enabled at the meeting level, and the meeting attribute definition type is specified as LOCAL.* Enter the number of minutes that a guaranteed Meet-Me meeting is allowed to be empty. When this timer expires, the system will end or cancel the meeting.
newMeetingExtensionPeriod	Integer	*Applicable only if meeting extension is enabled at the meeting level, and the meeting attribute definition type is specified as LOCAL.* Enter the length of time (in minutes) of a meeting extension period. This value must be a multiple of 15.
newMaxMeetingExtensionsAllowed	Integer	*Applicable only if meeting extension is enabled at the meeting level, and the meeting attribute definition type is specified as LOCAL.* Enter the maximum number of meeting extensions allowed for any given meeting. The maximum number of extensions times the extension period must not exceed 24 hours.
newSchedulerOrgKey	String	(Optional) Organization key of the scheduler.

Table 3-10 modifyActiveMeeting Element (continued)

Parameter	Type	Description
newMinScreensDefinitionType	Enumeration	*Applicable only to best-effort meetings.* Indicates whether the minimum best-effort allocation attribute is inherited from the service provider or organization of the meeting scheduler. One of the following values: • INHERITED • LOCAL You can modify the value from INHERITED to LOCAL but not from LOCAL to INHERITED. For more information about the minimum best-effort allocation attribute, see the "Resource Groups and Reservation Types" section on page 2-3.
newMinScreens	Integer	*Applicable only if the meeting attribute definition type is specified as LOCAL.* Enter the number of screens the system will use to determine the minimum amount of bridge capacity to allocate to the best-effort meeting when the first participant joins.

The service returns a Modify Active Meeting Result. Table 3-11 describes the Modify Active Meeting Result.

Table 3-11 Modify Active Meeting Result Parameters

Parameter	Type	Description
capacityAllocated	Integer	Number of segments of media bridge capacity that is allocated to the meeting.

muteAllExcept

This method mutes all participants in a meeting except a list of specified participants.

Table 3-12 describes the input parameters for the Mute All Except service request.

Table 3-12 Mute All Except Request Parameters

Parameter	Type	Description
meetingKey	String	Unique key that the system uses to identify the meeting. **Note** The most convenient way to obtain the meeting key is by using the response to the getActiveMeetings method.
participant	String	E.164 number (such as "14085551234") or URI of the endpoint. **Note** you can specify multiple participants.

The Mute All Except service returns a success or fault message. There is no response data returned.

muteParticipant

This method mutes a list of specified participants.

Table 3-13 describes the input parameters for the Mute Participant service request.

Table 3-13 Mute Participant Parameters

Parameter	Type	Description
meetingKey	String	Unique key that the system uses to identify the meeting. **Note** The most convenient way to obtain the meeting key is by using the response to the getActiveMeetings method.
participant	String	E.164 number (such as “14085551234”) or URI of the endpoint. **Note** you can specify multiple participants.

The Mute Participant service returns a success or fault message. There is no response data returned.

redialParticipant

This method initiates a dial-out call to a specified participant.

Table 3-14 describes the input parameters for the Redial Participant service request.

Table 3-14 Redial Participant Parameters

Parameter	Type	Description
meetingKey	String	Unique key that the system uses to identify the meeting. **Note** The most convenient way to obtain the meeting key is by using the response to the getActiveMeetings method.
participant	String	E.164 number (such as “14085551234”) or URI of the endpoint. **Note** you can specify multiple participants.

The Redial Participant service returns a success or fault message. There is no response data returned.

sendEndpointText

This method sends text to display on all endpoints that are in the meeting.

Note The endpoint text display feature is not supported for meetings that are hosted on a Cisco TelePresence Multipoint Switch.

Table 3-15 describes the input parameters for the Send Endpoint Text service request.

Table 3-15 Send Endpoint Text Parameters

Parameter	Type	Description
meetingKey	String	Unique key that the system uses to identify the meeting. **Note** The most convenient way to obtain the meeting key is by using the response to the getActiveMeetings method.
endpointMessage	String	Text message that you want to display in the meeting.

The Send Endpoint Text service returns a success or fault message. There is no response data returned.

sendEndpointTextToParticipant

This method sends text to display on the specified endpoint.

Note The endpoint text display feature is not supported for meetings that are hosted on a Cisco TelePresence Multipoint Switch.

Table 3-16 describes the input parameters for the Send Endpoint Text To Participant service request.

Table 3-16 Send Endpoint Text To Participant Parameters

Parameter	Type	Description
meetingKey	String	Unique key that the system uses to identify the meeting. **Note** The most convenient way to obtain the meeting key is by using the response to the getActiveMeetings method.
participant	String	E.164 number (such as “14085551234”) or URI of the endpoint.
endpointMessage	String	Text message that you want to display to the participant.

The Send Endpoint Text To Participant service returns a success or fault message. There is no response data returned.

startSubscribeMeetingEvents

The startSubscribeMeetingEvents method is not supported.

unlockMeeting

This method enables new participants to dial into a previously locked meeting. Dial-out endpoints are not affected by whether a meeting is locked or unlocked.

Table 3-17 describes the input parameters for the Unlock Meeting service request.

Table 3-17 Unlock Meeting Request Parameters

Parameter	Type	Description
meetingKey	String	Unique key that the system uses to identify the meeting. **Note** The most convenient way to obtain the meeting key is by using the response to the getActiveMeetings method.

The Unlock Meeting service returns a success or fault message. There is no response data returned.

unMuteAll

This method unmutes all participants in a meeting.

Table 3-18 describes the input parameters for the Unmute All service request.

Table 3-18 Unmute All Request Parameters

Parameter	Type	Description
meetingKey	String	Unique key that the system uses to identify the meeting. **Note** The most convenient way to obtain the meeting key is by using the response to the getActiveMeetings method.

The Unmute All service returns a success or fault message. There is no response data returned.

unMuteParticipant

This method unmutes one or more specified participants in a meeting.

Table 3-19 describes the input parameters for the Unmute Participant service request.

Table 3-19 Unmute Participant Parameters

Parameter	Type	Description
meetingKey	String	Unique key that the system uses to identify the meeting. **Note** The most convenient way to obtain the meeting key is by using the response to the getActiveMeetings method.
participant	String	E.164 number (such as “14085551234”) or URI of the endpoint. **Note** you can specify multiple participants.

The Unmute Participant service returns a success or fault message. There is no response data returned.

Performing API-Related Tasks

Each of the Cisco TelePresence Exchange System APIs supports a common set of methods, which are described in the following sections:

- echo, page 3-16
- getVersion, page 3-16

echo

The Echo service allows the system to confirm that the CDR API service is active. For additional details about this service, see the "echo" section on page 1-5.

getVersion

The Get Version service returns the product software version. For additional details about this service, see the "getVersion" section on page 1-5.

Error Handling

The Cisco TelePresence Exchange System API communicates an error condition to the client by returning a SOAP fault message. The fault message contains an API Active Meetings Management Exception, which is described in Table 3-20.

Table 3-20 API ActiveMeetingsManagement Exception

Parameter	Type	Description
cause code	String	(Optional) Provides more detailed information about an exception return code. The cause codes are listed in the "Cause Codes" section on page 3-18.
erc	String	Exception return code. **Note** For information on API Active Meetings Management Exception values, see the "Exception Values" section on page 3-17.
message	String	English text message that provides additional information about the exception code. The content of the message varies depending on the exception code. **Note** This message is not localized. Therefore, Cisco recommends that the message string not be displayed to the end user directly, due to the possibility that the portal may cater to multiple languages.

Table 3-20 API ActiveMeetingsManagement Exception (continued)

Parameter	Type	Description
value map	String	(Optional) A name/value map in which each element is a pair of strings (a key and a value). The key identifies the type of entity, and the value identifies the specific instance that caused the exception. Possible key values are as follows: MEETING_KEY ENDPOINT_KEY ORGANIZATION_KEY SERVICE_PROVIDER_KEY REGION_KEY MEETING_ENDPOINT_KEY SERVICE_NUMBER_KEY RESERVATION_TYPE_KEY MEDIA_PROFILE_KEY SUBSCRIPTION_KEY

Exception Values

Table 3-21 describes the exception values.

Table 3-21 API Active Meeting Management Exception Values

Exception Value	Description
ERC_EXCEPTION	General exception. See the message string for more information about the exception.
ERC_MISSING_PARAMETER	One or more of the required parameters are missing.
ERC_INVALID_VALUE	Generic exception for a bad parameter value from the client.
ERC_INVALID_DATE_TIME	The date and time in the request are invalid.
ERC_LICENSE_ERROR	The Cisco TelePresence Exchange System requires a valid meeting service license.
ERC_SERVICE_PROVIDER_NOT_FOUND	The service provider in the request does not match a provisioned service provider in the system.
ERC_ORGANIZATION_NOT_FOUND	The organization in the request does not match a provisioned service provider in the system.
ERC_RESTORE_IN_PROGRESS	A database restore is in progress; therefore, no requests can be handled. When the restore is complete, requests can be handled. A database restore may take several minutes.
ERC_STRING_TOO_LONG	The parameter string is too long.
ERC_NOT_FOUND	The provided key does not resolve to a valid item.
ERC_BRIDGE_COMMUNICATION_ERROR	An error occurred while calling an API method on the bridge resource. For example, if your bridge is an unsupported version, then it may return an error when the Cisco TelePresence Exchange System tries to call a particular method.

Table 3-21 API Active Meeting Management Exception Values (continued)

Exception Value	Description
ERC_INTERNAL_ACTIVE_MEETINGS_MANAGEMENT_EXCEPTION	General exception; see the message text for more information.
ERC_MODIFICATION_EXCEPTION	General exception; see the message text for more information.
ERC_MISMATCHED_SERVICE_PROVIDER	The service provider in the request does not match the provisioned service provider that is associated with the specified resource (endpoint or region).
ERC_CALL_CONTROL_EXCEPTION	Internal exception related to the call-control part of Cisco TelePresence Exchange System. See the message text for more information.
ERC_CANNOT_ACCESS_OR_CONTROL_ACTIVE_MEETING	Unable to retrieve active meeting status necessary for controlling participants in an active meeting.

getPossibleCauseCodes

The Get Possible Cause Codes service returns a list of possible cause codes for the specified ERC (Exception Return Code). If no ercName parameter is provided, the service returns all possible cause codes that the active meeting management API could use in an error message. Table 3-22 describes the parameters for the service request.

Table 3-22 Get Possible Cause Codes Request

Parameter	Type	Description
ercName	String	Name of the ERC (Exception Return Code).

Table 3-23 describes the service response.

Table 3-23 Get Possible Cause Codes Response

Parameter	Type	Description
return	Complex	List of causeCode elements. The causeCode type is an enumeration, which is described in the "Cause Codes" section on page 3-18.

Cause Codes

Table 3-21 describes the possible cause codes.

Table 3-24 API Active Meeting Management Cause Codes

Cause Code	Description
CANNOT_ADD_UNSUPPORTED_ENDPOINT	The system cannot add the endpoint because it is unsupported.
CANNOT_CHANGE_DROP_PARTICIPANTS_ON_HOST_EXIT	The system cannot change the Drop Participants on Host Exit setting.

Table 3-24 API Active Meeting Management Cause Codes (continued)

Cause Code	Description
CANNOT_CHANGE_IDLE_MEETING_CLEANUP_DEFINITION_TYPE	The system cannot change the Idle Meeting Cleanup setting.
CANNOT_CHANGE_MEETING_EXTENSION_DEFINITION_TYPE	The system cannot change the Meeting Extension setting.
CANNOT_CHANGE_MIN_SCREENS_DEFINITION_TYPE	The system cannot change the Minimum Screens setting.
CANNOT_DECREASE_ADDITIONAL_CAPACITY	The system cannot decrease the Additional Capacity value.
CANNOT_DECREASE_BANDWIDTH	The system cannot decrease the bandwidth for the meeting.
CANNOT_DECREASE_CAPACITY	The system cannot decrease the capacity for the meeting.
CANNOT_DECREASE_NUMBER_OF_SCREENS	The system cannot decrease the number of screens to reserve for the endpoints that can join the Rendezvous meeting.
CANNOT_REMOVE_EXISTING_ENDPOINT	The system cannot remove the existing endpoint from the meeting.
INVALID_ACTIVE_MEETING	The specified meetingKey does not match a currently active meeting.
LICENSE_NOT_VALID	The system cannot perform the action because the ActiveMeetingMgmt license is not valid.
LICENSE_SERVER_NOT_ACCESSIBLE	The system cannot perform the action because the license server is not accessible.
MUTE_FAILED	The system is unable to mute the participant.
MUTE_ALL_EXCEPT_FAILED	The system is unable to mute the participants.
UNMUTE_FAILED	The system is unable to unmute the participant.
UNMUTE_ALL_FAILED	The system is unable to unmute the participants.
DROP_PARTICIPANT_FAILED	The system is unable to drop the participant from the meeting.
DROP_CONNECTING_CTMS_PARTICIPANT_FAILED	The system cannot drop the participant from the meeting. (Applies to meetings hosted on the Cisco TelePresence Multipoint Switch.)
REDIAL_PARTICIPANT_FAILED	The system is unable to redial the participant.
SEND_ENDPOINT_TEXT_FAILED	The system is unable to send the message to the endpoint.
LICENSING_EXCEPTION	The system has encountered a licensing exception.
BRIDGE_TYPE_NOT_VALID	The bridge type is not valid.
MEETING_NOT_ACTIVE	The specified meeting is not active at this time.

CHAPTER 4

Call Detail Record API

The Cisco TelePresence Exchange System provides an Application Programming Interface (API) for managing and retrieving call detail records. Familiarity with telephony is required for readers to understand the terms and concepts within this chapter.

This chapter provides a description of the CDR API and includes the following sections:

Getting Started

This section describes how to get started with the CDR API and includes the following topics:

CDR API Overview

The CDR API enables you to accomplish the following tasks:

- Retrieve call detail records from the Cisco TelePresence Exchange System.

  The API provides web services to retrieve CDR records.

- Perform tasks that are related to the API.

  The API provides services that are related to managing the CDR API. These services are described in the "Performing API-Related Tasks" section on page 4-14.

Obtaining the WSDL

You can access the WSDL file for the CDR API at
http://*<DNS name or IP address for your admin server>*:8080/ctxapi/api/v1_2/cdr?wsdl

The WSDL file provides a complete and accurate definition of the API that is supported by your Cisco TelePresence Exchange System. In the event of any discrepancies between the WSDL file and this document, you should follow the WSDL file definition.

API Versions

At time of publication, the latest version of the CDR API is version 1.2, which is accessed by using the WSDL URL listed above.

Cisco TelePresence Exchange System release 1.2 also supports version 1.1 of the CDR API, which you can access by using the following URL:

1.1—http://*<DNS name or IP address for your admin server>*:8080/ctxapi/api/v1_1/cdr?wsdl

For notes on backward compatibility with the version 1.1 API, see Appendix A, "Backward Compatibility."

Note This document describes version 1.2 of the API. The documentation for previous versions of the API is available from Cisco.com at the following URL:
http://www.cisco.com/en/US/products/ps11276/products_programming_reference_guides_list.html

Filtering CDRs

You can set filters for all **get**, **get count**, and **purge** requests. By default, a request operates on all records that are defined for that command unless you set filters to specify a subset of records for the request.

For example, you might want the request to apply only to Meet-Me calls for a single organization within a given month, from the first day of the month until the last day of the month. To accomplish this, you would set the organization and time range parameters appropriately, and leave the other parameters as null.

Pagination

You can define pagination parameters to limit the number of records that the Cisco TelePresence Exchange System returns to the API client, to adapt to a web display or a client buffer.

For information about the parameters that control pagination, see the "Pagination" section on page 1-4.

Retrieving CDR Records

The CDR API provides methods for retrieving call detail records that are stored on the Cisco TelePresence Exchange System. The methods are described in the following sections:

callType

Several of the CDR API service requests and responses include a callType element, which is described in Table 4-1.

Table 4-1 callType Element

Parameter	Type	Description
callType	Enumeration	The callType field contains one of the following string values: • DIRECTDIAL—Direct Dial call. • MEETME_INCOMING—Call leg originates from an endpoint and connects to a Meet-Me or Rendezvous meeting on the Cisco TelePresence Exchange System. • MEETME_OUTGOING—Call leg for a Meet-Me or Rendezvous meeting originates from the Cisco TelePresence Exchange System and connects to an endpoint (for example, dial out calls to H.323, ISDN, or SIP endpoints). **Note** For call records imported from the Cisco Unified Communications Manager, the call type is DIRECTDIAL.

companyScope

Several of the CDR API service requests and responses include a companyScope element, which is described in Table 4-2.

Table 4-2 companyScope Element

Parameter	Type	Description
companyScope	Enumeration	The companyScope field is relevant only for the DIRECTDIAL callType. This field contains one of the following string values: • INTRA_COMPANY—Returns intra-company direct dial calls that reside on Cisco Unified Communications Manager. • INTER_COMPANY—Returns all inter-company direct dial calls.

getCallDetailRecordsCount

The getCallDetailRecordsCount service returns the number of call records that match the filtering criteria that are specified in the request message. You can use this information to adjust the criteria before requesting the actual call records.

The service request includes a getCallDetailRecordsCount element. Table 4-3 describes the parameters in a getCallDetailRecordsCount request. For each parameter that is set to null, the Cisco TelePresence Exchange System ignores the criteria.

Table 4-3 getCallDetailRecordsCount Request

Parameter	Type	Description
startTimeFrom	String	(Optional) Selects a call record if the start time of the call in the call record is equal to or later than the time that is specified in this parameter.
startTimeTo	String	(Optional) Selects a call record if the start time of the call in the call record is earlier than the time that is specified in this parameter.
endTimeFrom	String	(Optional) Selects a call record if the end time of the call in the call record is equal to or later than the time that is specified in this parameter.
endTimeTo	String	(Optional) Selects a call record if the end time of the call in the call record is earlier than the time that is specified in this parameter.
serviceProvider	String	(Optional) Selects a call record if the service provider of the caller or callee matches this name. The service provider name in the call record must match this name exactly.
organization	String	(Optional) Selects a call record if the organization of the caller or callee matches this name. The organization name in the record must match this name exactly.
callTypeList	String	(Optional) List of call types. The service selects a call record if the call type field in the record matches one of the specified values. The call type values are described in Table 4-1.
companyScope	String	(Optional) Selects a call record if the company scope field in the record matches the specified value. Table 4-2 describes the company scope values.

The service returns a getCallDetailRecordsCountResult in the service response. Table 4-4 describes the elements in the getCallDetailRecordsCountResult.

Table 4-4 Get Call Details Records Count Result

Parameter	Type	Description
totalNumberFound	Integer	The total number of records that are returned. The value is zero if the filter criteria did not match any call records.

getCallDetailRecords

The getCallDetailRecords service returns a list of records that meet the criteria that are supplied in the request. Table 4-5 describes the parameters in the service request.

Table 4-5 getCallDetailRecords Request

Parameter	Type	Description
startTimeFrom	String	(Optional) Selects call records for which the start time of the call is equal to or later than the time that is specified in this parameter.
startTimeTo	String	(Optional) Selects call records for which the start time of the call is earlier than the time that is specified in this parameter.
endTimeFrom	String	(Optional) Selects call records for which the end time of the call is equal to or later than the time that is specified in this parameter.
endTimeTo	String	(Optional) Selects call records for which the end time of the call is earlier than the time that is specified in this parameter.
meetingID	String	(Optional) Specifies the meeting identifier. All records that are associated with this meeting ID are retrieved.
serviceProvider	String	(Optional) Selects a call record if the service provider of the caller or callee matches this name. The service provider name in the call record must match this name exactly.
organization	String	(Optional) Selects a call record if the organization of the caller or callee matches this name. The organization name in the record must match this name exactly.
callTypeList	String	(Optional) List of call types. The service selects a call record if the call type field in the record matches one of the specified values. The call type values are described in Table 4-1.
companyScope	String	(Optional) Selects a call record if the company scope field in the record matches the specified value. Table 4-2 describes the company scope combined value.
firstIndex	Integer	(Optional) The index value of the first call record within the response message. Pagination uses this value. **Note** For details on managing how many records the Cisco TelePresence Exchange System returns to the API client, see the "Pagination" section on page 4-2.
numberOfRecords	Integer	(Optional) The maximum number of call records that will be included in the response message. **Note** For details on managing how many records the Cisco TelePresence Exchange System returns to the API client, see the "Pagination" section on page 4-2.

The service returns a getCallDetailRecordsResult in the service response. Table 4-6 describes the getCallDetailRecordsResult.

Table 4-6 getCallDetailsRecordsResult

Parameter	Type	Description
callDetailRecords	Complex	List of apiCallDetailRecord elements. See Table 4-7 for a description of apiCallDetailRecord.
totalNumberFound	Integer	The total number of records returned. The value is zero if the query does not match any rooms.

Table 4-7 describes the apiCallDetailRecord element.

Table 4-7 apiCallDetailRecord Element

Parameter	Type	Description
callType	String	The call type in the record. The call type values are described in Table 4-1.
callee	String	The value of the callee field is dependent on the callType as follows: • DIRECTDIAL—E.164 number or the username part of the SIP URI (the characters that precede the @ symbol in the SIP URI) of the called endpoint (callee). • MEETME_INCOMING—Service number that the calling endpoint (caller) dials to reach the service for the meeting. • MEETME_OUTGOING—E.164 number or the username part of the SIP URI (the characters that precede the @ symbol in the SIP URI) of the called endpoint (callee).
calleeAlternateIdentities	String	Alternate identifier of the called endpoint (callee), such as an IP address.
calleeOrganization	String	The value of the calleeOrganization field is dependent on the callType as follows: • DIRECTDIAL—Organization of the called endpoint (callee). • MEETME_INCOMING—Organization of the meeting scheduler. • MEETME_OUTGOING—Organization of the called endpoint (callee). **Note** If the Cisco TelePresence Exchange System cannot determine a value for this field, the value is null.

Table 4-7 apiCallDetailRecord Element (continued)

Parameter	Type	Description
calleeRegion	String	The value of the calleeRegion field is dependent on the callType as follows: • DIRECTDIAL—Region of the service provider SBC of the called endpoint (callee). • MEETME_INCOMING—Region in which the media bridge resource allocated for the meeting is hosted. • MEETME_OUTGOING—Region of the service provider SBC of the called endpoint (callee). **Note** If the Cisco TelePresence Exchange System cannot determine a value for this field, the value is null.
calleeServiceProvider	String	The value of the calleeServiceProvider field is dependent on the callType as follows: • DIRECTDIAL—Service provider of the called endpoint (callee). • MEETME_INCOMING—Service provider hosting the meeting. • MEETME_OUTGOING—Service provider of the called endpoint (callee). **Note** If the Cisco TelePresence Exchange System cannot determine a value for this field, the value is null.
caller	String	The value of the caller field is dependent on the callType as follows: • DIRECTDIAL—E.164 number or the username part of the SIP URI (the characters that precede the @ symbol in the SIP URI) of the calling endpoint (caller). • MEETME_INCOMING—E.164 number or the username part of the SIP URI (the characters that precede the @ symbol in the SIP URI) of the calling endpoint (caller). • MEETME_OUTGOING—Internal number of the media bridge resource that initiated the dial out call.
callerAlternateIdentities	String	Alternate identifier of the calling endpoint (caller), such as an IP address.

Table 4-7 apiCallDetailRecord Element (continued)

Parameter	Type	Description
callerOrganization	String	The value of the callerOrganization field is dependent on the callType as follows: • DIRECTDIAL—Organization of the calling endpoint (caller). • MEETME_INCOMING—Organization of the calling endpoint (caller). • MEETME_OUTGOING—Organization of the meeting scheduler. **Note** If the Cisco TelePresence Exchange System cannot determine a value for this field, the value is null.
callerRegion	String	The value of the callerRegion field is dependent on the callType as follows: • DIRECTDIAL—Region of the service provider SBC of the calling endpoint (caller). • MEETME_INCOMING—Region of the service provider SBC of the calling endpoint (caller). • MEETME_OUTGOING—Region in which the media bridge resource allocated for the meeting is hosted. **Note** If the Cisco TelePresence Exchange System cannot determine a value for this field, the value is null.
callerServiceProvider	String	The value of the callerServiceProvider field is dependent on the callType as follows: • DIRECTDIAL—Service provider of the calling endpoint (caller). • MEETME_INCOMING—Service provider of the calling endpoint (caller). • MEETME_OUTGOING—Service provider hosting the meeting. **Note** If the Cisco TelePresence Exchange System cannot determine a value for this field, the value is null.
companyScope	String	Specifies the company scope. Table 4-2 describes the company scope values.
conferenceParticipantDisconnect Code	Integer	Numerical value. See Table 4-8 for a description of the parameters that correspond to the numerical values.
conferenceParticipantDisconnect Reason	String	Additional disconnect information, when available.

Table 4-7 apiCallDetailRecord Element (continued)

Parameter	Type	Description
conferenceParticipantJoinTime	String	Time that the meeting participant joined the meeting. The time is in ISO8601 format. **Note** The Cisco TelePresence Exchange System does not consider the participant as having joined the meeting until after any interaction with the IVR prompts is complete.
conferenceParticipantLeaveTime	String	Time that the participant left the meeting. The time is in ISO8601 format.
conferenceParticipantResourceID	String	Concatenation of the resource name and IP address of the Cisco TelePresence Multipoint Switch or Cisco TelePresence MSE 8000 Series system that is involved in the meeting.
disconnectCauseCode	Integer	Q.850 or SIP cause code. **Note** For H.323 and ISDN calls, the value of this field is the same as conferenceParticipantDisconnectCode.
disconnectCauseStr	String	Text description of the disconnect cause. **Note** For H.323 and ISDN calls, the value of this field is the same as conferenceParticipantDisconnectReason.
duration	Integer	Length of time in seconds from the startTime to the endTime of the call.
endTime	String	The time the endpoint hangs up or is disconnected from the call. The time is in UTC time and in ISO8601 format.
guid	String	Globally unique identifier for a call.
interSpDirection	Enumeration	If isInterSP is set to TRUE, the value of interSpDirection can be one of the following: • INCOMING —The call is incoming to the Cisco TelePresence Exchange System from a remote service provider endpoint. Typically, this is a call from a remote service provider endpoint for a meeting hosted on the local Cisco TelePresence Exchange System. • OUTGOING—The call is outgoing from the Cisco TelePresence Exchange System to a remote service provider endpoint.Typically, this is a call from a locally managed endpoint to a meeting hosted on the remote service provider network. **Note** If the Cisco TelePresence Exchange System cannot determine a value for this field, the value is null.

Table 4-7 apiCallDetailRecord Element (continued)

Parameter	Type	Description
isHost	Boolean	Set to TRUE if the participant joined the meeting as the host.
isInterSP	Boolean	Set to TRUE if the callerServiceProvider differs from the calleeServiceProvider. (For direct-dial calls, the callee and caller are associated with different service providers. For Meet-Me or Rendezvous calls, the service provider of the meeting scheduler is different from the service provider of the meeting participant.)
legID	String	Unique identifier that can be used to correlate the call with SIP call logs from other systems such as Cisco Unified Communications Manager.
meetingID	String	Meet-Me or Rendezvous meeting identifier that is unique on the Cisco TelePresence Exchange System. This is the number that the participant dials to access the meeting after dialing the main access number. **Note** When a meeting is purged, the associated meetingID is also purged. A meetingID can be reused after it is purged. **Note** For direct dial calls or if the participant never joins the meeting, the value for this field is null.
meetingInstanceID	Integer	This indicates the instance number of a Rendezvous meeting. The number starts at 0 for the first instance and increments by one for each successive instance of the Rendezvous meeting. For other meeting types, the value is always 0.
meetingKey	String	Unique key that the system database uses to access the Meet-Me or Rendezvous meeting. Scheduling API methods such as getMeeting, modifyMeeting, and cancelMeeting require the meetingKey as a parameter. **Note** For direct dial calls or if the participant never joins the meeting, the value of this field is null.

Table 4-7 apiCallDetailRecord Element (continued)

Parameter	Type	Description
numberOfScreens	Integer	The number of screens that the Cisco TelePresence Exchange System has determined is being used by the call. For information on how the number of screens is determined for direct dial calls, see the "Understanding Number of Screens Reporting for Direct Dial Calls" section in the "Configuring Routing" chapter of the *Administration Guide for the Cisco TelePresence Exchange System Release 1.2*. For information on how the number screens is determined for Meet-Me and Rendezvous meetings, see the "Capacity Consumption for Meet-Me and Rendezvous Meetings" section in the "Media Bridge Resource and Network Protocol Selection, and Capacity Reservation and Allocation" appendix of the *Administration Guide for the Cisco TelePresence Exchange System Release 1.2*.
requiredCapacity	Integer	The number of media bridge resource segments that the Cisco TelePresence Exchange System allocated to the endpoint when it joined the meeting.
serverIP	String	IP address of the call engine.
serverName	String	Hostname of the call engine server that generated the event or call detail record. **Note** When an endpoint joins or leaves a meeting, the call engine server that generates the record may not be the same server that handles the particular endpoint or meeting.
startTime	String	The time that the endpoint is connected in the call, either by dialing in or by the system dialing out to the endpoint. The time is in UTC time and in ISO8601 format.
videoBandwidth	String	Video bandwidth used by the participant, in bits per second. This parameter is relevant only for Meet-Me meeting calls. For a SIP endpoint, the value is determined based on the last maximum negotiated bandwidth from the SIP messages exchanged between the client and MCU. For an H323 or ISDN endpoints, the value is reported from the MCU.

Table 4-8 describes the conferenceParticipantDisconnectCode elements.

Table 4-8 conferenceParticipantDisconnectCode Element

Value	Description
1	Indicates normal disconnect (the participant disconnected from the call).
2	Indicates that the SIP INVITE to the bridge has been rejected.
3	Indicates that the SIP INVITE to the bridge has timed out.
4	Indicates that the outgoing leg to the bridge is in a hung state.
5	Indicates that the meeting ended with a participant connected to the call.
6	Indicates that the caller is already connected to another meeting.
7	Indicates that the caller was rejected because of its presence on a blacklist.
8	Indicates that the bridge resource is offline.
9	Participant was disconnected by a third party.
10	Participant disconnected for an unknown reason.
11	Participant was disconnected because the host disconnected from the meeting.
12	Bridge disconnected because all participants disconnected from the meeting.
14	Participant disconnected because the incorrect capacity was specified by the endpoint and the meeting capacity exceeded the maximum limit.

purgeCallDetailRecords

The Purge Call Detail Records service deletes the set of records that are specified by the criteria in the request and returns the number of call records that were deleted.

Note We recommend that you implement a regular CDR collection strategy in conjunction with the automatic CDR purging feature rather than manually purging CDRs with the Purge Call Detail Records service. For more information, see the "Retrieving CDR Records" section on page 4-2.

Table 4-9 describes the parameters in the service request.

Table 4-9 purgeCallDetailRecordsCount Request

Parameter	Type	Description
startTimeFrom	String	(Optional) Selects call records for which the start time of the call is equal to or later than the time that is specified in this parameter.
startTimeTo	String	(Optional) Selects call records for which the start time of the call is earlier than the time that is specified in this parameter.
endTimeFrom	String	(Optional) Selects call records for which the end time of the call is equal to or later than the time that is specified in this parameter.
endTimeTo	String	(Optional) Selects call records for which the end time of the call is earlier than the time that is specified in this parameter.

Table 4-9 purgeCallDetailRecordsCount Request

Parameter	Type	Description
serviceProvider	String	(Optional) Selects a call record if the service provider of the caller or callee matches this name. The service provider name in the call record must match this name exactly.
organization	String	(Optional) Selects a call record if the organization of the caller or callee matches this name. The organization name in the record must match this name exactly.
callTypeList	Enumeration	(Optional) You can specify the call types of the records to be purged. The call type values are described in Table 4-1.
companyScope	String	(Optional) Selects a call record if the company scope field in the record matches the specified value. Table 4-2 describes the company scope values.

Table 4-10 describes the elements in the Purge Call Detail Records result.

Table 4-10 Purge Call Details Records Result

Parameter	Type	Description
totalNumberPurged	Integer	The total number of records that were deleted. The value is zero if the query did not match any call records.

Best Practices for Retrieving CDRs

By default, the Cisco TelePresence Exchange System retains CDRs for up to 30 days from the recorded end time of the CDR. On the Global Configuration page in the administration console, you can configure the data retention period for any length between 1 and 60 days. The system automatically purges any CDRs that exceed the retention period. If the total number of CDRs retained by the system reaches 100,000, the system retains only the most recent 100,000 records and automatically purges the rest.

We recommend that you collect CDR data at least once per day, or for a more resilient scheme, at regular periods throughout the day. For example, the following scheme collects data at hourly intervals:

- At 12:17, retrieve CDRs with endTimeFrom 09:00 and endTimeTo 10:00.
- At 13:17, retrieve CDRs with endTimeFrom 10:00 and endTimeTo 11:00.
- At 14:17, retrieve CDRs with endTimeFrom 11:00 and endTimeTo 12:00.

Each subsequent query should request records starting from the last successful poll. Therefore, if there are a few network glitches or other reasons why the previous polls failed, then the subsequent query needs to span more than one hour. If in the above example, the network was dead during the 12:17 and 13:17 retrievals and connectivity resumed shortly before the 14:17 retrieval, then the client portal would request the records from 9:00 to 12:00 at that retrieval rather than the records from 11:00 to 12:00.

The formula for this retrieval strategy is summarized as follows:

At XX:17, retrieve CDRs with endTimeFrom [last successful CDR time] and endTimeTo [XX-2]:00

If there are ongoing concerns about retrieval failures, consider adjusting to a wider buffer of time between the end of the period being retrieved and the time of the query (for example, endTimeTo is XX-4 rather than XX-2).

Caution If you do not regularly collect CDR data, the system may automatically purge useful CDR data that you have not collected.

Performing API-Related Tasks

Each of the Cisco TelePresence Exchange System APIs supports a common set of methods, which are described in the following sections:

- echo, page 4-14
- getVersion, page 4-14

echo

The Echo service allows the system to confirm that the Scheduling API service is active.

For additional details about this service, see the "echo" section on page 1-5.

getVersion

The Get Version service returns the product software version. For additional details about this service, see the "getVersion" section on page 1-5.

Error Handling

The Cisco TelePresence Exchange System API communicates an error condition to the client by returning a SOAP fault message. The fault message contains an APICdrException, which is described in Table 4-11.

Table 4-11 APICdrException

Parameter	Type	Description
erc	String	Exception return code, as described in Table 4-12.
message	String	A text message that provides additional information about the exception. The content of the message varies depending on the exception code.

Table 4-12 describes the CDR exception values.

Table 4-12 CDR Exception Values

Exception Value	Description
ERC_EXCEPTION	General exception. See the message element for more information about the exception.
ERC_MISSING_PARAMETER	One or more of the required parameters is missing.
ERC_INVALID_VALUE	One or more of the supplied parameters is invalid. The message text lists the invalid parameters.
ERC_INVALID_DATE_TIME	The supplied date/time string is not valid.
ERC_SERVICE_PROVIDER_NOT_FOUND	An invalid service provider name was specified in the request.
ERC_ORGANIZATION_NOT_FOUND	An invalid organization name was specified in the request.
ERC_MEETING_NOT_FOUND	An invalid meeting ID was specified in the request.

APPENDIX A

Backward Compatibility

This appendix provides notes on backward compatibility with Cisco TelePresence Exchange System Release 1.1, and includes the following sections:

Preparing For Backward Compatibility

Before upgrading to Cisco TelePresence Exchange System Release 1.2, verify that you have retrieved all past meeting records, call detail records (CDRs) and associated event records.

Caution Any previous Release 1.1 records that remain will be purged during the upgrade process. In addition to CDRs, this includes records for Meet-Me meetings that occurred 30 or more days in the past, future Meet-Me meetings that have been cancelled, and Rendezvous meetings that have been cancelled.

Release 1.2 enforces automatic meeting purging in addition to the automatic CDR purging that was enforced in Release 1.1. We recommend that you set up a regular meeting retrieval strategy to back up data before it is purged. For more information on setting up a strategy for retrieving meeting records, see the "Best Practices for Retrieving Meeting Data" section on page 2-64. For more information on setting up a strategy for retrieving call detail records, see the "Best Practices for Retrieving CDRs" section on page 4-13.

Enabling Backward Compatibility

After upgrading to Cisco TelePresence Exchange System Release 1.2, you must explicitly enable the Release 1.1 API in order to use backward compatibility.

Procedure

To enable backward compatibility, do the following procedure:

Step 1 From the navigation pane, choose **System > Backward Compatibility**.

The Backward Compatibility window is displayed.

Step 2 In the SOAP API Versions box, check the **1.1** check box.

Step 3 To save your changes, click **Save**.

Using the Release 1.1 APIs with a Release 1.2 System

Clients using the Release 1.1 APIs can successfully schedule, modify, and cancel meetings and collect call detail records on a Cisco TelePresence Exchange System Release 1.2 system. The steps will be typically:

1. The system has an operational scheduling portal using the Release 1.1 API.
2. The system is upgraded to Release 1.2. Existing meetings are correctly migrated to the new Release 1.2 schemas.
3. The existing scheduling portal based on the Release 1.1 APIs continues to work, with both newly created meetings and meetings migrated during the upgrade to Release 1.2. The existing scheduling portal is used while the service provider finishes developing the Release 1.2 compatible portal.
4. The existing scheduling portal is replaced by the new scheduling portal based on Release 1.2. New meetings are created successfully and previously scheduled meetings can be modified successfully.

Here are a couple of caveats when using an older API with a newer release:

- None of the user-facing features that were added Release 1.2 are accessible through the Release 1.1 API. This includes idle meeting cleanup for guaranteed Meet-Me meetings and minimum media bridge resource allocation for best-effort meetings.
- For scheduling failures, the English text message may contain references to new Release 1.2 concepts that are not present in Release 1.1. For example, when scheduling a Rendezvous meeting with an invalid value for number of endpoints (for example, a negative number), the error text returned will refer to an invalid number of screens.
- The Cisco TelePresence Exchange System does not support hybrid-mode operation (using the Release 1.1 API to modify meetings that were created either from the Release 1.2 administration console or the Release 1.2 API). The portal client application will likely maintain its own data for each scheduled meeting and only allow modifications on meetings that it knows about. Therefore it will not typically be aware of any meetings scheduled through the Cisco TelePresence Exchange System administration console “back door.” The only way that the portal client can know of these meetings is to separately query for meetings using broad criteria (e.g. created within a certain time interval).

Other than these caveats, Release 1.1 portal clients should be able to operate normally against a Release 1.2 system.

Changes to the APIs Between Release 1.1 and Release 1.2

The following sections describe the changes between the Release 1.1 and Release 1.2 APIs.

- Scheduling API Changes, page A-3
- Active Meeting Management API Changes, page A-5
- CDR API Changes, page A-7

Scheduling API Changes

This section describes the changes to the Scheduling API between Release 1.1 and Release 1.2:

- Changes to the Scheduling API for New Features, page A-3
- Changes to the Scheduling API for Existing Features, page A-3
- Fields Deprecated from the Release 1.2 Scheduling API, page A-4

Changes to the Scheduling API for New Features

Idle Meeting Cleanup for Guaranteed Meet-Me Meetings

In Release 1.2, you can configure the number of minutes that the system will wait before automatically ending or canceling a guaranteed Meet-Me meeting that has been empty (no participants are consuming bridge resources for the meeting) so that the bridge resources associated with the meeting can be made available for use by other guaranteed meetings. This capability is not provided in the Release 1.1 API.

Minimum Media Bridge Resource Allocation for Best-Effort Meetings

In Release 1.2, you can configure the minimum number of screens that the system will use to determine the minimum amount of bridge capacity to allocate to the best-effort meeting when the first participant joins. This capability is not provided in the Release 1.1 API.

Changes to the Scheduling API for Existing Features

Rendezvous Meetings

In Release 1.1, Rendezvous meeting capacity was determined using number of endpoints and additional capacity. For Release 1.2, meeting capacity is determined using number of screens and additional capacity.

Drop Participants on Meeting Host Exit Behavior and Inheritance Settings

In Release 1.1, the drop participant on meeting host exit behavior and inheritance settings were captured in one API parameter. In Release 1.2, the drop participant on meeting host exit behavior and inheritance settings are separated into two API parameters—one to indicate whether the behavior is inherited, and the other to enable or disable the behavior.

Meeting Extensions and Inheritance Settings

In Release 1.1, enabling meeting extensions and defining their inheritance settings were captured in one API parameter. In Release 1.2, enabling meeting extensions and defining their inheritance settings are separated into two API parameters-one to indicate whether meeting extensions is inherited, and the other to enable or disable meeting extensions.

Endpoint and Media Profile Lists

In Release 1.1, when modifying a meeting, you must specify the endpoint and media profile lists completely, even if there are no changes, and any endpoints or media profiles that are excluded from the list will be removed from the meeting. In Release 1.2, the endpoint and media profile lists are defined within containers. During modification, you may specify a null value for the container if there are no additions to or removals from the contained list.

To remove one or more endpoints from a meeting via the Scheduling API, you pass the list container in the modify method without the endpoint. For example, for a meeting that includes the endpoint list [A, B, C] at scheduling time, you remove endpoints B and C by calling the modify method with a list containing only [A]. To remove all endpoints from the meeting, send an empty list. To add endpoint D, you would specify a list of [A, B, C, D].

Region Added to Get Reservation Types Result and apiMeeting Object

In Release 1.2, the Get Reservation Types service returns a list of regions associated with each reservation type that meets the criteria supplied in the request. In addition, the apiMeeting object (returned when you schedule a meeting or in response to a getMeetings query) includes the key of the region in which the meeting is hosted.

This information is not provided in these situations in the Release 1.1 API.

Resource Groups and Routes

In Release 1.2, the following new methods have been added for obtaining configured information:

- getResourceGroups—Returns the resource groups that meet the criteria that are supplied in the request.
- getRoutes—Returns the routes that meet the criteria that are supplied in the request.

In the Release 1.1 API, these methods are not available.

Meeting Start Time and End Time

The parameter dateTimeStr has been replaced with the startTime parameter in the following objects and methods:

- apiMeeting
- scheduleMeeting and modifyMeeting
- scheduleRemoteMeeting and modifyRemoteMeeting
- scheduleTwoPartyDirectMeeting and modifyTwoPartyDirectMeeting

End Time, Region, and Service Number Information Added to apiMeeting Object

In addition to the attributes added for new 1.2 features and enhancements, the following new attributes have been added to the apiMeeting object in the Release 1.2 API:

- additionalCapacity
- endTime
- regionKey
- serviceNumberKey

Whitelist Groups Key

In Release 1.2, the apiWhiteListGroupResult includes the key for the whitelist group. The key is an parameter that can be used in subsequent requests to uniquely identify the whitelist group.

In the Release 1.1 API, the key is not provided in the result.

Fields Deprecated from the Release 1.2 Scheduling API

The following attributes have been deprecated in Release 1.2.

- apiOrganization:

  - dropParticipantsOnHostExit
  - meetingExtension
- apiServiceProvider:
  - dropParticipantsOnHostExit
  - meetingExtension
- scheduleMeeting:
  - dateTimeStr
  - dropParticipantsOnHostExitType
  - meetingExtensionEnabledType
- modifyMeeting:
  - dateTimeStr
  - dropParticipantsOnHostExitType
  - meetingExtensionEnabledType
- scheduleRendezvousMeeting:
  - dropParticipantsOnHostExitType
  - maximumNumberOfEndpoints
- modifyRendezvousMeeting:
  - dropParticipantsOnHostExitType
  - maximumNumberOfEndpoints
- scheduleRemoteMeeting:
  - dateTimeStr
- modifyRemoteMeeting:
  - dateTimeStr
- scheduleTwoPartyDirectMeeting:
  - dateTimeStr
- modifyTwoPartyDirectMeeting:
  - dateTimeStr
- apiMeeting:
  - dateTimeStr
  - dropParticipantsOnHostExitType
  - meetingExtensionEnabledType

Active Meeting Management API Changes

This section describes the changes to the Scheduling API between Release 1.1 and Release 1.2:

- Changes to the Active Meeting Management API for New Features, page A-6
- Changes to the Active Meeting Management API for Existing Features, page A-6
- Fields Deprecated from the Release 1.2 Active Meeting Management API, page A-6

Changes to the Active Meeting Management API for New Features

Idle Meeting Cleanup for Guaranteed Meet-Me Meetings

In Release 1.2, you can configure the number of minutes that the system will wait before automatically ending or canceling a guaranteed Meet-Me meeting that has been empty (no participants are consuming bridge resources for the meeting) so that the bridge resources associated with the meeting can be made available for use by other guaranteed meetings. This capability is not provided in the Release 1.1 API.

Minimum Media Bridge Resource Allocation for Best-Effort Meetings

In Release 1.2, you can configure the minimum number of screens that the system will use to determine the minimum amount of bridge capacity to allocate to the best-effort meeting when the first participant joins. This capability is not provided in the Release 1.1 API.

Changes to the Active Meeting Management API for Existing Features

Current Meeting Status

The isLocked attribute is returned in the GetCurrentMeetingStatusResult when using the Release 1.2 API. The attribute is not returned when using the Release 1.1 API.

Rendezvous Meetings

In Release 1.1, Rendezvous meeting capacity was determined using number of endpoints and additional capacity. For Release 1.2, meeting capacity is determined using number of screens and additional capacity.

Meeting Extensions and Inheritance Settings

In Release 1.1, enabling meeting extensions and defining their inheritance settings were captured in one API parameter. In Release 1.2, enabling meeting extensions and defining their inheritance settings are separated into two API parameters-one to indicate whether meeting extensions is inherited, and the other to enable or disable meeting extensions.

Endpoint and Media Profile Lists

In Release 1.1, when modifying a meeting, you must specify the endpoint and media profile lists completely, even if there are no changes, and any endpoints or media profiles that are excluded from the list will be removed from the meeting. In Release 1.2, you may specify a null value for the endpoint or media profiles if there are no changes to the list.

Parameters Added to participantsInCurrentMeeting Object

The following new attributes have been added to the participantsInCurrentMeeting object (returned as part of the apiMeetingStatus object) in the Release 1.2 API:

- cic
- requiredCapacity

These attributes are not returned in the participantsInCurrentMeeting object when using the Release 1.1 API.

Fields Deprecated from the Release 1.2 Active Meeting Management API

The newMeetingExtensionEnabledType parameter has been deprecated in Release 1.2.

CDR API Changes

This section describes the changes to the CDR API between Release 1.1 and Release 1.2:

- Changes to the CDR API for New Features, page A-7
- Changes to the CDR API for Existing Features, page A-7
- Fields Deprecated from the Release 1.2 CDR API, page A-7

Changes to the CDR API for New Features

There are no changes to the CDR API for new Release 1.2 features.

Changes to the CDR API for Existing Features

InterSP Call Information

In Release 1.2, the apiCallDetailRecord element returned by the getCallDetailRecords service includes additional attributes isInterSp and interSpDirection, which indicate whether or not the callee and caller are associated with different service providers, and whether or not an interSP call is incoming from the remote endpoint to the system, or outgoing from the system to the remote endpoint.

Number of Screens

In Release 1.2, the numberOfScreens parameter is added to the apiCallDetailRecord element. This parameter reports the number of screens that the Cisco TelePresence Exchange System has determined is being used by the call.

legID

In Release 1.2, the apiCallDetailRecord element returned by the getCallDetailRecords service includes the legID attribute. This attribute can be used to correlate the call with SIP call logs from other systems such as Cisco Unified Communications Manager.

Fields Deprecated from the Release 1.2 CDR API

The disconnectData parameter in the apiCallDetailRecord element has been deprecated in Release 1.2.