API User Guide for the Cisco TelePresence Exchange System Release 1.1

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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.

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 February 11, 2011 and the time of 12:00 PM PDT as follows:

```
2011-11-02T19:00:00-07:00
```

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, 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.

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

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.

CHAPTER 2

Scheduling API

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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:

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 2-7.

- 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 2-21.

- 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 2-44.

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.

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.

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. After the resource group has been created, you associate specific media bridge resources to the group. Based on the set of requirements configured for a 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.

The reservation type determines whether the system provides a guaranteed or best-effort level of service when reserving a media bridge resource for a Meet-Me or Rendezvous meeting. The reservation type levels of service are defined as follows:

- Guaranteed—When you create a guaranteed Meet-Me meeting, the system reserves media bridge resources for the specified meeting duration. For a guaranteed Rendezvous meeting, the system reserves resources for the meeting that can never be used for other meetings.
- Best-effort—When you create a best-effort Meet-Me or Rendezvous meeting, the system does not reserve any media bridge resources in advance for the meeting. Instead, the system allocates resources when the first participant joins the meeting and deallocates resources when the last participant leaves the meeting. For a best-effort meeting, the system may fail to allocate resources to the meeting because all the available resources may be in use by other best-effort meetings for the given time period.

You configure Meet-Me meetings, Rendezvous meetings, and resource groups to be associated with specific reservation types. When creating a resource group, you 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 higher likelihood of successful meetings.

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 2-5 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, 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.
- Unprovisioned endpoints—Endpoints for which none of the configuration details are known by the administrator except the name of the meeting scheduler for the endpoint. Through the administration console you can reserve bandwidth for unprovisioned endpoints on the service provider network. This allows the endpoint to connect with other known endpoints within the network that are scheduled for the same meeting. This capability is useful for intercompany meetings.
- Remote endpoints—Endpoints for which no configuration details are known. Remote endpoints are endpoints that join the meeting from another service provider network. Configuring a remote endpoint on the Cisco TelePresence Exchange System reserves capacity for the endpoint on the service provider network on which it is resident. The Cisco TelePresence Exchange System automatically determines and reserves the capacity to support these interprovider meetings.

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

Three factors determine how many segments the Cisco TelePresence Exchange System reserves for an endpoint:

- 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 Endpoint Capacity appendix of the *Installation and Administration Guide for the Cisco TelePresence Exchange System* at http://www.cisco.com/en/US/docs/telepresence/tx/exchange_system/1_1/install_admin/book/b_install_admin.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.

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. Typically, a Meet-Me meeting is associated with a guaranteed reservation type. 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.
- 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.
- 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. Typically, a Rendezvous meeting is scheduled with a best-effort reservation type. With a best-effort reservation type, the Cisco TelePresence Exchange System does not reserve any media resources for a Rendezvous 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.

Meeting Extensions

You can optionally configure a 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.

Inherited Values

The MeetingExtension element and the DropParticipantOnHostExit element are examples of enumerated types which allow a value of INHERIT.

If you set the value in the meeting to INHERIT, the meeting inherits the behavior defined by the organization hosting the meeting. In the organization element, INHERIT indicates that the organization will inherit the behavior from the service provider. A value of INHERIT is not valid in the service provider element.

If you set a value other than INHERIT for a meeting, the value in the meeting will override the value set for the organization. Similarly, setting a value other than INHERIT for the organization will override the value set for the service provider.

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_1/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.

API Versions

At time of publication, the latest version of the Scheduling API is version 1.1, which is accessed by using the WSDL URL listed above.

Cisco TelePresence Exchange System also supports version 1.0 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/sched?wsdl

For notes on backward compatibility with Cisco TelePresence Exchange System Release 1.0, see Appendix A, “Backward Compatibility.”

Note This document describes version 1.1 of the API. The documentation for version 1.0 of the API is available from Cisco.com at the following URL: http://www.cisco.com/en/US/docs/telepresence/tx/exchange_system/1_0/api_guide/api_guide_101.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).

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:

- getServiceProviders, page 2-18
- getWhiteListGroups, page 2-20

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 2-1 describes the parameters in the service request.

Table 2-1 Get Endpoint Availability Request

Parameter	Type	Description
endpointKeys	String	Enter the key for one or more endpoints.
dateTimeStr	Date/Time, ISO 8601	Enter the starting date and time of the duration for which endpoint availability will be reported.
duration	int	Enter the length (in minutes) of the duration for which endpoint availability will be reported.
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 2-2 describes the Get Endpoints Result.

Table 2-2 Get Endpoint Availability Result

Parameter	Type	Description
endpointAvailability	Complex	List of endpointAvailability elements. See Table 2-3 for a description of endpointAvailability element.

Table 2-3 describes the endpointAvailability element.

Table 2-3 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).

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 2-50.
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.

Table 2-6 apiEndpoint Element (continued)

Parameter	Type	Description
organizationKey	String	Key value of this endpoint's organization
supportOBTP	Boolean	Indicates that the endpoint supports OBTP functionality.

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 2-50.

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.

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 2-50.
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.

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.

Table 2-13 apiOrganization Type (continued)

Parameter	Type	Description
dropParticipantsOnHostExit	Enumeration	If the host role is not enabled, participants will remain on the call regardless of who drops from the call before them. If the host role IS enabled, this parameter defines the default action for participants when the host exits a meeting. **Note** Setting DROP or DO NOT DROP for a meeting will override the value set for the organization. Enter one of the string values: DO NOT DROP—Participants remain in the meeting. DROP—Participants are dropped and the meeting ends. INHERIT—The setting defined in the service provider determines the drop behavior.
enforceWhitelisting	Boolean	Set to TRUE if the Whitelist is enforced for this organization.
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	Maximum number of meeting extensions allowed for any given meeting. The maximum number of extensions times the extension period must not exceed 24 hours.
meetingExtension	Enumeration	Determines whether meetings in this organization can be extended. **Note** The MeetingExtension value of a meeting will override the value set for an organization. Enter one of the string values: DISABLE—The system will not extend meetings in this organization. ENABLE—The system will extend meetings in this organization if resources are available near the end of the meeting. INHERIT—The setting defined in the service provider determines the extension behavior.

Table 2-13 apiOrganization Type (continued)

Parameter	Type	Description
meetingExtensionPeriod	Integer	Length of time (in minutes) of a meeting extension period. This value must be a multiple of 15.
minimizeCapacity	Boolean	If set to TRUE, the system reserves fewer ports of bridge capacity for the single-screen systems 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 reserve ports to accommodate additional participants (or unregistered participants with multi-screen systems).
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.

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 2-15 describes the parameters for the service request.

Table 2-15 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.
dateTimeStr	Date/time string	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 2-16 describes the Get Ports by Organization response.

Table 2-16 Get Ports by Organization Response

Parameter	Type	Description
APIPortsList	Complex	List of apiPorts elements. The apiPorts elements are described in Table 2-17. For each organization (or the specified organization), the service returns one apiPorts element for each 15-minute interval in the requested duration.

Table 2-17 describes the apiPorts element.

Table 2-17 apiPorts Element

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

getRegions

The Get Regions service returns a list of regions that meet the query criteria that are supplied in the request. Table 2-18 describes the parameters for the service request.

Table 2-18 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 2-50.

Table 2-19 describes the Get Regions service response.

Table 2-19 Get Regions Result

Parameter	Type	Description
regions	Complex	List of zero or more apiRegion elements. The apiRegion element is described in Table 2-20.
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 2-20 describes the apiRegion element.

Table 2-20 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 2-21 describes the parameters for the service request.

Table 2-21 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 2-19.

getReservationTypes

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

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

Table 2-22 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 2-50.

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

Table 2-23 Get Reservation Types Result

Parameter	Type	Description
reservationTypes	Complex	List of apiReservationType. 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 apiReservationType element.

Table 2-24 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.

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 2-25 describes the parameters in the service request.

Table 2-25 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 2-50.

The service returns a Get Service Numbers Result in the service response. Table 2-26 describes the result.

Table 2-26 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 2-27 describes the apiServiceNumber element.

Table 2-27 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 2-28 describes the parameters for the service request.

Table 2-28 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 2-50.

Table 2-29 describes the service response.

Table 2-29 Get Service Providers Response

Parameter	Type	Description
serviceProviders	Complex	List of apiServiceProvider elements. The apiServiceProvider type is described in Table 2-30. 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 2-30 describes the apiServiceProvider element.

Table 2-30 apiServiceProvider Element

Parameter	Type	Description
description	String	Text description of the service provider.
dropParticipantsOnHostExit	Enumeration	If the host role is not enabled, participants will remain on the call regardless of who drops from the call before them. If the host role IS enabled, this parameter defines the default action for participants when the host exits a meeting. **Note** Setting DROP or DO NOT DROP for the organization or for a meeting will override the value set for the service provider. Enter one of the string values: DO NOT DROP—Participants remain in the meeting. DROP—Participants are dropped and the meeting ends.
helpDeskNumber	String	Service desk phone number for the service provider.
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	Maximum number of meeting extensions allowed for any given meeting. The maximum number of extensions times the extension period must not exceed 24 hours.

Table 2-30 apiServiceProvider Element

Parameter	Type	Description
meetingExtension	Enumeration	Determines whether meetings in this service provider can be extended. **Note** A value of ENABLE or DISABLE in the organization element or a meeting element will override the value set for the service provider. String values: DISABLE—meeting extensions not allowed. ENABLE—meeting extensions allowed.
meetingExtensionPeriod	Integer	Length of time (in minutes) of a meeting extension period. This value must be a multiple of 15.
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 2-31 describes the parameters for the service request.

Table 2-31 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 2-50.

Table 2-32 describes the parameters for the service response.

Table 2-32 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 2-33.
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 2-33 describes the apiWhiteListGroup type.

Table 2-33 apiWhiteList Group Type

Parameter	Type	Description
description	String	Text description of the whitelist group.
name	String	Text name of the whitelist group,

Table 2-33 apiWhiteList Group Type (continued)

Parameter	Type	Description
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.

Scheduling and Managing Meetings

The following sections describe the services for scheduling and managing 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 delete the meeting.

Table 2-34 describes the parameters for the service request.

Table 2-34 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. The email address is displayed on the IP phone in the meeting room.
schedulerOrganizationKey	String	(Optional) Enter the key value for the meeting scheduler's organization. **Note** This field is NOT optional if any field is set to INHERIT its value from the organization. Also, any configured whitelist policies will not be applied when attendees join the meeting if you do not specify the scheduler's organization.
subject	String	Enter the subject of the meeting.
dateTimeStr	Date/time string	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.
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 2-43.

Table 2-34 Schedule Meeting Request (continued)

Parameter	Type	Description
unprovisionedEndpointList	Complex	(Optional) Enter a list of apiUnprovisionedEndpoint elements. See the "Unprovisioned Endpoint Fields" section on page 2-44.
remoteEndpointList	Complex	(Optional) Enter a list of apiRemoteEndpoint elements. See the "Remote Endpoint Fields" section on page 2-44.
additionalCapacity	Integer	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	Set to true to define a host for this meeting.
hostPin	String	(Optional) Enter a numerical host PIN for the meeting. By default, the system will create a random PIN. **Note** Only set a host PIN if the host role is enabled.
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.

Table 2-34 Schedule Meeting Request (continued)

Parameter	Type	Description
meetingExtensionEnabledType	Enumeration	Determines whether this meeting can be extended. **Note** A value of ENABLE or DISABLE in the meeting element will override the value set for the organization or service provider. String values: DISABLE—meeting extensions not allowed. ENABLE—meeting extensions allowed. INHERIT—The setting defined in the organization determines the behavior.
meetingExtensionPeriod	Integer	Enter the length of time (in minutes) of a meeting extension period. This value must be a multiple of 15.
maxMeetingExtensionsAllowed	Integer	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.
dropParticipantsOnHostExit	Enumeration	Defines the default action for participants when the host exits a meeting. **Note** Setting DROP or DO NOT DROP for a meeting will override the value set for the organization. Enter one of the string values: DO NOT DROP—Participants remain in the meeting. DROP—Participants are dropped and the meeting ends. INHERIT—The setting defined in the organization determines the drop behavior. **Note** If the host role is not enabled, participants will remain on the call regardless of who drops from the call before them.

The service responds with a scheduleMeetingResult, which contains an apiMeeting element. The apiMeeting element is described in Table 2-46.

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 participants join the meeting, and 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 2-35 describes the parameters for the service request.

Table 2-35 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. The email address is displayed on the IP phone in the meeting room.
schedulerOrganizationKey	String	(Optional) Enter the key of the scheduler's organization. **Note** This field is NOT optional if any field is set to INHERIT its value from the organization. Also, any configured whitelist policies will not be applied when attendees join the meeting if you do not specify the scheduler's organization.
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.

Table 2-35 Schedule Rendezvous Meeting Request (continued)

Parameter	Type	Description
maximumNumberOfEndpoints	Integer	Enter the maximum number of endpoints that can join the meeting. **Note** At attend time, the system does not limit the actual number of endpoints that can join the meeting to this value. As long as the reserved capacity is available, more endpoints can join if the endpoints have fewer screens than the "worst-case" scenario accounted for in the capacity calculation. For more information on the calculation, see the "Organization Bandwidth, Endpoint Capacity, Protocols and Bridge Selection" appendix in the *Installation and Administration Guide for the Cisco TelePresence Exchange System Release 1.1,* at http://www.cisco.com/en/US/docs/telepresence/tx/exchange_system/1_1/install_admin/book/b_install_admin.html.
additionalCapacity	Integer	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.
maxInstanceDuration	Integer	Maximum duration (in minutes) of a Rendezvous meeting.
isHostRoleEnabled	Boolean	Set to true to define a host for this meeting.
hostPin	String	(Optional) Enter a numerical host PIN for the meeting. By default, the system will create a random PIN. **Note** Only set a host PIN if the host role is enabled.
serviceNumberKey	String	Enter the key of the service number for this meeting. Typically, a different service number is defined for each supported language.

Table 2-35 Schedule Rendezvous Meeting Request (continued)

Parameter	Type	Description
reservationTypeKey	String	Enter the key of the reservation type for this 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).
dropParticipantsOnHostExit	Enumeration	If the host role is not enabled, participants will remain on the call regardless of who drops from the call before them. If the host role IS enabled, this parameter defines the default action for participants when the host exits a meeting. **Note** Setting DROP or DO NOT DROP for a meeting will override the value set for the organization. Enter one of the string values: DO NOT DROP—Participants remain in the meeting. DROP—Participants are dropped and the meeting ends. INHERIT—The setting defined in the organization determines the drop behavior.

The service responds with a scheduleMeetingResult, which contains an apiMeeting element. The apiMeeting element is described in Table 2-46.

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 2-36 describes the parameters for the Schedule Remote Meeting service request.

Table 2-36 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. The email address is displayed on the IP phone in the meeting room.
subject	String	Enter the subject of the meeting.
dateTimeStr	Date/time string	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 2-43. **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 2-44. **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 2-46.

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.

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 2-37 describes the parameters for the service request.

Table 2-37 Schedule Two Party Meeting Request

Parameter	Type	Description
schedulerEmail	String	Enter the email address of the contact person for the meeting. The email address is displayed on the IP phone in the meeting room.
subject	String	Enter the subject of the meeting.
dateTimeStr	Date/time string	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 2-43. **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 2-43.

The service responds with a scheduleMeetingResult, which contains an apiMeeting element. The apiMeeting element is described in Table 2-46.

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 2-38 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.

Note When modifying a meeting, the endpoint and media profile lists must be specified completely, even if there are no changes. A null value cannot be used to indicate that there are no changes to the endpoint or media profile lists.

Table 2-38 Modify Meeting Request

Parameter	Type	Description
meetingKey	String	Enter the meeting key, which is the unique identifier of a specific meeting.
schedulerOrganizationKey	String	(Optional) Enter the key value for the meeting scheduler's organization. **Note** This field is NOT optional if any field is set to INHERIT its value from the organization. Also, any configured whitelist policies will not be applied when attendees join the meeting if you do not specify the scheduler's organization. **Note** If you specify a null value for the schedulerOrganizationKey, the scheduler's organization will be removed from the meeting. (This can only be done in situations where the field is not required.)
subject	String	(Optional) Enter the subject of the meeting.
dateTimeStr	Date/time string	(Optional) 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.

Table 2-38 Modify Meeting Request (continued)

Parameter	Type	Description
provisionedEndpointList	Complex	Enter a list of apiProvisionedEndpoint elements. See the "Provisioned Endpoint Fields" section on page 2-43. **Note** The list must include all of the provisioned endpoints for the meeting (not just the added and changed endpoints). Any of the original endpoints that are not included in the list will be removed from the meeting.
unprovisionedEndpointList	Complex	Enter a list of apiUnprovisionedEndpoint elements. See the "Unprovisioned Endpoint Fields" section on page 2-44. **Note** The list must include all of the unprovisioned endpoints for the meeting (not just the added and changed endpoints). Any of the original endpoints that are not included in the list will be removed from the meeting.
remoteEndpointList	Complex	Enter a list of apiRemoteEndpoint elements. See the "Remote Endpoint Fields" section on page 2-44. **Note** The list must include all of the remote endpoints for the meeting (not just the added and changed endpoints). Any of the original endpoints that are not included in the list will be removed from the meeting.
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. **Note** The list must include all of the media profiles for the meeting (not just the added and changed media profiles). Any of the original media profiles that are not included in the list will be removed from the meeting.
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.

Table 2-38 Modify Meeting Request (continued)

Parameter	Type	Description
isHostRoleEnabled	Boolean	(Optional) Set this element to TRUE to define a host for this meeting.
hostPin	String	(Optional) Enter a numerical host PIN for the meeting. By default, the system will create a random PIN. **Note** Only set a host PIN if the host role is enabled.
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.
meetingExtensionEnabledType	Enumeration	(Optional) Determines whether this meeting can be extended. **Note** A value of ENABLE or DISABLE in the meeting element will override the value set for the organization or service provider. String values: DISABLE—meeting extensions not allowed. ENABLE—meeting extensions allowed. INHERIT—The setting defined in the organization determines the behavior.
meetingExtensionPeriod	Integer	(Optional) Enter the length of time (in minutes) of a meeting extension period. This value must be a multiple of 15.

Table 2-38 Modify Meeting Request (continued)

Parameter	Type	Description
maxMeetingExtensionsAllowed	Integer	(Optional) 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.
dropParticipantsOnHostExit	Enumeration	(Optional) If the host role is not enabled, participants will remain on the call regardless of who drops from the call before them. If the host role IS enabled, this parameter defines the default action for participants when the host exits a meeting. **Note** Setting DROP or DO NOT DROP for a meeting will override the value set for the organization. Enter one of the string values: DO NOT DROP—Participants remain in the meeting. DROP—Participants are dropped and the meeting ends. INHERIT—The setting defined in the organization determines the drop behavior.

The service responds with a modifyMeetingResult, which contains an apiMeeting element. The apiMeeting element is described in Table 2-46.

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 2-39 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.

Note When modifying a Rendezvous meeting, the allowed host endpoint list and media profile list must be specified completely if either is already defined for the meeting, even if there are no changes. A null value cannot be used to indicate that there are no changes to the allowed host endpoint or media profile lists.

Table 2-39 Modify Rendezvous Meeting Request

Parameter	Type	Description
meetingKey	String	Enter the meeting key, which is the unique identifier of a specific meeting.
schedulerOrganizationKey	String	(Optional) Enter the key value for the meeting scheduler's organization. **Note** This field is NOT optional if any field is set to INHERIT its value from the organization. Also, any configured whitelist policies will not be applied when attendees join the meeting if you do not specify the scheduler's organization. **Note** If you specify a null value for the schedulerOrganizationKey, the scheduler's organization will be removed from the meeting. (This can only be done in situations where the field is not required.)
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.
maximumNumberOfEndpoints	Integer	(Optional) Maximum number of endpoints that can join the Rendezvous meeting.
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. **Note** The list must include all of the media profiles for the meeting (not just the added and changed media profiles). Any of the original media profiles that are not included in the list will be removed from the meeting.
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).

Table 2-39 Modify Rendezvous Meeting Request (continued)

Parameter	Type	Description
isHostRoleEnabled	Boolean	(Optional) Set to true to define a host for this meeting.
hostPin	String	(Optional) Enter a numerical host PIN for the meeting. By default, the system will create a random PIN. **Note** Only set a host PIN if the host role is enabled.
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.
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). **Note** The allowedHostEndpoints list must be specified completely, even if there are no changes. If you specify a null value for allowedHostEndpoints, the host endpoint and any alternate hosts will be cleared.
dropParticipantsOnHostExit	Enumeration	(Optional) Defines the default action for participants when the host exits a meeting. **Note** Setting DROP or DO NOT DROP for a meeting will override the value set for the organization. Enter one of the string values: DO NOT DROP—Participants remain in the meeting. DROP—Participants are dropped and the meeting ends. INHERIT—The setting defined in the organization determines the drop behavior. **Note** If the host role is not enabled, participants will remain on the call regardless of who drops from the call before them.

The service responds with a modifyMeetingResult, which contains an apiMeeting element. Table 2-46 describes the apiMeeting element.

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 2-40 describes the parameters for the Modify Remote 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 remote meeting, the endpoint lists must be specified completely, even if there are no changes. A null value cannot be used to indicate that there are no changes to the endpoint lists.

Table 2-40 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.
dateTimeStr	Date/time string	(Optional) 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.

Table 2-40 Modify Remote Meeting Request (continued)

Parameter	Type	Description
provisionedEndpointList	Complex	Enter a list of apiProvisionedEndpoint elements. See the "Provisioned Endpoint Fields" section on page 2-43. **Note** The list must include all of the provisioned endpoints for the meeting (not just the added and changed endpoints). Any of the original endpoints that are not included in the list will be removed from the meeting.
unprovisionedEndpointList	Complex	Enter a list of apiUnprovisionedEndpoint elements. See the "Unprovisioned Endpoint Fields" section on page 2-44. **Note** The list must include all of the unprovisioned endpoints for the meeting (not just the added and changed endpoints). Any of the original endpoints that are not included in the list will be removed from the meeting.

The service responds with a modifyMeetingResult, which contains an apiMeeting element. The apiMeeting element is described in Table 2-46.

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.

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

Table 2-41 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 2-41 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.
dateTimeStr	Date/time string	(Optional) Enter the new date and time for the start of the meeting.
duration	Integer	(Optional) Enter the new duration of the meeting in minutes.

Table 2-41 Modify Two Party Meeting Request (continued)

Parameter	Type	Description
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 2-43. **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 2-43. **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 2-46.

cancelMeeting

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

Table 2-42 describes the fields in the Cancel Meeting request.

Table 2-42 Cancel Meeting Request Parameters

Parameter	Type	Description
meetingKey	Integer	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.

getMeetings

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

Table 2-43 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.

Table 2-43 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 2-50.
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 2-44 describes the Get Meetings Result.

Table 2-44 Get Meetings Result

Parameter	Type	Description
meetings	Complex	List of apiMeeting elements. Table 2-46 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 2-45 describes the fields in the Get Meeting request.

Table 2-45 Get Meeting Request Parameters

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

The Get Meeting Response returns a list of apiMeeting elements. Table 2-46 describes the apiMeeting element.

Table 2-46 apiMeeting Element

Parameter	Type	Description
accessNumber	String	The number that the participants dial to join the meeting (also known as the service number).
additionalMediaProfileList	Complex	List of apiMediaProfileResult elements. See Table 2-10 for a description of this element

Table 2-46 apiMeeting Element (continued)

Parameter	Type	Description
bridgeResourceType	Enumeration	CTMS, TPS, TPS_8510
conferenceId	String	The conference ID for the participants to input when they join the meeting.
dateTimeStr	Date/time string	The date and time for the start of the meeting.
didOBTP	Boolean	This element is set to TRUE if OBTP capability was provided for this meeting.
dropParticipantsOnHostExitType	Enumeration	If the host role is not enabled, participants will remain on the call regardless of who drops from the call before them. If the host role IS enabled, this parameter defines the default action for participants when the host exits a meeting. **Note** Setting DROP or DO NOT DROP for a meeting will override the value set for the organization. This will be one of the string values: DO NOT DROP—Participants remain in the meeting. DROP—Participants are dropped and the meeting ends. INHERIT—The setting defined in the organization determines the drop behavior.
duration	Integer	The duration of the meeting in minutes.
hostPin	String	The 6-digit string that the host enters via the phone keypad to start the meeting when the host role is enabled.
isCancelled	Boolean	This element is set to TRUE if the meeting is cancelled.
isHostRoleEnabled	Boolean	This element is set to TRUE if the host role is enabled for this meeting.
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 string	Date and time that the meeting record was last modified.
maxInstanceDuration	Integer	Maximum call duration (in minutes) if this is a Rendezvous meeting.

Table 2-46 apiMeeting Element (continued)

Parameter	Type	Description
maxMeetingExtensionsAllowed	Integer	Maximum number of meeting extensions allowed for any given meeting. The maximum number of extensions times the extension period must not exceed 24 hours.
meetingExtensionEnabledType	Enumeration	Determines whether this meeting can be extended. **Note** The MeetingExtension value of a meeting will override the value set for an organization. String values: DISABLE—meeting extensions not allowed. ENABLE—meeting extensions allowed. INHERIT—meeting extensions allowed if the organization allows extensions.
meetingExtensionPeriod	Integer	Length of time (in minutes) of a meeting extension period. This value must be a multiple of 15.
meetingKey	Integer	The meeting key is a unique identifier of a specific meeting.
numberOfRendezvousEndpoints	Integer	Maximum number of endpoints allowed in a meeting, if this is a Rendezvous meeting.
provisionedEndpointList	Complex	List of apiProvisionedEndpoint elements. See the "Provisioned Endpoint Fields" section on page 2-43.
remoteEndpointList	Complex	List of apiRemoteEndpoint elements. See the "Remote Endpoint Fields" section on page 2-44.
requiredCapacity	Integer	Amount of bridge capacity required
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.
subject	String	Subject of the meeting.
unprovisionedEndpointList	Complex	List of apiUnprovisionedEndpoint elements. See the "Unprovisioned Endpoint Fields" section on page 2-44.
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).

checkPorts

The Check Ports service queries availability of sufficient organization port bandwidth for the specified meeting or period of time. Table 2-47 describes the fields in the Check Port request.

Table 2-47 Check Port Request

Parameter	Type	Description
meetingKey	Integer	(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.
dateTimeStr	Date/time string	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 2-43.

Table 2-48 describes the Check Ports response.

Table 2-48 Check Ports Response

Parameter	Type	Description
free	Boolean	The boolean is set to true when organization port bandwidth is available for the entire duration that is specified in the request.

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 2-49 describes the fields in the Is Endpoint Free request.

Table 2-49 Is Endpoint Free Request Parameters

Parameter	Type	Description
dateTimeStartStr	String	Start date and time for checking the endpoint availability.
dateTimeEndStr	String	End date and time for checking the endpoint availability.
serviceProviderKey	String	Enter the unique key for the service provider of the endpoint.
provisionedEndpoint	Complex	apiProvisionedEndpoint element. See the "Provisioned Endpoint Fields" section on page 2-43.

Table 2-50 describes the Is Endpoint Free Result service response.

Table 2-50 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.

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 2-43
- Unprovisioned Endpoint Fields, page 2-44
- Remote Endpoint Fields, page 2-44

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 2-51 describes the provisioned endpoint element.

Table 2-51 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 2-52 describes the unprovisioned endpoint element.

Table 2-52 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.
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.

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

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

Revised January 30, 2013

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 2-53.

Table 2-53 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 2-48.
erc	String	Exception return code. **Note** For information on Scheduling Exception values, see Table 2-54.
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.
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 2-54 describes the scheduling exception values.

Table 2-54 Scheduling Exception Values

Exception Value	Description or Cause Code
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.
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 2-48.
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 for OBTP scheduling due to invalid login credentials, misconfiguration, or other communication failures. 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.

Table 2-54 Scheduling Exception Values (continued)

Exception Value	Description or Cause Code
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_CUVCM_SCHEDULING_FAILURE	This ERC is obsolete.
ERC_LARGE_CAPACITY_NOT_AVAILABLE	There is not enough capacity available on the large capacity Cisco TelePresence Multipoint Switch at the specified time to reserve the meeting.
ERC_RESOURCE_UNAVAILABLE	There is insufficient resource capacity at the specified time on the specified resource type. When you see the “large” term within the cause code, it refers to large meetings. See specific cause codes below: BRIDGE_RESOURCE_NOT_AVAILABLE CTSMAN_RESOURCE_NOT_AVAILABLE LARGE_BRIDGE_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.
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 2-55 describes the parameters for the service request.

Table 2-55 Get Possible Cause Codes Request

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

Table 2-56 describes the service response.

Table 2-56 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 2-48.

Cause Codes

The list of possible cause codes includes the following:

BRIDGE_RESOURCE_NOT_AVAILABLE
CANNOT_ENABLE_HOST_FOR_ACTIVE_MEETING
CANNOT_SCHEDULE_IN_PAST
CTSMAN_CONNECTION_ERROR
CTSMAN_INTERCOMPANY_NOT_CONFIGURED
CTSMAN_RESOURCE_NOT_AVAIILABLE
CTSMAN_SCHEDULING_ERROR
DUPLICATE_CONFERENCE_ID
DUPLICATE_ENDPOINT
DUPLICATE_GUEST_DIALOUT_NUMBER
EMPTY_MEDIA_PROFILES_FOR_NON_PROVISIONED_ENDPOINT_MEETING
ENDPOINT_DOES_NOT_BELONG_TO_SERVICE_PROVIDER
ENDPOINT_DOES_NOT_SUPPORT_OBTP
ENDPOINT_NOT_ACTIVE
ENDPOINT_WITHOUT_ORGANIZATION_ASSIGNED
ENDPOINTS_FROM_DIFFERENT_CTSMANS
ENDPOINTS_FROM_DIFFERENT_ORGANIZATIONS
INVALID_DIALIN_PROTOCOL
INVALID_CAPACITY_VALUE
INVALID_CONFERENCE_ID
INVALID_DURATION
INVALID_E164_NUMBER
INVALID_HOST_PIN
INVALID_HOST_PIN_ENDPOINT_CONFIGURATION
INVALID_MEETING_EXTENSION_PERIOD
INVALID_NUMBER_OF_MEETING_EXTENSIONS
INVALID_TOTAL_MEETING_EXTENSION_TIME
INVALID_STRING_LENGTH
INVALID_UNPROVISIONED_DIALOUT_ENDPOINT_DOMAIN
LARGE_BRIDGE_RESOURCE_NOT_AVAILABLE

LICENSE_NOT_VALID
LICENSE_SERVER_NOT_ACCESSIBLE
REGION_DOES_NOT_BELONG_TO_SERVICE_PROVIDER
MAXIMUM_MEETING_DURATION_EXCEEDED
MEETING_IS_CANCELLED
MEETING_START_TIME_IN_PAST
MEETING_TYPE_ONLY_SUPPORTS_DIALIN
MISSING_ENDPOINT_NUMBER
MISSING_ENDPOINT_PROTOCOL
MISMATCHED_MEETING_TYPE
NEED_HOST_ROLE_ENABLED_AND_PIN
NOT_ENOUGH_ENDPOINTS_OR_EQUIVALENT_CAPACITY
ORGANIZATION_DOES_NOT_BELONG_TO_SERVICE_PROVIDER
REMOTE_ACCESS_NUMBER_NOT_VALID
REQUIRED_CONFIGURATION_MISSING
REQUIRED_PARAMETER_MISSING
SCHEDULER_EMAIL_NOT_VALID
TOO_LONG_ENDPOINT_NUMBER
PORTS_CANNOT_BE_NEGATIVE
SCHEDULER_ORGANIZATION_IS_REQUIRED
INVALID_PARAMETER_COMBINATION
INVALID_NUMBER_OF_ RENDEZVOUS_ENDPOINTS

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 2-57 describes query parameters.

Table 2-57 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).

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 2-58 provides a summary of query properties for endpoints.

Table 2-58 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 2-59 provides a summary of query properties for meetings.

Table 2-59 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)`
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 2-60 provides a summary of query properties for organizations.

Table 2-60 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)`

Table 2-60 Organization Query Properties (continued)

Property	Description	Query String Example
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)`

Regions Query Properties

Table 2-61 provides a summary of query properties for regions.

Table 2-61 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)`

Service Provider Query Properties

Table 2-62 provides a summary of query properties for service providers.

Table 2-62 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 2-63 provides a summary of query properties for service numbers.

Table 2-63 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)`

Media Profile Query Properties

Table 2-64 provides a summary of query properties for media profiles.

Table 2-64 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 2-65 provides a summary of query properties for reservation types.

Table 2-65 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 2-66 provides a summary of query properties for whitelist groups.

Table 2-66 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)`

CHAPTER 3

Active Meeting Management API

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.

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:

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_1/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 Methods

All active meeting management API methods 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. You can obtain the meeting key via the getMeeting method in the *scheduling* API.
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.

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.

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.

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

Parameter	Type	Description
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.
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 string	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	Integer	Unique key that the system uses to identify the meeting. You can obtain the meeting key via the getMeeting method in the *scheduling* API.
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.

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 string	Scheduled end time of the meeting.
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.
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	Int	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	Int	Video bandwidth used by the participant. 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.

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.

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.

getVersion

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

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.

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. Except where otherwise specifically noted in the table, 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.

Note When modifying a meeting, any endpoint lists that were previously defined for the meeting must be specified completely, even if there are no changes. A null value cannot be used to indicate that there are no changes to the endpoint lists.

Table 3-10 modifyActiveMeeting Element

Parameter	Type	Description
meetingKey	String	Unique key that the system uses to identify the meeting.
newDuration	String	(Optional) New duration of meeting, in minutes.
newProvisionedEndpoints	Complex	Contains one or more apiProvisionedEndpoint elements. This element is described in Table 3-7. **Note** The list must include all of the provisioned endpoints for the meeting (not just the added and changed endpoints). Any of the original endpoints that are not included in the list will be removed from the meeting.
newUnprovisionedEndpoints	Complex	Contains one or more apiUnprovisionedEndpoint elements. This element is described in Table 3-8. **Note** The list must include all of the unprovisioned endpoints for the meeting (not just the added and changed endpoints). Any of the original endpoints that are not included in the list will be removed from the meeting.
newRemoteEndpointList	Complex	Contains one or more endpoints from a remote system. **Note** The list must include all of the remote endpoints for the meeting (not just the added and changed endpoints). Any of the original endpoints that are not included in the list will be removed from the meeting.

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. 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) Element set to TRUE if the host role is enabled.
newHostPin	String	(Optional) Enter a numerical host PIN for the meeting. By default, the system will create a random PIN. **Note** Only set a host PIN if the host role is enabled.

Table 3-10 modifyActiveMeeting Element (continued)

Parameter	Type	Description
newMeetingExtensionEnabledType	Complex	(Optional) Whether meeting extensions are enabled for the meeting. One of the following values: • **DISABLE**—Disables meeting extensions for the meeting. • **ENABLE**—Enables meeting extensions for the meeting. • **INHERIT**—Inherits the setting (either DISABLE or ENABLE) from the organization of the meeting scheduler.
newMeetingExtensionPeriod	Integer	(Optional) Number of minutes to extend the meeting if participants are still in the meeting when it is scheduled to end.
newMaxMeetingExtensionsAllowed	Integer	(Optional) Maximum number of times that the meeting can be extended.
newSchedulerOrgKey	String	(Optional) Organization key of the scheduler.

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.
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.
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.
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.
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 one or more specified endpoints.

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.
participant	String	E.164 number (such as "14085551234") or URI of the endpoint. **Note** you can specify multiple participants.
endpointMessage	String	Text message that you want to display in the meeting.

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

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.

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.

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.
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.

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 3-14.
erc	String	Exception return code. **Note** For information on API Active Meetings Management Exception values, see the "Exception Values" section on page 3-13.

Table 3-20 API ActiveMeetingsManagement Exception (continued)

Parameter	Type	Description
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.
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 or Cause Code
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.

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

Exception Value	Description or Cause Code
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.
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.

Cause Codes

The list of possible cause codes includes the following:

CANNOT_ADD_UNSUPPORTED_ENDPOINT
CANNOT_CHANGE_DROP_PARTICIPANTS_ON_HOST_EXIT
CANNOT_CHANGE_MEETING_EXTENSION_SETTING
CANNOT_DECREASE_ADDITIONAL_CAPACITY
CANNOT_DECREASE_BANDWIDTH
CANNOT_DECREASE_CAPACITY
CANNOT_REMOVE_EXISTING_ENDPOINT
INVALID_ACTIVE_MEETING
LICENSE_NOT_VALID
LICENSE_SERVER_NOT_ACCESSIBLE
MUTE_FAILED
MUTE_ALL_EXCEPT_FAILED
UNMUTE_FAILED
UNMUTE_ALL_FAILED
DROP_PARTICIPANT_FAILED
REDIAL_PARTICIPANT_FAILED
SEND_ENDPOINT_TEXT_FAILED
LICENSING_EXCEPTION
BRIDGE_TYPE_NOT_VALID
MEETING_NOT_ACTIVE

CHAPTER 4

Call Detail Record API

Revised January 30, 2013

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 4-12.

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_1/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 1.1, which is accessed by using the WSDL URL listed above.

Cisco TelePresence Exchange System also supports version 1.0 of the CDR API, which you can access using the following URL:

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

For notes on backward compatibility with Cisco TelePresence Exchange System Release 1.0, see Appendix A, "Backward Compatibility."

Note This document describes version 1.1 of the API. The documentation for version 1.0 of the API is available from Cisco.com at the following URL: http://www.cisco.com/en/US/docs/telepresence/tx/exchange_system/1_0/api_guide/api_guide_101.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

Revised January 30, 2013

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.

Table 4-5 getCallDetailRecords Request

Parameter	Type	Description
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.

Table 4-7 apiCallDetailRecord Element (continued)

Parameter	Type	Description
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.
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.

Table 4-7 apiCallDetailRecord Element (continued)

Parameter	Type	Description
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.
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.

Table 4-7 apiCallDetailRecord Element (continued)

Parameter	Type	Description
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.
conferenceParticipantDisconnectCode	Integer	Numerical value. See Table 4-8 for a description of the parameters that correspond to the numerical values.
conferenceParticipantDisconnectReason	String	Additional disconnect information, when available.
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.
disconnectData	String	Additional information to describe the disconnect cause.
duration	Integer	Length of time in minutes from the startTime to the endTime of the call.

Table 4-7 apiCallDetailRecord Element (continued)

Parameter	Type	Description
endTime	String	Time the Caller or Callee disconnects from the call. The time is in ISO8601 format.
guid	String	Globally unique identifier for a call. The CDR for each call leg contains the same GUID.
id	String	Unique identifier for CDR in the Cisco TelePresence Exchange System database.
isHost	Boolean	Set to TRUE if the participant joined the meeting as the host.
meetingID	String	Unique identifier for a Meet-Me or Rendezvous meeting. This is the number that the participant dials from the endpoint keypad to access the meeting after dialing the main access number. **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.
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 that the administrator assigns during installation.
startTime	String	The time the called endpoint (callee) answers the call. The time is in ISO8601 format.
videoBandwidth	String	Video bandwidth used by the participant. 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.

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.

The Cisco TelePresence Exchange System retains CDRs for up to 30 days from the recorded end time of the CDR. The system automatically purges CDRs that exceed this 30-day limit. 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.

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.

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

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

Revised January 30, 2013

This appendix provides notes on backward compatibility with Cisco TelePresence Exchange System Release 1.0, and includes the following sections:

Preparing For Backward Compatibility

Before upgrading to Cisco TelePresence Exchange System Release 1.1, ensure that you have retrieved all existing CDR records. Any Release 1.0 records that remain will be purged when upgrading to Release 1.1.

Enabling Backward Compatibility

After upgrading to Cisco TelePresence Exchange System Release 1.1, you must explicitly enable the Release 1.0 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 **1.0.x** check box.

Step 3 From the **Default Service Number** drop-down list, choose a service number to use when scheduling meetings via the Release 1.0 API. A service number is required when scheduling meetings in Release 1.1, but cannot be specified by using the Release 1.0 API.

For more information on service numbers, see the "Configuring Service Numbers" section in the "Configuring Collaboration Services" chapter of the *Installation and Administration Guide for the Cisco TelePresence Exchange System Release 1.1*.

Step 4 From the **Default Reservation Type** drop-down list, choose a reservation type to use when scheduling meetings via the Release 1.0 API. A reservation type is required when scheduling meetings in Release 1.1, but cannot be specified by using the Release 1.0 API.

For more information on reservation types, see the "Configuring Reservation Types" section in the "Configuring Collaboration Services" chapter of the *Installation and Administration Guide for the Cisco TelePresence Exchange System Release 1.1*.

Step 5 To save your changes, click **Save**.

Scheduling API

The following information pertains to using the scheduling API in backward compatibility mode:

Using the Release 1.0 API to Schedule, Modify, and Cancel Meetings

Clients using the Release 1.0 API can successfully schedule, modify, and cancel meetings on a Cisco TelePresence Exchange System Release 1.1 system. The steps will be typically:

1. The Release 1.0 system has an operational scheduling portal using the Release 1.0 APIs.
2. The Release 1.0 system is upgraded to Release 1.1. Existing meetings are correctly migrated to the new Release 1.1 schemas.
3. The existing scheduling portal based on the Release 1.0 APIs continues to work, with both newly created meetings and meetings migrated during the upgrade to Release 1.1. The existing scheduling portal is used while the service provider finishes developing the Release 1.1 compatible portal.
4. The existing scheduling portal is replaced by the new scheduling portal based on Release 1.1. New meetings are created successfully and previously scheduled meetings can be modified successfully.

Here are a few caveats when using the Release 1.0 API with a Release 1.1 system:

- None of the new user-facing Release 1.1 features are accessible through the Release 1.0 API. This includes Host PINs, Automatic Meeting Extension, and Multiple Language IVRs.
- For scheduling failures, the English text message may contain references to new Release 1.1 concepts that are not present in Release 1.0. For example, bridge resource capabilities in Release 1.0 have been replaced by the more general media profile concept in Release 1.1. Even though the Release 1.0 API will continue to support the usage of bridge resource capabilities, the Release 1.1 back-end will necessarily translate these to media profiles. Therefore, any exceptions related to these will refer to media profiles in the English text message.

Other than these caveats, the Release 1.0 portal clients should be able to operate normally against a Release 1.1 system.

Conceptual Enhancements For Release 1.1

Cisco TelePresence Exchange System Release 1.1 includes several conceptual enhancements that need to be noted when using the Release 1.0 API in the backward compatibility mode. In some cases, objects exposed in the Release 1.0 API were replaced and enhanced for Release 1.1. A few parameters were removed altogether.

The following sections list the changes:

Meet-Me Meetings

- In the Release 1.0 API, the unprovisioned endpoint object contained an attribute for endpoint protocol (e.g. SIP). For Release 1.1, unprovisioned endpoints instead contain a reference to a media profile, which in turn contains the protocol and other attributes.
- In the Release 1.0 API, there was an ability to specify one or more bridge resource capabilities (e.g. SUPPORT_ANY_CTS) for the meeting. For Release 1.1, there is instead an ability to specify one or more media profiles, which in turn contain equivalent information.

Rendezvous Meetings

- The Release 1.0 API refers to these as reservationless meetings. The Release 1.1 API uses the new terminology: Rendezvous meetings.
- In Release 1.0, Rendezvous (i.e. reservationless) meetings were scheduled with a start time and a duration. These were largely ignored. In Release 1.1, these are removed from the method parameters.
- In Release 1.0, Rendezvous meeting capacity was measured simply using maximum capacity. For Release 1.1, this is separated for clarity into number of endpoints and additional capacity.
- As for Meet-Me meetings, the bridge resource capabilities for the meeting are replaced by the media profiles.

Scheduling Exception Values

Added January 30, 2013

- In Release 1.0, if the Cisco TelePresence Manager is offline, the Cisco TelePresence Exchange System throws an ERC_CTSMAN_COMMUNICATION_FAILURE exception with the cause code CTSMAN_CONNECTION_ERROR. However, in Release 1.1, the system does a preemptive online validation and, if the Cisco TelePresence Manager is offline, throws an ERC_RESOURCE_UNAVAILABLE exception with the cause code CTSMAN_RESOURCE_NOT_AVAILABLE.

Hybrid-Mode Operation Not Supported

Hybrid-mode operation is using the Release 1.0 API to modify meetings that were created either from the Release 1.1 administration console or the Release 1.1 API. The Cisco TelePresence Exchange System does not support hybrid mode operation. 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).

If administrators insist on supporting this mixed-mode operation, see the following sections for details on how the system behaves for each meeting type:

- Hybrid-Mode Meet-Me Meeting Scenarios, page A-4
- Hybrid-Mode Rendezvous Meeting Scenarios, page A-4
- Hybrid-Mode and Remote Meetings, page A-5
- Hybrid-Mode and Two-Party Direct Meetings, page A-5

Hybrid-Mode Meet-Me Meeting Scenarios

In Release 1.1, Schedule Meeting With No Specific Release 1.1 Features

When using the Release 1.0 API, most modifications happen as expected. Endpoints, capacity, start time, duration, etc., can be successfully changed. Bridge capabilities can be changed and the corresponding media profiles will be associated with the meeting. Unprovisioned dial-out endpoints can have their protocols changed and the corresponding media profiles will then be associated with the endpoints.

In Release 1.1, Schedule Meeting With Release 1.1 Features

Here, the meeting was scheduled with one or more Release 1.1 features, such as host pin or meeting extension. When using the Release 1.0 API, if the meeting is modified to change endpoints, capacity, start time, duration, etc., those changes will be applied as expected. However, any Release 1.1 features associated with the meeting will be explicitly disabled.

Release 1.1, Schedule Meeting With Parameters Different From Backward Compatibility Configuration

Here, the meeting was scheduled using a different service number or reservation type than what was defined in the backward compatibility settings within the Release 1.1 administration console. When using the Release 1.0 API, if the meeting is modified to change endpoints, capacity, start time, duration, etc., those changes will be applied as expected. However, the service number and reservation type will be forced to what is defined in the backward compatibility settings. Note that the reservation type change may lead to an unexpected failure if the corresponding bridge capacity cannot be reserved with this reservation type.

Hybrid-Mode Rendezvous Meeting Scenarios

In Release 1.1, Schedule Rendezvous Meeting With No Specific Release 1.1 Features

When using the Release 1.0 API, the capacity can be changed but this will only affect the additional capacity of the meeting. This will not impact the number of endpoints as scheduled within Release 1.1 administration console. The total capacity of the meeting will reflect the sum of these. Bridge capabilities can be changed and the corresponding media profiles will be associated with the meeting.

In Release 1.1, Schedule Meeting With Release 1.1 Features

Here, the meeting was scheduled with a Release 1.1 feature such as host pin. When using the Release 1.0 API, if the meeting is modified to change capacity, bridge resource type, etc., those changes will be applied as expected. However, the Release 1.1 features associated with the meeting will be explicitly disabled.

In Release 1.1, Schedule Meeting With Parameters Different From Backward Compatibility Configuration

As with Meet-Me meetings (see above), any modification from the Release 1.0 API will force the service number and reservation type to be what is defined in the backward compatibility settings. Note that only one reservation type can be specified for backward compatibility, so a decision needs to be made whether Meet-me or Rendezvous meetings will be accessible using backwards compatibility.

Hybrid-Mode and Remote Meetings

The only difference here is that the unprovisioned endpoints have a protocol attribute in the Release 1.0 API and this has been generalized to a media profile reference in Release 1.1. Otherwise, all modifications using the Release 1.0 API should work correctly and as expected.

Hybrid-Mode and Two-Party Direct Meetings

There are no differences here. All modifications using the Release 1.0 API should work correctly and as expected.

CDR API

The following call detail record changes apply when using the Release 1.0 CDR API on a Release 1.1 System.

InterSP Incoming Direct Dial

If InterSP Incoming Direct Dial calls are enabled, CDR data retrieved from the Cisco TelePresence Exchange SystemAPI will have these calls mapped to the INTERSP_OUTGOING callType category.

Host PIN and Active Meeting Management Feature

Below are additional disconnect codes in Release 1.1. These are generated if Host PIN or Active Meeting Management (AMM) feature in Release 1.1 is used.

- 11 - Participant disconnected because host left.
- 12 - Bridge disconnected because all participants left

SIP Dial Out

Calls dialed out from a resource (for endpoints with SIP/TIP Media Profile) will be returned under the TPS_Dialout callType.

Rendezvous Meeting

If the Rendezvous meeting feature from Release 1.1 is used, then CDRs will contain the same meeting ID for all instances.

Fields deprecated

The following attributes have been deprecated in Release 1.1. (No value will be returned for these)

- callNetwork
- Sdp
- cdrRecordType
- calleeType
- callerType

For Release 1.0, these were deemed to be incomplete and inconsistent.

CDR Purging

Purge API is not supported in backward compatibility mode. We recommend that you do not use the purge API in backward compatibility mode.

The Cisco TelePresence Exchange System retains CDRs for up to 30 days from the recorded end time of the CDR. The system automatically purges CDRs that exceed this 30-day limit. 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.

callType Element Mapping

The following table maps the Release 1.0 CDR API callType values to the new Release 1.1 CDR API callType values. When you use the Release 1.0 CDR API on a Release 1.1 system, the Release 1.0 callType values are displayed in the CDRs.

Release 1.0 callType	Release 1.1 callType
UNKNOWN	No equivalent value in Release 1.1.
MEETME	MEETME_INCOMING
DIRECTDIAL	DIRECTDIAL
INTERSP_INCOMING	MEETME_INCOMING
INTERSP_OUTGOING	DIRECTDIAL
TPS_DIALOUT	MEETME_OUTGOING