



CHAPTER 3

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, page 3-1](#)
- [Obtaining Configured Information, page 3-5](#)
- [Scheduling and Managing Meetings, page 3-10](#)
- [Performing API-Related Tasks, page 3-24](#)
- [Error Handling, page 3-25](#)
- [Creating Queries, page 3-28](#)

Getting Started

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

- [Scheduling API Overview, page 3-1](#)
- [Information Model, page 3-2](#)
- [Obtaining the WSDL, page 3-4](#)
- [Key Name Maps, page 3-4](#)

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, and endpoints that are configured on the Cisco TelePresence Exchange System. These methods are described in the [“Obtaining Configured Information” section on page 3-5](#).
- 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 3-10](#).

- 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 3-24](#).

Information Model

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

- [Service Provider, page 3-2](#)
- [Region, page 3-2](#)
- [Organization, page 3-2](#)
- [Endpoint Types, page 3-3](#)
- [Endpoint Capacity, page 3-4](#)
- [Meeting Types, page 3-4](#)

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.

All media resources in a region are dedicated to one service provider.

A service provider might have multiple regions that are configured on a Cisco TelePresence Exchange System.

Organization

An organization is a business customer that is served by a service provider. An organization controls one or more telepresence rooms (also known as 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 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. You must specify the ports that are required by endpoints when you schedule the meeting.

When the system schedules a 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 provides telepresence services for Cisco TelePresence System (CTS) endpoints and third-party endpoints. Cisco TelePresence endpoints include both TIP-based endpoints and standards-based H.323 and ISDN endpoints. Supported third-party endpoints only include select single-screen endpoints that are H.323 and ISDN standards-based.

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.

The API also distinguishes the following endpoint types:

- CTS—Cisco Telepresence System endpoints.
- INTEROP—Standards-based (H.323, ISDN) endpoints that can interoperate with the Cisco TelePresence Exchange System.

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](http://www.cisco.com/en/US/docs/telepresence/tx/exchange_system/1_0/install_admin/book/b_install_admin.html) 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_0/install_admin/book/b_install_admin.html.

Meeting Types

Each meeting is associated with a service provider and a region. All media resources for the meeting will be allocated from the specified region, even if some participants are from another region or a different service provider. You must specify the region when you schedule the meeting.

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

- **Meet-Me meeting**—A Meet-Me service meeting that is hosted by this Cisco TelePresence Exchange System. The system reserves and allocates media resources for all of the endpoints in the meeting and provides One-Button-to-Push (OBTP) functionality to the provisioned endpoints. The system also reserves bandwidth for the meeting, if requested.
- **Remote meeting**—A Meet-Me service 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.

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/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.

Key Name Maps

The Scheduling API assigns a unique identifier (called a key) to each service provider, organization, region, endpoint and meeting.

When the API responds to Get requests, each item in the response is represented as a pair of values called a key name map. A key name map contains the item key and a text string that contains the name of the item.

Key name maps are provided as a convenience for the API user. The name string provides a human-readable identifier for the item (for use in a display or a report). The key provides a unique identifier for the item. You use the key in subsequent API requests to ensure that the service selects the correct item.

Table 3-1 describes the fields in a key map.

Table 3-1 Key Map Fields

| Parameter | Type | Description |
|-----------|--------|---|
| key | String | Unique identifier. The key is an alpha-numeric string of up to 32 characters. |
| name | String | Refers to the exact name of the provisioned entity within the Cisco TelePresence Exchange System. |

Obtaining Configured Information

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

- [getEndpoints](#), page 3-5
- [getEndpointsForOrganization](#), page 3-7
- [getRegions](#), page 3-7
- [getRegionsForServiceProvider](#), page 3-8
- [getOrganizations](#), page 3-8
- [getOrganizationsForServiceProvider](#), page 3-9
- [getServiceProviders](#), page 3-9
- [getPortsByOrganization](#), page 3-10

getEndpoints

The Get Endpoints service returns a list of endpoints that meet the criteria that are supplied in the request. Table 3-2 describes the parameters in the service request.

Table 3-2 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 3-29. |
| endpointType | String | (Optional) Specifies the endpoint type for the service to return. You can enter one of the following values: <ul style="list-style-type: none"> CTS—Cisco Telepresence System endpoints. INTEROP—Standards-based (H.323, ISDN) endpoints that can interoperate with the Cisco TelePresence Exchange System. <p>Note The system ignores the endpointType parameter if you enter a null string.</p> |

The service returns a Get Endpoints Result in the service response. [Table 3-3](#) describes the Get Endpoints Result.

Table 3-3 Get Endpoints Result

| Parameter | Type | Description |
|------------------|---------|---|
| endpoints | Complex | List of apiEndpoints. See Table 3-4 for a description of apiEndpoint element. |
| totalNumberFound | Integer | The total number of records that are found and returned in the query. The value is zero if the query did not match any endpoints. |

[Table 3-4](#) describes the apiEndpoint element.

Table 3-4 apiEndpoint Element

| Parameter | Type | Description |
|-------------|------------|--|
| isCts | Boolean | Returns true if the endpoint is a Cisco TelePresence endpoint. |
| keyNameMap | keyNameMap | Contains a key, which is a unique identifier for the endpoint, and the corresponding endpoint name. See Table 3-1 for the keyNameMap fields. |
| number | number | Provides the directory number for the endpoint. |
| supportOBTP | Boolean | Indicates that the endpoint supports OBTP functionality. |

Example

The following example shows how to get the list of endpoints that meet a complex query. The API will include an endpoint in the response if the endpoint name starts with the letters *test*, the endpoint capacity is less than one, and the endpoint is synchronized with the Cisco TelePresence Manager.

```
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sch="http://sched.api.ctx.txbu.cisco.com">
  <soapenv:Header/>
  <soapenv:Body>
    <sch:getEndpoints>
```

```

    <queryString>(AND (roomName sw test) (capacity lt 1) (isSynchronized eq
true))</queryString>
  </sch:getEndpoints>
</soapenv:Body>
</soapenv:Envelope>

```

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 3-5 describes the parameters for the service request.

Table 3-5 *Get Endpoints for Organization Request*

| Parameter | Type | Description |
|--------------------|--------|---|
| serviceProviderKey | String | (Required) Enter the key of the service provider that is associated with the organization. |
| organizationKey | String | (Required) Enter the key of the organization. |
| endpointType | String | (Optional) Specifies the endpoint type for the service to return. You can enter one of the following values: <ul style="list-style-type: none"> • CTS—Cisco Telepresence System endpoints. • INTEROP—Standards-based H.323 and ISDN endpoints that can interoperate with the Cisco TelePresence Exchange System. <p>Note The system ignores the endpointType parameter if you enter a null string.</p> |

The service response contains a Get Endpoints Result. The Get Endpoints Result is described in Table 3-3.

getRegions

The Get Regions service returns a list of regions that meet the query criteria that are supplied in the request. Table 3-6 describes the parameters for the service request.

Table 3-6 *Get Regions Request*

| Parameter | Type | Description |
|-------------|--------|--|
| queryString | String | (Optional) Enter a query to select the desired set of regions. |

Table 3-7 describes the Get Regions service response.

Table 3-7 Get Regions Response

| Parameter | Type | Description |
|------------------|---------|---|
| regions | Complex | List of zero or more apiRegions. The apiRegion type is a key name map, which is described in Table 3-1 . Each apiRegion provides the unique key and name of a region. |
| totalNumberFound | Integer | The total number of region records returned. |

getRegionsForServiceProvider

The Get Regions for Service Provider service returns a list of regions that are configured for the specified service provider. [Table 3-8](#) describes the parameters for the service request.

Table 3-8 Get Regions for Service Provider Request

| Parameter | Type | Description |
|--------------------|--------|--|
| serviceProviderKey | String | (Required) Enter the key of the service provider that is associated with the region. Note The Cisco TelePresence Exchange System throws an exception when this value is missing. |

The service response contains a Get Regions Result, which is described in [Table 3-7](#).

getOrganizations

The Get Organizations service returns a list of all organizations that meet the criteria that are supplied in the request. [Table 3-9](#) describes the parameters for the service request.

Table 3-9 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 3-29 . |

[Table 3-10](#) describes the parameters for the service response.

Table 3-10 Get Organizations Result

| Parameter | Type | Description |
|------------------|---------|---|
| organizations | Complex | List of zero or more apiOrganizations that meet the query criteria. The apiOrganization type is described in Table 3-11 . |
| totalNumberFound | Integer | The total number of records returned. |

[Table 3-11](#) describes the apiOrganization type.

Table 3-11 *apiOrganization Type*

| Parameter | Type | Description |
|------------|------------|---|
| keyNameMap | keyNameMap | Unique organization key and the corresponding text name. The key name map is described in Table 3-1 . |
| maxPort | Integer | Maximum number of ports that can be scheduled for this organization. |

getOrganizationsForServiceProvider

The Get Organizations for Service Provider service returns a list of organizations that are configured for the specified service provider. [Table 3-12](#) describes the parameters for the service request.

Table 3-12 *Get Organizations for Service Provider Request*

| Parameter | Type | Description |
|--------------------|--------|--|
| serviceProviderKey | String | (Required) Enter the unique key of the service provider. |

The service response contains the Get Organizations Result element, which is described in [Table 3-10](#).

getServiceProviders

The Get Service Provider service returns a list of service providers that meet the criteria that are supplied in the request. [Table 3-13](#) describes the parameters for the service request.

Table 3-13 *Get Service Providers Request*

| Parameter | Type | Description |
|-------------|--------|---|
| queryString | String | (Optional) Enter a query string. For information about building queries, see the “ Query Syntax ” section on page 3-29. |

[Table 3-14](#) describes the service response.

Table 3-14 *Get Service Providers Response*

| Parameter | Type | Description |
|------------------|---------|---|
| serviceProviders | Complex | List of apiServiceProviders. The apiServiceProvider type is a key name map, which is described in Table 3-1 . Each apiServiceProvider provides the unique key and name of a service provider. |
| totalNumberFound | Integer | The total number of service provider records returned. |

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 3-15](#) describes the parameters for the service request.

Table 3-15 *Get Ports by Organization Request*

| Parameter | Type | Description |
|-----------------|------------------|--|
| organizationKey | String | (Required) Enter the unique key of the organization. Enter a null string to get information for all organizations. |
| dateTimeStr | Date/time string | (Required) 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 | (Required) 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 3-16](#) describes the Get Ports by Organization response.

Table 3-16 *Get Ports by Organization Response*

| Parameter | Type | Description |
|--------------|---------|---|
| APIPortsList | Complex | List of apiPorts elements. The apiPorts elements are described in Table 3-17 . For each organization (or the specified organization), the service returns one apiPorts element for each 15-minute interval in the requested duration. |

[Table 3-17](#) describes the apiPorts element.

Table 3-17 *apiPorts Element*

| Parameter | Type | Description |
|-----------------|------------------|---|
| date | Date/time string | Start date and time. |
| lane | String | Values are limited to CTS, ISDN, or IP. |
| organizationKey | String | Key value for the organization. |
| value | int | Bandwidth value. |

Scheduling and Managing Meetings

The following sections describe the services for scheduling and managing meetings:

- [scheduleMeeting](#), page 3-11
- [scheduleRemoteMeeting](#), page 3-14

- [scheduleTwoPartyDirectMeeting](#), page 3-15
- [modifyMeeting](#), page 3-16
- [modifyRemoteMeeting](#), page 3-18
- [modifyTwoPartyDirectMeeting](#), page 3-19
- [cancelMeeting](#), page 3-20
- [getMeeting](#), page 3-20
- [checkPorts](#), page 3-21
- [isEndpointFree](#), page 3-22
- [Endpoint Elements](#), page 3-22

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 any subsequent request to view, modify or delete the meeting.

Table 3-18 describes the parameters for the service request.

Table 3-18 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 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 | (Optional) 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 | (Required) Enter the subject of the meeting. |
| dateTimeStr | Date/time string | (Required) Enter the date and time for the start of the meeting. |
| duration | Integer | (Required) Enter the duration of the meeting in minutes. |
| serviceProviderKey | String | (Required) Enter the unique key of the service provider that will host the meeting. |
| regionKey | String | (Required) Enter the key of the region for the meeting. The region must be associated with the service provider. |

Table 3-18 Schedule Meeting Request (continued)

| Parameter | Type | Description |
|---------------------------|---------|--|
| requireOBTP | Boolean | (Optional) Set to TRUE when you want to display One-Button-to-Push (OBTP) information on the IP phone that is associated with the provisioned endpoint. Set to FALSE when you do not want to use OBTP for privacy reasons or when the Cisco TelePresence Manager is temporarily unavailable. When no value is set, a default of TRUE is set. |
| provisionedEndpointList | Complex | (Optional) Enter a list of apiProvisionedEndpoint elements. See the “Provisioned Endpoint Fields” section on page 3-23. |
| unprovisionedEndpointList | Complex | (Optional) Enter a list of apiUnprovisionedEndpoint elements. See the “Unprovisioned Endpoint Fields” section on page 3-23. |
| remoteEndpointList | Complex | (Optional) Enter a list of apiRemoteEndpoint elements. See the “Remote Endpoint Fields” section on page 3-24. |
| additionalCapacity | Integer | (Required) Enter the additional capacity to reserve for unprovisioned and remote endpoints in the meeting. Units are segments. |
| bridgeCapabilityList | Complex | Enter the bridge capabilities that are required for the meeting. Enter one of the following values: <ul style="list-style-type: none"> SUPPORT_ANY_CTS SUPPORT_SINGLESSCREEN_INTEROP SUPPORT_MULTISCREEN_INTEROP <p>Note The system can infer the bridge requirements for provisioned endpoints. The bridge capability list is required to specify capabilities for unprovisioned and remote endpoints.</p> <p>Note When no provisioned endpoints are specified in the request, the bridgeCapabilityList parameter is required. When one or more endpoints are specified in the bridgeCapabilityList, this parameter is optional.</p> |
| customLayout | Integer | (Optional) Enter a default value for the screen layout. For details on the layout values, see the “Conference Layouts” section of the <i>Cisco TelePresence MCU Remote Management API Reference Guide</i> , at http://www.cisco.com/en/US/products/ps11341/products_programming_reference_guides_list.html . <p>Note When the conference is not hosted on a Cisco TelePresence MCU MSE 8510, the customLayout parameter is ignored.</p> |

Table 3-19 describes the Schedule Meeting result.

Table 3-19 Schedule Meeting Result

| Parameter | Type | Description |
|--------------------|--------------|---|
| accessNumber | Digit string | Number that the participants dial to join the meeting. |
| conferenceID | String | Conference ID for the participants to input when they join the meeting. |
| meetingKey | String | Unique meeting identifier, which must be supplied in any subsequent service request to view, modify, or delete the meeting. |
| capacityAllocated | Integer | MTU capacity that is allocated for this meeting. Units are segments (screens). |
| bridgeResourceType | String | The type of media resource that is allocated for this meeting. Values include CTMS, TPS, and MSE8510. |

Examples

The following example shows how to schedule a meeting:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sch="http://sched.api.ctx.txbu.cisco.com">
  <soapenv:Header/>
  <soapenv:Body>
    <sch:scheduleMeeting>
      <auditID>audit</auditID>
      <schedulerEmail>user1@cisco.com</schedulerEmail>
      <subject>test</subject>
      <dateTimeStr>2011-04-19T06:00:00-07:00</dateTimeStr>
      <duration>15</duration>
      <serviceProviderKey>0a4fa39d9c2d11df98187da9da46d147</serviceProviderKey>
      <regionKey>09439bb29c2d11df98187da9da46d147</regionKey>
      <requireOBTP>true</requireOBTP>
      <provisionedEndpointList>
        <provisionedEndpoints>
          <endpointKey>00eb0d9b2b6007c7012b60207b8e01ba</endpointKey>
          <bandwidth>2</bandwidth>
          <dialOut>>false</dialOut>
          <minimizeCapacity>>false</minimizeCapacity>
        </provisionedEndpoints>
      </provisionedEndpointList>
      <unprovisionedEndpointList>
        <unprovisionedEndpoints>
          <bandwidth>4</bandwidth>
          <organizationKey>0b463c0b9c2d11df98187da9da46d147</organizationKey>
        </unprovisionedEndpoints>
      </unprovisionedEndpointList>
      <remoteEndpointList>
        <remoteEndpoints/>
      </remoteEndpointList>
      <additionalCapacity>8</additionalCapacity>
      <bridgeCapabilityList>
        <bridgeCapabilities>SUPPORT_ANY_CTS</bridgeCapabilities>
      </bridgeCapabilityList>
      <customLayout/>
    </sch:scheduleMeeting>
  </soapenv:Body>
</soapenv:Envelope>
```

The following example shows the response to the Schedule Meeting request:

```
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
  <env:Header/>
  <env:Body>
    <ns2:scheduleMeetingResponse xmlns:ns2="http://sched.api.ctx.txbu.cisco.com">
      <return>
        <accessNumber>12345</accessNumber>
        <conferenceID>05195048</conferenceID>
        <meetingKey>00eb0da32a830ebc012a865fa8f9003a</meetingKey>
        <bridgeResourceType>CTMS</bridgeResourceType>
        <capacityAllocated>12</capacityAllocated>
      </return>
    </ns2:scheduleMeetingResponse>
  </env:Body>
</env:Envelope>
```

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 3-20](#) describes the parameters for the Schedule Remote Meeting service request.

Table 3-20 Schedule Remote Meeting Request

| Parameter | Type | Description |
|--------------------|------------------|---|
| accessNumber | Digit string | (Required) Number that the participants dial to join the meeting. |
| conferenceID | String | (Required) Conference ID for the participants to input when they join the meeting. |
| schedulerEmail | String | (Optional) 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 | (Required) Enter the subject of the meeting. |
| dateTimeStr | Date/time string | (Required) Enter the date and time for the start of the meeting. |
| duration | Integer | (Required) Enter the duration of the meeting in minutes. |
| serviceProviderKey | String | (Required) Enter the unique key of the service provider that hosts the meeting. |

Table 3-20 Schedule Remote Meeting Request (continued)

| Parameter | Type | Description |
|---------------------------|---------|--|
| requireOBTP | Boolean | (Optional) Set to TRUE when you want to display One-Button-to-Push (OBTP) information on the IP phone that is associated with the provisioned endpoint. Set to FALSE when you do not want to use OBTP for privacy reasons or when the Cisco TelePresence Manager is temporarily unavailable. When no value is set, a default of TRUE is set. |
| provisionedEndpointList | Complex | Enter a list of apiProvisionedEndpoint elements. See the “Provisioned Endpoint Fields” section on page 3-23. 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 3-23. Note For this request, there must be at least one endpoint in either the provisioned or unprovisioned list. |

The service response contains a scheduleMeetingResult element, which is described in [Table 3-19](#).

scheduleTwoPartyDirectMeeting

The Schedule Two Party Direct Meeting service creates a new direct meeting between two local provisioned endpoints within the same organization, 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 for a two party meeting. Two party meetings are scheduled to provide One-Button-to-Push (OBTP) functionality for the endpoints.

[Table 3-21](#) describes the parameters for the service request.

Table 3-21 Schedule Two Party Meeting Request

| Parameter | Type | Description |
|----------------|------------------|---|
| schedulerEmail | String | (Optional) 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 | (Required) Enter the subject of the meeting. |
| dateTimeStr | Date/time string | (Required) Enter the date and time for the start of the meeting. |
| duration | Integer | (Required) Enter the duration of the meeting in minutes. |

Table 3-21 Schedule Two Party Meeting Request (continued)

| Parameter | Type | Description |
|----------------------|---------|--|
| serviceProviderKey | String | (Required) 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 | (Required) Enter a apiProvisionedEndpoint element. See the “Provisioned Endpoint Fields” section on page 3-23 . |
| provisionedEndpoint2 | Complex | (Required) Enter a apiProvisionedEndpoint element. See the “Provisioned Endpoint Fields” section on page 3-23 . |

The service response contains a scheduleMeetingResult element, which is described in [Table 3-19](#).

modifyMeeting

The Modify Meeting service modifies the information for a meeting based on the parameter values that are supplied in the request. Null parameter values are set for fields that you do not want to change.

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.



Note

When modifying a 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 3-22](#) describes the parameters for the service request.

Table 3-22 Modify Meeting Request

| Parameter | Type | Description |
|-------------|------------------|--|
| meetingKey | Integer | (Required) Enter the meeting key. The meeting key 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. |
| regionKey | String | (Optional) Enter the unique region key for the meeting. The region must be associated with the service provider. |

Table 3-22 Modify Meeting Request (continued)

| Parameter | Type | Description |
|---------------------------|---------|--|
| requireOBTP | Boolean | (Optional) Set to TRUE when you want to display One-Button-to-Push (OBTP) information on the IP phone that is associated with the provisioned endpoint. Set to FALSE when you do not want to use OBTP for privacy reasons or when the Cisco TelePresence Manager is temporarily unavailable. When no value is set, a default of TRUE is set. |
| provisionedEndpointList | Complex | Enter a list of apiProvisionedEndpoint elements. See the “Provisioned Endpoint Fields” section on page 3-23. Note The provisionedEndpointList must be specified to retain the original endpoints. When a null or empty list is provided, it is interpreted that all endpoints are being removed. |
| unprovisionedEndpointList | Complex | Enter a list of apiUnprovisionedEndpoint elements. See the “Unprovisioned Endpoint Fields” section on page 3-23. Note The unprovisionedEndpointList must be specified to retain the original endpoints. When a null or empty list is provided, it is interpreted that all endpoints are being removed. |
| remoteEndpointList | Complex | Enter a list of apiRemoteEndpoint elements. See the “Remote Endpoint Fields” section on page 3-24. Note The remoteEndpointList must be specified to retain the original endpoints. When a null or empty list is provided, it is interpreted that all endpoints are being removed. |
| additionalCapacity | Integer | (Optional) Enter the additional capacity to reserve for unprovisioned and remote endpoints in the meeting. Units are segments. |
| bridgeCapabilityList | Complex | (Optional) Enter the bridge capabilities that are required for the meeting. Enter one of the following values: <ul style="list-style-type: none"> • SUPPORT_ANY_CTS • SUPPORT_SINGLESSCREEN_INTEROP • SUPPORT_SINGLESSCREEN_INTEROP |
| customLayout | Integer | (Optional) Enter a default value for the screen layout. For details on the layout values, see the “Conference Layouts” section of the <i>Cisco TelePresence MCU Remote Management API Reference Guide</i> , at http://www.cisco.com/en/US/products/ps11341/products_programming_reference_guides_list.html . |

Table 3-23 describes the Modify Meeting result.

Table 3-23 *Modify Meeting Result*

| Parameter | Type | Description |
|--------------------|---------|---|
| capacityAllocated | Integer | MTU capacity that is allocated for this meeting. Units are segments (screens). |
| bridgeResourceType | String | The type of media resource that is allocated for this meeting. Values include CTMS, TPS, and MSE8510. |

modifyRemoteMeeting

The Modify Remote Meeting service modifies the information for a remote meeting based on the parameter values that are supplied in the request. Set null parameter values in the request for fields that you are not changing.


Note

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


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 3-24](#) describes the parameters for the Modify Remote Meeting request.

Table 3-24 *Modify Remote Meeting Request*

| Parameter | Type | Description |
|--------------|------------------|--|
| meetingKey | String | (Required) Enter the meeting key, which is the unique identifier of a specific meeting. |
| accessNumber | String | (Optional) Enter the number that the participants dial to join the meeting. |
| 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 3-24 *Modify Remote Meeting Request (continued)*

| Parameter | Type | Description |
|---------------------------|---------|--|
| provisionedEndpointList | Complex | Enter a list of apiProvisionedEndpoint elements. See the “Provisioned Endpoint Fields” section on page 3-23. Note The provisionedEndpointList must be specified to retain the original endpoints. When a null or empty list is provided, it is interpreted that all endpoints are being removed. |
| unprovisionedEndpointList | Complex | Enter a list of apiUnprovisionedEndpoint elements. See the “Unprovisioned Endpoint Fields” section on page 3-23. Note The unprovisionedEndpointList must be specified to retain the original endpoints. When a null or empty list is provided, it is interpreted that all endpoints are being removed. |

No parameters are returned in the Modify Remote Meeting service response.

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. Set null parameter values in the request for fields that you are not changing.



Note

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



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 3-25](#) describes the parameters for the Modify Two Party Direct Meeting request.

Table 3-25 *Modify Two Party Meeting Request*

| Parameter | Type | Description |
|-------------|------------------|---|
| meetingKey | String | (Required) 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 3-25 *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 3-23 . Note Either both the provisionedEndpoint1 and the provisionedEndpoint2 parameters must change or both parameters must be set to null to indicate no change. |
| provisionedEndpoint2 | Complex | Enter an apiProvisionedEndpoint element. See the “Provisioned Endpoint Fields” section on page 3-23 . Note Either both the provisionedEndpoint1 and the provisionedEndpoint2 parameters must change or both parameters must be set to null to indicate no change. |

No parameters are returned in the Modify Two Party Direct Meeting service response.

cancelMeeting

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

[Table 3-26](#) describes the fields in the Cancel Meeting request.

Table 3-26 *Cancel Meeting Request Parameters*

| Parameter | Type | Description |
|------------|---------|---|
| meetingKey | Integer | (Required) 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.

getMeeting

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

[Table 3-27](#) describes the fields in the Get Meeting request.

Table 3-27 Get Meeting Request Parameters

| Parameter | Type | Description |
|------------|---------|---|
| meetingKey | Integer | (Required) Enter the meeting key, which is the unique identifier of a specific meeting. |

The Get Meeting Response returns a list of apiMeeting elements. [Table 3-28](#) describes the apiMeeting element.

Table 3-28 apiMeeting Element

| Parameter | Type | Description |
|---------------------------|------------------|--|
| accessNumber | String | The number that the participants dial to join the meeting. |
| 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. |
| duration | Integer | The duration of the meeting in minutes. |
| isCancelled | Boolean | This element is set to TRUE if the meeting is cancelled. |
| isRemote | Boolean | This element is set to TRUE if the meeting is remote. |
| meetingKey | Integer | The meeting key is a unique identifier of a specific meeting. |
| provisionedEndpointList | Complex | List of apiProvisionedEndpoint elements. See the “Provisioned Endpoint Fields” section on page 3-23. |
| remoteEndpointList | Complex | List of apiRemoteEndpoint elements. See the “Remote Endpoint Fields” section on page 3-24. |
| subject | String | Subject of the meeting. |
| unprovisionedEndpointList | Complex | List of apiUnprovisionedEndpoint elements. See the “Unprovisioned Endpoint Fields” section on page 3-23. |

checkPorts

The Check Ports service queries availability of sufficient organization port bandwidth for the specified meeting. [Table 3-29](#) describes the fields in the Check Port request.

Table 3-29 Check Port Request

| Parameter | Type | Description |
|-------------|------------------|---|
| meetingKey | Integer | (Required) Enter the meeting key, which is the unique identifier of a specific meeting. |
| dateTimeStr | Date/time string | (Required) Enter the date and time of the start of the meeting. |
| duration | Integer | (Required) Enter the duration of the meeting in minutes. |

Table 3-29 Check Port Request (continued)

| Parameter | Type | Description |
|-------------------------|---------|---|
| serviceProviderKey | String | (Required) Enter the unique key for the service provider. |
| provisionedEndpointList | Complex | (Required) Enter a list of the apiProvisionedEndpoint elements. See the “Provisioned Endpoint Fields” section on page 3-23. |

Table 3-30 describes the Check Ports response.

Table 3-30 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. Table 3-31 describes the fields in the Is Endpoint Free request.

Table 3-31 Is Endpoint Free Request Parameters

| Parameter | Type | Description |
|---------------------|---------|--|
| dateTimeStartStr | String | (Required) Start date and time for checking the endpoint availability. |
| dateTimeEndStr | String | (Required) End date and time for checking the endpoint availability. |
| serviceProviderKey | String | (Required) Enter the unique key for the service provider of the endpoint. |
| provisionedEndpoint | Complex | (Required) apiProvisionedEndpoint element. See the “Provisioned Endpoint Fields” section on page 3-23. |

Table 3-32 describes the Is Endpoint Free Result service response.

Table 3-32 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 XML definitions for endpoints 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 3-23](#)
- [Unprovisioned Endpoint Fields, page 3-23](#)
- [Remote Endpoint Fields, page 3-24](#)

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 3-33](#) describes the provisioned endpoint element.

Table 3-33 Provisioned Element Fields

| Parameter | Type | Description |
|-------------|---------|---|
| 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. |
| dialOut | Boolean | (Optional) Indicates whether the system can dial out to this provisioned endpoint at the start of the meeting. The system dials out only to standards-based H.323 and ISDN endpoints (known as INTEROP endpoints in the API). Therefore, this field must be set to false for TIP endpoints (known as CTS endpoints in the API). The dialOut default value is FALSE. |
| endpointKey | String | (Required) The unique key of the endpoint. |

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 3-34](#) describes the unprovisioned endpoint element.

Table 3-34 Unprovisioned Element Fields

| Parameter | Type | Description |
|-----------------|---------|--|
| 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. |
| organizationKey | String | (Required) The unique key of the organization that is associated with this endpoint. This can be entirely removed from here, and pieces of this can be applied to the dialOut, number, and protocol for clarity. For example, for each of the three fields mentioned, they are only necessary for guest outdials; they can be left blank otherwise, because they will be ignored. |

Table 3-34 Unprovisioned Element Fields (continued)

| Parameter | Type | Description |
|-----------|---------|--|
| dialOut | Boolean | (Optional) Indicates whether the system can dial out to this provisioned endpoint at the start of the meeting. The system dials out only to standards-based H.323 and ISDN endpoints (known as INTEROP endpoints in the API). Therefore, this field must be set to false for TIP endpoints (known as CTS endpoints in the API). The dialOut default value is FALSE. Note This field is required only for guest outdials; it can otherwise be left blank. |
| 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. |
| protocol | String | (Optional) The protocol for the guest outdial. Enter ISDN or H323. Note This field is required only for guest outdials; it can otherwise be left blank. |

Remote Endpoint Fields

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

Performing API-Related Tasks

See the following sections:

- [echo](#), page 3-24
- [getVersion](#), page 3-25

echo

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

[Table 3-35](#) describes the input parameters for the Echo service request.

Table 3-35 Echo Request Parameters

| Parameter | Type | Description |
|------------|--------|--|
| echoString | String | (Required) Enter an arbitrary string. The same string is returned in the response message. |

Table 3-36 describes the parameters in the Echo service response.

Table 3-36 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 version of the Scheduling API. The service request contains no input parameters.

Table 3-37 describes the parameters in the service response.

Table 3-37 Get Version Response Parameters

| Parameter | Type | Description |
|-----------|--------|---|
| return | String | The value of the string is the build version of the Scheduling API. |

Error Handling

The Cisco TelePresence Exchange System API communicates an error condition to the client by returning a SOAP fault message. The fault message contains an API scheduling exception, which is described in Table 3-38.

Table 3-38 API Scheduling Exception

| Parameter | Type | Description |
|------------|--------|---|
| erc | String | Exception return code. Note For information on Scheduling Exception values, see Table 3-39 . |
| cause code | String | (Optional) Provides more detailed information about an exception return code. |
| error map | Map | An optional map with name and value pairs that identify the parameters that caused the exception. Possible keys 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 |

Table 3-38 API Scheduling Exception (continued)

| Parameter | Type | Description |
|-----------|--------|--|
| message | String | <p>English text message that provides additional information about the exception code. The content of the message varies depending on the exception code.</p> <p>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.</p> |

[Table 3-39](#) describes the scheduling exception values.

Table 3-39 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_INTERNAL_SCHEDULING_EXCEPTION | General scheduling failure. See the message element for more information about the exception. |

Table 3-39 Scheduling Exception Values (continued)

| Exception Value | Description or Cause Code |
|-------------------------------------|--|
| ERC_SCHEDULING_VALIDATION_EXCEPTION | <p>At least one of the supplied parameters is invalid. See specific cause codes below:</p> <p>CANNOT_SCHEDULE_IN_PAST CTS_ENDPOINTS_MUST_NOT_USE_DIALOUT DUPLICATE_CONFERENCE_ID DUPLICATE_ENDPOINT DUPLICATE_GUEST_DIALOUT_NUMBER EMPTY_CAPABILITIES_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 INTEROP_ENDPOINTS_MUST_USE_DIALOUT INTEROP_ENDPOINTS_CANNOT_BE_SIP INVALID_CAPACITY_VALUE INVALID_CONFERENCE_ID INVALID_DURATION INVALID_E164_NUMBER INVALID_STRING_LENGTH REGION_DOES_NOT_BELONG_TO_SERVICE_PROVIDER MAXIMUM_MEETING_DURATION_EXCEEDED MEETING_IS_CANCELLED MEETING_START_TIME_IN_PAST MISSING_ENDPOINT_NUMBER MISSING_ENDPOINT_PROTOCOL MISMATCHED_MEETING_TYPE NOT_ENOUGH_ENDPOINTS_OR_EQUIVALENT_CAPACITY ORGANIZATION_DOES_NOT_BELONG_TO_SERVICE_PROVIDER REMOTE_ACCESS_NUMBER_NOT_VALID REQUIRED_PARAMETER_MISSING SCHEDULER_EMAIL_NOT_VALID</p> |
| 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 | <p>The Cisco TelePresence Manager might be unavailable or the supplied login credentials are invalid. See specific cause codes below:</p> <p>CTSMAN_SCHEDULING_ERROR CTSMAN_CONNECTION_ERROR CTSMAN_INTERCOMPANY_NOT_CONFIGURED</p> |
| 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 3-39 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_CUVC_M_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_CAPABILITY_EXCEPTION | The API could not provide the meeting capabilities that are specified in the request. See specific cause codes below. CAPABILITY_NOT_SUPPORTED CAPABILITY_COMBINATION_NOT_VALID CAPABILITY_MUST_BE_SPECIFIED |
| 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: CTMS_OR_TPS_RESOURCE_NOT_AVAILABLE LARGE_CTMS_OR_TPS_RESOURCE_NOT_AVAILABLE LARGE_TEST_CTMS_OR_TPS_RESOURCE_NOT_AVAILABLE TEST_CTMS_OR_TPS_RESOURCE_NOT_AVAILABLE (Test resources are for internal use only. You can ignore test resource cause codes.) |
| 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.) |

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, page 3-29](#)
- [Complex Queries, page 3-30](#)
- [Null Queries, page 3-30](#)
- [Endpoint Query Properties, page 3-30](#)
- [Meeting Query Properties, page 3-31](#)
- [Organization Query Properties, page 3-32](#)
- [Regions Query Properties, page 3-32](#)
- [Service Provider Query Properties, page 3-33](#)

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 3-40](#) describes query parameters.

Table 3-40 Query Parameters

| Parameter | Description |
|-----------|---|
| property | <p>Name of the property of the object to be queried. Examples include:</p> <ul style="list-style-type: none"> • name • id • region.name • organization.serviceProvider.serviceProviderKey <p>You can specify the property in dotted notation format, which is shown in the above example.</p> |

Table 3-40 Query Parameters (continued)

| Parameter | Description |
|-----------|--|
| operator | <p>The operator is a comparator or string match operator between the property and the value. Comparator operators include the following:</p> <ul style="list-style-type: none"> • eq — equals • lt — less than • le — less than or equal • gt — greater than • ge — greater than or equal <p>The string match mode operators include the following:</p> <ul style="list-style-type: none"> • sw — string starts with • ew — string ends with • contains — string contains • null — is null • notnull — is not null |
| value | <p>Numeric or string value. String values are not case sensitive and can contain spaces. When the operator is null or notnull, no value parameter is specified in the query.</p> |

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 3-41 provides a summary of query properties for endpoints.

Table 3-41 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) |
| mediaProfile.protocol | Media profile protocol (ISDN, H323, or SIP) | (mediaProfile.protocol ne ISDN) |
| 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 3-42 provides a summary of query properties for meetings.

Table 3-42 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) |

Table 3-42 Meeting Query Properties (continued)

| Property | Description | Query String Example |
|-----------------------------|-------------------------------|---|
| 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) |

Organization Query Properties

Table 3-43 provides a summary of query properties for organizations.

Table 3-43 Organization Query Properties

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

Regions Query Properties

Table 3-44 provides a summary of query properties for regions.

Table 3-44 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) |

Table 3-44 *Regions Query Properties (continued)*

| Property | Description | Query String Example |
|-----------------------------|------------------------------|---|
| serviceProvider.name | Service provider name | (serviceProvider.name sw Building31) |
| serviceProvider.description | Service provider description | (serviceProvider.description contains telepresence) |

Service Provider Query Properties

Table 3-45 provides a summary of query properties for service providers.

Table 3-45 *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) |

