Moving a participant between conferences using the API
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# Change History

<table>
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<tr>
<th>Date</th>
<th>Change Summary</th>
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<tbody>
<tr>
<td>May 9, 2019</td>
<td>Minor improvements.</td>
</tr>
</tbody>
</table>
Introduction

This Quick Reference Guide pulls together related information on moving participants using the Meeting Server API.

From version 2.6, a participant using a SIP endpoint registered to Cisco Unified Communications Manager can be moved between meetings hosted on Meeting Servers. This allows conference organizers to use previously created spaces for breakout sessions, splitting a large group into smaller groups to encourage collaboration, or to screen participants before being allowed into a meeting.
Moving a participant between conferences

New API parameters have been added in version 2.6 to enable an administrator to move a participant between conferences.

To determine whether a participant can be moved to a different conference on the same Call Bridge or a different Call Bridge in the cluster, use GET on either /participants/<participant id> or /callLegs/<call leg id>:

- Use GET on /participants/<participant id> to return the setting for canMove, if set to "true" the participant can be moved, if set to "false" the participant cannot be moved.

- Use GET on /callLegs/<call leg id> to return the setting for canMove, if set to "true" the participant owning the call leg can be moved, if set to "false" the participant owning the call leg cannot be moved.

To move a participant to a different conference, a new movedParticipant parameter has been added to /calls/<call id>/participants:

- POST to /calls/<call id>/participants the new movedParticipant with the ID of the participant to be moved, where <call id> is the ID of the target conference. Note: the original Call Bridge or Call Bridge Group will be used, and any Call Bridge or Call Bridge Group parameters specified in the POST will be ignored.

After moving a participant to a different conference:

- To determine the call leg that the participant was moved from, use GET on /participants/<participant id>. A new response value of movedCallLeg will be returned with the ID of the original call leg before the participant was moved.

- To find the Call Bridge that homed the call leg that the participant was moved from, use GET on /participants/<participant id>. A new response value of movedCallLegCallBridge will be returned with the ID of the Call Bridge that homed the original call leg before the participant was moved.

- To determine if the specified call leg was created as a result of moving a participant to a new conference, use GET on /callLegs/<call leg id>. A new response value of movedCallLeg will be returned with the ID of the original call leg before the participant was moved, and a new response value of movedCallLegCallBridge will be returned with the ID of the Call Bridge that homed the original call leg before the participant was moved.

Note: Even if the API request succeeds, the move participant may not succeed if the SIP replaced call out for the new participant fails. If this happens then the new participant will be destroyed and the participant that was due to be replaced will remain in the call. The status of the new and replaced participants will be relayed via CDRs and events messages.
Example

To move a participant between conferences:

1. Identify the ID of the participant to be moved from the conference specified by `<call id>`
   
   GET `/calls/<call id>/participants`

2. Determine whether the identified participant can be moved using the ID of the participant
   
   GET `/participants/<participant id>`
   
   the participant can be moved if response value `canMove` is set to `true`.

3. Move the identified participant to the destination conference with the ID specified by `<call id>`
   
   POST to object `/calls/<call id>/participants` the parameter `movedParticipant` with
   
   the ID of the participant to move.

   **Note:** The ID of the participant to be moved will be destroyed and replaced with a new ID as part of the move. The callLeg ID also changes during the move.

Responses

<table>
<thead>
<tr>
<th>HTTP response</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 OK, with GUID of the new participant given inside the Location: header</td>
<td>Move participant successfully, but see note below table.</td>
</tr>
<tr>
<td>400 error with the following data: <code>&lt;xml version=&quot;1.0&quot;?&gt;&lt;failureDetails&gt;&lt;parameterError parameter=&quot;remoteParty or movedParticipant&quot; error=&quot;mandatory&quot; /&gt;&lt;/failureDetails&gt;</code></td>
<td>Move failed because neither <code>remoteParty</code> or <code>movedParticipant</code> was provided</td>
</tr>
<tr>
<td>400 error with the following data: <code>&lt;xml version=&quot;1.0&quot;?&gt;&lt;failureDetails&gt;&lt;parameterError parameter=&quot;movedParticipant&quot; error=&quot;invalidValue&quot; /&gt;&lt;/failureDetails&gt;</code></td>
<td>Move failed because the <code>movedParticipant</code> GUID was malformed</td>
</tr>
<tr>
<td>400 error with the following data: <code>&lt;xml version=&quot;1.0&quot;?&gt;&lt;failureDetails&gt;&lt;participantDoesNotExist /&gt;&lt;/failureDetails&gt;</code></td>
<td>Move failed because the <code>movedParticipant</code> GUID did not correspond to a participant hosted on a Call Bridge in the cluster</td>
</tr>
</tbody>
</table>
### HTTP response

<table>
<thead>
<tr>
<th>400 error with the following data:</th>
<th>Move failed because the <code>movedParticipant</code> GUID did not correspond to a participant that supports being moved</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;?xml version=&quot;1.0&quot;?&gt;&lt;failureDetails&gt;&lt;participantCannotBeMoved /&gt;&lt;/failureDetails&gt;</code></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Moving a participant between conferences</strong></th>
</tr>
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<tbody>
<tr>
<td>Administrator Quick Reference Guide: Moving a participant using the API</td>
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</table>
Points to consider when moving a participant

A participant can be moved between any type of call with the exception of moving to dual homed conferences. For instance, a participant can be moved between meetings associated with a space, and meetings with a call forwarding rule applied. A SIP participant which supports SIP replaces can be moved from a conference hosted on an AVMCU. Currently, there is also a limitation on moving a participant within an Ad hoc call, see below.

Moving a participant between conferences on different Call Bridges requires each trunk between Cisco Unified Communications Manager and a Call Bridge to be configured to use a SIP Trunk Security Profile that has the “Accept Replaces Header” check box selected, this is required even if load balancing is not configured within the deployment. For more information on the SIP Trunk Security Profile, see the Security Guide for Cisco Unified Communications Manager.

**Note:** SIP calls with Cisco Expressway/VCS or Cisco Meeting App calls are not supported by the move participant feature.

**Note:** There is no facility to move participants in bulk using the API.

The source and destination meetings can be hosted on the same Call Bridge or on different Call Bridges within a cluster. For a participant to be moved to a different conference, the Call Bridge that you send the API request to must be aware of the ID of the target conference. The participant ID does not have to correspond to a participant existing on that Call Bridge, the Call Bridge will query other Call Bridges in the cluster in an attempt to find the participant.

**Note:** When a participant is moved to a new conference, the participant is given a new participant ID. During the move there is a period where both the old and new participant IDs exist while the callLeg is being transferred. The callLeg ID also changes during the move.

**Specifying callBridge and callBridgeGroups**

When moving a participant between conferences, do not specify the `callBridge` or `callBridgeGroup` API parameters, in the POST to `calls/<call_id>/participants`, the parameters will be ignored if specified. Instead, the participant will be placed automatically; they will remain within the same Call Bridge group providing both `loadBalancingEnabled` and `loadBalanceOutgoingCalls` are set to `true` for that Call Bridge group, otherwise the participant will remain homed on the same Call Bridge in the cluster. When moving a remote participant between conferences homed on different Call Bridges, a peer link between the Call Bridges will be created for the participant.
Configuration settings for a participant being moved

Moving a participant between conferences will not move any configuration settings associated with the participant, they will have the same configuration as if they had dialed into the destination conference themselves. However, it is possible to override specific settings for the participant as part of the POST to /calls/<call id>/participants. For example: you might want to ensure that the participant had the same importance value in the destination conference as they have in the conference they are moving from, in which case set movedParticipant with the ID of the participant to be moved and importance set to the same value as was set for the conference they are moving from.

Limitations when moving a participant

The following lists the limitations which must be considered when planning to move a participant:

- A Cisco Meeting App user cannot currently be moved between conferences.
- If a participant is moved while sharing content, they may continue to share content in the new meeting.
- Move participant currently allows a SIP endpoint to be dialed out to the AVMCU, but fails to initiate and connect the corresponding Lync-side call legs. You are advised to avoid moving a participant using a SIP endpoint to a dual homed call, as they will only see video from participants homed to the Meeting Servers, and will not see Lync or Skype for Business clients.
- A participant cannot be moved between conferences if the outbound call is routed through a Cisco Expressway.
- Cisco Unified Communications Manager is not aware of participants moving within an escalated Ad hoc call. If three participants join an Ad hoc call with two of them being dialed out via moveParticipant, if one of these participants drop from the call, the call will change to a point to point call.
Checking that participants have moved

When moving a participant between conferences, there is no provision in the API to check that the move has been successful. Instead use CDRs and Events to track the progress of the move participant.

From 2.6, the callLegStart CDR contains additional parameters to indicate:

- whether the participant owning this call leg can be moved,
- the ID of the original call leg that the participant was moved from,
- the ID of the Call Bridge hosting the conference that the moved participant's call leg was originally homed on.

In addition, the event resource callRoster includes additional parameters to indicate:

- whether the participant can be moved,
- the original participant ID,
- the ID of the Call Bridge hosting the conference that this participant was moved from.
Example of moving a participant using the API

Below is an example of the steps required to move a participant using the API. In this example, a participant will be moved from 'Example Call 1' to 'Example Call 2'.

```xml
<calls total="2">
  <call id="6ce3f3e1-2dd0-47d9-aec8-eeca2238049d">
    <name>Example Call 2</name>
    <callCorrelator>177396da-5cc3-47cf-9043-8afdef03421a</callCorrelator>
  </call>
  <call id="0ea107df-480d-4642-9be7-5c8906d75f65">
    <name>Example Call 1</name>
    <callCorrelator>797e1651-1289-4d43-9fd7-c71d07e5732e</callCorrelator>
  </call>
</calls>
```

1. Obtain the participant's unique ID. This can be obtained from either the conference's participants information:

   ```
   GET https://<CMS IP>/api/v1/calls/<source call ID>/participants
   ```
   or via

   ```
   GET https://<CMS IP>/api/v1/participants
   ```

   Currently, 'Example Call 1' (0ea107df-480d-4642-9be7-5c8906d75f65) has one participant:

   ```xml
   <participants total="1">
     <participant id="b2886fa3-2247-4780-8067-d22cc91e495e">
       <call id="0ea107df-480d-4642-9be7-5c8906d75f65"></call>
     </participant>
   </participants>
   ```

   while 'Example Call 2' (6ce3f3e1-2dd0-47d9-aec8-eeca2238049d) has none:

   ```xml
   <participants total="0"/>
   ```

2. Check the participant's information to see if it can be moved, with

   ```
   GET https://<CMS IP>/api/v1/calls/<source call ID>/participants/<participant ID>
   ```
   or via

   ```
   GET https://<CMS IP>/api/v1/participants/<participant ID>
   ```
The 'canMove' field for the participant will be set to 'true' if this participant can be moved.

```xml
<participant id="b2886fa3-2247-4780-8067-d22cc91e495e">
  <call>0ea107df-480d-4642-9be7-5c8906d75f65</call>
  <numCallLegs>1</numCallLegs>
  <name/>
  <uri>6294@uxb.ciscolabs.com</uri>
  <originalUri>6294@uxb-cucm-0.uxb.ciscolabs.com</originalUri>
  <isActivator>true</isActivator>
  <canMove>true</canMove>
  <configuration/>
  <status>
    <state>connected</state>
  </status>
</participant>
```

3. Add the participant to the destination conference by performing a POST request:

```
POST https://<CMS IP>/api/v1/calls/<destination call ID>/participants
```

Instead of using the 'remoteParty' parameter as a form parameter, use the 'movedParticipant' parameter instead. This should be set to the ID of the participant.

The participant will now be in the 'Example Call 2' conference (6ce3f3e1-2dd0-47d9-aec8-eeca2238049d) with a different participant ID.

```xml
<participants total="1">
  <participant id="defbfcf8-1782-4473-82ce-a5b49122c0c1">
    <name/>
    <call>6ce3f3e1-2dd0-47d9-aec8-eeca2238049d</call>
  </participant>
</participants>
```
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