This sequence diagram shows an IMS user creating a conference by using a conference-factory URI. The conference is created at a MRFC-AS of the user's home network. The steps involved in the conference scenario covered here are:

1. The conference initiator UE uses the conference factory URI to initiate a conference with the MRFC-AS (Multimedia Resource Function Control/Application Server).
2. The MRFC-AS assigns a conference URI to the conference and configures the MRFP (Multimedia Resource Function Processor).
3. The conference call is setup and the RTP data begins flowing between the conference initiating UE and the MRFP.
4. The conference initiator then uses the refer procedure to add more users to the conference. The new users establish a call to the conference URI passed in the refer message.
5. When the conference is in progress, RTP media streams are being mixed and propagated to all the participants.
6. The conference user drops out of the conference. All users are notified for this exit from the conference.

Initiating an IMS Conference using the Conference Factory URI

The Conference Caller includes all supported codecs. This information is included as the first SDP offer in the initial invite. The Conference Caller supports audio and video codecs.

Conference Initiator UE is aware of a conference-factory URI due to pre-configuration. When creating a conference, the Conference Caller generates an initial INVITE request with its request URI set to conference factory URI.

The P-CSCF responds to INVITE with 100 Trying.

The P-CSCF forwards the INVITE request to the S-CSCF.

The S-CSCF responds to INVITE with 100 Trying.

The S-CSCF forwards the INVITE request to the MRFC-AS that is indicated in the host part of the Request URI.
### IMS Conference (IMS Conference Call)

**Calling UE**
- **Caller User Equipment**
- **Conference Initiator**
  - Initiating P-CSCF

**IMS Network**
- **IMS 1**
  - Initiating S-CSCF
  - MRFC-AS
  - MRFP
  - Participating I-CSCF
  - Participating S-CSCF
  - Participating P-CSCF

**Called UE**
- **Called User Equipment**
- **Called User Equipment**
- **Conference Participant**

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The MRF responds to INVITE with 100 Trying.

The MRFC-AS allocates a conference URI, based on local information and information gained from the conference-factory URI in the Request URI field of INVITE message.

The media stream capabilities of the MRFP are returned along the signalling path, in a 183 (Session Progress) provisional response.

The Conference Initiator UE determines which media flows should be used for this session, and which codecs should be used for each of those media flows. If there is any change, Conference Caller sends a new codec request in PRACK.

MRFC-AS initiates H.248 interaction to modify the connection. It instructs the MRFP to reserve multimedia resources for the negotiated codecs.

The MRFC-AS acknowledges the PRACK request with a 200 (OK) response.

When the resource reservation is completed, the Conference Initiator UE sends the UPDATE request towards the MRFC-AS.

The MRFC-AS acknowledges the UPDATE with a 200 (OK) response.

MRFC initiates a H.248 interaction to connect through the multimedia processing resources for Conference...
### Conference Call Process

<table>
<thead>
<tr>
<th>Calling UE</th>
<th>IMS Network</th>
<th>Called UE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Caller User Equipment</strong></td>
<td><strong>Initiating P-CSCF</strong></td>
<td><strong>Initiating S-CSCF</strong></td>
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</table>

- **200 OK (INVITE)**: The conference initiator sends an INVITE message to the MRFP.
- **200 OK (INVITE)**: The conference initiator sends an ACK towards MRFC-AS.

**User inviting another user to a conference by sending a REFER request**

#### REFER Message

- **Request URI**: `sip:user2_public1@home2.net`
- **From**: `sip:user1_public1@home1.net`
- **To**: `sip:user2_public1@home2.net`
- **Refer-To**: `sip:conf1@mrfc1.home1.net;method=INVITE`
- **Referred-By**: `sip:user1_public1@home1.net`

**Conference Caller creates a conference and then sends REFER message with Refer-To containing the conference URI as learned during the conference establishment. Additionally the "method" uri parameter indicates that the other user is requested to send an INVITE request to this conference URI.**

#### NOTIFY Message

- **To**: `sip:user1_public1@home1.net`
- **From**: `sip:user2_public1@home2.net`
- **Subscription-State**: active;expires:7200
- **Event**: refer

**The originating S-CSCF performs an analysis of the destination address, determines the terminating I-CSCF and forwards the REFER message to it.**

**The terminating I-CSCF performs a location query to the HSS to find out the terminating S-CSCF and forwards the REFER request to that S-CSCF.**

**The Called Conference Participant accepts the REFER request by sending a 202 (Accepted) response.**

**The NOTIFY message is sent to inform that the REFER message is being processed.**
The "200 OK" Acknowledges the NOTIFY message.

Called Conference Participant enters Conference

 Called Conference UE is aware of a conference-factory URI from REFER.

The S-CSCF forwards the INVITE request to the MRFC-AS that is indicated in the message.

The S-CSCF forwards the INVITE request to the MRFC-AS that is indicated in the message.
Notify Conference Initiator that the user has successfully entered the conference

```
<table>
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<tr>
<th>NOTIFY</th>
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<tr>
<td>To: <a href="">sip:user1_public1@home1.net</a>, From: <a href="">sip:user2_public1@home2.net</a>, Subscription-State: terminated, Event: refer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200 OK (NOTIFY)</td>
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</table>
```

Conference in progress

```
RTP Stream
```

The conference is now in progress. The MRFP is merging and distributing the media stream for the conference.

Conference Caller leaving the Conference

```
BYE
Request URI: sip:conf1@mrfc1.home1.net,
From: <sip:user2_public1@home1.net>,
To: <sip:conf1@mrfc1.home1.net>
```

```
H.248 interaction to release resources
```

```
200 OK (BYE)
To: <sip:user3_public1@home1.net>, From: <sip:conf1@mrfc1.home1.net>, Subscription-State terminated, Event: conference, Conference status information of all conference participants
```

```
NOTIFY
To: <sip:user3_public1@home1.net>, From: <sip:conf1@mrfc1.home1.net>, Conference status information of all conference participants
```

```
200 OK (NOTIFY)
```

```
200 OK (BYE)
```

```
200 OK (BYE)
```

```
200 OK (BYE)
```

The called Conference Participant wants to leave the conference. For this purpose it sends a BYE message to the P-CSCF with the Conference-URI as the Request-URI.

The MRFC AS interacts with the MRFP to release the resources reserved for Conference Caller in this conference.

The MRFC AS generates a NOTIFY request to indicate that Called Conference Participant has left the conference and automatically unsubscribes it from its subscription to the conference event package. MRFC AS similarly notifies other conference participants that have subscribed to the conference event package that Called Conference...
## IMS Conference (IMS Conference Call)

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Participant has left the conference.

The conference initiator is also notified about a user dropping out of the conference.