Troubleshoot Webex Calling Transfer Audio Loss Due to SIP Race Condition

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Issue

During Webex Calling consultative transfers, the transfer target connects successfully but experiences no audio on both internal and PSTN calls. This issue affects executive and administrative call handling due to failed transfers. The problem occurs when a consultative transfer is initiated, resulting in the receiving user being connected without audio. Multiple call examples demonstrate this behavior consistently across different call scenarios including internal extensions and external PSTN numbers.

Environment

- Webex Calling service
- Cisco IP phones (8851 series)
- Firmware version 12.0.7_08f3fbbd6d68
- Both internal and PSTN call scenarios affected
- Consultative transfer feature in use

Resolution

The issue was resolved by deploying engineering firmware version 12-0-7MPP0506-20260624-1f5ff103a2 that addresses the identified SIP race condition. These steps were taken:

Step 1: Problem Identification and Analysis

Engineering analyzed the SIP messaging and identified a race condition where an UPDATE message is received before the device completes the 200 OK with ACK sequence during consultative transfers. This SIP message sequence was observed:

```
2026-06-17 21:13:14.581Z
SIP/2.0 200 OK
To:"Ken Griffin"<sip:xnou90gmr8_08F3FBBD6D68@83549438.cisco-bcld.com>;tag=673fdc680265ea3i0
From:"Mehwesh Khalid"<sip:3405@144.196.250.28;user=phone>;tag=1163537478-1781730793405-
Call-ID:SSE211313405170626889929990144.196.250.28
CSeq:100 INVITE

2026-06-17 21:13:14.609Z
UPDATE sip:xnou90gmr8_08F3FBBD6D68@10.217.244.134:5076;transport=tls SIP/2.0
CSeq:101 UPDATE

17/06/26 15:13:14.631
ACK sip:xnou90gmr8_08F3FBBD6D68@10.217.244.134:5076;transport=tls SIP/2.0
CSeq:100 ACK
```

Step 2: Engineering Firmware Deployment

Engineering provided updated firmware containing the race condition fix. The firmware was deployed to targeted test devices first, then to production devices after successful validation.

Step 3: Device Firmware Update Process

Devices were updated to the engineering firmware through this process:

1. Engineering deployed the firmware to specific device MAC addresses

2. Devices required either a manual reboot or midnight sync to download the new firmware

3. Additional devices were updated in phases as requested

Step 4: Testing and Validation

After firmware deployment, testing confirmed the no-audio issue was resolved. Post-upgrade testing showed calls were stable and the consultative transfer functionality worked correctly without audio loss.

Step 5: Production Rollout

The fix was scheduled for inclusion in general availability firmware build 12.0.8, targeted for October/November release timeframe.

Cause

The root cause was a SIP race condition in the device firmware where an UPDATE message was received before the device completed the 200 OK with ACK sequence during consultative transfer operations. This timing issue prevented proper audio path establishment for the transfer target, resulting in successful call connection but no audio transmission.

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