

PSTN Callers not Hearing any Ring Back When they Call IP Phones

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Introduction

This document discusses a problem where a public switched telephone network (PSTN) caller does not hear a ring back when calling an IP phone.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

This document is not restricted to specific software and hardware versions.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

Problem

There are some situations in which a gateway may intermittently fail to provide Ring Back Tone (RBT) to an incoming ISDN caller. This problem has been seen on local, long distance, and international calls.

- The Gateway generates ring back toward the network side (PSTN or private automatic branch exchange [PABX]), if the setup contains Progress IE = 3, meaning the originating address (calling party) is NON-ISDN.

- The Gateway does NOT generate ring back towards the network side (PSTN or PABX), if the setup contains No Progress IE (Progress IE =0), meaning the originating address (calling party) is ISDN.

This is an example of when this might occur. International calls are arriving via the ISDN.

PSTN ----- IOS Gateway ----- CallManager ----- IP phone

Example of a Call that Gets Ring Back Tone

A call from a NON-ISDN terminal is received. The setup contains a Progress IE = 3. The gateway generates the ring back when it receives the alert from the Cisco CallManager.

Note: These debugs were captured by issuing the **debug isdn q931** Cisco IOS® Software command:

```
01:34:48: ISDN Se0:15: RX <- SETUP pd = 8 callref = 0x002B
01:34:48: Sending Complete
01:34:48: Bearer Capability i = 0x9090A3
01:34:48: Channel ID i = 0xA9838D
01:34:48: Progress Ind i = 0x8583 - Origination address is non-ISDN
01:34:48: Calling Party Number i = 0x2183, '27045000', Plan:ISDN, Type:National
01:34:48: Called Party Number i = 0xA1, '27182145', Plan:ISDN, Type:National
01:34:48: ISDN Se0:15: TX -> CALL_PROC pd = 8 callref = 0x802B
01:34:48: Channel ID i = 0xA9838D
01:34:48: act_alert: Tone Ring Back generated in direction Network One
01:34:48: act_gen_tone: Tone Ring Back generated in direction Network
01:34:48: ISDN Se0:15: TX -> ALERTING pd = 8 callref = 0x802B
```

Example of a Call that Does Not Get Ring Back Tone

A call is received from an ISDN terminal. There is no Progress IE in the setup. (Progress IE = 0). The Gateway is not generating ring back when it receives the alert from the Cisco CallManager.

```
01:37:01: ISDN Se0:15: RX <- SETUP pd = 8 callref = 0x002E
01:37:01: Sending Complete
01:37:01: Bearer Capability i = 0x8090A3
01:37:01: Channel ID i = 0xA98391
01:37:01: Calling Party Number i = 0x2183, '478681058', Plan:ISDN, Type:International
01:37:01: Called Party Number i = 0xA1, '27182145', Plan:ISDN, Type:International
01:37:01: High Layer Compat i = 0x9181
01:37:01: ISDN Se0:15: TX -> CALL_PROC pd = 8 callref = 0x802E
01:37:01: Channel ID i = 0xA98391
01:37:01: ISDN Se0:15: TX -> ALERTING pd = 8 callref = 0x802E
```

In this example, the gateway is expecting the ISDN to generate the ring back (due to no PI of 3). The ISDN, however, is not generating a ring back tone. This results in the caller only hearing silence until the called party answers the call. This may be due to an ISDN interworking issue caused because the call originated internationally (normally ring is generated at the terminating device for international calls).

Solution

You can force the gateway to generate a ring back by issuing the **progress_ind setup enable 3** command. Configure this on the VoIP pointing to the Cisco CallManager.

```
!
dial-peer voice 500 voip
destination-pattern 5...
progress_ind setup enable 3
```

```
!-- Forces ring back tone for this peer.
```

```
session target ipv4:10.200.73.15  
codec g711ulaw  
!
```

Note: In case of multiple VoIP peers that can be matched, make sure to configure this on all of them.

Related Information

- **Troubleshooting No Ringback Tone on ISDN–VoIP (H.323) Calls**
 - **Voice Technology Support**
 - **Voice and IP Communications Product Support**
 - **Troubleshooting Cisco IP Telephony** [↗](#)
 - **Technical Support – Cisco Systems**
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