Unity Connection TIMG/PIMG Calls Roll to the Opening Greeting

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Contents

Introduction

T1 Media Gateway (TIMG) and PBX IP Media Gateway (PIMG) devices are used in order to allow PBXs to use Unity Connection as their voicemail system. The communication from TIMG/PIMG to Unity Connection is via Session Initiation Protocol (SIP). The communication from PBX to Unity Connection is via Time−Division Multiplexing (TDM).

This document describes an issue that might be encountered with this type of integration.

Problem

Unity Connection is configured to work with TIMG in order to integrate with PBX. When you call a PBX and Ring No Answer or Call Forward All to voicemail, the call goes to the Opening Greeting instead of to the voicemail greeting.

Traces show:

Note: Some parts of the trace have been re−organized to be easier to view.

TIMG composes a invite because it has received the physical call. However, at this point, TIMG has not received any call information from the PBX.

```
087:57.872 [VoIP      ] Prot     <----INVITE sip:Anonymous@14.48.13.103:5060 SIP/2.0
087:57.872 [VoIP      ] Prot     From:"Anonymous"<sip:Anonymous@14.48.13.115:5060;
user=phone>;vnd.pimg.port=7;tag=42B2324631353641000A6029
087:57.872 [VoIP      ] Prot     To:"Anonymous"<sip:Anonymous@14.48.13.103:5060>
087:57.872 [VoIP      ] Prot     Contact:<sip:14.48.13.115:5060>
087:57.872 [VoIP      ] Prot     Content-Type:application/sdp
087:57.872 [VoIP      ] Prot     Supported:replaces,early-session,100rel
087:57.872 [VoIP      ] Prot     Allow:INVITE,BYE,CANCEL,REFER,NOTIFY,OPTIONS,
REGISTER, INFO,ACK,PRACK
087:57.872 [VoIP      ] Prot     Expires:120
087:57.872 [VoIP      ] Prot     Call-ID:01B22816147E007E00000019@14.48.13.103
087:57.872 [VoIP      ] Prot     CSeq:1 INVITE
087:57.872 [VoIP      ] Prot     Max-Forwards:70
087:57.872 [VoIP      ] Prot     User-Agent:Voice Messaging
087:57.872 [VoIP      ] Prot     Via:SIP/2.0/UDP 14.48.13.115:5060;branch=z9hG4bKC
621E66EBDE4CB89FF423B472071147B
087:57.872 [VoIP      ] Prot     Content-Length:219
087:57.872 [VoIP      ] Prot
```

```
087:57.872 [VoIP      ] Prot     v=0
087:57.872 [VoIP      ] Prot     o=phone 3397 20425 IN IP4 14.48.13.115
087:57.872 [VoIP      ] Prot     s=-
087:57.872 [VoIP      ] Prot     c=IN IP4 14.48.13.115
087:57.872 [VoIP      ] Prot     t=0 0
087:57.872 [VoIP      ] Prot     m=audio 18698 RTP/AVP 0 101 13
087:57.872 [VoIP      ] Prot     a=rtpmap:0 PCMU/8000/1
087:57.872 [VoIP      ] Prot     a=ptime:30
087:57.872 [VoIP      ] Prot     a=rtpmap:101 telephone-event/8000
087:57.872 [VoIP      ] Prot     a=fmtp:101 0-15
087:57.872 [VoIP      ] Prot     a=rtpmap:13 CN/8000
087:57.872 [VoIP      ] Prot


087:57.872 [VoIP      ] Prot     ---->SIP/2.0 100 Trying
087:57.872 [VoIP      ] Prot     From: "Anonymous"<sip:Anonymous@14.48.13.115:5060;
user=phone>;vnd.pimg.port=7;tag=42B2324631353641000A6029
087:57.872 [VoIP      ] Prot     To: "Anonymous"<sip:Anonymous@14.48.13.103:5060>;
tag=f0c09771bd2942e7a57794619f8efccd
087:57.872 [VoIP      ] Prot     Via: SIP/2.0/UDP 14.48.13.115:5060;branch=z9hG4bKC
621E66EBDE4CB89FF423B472071147B
087:57.872 [VoIP      ] Prot     Expires: 120
087:57.872 [VoIP      ] Prot     Call-ID: 01B22816147E007E00000019@14.48.13.103
087:57.872 [VoIP      ] Prot     CSeq: 1 INVITE
087:57.872 [VoIP      ] Prot     Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,
REGISTER,SUBSCRIBE
087:57.872 [VoIP      ] Prot     Content-Length: 0
087:57.872 [VoIP      ] Prot
087:57.888 [VoIP      ] Prot

087:57.888 [VoIP      ] Prot     ---->SIP/2.0 180 Ringing
087:57.888 [VoIP      ] Prot     From: "Anonymous"<sip:Anonymous@14.48.13.115:5060;
user=phone>;vnd.pimg.port=7;tag=42B2324631353641000A6029
087:57.888 [VoIP      ] Prot     To: "Anonymous"<sip:Anonymous@14.48.13.103:5060>;
tag=f0c09771bd2942e7a57794619f8efccd
087:57.888 [VoIP      ] Prot     Via: SIP/2.0/UDP 14.48.13.115:5060;branch=z9hG4bKC
621E66EBDE4CB89FF423B472071147B
087:57.888 [VoIP      ] Prot     Expires: 120
087:57.888 [VoIP      ] Prot     Call-ID: 01B22816147E007E00000019@14.48.13.103
087:57.888 [VoIP      ] Prot     CSeq: 1 INVITE
087:57.888 [VoIP      ] Prot     Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,
REGISTER,SUBSCRIBE
087:57.888 [VoIP      ] Prot     Content-Length: 0
087:57.888 [VoIP      ] Prot
087:57.968 [VoIP      ] Prot

087:57.968 [VoIP      ] Prot     ---->SIP/2.0 200 OK
087:57.968 [VoIP      ] Prot     From: "Anonymous"<sip:Anonymous@14.48.13.115:5060;
user=phone>;vnd.pimg.port=7;tag=42B2324631353641000A6029
087:57.968 [VoIP      ] Prot     To: "Anonymous"<sip:Anonymous@14.48.13.103:5060>;
tag=f0c09771bd2942e7a57794619f8efccd
087:57.968 [VoIP      ] Prot     Via: SIP/2.0/UDP 14.48.13.115:5060;branch=z9hG4bKC
621E66EBDE4CB89FF423B472071147B
087:57.968 [VoIP      ] Prot     Contact: <sip:14.48.13.103:5060>
087:57.968 [VoIP      ] Prot     Expires: 120
087:57.968 [VoIP      ] Prot     Call-ID: 01B22816147E007E00000019@14.48.13.103
087:57.968 [VoIP      ] Prot     CSeq: 1 INVITE
087:57.968 [VoIP      ] Prot     Allow-Events: kpml
087:57.968 [VoIP      ] Prot     Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,
REGISTER,SUBSCRIBE
087:57.968 [VoIP      ] Prot     Content-Length: 224
087:57.968 [VoIP      ] Prot     Content-Type: application/sdp
087:57.968 [VoIP      ] Prot
087:57.968 [VoIP      ] Prot     v=0
087:57.968 [VoIP      ] Prot     o=CiscoSystemsUCXN 399280213 399280214 IN IP4 14.
48.13.103
```

```
087:57.968 [VoIP      ] Prot     s=No Subject
087:57.968 [VoIP      ] Prot     c=IN IP4 14.48.13.103
087:57.968 [VoIP      ] Prot     t=0 0
087:57.968 [VoIP      ] Prot     m=audio 16716 RTP/AVP 0 101
087:57.968 [VoIP      ] Prot     a=rtpmap:0 PCMU/8000/1
087:57.968 [VoIP      ] Prot     a=ptime:30
087:57.968 [VoIP      ] Prot     a=rtpmap:101 telephone-event/8000
087:57.968 [VoIP      ] Prot     a=fmtp:101 0-15
```

At this point, the call has been answered and the caller hears the Opening Greeting.

```
087:58.448 [VoIP      ] Prot     ---->SIP/2.0 200 OK
087:58.448 [VoIP      ] Prot     From: "Anonymous"<sip:Anonymous@14.48.13.115:5060;
user=phone>;vnd.pimg.port=7;tag=42B232463135364100A6029
087:58.448 [VoIP      ] Prot     To: "Anonymous"<sip:Anonymous@14.48.13.103:5060>;
tag=f0c09771bd2942e7a57794619f8efccd
087:58.448 [VoIP      ] Prot     Via: SIP/2.0/UDP 14.48.13.115:5060;branch=z9hG4bKC
621E66EBDE4CB89FF423B472071147B
087:58.448 [VoIP      ] Prot     Contact: <sip:14.48.13.103:5060>
087:58.448 [VoIP      ] Prot     Expires: 120
087:58.448 [VoIP      ] Prot     Call-ID: 01B22816147E007E00000019@14.48.13.103
087:58.448 [VoIP      ] Prot     CSeq: 1 INVITE
087:58.448 [VoIP      ] Prot     Allow-Events: kpml
087:58.448 [VoIP      ] Prot     Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,
REGISTER,SUBSCRIBE
087:58.448 [VoIP      ] Prot     Content-Length: 224
087:58.448 [VoIP      ] Prot     Content-Type: application/sdp
087:58.448 [VoIP      ] Prot
087:58.448 [VoIP      ] Prot     v=0
087:58.448 [VoIP      ] Prot     o=CiscoSystemsUCXN 399280213 399280214 IN IP4 14.
48.13.103
087:58.448 [VoIP      ] Prot     s=No Subject
087:58.448 [VoIP      ] Prot     c=IN IP4 14.48.13.103
087:58.448 [VoIP      ] Prot     t=0 0
087:58.448 [VoIP      ] Prot     m=audio 16716 RTP/AVP 0 101
087:58.448 [VoIP      ] Prot     a=rtpmap:0 PCMU/8000/1
087:58.448 [VoIP      ] Prot     a=ptime:30
087:58.448 [VoIP      ] Prot     a=rtpmap:101 telephone-event/8000
087:58.448 [VoIP      ] Prot     a=fmtp:101 0-15
```

TIMG has received the call information from PBX. At this point, it is too late since the call has already routed to Unity Connection.

```
087:58.384 [Tel-7     ] Event    Dtmf (#) On
087:58.384 [Tel-7     ] Event    Dtmf (#) Off
087:58.592 [Tel-7     ] Event    Dtmf (0) On
087:58.592 [Tel-7     ] Event    Dtmf (0) Off
087:58.768 [Tel-7     ] Event    Dtmf (2) On
087:58.768 [Tel-7     ] Event    Dtmf (2) Off
087:58.960 [Tel-7     ] Event    Dtmf (#) On
087:58.960 [Tel-7     ] Event    Dtmf (#) Off
087:59.168 [Tel-7     ] Event    Dtmf (5) On
087:59.168 [Tel-7     ] Event    Dtmf (5) Off
087:59.344 [Tel-7     ] Event    Dtmf (2) On
087:59.344 [Tel-7     ] Event    Dtmf (2) Off
087:59.408 [VoIP      ] Prot

087:59.536 [Tel-7     ] Event    Dtmf (8) On
087:59.536 [Tel-7     ] Event    Dtmf (8) Off
087:59.744 [Tel-7     ] Event    Dtmf (6) On
087:59.744 [Tel-7     ] Event    Dtmf (6) Off
087:59.920 [Tel-7     ] Event    Dtmf (#) On
087:59.920 [Tel-7     ] Event    Dtmf (#) Off
088:00.112 [Tel-7     ] Event    Dtmf (5) On
088:00.112 [Tel-7     ] Event    Dtmf (5) Off
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```
088:00.320 [Tel-7      ] Event    Dtmf (5) On
088:00.320 [Tel-7      ] Event    Dtmf (5) Off
088:00.496 [Tel-7      ] Event    Dtmf (8) On
088:00.496 [Tel-7      ] Event    Dtmf (8) Off
088:00.688 [Tel-7      ] Event    Dtmf (8) On
088:00.688 [Tel-7      ] Event    Dtmf (8) Off
088:00.896 [Tel-7      ] Event    Dtmf (#) On
088:00.896 [Tel-7      ] Event    Dtmf (#) Off
088:01.328 [VoIP       ] Prot

087:59.408 [VoIP       ] Prot     ---->SIP/2.0 200 OK
087:59.408 [VoIP       ] Prot     From: "Anonymous"<sip:Anonymous@14.48.13.115:5060;
user=phone>;vnd.pimg.port=7;tag=42B2324631353641000A6029
087:59.408 [VoIP       ] Prot     To: "Anonymous"<sip:Anonymous@14.48.13.103:5060>;
tag=f0c09771bd2942e7a57794619f8efccd
087:59.408 [VoIP       ] Prot     Via: SIP/2.0/UDP 14.48.13.115:5060;branch=z9hG4bKC
621E66EBDE4CB89FF423B472071147B
087:59.408 [VoIP       ] Prot     Contact: <sip:14.48.13.103:5060>
087:59.408 [VoIP       ] Prot     Expires: 120
087:59.408 [VoIP       ] Prot     Call-ID: 01B22816147E007E00000019@14.48.13.103
087:59.408 [VoIP       ] Prot     CSeq: 1 INVITE
087:59.408 [VoIP       ] Prot     Allow-Events: kpml
087:59.408 [VoIP       ] Prot     Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,
REGISTER,SUBSCRIBE
087:59.408 [VoIP       ] Prot     Content-Length: 224
087:59.408 [VoIP       ] Prot     Content-Type: application/sdp
087:59.408 [VoIP       ] Prot
087:59.408 [VoIP       ] Prot     v=0
087:59.408 [VoIP       ] Prot     o=CiscoSystemsUCXN 399280213 399280214 IN IP4 14.48.
13.103
087:59.408 [VoIP       ] Prot     s=No Subject
087:59.408 [VoIP       ] Prot     c=IN IP4 14.48.13.103
087:59.408 [VoIP       ] Prot     t=0 0
087:59.408 [VoIP       ] Prot     m=audio 16716 RTP/AVP 0 101
087:59.408 [VoIP       ] Prot     a=rtpmap:0 PCMU/8000/1
087:59.408 [VoIP       ] Prot     a=ptime:30
087:59.408 [VoIP       ] Prot     a=rtpmap:101 telephone-event/8000
087:59.408 [VoIP       ] Prot     a=fmtp:101 0-15

088:01.328 [VoIP       ] Prot     ---->SIP/2.0 200 OK
088:01.328 [VoIP       ] Prot     From: "Anonymous"<sip:Anonymous@14.48.13.115:5060;
user=phone>;vnd.pimg.port=7;tag=42B2324631353641000A6029
088:01.328 [VoIP       ] Prot     To: "Anonymous"<sip:Anonymous@14.48.13.103:5060>;
tag=f0c09771bd2942e7a57794619f8efccd
088:01.328 [VoIP       ] Prot     Via: SIP/2.0/UDP 14.48.13.115:5060;branch=z9hG4bKC
621E66EBDE4CB89FF423B472071147B
088:01.328 [VoIP       ] Prot     Contact: <sip:14.48.13.103:5060>
088:01.328 [VoIP       ] Prot     Expires: 120
088:01.328 [VoIP       ] Prot     Call-ID: 01B22816147E007E00000019@14.48.13.103
088:01.328 [VoIP       ] Prot     CSeq: 1 INVITE
088:01.328 [VoIP       ] Prot     Allow-Events: kpml
088:01.328 [VoIP       ] Prot     Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,
REGISTER,SUBSCRIBE
088:01.328 [VoIP       ] Prot     Content-Length: 224
088:01.328 [VoIP       ] Prot     Content-Type: application/sdp
088:01.328 [VoIP       ] Prot
088:01.328 [VoIP       ] Prot     v=0
088:01.328 [VoIP       ] Prot     o=CiscoSystemsUCXN 399280213 399280214 IN IP4 14.48.
13.103
088:01.328 [VoIP       ] Prot     s=No Subject
088:01.328 [VoIP       ] Prot     c=IN IP4 14.48.13.103
088:01.328 [VoIP       ] Prot     t=0 0
088:01.328 [VoIP       ] Prot     m=audio 16716 RTP/AVP 0 101
088:01.328 [VoIP       ] Prot     a=rtpmap:0 PCMU/8000/1
088:01.328 [VoIP       ] Prot     a=ptime:30
088:01.328 [VoIP       ] Prot     a=rtpmap:101 telephone-event/8000
```

```
088:01.328 [VoIP      ] Prot     a=fmtp:101 0-15

088:01.920 [Tel-7     ] Event    Tone Detect Enabled (0xFF)
```

After Parsing the Adept rules, the call information from PBX is organized to this statement. This should have been received before the invite so the invite could be composed properly.

```
088:01.920 [Tel-7     ] Event    Cpid (5286,->,->5588,) (NoAns)

088:01.920 [VoIP      ] Prot     <----ACK sip:14.48.13.103:5060 SIP/2.0
088:01.920 [VoIP      ] Prot     CSeq:1 ACK
088:01.920 [VoIP      ] Prot     To:"Anonymous"<sip:Anonymous@14.48.13.103:5060>;
tag=f0c09771bd2942e7a57794619f8efccd
088:01.920 [VoIP      ] Prot     From:"Anonymous"<sip:Anonymous@14.48.13.115:5060;
user=phone>;vnd.pimg.port=7;tag=42B2324631353641000A6029
088:01.920 [VoIP      ] Prot     Call-ID:01B22816147E007E00000019@14.48.13.103
088:01.920 [VoIP      ] Prot     Max-Forwards:70
088:01.920 [VoIP      ] Prot     User-Agent:Voice Messaging
088:01.920 [VoIP      ] Prot     Via:SIP/2.0/UDP 14.48.13.115:5060;branch=z9hG4bK3
032A56F55534D5407B2D30922E6F860
088:01.920 [VoIP      ] Prot     Content-Length:0
088:01.920 [VoIP      ] Prot
088:01.920 [VoIP      ] Prot
```

Here TIMG attempts to act on the updated call information. However, this is not accepted by Unity Connection.

```
088:01.920 [VoIP      ] Prot     <----INFO sip:14.48.13.103:5060 SIP/2.0
088:01.920 [VoIP      ] Prot     Diversion: <tel:5588>;reason=no-answer
088:01.920 [VoIP      ] Prot     Content-Type:text/source-party
088:01.920 [VoIP      ] Prot     To:"Anonymous"<sip:Anonymous@14.48.13.103:5060>;
tag=f0c09771bd2942e7a57794619f8efccd
088:01.920 [VoIP      ] Prot     From:"Anonymous"<sip:Anonymous@14.48.13.115:5060;
user=phone>;vnd.pimg.port=7;tag=42B2324631353641000A6029
088:01.920 [VoIP      ] Prot     Call-ID:01B22816147E007E00000019@14.48.13.103
088:01.920 [VoIP      ] Prot     CSeq:2 INFO
088:01.920 [VoIP      ] Prot     Max-Forwards:70
088:01.920 [VoIP      ] Prot     User-Agent:Voice Messaging
088:01.920 [VoIP      ] Prot     Via:SIP/2.0/UDP 14.48.13.115:5060;branch=z9hG4bK6
EBB9CF7420BA1A393273882D5157413
088:01.920 [VoIP      ] Prot     Content-Length:6
088:01.920 [VoIP      ] Prot
088:01.920 [VoIP      ] Prot     5286
088:01.968 [VoIP      ] Prot

088:01.968 [VoIP      ] Prot     ---->SIP/2.0 200 OK
088:01.968 [VoIP      ] Prot     From: "Anonymous"<sip:Anonymous@14.48.13.115:5060;
user=phone>;vnd.pimg.port=7;tag=42B2324631353641000A6029
088:01.968 [VoIP      ] Prot     To: "Anonymous"<sip:Anonymous@14.48.13.103:5060>;
tag=f0c09771bd2942e7a57794619f8efccd
088:01.968 [VoIP      ] Prot     Via: SIP/2.0/UDP 14.48.13.115:5060;branch=z9hG4bK6
EBB9CF7420BA1A393273882D5157413
088:01.968 [VoIP      ] Prot     Call-ID: 01B22816147E007E00000019@14.48.13.103
088:01.968 [VoIP      ] Prot     CSeq: 2 INFO
088:01.968 [VoIP      ] Prot     Allow: ACK,BYE,CANCEL,INVITE,NOTIFY,OPTIONS,REFER,
REGISTER,SUBSCRIBE
088:01.968 [VoIP      ] Prot     Content-Length: 0
088:01.968 [VoIP      ] Prot
```

Note: The remainder of the trace has been truncated.

The main issue here is that the call information from the PBX arrives about four seconds after the physical call that triggered the Invite to be sent to Unity Connection is received. Thus the call rolled to the Opening

Greeting because no ***Diversion:*** was contained in the inital invite to Unity Connection to tell Unity Connection to what mailbox to route the call.

Solution

In order to fix this issue, navigate to ***Configuration > TDM > General***, find ***Maximum Call Party Delay*** (ms), and change it to a value such as 5,000 ms. This adds a five−second delay before the initial invite is composed to Unity Connection, which allows time for all call information to be received from PBX.