

在CUCM 11.5的本地呼叫排队增强

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简介

Cisco Unified通信Manager(CUCM)在队列提供呼叫排队安置呼叫方，直到搜索成员是可用答复他们。管理员能设置默认，因此呼叫方接收一最初的问候语通告，在呼叫对代理程序前被扩展或默认可以更改，因此最初的通告作用，在呼叫方在Music on Hold或Tone on Hold之后跟随的队列放置。如果呼叫方在队列保持特定的时间，一附属通告播放在直到呼叫的一配置的时间间隔可以回答或，直到最大等待计时器超时。

使用的组件

- Cisco Unified Communications管理器版本11.5.1
- Cisco IP电话版本8.6.6.0

背景信息

此部分在CUCM 11.5的增强之前描述本地呼叫排队基本功能

当呼叫进来并且到达寻线引导时，提供这些功能：

- 呼叫方可以连接到一最初的可定制的问候语通告前面继续。
- 如果一个或更多线路成员登陆对寻线引导并且在空闲状态，并且，如果呼叫不是排队，呼叫对是空闲在最长的时期的线路成员被扩展。
- 如果线路成员不应答呼叫，该呼叫方在队列没有安置。呼叫路由对新建目标或者断开，根据设置，当搜索成员不应答时，登陆或者注册。
- 如果线路成员不应答一队列启用的呼叫，该线路成员注销搜索组只有当选项自动地注销没有答案的搜索成员在线群选择设置窗口。

- 只有当所有成员忙碌，呼叫在队列安置。
- 在队列连接的呼叫方能听到Music on Hold和重复(可定制的)定期通告。
- 在线路成员变得空闲后，有最久的等待时间的呼叫方在广泛搜索组间是对空闲线路成员延伸。如果空闲线路成员不应答呼叫，呼叫方返回到队列的上一个位置。
- 如果一排队呼叫超出其最长等待时间或在队列允许的呼叫方最大是超出，呼叫可以路由到一个备选编号或如何可以被断开，根据寻线引导配置。备选编号可以是下列之一：与排队二者之一的寻线引导DN启用或禁用的语音邮件DN线路DN共享DN
- 线路成员能显示他们的队列启用的搜索飞行员队列状态。队列状态显示提供信息的以下类型：寻线引导模式排队呼叫方编号每寻线引导的最久的等待时间

与现有搜索飞行员一道呼叫排队工作，但是那里是在搜寻操作的行为的上没有变化排队的或非排队的工作。寻找安排呼叫排队启用提供以下功能的飞行员：

- 队列启用的寻线引导呼叫可能由线路成员每次只接收一呼叫。两队列启用的寻线引导呼叫不可能提供到线路成员。线路成员能收到呼叫直接地对DN或非队列搜索飞行员。
- 不应答呼叫由搜索飞行员路由的线路成员自动地注销。A如果线路成员接收一次队列启用的搜索，线路成员自动地被记录在设备外面在超时出现前，试验呼叫，并且不应答呼叫。一旦一共用线的部署，用同一条共享线路配置的所有设备注销。您能配置此行为从线路组设置窗口通过自动选择注销没有答案的搜索成员。线路只有当此复选框被检查，成员注销。

在最初的通告期间，使用工作呼叫排队如描述有最终用户会听到断线或沉默的许多实例，因而造成用户的认为呼叫不是成功的。当一端不可能支持在呼叫的早媒体此情况将出现。

功能概述

开始用Cisco Unified Communications Manager版本11.5，您能配置呼入呼叫更改向在播放排队通告前的已连接的呼叫状态，而呼叫对a被扩展队列启用的寻线引导的搜索成员。

在播放排队通告复选框前的新的连接呼入呼叫被添加到以下中继和网关配置windows：

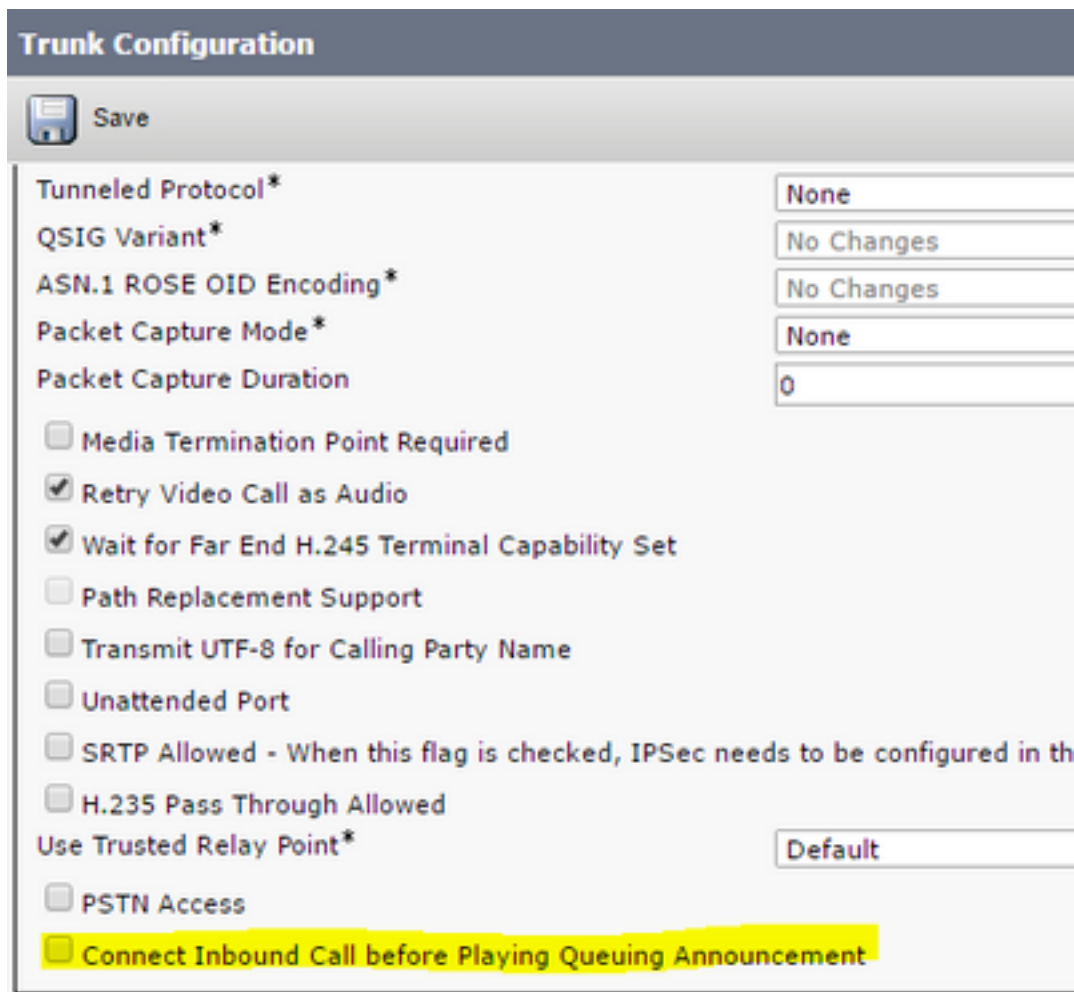
- H.225 干线 (网守控制)
- 群集间干线 (非网守控制)
- 相互团星中继(Gatekeeper Controlled)
- H.323网关(网关类型)
- SIP配置文件(中继特定配置)
- MGCP (E1PRI、T1PRI、T1 CAS和BRI)

一旦用户检查此方框，CUCM在100Trying以后将发送200OK在SIP的情况下，并且在H323/MGCP的情况下CUCM将发送在寻线引导呼叫流的一连接。这保证用户能听到最初的通告而不是沉默或断线，万一另一端不能支持早期的梅迪亚。

配置

下面与新加的参数的配置快照在CUCM

H.225 干线 (网守控制)




The screenshot shows the 'Trunk Configuration' page in CUCM. At the top, there is a 'Save' button. Below it, several configuration fields are visible:

- Tunneled Protocol*: None
- QSIG Variant*: No Changes
- ASN.1 ROSE OID Encoding*: No Changes
- Packet Capture Mode*: None
- Packet Capture Duration: 0
- Media Termination Point Required
- Retry Video Call as Audio
- Wait for Far End H.245 Terminal Capability Set
- Path Replacement Support
- Transmit UTF-8 for Calling Party Name
- Unattended Port
- SRTP Allowed - When this flag is checked, IPsec needs to be configured in th
- H.235 Pass Through Allowed
- Use Trusted Relay Point*: Default
- PSTN Access
- Connect Inbound Call before Playing Queuing Announcement

群集间干线 (非网守控制)

Trunk Configuration

 Save

Tunneled Protocol*	None
QSIG Variant*	No Changes
ASN.1 ROSE OID Encoding*	No Changes
Packet Capture Mode*	None
Packet Capture Duration	0
<input type="checkbox"/> Media Termination Point Required	
<input checked="" type="checkbox"/> Retry Video Call as Audio	
<input type="checkbox"/> Path Replacement Support	
<input type="checkbox"/> Transmit UTF-8 for Calling Party Name	
<input type="checkbox"/> Unattended Port	
<input type="checkbox"/> SRTP Allowed - When this flag is checked, IPsec needs to be configured	
<input type="checkbox"/> H.235 Pass Through Allowed	
<input type="checkbox"/> Enable SAF	
Use Trusted Relay Point*	Default
<input type="checkbox"/> PSTN Access	
<input checked="" type="checkbox"/> Connect Inbound Call before Playing Queuing Announcement	
<input type="checkbox"/> Run On All Active Unified CM Nodes	

群集间干线 (网守控制)

Trunk Configuration



Save

Tunneled Protocol*	None
QSIG Variant*	No Changes
ASN.1 ROSE OID Encoding*	No Changes
Packet Capture Mode*	None
Packet Capture Duration	0
<input type="checkbox"/> Media Termination Point Required	
<input checked="" type="checkbox"/> Retry Video Call as Audio	
<input type="checkbox"/> Path Replacement Support	
<input type="checkbox"/> Transmit UTF-8 for Calling Party Name	
<input type="checkbox"/> Unattended Port	
<input type="checkbox"/> SRTP Allowed - When this flag is checked, IPsec needs to be configured	
<input type="checkbox"/> H.235 Pass Through Allowed	
Use Trusted Relay Point*	Default
<input type="checkbox"/> PSTN Access	
<input type="checkbox"/> Connect Inbound Call before Playing Queuing Announcement	

H.323 网关

Gateway Configuration

Save

Queue Name: [No Changes]

ASN.1 ROSE OID Encoding*: [No Changes]

Use Trusted Relay Point*: [Default]

Signaling Port*: [1720]

Media Termination Point Required

Retry Video Call As Audio

Wait for Far End H.245 Terminal Capability Set

Path Replacement Support

Transmit UTF-8 for Calling Party Name

SRTP Allowed - When this flag is checked, IPsec needs to be config

H.235 Pass Through Allowed

PSTN Access

Connect Inbound Call before Playing Queuing Announcement

Sip 配置文件

SIP Profile Configuration

Save

Calling Line Identification Presentation*: [Default]

Session Refresh Method*: [Invite]

Early Offer support for voice and video calls*: [Disabled (Default)]

Enable ANAT

Deliver Conference Bridge Identifier

Allow Passthrough of Configured Line Device Caller Information

Reject Anonymous Incoming Calls


Reject Anonymous Outgoing Calls

Send ILS Learned Destination Route String

Connect Inbound Call before Playing Queuing Announcement

MGCP (E1PRI、T1PRI、T1 CAS和BRI)

Gateway Configuration

 Save

Confidential Access Level

Handle DTMF Precedence Signals

Encode Voice Route Class

Load Information

Port Selection Order*

Digit Sending*

Network Locale

SMDI Base Port*

Use Trusted Relay Point*

Route Class Signaling Enabled*

V150 (subset)

Called Party Transformation CSS

Use Device Pool Called Party Transformation CSS

PSTN Access

Connect Inbound Call before Playing Queuing Announcement

日志分析

下面的部分着重在跟踪文件看到的差异，当在播放排队通告前的“连接呼入呼叫”时被检查并且被不选定。

SIP Normal Call Flow

Incoming Invite to the CUCM

```
00455394.002 |18:33:30.036 |AppInfo |SIPtcp - wait_SdlReadRsp: Incoming SIP TCP message from
10.127.227.7 on port 55522 index 16 with 1182 bytes:
[14599,NET]
INVITE sip:0000@10.106.111.105:5060 SIP/2.0
Via: SIP/2.0/TCP 10.127.227.7:5060;branch=z9hG4bK4e222dea4e0
From: <sip:888819@10.127.227.7>;tag=107999~6c65cba7-94a0-4069-84c7-4774aecf0647-33198813
To: <sip:0000@10.106.111.105>
.
.
//Truncated Output
```

100 Trying Sent

```
00455398.001 |18:33:30.037 |AppInfo |SIPtcp - wait_SdlSPISignal: Outgoing SIP TCP message to
10.127.227.7 on port 55522 index 16
[14600,NET]
SIP/2.0 100 Trying
Via: SIP/2.0/TCP 10.127.227.7:5060;branch=z9hG4bK4e222dea4e0
From: <sip:888819@10.127.227.7>;tag=107999~6c65cba7-94a0-4069-84c7-4774aecf0647-33198813
```

To: <sip:0000@10.106.111.105>

.

//Truncated Output

Digit Analysis takes place

00455415.007 |18:33:30.038 |AppInfo |Digit analysis: match(pi="2", fqcn="",
cn="888819",plv="5", pss="", TodFilteredPss="", dd="0000",dac="0")
00455415.008 |18:33:30.038 |AppInfo |Digit analysis: analysis results
00455415.009 |18:33:30.038 |AppInfo ||PretransformCallingPartyNumber=888819
|CallingPartyNumber=888819
|DialingPartition=
|DialingPattern=0000
|FullyQualifiedCalledPartyNumber=0000

Allocate Annunciater for the Initial Announcement

00455426.001 |18:33:30.039 |AppInfo |QueueControlCdr(17) - get_call_info_SsCallInfoRes,
huntPilotQueueProfile.alwaysplayinitialannouncement=1
00455432.001 |18:33:30.039 |AppInfo |MediaResourceCdpc(22)::waiting_MrmAllocateAnnResourceReq -
CI = 21438416

Media Negotiation takes place for initial announcement

00455454.001 |18:33:30.041 |AppInfo |ARBTRY-ConnectionManager-
wait_MediaConnectRequest(21438414,21438416)
00455478.001 |18:33:30.041 |AppInfo |ARBTRY-ConnectionManager-
wait_MediaConnectReply(21438414,21438416)

183 Session Progress sent for early media with SDP a=sendonly

00455494.001 |18:33:30.143 |AppInfo |SIPtcp - wait_SdlSPISignal: Outgoing SIP TCP message to
10.127.227.7 on port 55522 index 16
[14601,NET]
SIP/2.0 183 Session Progress
Via: SIP/2.0/TCP 10.127.227.7:5060;branch=z9hG4bK4e222dea4e0
From: <sip:888819@10.127.227.7>;tag=107999~6c65cba7-94a0-4069-84c7-4774aecf0647-33198813
To: <sip:0000@10.106.111.105>;tag=4705~8b68bd5c-f78f-44c5-b1ce-8ea93a8efbb6-21438414

.

//Truncated Output

.

v=0
o=CiscoSystemsCCM-SIP 4705 1 IN IP4 10.106.111.105
s=SIP Call
c=IN IP4 10.106.111.105
t=0 0
m=audio 4000 RTP/AVP 0 8 18
a=X-cisco-media:umoh+ConnSendOnly
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:18 G729/8000
a=fmtp:18 annexb=no
a=sendonly

SIP Call Flow with "Connect Inbound Call before Playing Queuing Announcement" checked

Incoming Invite to the CUCM

00452822.002 |18:22:22.842 |AppInfo |SIPtcp - wait_SdlReadRsp: Incoming SIP TCP message from
10.127.227.7 on port 56658 index 14 with 1182 bytes:
[14494,NET]
INVITE sip:0000@10.106.111.105:5060 SIP/2.0
Via: SIP/2.0/TCP 10.127.227.7:5060;branch=z9hG4bK4d2425c95ba

From: <sip:888819@10.127.227.7>;tag=107977~6c65cba7-94a0-4069-84c7-4774aecf0647-33198808
To: <sip:0000@10.106.111.105>

.
.
//Truncated Output

100 Trying sent

00452826.001 |18:22:22.843 |AppInfo |SIPtcp - wait_SdlSPISignal: Outgoing SIP TCP message to
10.127.227.7 on port 56658 index 14
[14495,NET]

SIP/2.0 100 Trying

Via: SIP/2.0/TCP 10.127.227.7:5060;branch=z9hG4bK4d2425c95ba

From: <sip:888819@10.127.227.7>;tag=107977~6c65cba7-94a0-4069-84c7-4774aecf0647-33198808

To: <sip:0000@10.106.111.105>

.
.
//Truncated Output

Digit Analysis takes place

00452843.007 |18:22:22.844 |AppInfo |Digit analysis: match(pi="2", fqcn="",
cn="888819",plv="5", pss="", TodFilteredPss="", dd="0000",dac="0")

00452843.008 |18:22:22.844 |AppInfo |Digit analysis: analysis results

00452843.009 |18:22:22.844 |AppInfo ||PretransformCallingPartyNumber=888819

|CallingPartyNumber=888819

|DialingPartition=

|DialingPattern=0000

|FullyQualifiedCalledPartyNumber=0000

Annunciater allocated for Initial announcement

00452854.001 |18:22:22.845 |AppInfo |QueueControlCdr(15) - get_call_info_SsCallInfoRes,
huntPilotQueueProfile.alwaysplayinitialannouncement=1

00452860.001 |18:22:22.845 |AppInfo |MediaResourceCdpc(19)::waiting_MrmAllocateAnnResourceReq -
CI = 21438406

Media Negotiation for the initial announcement

00452882.001 |18:22:22.846 |AppInfo |ARBTRY-ConnectionManager-
wait_MediaConnectRequest(21438404,21438406)

00452906.001 |18:22:22.847 |AppInfo |ARBTRY-ConnectionManager-
wait_MediaConnectReply(21438404,21438406)

200 OK with SDP a=sendonly sent instead of 183 session progress thus connecting the call rather than an early media.

00452928.001 |18:22:22.848 |AppInfo |SIPtcp - wait_SdlSPISignal: Outgoing SIP TCP message to
10.127.227.7 on port 56658 index 14
[14496,NET]

SIP/2.0 200 OK

Via: SIP/2.0/TCP 10.127.227.7:5060;branch=z9hG4bK4d2425c95ba

From: <sip:888819@10.127.227.7>;tag=107977~6c65cba7-94a0-4069-84c7-4774aecf0647-33198808

To: <sip:0000@10.106.111.105>;tag=4690~8b68bd5c-f78f-44c5-b1ce-8ea93a8efbb6-21438404

.
.
//Truncated Output

.
.
v=0

o=CiscoSystemsCCM-SIP 4690 1 IN IP4 10.106.111.105

s=SIP Call

c=IN IP4 10.106.111.105

t=0 0

m=audio 4000 RTP/AVP 0 8 18

a=X-cisco-media:umoh+ConnSendOnly

a=rtpmap:0 PCMU/8000

a=rtpmap:8 PCMA/8000

a=rtpmap:18 G729/8000

a=fmtp:18 annexb=no
a=sendonly

H323正常呼叫流

Incoming H323 Setup Message

```
00091345.011 |09:03:06.341 |AppInfo |SPROCRas - {  
  h323-uu-pdu  
  {  
    h323-message-body setup :  
    {  
      protocolIdentifier { 0 0 8 2250 0 5 },  
      sourceAddress  
      {  
        dialedDigits : "999919",  
        h323-ID : {"999919", {0, 0, 0, 0}, ...}  
      }  
    }  
  }  
.  
.  
//Truncated Output
```

Digit Analysis takes place

```
00091367.006 |09:03:06.384 |AppInfo |Digit analysis: match(pi="2", fcn="",  
cn="999919",plv="5", pss="", TodFilteredPss="", dd="0000",dac="0")  
00091367.007 |09:03:06.384 |AppInfo |Digit analysis: analysis results  
00091367.008 |09:03:06.384 |AppInfo ||PretransformCallingPartyNumber=999919  
|CallingPartyNumber=999919  
|DialingPartition=  
|DialingPattern=0000
```

Annunciator Allocated for initial announcement

```
00091378.001 |09:03:06.388 |AppInfo |QueueControlCdr(1) - get_call_info_SsCallInfoRes,  
huntPilotQueueProfile.alwaysplayinitialannouncement=1  
00091384.001 |09:03:06.388 |AppInfo |MediaResourceCdpc(1)::waiting_MrmAllocateAnnResourceReq -  
CI = 25333775
```

Call Proceeding Message sent

```
00091386.005 |09:03:06.389 |AppInfo |{  
  h323-uu-pdu  
  {  
    h323-message-body callProceeding :  
    {  
      protocolIdentifier { 0 0 8 2250 0 5 },  
    }  
  }  
.  
.  
//Truncated Output
```

Media Negotiation takes place for the initial announcement

```
00091407.001 |09:03:06.392 |AppInfo |ARBTRY-ConnectionManager-  
wait_MediaConnectRequest(25333773,25333775)  
  
00091447.001 |09:03:06.411 |AppInfo |ARBTRY-ConnectionManager-  
wait_MediaConnectReply(25333773,25333775)
```

H323 Progress message sent for early media, which is followed by the H245 messages for media negotiation

```
00091456.005 |09:03:06.411 |AppInfo |SPROCRas - {  
  h323-uu-pdu  
  {  
    h323-message-body progress :  
    {  
      protocolIdentifier { 0 0 8 2250 0 5 },  
    }  
  }  
.  
.
```

.
//Truncated Output

H323 Call flow with the "Connect Inbound Call before Playing Queuing Announcement" checked

Incoming setup message to the CUCM

```
00092572.010 |09:07:25.234 |AppInfo |SPROCRas - {
  h323-uu-pdu
  {
    h323-message-body setup :
    {
      protocolIdentifier { 0 0 8 2250 0 5 },
      sourceAddress
      {
        dialedDigits : "999919",
        h323-ID : {"999919", {0, 0, 0, 0}, ...}
      },
    }
  }
}
```

.
.
//Truncated Output

Digit Analysis takes place

```
00092594.006 |09:07:25.236 |AppInfo |Digit analysis: match(pi="2", fqcn="",
cn="999919",plv="5", pss="", TodFilteredPss="", dd="0000",dac="0")
00092594.007 |09:07:25.236 |AppInfo |Digit analysis: analysis results
00092594.008 |09:07:25.236 |AppInfo ||PretransformCallingPartyNumber=999919
|CallingPartyNumber=999919
|DialingPartition=
|DialingPattern=0000
```

Annunciator is invoked for initial announcement

```
00092605.001 |09:07:25.236 |AppInfo |QueueControlCdr(2) - get_call_info_SsCallInfoRes,
huntPilotQueueProfile.alwaysplayinitialannouncement=1
00092611.001 |09:07:25.237 |AppInfo |MediaResourceCdpc(2)::waiting_MrmAllocateAnnResourceReq -
CI = 25333779
```

H323 Proceeding message sent out

```
00092612.005 |09:07:25.237 |AppInfo |{
  h323-uu-pdu
  {
    h323-message-body callProceeding :
    {
      protocolIdentifier { 0 0 8 2250 0 5 },
    }
  }
}
```

.
.
//Truncated Output

Media negotiation takes place

```
00092634.001 |09:07:25.238 |AppInfo |ARBTRY-ConnectionManager-
wait_MediaConnectRequest(25333777,25333779)
00092674.001 |09:07:25.240 |AppInfo |ARBTRY-ConnectionManager-
wait_MediaConnectReply(25333777,25333779)
```

Connect message is sent out instead of H323 Progress message placing the call in connected state rather than early media. The H245 messages will be exchanged post this message.

```
00092686.006 |09:07:25.240 |AppInfo |SPROCRas - {
  h323-uu-pdu
  {
    h323-message-body connect :
    {
      protocolIdentifier { 0 0 8 2250 0 5 },
      h245Address ipAddress :
    }
  }
}
```

```
{
  ip '0A6A6F69'H,
  port 34408
},
.
.
//Truncated Output
```

故障排除

目前没有针对此配置的故障排除信息。