

Configure Outbound Dialer for UCCX Agent Based Progressive

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Introduction

This document describes how to configure an Outbound Campaign for Agent-based Progressive for Unified Contact Center Express (UCCX).

Prerequisites

Requirements

Cisco recommends knowledge of these topics:

- Cisco Unified Border Element (CUBE) configuration
- Unified Contact Center Express (UCCX) configuration

Components Used

The information in this document is based on these hardware and software versions:

- UCCX version 12.5.1.11002-481
- CUCM version 12.5.1.11900-146
- ISR4451 version 17.03.04a

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, ensure that you understand the potential impact of any command.

Background Information

Specific requirements for this document include:

- Finesse Agent on Ready mode.
- ISR4451 with CUBE basic configuration and PVDM for Call Progress Analysis (CPA) functionality.
- Internet Telephony Service Provider (ITSP) integrated with CUBE.
- Unified CCX Outbound license

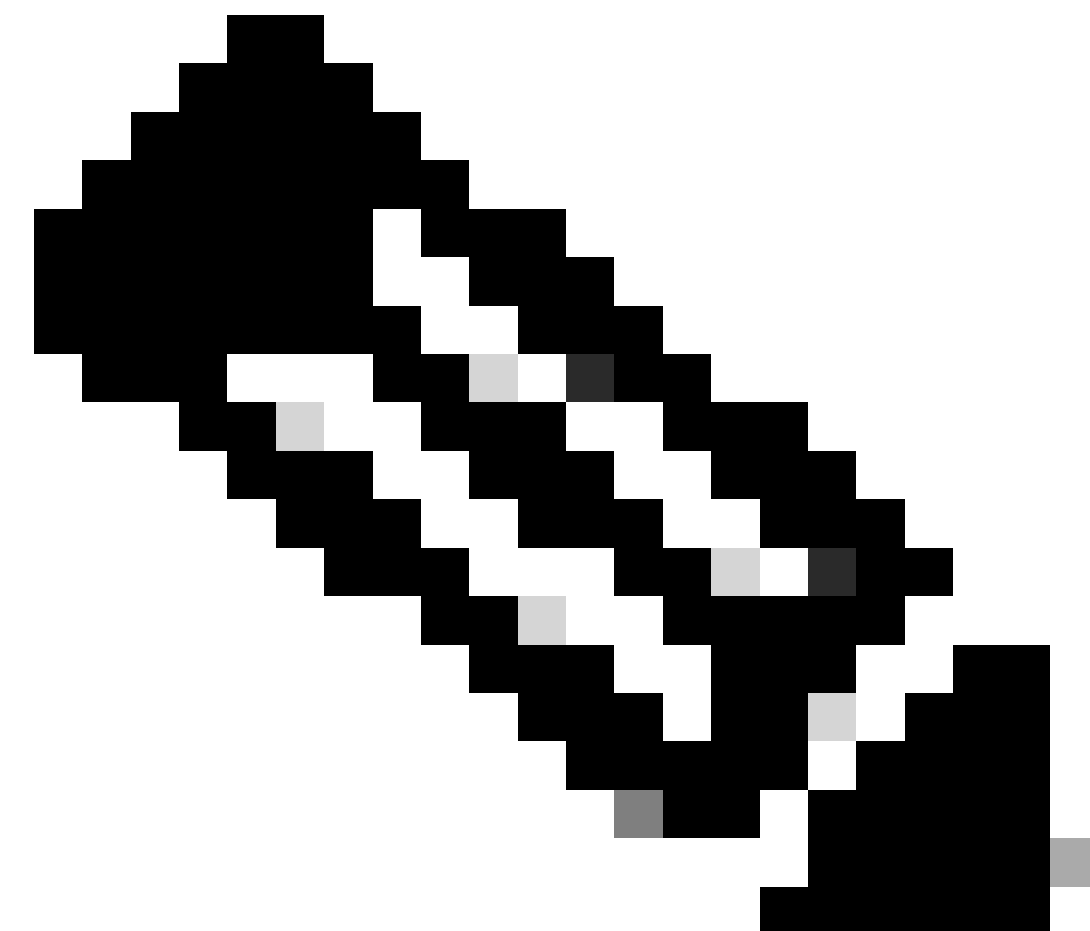
On UCCX Outbound Dialer feature, there are five types of campaigns:

Agent-based:

- Agent Direct Preview
- Agent Progressive
- Agent Predictive

IVR Based:

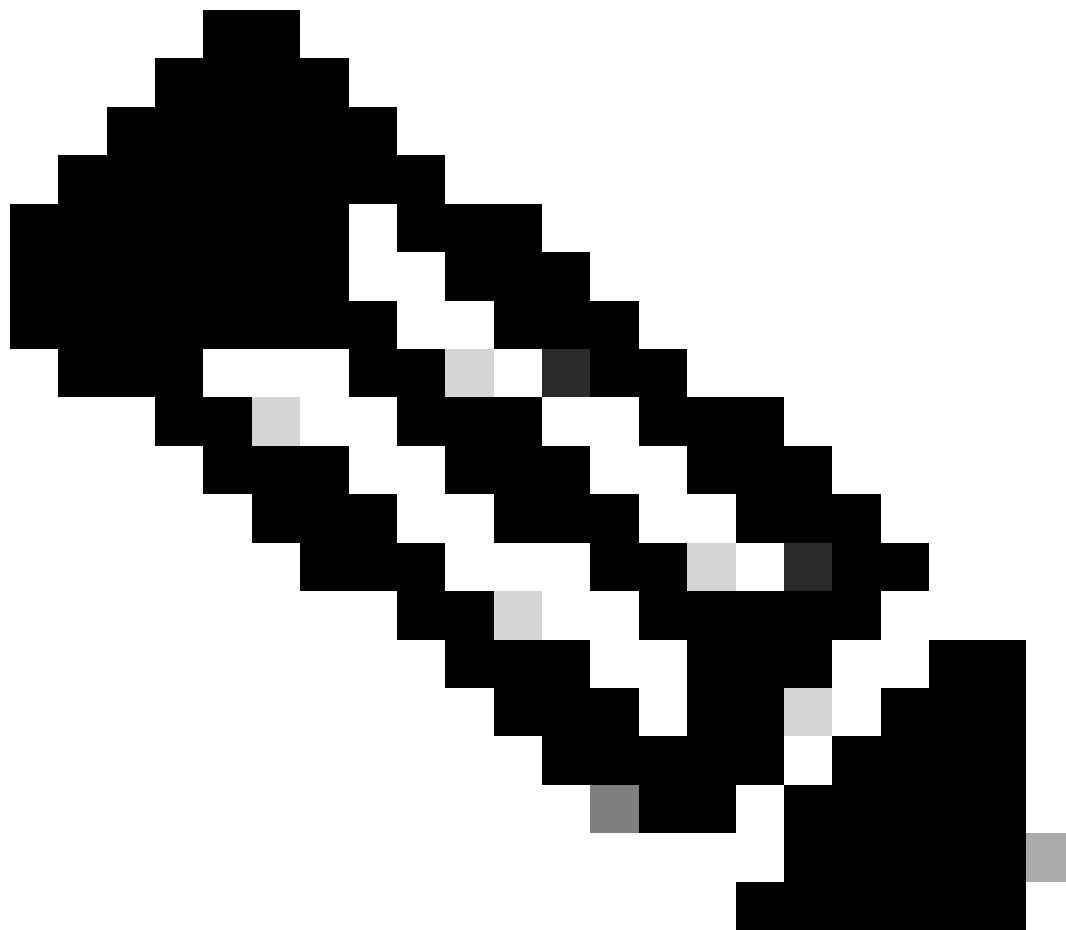
- Progressive
 - Predictive
-



Note: This document focuses on the configuration for Agent-based Progressive.

There are some services on UCCX that must be in service:

- Outbound subsystem
 - Unified CM Telephony subsystem
 - RmCm subsystem
 - Unified CCX Database
-

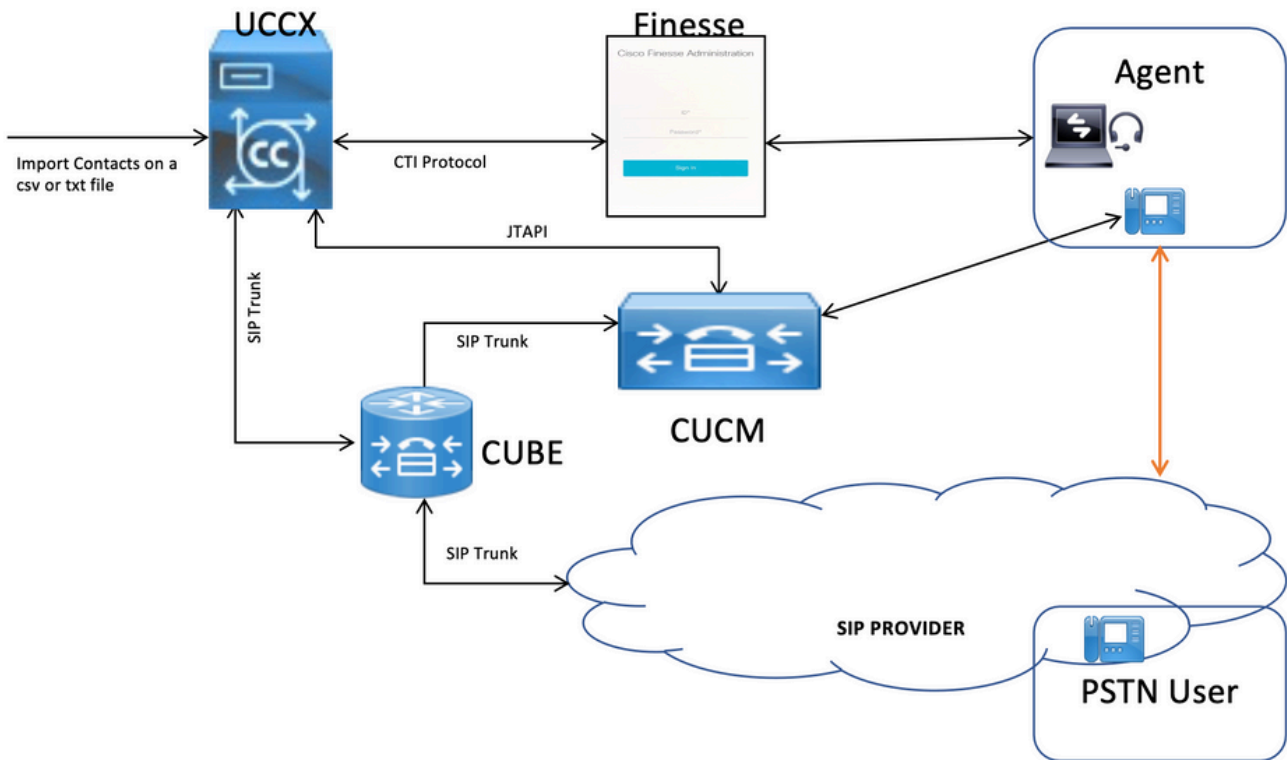


Note: Navigate to **Cisco Unified CCX Serviceability > Tools > Control Center Network Services**.

Configure

Network Diagram

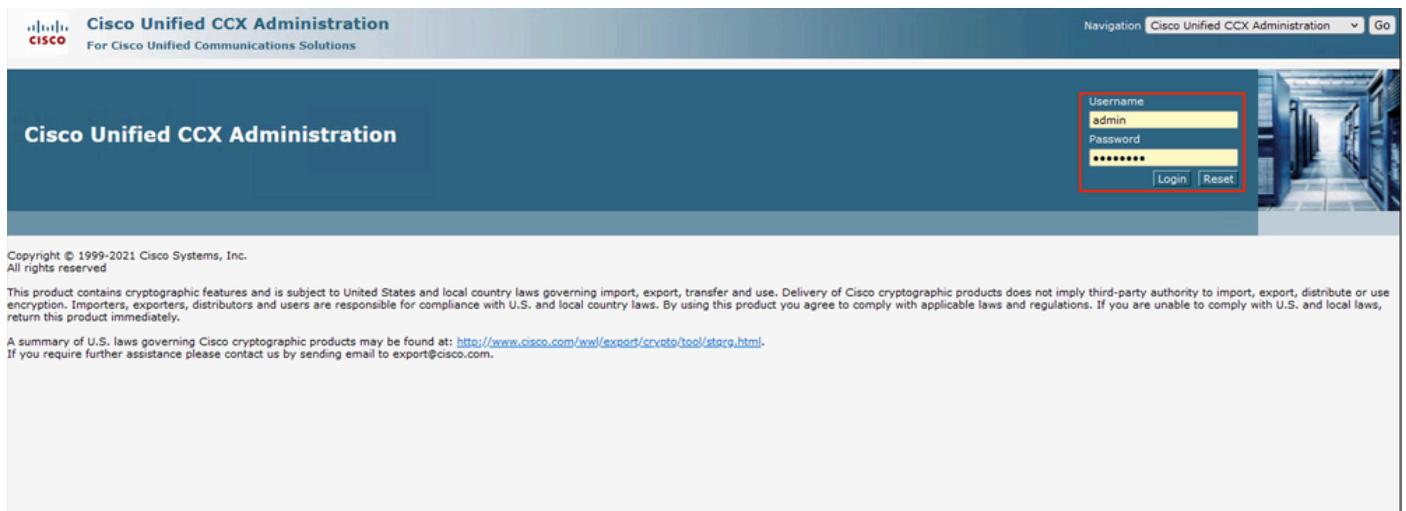
This topology diagram shows the interaction of UCCX, Finesse, CUCM, and CUBE for outbound campaigns:



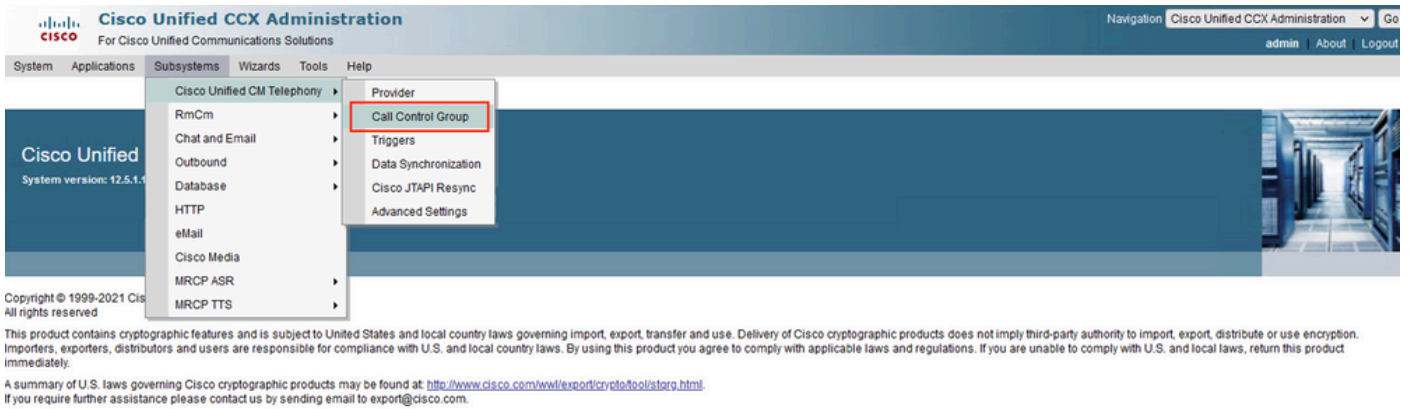
Configurations

UCCX Configuration

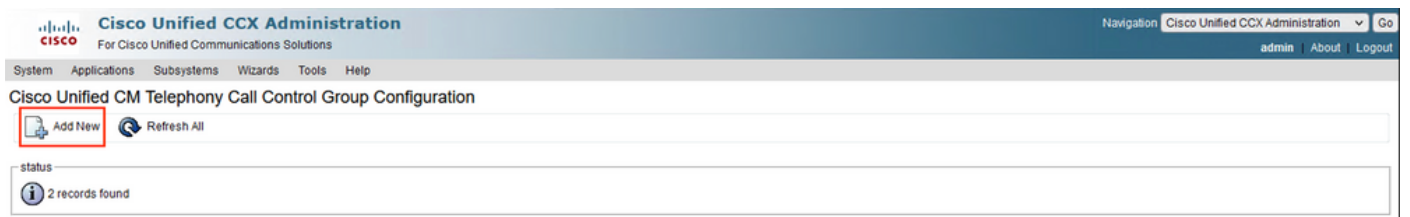
1. Log into the CCX Administration:



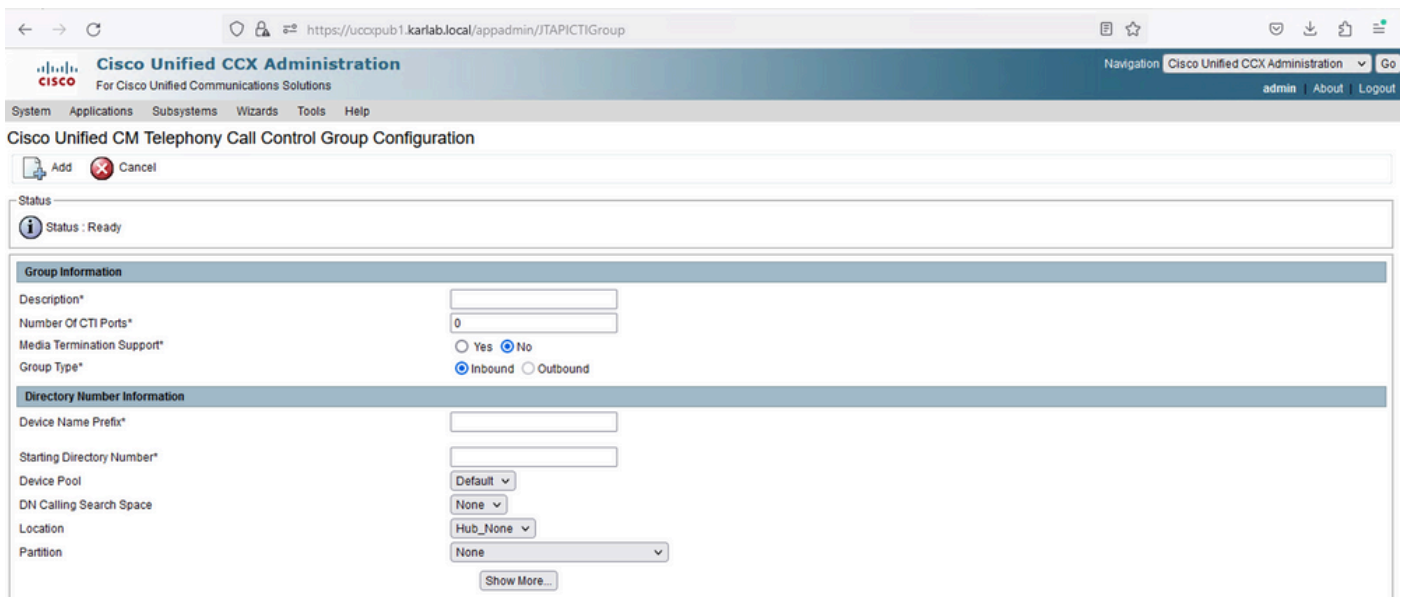
2. Then click on **Subsystems > CM Telephony > Call Control Group**:



Then Click on **Add New**:



3. Fill out the mandatory fields marked with asterisks such as the **Description**, **Number of CTI ports**, **Group Type**, **Device Name Prefix**, and **Directory Number**, and click **Add**:

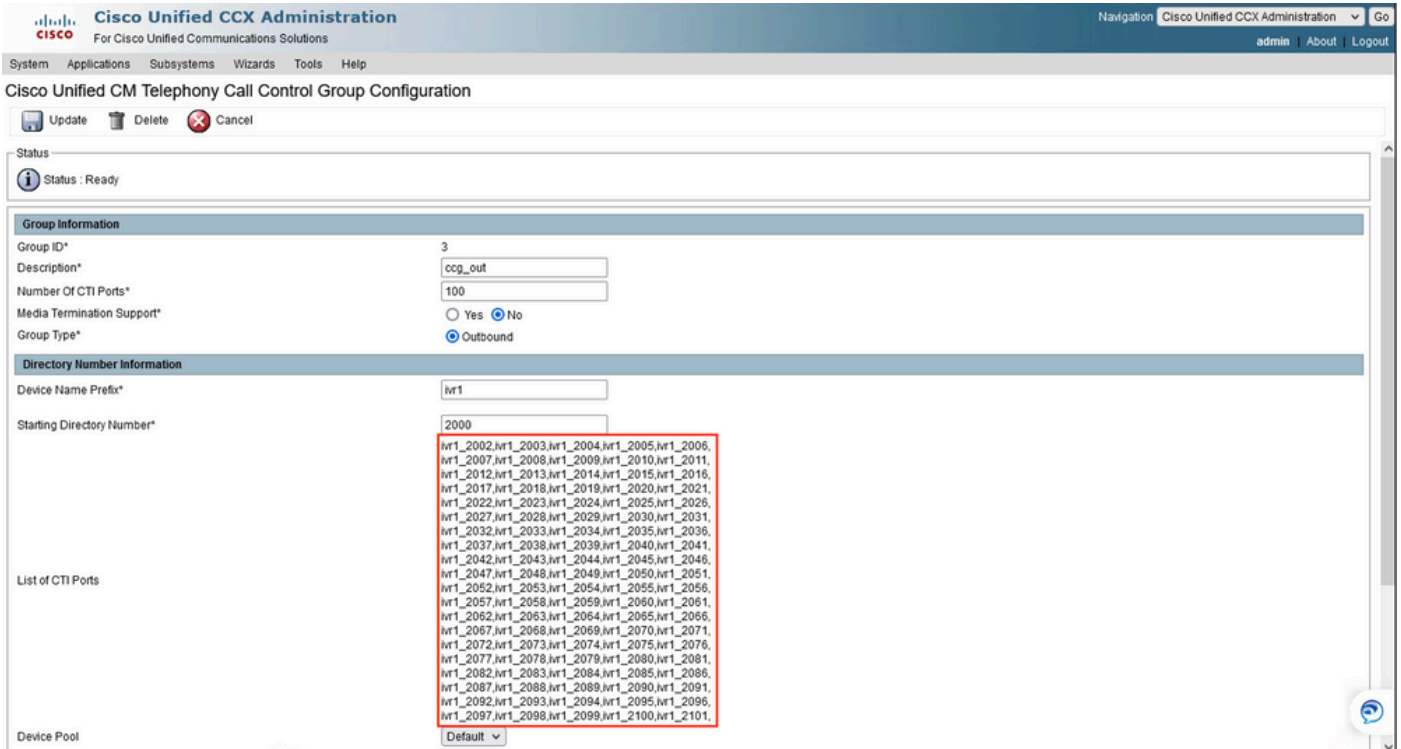




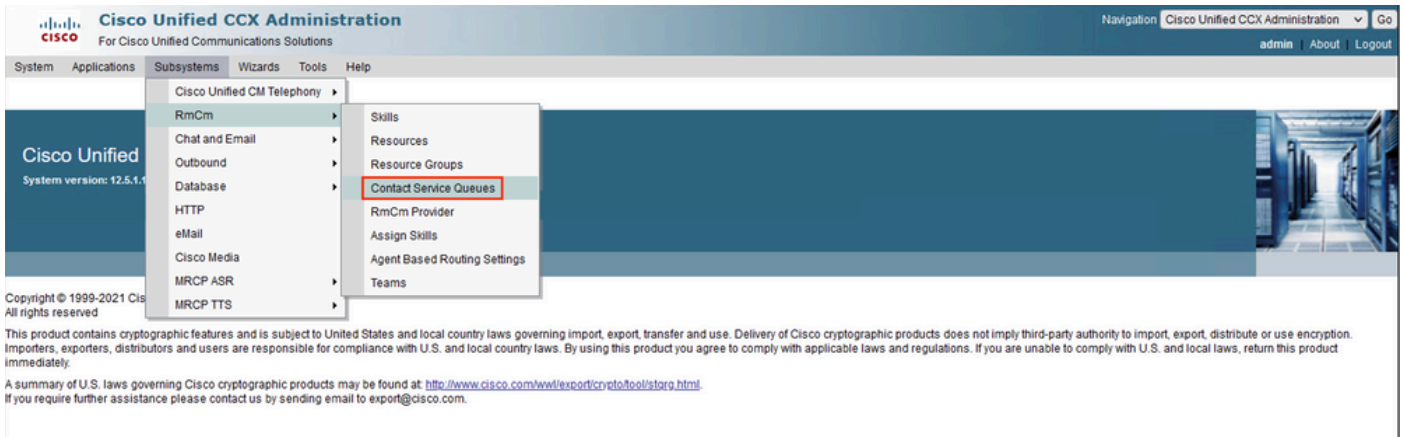
Notes:

- On **Group Type** select Outbound.
- Once you click **Add** the Status changes to In Progress, UCCX begins to create the CTI Ports.

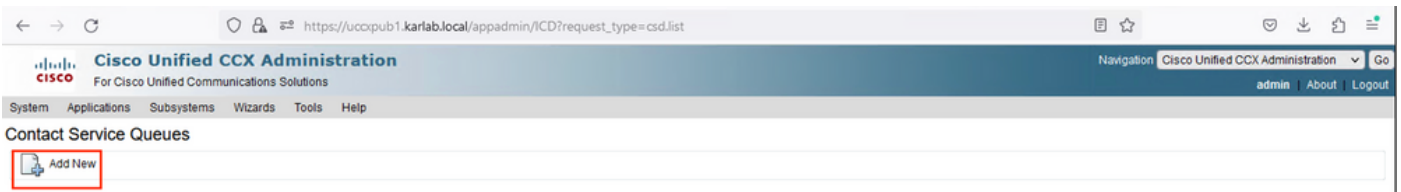
This is the expected output after you click **Add**:



4. Navigate to **Subsystems > RCMC > Contact Service Queues** to create the Progressive CSQ:



Then click **Add New**:



5. Fill out the mandatory fields marked with an asterisk such as **Contact Service Queue Name**, and select the most appropriate options for your specific environment, then click **Next**:

Cisco Unified CCX Administration
For Cisco Unified Communications Solutions

System Applications Subsystems Wizards Tools Help

Navigation Cisco Unified CCX Administration Go
admin About Logout

Contact Service Queue Configuration

Next Cancel

Status
Status : Ready

Contact Service Queue Name*

Contact Service Queue Type Voice

Contact Queuing Criteria FIFO

Automatic Wrapup* Enabled Disabled

Wrapup Time* Enabled Second(s) Disabled

Resource Pool Selection Model* Resource Skills

Service Level*

Service Level Percentage*

Prompt -No Selection -

Next Cancel

i * indicates required item

This is the expected output:

Cisco Unified CCX Administration
For Cisco Unified Communications Solutions

System Applications Subsystems Wizards Tools Help

Navigation Cisco Unified CCX Administration Go
admin About Logout

Contact Service Queue Configuration

Next Delete Cancel Open Printable Report of this CSQ configuration

Status
Status : Ready

Contact Service Queue Name* AgentBasedProgressive

Contact Service Queue Type Voice

Contact Queuing Criteria FIFO

Automatic Wrapup* Enabled Disabled

Wrapup Time* Enabled Second(s) Disabled

Resource Pool Selection Model* Resource Skills

Service Level*

Service Level Percentage*

Prompt -No Selection -

Next Delete Cancel

i * indicates required item

6. Then click **Next**, select the required skills, and add them, and finally click **Add**:

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System Applications Subsystems Wizards Tools Help

Navigation Cisco Unified CCX Administration Go
admin About Logout

Contact Service Queue Configuration

Add Cancel Show Resources

Contact Service Queue Name sss

Resource Selection Criteria Longest Available

Select Required Skills

English
Spanish

Skills

Skills	Minimum Competence	Delete
English	<input type="text" value="5"/>	

Add Cancel

i 1-Beginner, 10-Expert

7. Now configure the Outbound section, so navigate to **Subsystems > Outbound > General**:

Cisco Unified CCX Administration
For Cisco Unified Communications Solutions

Navigation Cisco Unified CCX Administration Go
admin | About | Logout

System Applications Subsystems Wizards Tools Help

General Configuration

Update Clear

Status
Status : Ready

Customer Dialing Time Range (hh:mm)*
Start Time 1:00 AM
End Time 11:00 PM
Outbound Call Timeout* (seconds) 60
Dialing Prefix
Long Distance Prefix
International Prefix
Local Area Code
Do Not Remove Local Area Code When Dialing
Auto Answer Enable for predictive and progressive campaigns

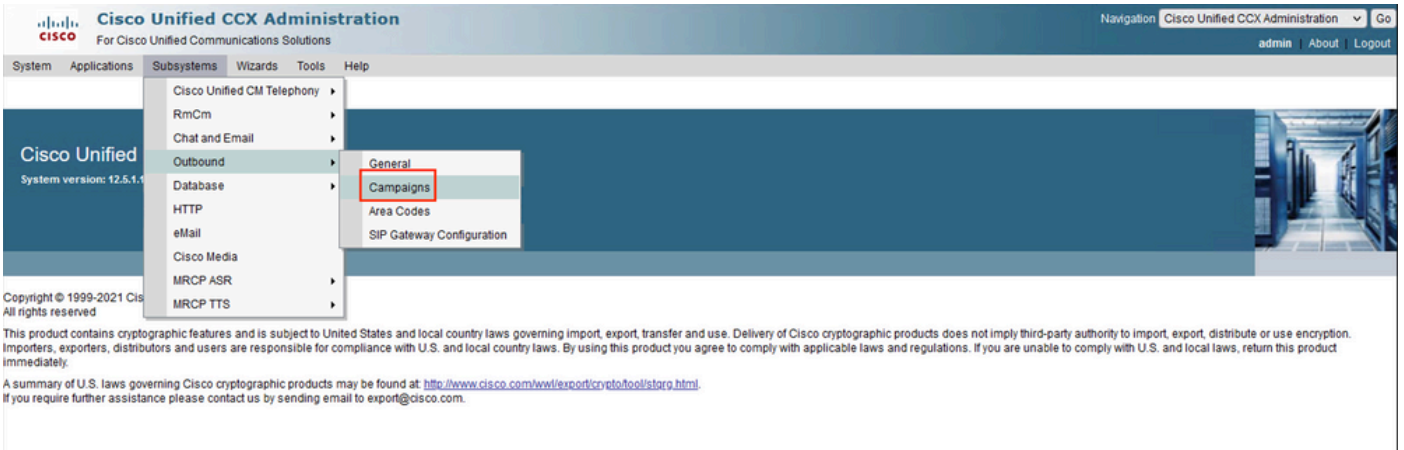
Assigned CSQs
AgentBasedDirectPreview(100)
AgentBasedPredictive(100)
AgentBasedProgressive(10)

Available CSQs
csq1
AgentBasedProgressive

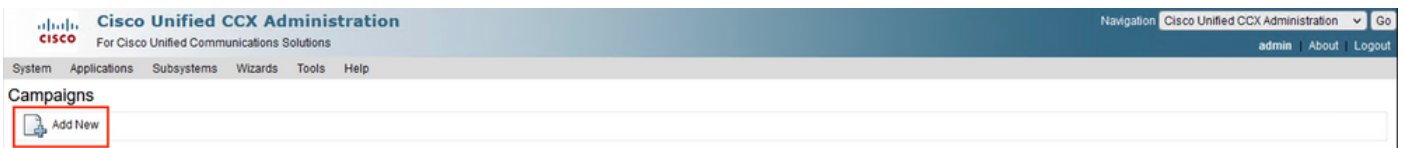
% of Logged in Agents for Outbound 100

Note: Here you need to add the Progressive CSQ created in the previous step to the Available CSQs section and click update.

8. Navigate to **Subsystems > Outbound > Campaigns** to create the Agent-based Progressive campaign:



Click on **Add New**



9. Then select the Agent-based **Campaign Type**, and also select the **Dialer Type** of Progressive, and then click **Next**:



10. Then fill out the mandatory values marked with an asterisk like Campaign Name, Start and End Time, Campaign Calling Number, and other desired values according to your specific needs.

Cisco Unified CCX Administration
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Navigation | Cisco Unified CCX Administration | Go
admin | About | Logout

System Applications Subsystems Wizards Tools Help

Agent Progressive Campaign Configuration

Add Cancel

Status: Ready

Automatic Import of Contacts
Status: Not Configured.

Parameter Name	Parameter Value	Suggested Value
Campaign Name*	<input type="text"/>	
Enabled*	<input type="radio"/> Yes <input checked="" type="radio"/> No	
Description	<input type="text"/>	
Start Time (hh:mm)*	8:00 AM Central Daylight Time	
End Time (hh:mm)*	9:00 PM Central Daylight Time	
Campaign Calling Number*	<input type="text"/>	
Maximum Attempts to Dial Contact*	3	3
Callback Time Limit*	15 Minute(s)	15
Callback Missed*	Reschedule for same time next business day	Reschedule for same time next business day

Dialing Options

Lines Per Agent(1-3)*

Handle Low Volume as Voice Yes No

Answering Machine Treatment Transfer To IVR End Call
Trigger* : Select Trigger
AppName:

Abandoned Call Treatment Transfer To IVR Abandon Call
Trigger* : Select Trigger
AppName:

Configuration Continues:

Dial Settings

No Answer Ring Limit*	<input type="text" value="15"/> Second(s)	15
Abandoned Call Wait Time*	<input type="text" value="2"/> Second(s)	2

Retries

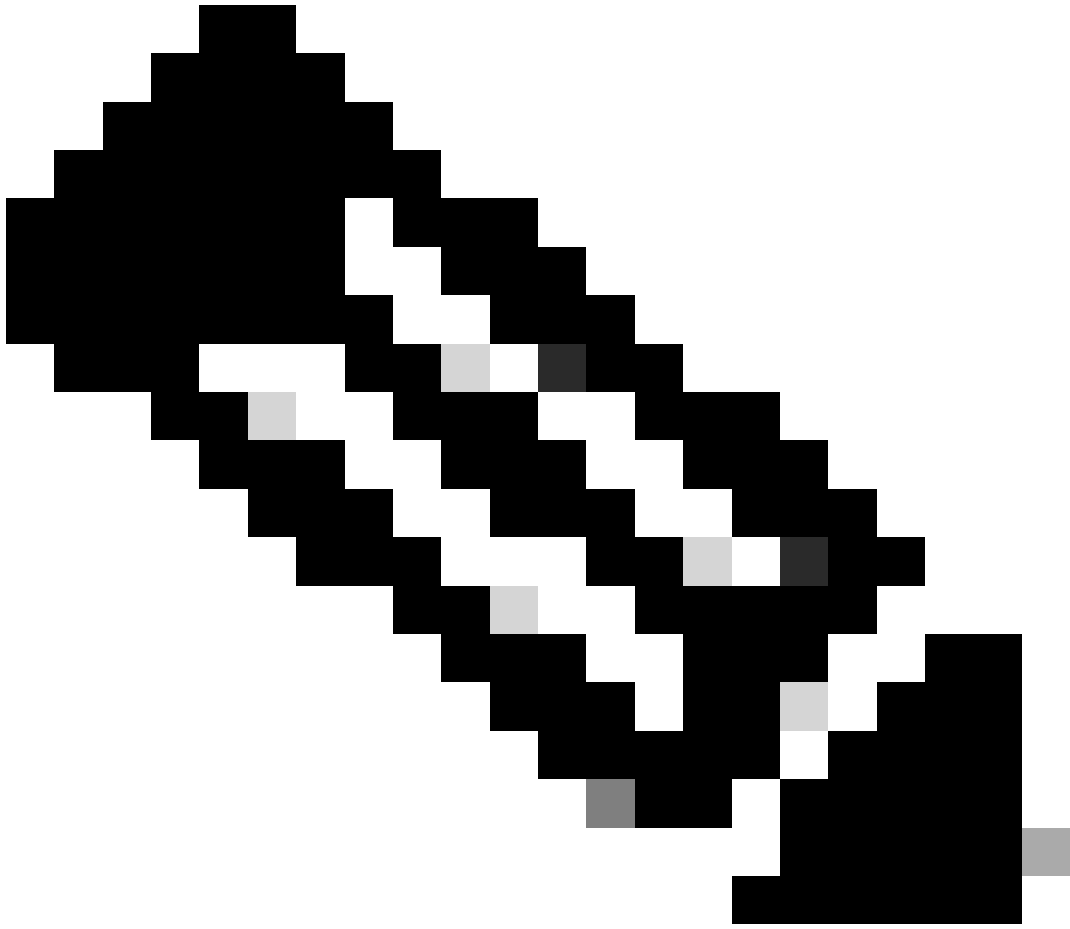
No Answer Delay*	<input type="text" value="60"/> Minute(s)	60
Busy Signal Delay*	<input type="text" value="60"/> Minute(s)	60
Customer Abandoned Delay*	<input type="text" value="0"/> Minute(s)	0
Dialer Abandoned Delay*	<input type="text" value="0"/> Minute(s)	0

Assigned CSQs

Available CSQs

Add Cancel

i - indicates required item



Note: Just click yes on **Enable**.

This is the expected result:

Cisco Unified CCX Administration
For Cisco Unified Communications Solutions

Navigation Cisco Unified CCX Administration Go
admin About Logout

System Applications Subsystems Wizards Tools Help

Agent Progressive Campaign Configuration

Save Cancel Import Contacts Delete All Contacts Open Printable Report

Status: Ready

Automatic Import of Contacts
Status: Not Configured.

Parameter Name	Parameter Value	Suggested Value
Campaign Name*	AgentBasedProgressive	
Enabled*	<input checked="" type="radio"/> Yes <input type="radio"/> No	
Description	AgentBasedProgressive	
Start Time (hh:mm)*	1:00 AM Central Daylight Time	
End Time (hh:mm)*	11:00 PM Central Daylight Time	
Campaign Calling Number*	1900	
Maximum Attempts to Dial Contact*	3	3
Callback Time Limit*	15 Minute(s)	15
Callback Missed*	Reschedule for same time next business day	Reschedule for same time next business day

Dialing Options

Lines Per Agent(1-3)*: 1.0

Handle Low Volume as Voice: Yes No

Answering Machine Treatment: Transfer To IVR End Call Transfer To IVR

Abandoned Call Treatment: Transfer To IVR Abandon Call Transfer To IVR

11. Add the proper Progressive CSQ on Assigned CSQs and click Add.

Dial Settings

No Answer Ring Limit*: 15 Second(s) 15

Abandoned Call Wait Time*: 2 Second(s) 2

Retries

No Answer Delay*: 60 Minute(s) 60

Busy Signal Delay*: 60 Minute(s) 60

Customer Abandoned Delay*: 0 Minute(s) 0

Dialer Abandoned Delay*: 0 Minute(s) 0

Assigned CSQs: AgentBasedProgressive

Available CSQs: AgentBasedProgressive

Add Cancel Import Contacts Delete All Contacts Open Printable Report

* - Indicates required item

12. Finally, navigate to **Subsystems > Outbound > SIP Gateway Configuration**, and type the specific IP Address of the CUBE that handles the outbound calls:

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Navigation Cisco Unified CCX Administration Go
admin About Logout

System Applications Subsystems Wizards Tools Help

SIP Gateway Configuration

Update Cancel

Status: Ready

Gateway Configuration

Gateway Hostname/IP Address*: 10.2.10.70

Gateway Port*: 5060

Local CCX Port*: 5065

Local User Agent*: Cisco-UCCX

Transport Protocol*: UDP TCP

Parameter Name	Parameter Value	Suggested Value
Minimum Silence Period (100 - 1000)*	375 Milliseconds	375
Analysis Period (1000 - 10000)*	2500 Milliseconds	2500
Maximum Time Analysis (1000 - 10000)*	3000 Milliseconds	3000
Minimum Valid Speech Time (50 - 500)*	112 Milliseconds	112
Maximum Term Tone Analysis (1000 - 60000)*	15000 Milliseconds	15000

Update Cancel

CUBE Configuration

Add global configuration on CUBE under voice service voip and add the cpa global parameters:

```
<#root>
```

```
voice service voip
```

```
ip address trusted list
ipv4 0.0.0.0 0.0.0.0
mode border-element
no supplementary-service sip refer      ---->This command avoids to send Refer SIP message to ITSP
allow-connections sip to sip
cpa timing live-person 2501
cpa timing term-tone 15500
cpa threshold active-signal 18db
```

Note: Make sure you do not need to configure allow trusted list, otherwise you need to configure each ip address of the UCCX and CUCM here.

Configure dspfarm services on the voice card:

```
<#root>
```

```
voice-card 0/1
```

```
  dsp services dspfarm
```

Configure the dspfarm profile and enable Call Progress Analysis (CPA):

```
<#root>
```

```
dsp services dspfarm
```

```
  dspfarm profile 1 transcode
```

```
  description dialer-lab
```

```
  codec g729abr8
```

```
  codec g729ar8
```

```
  codec g711alaw
```

```
  codec g711ulaw
```

```
  call-progress-analysis
```

```
    <-- This line enables CPA on the dspfarm
```

```
  maximum sessions 10
```

```
  associate application CUBE
```

```
    <--Remeber to use CUBE application here
```

Note: On the cube router for this lab the PVDM is installed on the slot 0/1:

```
<#root>
```

```
#sh inventory
```

```
---Output omitted
```

```
NAME: "subslot 0/1 db module 0", DESCR: "PVDM4-64 Voice DSP Module" PID: PVDM4-64
```

```
---Output omitted
```

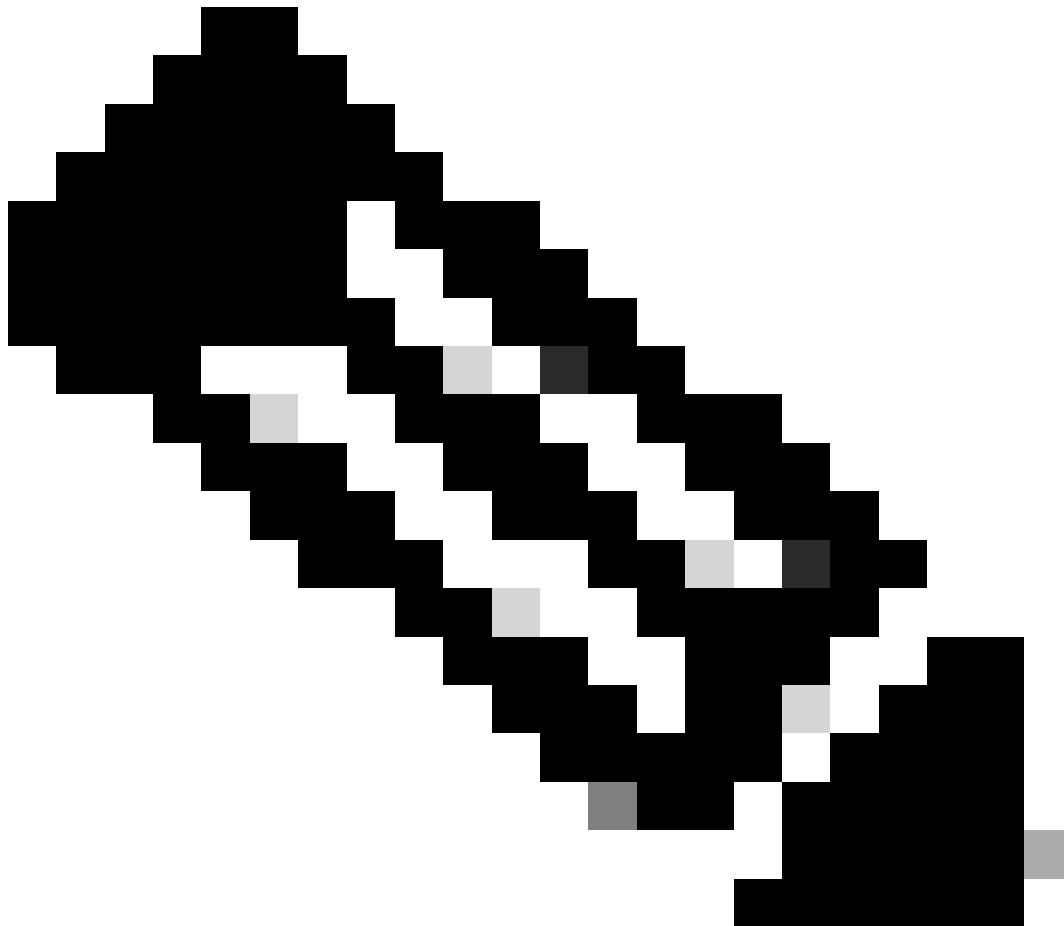
Configure the inbound dial peer:

```
<#root>
```

```
dial-peer voice 10 voip
```



```
description dialer IncomingDP
session protocol sipv2
incoming called-number .    <--This dot means that the dial peer receives any digit
dtmf-relay rtp-nte
codec g711ulaw
no vad
```



Note: There are so many ways to receive a call on a dial peer, this is only an example for this lab using incoming called-number command.

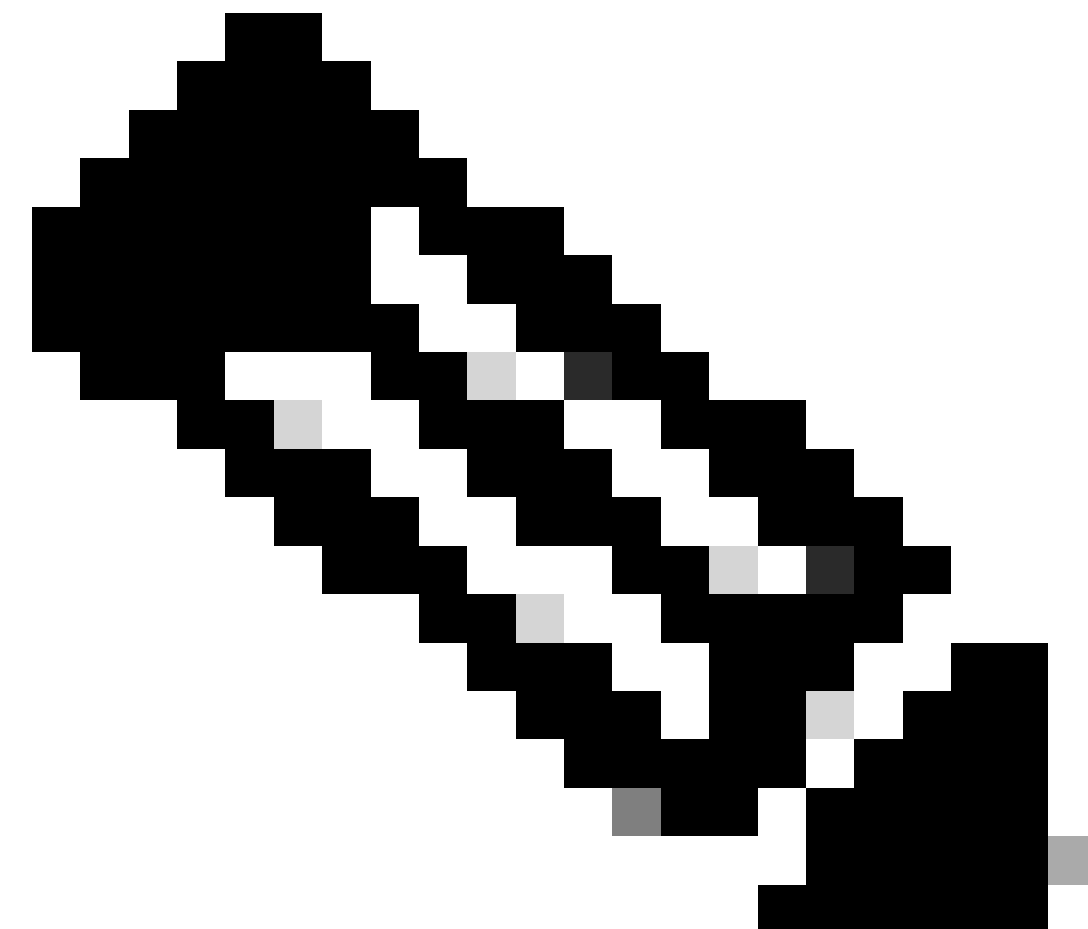
Configure the outbound dial peer pointing to the ITSP:

```
<#root>
```

```
dial-peer voice 400 voip
```

```
description ** DIALER ITSP SIDE **
destination-pattern 9001$
```

```
session protocol sipv2
session target ipv4:10.4.14.4      <--ITSP IP Address
dtmf-relay rtp-nte
codec g711ulaw
no vad
```



Note: You must to point to the ITSP IP Address and create the proper destination pattern for your specific dial plan.

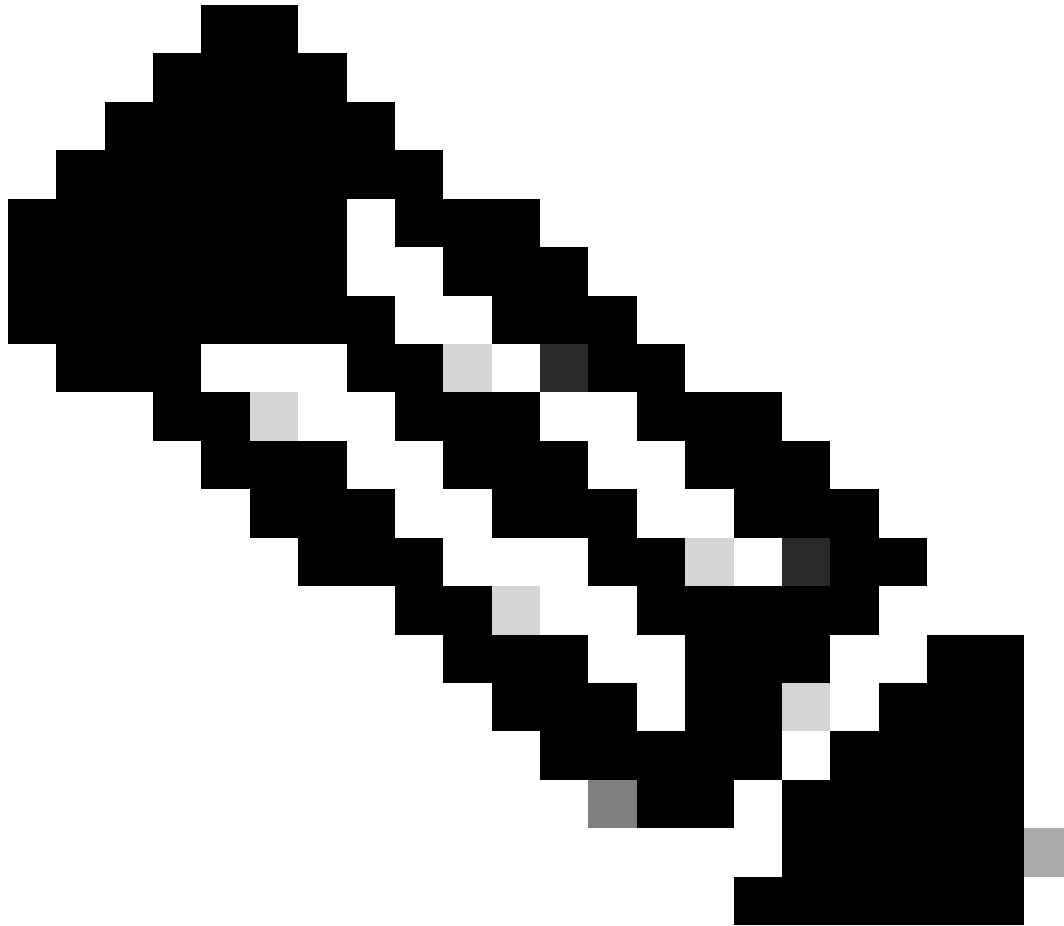
Configure the dial peer that points to the CUCM agent:

```
<#root>
```

```
dial-peer voice 2000 voip
```

```
description ** DIALER UCCX agents on CUCM**
destination-pattern 2000      <--Agent Extension, this can be a range of extensions.
session protocol sipv2
session target ipv4:10.2.10.30 <--IP Address of the Call Manager
```

```
dtmf-relay rtp-nte
codec g711ulaw
no vad
```



Note: This dial peer is only an example for this lab and it is being sent to a specific agent extension registered on the CUCM.



Note: Unified CCX does not support the translation or modification of the phone number that it uses to dial out outbound calls. Any **voice translation rule** configured in the gateway that modifies the phone number are not supported.

Verify

Verify the dspfarm is up, active and associated and also the CPA is enabled:

```
<#root>
```

```
#show dspfarm profile 1
```

Dspfarm Profile Configuration

```
Profile ID = 1, Service = TRANSCODING, Resource ID = 1  
Profile Description : dialer-lab  
Profile Service Mode : Non Secure  
Profile Admin State :
```

UP

Profile Operation State :

ACTIVE

Application : CUBE Status :

ASSOCIATED

Resource Provider : FLEX_DSPRM Status : UP

Total Number of Resources Configured : 10

Total Number of Resources Available : 10

Total Number of Resources Out of Service : 0

Total Number of Resources Active : 0

Codec Configuration: num_of_codecs:4

Codec : g711ulaw, Maximum Packetization Period : 30

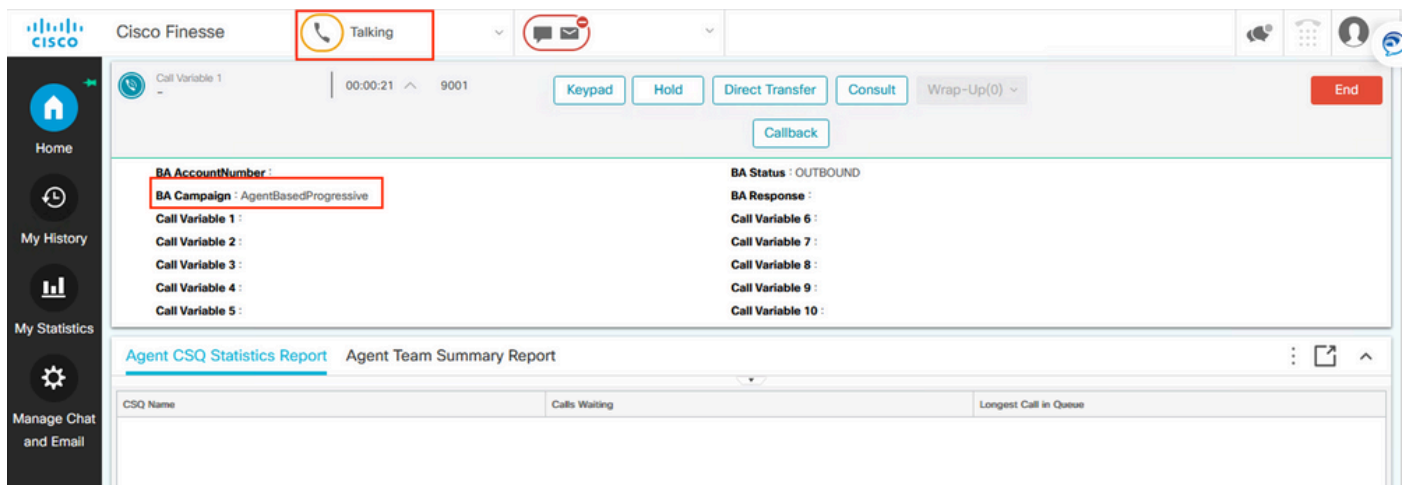
Codec : g711alaw, Maximum Packetization Period : 30

Codec : g729ar8, Maximum Packetization Period : 60

Codec : g729abr8, Maximum Packetization Period : 60

Call Progress Analysis : ENABLED

Verify the agent goes to Talking State on Finesse and the BA Campaign is the Agent-basedProgressive:



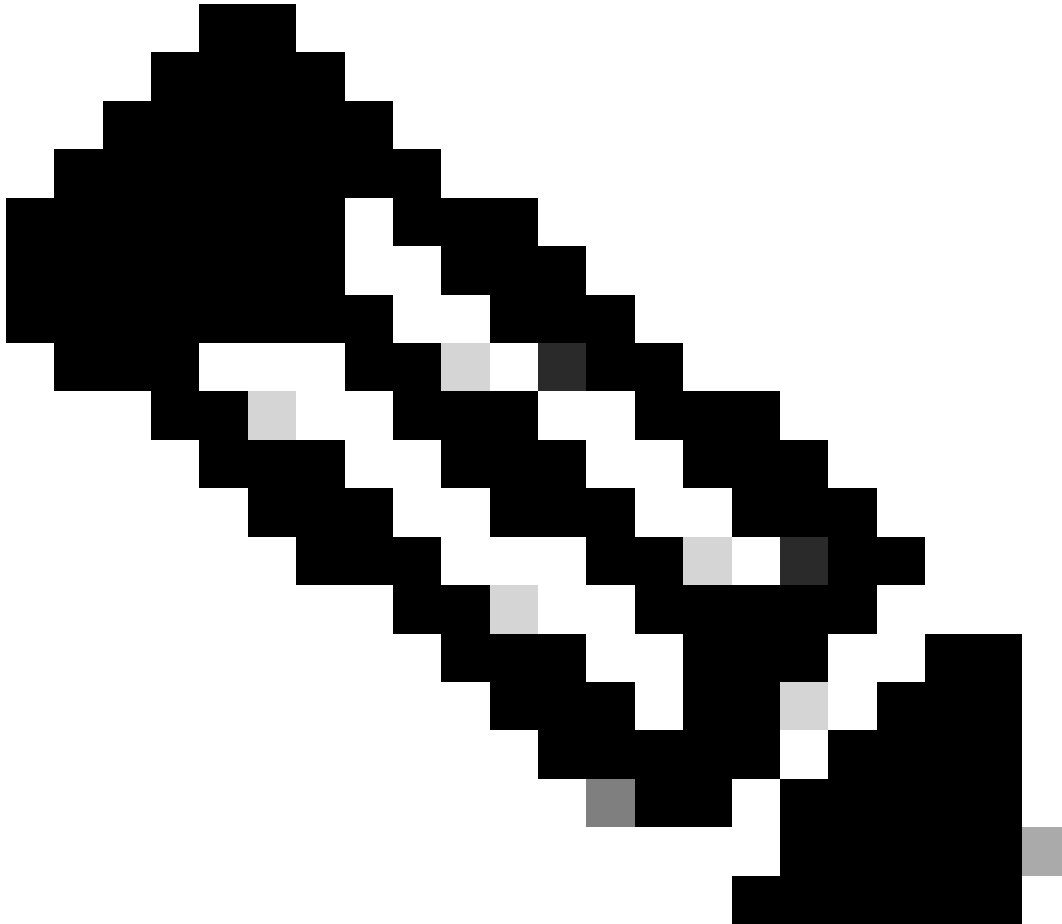
Troubleshoot

The easiest way to troubleshoot is to collect debugs on CUBE with this configuration:

```
conf t
service timestamps debug datetime localtime msec
service timestamps log datetime msec
service sequence-numbers
logging buffered 10000000 debug
no logging console
no logging monitor
default logging rate-limit
default logging queue-limit
voice iec syslog
```

exit

```
Debug voice ccapi inout      <-- CCAPI debug allows to verify the dial peers matched.  
Debug ccsip messages        <--Enables SIP messages logs  
Debug ccsip error           <--Enables SIP Errors logs
```



Note: Another way to collect logs is by enabling traces on the UCCX side, for this refer to the [Tech Note on UCCX Tracing Levels on the Outbound voice calls](#) section for more information.

Once you collect the CUBE logs you need to validate you are matching the correct dial peers for three legs:

```
<#root>
```

```
Incoming Dial-peer=
```

```
10      <--First Leg
```

```
Outgoing Dial-peer=
```

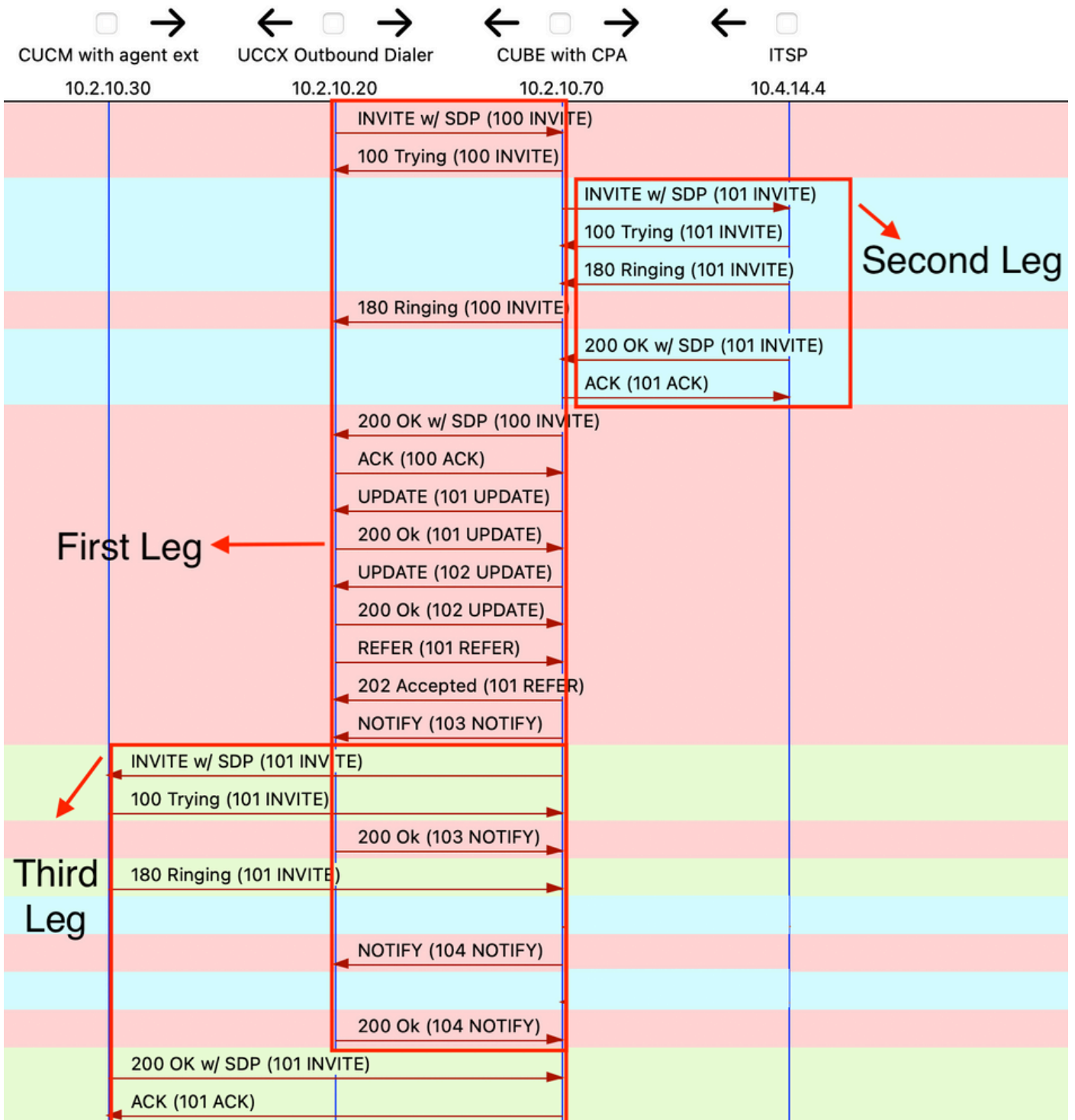
400 <--Second Leg

Outgoing Dial-peer=

2000 <--Third Leg

There are three legs:

- the first leg comes from UCCX,
- the second leg goes to ITSP,
- and the third leg goes to the CUCM



Note: The Analysis described in this section describes only specific segments of the SIP messages that you need to troubleshoot.

On the first leg, it is important to check that CPA is sent with the correct CPA parameters configured on UCCX on the SIP Invite message:

```
<#root>
```

```
---Output omitted
```

```
Content-Type: application/
```

```
x-cisco-cpa
```

```
Content-Disposition: signal;handling=optional
```

```
Events=FT,Asm,AsmT,Sit
```

```
CPAMinSilencePeriod=375
```

```
CPAAnalysisPeriod=2500
```

```
CPAMaxTimeAnalysis=3000
```

```
CPAMinValidSpeechTime=112
```



```
CPAMaxTermToneAnalysis=15000
--unique_boundary--
---Output omitted
```

The 200 ok SIP message on the first leg also needs to say that the CPA is enabled:

```
<#root>
---Output omitted

--uniqueBoundary
Content-Type: application/x-cisco-cpa
Content-Disposition: signal;handling=optional
event=enabled
--uniqueBoundary--
```

The first Update SIP message on the first leg indicates that the CPA event has been detected:

```
<#root>
---Output omitted

Content-Type: application/
x-cisco-cpa

Content-Disposition: signal;handling=optional
Content-Length: 26

event=detected

status=

CpaS
```

The second Update SIP message also on the first leg indicates that the CPA event is Live Human Speech:

```
<#root>
---Output omitted

Content-Type: application/x-cisco-cpa
Content-Disposition: signal;handling=optional
Content-Length: 167
event=detected
status=LS      <-- This indicates it is Human speech
pickupT=2510
maxActGlitchT=0
numActGlitch=0
```

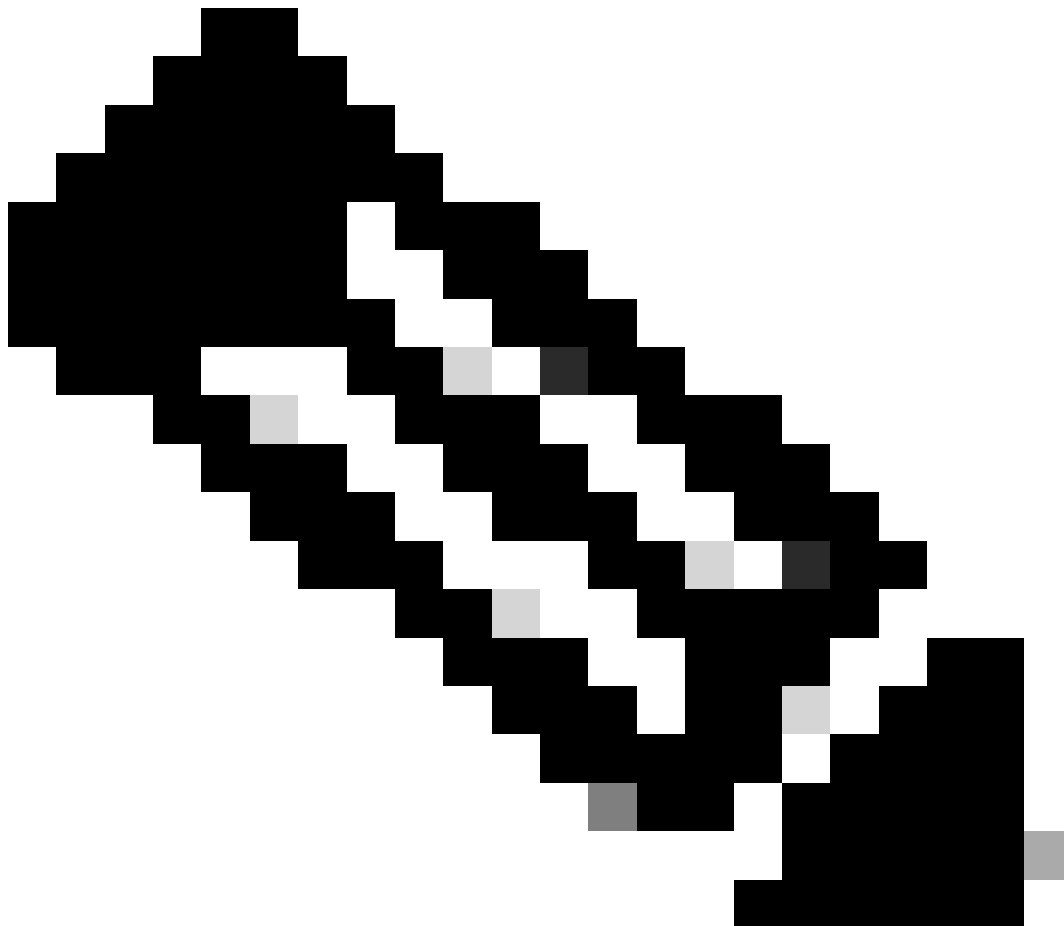
```
valSpeechT=190
maxPSSGlitchT=0
numPSSGlitch=0
silenceP=380
termToneDetT=0
noiseTH=35
actTh=2097164
```

The Refer SIP message on first leg indicates where to send the call to on the Refer-To header:

```
<#root>
```

```
---Output omitted
```

```
Refer-To: <sip:2000@10.2.10.70>
```



Note: If the issue persists, open a Cisco TAC Case, and attach the CUBE logs collected for further

troubleshooting along with sh tech of your CUBE. For the UCCX side, you need to collect [UCCX Engine traces and Finesse agent side logs](#).

Related Information

[Understand Inbound/Outbound Dial Peers that Match on Cisco IOS® Platforms](#)

[Call Progress Analysis Overview](#)

[Tech Note on UCCX Tracing Levels](#)

[Cisco Unified Contact Center Express Design Guide](#)