Cisco Unified CM Using Extensions

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This document covers the requirements, features and highlights some of the configuration of the DuVoice integration with Cisco Unified Communications Manager (CUCM). This interface will not work with Cisco Communications Manager Express.

Features

- MWI set/clear.
- Name display change.
 - DN Changes
 - Note: DN must match mailbox.
 - Display.
 - ASCII Display.
 - Calling Search Space (COS).
 - End user settings.
 - First name
 - Last name
- DND for all devices using a DN.

Note: DN must match mailbox.

Requirements

- Cisco Unified Communications System version: 8.6.2.20000-2 or above.
- DuVoice 5.10.030 or above.
- Lan with internet access.
- Network connection between DuVoice and Cisco.
- Cisco Administration XML version 8.5.

Known issues

- Message Waiting
 - $\circ\,$ Our lab's Cisco 7960 phone's MWI light will not function.

PBX Configuration

SIP Account

Create an end user account for the voicemail to login.

• First name Not required.

Last name

• PIN

User ID

Password

Telephone Number

the voicemail port.

Enter the extension number entered for the User ID field.

Enter anything you like, this field is not used.

You must enter a something in this field.

Confirm
DIN

User Information		
User ID*	2001	
Password	•••••	Edit Credential
Confirm Password	•••••	
PIN	•••••	Edit Credential
Confirm PIN	•••••	
Last name*	Voicemail	
Middle name		
First name	Hospitality	
Telephone Number	2001	
Mail ID		
Manager User ID		
Department		
User Locale	< None >	
Associated PC		
Digest Credentials		
Confirm Digest Credentials		

Enter the primary number for the DuVoice system. In these examples we used the extension 2001.

Enter any alphanumeric value you like. This will be entered in the Password field when configuring

licon Information

Device Information	
Controlled Devices	Device Association
Available	•
Profiles	
	**
CTI Controlled Device Profiles	*
-Extension Mobility	
Available Profiles	
	**
Controlled Profiles	
Default Profile	Not Selected 👻
Presence Group*	Standard Presence group 👻
SUBSCRIBE Calling Search Space	< None >
Allow Control of Device from C	ті
Enable Extension Mobility Cross	s Cluster
-Directory Number Associations	5
Primary Extension < None >	•

Mobility Information	
Enable Mobility	
Primary User Device	< None >
Enable Mobile Voice Access	
Maximum Wait Time for Desk Pickup*	10000
Remote Destination Limit*	4
Remote Destination Profiles	View Details
CAPF Information	
Associated CAPF Profiles	
	View Details
Permissions Information	
Groups	*
	Add to User Group
	View
Details	
Roles	*
Details	- <u>View</u>

Phone Device

Create a phone device to represent the voicemail system.

Г	Device Information —			
l	Registration	nregistered		
l	IP Address	92.168.11.25		
l	Active Load ID	nknown		
	Device is Active			
l	A Device is not trusted			
l	MAC Address*			
	Description	DuVoice Voicemail		
l	Device Pool*	Default	•	View Details
	Common Device	< None >	~	View Details
l	Configuration			-
l	Phone Button Template*	Third-party SIP Device (Basic)	•	
l	Common Phone Profile*	Standard Common Phone Prof	ile 👻	
l	Calling Search Space	< None >	•	
	AAR Calling Search Space	< None >	-]
	Media Resource Group List	< None >	-]
l	Location*	lub_None	•]
l	AAR Group	< None >	•]
l	Device Mobility Mode*	Off	•	View Current
l		evice Mobility Settings		
l	Owner User ID	< None >	•	
l	Use Trusted Relay Point*	Default	•]
l	Always Use Prime Line*	Default	•]
	Always Use Prime Line for Voice Message*	Default	•]
	Calling Party Transformation CSS	< None >	•]
l	Geolocation	< None >)
l	Use Device Pool Callin	Party Transformation CSS		
	Ignore Presentation Ir	cators (internal calls only)		
l	Logged Into Hunt Grou			
	Remote Device			
L	Protocol Specific Inform	ation		
ſ				
	Presence Group*	Standard Presence gr	oup	-
1	MTP Preferred Originating	odec 711ulaw		-

Presence Group*	Standard Presence group	•
MTP Preferred Originating Codec*	711ulaw	-
Device Security Profile*	Third-party SIP Device Basic - Standard SIP Non-S	•
Rerouting Calling Search Space	< None >	•
SUBSCRIBE Calling Search Space	< None >	•
SIP Profile*	Standard SIP Profile	•
Digest User	2001	•
Media Termination Point Require	ed	
Unattended Port		
Require DTMF Reception		
- MLPP Information		
MLPP Domain < None >		

MAC Address

Enter the same MAC address which the Dialogic HMP is licensed for. This field is entered without any colons.

• Digest User

Choose the end user account you created in the previous step.

Line Device

Create a line device for this phone device.

Directory Num	iber Informati	on ———			
Directory Numbe	er* 2001				
Route Partition	< None >				
Description	All DuVoi	ce ports			
Alerting Name					
ASCII Alerting N	Name				
Associated Devic	ces SEP00241	DDAB3BE	A		
			Edit Device Edit Line Appearant	ce	
		**	`		
Dissociate Devic	ces		۵ ۳		
Directory Num	ber Settings-				
Voice Mail Profile	e	< None >	✓ (Choose <none> to u</none>	se system default)	
Calling Search S	Space	< None >	•		
Presence Group	*	Standard F	Presence group		
User Hold MOH A	Audio Source	< None >			
Network Hold MC	OH Audio Source	<pre>< None ></pre>	•		
AAR Settings					
	Voice N	1ail	AAR Destination Mask	AAR Group	
AAR	or			< None >	•
Retain this of forwarding hist	destination in th	e call			
Retain this of forwarding history	destination in th ory	e call			
Retain this of forwarding histo	destination in th ory	e call Settings—			
Retain this (forwarding hist) Call Forward a	destination in th cory and Call Pickup	e call Settings— Voice Mail	Destination	Calling Search Space	
Retain this of forwarding histo Call Forward a Calling Search	destination in th ory and Call Pickup Space Activatio	e call Settings Voice Mail n Policy	Destination	Calling Search Space Use System Default	•
Call Forward a Calling Search Forward All	destination in th ory and Call Pickup Space Activatio	e call Settings Voice Mail n Policy	Destination	Calling Search Space Use System Default < None >	•
Retain this of forwarding hist Call Forward a Calling Search Forward All Secondary Call	destination in th lory Ind Call Pickup Space Activatio	e call Settings Voice Mail n Policy or ce for Forwar	Destination	Calling Search Space Use System Default < None > < None >	•
Retain this of forwarding hist Call Forward a Calling Search Forward All Secondary Call Forward Busy I	destination in th ory and Call Pickup Space Activatio ling Search Spa	e call Settings Voice Mail n Policy or ce for Forwar or	Destination d All	Calling Search Space Use System Default < None > < None > < None >	 • • • • • •
Call Forward a Calling Search Forward All Secondary Call Forward Busy I	destination in th iory and Call Pickup Space Activatio ling Search Spac Internal	Settings	Destination	Calling Search Space Use System Default < None >	• •
Call Forward a Calling Search Forward All Secondary Call Forward Busy I Forward Busy E	destination in th ory and Call Pickup Space Activatio ling Search Space Internal External	settings	Destination	Calling Search Space Use System Default < None >	
Call Forward a Calling Search Forward All Secondary Call Forward Busy I Forward Busy E Forward No Ans	destination in th iory Ind Call Pickup Space Activatio ling Search Space Internal External swer Internal	Settings	Destination	Calling Search Space Use System Default < None >	
Retain this of forwarding hist Call Forward a Calling Search Forward All Secondary Call Forward Busy I Forward Busy E Forward No Ans Forward No Ans	destination in th iory Space Activatio ling Search Space Internal External swer Internal swer External	Settings- Voice Mail n Policy c for Forwar or or or or	Destination	Calling Search Space Use System Default < None >	
Retain this of forwarding hist Call Forward a Calling Search Forward All Secondary Call Forward Busy I Forward Busy I Forward Busy E Forward No Ans Forward No Ans Forward No Con Internal	destination in th iory Ind Call Pickup Space Activatio ling Search Space Internal External swer Internal swer External verage	Settings	Destination	Calling Search Space Use System Default < None >	
Retain this of forwarding hist Call Forward a Calling Search Forward All Secondary Call Forward Busy I Forward Busy I Forward Busy E Forward No Ans Forward No Ans Forward No Con Internal Forward No Con External	destination in th iory Ind Call Pickup Space Activatio ling Search Space Internal External swer Internal swer Internal swer External verage verage	settings	Destination	Calling Search Space Use System Default < None >	
Retain this of forwarding hist Call Forward a Calling Search Forward All Secondary Call Forward Busy I Forward Busy I Forward Busy E Forward No Ans Forward No Cos Forward No Cos Internal Forward No Cos External Forward No Cos	destination in th iory Space Activatio Iing Search Space Internal External swer Internal swer External verage iverage I Failure	settings	Destination	Calling Search Space Use System Default < None >	• • • • • • • • • •
Retain this of forwarding hist Call Forward a Calling Search Forward All Secondary Call Forward Busy I Forward Busy I Forward Busy I Forward No Ans Forward No Ans Forward No Cov Internal Forward No Cov External Forward on CTI Forward Unregi Internal	destination in th iory Ind Call Pickup Space Activatio ling Search Space Internal External swer Internal swer Internal swer External verage I Failure istered	settings	Destination	Calling Search Space Use System Default < None >	
Retain this of forwarding hist Call Forward a Calling Search Forward All Secondary Call Forward Busy I Forward Busy I Forward Busy I Forward No Ans Forward No Ans Forward No Con Internal Forward No Con External Forward on CTI Forward On CTI Forward On CTI Forward Unregi Internal Forward Unregi External	destination in th iory Ind Call Pickup Space Activatio ling Search Space Internal External swer Internal swer Internal swer External verage I Failure istered	settings	Destination	Calling Search Space Use System Default None >	
Retain this of forwarding hist Call Forward a Calling Search Forward All Secondary Call Forward Busy I Forward Busy I Forward Busy I Forward No Ans Forward No Ans Forward No Con Internal Forward No Con External Forward on CTI Forward Unregi Internal Forward Unregi External No Answer Ring	destination in th iory Space Activatio ling Search Space Internal External swer Internal swer Internal werage I Failure istered Duration (secor	settings	Destination Destination d All 1141 1141 1141 1141 1141 1141 1141 1141 1141 1141 1141 1141	Calling Search Space Use System Default < None >	

- Forward Busy Internal Enter the operator or front desk extension.
 Forward Busy External
- Enter the operator or front desk extension.
- Forward No Answer Internal Enter the operator or front desk extension.
- Forward No Answer External Enter the operator or front desk extension.
- Forward Unregistered Internal Enter the operator or front desk extension.
- Forward Unregistered Extenral Enter the operator or front desk extension.

Park Monitoring –				
	Voice Mail	Destination		Calling Search Space
Park Monitoring Forward No Retriev Destination Extern	l or ve al		< None > value means to ca	▼ A blank
Park Monitoring Forward No Retriev Destination Interna	e or		< None > value means to ca	▼ A blank
Park Monitoring Rev Timer	version service	parameter	A blank value will use valu	ie set in Park Monitoring Reversion Timer
MLPP Alternate Pa	arty Settings —			
Target (Destination))			
MLPP Calling Search	n Space	< None >	•	
MLPP No Answer Rir	ng Duration (secor	nds)		
Line Settings for J	All Devices			
Hold Reversion Ring (seconds)	Duration	feature	Setting the Hold	Reversion Ring Duration to zero will disable the
Hold Reversion Noti (seconds)	fication Interval	disable the feature	Setting the Hold	Reversion Notification Interval to zero will
Party Entrance Tone	*	Default	•	
Line 1 on Device 9	SEP00241DDAB3	BE		
Display (Internal Caller ID)	name instead caller.	Dis of a directory number for internal calls. If you specify	play text for a line appearance a number, the person receivin	e is intended for displaying text such as a ig a call may not see the proper identity of the
ASCII Display (Internal Caller ID)				
External Phone Number Mask				
Monitoring Calling Search Space	< None >	▼		
Multiple Call/Call	Waiting Setting	s on Device SEP00241DDAB3BE		
Note:The range to s	elect the Max Nur	nber of calls is: 1-2		
Maximum Number o	f Calls*	2		
Busy Trigger*		2		(Less than or equal to Max. Calls)
Forwarded Call In	formation Disp	ay on Device SEP00241DDAB3BE		
Caller Name		-,		
Caller Number				
Redirected Num	ber			
Dialed Number				
∟ ⊤Users Associated	with Line			
		Full Name	User ID	Permission
Voicemail,H	ospitality	200	01	(i)
Associate E	nd Users Select	All Clear All Delete Selected		

www.duvoice.com

DuVoice Configuration (Part 1)

These steps assume you are performing a new install and guide you through the Cisco Specific settings in the Setup Wizard.

Setup

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PBX Model		×
DuVoice	Select the telephone system the DuVoice will be connected to. If you do not see your particular telephone system listed select Other. • Avaya • Cisco • Cisco • Cisco Unified Comunications Manager • Other • Dialogic PIMG • Mitel • NEC • Shore Tel • Siemens • SIP Gateway • Panasonic • Panasonic TDE • Asterisk Based • Other	
	< <u>B</u> ack <u>N</u> ext > Cancel H	elp

- Choose Cisco Unified Communications Manager.
- Click Next

MWI Method	×
	Choose the method by which message waiting lights will be set and cleared.
	SIP Notify
	C TAPI
	C SMDI
	C Inband using a feature or shortcode
	C HTTP
	Inband codes
	Enter the code used to set and clear the message waiting lights. Enter an E for the extension number. If an E is not specified it will be automatically added to the end of the code.
	For example: *81*E* or *4E
	Set code Clear code
DuVoice	
	< Back Next > Cancel Help

- Cisoc only support SIP Notify.
- Click Next

SIP Information	×
DuVoice	Enter the server name or IP address of the SIP registrar with which the SIP ports will be registered; this is optional but recommended. Typically, this will be the server name or IP address of the IP PBX. Server IP Address or DNS name: 192.168.11.19
	< Back Next > Cancel Help

• Enter the IP Address of the Cisco.

Click Next

Voice Ports		×
	This system extension of extension file integrations If You do no later in Syste Voicemail H	will be configured for 4 voice mail ports. If you know the i each port enter it in the space provided by clicking the ports eld below. Entering the extension numbers is required for some and will help with resolving integration issues. In the extensions leave them blank, they can be entered em Configuration.
	Number Port 1 Port 2 Port 3 Port 4	Extension 2001 2001 2001 2001 2001 2001 2001
DuVoice	•	4
		< <u>Back</u> <u>N</u> ext > Cancel Help

- Enter the extension number for the voicemail you created in the previous steps on all lines.
- Click Next and continue with the Wizard.

System Configuration

Run System Configuration to continue configuring the system.

Line 1

- Double click SIP Line 1.
- Click SIP Configuration tab.

Line 1				×
Port Configuration	SIP Configuration SIP			
Display name		Account name	2001	
User agent	DuVoice	Password	1234	
Local Port	5060	Realm	ccmsipline	
DMG Settings		-	I ■ Enable Register	
Port number for	MWI use Any 💌	1		
Direct Outgoing	to (optional)			
	[

• Account name

Enter the User ID created in the steps above.

Password

Enter the password created in the steps above.

• Realm

Enter **ccmsipline**. If you have created another SIP Realm for the voicemail enter it here instead.

• Enable Register

Check.

SIP Line 1			×
Port Configuration S	IP Configuration SIP		
Location	Default Location	•	
Server address	192.168.11.19	Port 5060	
Dialogic IP Address	192 . 168 . 11 . 25		
Register expire time	3600 ÷ seconds		
SIP Trunk			
Optional Backup s	erver		
Server address			
Default to prim	ary on restart.		
	ОК		Help

- These settings are the default created by the Setup Wizard. Your Dialogic IP Address will be set to the IP Address your Dialogic PowerMedia HMP software has been licensed for.
- Click Ok to save these settings.

All other lines

Line 2				×
Port Configuration	SIP Configuration SIP			
Display name		Account name		
User agent	DuVoice	Password		
Local Port	5060	Realm		
DMG Settings			Enable Register	
Port number for	MWI use Any 💌			
Direct Outgoing	to (optional)			
· ·				
		OK (Cancel Apply	Help

• All other lines should be configured with a blank entries for Account name, Password and Realm.

• Enable Register

Uncheck.

This concludes the configuration of the PBX and the voicemail system. System Configuration should show something like the following.

🔀 System (Configuration								
<u>P</u> assword	Define Ports	Integra	ations <u>L</u> ocations	<u>F</u> eatures <u>T</u> ools	<u>H</u> elp				
Device	Extension	Hu	PBX Template	Default Mailbox	Location	SIP User	SIP Realm	Server	Enable Register
SIP Line 1	2001		SIP_CISCO_UCM	991	Default L	2001	ccmsipline	192.168.1	Yes
SIP Line 2	2001		SIP_CISCO_UCM	991	Default L			192.168.1	No
SIP Line 3	2001		SIP_CISCO_UCM	991	Default L			192.168.1	No
SIP Line 4	2001		SIP_CISCO_UCM	991	Default L			192.168.1	No
Ready									NUM //

PBXLink

The PBXLink provides all the guest name changes.

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DuVoice uses the Cisco Administration XML (AXL) API for all changes. This interface provides mechanisms for inserting, retrieving, updating, and removing data from the Unified CM configuration database and is provided by Cisco.

DuVoice uses it's internal extension directory to find matching DN's on the CUCM. If multiple DN's have the same number it will change the settings for each of the DN's. The extension must be an exact match and does not support partial matches.

All changes are made to the DN's with the exception of the DND state. In this case any device which a DN appears on will have it's DND changed regardless if the DN is the primary appearance or not.

The ability to change end user settings relies on the Telephone Number field matching that of the DuVoice extension number. The creation of End Users for room phones is not encouraged and therefore this feature is optional.

PBX Configuration

Analog Gateways

When using analog gateways they should be configured to use the SCCP protocol in order for the DuVoice to resolve all the DN's.

Administration XML Installation

The Administration XML (AXL) interface is a an application plugin which must be installed. This installation is done from the Application|Plugins and choosing Cisco AXL Toolkit.

Calling Search Space

The Calling Search Space (CSS) is used to restrict guests phones from making certain types of calls. Only the CSS of the matching DN's are changed and not that of the device they may be configured for.

DuVoice Account

An application user account must be created for the DuVoice to access the Cisco. This account must be a member of axlGroup and have the Role Standard AXL API Access under the Permissions Information fields. The account user id and password may be set to anything desired. These will be used in the configuration of the DuVoice system discussed later in this document.

Application User Inform	ation	
User ID*	duvoice	Edit Credential
Password	•••••]
Confirm Password	•••••]
Digest Credentials]
Confirm Digest Credentials]
Presence Group*	Standard Presence group 👻	
Accept Presence Subsc	ription	
Accept Out-of-dialog RE	FER	
CACCEPT Unsolicited Notif	ication	
C Accept Replaces Heade	r	

- Permis	sions Information		
Groups	axlGroup	A	
		Add to User Group	
		Remove from User Grou	
		View Details	
Roles	Standard AXL API Access	A	
		▼ View Details	

DuVoice Configuration (Part 3)

Connector

Configuration of the Cisco interface can be found in System Configuration|Features|Connectors|Cisco.

Cisco		
Location	Default Location	Enabled
Server	192.168.11.19	
User ID	duvoice	
Password		Time
TCP/IP Port	8443	 Call Manager
Hetries	3	C Call Manager Express
Interval (seconds)	90 🕂	

Server

For the Server enter the IP address or DNS name of the Cisco Unified Communications Manager.

• User ID

Enter the user id of the DuVoice application account created in CUCM.

Password

Enter the password of the DuVoice application account created in CUCM.

• TCP/IP Port

Must be set to 8443 unless changed by the Cisco administration.

• Retries

Enter the number of retries in case of failure.

Interval (seconds)

Enter the number of seconds between retries.

• Type

Choose Call manager.

Hospitality

Phone control is configured in System Configuration|Features|Hospitality and then from the Phone Control tab.

BX		Call accouting
Type: Cisco	-	Type: -none
		Enabled:no change
ito-set phone state on		Disabled:no change
Check-in: -no chang	e	Vodavi-specific settings
Check-out: L-no chang	e ▼	
ser group restrictions / call re	estriction values	Outdial prefix: 470
ser group restrictions / call re	estriction values	Outdial prefix: 470 s, right-click any row to display a menu.
ser group restrictions / call re To edit an entry, left-click on Display Text	it. For all other actions	Outdial prefix: 470 s, right-click any row to display a menu.
ser group restrictions / call re To edit an entry, left-click on Display Text Checked In Checked Out	it. For all other actions	Outdial prefix: 470 s, right-click any row to display a menu. PMS Value IN 2
ser group restrictions / call re To edit an entry, left-click on Display Text Checked In Checked Out	estriction values it. For all other actions PBX Value CHECKED CHECKED	Outdial prefix: 470 s, right-click any row to display a menu. PMS Value -IN 2 -OUT 3
ser group restrictions / call re To edit an entry, left-click on Display Text Checked In Checked Out	estriction values it. For all other actions PBX Value CHECKED CHECKED	Outdial prefix: 470 s, right-click any row to display a menu. PMS Value N 2 OUT 3
ser group restrictions / call re To edit an entry, left-click on Display Text Checked In Checked Out	estriction values it. For all other actions PBX Value CHECKED CHECKED	Outdial prefix: 470 s, right-click any row to display a menu. PMS Value -IN 2 -OUT 3

• PBX

Set to Cisco.

• User group restrictions / call restriction values

Here you enter all the different Calling Search Space configuration items you want to use. The Display Text is used in InnDesk and the PMS Value is the value sent by the PMS which matches that particular restriction. The Calling Search Space values are case-sensitive so care should be taken to insure they are entered correctly.

Troubleshooting

AXL

Quick Test

You can quickly check if AXL is listening on the correct port by opening your browser of choice and browsing to the interface. In this example CUCM is located at the IP address 192.168.11.19 and which would be replaced with the IP address or DNS name of the local CUCM. Example URL is https://192.168.11.19:8443/axl.

$(\Leftrightarrow) \odot $	號 https://192.168.11.19:8443/axl/ りー C× 🗱 Certificate Error: Navi × 🖬 🏠 😒
<u>F</u> ile <u>E</u> dit	<u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp
8	There is a problem with this website's security certificate.
	The security certificate presented by this website was not issued by a trusted certificate authority. The security certificate presented by this website was issued for a different website's address.
	Security certificate problems may indicate an attempt to fool you or intercept any data you send to the server.
	We recommend that you close this webpage and do not continue to this website.
	🧭 Click here to close this webpage.
	Source Continue to this website (not recommended).
	More information
ll Click Conti l	nue to this website (not recommended).

Windows Security		×
The server 192.3 password.	.68.11.19 at Cisco AXL API requires a username and	
	User name Password Remember my credentials	
	ОК Са	ncel

Enter the user id and password of the application account associated with the DuVoice.



If the user name and password are correct you will be presented with this screen. cisco