Cisco Unified CM Using Extensions

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
    - 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
  - 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.
- **User ID**
  Enter the primary number for the DuVoice system. In these examples we used the extension 2001.

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

- **PIN**
  Enter anything you like, this field is not used.

- **Last name**
  You must enter a something in this field.

- **First name**
  Not required.

- **Telephone Number**
  Enter the extension number entered for the User ID field.
Phone Device

Create a phone device to represent the voicemail system.
- **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.
- **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 External**
  Enter the operator or front desk extension.
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**

- Choose Cisco Unified Communications Manager.
- Click Next
Cisco only support SIP Notify.
Click Next

Enter the IP Address of the Cisco.
• Click Next

![Voice Ports](image.png)

• 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.
- **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.
• 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

• 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.

PBXLink

The PBXLink provides all the guest name changes.
Overview

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 its 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.
DuVoice Configuration (Part 3)

Connector

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

- **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.

<table>
<thead>
<tr>
<th>Phone Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBX:</td>
</tr>
<tr>
<td>Type: Cisco</td>
</tr>
<tr>
<td>Auto-set phone state on</td>
</tr>
<tr>
<td>Check-in: -no change-</td>
</tr>
<tr>
<td>Check-out: -no change-</td>
</tr>
<tr>
<td>Call accounting</td>
</tr>
<tr>
<td>Type: -none-</td>
</tr>
<tr>
<td>Enabled: -no charge-</td>
</tr>
<tr>
<td>Disabled: -no charge-</td>
</tr>
<tr>
<td>Voicai-specific settings</td>
</tr>
<tr>
<td>Outdial prefix: 470</td>
</tr>
<tr>
<td>User group restrictions / call restriction values</td>
</tr>
<tr>
<td>Display Text</td>
</tr>
<tr>
<td>Checked In</td>
</tr>
<tr>
<td>Checked Out</td>
</tr>
<tr>
<td>Active PMS: DuVoice Advanced</td>
</tr>
</tbody>
</table>

• 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.

Click Continue to this website (not recommended).

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