

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
 - 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
 - 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 Information	
User ID*	<input type="text" value="2001"/>
Password	<input type="password" value="....."/> <input type="button" value="Edit Credential"/>
Confirm Password	<input type="password" value="....."/>
PIN	<input type="password" value="....."/> <input type="button" value="Edit Credential"/>
Confirm PIN	<input type="password" value="....."/>
Last name*	<input type="text" value="Voicemail"/>
Middle name	<input type="text"/>
First name	<input type="text" value="Hospitality"/>
Telephone Number	<input type="text" value="2001"/>
Mail ID	<input type="text"/>
Manager User ID	<input type="text"/>
Department	<input type="text"/>
User Locale	<input type="text" value=" < None >"/>
Associated PC	<input type="text"/>
Digest Credentials	<input type="text"/>
Confirm Digest Credentials	<input type="text"/>

- **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.

Device Information

Controlled Devices	<div style="border: 1px solid gray; height: 40px;"></div>	Device Association
Available Profiles	<div style="border: 1px solid gray; height: 40px;"></div>	
CTI Controlled Device Profiles	<div style="border: 1px solid gray; height: 40px;"></div>	

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Extension Mobility

Available Profiles	<div style="border: 1px solid gray; height: 40px;"></div>
Controlled Profiles	<div style="border: 1px solid gray; height: 40px;"></div>
Default Profile	<div style="border: 1px solid gray; padding: 2px;">-- Not Selected --</div>
Presence Group*	<div style="border: 1px solid gray; padding: 2px;">Standard Presence group</div>
SUBSCRIBE Calling Search Space	<div style="border: 1px solid gray; padding: 2px;">< None ></div>
<input checked="" type="checkbox"/> Allow Control of Device from CTI	
<input type="checkbox"/> Enable Extension Mobility Cross Cluster	

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Directory Number Associations

Primary Extension	<div style="border: 1px solid gray; padding: 2px;">< None ></div>
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Mobility Information
 Enable Mobility
Primary User Device < None >
 Enable Mobile Voice Access
Maximum Wait Time for Desk Pickup*
Remote Destination Limit*
Remote Destination Profiles [View Details](#)

CAPF Information
Associated CAPF Profiles [View Details](#)

Permissions Information
Groups [View](#)
[Details](#)
Roles [View](#)
[Details](#)

Phone Device

Create a phone device to represent the voicemail system.

Device Information

Registration	Unregistered
IP Address	192.168.11.25
Active Load ID	Unknown
<input checked="" type="checkbox"/> Device is Active	
<input type="checkbox"/> Device is not trusted	
MAC Address*	<input type="text"/>
Description	DuVoice Voicemail
Device Pool*	Default View Details
Common Device Configuration	< None > View Details
Phone Button Template*	Third-party SIP Device (Basic)
Common Phone Profile*	Standard Common Phone Profile
Calling Search Space	< None >
AAR Calling Search Space	< None >
Media Resource Group List	< None >
Location*	Hub_None
AAR Group	< None >
Device Mobility Mode*	Off View Current Device Mobility Settings
Owner User ID	< None >
Use Trusted Relay Point*	Default
Always Use Prime Line*	Default
Always Use Prime Line for Voice Message*	Default
Calling Party Transformation CSS	< None >
Geolocation	< None >
<input checked="" type="checkbox"/> Use Device Pool Calling Party Transformation CSS	
<input type="checkbox"/> Ignore Presentation Indicators (internal calls only)	
<input checked="" type="checkbox"/> Logged Into Hunt Group	
<input type="checkbox"/> Remote Device	

Protocol Specific Information

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
<input type="checkbox"/> Media Termination Point Required	
<input type="checkbox"/> Unattended Port	
<input type="checkbox"/> Require DTMF Reception	

MLPP Information

MLPP Domain	< None >
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• 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 Number Information

Directory Number*

Route Partition

Description

Alerting Name

ASCII Alerting Name

Associated Devices

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Dissociate Devices

Directory Number Settings

Voice Mail Profile (Choose <None> to use system default)

Calling Search Space

Presence Group*

User Hold MOH Audio Source

Network Hold MOH Audio Source

AAR Settings

	Voice Mail	AAR Destination Mask	AAR Group
AAR	<input type="checkbox"/> or	<input type="text"/>	<input type="text" value="< None >"/>
<input checked="" type="checkbox"/> Retain this destination in the call forwarding history			

Call Forward and Call Pickup Settings

	Voice Mail	Destination	Calling Search Space
Calling Search Space Activation Policy			<input type="text" value="Use System Default"/>
Forward All	<input type="checkbox"/> or	<input type="text"/>	<input type="text" value="< None >"/>
Secondary Calling Search Space for Forward All			<input type="text" value="< None >"/>
Forward Busy Internal	<input type="checkbox"/> or	<input type="text" value="1141"/>	<input type="text" value="< None >"/>
Forward Busy External	<input type="checkbox"/> or	<input type="text" value="1141"/>	<input type="text" value="< None >"/>
Forward No Answer Internal	<input type="checkbox"/> or	<input type="text" value="1141"/>	<input type="text" value="< None >"/>
Forward No Answer External	<input type="checkbox"/> or	<input type="text" value="1141"/>	<input type="text" value="< None >"/>
Forward No Coverage Internal	<input type="checkbox"/> or	<input type="text"/>	<input type="text" value="< None >"/>
Forward No Coverage External	<input type="checkbox"/> or	<input type="text"/>	<input type="text" value="< None >"/>
Forward on CTI Failure	<input type="checkbox"/> or	<input type="text"/>	<input type="text" value="< None >"/>
Forward Unregistered Internal	<input type="checkbox"/> or	<input type="text" value="1141"/>	<input type="text" value="< None >"/>
Forward Unregistered External	<input type="checkbox"/> or	<input type="text" value="1141"/>	<input type="text" value="< None >"/>
No Answer Ring Duration (seconds)		<input type="text" value="5"/>	
Call Pickup Group			<input type="text" value="< 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 External**
Enter the operator or front desk extension.

Park Monitoring

	Voice Mail	Destination	Calling Search Space
Park Monitoring Forward No Retrieve Destination External	<input type="checkbox"/> or	<input type="text"/>	< None > A blank value means to call the parker's line.
Park Monitoring Forward No Retrieve Destination Internal	<input type="checkbox"/> or	<input type="text"/>	< None > A blank value means to call the parker's line.
Park Monitoring Reversion Timer		<input type="text"/> service parameter	A blank value will use value set in Park Monitoring Reversion Timer

MLPP Alternate Party Settings

Target (Destination)

MLPP Calling Search Space < None >

MLPP No Answer Ring Duration (seconds)

Line Settings for All Devices

Hold Reversion Ring Duration (seconds) Setting the Hold Reversion Ring Duration to zero will disable the feature

Hold Reversion Notification Interval (seconds) Setting the Hold Reversion Notification Interval to zero will disable the feature

Party Entrance Tone* Default

Line 1 on Device SEP00241DDAB3BE

Display (Internal Caller ID) Display text for a line appearance is intended for displaying text such as a name instead of a directory number for internal calls. If you specify a number, the person receiving a call may not see the proper identity of the caller.

ASCII Display (Internal Caller ID)

External Phone Number Mask

Monitoring Calling Search Space < None >

Multiple Call/Call Waiting Settings on Device SEP00241DDAB3BE

Note: The range to select the Max Number of calls is: 1-2

Maximum Number of Calls*

Busy Trigger* (Less than or equal to Max. Calls)

Forwarded Call Information Display on Device SEP00241DDAB3BE

Caller Name

Caller Number

Redirected Number

Dialed Number

Users Associated with Line

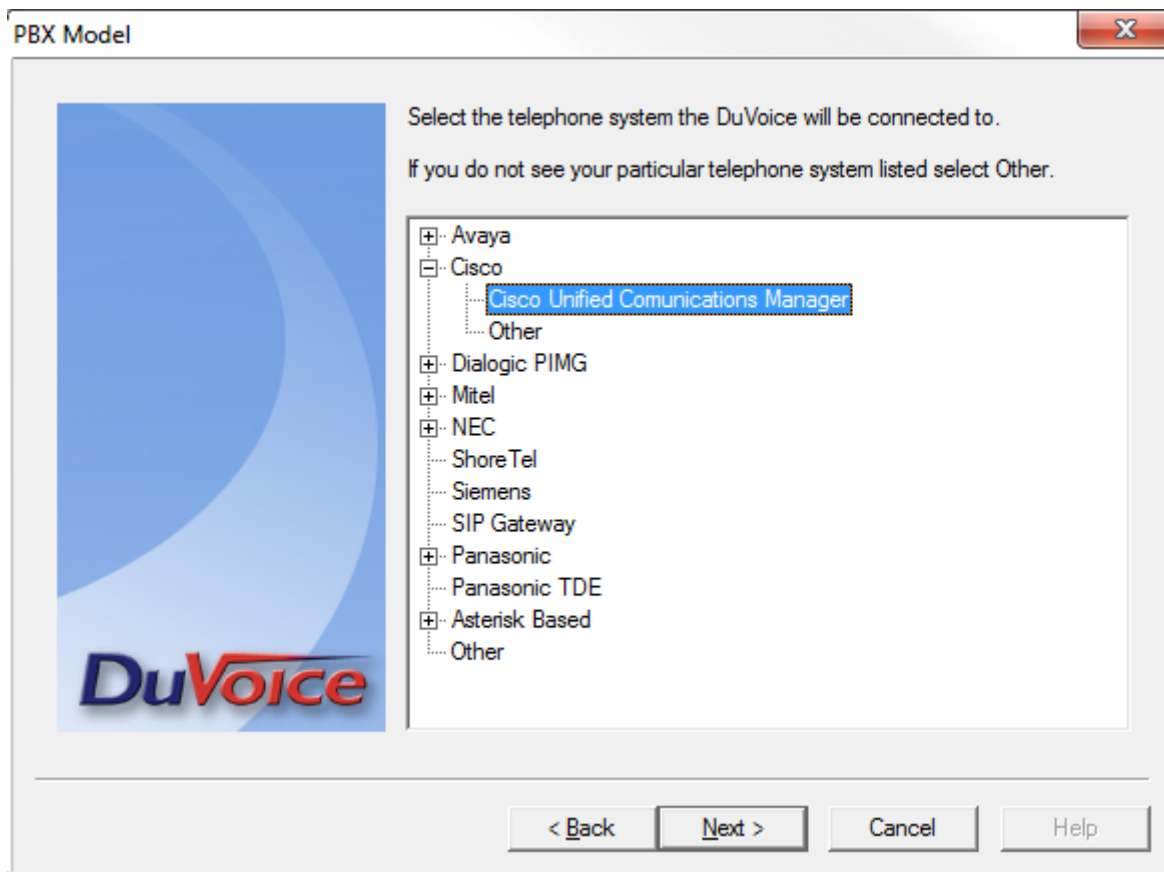
	Full Name	User ID	Permission
<input type="checkbox"/>	Voicemail,Hospitality	2001	

Associate End Users Select All Clear All Delete Selected

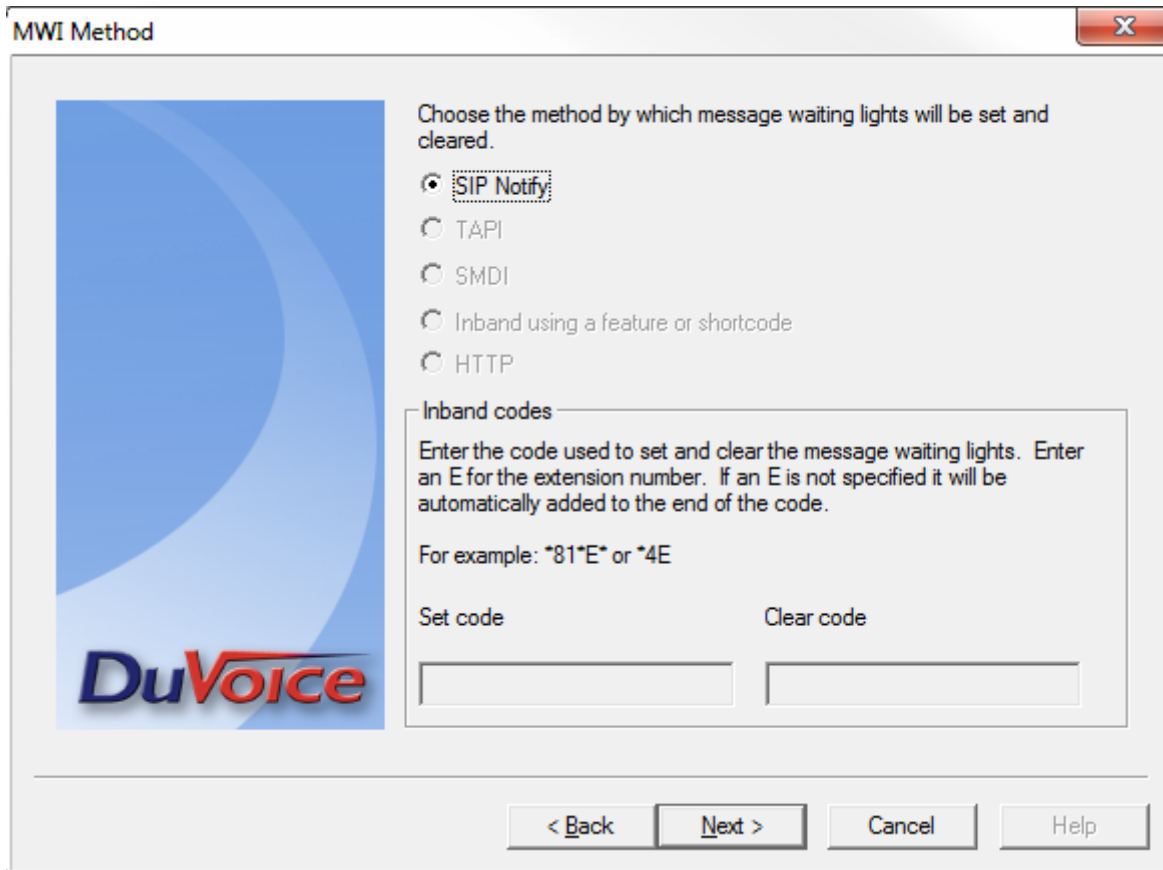
DuVoice Configuration (Part 1)

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

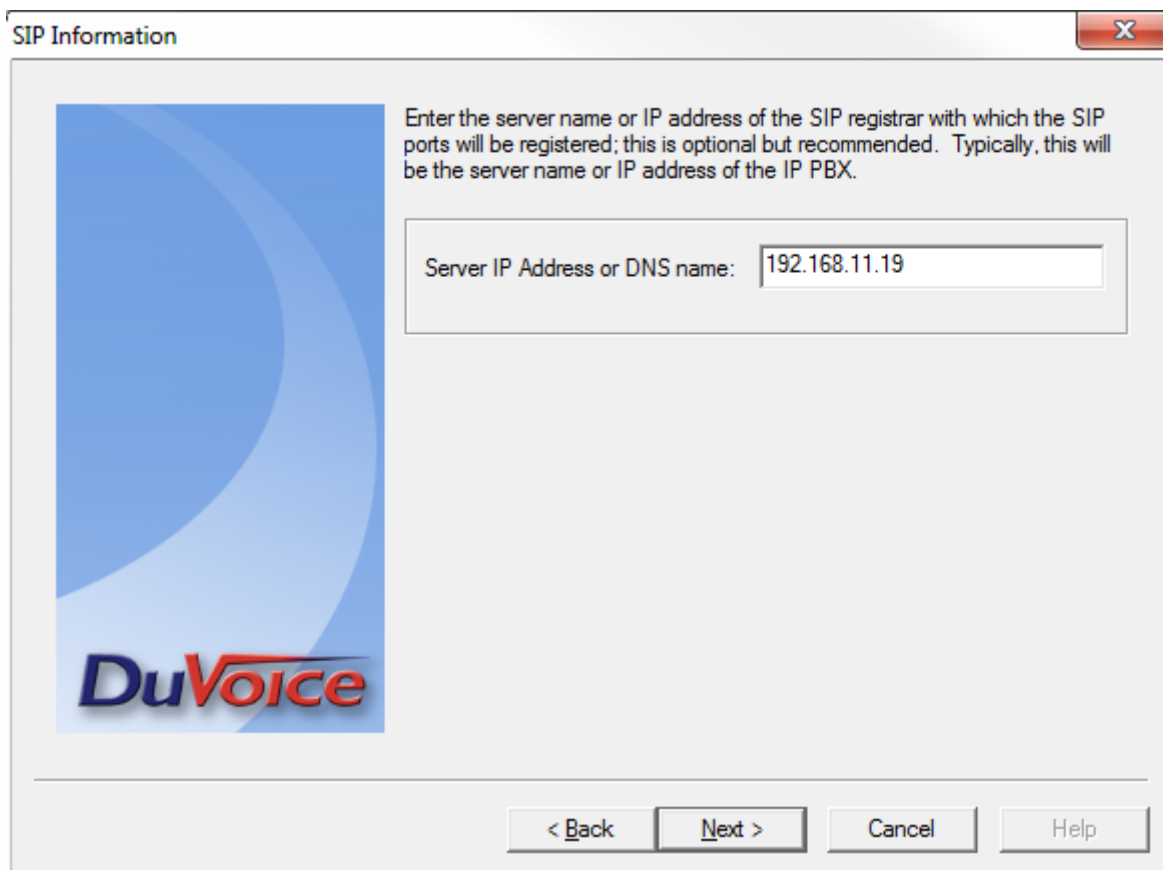
Setup



- Choose Cisco Unified Communications Manager.
- Click Next

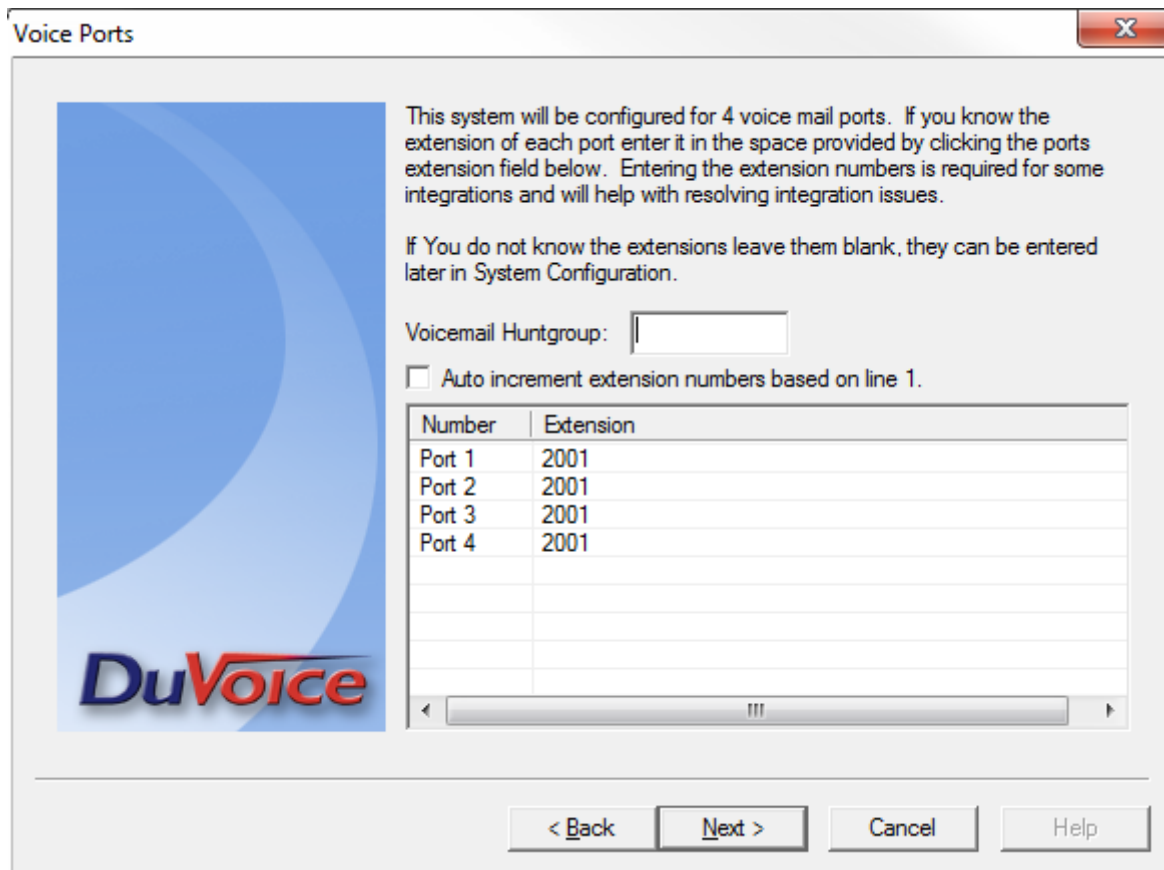


- Cisco only support SIP Notify.
- Click Next



- Enter the IP Address of the Cisco.

- Click Next



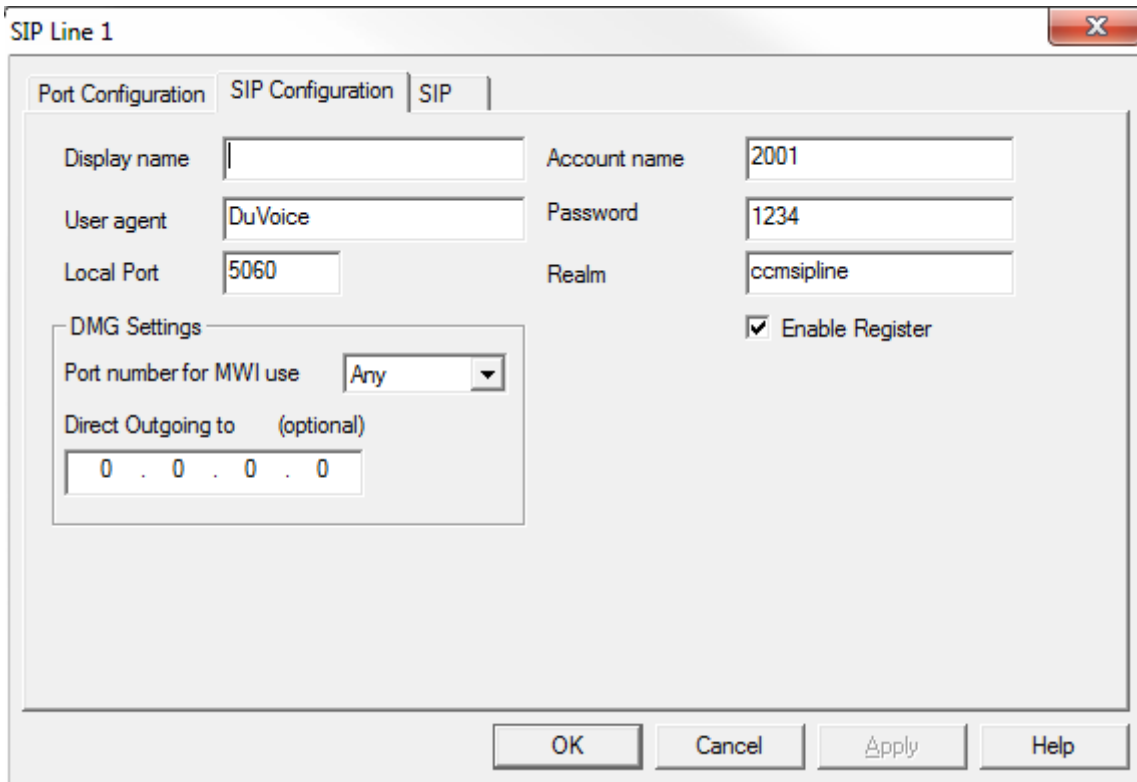
- Enter the extension number for the voicemail you created in the previous steps on all lines.
- Click Next and continue with the Wizard.

System Configuration

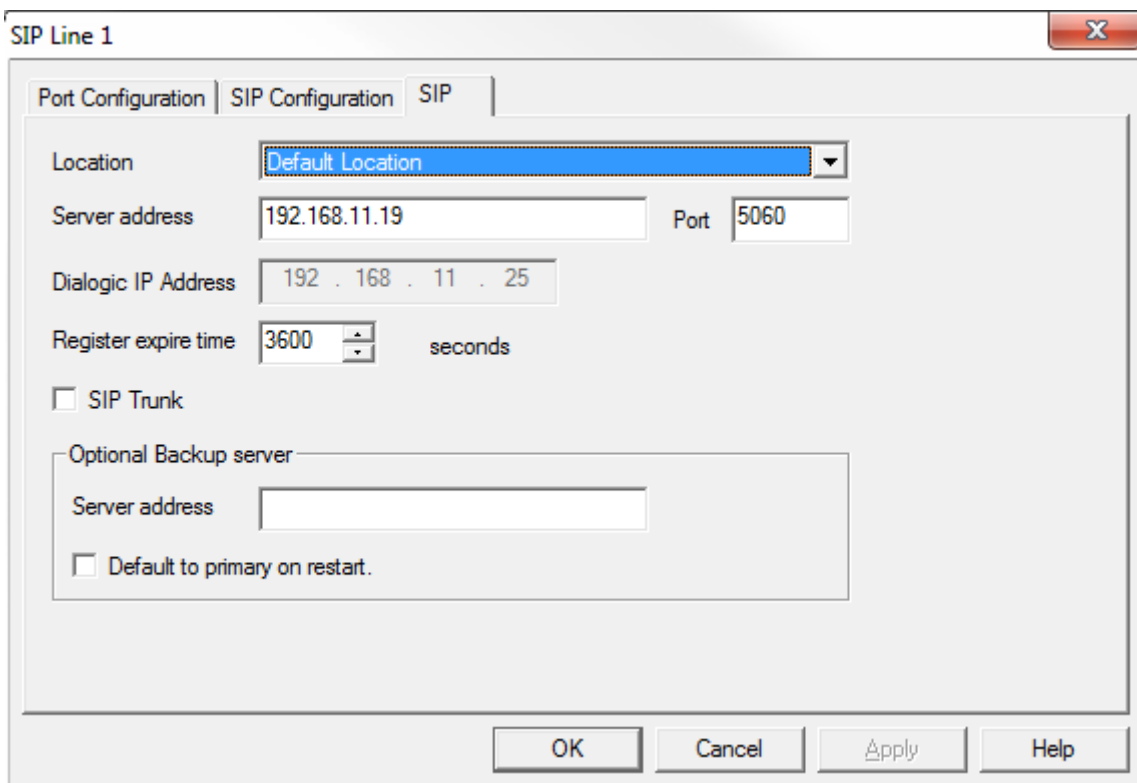
Run System Configuration to continue configuring the system.

Line 1

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

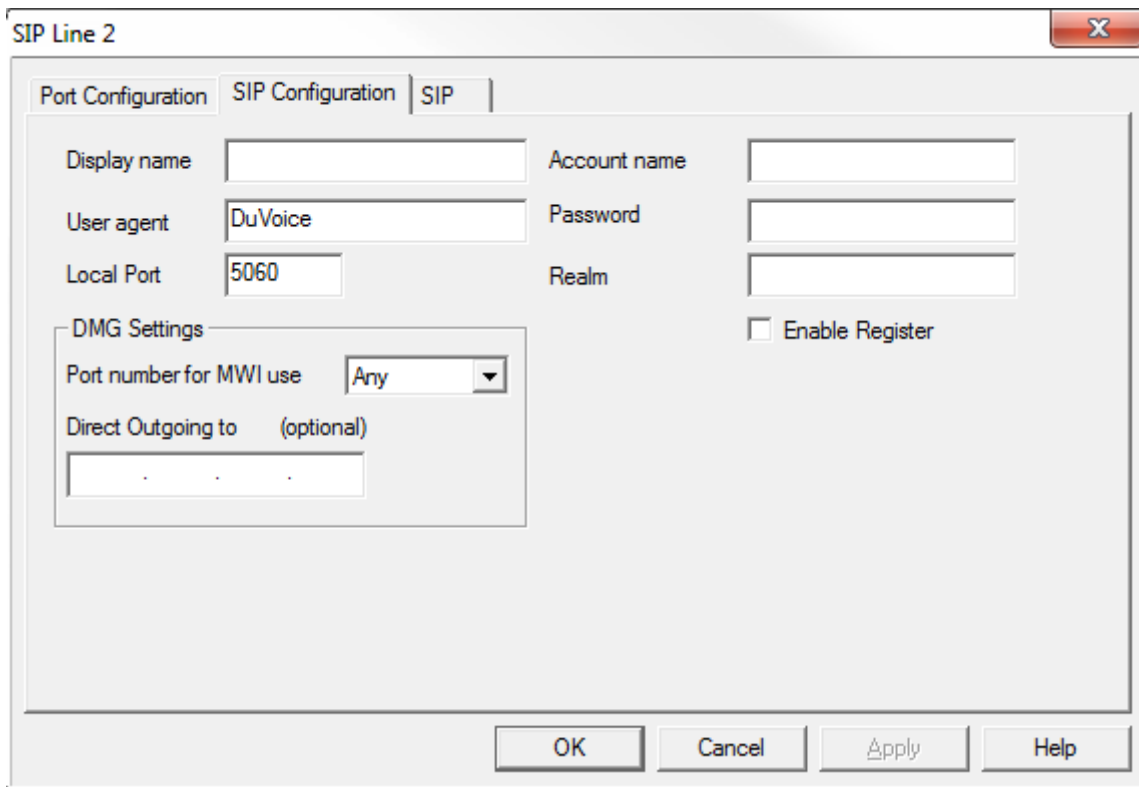


- **Account name**
Enter the User ID created in the steps above.
- **Password**
Enter the password created in the steps above.
- **Realm**
Enter **ccmsipline**. If you have created another SIP Realm for the voicemail enter it here instead.
- **Enable Register**
Check.



- 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.

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

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 its 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 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 Information

User ID*

Password

Confirm Password

Digest Credentials

Confirm Digest Credentials

Presence Group*

Accept Presence Subscription

Accept Out-of-dialog REFER

Accept Unsolicited Notification

Accept Replaces Header

Permissions Information

Groups

[View Details](#)

Roles

DuVoice Configuration (Part 3)

Connector

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

Cisco

Location Enabled

Server

User ID

Password

TCP/IP Port

Retries

Interval (seconds)

Type Call Manager Call Manager Express

- **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.

Phone Control

PBX
Type: Cisco

Call accounting
Type: -none--
Enabled: -no change--
Disabled: -no change--

Auto-set phone state on
 Check-in: -no change--
 Check-out: -no change--

Vodavi-specific settings
Outdial prefix: 470

User group restrictions / call restriction values
To edit an entry, left-click on it. For all other actions, right-click any row to display a menu.

Display Text	PBX Value	PMS Value
Checked In	CHECKED-IN	2
Checked Out	CHECKED-OUT	3

Active PMS: DuVoice Advanced

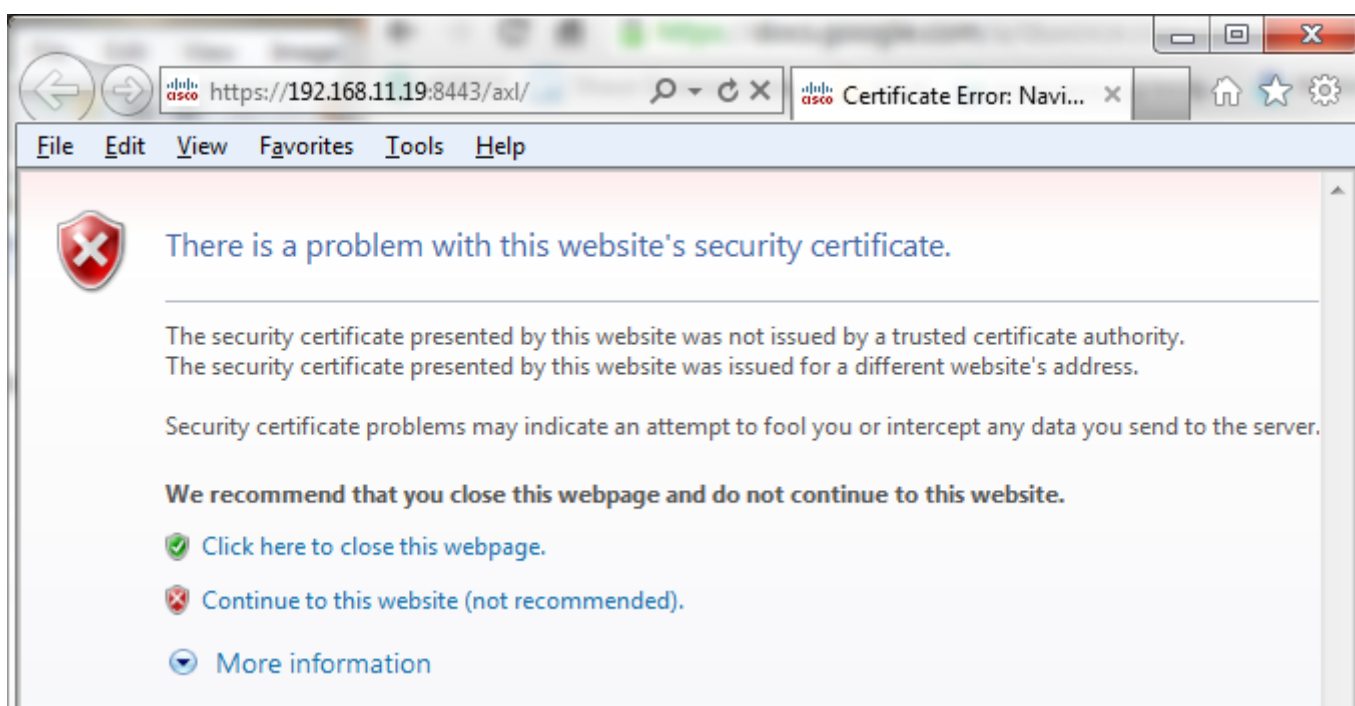
- **PBX**
Set to Cisco.
- **User group restrictions / call restriction values**
Here you enter all the different Calling Search Space configuration items you want to use. The Display Text is used in InnDesk and the PMS Value is the value sent by the PMS which matches that particular restriction. The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

Troubleshooting

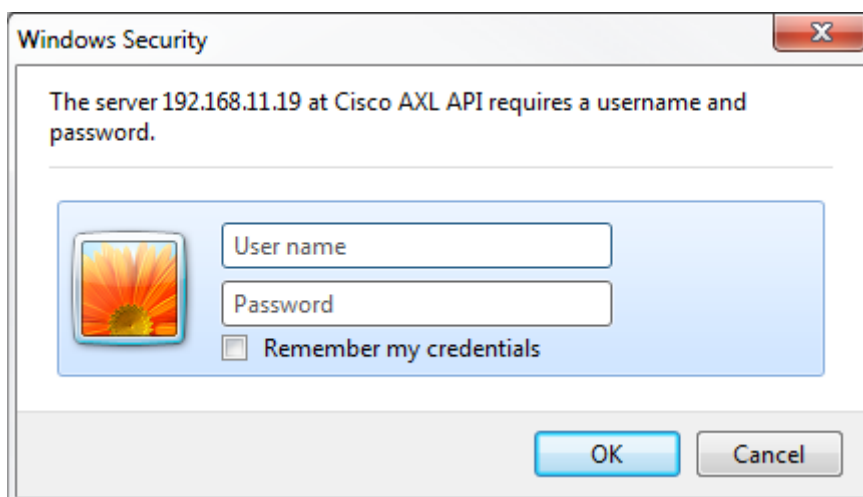
AXL

Quick Test

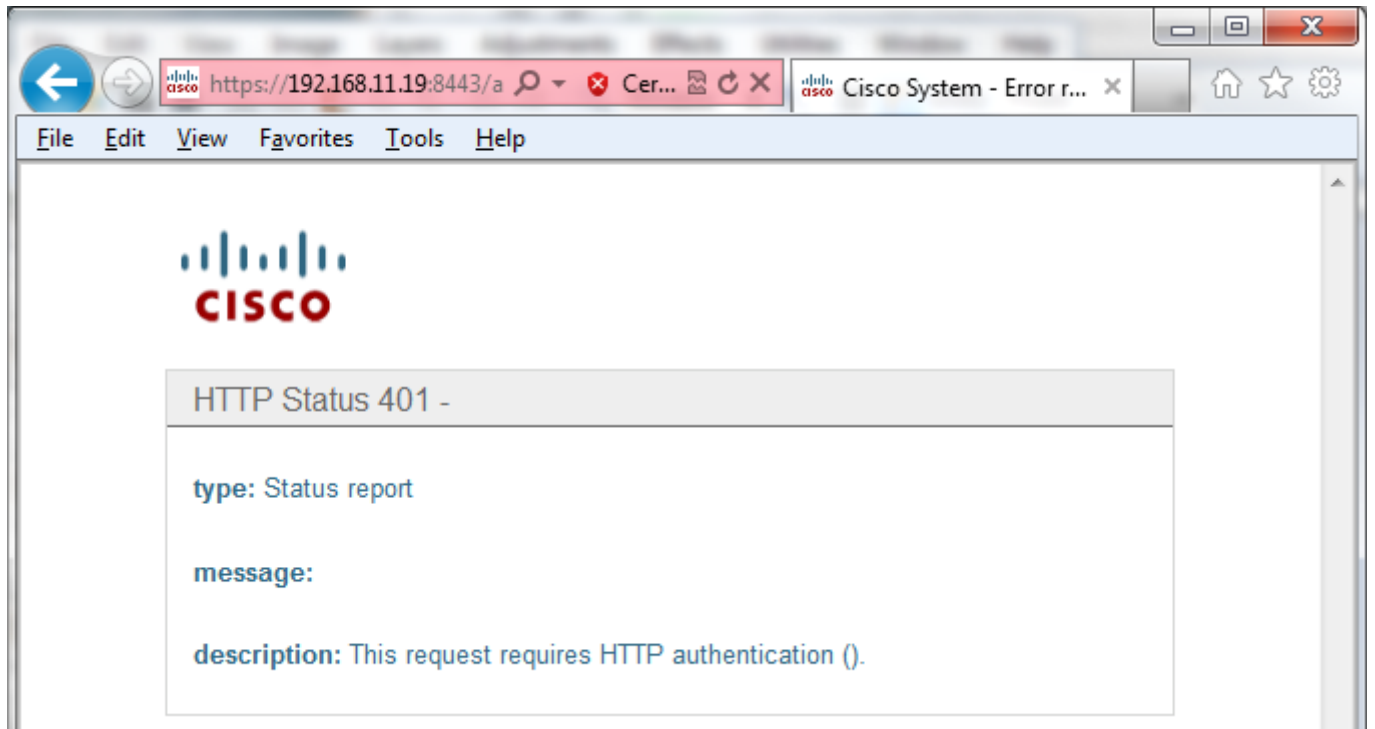
You can quickly check if AXL is listening on the correct port by opening your browser of choice and browsing to the interface. In this example CUCM is located at the IP address 192.168.11.19 and which would be replaced with the IP address or DNS name of the local CUCM. Example URL is <https://192.168.11.19:8443/axl>.



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](#)