Configuring Spectralink IP-DECT Server 400 and 6500 for Cisco Unified Call Manager

Contents

Introduction

The Spectralink IP-DECT solution can be configured for use on a Cisco Unified Call Manager in two different ways.

- Third Party SIP device.
  Handsets configured as a Third Party SIP device will have basic integration.
- Spectralink IP-DECT. (recommended)
  Handsets configured as Spectralink IP-DECT will have a tighter integration with the Cisco Unified CM, and will have access to additional features.

This application note describes how to configure a Spectralink IP-DECT Server for connecting to a Cisco Unified CM as Spectralink IPDECT.

The reader is assumed to have a basic knowledge about the IP-DECT Server and the Cisco Unified CM. For further information please refer to the IP-DECT Server configuration guide and the relevant documentation from Cisco.

This document contains an IP-DECT Server part and a Cisco Unified CM part. Each part describes the general one-time configuration and the user administration.

The IP-DECT Server must have firmware version PCS14A_ or newer to support the configuration described in this application note. The examples in this application note are made with IP-DECT Server firmware PCS14A_ and Cisco Unified CM version 9.1.

IP-DECT Server

The following part of the document describes how to configure the IP-DECT Server and add users and handsets.

Licensing

The IP-DECT Server requires a Cisco Unified CM license to enable advanced registration and associated features. The license can be ordered through normal Spectralink channels.
The license is loaded by clicking to:

Administration -> License

Licenses

Load license		
License **		Load
Loaded licenses		
Key	Users	Features
cba853b1c82a73053d3ca4ed65ed11824c6a8ca7000000000008000000000000	0	Cisco Unified CM	Delete

Copy and paste in the license key and press load. A reboot is required to activate the license.

Note: When the license is loaded the SIP signaling is changed to be optimized for Cisco Unified CM. Some SIP servers will not accept this signaling and the IP-DECT Server will be unable to communicate with them. Delete the license to resolve this.

SIP Settings

The IP-DECT Server requires a few SIP settings to be adjusted in order to connect properly to the Cisco Unified Server. The settings not mentioned below should be left at their default values.
The SIP configuration is modified by clicking to:

Configuration -> SIP

Transport	TCP
Send all messages to current registrar	Enable
TCP ephemeral port in contact address	Enable
Default domain	• For a standalone Cisco Unified CM enter the IP address of the Cisco Unified CM. • For a Cisco Unified CM cluster or if a SRST is present enter the Cluster Fully Qualified Domain Name, which can be found in Cisco Unified CM under System -> Enterprise Parameters.
Proxies	If the Cluster Fully Qualified Domain Name is entered in the "Default domain" fill in the IP addresses or hostnames of the Cisco Unified CM servers in prioritized order.

Example using a simple Cisco Unified CM configuration:

SIP Configuration

General	
Local port * **	5060
Transport * **	TCP ▾
DNS method * **	A records ▾
Default domain * **	172.29.193.80

Example using a Cisco Unified CM cluster solution:

SIP Configuration

General	
Local port * **	5060
Transport * **	TCP ▾
DNS method * **	A records ▾
Default domain * **	cucm.example.com
Register each endpoint on separate port **	☐
Send all messages to current registrar **	☑
Registration expire(sec) *	180
Max forwards *	70
Client transaction timeout(msec) *	4000
SIP type of service (TOS/Diffserv) * **	96
SIP 802.1p Class-of-Service *	3
GRUU	☑
Use SIPS URI	☑
TLS allow insecure **	☐
TCP ephemeral port in contact address **	☐

Proxies	Priority	Weight	URI
Proxy 1 **	1	100	cucmpub.example.com
Proxy 2 **	2	100	cucmsub.example.com
Proxy 3 **	3	100	
Proxy 4 **	4	100	

Feature Codes

Some advanced features are accessed by dialing special feature codes from the DECT handsets. In order to enable access to these advanced features they must be enabled.

The feature codes are enabled by clicking to:

Configuration -> Wireless server

The "Enable" must be ticked for the IP-DECT Server to react to features codes. The default features codes can be modified if desired.

Feature codes	
Enable	☑
Call forward unconditional - enable	*21*$#
Call forward unconditional - disable	#21#
Call pickup local	**3
Call pickup other group	**8
Conference Meet-Me	**5$
Language	
Phone Language **	English

Save   Cancel

Adding handsets

Each individual DECT handset/user must be added to the IP-DECT Server and later on to the Cisco Unified CM. This section describes how to add the handsets to the IP-DECT Server.

The users are added by clicking to:

Users -> List Users -> New

Fill in the required information:

IPEI (optional)	If a *specific* handset is being subscribed for this extension, type in the IPEI number of the actual handset. (The IPEI number is readable from the label on the product). If this is not the case this field can be left empty and it will auto-fill when the handsets subscribe. Note: A SIP REGISTER will not be sent before there is an IPEI number present.

Access code (optional)	Admins can define a system wide or individual access code as extra wireless security during the subscription process.
Standby text (optional)	A standby text is a fixed label shown in the top left part of the screen on the DECT handset when in idle state. Note: This feature is only available if Spectralink DECT handsets are being used. If third party DECT handsets are being subscribed, this feature is not supported.
Username / Extension	The actual directory number of the handset defined in the Cusco Unified CM. Note: This field must be unique within the IP-DECT Server. If simultaneous ring on two or more handsets is required, a Cisco Unified CM ring group must be set up.
Display name (optional)	The name of the user can be entered here. The Cisco Unified CM will not use this but it may ease the administration of users within the IP-DECT Server.
CUCM device name	This value is auto-generated by the IP-DECT Server and must be used as the device name when the device is added to the Cisco Unified CM. Note: The IP-DECT Server will generate this value when the user is saved and it will be re-generated if the username/extension is changed. Note: This information is not displayed if the Cisco Unified CM license is not loaded into the IP-DECT Server.

User 2000

DECT device

Model	Spectralink Butterfly
Software part number	14208700
Firmware	13M
HW version	5E
Production Id	000B FD35 D194 4F25
IPEI	05003 0229363
Access code	

User

Standby text	Ext. 2000
Disabled	☐

SIP

Username / Extension *	2000
Domain	
Displayname	Spectralink 2000
Authentication user	
Authentication password	
CUCM device name	SEP7EA451BED8A8

Features

Call forward unconditional	

When the users have been added to the IP-DECT Server the handsets must be DECT subscribed in order to be able to communicate with the IP-DECT Server. Please refer to the handset documentation for this.

Bulk Provisioning for Cisco Unified CM

The IP-DECT Server supports Cisco Unified CM bulk administration of phones. The IP-DECT Server can export a CSV file that can be used directly to import new phones into the Cisco Unified CM.

The CSV file can be generated by clicking to:

Users -> Import/Export

Click on the Save button next to "CSV format Cisco Unified CM" and download the CSV file. This file can later on be imported directly into the Cisco Unified CM.

Import/Export Users

Import user data

| CSV format | | Browse... | Load |

Encoding: ◉ UTF-8 ○ ISO/IEC 8859-1 ○ Windows-1252

Export user data

CSV format		Save
CSV format Cisco Unified CM		Save
XML format		Save

Delete users

| Delete all users | | Delete |

Example of a CSV file for Cisco Unified CM:

	A	B	C
1	MAC ADDRESS	DESCRIPTION	DIRECTORY NUMBER 1
2	SEP1A54B9EF6002	DECT 2601	2601
3	SEP8558BDBEE189	DECT 2602	2602
4	SEPC639A53C244C	DECT 2604	2604
5			

Cisco Unified Call Manager

The following part of the document describes how to prepare the Cisco Unified CM and add the DECT handsets.
Each individual DECT handset must be added as a device in Cisco Unified CM and the IP-DECT Server itself will not be added and known to the Cisco Unified CM.

COP file installation

A Cisco Unified CM COP file provided by Spectralink must be loaded into the Cisco Unified CM in order add support for "Spectralink IP-DECT" devices.

Download the Spectralink COP file for Cisco Unified CM at support.spectralink.com.

The COP file can be installed by clicking to:

Cisco Unified OS Administration -> Software Upgrades -> Install/Upgrade

A FTP/SFTP server is required for this step.

Fill out the following in the Software Location form:

Source	Remote Filesystem
Directory	The path on the SFTP or FTP server
Server	The hostname or IP address of the SFTP

	or FTP server
Username	Username to login to the SFTP or FTP server
Password	Password to login to the SFTP or FTP server
Transfer Protocol	SFTP or FTP

When the form is completed click Next and Cisco Unified CM will contact the FTP/SFTP server and look for update files.

When the update files are listed select the COP (.cop.sgn) file and click Next. The Cisco Unified CM will download the COP file.

When the COP file is downloaded Cisco Unified CM will display the file checksum details. Check that everything looks correct and click Next. The Cisco Unified CM will start installing the COP file.

The installation will take a while. When it is successfully completed, restart the Cisco Unified CM to make sure that the changes take effect.

Spectralink IP-DECT Device Setup

This chapter describes how to add the individual Spectralink DECT handsets to the Cisco Unified CM.

Each individual DECT handset is identified by a unique device name, which is generated by the IP-DECT Server. This can be compared to the MAC address, which identifies the Cisco IP Phones. The device name of a specific DECT handset can be viewed by editing the user in the IP-DECT Server.

Two different methods for adding handsets are supported:

- Manual
- Automated by using Cisco bulk provisioning/administration.

Manual

In this section it is described how to manually add a Spectralink DECT handset to the Cisco Unified CM.

The handsets can be added by clicking to:

Cisco Unified CM Administration -> Device -> Phone -> Add new

Select "Spectralink IPDECT" from the list of phone types and click Next. (If this is not available please make sure that the COP file is installed correctly and that the Cisco Unified CM has been restarted afterwards)

In the Phone Configuration page fill in at least the following fields:

Device name	Copy and paste the device name from the user on the IP-DECT Server into the Device Name field.
Device Pool	Select the desired device pool.
Phone Button Template	Select phone button template.
Device Security Profile	Under Protocol Specific Information select the desired Device Security Profile.
SIP Profile	Under Protocol Specific Information select the desired SIP Profile.

When the data is entered click Save and the Associated Information will appear. Click "Add a new DN".
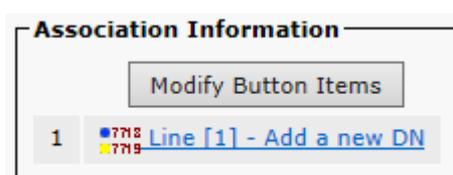
In the Directory Number configuration page type in the desired Directory Number. This must be the same as the Username/Extension field in the user setup on the IP-DECT Server.

Status

(i) Directory Number Configuration has refreshed due to a directory number cha

Directory Number Information

Directory Number*	2000
Route Partition	< None >
Description	
Alerting Name	
ASCII Alerting Name	

☑ Active

When the desired information is entered click Save and go back to the list of devices.
The Cisco Unified CM will show the registration status of the device.

	Device Name(Line) ▲	Description	Device Pool	Extension	Partition	Device Protocol	Status	IP Address
☐ DECT	SEP7EA451BED8A8(1)	Spectralink Butterfly Phone	Default	2000		SIP	Registered with HORCUCM02	172.29.193.101

The registration should look like this on the IP-DECT Server list users page:

Show [All ▼] entries   Search: [2000]

Enabled	User	Displayname	IPEI	Handset	Firmware	Subscription	Registration
✓	2000	Spectralink 2000	05003 0229363	Spectralink Butterfly	13M	✓	✓

Showing 1 to 1 of 1 entries (filtered from 12 total entries)   First | Previous | 1 | Next | Last

Note: It might take a while before the IP-DECT Server sends out a registration request.
To speed up the registration process, either reboot the IP-DECT Server or
disable/enable the user on the IP-DECT Server.

Automated with Cisco Bulk Provisioning

When adding many handsets to the Cisco Unified CM it is beneficial to use bulk
provisioning in order to automate the handset creation process.
The process of bulk provisioning handsets consists of three steps. Make sure that the
bulk provisioning service is activated, create templates for inserting the handsets and
finally importing a CSV file containing the handset data.

To check that the "Cisco Bulk Provisioning Service" is active click to:

Cisco Unified Serviceability -> Tools -> Service Activation

Database and Admin Services

	Service Name	Activation Status
☑	Cisco Bulk Provisioning Service	Activated
☑	Cisco AXL Web Service	Activated
☑	Cisco UXL Web Service	Activated
☑	Cisco TAPS Service	Activated

Next step is to create a phone template containing a line template. These templates
define the default values for the handsets that will be inserted.

In order to define a phone template click to:

Cisco Unified CM Administration -> Bulk Administration -> Phones -> Phone template -> Add New

First, select the phone type "Spectralink IPDECT" and click Next. In the Phone Template Configuration page fill in the required parameters:

Template Name	Enter a name for the template.
Device Pool	Select the desired device pool.
Phone Button Template	Select phone button template.
Device Security Profile	Under Protocol Specific Information select the desired Device Security Profile.
SIP Profile	Under Protocol Specific Information select the desired SIP Profile.

Status

(i) Status: Ready

Phone Type

Product Type: Spectralink IPDECT
Device Protocol: SIP

Device Information

⚠ Device is not trusted

Template Name*	Spectralink_template
Description	
Device Pool*	Default · View Details
Common Device Configuration	< None > · View Details
Phone Button Template*	Spectralink IPDECT default
Common Phone Profile*	Standard Common Phone Profile
Calling Search Space	< None >
AAR Calling Search Space	< None >
Media Resource Group List	< None >
User Hold MOH Audio Source	< None >
Network Hold MOH Audio Source	< None >
Location*	Hub_None

Click Save and the Association Information will appear. Click "Add a new DN" to add a line template to the device template.

Give the line template a name and click Save. Make sure that the phone template appears as an associated device and click Save again.

Go back to the phone template and click Save.

Next step is to import the CSV file exported from the IP-DECT Server using the phone template defined.

First, upload the CSV file to Cisco Unified CM by clicking to:

Cisco Unified CM Administration -> Bulk Administration -> Upload/Download Files

Click Add New and fill in the data:

File	Browse to the CSV file on the computer.
Target	Select Phones.
Transaction Type	Select Insert Phones – Specific Details.

Click Save and the file will be uploaded to Cisco Unified CM. Check that the uploaded file is available in the list.

When the CSV file is uploaded the DECT handsets can be inserted into the Cisco Unified CM by clicking to:

CUCM -> Cisco Unified CM Administration -> Bulk Administration -> Phones -> Insert Phones

insert Phones Specific Details	Select this
File Name	Select the file name uploaded in the previous step.
Phone Template Name	Select the phone template that was created for the IP-DECT handsets.
Run Immediately	Select this

Click Submit to start the job and insert the phones. The result of the job can be viewed by clicking to:

CUCM -> Cisco Unified CM Administration -> Bulk Administration -> Job Scheduler

Check that the job has been completed successfully by clicking it.