Spectralink IP-DECT Server 400/6500 and DECT Server 2500/8000

Interoperability Guide

Cisco Unified Communications Manager (CUCM)

CUCM license and COP file installation (Advanced features)

14224300-IG, Edition 9.0
October 2017, Original document

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About This Guide

This guide describes how to configure a Spectralink IP-DECT Server 400/6500 and Spectralink DECT Server 2500/8000 for connecting to a Cisco Unified Communications Manager.

In the following both servers will be referred to as “Spectralink IP-DECT/DECT Server”.

The Cisco Unified Communications Manager will be referred to as “CUCM”.

This guide is intended for qualified technicians and the reader is assumed to have a basic knowledge about the Spectralink IP-DECT/DECT Server and the Cisco Unified Communications Manager. It is also assumed, that you have an installed and functioning Cisco Unified CM Server and Spectralink IP-DECT/DECT Server.

You can configure the Spectralink IP-DECT/DECT Server solution to be used on a Cisco Unified Communications Manager in two different ways:

- Third Party SIP device

  Handsets configured as a Third Party SIP device will have basic integration.

  To be able to register Spectralink handsets, phone licenses for 3rd party SIP are required.

  For more information, see the relevant Interoperability Guide.

- Spectralink IP-DECT – CUCM license and COP file installation (recommended) – described in this guide

  Handsets configured as Spectralink IP-DECT will have a tighter integration with the Cisco Unified Communications Manager, and will have access to additional features.

  Having the CUCM license installed it is also possible to:

  - predefine user data including CUCM device names manually in a user XML file for provisioning.
  - predefine user data including CUCM device names manually in a CSV file in Spectralink IP-DECT Server format to be imported to the Spectralink IP-DECT Server.
  - export user data from the Spectralink IP-DECT Server in a CSV file in CUCM format to be imported directly to the CUCM

The guide is divided into three parts:

- Provisioning part
- Spectralink IP-DECT/DECT Server part
- Cisco Unified Communications Manager part

Each part describes the general configuration and the user administration.

Infrastructure Version Information

- Interoperability testing between the Spectralink IP-DECT/DECT Server and the CUCM was conducted using version 11.0 of the Cisco Unified Communications Manager and firmware PCS16F of the Spectralink IP-DECT Server and PCS16C of the Spectralink DECT Server.
- To support the configuration described in this guide, the Spectralink IP-DECT/DECT Server must have firmware version (400/6500 PCS16F or 2500/8000 PCS16C_) or newer.
- Spectralink DECT Handsets 75xx, 76xx and 77xx must have firmware PCS17Ha.

Note:

TLS/SRTP is only available on Spectralink IP-DECT Server 400/6500 with firmware PCS17B or newer/Spectralink DECT Server 2500/8000 with firmware PCS17Da or newer and requires additional Security license on the Spectralink IP-DECT/DECT Server and installation of Host certificates and CA certificates.

Note:

The examples in this guide are made with IP-DECT Server firmware PCS16F and Cisco Unified CM version 11.0.

Related Documentation

All Spectralink documents are available at http://support.spectralink.com/.

Subject	Documentation
Cisco Unified Communications Manager	Navigate to the Cisco documentation site for the latest Cisco documentation.
Spectralink Handset	For more information about the handset, refer to the user guide available online at http://support.spectralink.com/products.
Site Survey Function in Handset User Guide	For more information about the site survey function in handset, refer to the guide available online at http://support.spectralink.com/products.
Synchronization and Deployment Guide	For more information about synchronization and deployment, refer to the guide available online at http://support.spectralink.com/products.
Spectralink IP-DECT/DECT Server	For more information about the server, refer to the guide available online at http://support.spectralink.com/products.
Provisioning Guide	For more information about provisioning, refer to the guide available online at http://support.spectralink.com/products.
Spectralink Technical Bulletins	Available online at http://support.spectralink.com/products.
Release Notes	Document that describes software changes, bug fixes, outstanding issues, and hardware compatibility considerations for new software releases. Available online at http://support.spectralink.com/products.
Spectralink DECT Training material	In order to gain access to the Spectralink training material, you must attend training and become Spectralink Certified Specialist. Please visit http://-partneraccess.spectralink.com/training/classroom-training for more information and registration.

Feature List

Note:

All features marked with * require installation of a CUCM license in the Spectralink IP-DECT/DECT Server and a COP file in the CUCM.

The following features are supported:

	Supported features
Telephony	• Basic Calling • Call Hold • Call Transfer • Call Waiting • Call Forward • Message Waiting • Directed Call Park • SIP over UDP • FAC (Forced Authorization Codes) (72xx, 75xx, 76xx, 77xx only) * • CMC (Client Matter Codes) (72xx, 75xx, 76xx, 77xx only) * • Call Pickup (Group Directed) * • Meet-Me Conferencing (only with G.711) * • Call Forward (all endpoints) * • Shared Line * • Bulk Provisioning for CUCM * • Busy Lamp Field • SIP over TCP • Ad-hoc conferencing (75xx, 76xx, 77xx only) * • Music on Hold (MOH) * • Call Completed Elsewhere
User experience	• SIP URI Support Phone Book (75xx, 76xx, 77xx only)
Security	• TLS * • SRTP *
Management/Administration	• Logging (Server based) • Spectralink Device Profile in CUCM • Bulk Administration *

	Supported features
Voice Quality	• Codecs: G.711 (default), G.729 (optional) Note: G.729 requires additional license on the Spectralink IP-DECT/DECT Server.
Value added Spectralink features	• Rich APIs for third-party solutions integration • Multi-language (on handsets) • Paging • Safe Worker
All features marked with * require installation of a CUCM license in the Spectralink IP-DECT/DECT Server and a COP file in the CUCM.	

Using Provisioning

It is possible to have firmware bin files, configuration XML files and user XML files provisioned into the Spectralink IP-DECT/DECT Server. For more information about provisioning in general, see the Provisioning Guide.

Provisioning of User Data and CUCM Device Names

User data and CUCM device names must be generated for both Spectralink IP-DECT/DECT Server and CUCM when adding the devices to the Cisco Unified Communications Manager. It is possible to create user XML files containing CUCM device names to be used for provisioning.

The advantage of provisioning a user XML file is that you can:

- predefine user data and CUCM device names without having the Spectralink IP-DECT/DECT Server and Cisco Unified Communications Manager running.
- save time by creating many users at the same time instead of manually creating each user on first the Spectralink IP-DECT/DECT Server and then on the Cisco Unified Communications Manager.

Provisioning through Third Party Provisioning Tools

If using a third party provisioning tool that create valid user XML files for both the Spectralink IP-DECT/DECT Server as well as the Cisco Unified Communications Manager, then the user XML file containing CUCM device names can be provisioned directly into both the Spectralink IP-DECT/DECT Server and the Cisco Unified Communications Manager.

Using third party provisioning tools for creation and provisioning of the user XML file, you do not need to follow the manual instructions in this guide (assuming that you have the equipment, a CUCM license and relevant certificates installed already). Instructions for creating configuration files etc. must be followed regardless. For more information, see the Provisioning Guide and third party documentation.

Note:

If not using third party provisioning tools, you must follow the manual instructions in this guide.

This will allow you to:

- Provision a user XML file for the Spectralink IP-DECT/DECT Server
- Export a CUCM formatted CSV file to be used for Bulk Provisioning

For more information, see "To Add Users Creating User XML File Manually for Provisioning" on page 20, "Example of User XML File Containing Predefined CUCM Device Names" on page 21 and "Exporting CUCM Formatted CSV File for Use in CUCM/Bulk Provisioning" on page 22.

Spectralink IP-DECT/DECT Server

Below is a description of how to order and load the CUCM license, configure the Spectralink IP-DECT/DECT Server and how to add users and handsets to the system. It also describes how to export a CSV file in CUCM format from the Spectralink IP-DECT Server, to be used when importing new handsets into the Cisco Unified Communications Manager.

Using TLS/SRTP on the Spectralink IP-DECT/DECT Server also requires a Security license to be ordered and loaded and installation of Host certificate and CA certificate.

Note:

TLS/SRTP is only available on Spectralink IP-DECT Server 400/6500 with firmware PCS17B or newer/Spectralink DECT Server 2500/8000 with firmware PCS17Da or newer and requires additional Security license on the Spectralink IP-DECT/DECT Server and installation of Host certificates and CA certificates.

To Order a License

The Spectralink IP-DECT/DECT Server requires a CUCM license to enable advanced registration and associated features.

Using TLS/SRTP on the Spectralink IP-DECT/DECT Server requires a Security license.

Licenses can be ordered through normal Spectralink channels.

1. Send your Purchase Order (PO) including the software part number and the number of licenses needed to Spectralink Order Management via (EMEA and APAC) emeaom@spectralink.com or (NALA) nalaom@spectralink.com.
2. When your order is processed, Order Management will send you an email including an Authentication Product Key for your software license.
3. To activate your software license, use the License Key Generator available at http://support.spectralink.com/keycode.

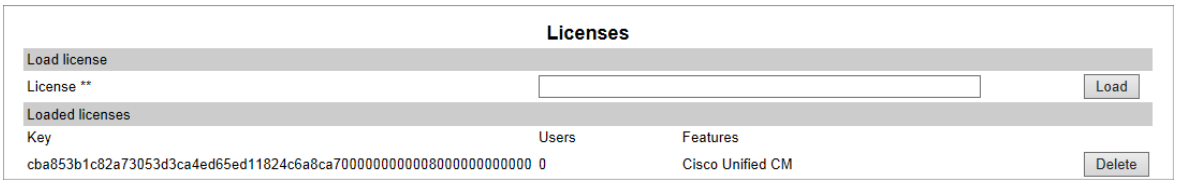
Note:

Please note that once a software license is generated this is locked to the specified ARI code, and cannot be changed.

To Load the License from the Web Based Administration Page

1. If using Spectralink IP-DECT 400/6500, click **Administration**, and then click **License**.

   If using Spectralink DECT 2500/8000, click **Installation**, and then click **License**.



2. Copy the provided license key from your email, paste it in the **License** field, and then click **Load**.
3. Reboot the server to activate the license.

Note:

When the CUCM license is loaded, the SIP signaling is changed to be optimized for Cisco Unified Communications Manager. Some SIP servers will not accept this signaling and the Spectralink IP-DECT/DECT Server will be unable to communicate with them. Delete the license to resolve this.

Importing Certificates (if Using TLS)

If using TLS as SIP transport method it is necessary to import following certificates into the Spectralink IP-DECT/DECT Server:

- Host certificate
- CA certificate

Note:

TLS/SRTP is only available on Spectralink IP-DECT Server 400/6500 with firmware PCS17B or newer/Spectralink DECT Server 2500/8000 with firmware PCS17Da or newer and requires additional Security license on the Spectralink IP-DECT/DECT Server and installation of Host certificates and CA certificates.

To Import Host Certificate from the Web Based Administration Page

Note:

The imported Host certificate must have a SAN (SubjectAltName) that matches the name of the security profile to be created in the Cisco Unified CM Administration and it must be signed by a CA certificate installed in the Cisco Unified OS Administration.

1. If using Spectralink IP-DECT 400/6500, click **Configuration**, and then click **Certificates**.If using Spectralink DECT 2500/8000, click **Installation**, and then click **Certificates**.
2. Under **Host certificate chain**, click **Browse** to find the relevant host certificate file (*.crt file).
3. Under **Host certificate chain**, click **Browse** to find the relevant key file (*.pem file).
4. Select **X.509**.
5. Click **Import Certificate**.
6. Reboot the server.

To Import CA Certificate from the Web Based Administration Page

Note:

The imported CA certificate list must include the CA certificate used to sign the Cisco Unified Communications Manager certificate.

1. If using Spectralink IP-DECT 400/6500, click **Configuration**, and then click **Certificates**.If using Spectralink DECT 2500/8000, click **Installation**, and then click **Certificates**.
2. Under **CA certificates**, click **Browse** to find the relevant CA certificate file (*.pem file).
3. Click **Import List**.
4. Reboot the server.

Configuring the Spectralink IP-DECT/DECT Server

SIP Settings

The Spectralink IP-DECT/DECT Server requires a few SIP settings to be adjusted in order to connect properly to the Cisco Unified Server.

Note:
SIP settings not mentioned below should be left at their default values.

To modify the SIP settings from the web based Administration Page:

1. Click **Configuration**, and then click **SIP**.
2. Modify the settings below.

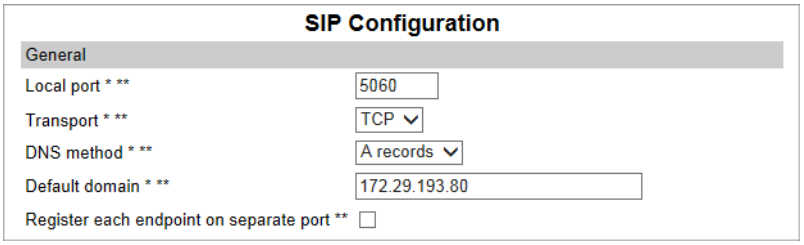
Field	Setting
SIP Configuration - General	
Transport	TCP or TLS **Note**: If TLS is used as SIP Transport Method it is necessary to create an additional security profile, that must be selected as the Device Security Profile. A phone security profile allows grouping of security-related settings for a phone type and protocol that can be assigned to a device. The device will then be required to enforce those settings.
Default domain	For a standalone CUCM enter the IP address of the Cisco Unified Communications Manager. For a CUCM cluster or if a SRST router is present enter the Cluster Fully Qualified Domain Name (to be found in CUCM by navigating to **Cisco Unified CM Administration** > **System** > **Enterprise Parameters**).
Send all messages to current registrar	Enable
TCP ephemeral port in contact address	Enable
SIP Configuration - Proxies	
Proxies	If the Cluster Fully Qualified Domain Name is entered in the **Default domain** field, fill in the IP addresses or hostnames of the CUCM servers in prioritized order.

Field	Setting
SIP Configuration - DTMF signalling	
Send as RTP	Ensure that this feature is enabled to make DTMF tones work.
Offered RFC2833 payload type	Value must be set to 101.
SIP Configuration - Media	
Enable media encryption (SRTP)	Enable SRTP (encrypted RTP) support towards external SIP endpoints. **Note**: TLS/SRTP is only available on Spectralink IP-DECT Server 400/6500 with firmware PCS17B or newer/Spectralink DECT Server 2500/8000 with firmware PCS17Da or newer and requires additional Security license on the Spectralink IP-DECT/DECT Server and installation of Host certificates and CA certificates.
Require media encryption (SRTP)	Enable **Note**: TLS/SRTP is only available on Spectralink IP-DECT Server 400/6500 with firmware PCS17B or newer/Spectralink DECT Server 2500/8000 with firmware PCS17Da or newer and requires additional Security license on the Spectralink IP-DECT/DECT Server and installation of Host certificates and CA certificates. **Note**: Requires that SRTP must be negotiated with remote SIP endpoints.

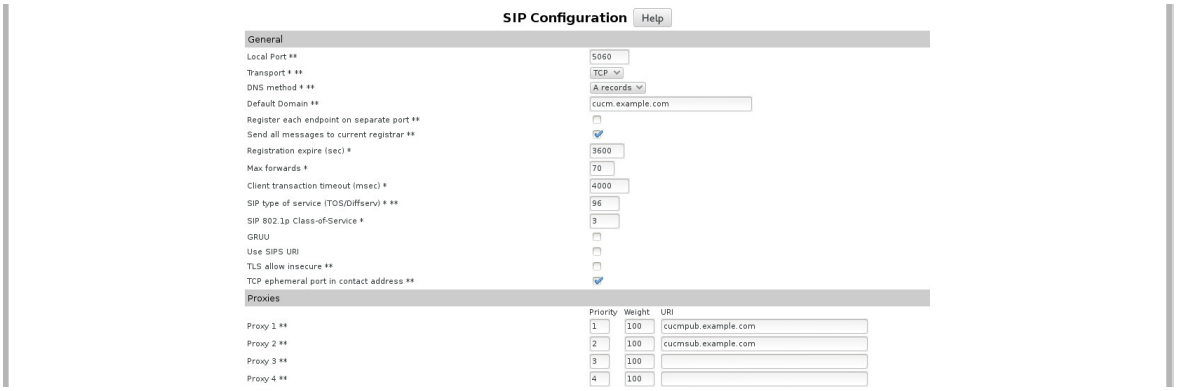
Note:

In order for the Spectralink IP-DECT/DECT Server to support Cisco Unified Survivable Remote Site Telephony (SRST) within a CUCM setup with a SRST router, this feature must be configured in the CUCM. For more information, see Cisco documentation.

Example using a standalone CUCM configuration:



Example using a CUCM cluster solution:



3. Click **Save**, and then reboot the system.

For an example of the configuration XML file from your Spectralink IP-DECT Server, see "Example of XML Configuration File" on page 36.

Enabling Feature Codes

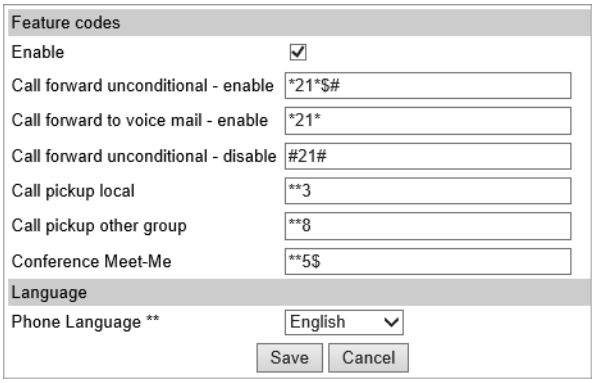
Some advanced features are accessed by dialing special feature codes from the DECT handsets. To provide access to these advanced features, the feature codes must be enabled.

To Enable Feature Codes from the Web Based Administration Page

1. If using Spectralink IP-DECT 400/6500, click **Configuration**, and then click **Wireless Server**.

   If using Spectralink DECT 2500/8000, click **Configuration**, and then click **DECT Server**.
2. Under **Feature codes/SIP Users Feature Codes**, mark the **Enable** check box to make the Spectralink IP-DECT Server react to the feature codes.

   The default features codes can be modified if relevant.



3. Click **Save**.

Adding Users and Handsets

User data including CUCM device names must be generated for both Spectralink IP-DECT/DECT Server and CUCM when adding the devices to the Cisco Unified CM.

This section describes how to add the handsets to the Spectralink IP-DECT/DECT Server.

The user data and CUCM devices names can be generated in different ways:

- From the Web Based Administration Page in the Spectralink IP-DECT/DECT Server
- In a predefined user XML file in Spectralink IP-DECT/DECT Server format to be provisioned into the Spectralink IP-DECT/DECT Server
- In a CSV file to be imported into the Spectralink IP-DECT/DECT Server

To Add Users to the IP-DECT/DECT Server from the Web Based Administration Page

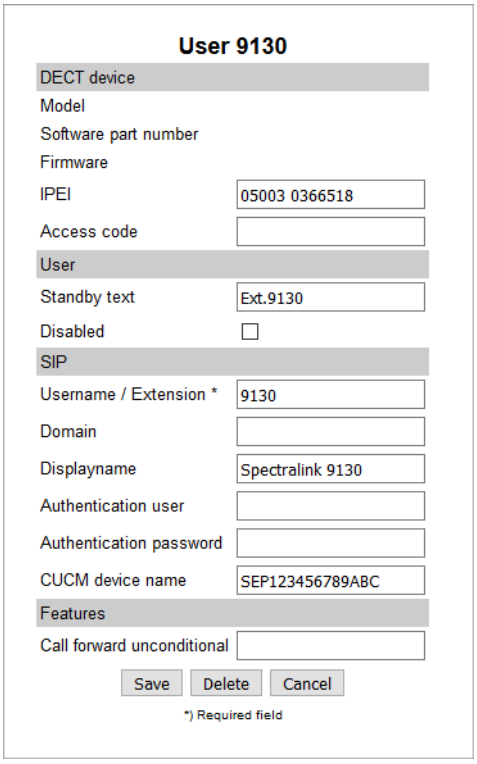
1. If using Spectralink IP-DECT 400/6500, click **Users**, click **List Users**, and then click **New**.

   If using Spectralink DECT 2500/8000, click **Users**, click **Overview**, and then click **New**.
2. Enter the required information:

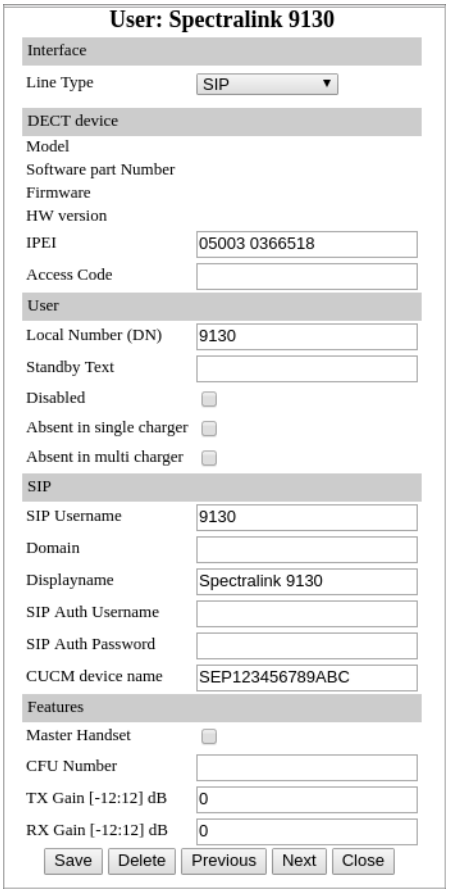
Field	Setting
Interface (only Spectralink DECT Server 2500/8000)	
Line type	Select **SIP**.
DECT device	
IPEI (optional)	If a specific handset is being subscribed for this extension, enter the IPEI number of the actual handset. (The IPEI number is readable from the label on the product). If this is not 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)	Administrators can define a system wide or individual access code as extra wireless security during the subscription process.
User	
Local Number (DN) (only Spectralink DECT Server)	The local number (DN) is required on Spectralink DECT Server 2500/8000.

Field	Setting
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.
SIP	
SIP Username (optional) (only on Spectralink DECT Server)	If not defined, then the SIP Username is automatically set to Local Number.
Username/Extension (only on Spectralink IP-DECT Server)	The actual directory number of the handset defined in the Cisco Unified CM. **Note**: This field must be unique within the Spectralink 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 Spectralink IP-DECT Server.
CUCM device name	If no CUCM device name is defined, then the CUCM device name will be auto-generated by the Spectralink IP-DECT/DECT Server when uploaded, as it must be used as the device name when the device is added to the Cisco Unified CM. It is always possible to change the device name later either through the user XML file, the CSV file, or the web based Administration Page of the server. **Note**: Leaving this field empty, the Spectralink IP-DECT Server will generate this value when the user is saved. **Note**: This information is not displayed if the Cisco Unified CM license is not loaded into the Spectralink IP-DECT Server.

Example - Spectralink IP-DECT Server 400/6500:



Example - Spectralink DECT Server 2500/8000:



3. Click **Save**.
4. When the users have been added to the Spectralink IP-DECT/DECT Server, the handsets must be DECT subscribed in order to be able to communicate with the Spectralink IP-DECT/DECT Server. Please refer to the relevant handset documentation for this.

To Add Users Creating User XML File Manually for Provisioning

It is possible to create user data including CUCM device names manually in an user XML file to be used for provisioning.

The user XML file must be uploaded to a provisioning server matching provisioning URL in the configuration.

For more information, see the Provisioning Guide.

Example of User XML File Containing Predefined CUCM Device Names

For an example of a user XML file in Spectralink IP-DECT/DECT Server format containing pre-defined CUCM device names, see below:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<users>
  <user>
    <ipei>00077 0000001</ipei>
    <standbytext>9997</standbytext>
    <username>9997</username>
    <cucmdevicename>SEP123456789ABC</cucmdevicename>
  </user>
  <user>
    <ipei>00077 0000002</ipei>
    <standbytext>9998</standbytext>
    <username>9998</username>
    <displayname>Morten Mortensen</displayname>
    <cucmdevicename>SEP123456789BCD</cucmdevicename>
  </user>
  <user>
    <ipei>00077 0000003</ipei>
    <accesscode>1234</accesscode>
    <standbytext>9999</standbytext>
    <username>9999</username>
    <displayname>Ole Olsen</displayname>
    <disabled>true</disabled>
    <cucmdevicename>SEP123456789CDE</cucmdevicename>
  </user>
</users>
```

Note:

If no CUCM device name is defined, then the CUCM device name will be auto-generated by the Spectralink IP-DECT/DECT Server when uploaded, as it must be used as the device name when the device is added to the Cisco Unified CM. It is always possible to change the device name later either through the user XML file, the CSV file, or the web based Administration Page of the server.

To Add Users Creating CSV File for Import

It is possible to create user data including CUCM device names manually in a CSV file to be imported into the Spectralink IP-DECT/DECT Server through the web based Administration Page.

Example of CSV File Containing Predefined CUCM Device Names

	A
1	#IPEI,access code,standbytext,username,domain,displayname,authenticate user,authenticate password,disabled,cucmdevicename
2	05003 0350612,"","9111","9111","","9111","","",0,"SEP123456789CBA"
3	05003 0551736,"","9112","9112","","9112","","",0,"SEP123456789DEF"
4	05003 0533454,"","9410","9410","","9410","","",0,"SEPBA77A4BEC091"
5	05003 0533113,"","9411","9411","","9411","","",0,"SEP123456789AAA"
6	05003 0350611,"","9412","9412","","9412","","",0,"SEP123456789BBB"
7	05003 0350610,"","9413","9413","","9413","","",0,"SEP60E9C826D228"
8	

Note:

If no CUCM device name is defined, then the CUCM device name will be auto-generated by the Spectralink IP-DECT/DECT Server when uploaded, as it must be used as the device name when the device is added to the Cisco Unified CM. It is always possible to change the device name later either through the user XML file, the CSV file, or the web based Administration Page of the server.

Import CSV File Into Spectralink IP-DECT/DECT Server

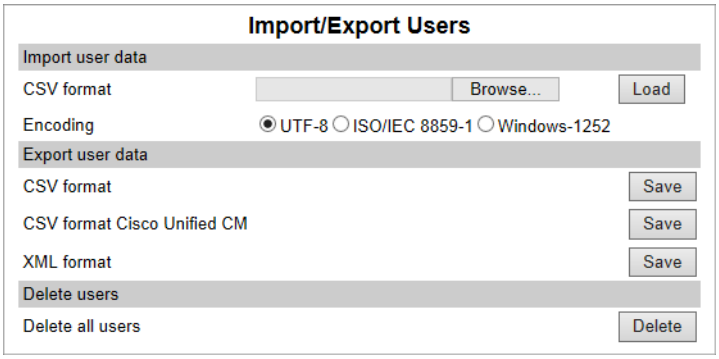
1. Click **Users**, and then click **Import/Export**.
2. Under **Import user data**, browse for the relevant CSV file, and then click **Load**.
3. After the CSV file containing user data is uploaded to the Spectralink IP-DECT/DECT Server, you can export a CSV file in CUCM format to be used for Bulk Provisioning. For more information, see "Exporting CUCM Formatted CSV File for Use in CUCM/Bulk Provisioning" below.

Exporting CUCM Formatted CSV File for Use in CUCM/Bulk Provisioning

Having the CUCM license installed, the Spectralink IP-DECT/DECT Server supports Cisco Unified Communications Manager's Bulk Administration of phones. From the Spectralink IP-DECT/DECT Server you can export a CSV file in CUCM format that can be used directly to import new phones into the CUCM. For more information about adding user data to the Spectralink IP-DECT/DECT Server, see "Adding Users and Handsets" on page 17.

To generate the CSV file in CUCM format from the web based Administration Page:

1. Click **Users**, and then click **Import/Export**.
2. Under **Export user data**, click **Save** next to **CSV format Cisco Unified CM** to download the CSV file. This file can be imported directly into the CUCM later on using the Bulk Administration Tool.



Example of a CSV file for Cisco Unified Communications Manager:

1	MAC ADDRESS,DESCRIPTION,DIRECTORY NUMBER 1
2	SEPB268FFB70220,DECT 9130,9130
3	SEPBB4E303AD3B6,DECT 9131,9131
4	

Cisco Unified Communications Manager

Below is a description of how to download and install the COP file, prepare the Cisco Unified Communications Manager, how to setup phone security profile (if using TLS), how to add end users, how to add the DECT handsets either manually or using the Bulk Administration Tool. Each individual DECT handset must be added as a device in CUCM. The Spectralink IP-DECT/DECT Server itself will not be added and known to the CUCM.

Installing the COP File

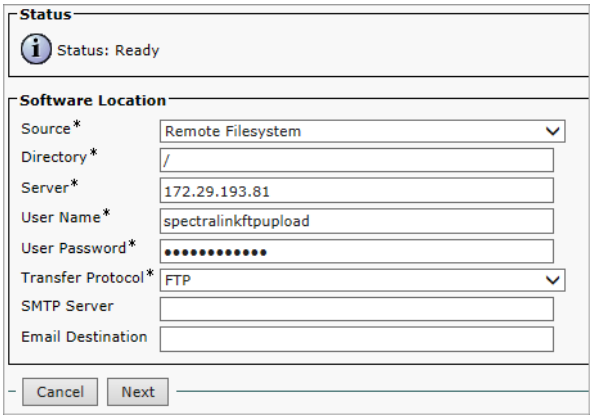
A Cisco Unified Communications Manager COP file provided by Spectralink must be loaded into the CUCM in order to add support for “Spectralink IP-DECT” devices. Handsets configured as Spectralink IP-DECT will have a tighter integration with the Cisco Unified Communications Manager, and will have access to additional features.

1. Download the Spectralink COP file for CUCM at http://support.spectralink.com/.
2. Install the COP file in the CUCM by navigating to **Cisco Unified OS Administration** > **Software Upgrades** > **Install/Upgrade**.

   Note:
   You need a FTP/SFTP server to install the COP file.

3. On the **Software Location** page, enter the following data:

Field	Setting
Software Location	
Source	Select **Remote Filesystem**.
Directory	Enter the path on the SFTP or FTP server.
Server	Enter the hostname or IP address of the SFTP or FTP server.
Username	Enter User name to login to the SFTP or FTP server.
Password	Enter Password to login to the SFTP or FTP server
Transfer Protocol	Select **SFTP** or **FTP**.



4. When the data has been entered, click **Next**.

   The CUCM now contacts the FTP/SFTP server and look for update files.

5. When the update files are listed, select the COP (.cop.sgn) file, and click **Next**.

   The CUCM downloads the COP file.

   When the COP file is downloaded, the CUCM displays the file checksum details.

6. Check that everything looks correct, and click **Next**.

   The CUCM will start installing the COP file. The installation will take a while.

7. When the installation of the COP file is successfully completed, restart the **CM TFTP Service** to make sure that the changes take effect.

   Navigate to **Cisco Unified Serviceability** * > **Tools** > **Control Center - Feature Services** > **Select Publicher IP Address** > **Cisco Tftp**.

Note:

If the COP file has been successfully installed, then a DECT handset icon appears when adding handsets to the CUCM Database. If you have restarted the CM TFTP without the DECT handset icon appearing, you need to restart the Cisco Unified Communications Manager as well.

Setting up Phone Security Profile (if Using TLS)

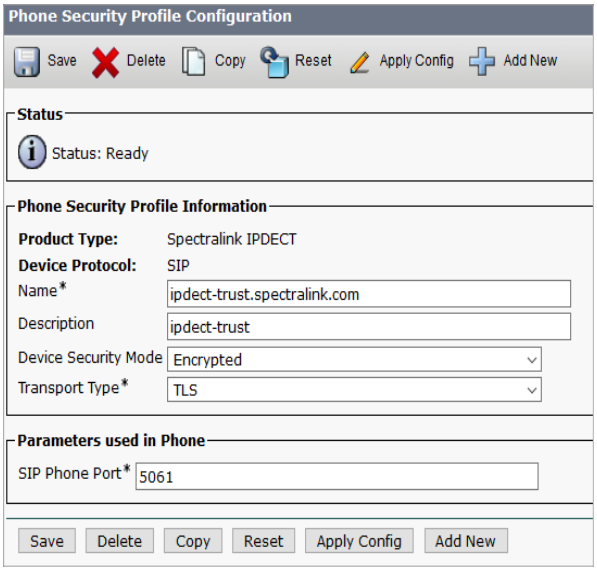
This section describes how to build a unique Phone Security Profile for the Spectralink IP-DECT/DECT Server .

If TLS is used as SIP Transport Method it is necessary to create an additional security profile, that must be selected as the Device Security Profile.

1. Navigate to **Cisco Unified CM Administration** > **System** > **Security** > **Phone Security Profile**.
2. Click **Add New**.
3. In the **Phone Security Profile Type** list, select **Spectralink IPDECT**, and then click **Next**.

4. On the **Phone Security Profile Configuration** page, enter relevant data in the following fields:

Field	Setting
Device Protocol	
Name	Enter the relevant name. E.g. **ipdect-trust.spectralink.com** Note: The name of the security profile must match SAN (SubjectAltName) of the device certificate (the host certificate offered to CUCM). For more information, see "Example of Security Profile Name" on the next page.
Description	Enter description. E.g. **ipdect-trust**
Device Security Mode	Select **Encrypted**.
Transport Type	Select **TLS**.

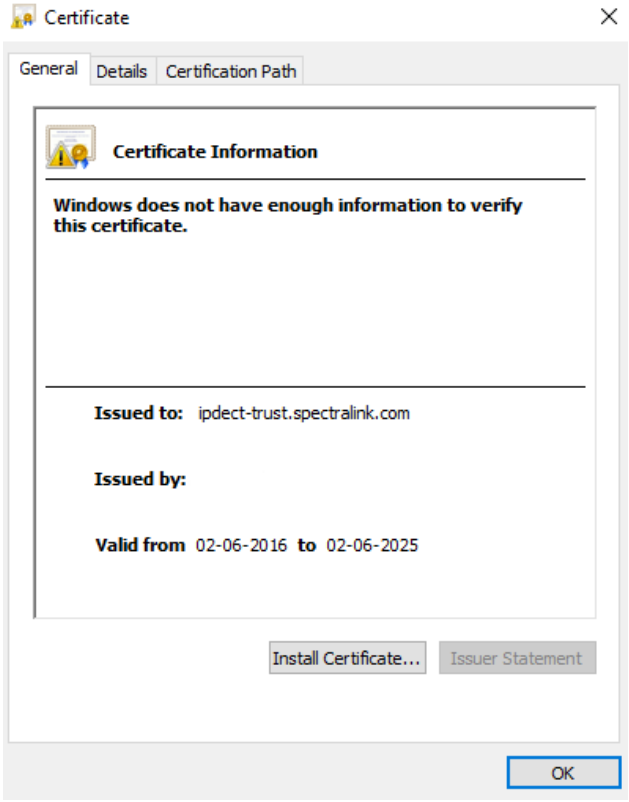


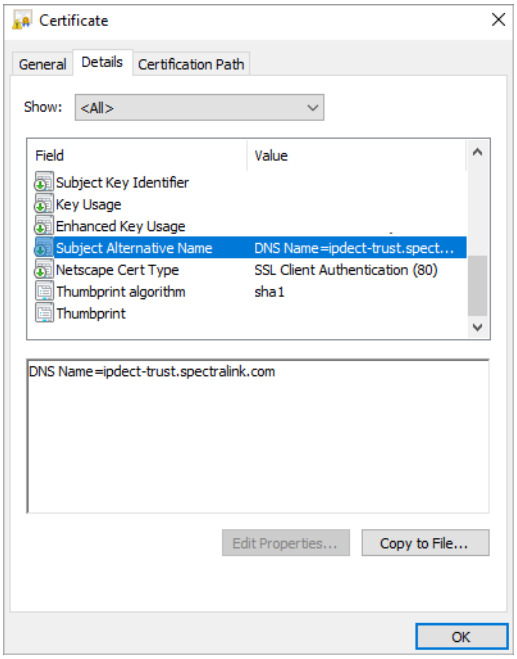
5. Click **Save**.

Example of Security Profile Name

The installed device certificate on Spectralink IP-DECT Server400/6500 is issued to:

ipdect-trust.spectralink.com





Adding DECT Handsets to CUCM Database

This section describes how to add the individual Spectralink DECT Handsets to the Cisco Unified Communications Manager.

Each individual DECT handset is identified by a unique device name, which can be generated by the Spectralink IP-DECT/DECT Server, defined through the web based Administration Page of the server, predefined manually in an XML file or CSV file. This device name 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 Spectralink IP-DECT/DECT Server, XML file or CSV file.

Note:

If no CUCM device name is defined, then the CUCM device name will be auto-generated by the Spectralink IP-DECT/DECT Server when uploaded, as it must be used as the device name when the device is added to the Cisco Unified CM. It is always possible to change the device name later either through the user XML file, the CSV file, or the web based Administration Page of the server.

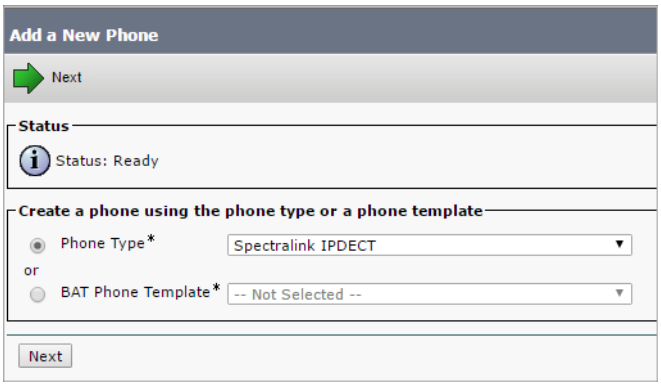
Two different methods for adding handsets are supported:

- Manual handset creation
- Automated end user/handset provisioning using the Bulk Administration Tool

Manual Handset Creation in CUCM

To Add Handsets Manually

1. Navigate to **Cisco Unified CM Administration** > **Device** > **Phone**.
2. Click **Add new**.
3. In the **Phone Type** list, select **Spectralink IPDECT**, and then click **Next**.

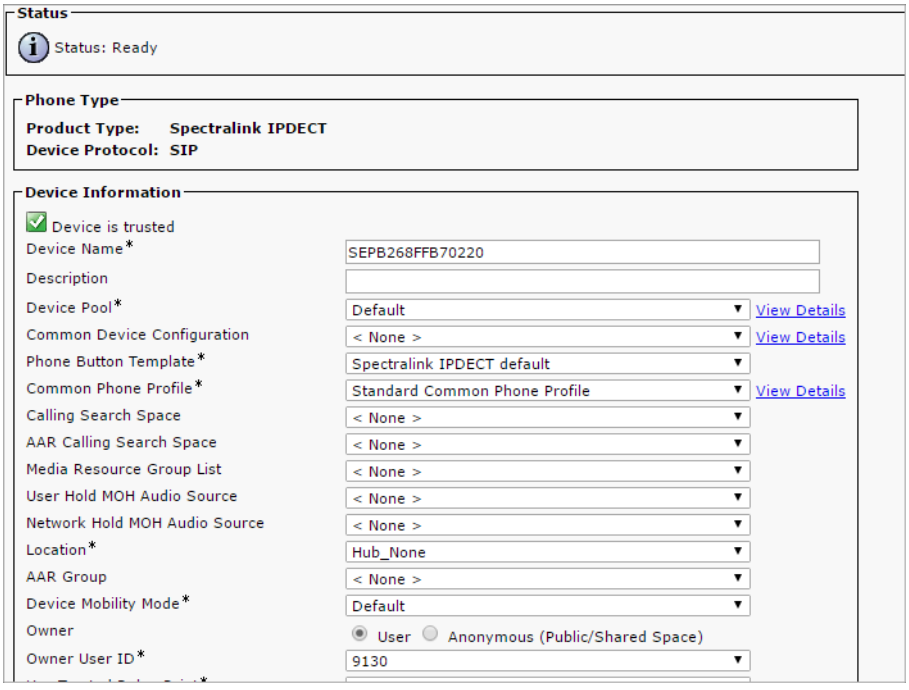


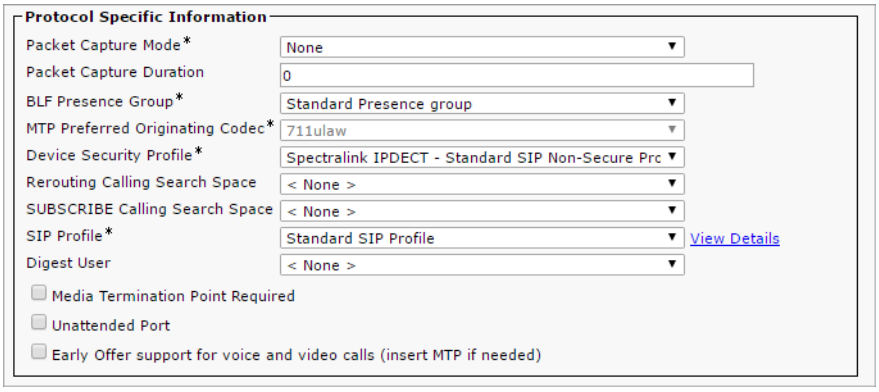
Note:

If **Spectralink IPDECT** is not available from the list, please make sure that the COP file is installed correctly and that the CUCM has been restarted afterwards.

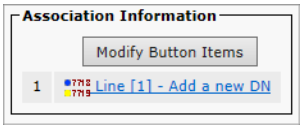
4. On the **Phone Configuration** page, enter relevant data in the following fields:

Field	Setting
Device Information	
Device Name	Enter (copy and paste) the device name from the user on the IP-DECT/DECT Server into the Device Name field.
Device Pool	Select the relevant device pool.
Phone Button Template	Select phone button template.
Owner User ID	Select the relevant Owner User ID.
Protocol Specific Information	
Device Security Profile	Select Spectralink IPDECT – Standard SIP Non-Secure Profile or TLS profile/ipdect-trust profile. **Note**: The TLS Phone Security Profile is only available if created, and if using Spectralink IP-DECT Server400/6500.
SIP Profile	Select the relevant SIP Profile.

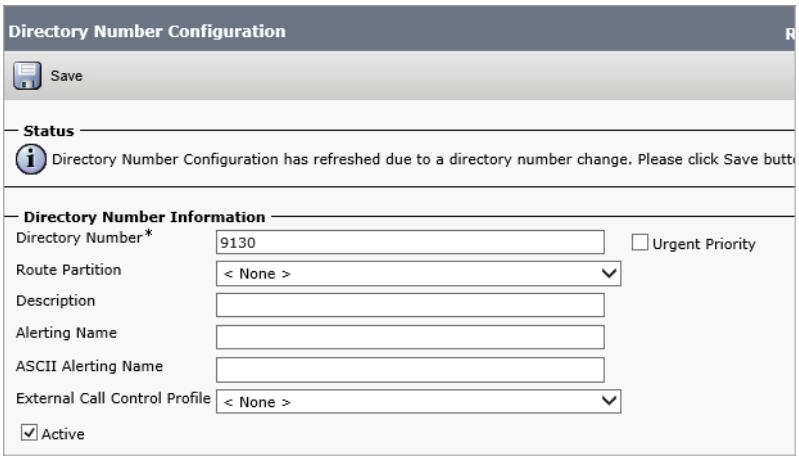




5. When the data is entered, click **Save**, and then click **OK** to apply the configuration.
6. In the appearing **Association Information**, click **Add a new DN**.



7. On the **Directory Number Configuration** page, enter the relevant Directory Number in the **Directory Number** field.



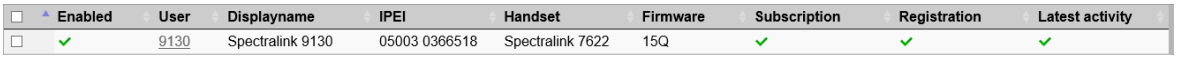
Note:

The Directory Number must be the same as the **Username/Extension** field in the User setup on the Spectralink IP-DECT/DECT Server .

8. Click **Save** and return to the list of devices.

   The CUCM will show the registration status of the device.

   The registration should look like this on the IP-DECT Server **List Users** page:



Note:

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

Automated End User/Handset Provisioning

When adding many handsets to the Cisco Unified Communications Manager it is beneficial to use bulk provisioning in order to automate the handset creation process. The Bulk Administration Tool allows you to import the user list and end user configuration from a CSV file in CUCM format into the database.

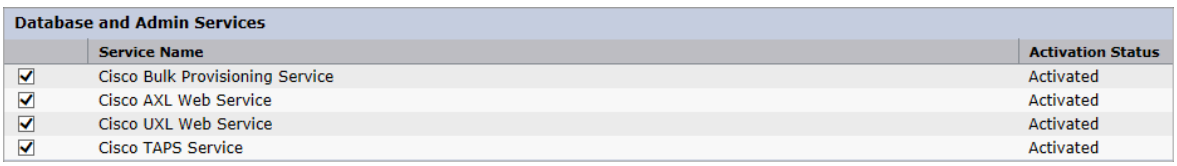
The process of bulk provisioning handsets using the Bulk Administration Tool consists of the following three tasks:

- Ensure activation of the bulk provisioning service
- Creation of templates for inserting the handsets
- Import of CSV file containing the user data and CUCM device name using the Bulk Administration Tool.

  For more information about exporting the CSV file from the Spectralink IP-DECT/DECT Server, see "Exporting CUCM Formatted CSV File for Use in CUCM/Bulk Provisioning" on page 22.

To Check Activation of Bulk Provisioning Service

- Check that the “Cisco Bulk Provisioning Service” is active by navigating to **Cisco Unified Serviceability** > **Tools** > **Service Activation**.



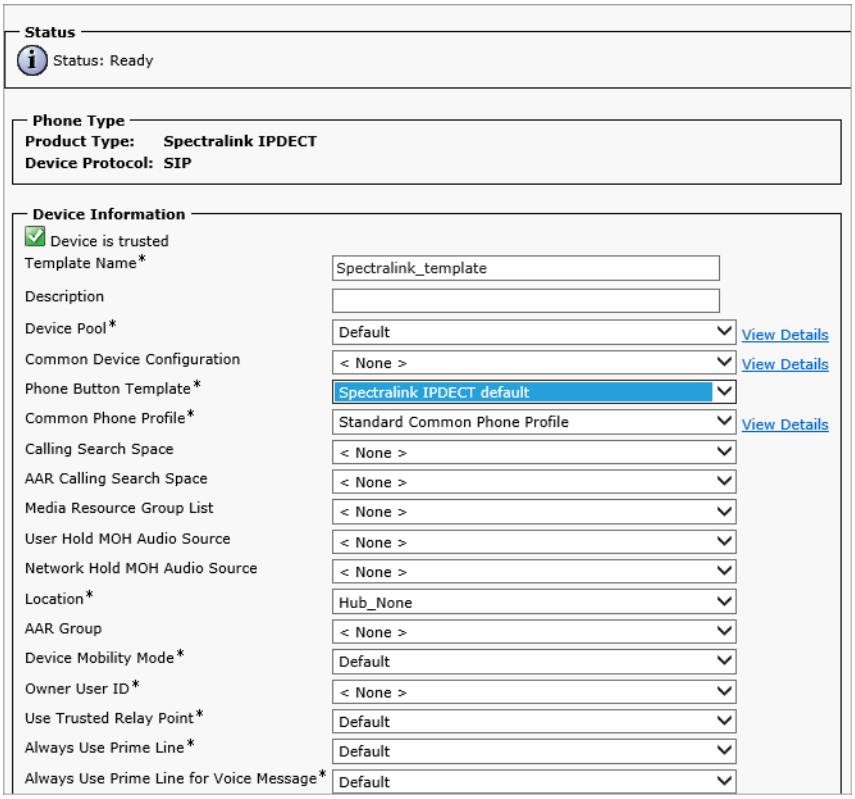
To Create Templates

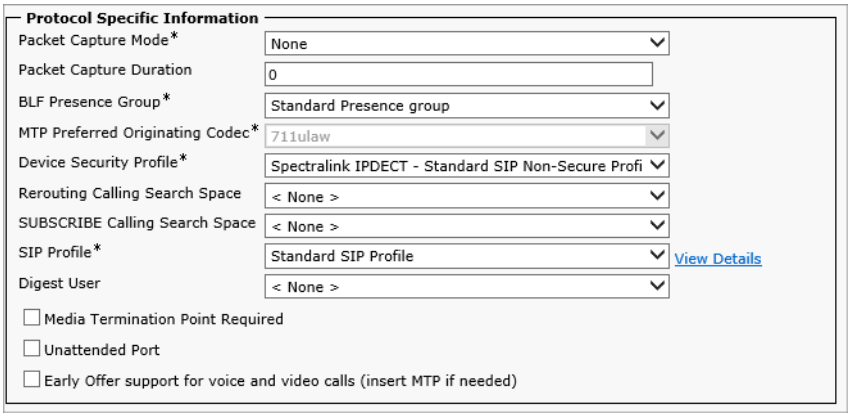
It is necessary to create a phone template containing a line template. These templates define the default values for the handsets that will be inserted.

In Order to Define a Phone Template

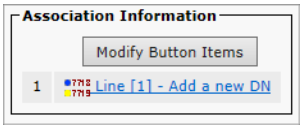
1. Navigate to **Cisco Unified CM Administration** > **Bulk Administration** > **Phones** > **Phone template**.
2. Click **Add New**.
3. In the **Phone Type** list, select **Spectralink IPDECT**, and click **Next**.
4. On the **Phone Template Configuration** page, enter the required parameters:

Field	Setting
Device Information	
Template Name	Enter a name for the template.
Device Pool	Select **Default**.
Phone Button Template	Select **Spectralink IPDECT default**.
Common Phone Profile	Select **Standard Common Phone Profile**.
Protocol Specific Information	
Device Security Profile	Select **Spectralink IPDECT – Standard SIP Non-Secure Profile** or **TLS profile/ipdect-trust profile**. **Note**: The **TLS Phone Security Profile** is only available if created.
SIP Profile	Select **Standard SIP Profile**.

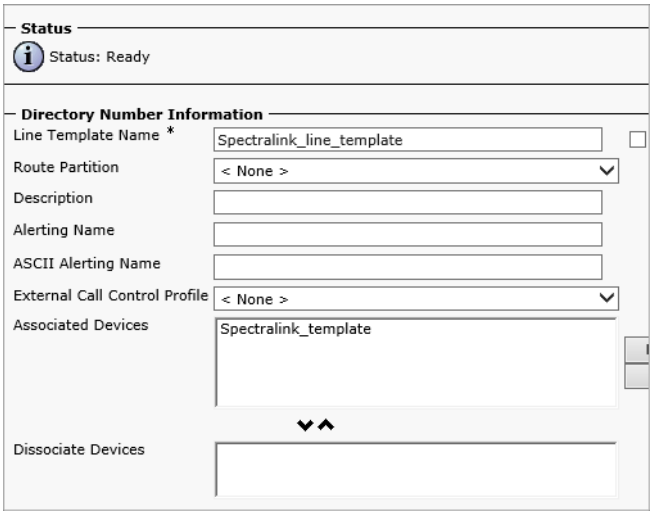




5. Click **Save**, and then click **OK** to apply the configuration.
6. In the appearing **Association Information**, click **Add a new DN** to add a line template to the device template.



7. In the **Line Template Name** field, enter a template name.



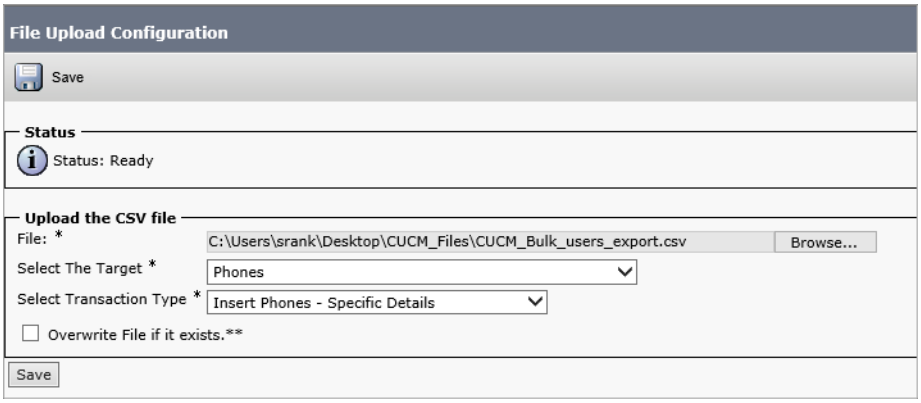
8. In the **Associated Devices** field, make sure that the phone template appears as an associated device, and then click **Save**.

To Import a CSV File

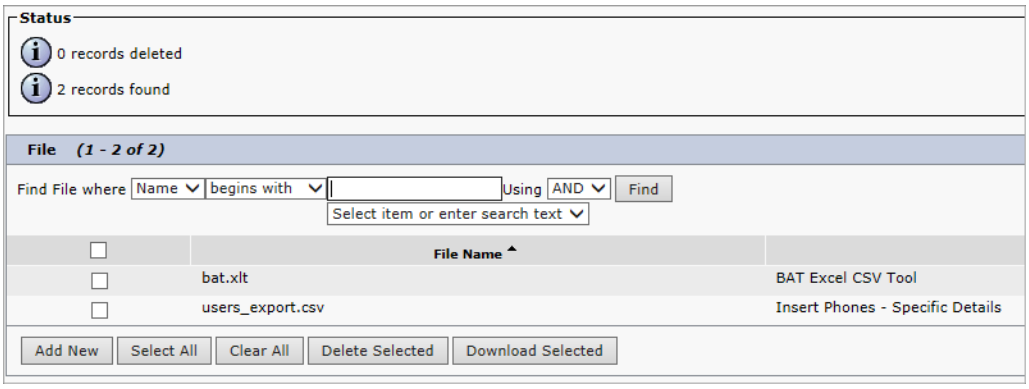
Import the CSV file (previously exported from the Spectralink IP-DECT/DECT Server) using the phone template defined.

1. Upload the CSV file to CUCM by navigating to **Cisco Unified CM Administration** > **Bulk Administration** > **Upload/Download Files**.
2. Click **Add New**.
3. On the **File Upload Configuration** page, enter the relevant data:

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



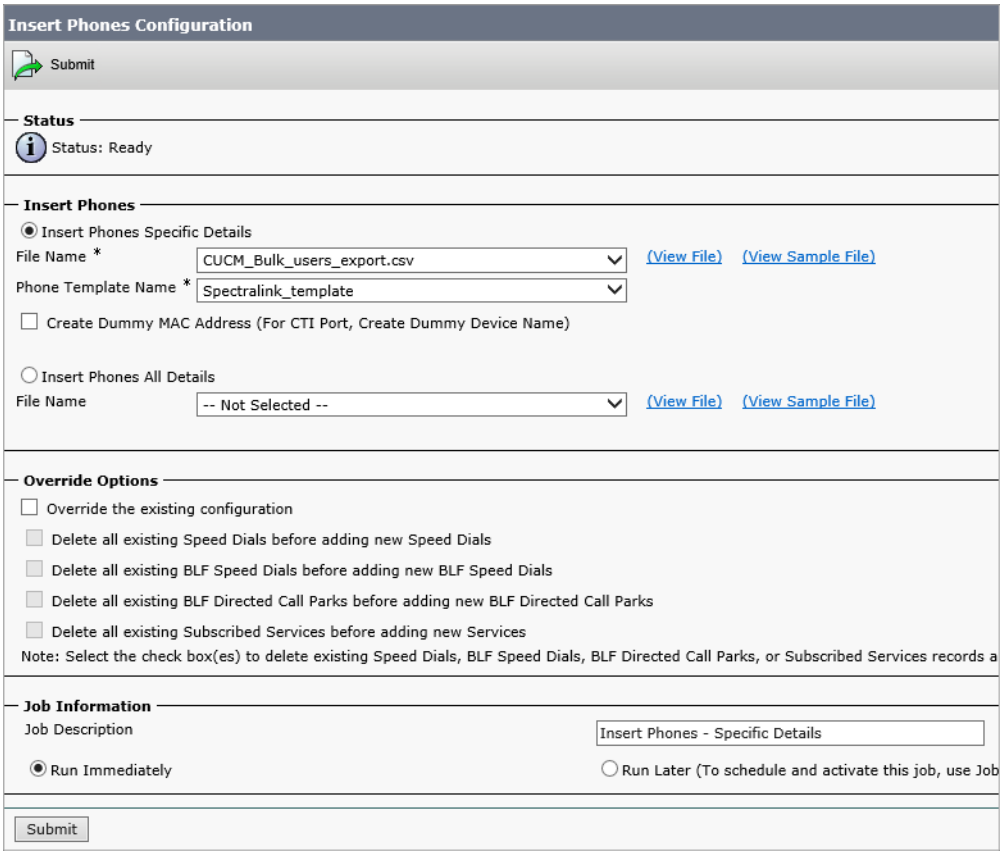
4. Click **Save**. The file will be uploaded to CUCM. Check that the uploaded file is available in the list.



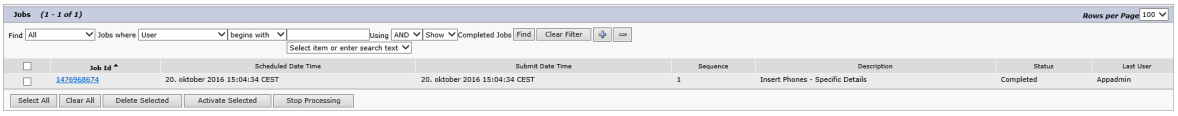
5. When the CSV file is uploaded, then the CUCM handsets can be inserted into the CUCM by navigating to **Cisco Unified CM Administration** > **Bulk Administration** > **Phones** > **Insert Phones**.

6. On the **Insert Phones Configuration** page, enter the following data:

Field	Setting
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 DECT handsets.
Job Information	
Run Immediately	Select this.



7. Click **Submit** to start the job and insert the phones. The result of the job can be viewed by navigating to **Cisco Unified CM Administration** > **Bulk Administration** > **Job Scheduler**.



8. Click on the relevant job to check that the job has been completed successfully.

Example of XML Configuration File

```
<?xml version="1.0" encoding="UTF-8" standalone="true"?>
<config>
	<application>
		<enable_msf>true</enable_msf>
		<enable_rpc>false</enable_rpc>
		<internal_messaging>true</internal_messaging>
		<username>GW-DECT/admin</username>
	</application>
	<dect>
		<auth_call>true</auth_call>
		<encrypt_voice_data>Disabled</encrypt_voice_data>
		<global_tx_power>0</global_tx_power>
		<send_date_time>true</send_date_time>
		<subscription_allowed>true</subscription_allowed>
	</dect>
	<feature_codes>
		<call_forward>
			<unconditional>
				<disable>#21#</disable>
				<enable>*21*$#</enable>
			</unconditional>
			<voicemail>
				<enable>*21*</enable>
			</voicemail>
		</call_forward>
		<conference>
			<meetme>**5$</meetme>
		</conference>
		<enable>true</enable>
		<pickup>
			<group_other>**8</group_other>
			<local>**3</local>
		</pickup>
	</feature_codes>
	<language>en</language>
	<license>[CISCO license]</license>
	<log>
		<syslog>
			<facility>16</facility>
			<level>info</level>
			<port>514</port>
		</syslog>
	</log>
	<network>
		<bootproto>dhcp</bootproto>
		<hostname></hostname>
		<ipaddr>10.8.10.150</ipaddr>
		<ipv6>
			<method>disabled</method>
		</ipv6>
		<netmask>255.255.255.0</netmask>
		<ntp>dk.pool.ntp.org</ntp>
		<timezone>CET-1CEST-2,M3.5.0/02:00:00,M10.5.0/03:00:00</timezone>
```

```
</network>
<rfp>
        <default_sync_type>radio</default_sync_type>
        <ptp>
                <transport>l2</transport>
        </ptp>
</rfp>
<security>
        <allow_new_media_resource>true</allow_new_media_resource>
        <allow_new_rfp>true</allow_new_rfp>
</security>
<sip>
        <callwaiting>true</callwaiting>
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        <dect_detach_action>ignore</dect_detach_action>
        <defaultdomain>172.29.193.102</defaultdomain>
        <dnsmethod>arecord</dnsmethod>
        <dtmf>
                <duration>270</duration>
                <info>false</info>
                <rtp>true</rtp>
                <rtp_payload_type>101</rtp_payload_type>
        </dtmf>
        <gruu>true</gruu>
        <localport>5060</localport>
        <maxforwards>70</maxforwards>
        <media>
                <codecs>64,1,2,0,0,0</codecs>
                <ice>
                        <enable>false</enable>
                </ice>
                <port>58000</port>
                <ptime>20</ptime>
                <sdp_answer_single>false</sdp_answer_single>
                <sdp_answer_with_preferred>false</sdp_answer_with_preferred>
                <sdp_ignore_version>false</sdp_ignore_version>
                <srtp> (*if using TLS)
                        <enable>true</enable>
                        <lifetime>false</lifetime>
                        <mki>false</mki>
                        <required>false</required>
                </srtp>
                <tos>184</tos>
                <turn>
                        <enable>false</enable>
                </turn>
                <vlan_cos>5</vlan_cos>
        </media>
        <music_on_hold>false</music_on_hold>
        <mwi>
                <enable>true</enable>
                <expire>3600</expire>
                <subscribe>false</subscribe>
        </mwi>
        <onholdtone>true</onholdtone>
        <pound_dials_overlap>false</pound_dials_overlap>
        <proxy>
```

```
                        <port>0</port>
                        <port2>0</port2>
                        <port3>0</port3>
                        <port4>0</port4>
                        <priority>1</priority>
                        <priority2>2</priority2>
                        <priority3>3</priority3>
                        <priority4>4</priority4>
                        <weight>100</weight>
                        <weight2>100</weight2>
                        <weight3>100</weight3>
                        <weight4>100</weight4>
                </proxy>
                <registration_expire>3600</registration_expire>
                <send_to_current_registrar>true</send_to_current_registrar>
                <separate_endpoint_ports>false</separate_endpoint_ports>
                <showstatustext>true</showstatustext>
                <tcp_contact_ephemeral_port>true</tcp_contact_ephemeral_port>
                <tls_allow_insecure>false</tls_allow_insecure>
                <tos>96</tos>
                <transport>tcp</transport>
                <use_sips_uri>false</use_sips_uri>
                <vlan_cos>3</vlan_cos>
        </sip>
        <snmp>
                <community>public</community>
                <enable>false</enable>
        </snmp>
        <upnp>
                <broadcast>false</broadcast>
                <enable>true</enable>
        </upnp>
</config>
```