Spectralink IP-DECT Server 200/400/6500, Virtual IP-DECT Server One and DECT Server 8000

Interoperability Guide

AudioCodes Mediant SBC

14232910-IG, Edition 4.0
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About This Guide

This guide describes how to configure a Spectralink IP-DECT Server 200/400/6500, Spectralink DECT Server 8000 and Spectralink Virtual IP-DECT Server One for connecting to a Microsoft Teams or Skype for Business Online tenant using an AudioCodes Mediant SBC. In the following, the servers will be referred to as Spectralink IP-DECT/DECT/Virtual IP-DECT Server .

This guide is intended for qualified technicians and the reader is assumed to have a basic knowledge about the Spectralink IP-DECT/DECT/Virtual IP-DECT Server , Microsoft Teams/Skype for Business Online tenant and AudioCodes Mediant SBC. It is also assumed, that you have an installed and functioning Microsoft Teams or Skype for Business Online tenant, AudioCodes Mediant SBC and Spectralink IP-DECT/DECT/Virtual IP-DECT Server .

When connecting to a:

- Skype for Business Online tenant, a Skype for Business Cloud Connector Edition (CCE) setup is utilized.
- Microsoft Teams tenant, a Direct Routing setup is used.

The Spectralink IP-DECT/DECT/Virtual IP-DECT Server configuration is identical for both cloud technologies.

The guide is divided into two parts:

- AudioCodes Mediant SBC
- Spectralink IP-DECT/DECT/Virtual IP-DECT Server

Each part describes the general configuration and the user administration.

Note:

The configuration steps described are only for a basic configuration to illustrate the important points when performing the integration. More advanced setups with PSTN connectivity, Skype for Business hybrid environments etc. are possible, but not described here. For more information, see the Microsoft documentation site for the latest Microsoft documentation.

Setup of the Microsoft Teams/Skype for Business Online tenant and basic setup of the AudioCodes Mediant SBC are also not covered. Fore more information about these tasks, see the relevant Microsoft and Audiocodes documentation.

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Related Documentation

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

Subject	Documentation
Skype for Business Online tenant	Navigate to the Microsoft documentation site for the latest Microsoft documentation.
Microsoft Teams Phone System Direct Routing	Navigate to the Microsoft documentation site for the latest Microsoft documentation.
Configure and manage Skype for Business Cloud Connector Edition	Navigate to the Microsoft documentation site for the latest Microsoft documentation.
AudioCodes Mediant SBC	Navigate to the AudioCodes documentation site for the latest AudioCodes Mediant SBC documentation.
Connecting AudioCodes SBC to Microsoft Teams Direct Routing Enterprise Model Configuration Note	Navigate to the AudioCodes documentation site for the latest AudioCodes Mediant SBC documentation.
Spectralink DECT Handsets	For more information about the handset, refer to the user guide available online at http://support.spectralink.com/products.
Site Survey Function in Handset	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/Virtual IP-DECT Server	For more information about the server, 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

The following features are supported:

	Supported features
Telephony	• Basic Calling • Call Hold • Call Transfer • Call Waiting • Call Forward (all endpoints) • Music on Hold (MOH)
User experience	• Centralized phone book via Active Directory and LDAP • SIP URI Support Phone Book (75x2, 76x2, 77x2 only)
Security	• TLS • SSRTP/ SRTP/RTP • STUN/TURN/ICE
Voice Quality	• Codecs: G.726 (default), G.711, G.729
Value added Spectralink features	• Rich APIs for third-party solutions integration • Multi-language (on handsets) • Centralized management and provisioning via DECT server management capability • Plug and play DECT is easy to use and fast to deploy • Real Time Location Services (RTLS) (requires third party solution)

Prerequisites and Limitations

Prerequisites

The following must be configured/installed:

- Microsoft Office 365 Enterprise subscription with Phone System enabled.

  For more information, see SfB Online Tenant documentation.
- AudioCodes Mediant SBC with the following licenses:
  - TEAMS (For Microsoft Teams only)
  - Far End Users (FEU)
- For Skype for Business Online tenants, a Skype for Business Cloud Connector Edition (CCE) has been installed and configured locally, with the AudioCodes Mediant SBC set up as gateway.
- For Microsoft Teams tenants, a Direct Route has been setup and configured with the AudioCodes Mediant SBC set up as gateway.
- The Spectralink IP-DECT Server(s) has been upgraded to PCS 19Ca or newer.
- The Spectralink DECT Server(s) has been upgraded to PCS 21Ba or newer.
- The Spectralink Virtual IP-DECT Server is installed with PCS 20A_ or newer.

Limitations

Note:

With the setup described in this guide, it is not possible to assign the same telephone number to both a Microsoft Teams/Skype for Business Client and a DECT handset simultaneously.

For routing purposes, it is recommended, that the telephone numbers assigned to DECT handsets are kept in a separate range.

Introduction

The basic Spectralink IP-DECT/DECT/Virtual IP-DECT Server and AudioCodes Mediant SBC integration consists of the following steps:

1. Create an SIP Interface

   For more information, see "Creating SIP Interface" on page 10.
2. Create a Media Realm

   For more information, see "Creating Media Realm" on page 10.
3. Create an Allowed Audio Coders Groups

   For more information, see "Creating an Allowed Audio Coders Groups" on page 10.
4. Create a Message Manipulation

   For more information, see "Creating a Message Manipulation" on page 11.
5. Create an Inbound Manipulation

   For more information, see "Creating an Inbound Manipulation" on page 11.
6. Create an IP Profile

   For more information, see "Creating an IP Profile" on page 11.
7. Create an IP Group

   For more information, see "Creating an IP Group" on page 12.
8. Create Classifications

   For more information, see "Creating Classifications" on page 12.
9. Create IP-to-IP routing rules

   For more information, see "Creating IP-to-IP routing rules" on page 13.

Note:

As Microsoft Teams/Skype for Business Online requires all phone numbers to be in E.164 format, it is required to transform any other phone number format into E.164.

This guide will keep phone numbers in E.164 format where possible and convert user dialed numbers before processing.

For more information about creating phone numbers in E.164 format, see https://en.wikipedia.org/wiki/E.164

Example Environment

The detailed configuration steps in the next sections assume the following example environment:

- E.164 numbers for Teams/SfB users are in the +457628118x range
- E.164 numbers for IP-DECT users are in the +457628119x range
- AudioCodes Mediant SBC with IP address 172.29.198.4
- Redundant Spectralink IP-DECT Servers with IP addresses 172.29.198.5 and 172.29.198.6

AudioCodes Mediant SBC

Below is a description of how to configure the AudioCodes Mediant SBC from the AudioCodes Mediant SBC user interface. Configuration includes creation of: SIP Interface, Media Realm, allowed Audio Coders Groups, Message Manipulation, IP Profile, IP Group, Inbound Manipulation, Classifications, and IP-to-IP Routing Rules.

Creating SIP Interface

Add an entry to the SIP Interfaces table (**Setup** menu > **Signaling & Media** tab > **Core Entities** folder > **SIP Interfaces**):

- Name: IP-DECT
- Network Interace: LAN_IF
- Application Type: SBC
- UDP Port: 5060
- TCP Port: 0
- TLS Port: 0

Creating Media Realm

Add an entry to the Media Realms table (**Setup** menu > **Signaling & Media** tab > **Core Entities** folder > **Media Realms**):

- Name: IP-DECT
- IPv4 Interace Name: LAN_IF
- UDP Port Range Start: 6000
- Number Of Media Session Legs: 1000

Creating an Allowed Audio Coders Groups

Add an entry to the Allowed Audio Coders Groups table (**Setup** menu > **Signaling & Media** tab > **Coders & Profiles** folder > **Allowed Audio Coders Groups**):

- Name: IP-DECT
- Items: G.726, G.711A, G.711U, G.729

Creating a Message Manipulation

Add an entry to the Message Manipulations table (**Setup** menu > **Signaling & Media** tab > **Message Manipulation** folder -> **Message Manipulations**):

- Name: Prefix Refer-To
- Manipulation Set ID: Pick an unused set ID
- Message Type: Refer
- Condition: Header.Refer-To.url.User regex 11[8-9]x
- Action Subject: Header.Refer-To.URL.User
- Action Type: Add Prefix
- Action Value: '+457628'

Creating an Inbound Manipulation

Add an entry to the Inbound Manipulation table (**Setup** menu > **Signaling & Media** tab > **SBC** folder > **Manipulation** > **Inbound Manipulations**):

- Name: Add E.164 prefix
- Request Type: INVITE
- Source IP Group: IP-DECT
- Destination Username Pattern: 11[8-9]x
- Manipulated Item: Destination
- Prefix to Add: +457628

Creating an IP Profile

Add an entry to the IP Profiles table (**Setup** menu > **Signaling & Media** tab > **Coders & Profiles** folder > **IP Profiles**):

- Name: IP-DECT
- SBC Media Security Mode: Not Secured
- Allowed Audio Coders: Select the Allowed Audio Coders Group created previously
- Remote REFER Mode: Handle Locally
- Remote Replaces Mode: Handle Locally
- Remote 3xx Mode: Handle Locally
- Remote Hold Format: Send Only
- Broken Connection Mode: Ignore

Creating an IP Group

Add an entry to the IP Group table (**Setup** menu > **Signaling & Media** tab > **Core Entities** folder > **IP Groups**):

- Name: IP-DECT
- Topology Location: Down
- Type: User
- IP Profile: IP-DECT
- Media Realm: IP-DECT
- Classify By Proxy Set: Disabled
- Inbound Message Manipulation Set: The set ID of the Message Manipulation set created previously

Creating Classifications

Classifications must be created for both the primary and secondary Spectralink IP-DECT Server.

Primary Spectralink IP-DECT Server

Add the primary Spectralink IP-DECT Server to the Classification table (**Setup** menu > **Signaling & Media** tab > **SBC** folder > **Classification**):

- Name: IP-DECT Primary Server
- Source SIP Interface: IP-DECT
- Source IP Address: 172.29.198.5
- Source IP Group: IP-DECT

Secondary Spectralink IP-DECT Server

Add the secondary Spectralink IP-DECT Server to the Classification table (**Setup** menu > **Signaling & Media** tab > **SBC** folder > **Classification**):

- Name: IP-DECT Seconday Server
- Source SIP Interface: IP-DECT
- Source IP Address: 172.29.198.6
- Source IP Group: IP-DECT

Creating IP-to-IP routing rules

Add an entry to the IP-to-IP Routing table (**Setup** menu > **Signaling & Media** tab > **SBC** folder > **Routing** > **IP-to-IP Routing**):

- Name: Terminate IP-DECT registration
- Source IP Group: IP-DECT
- Request Type: REGISTER
- Destination Type: All Users

Add an entry to the IP-to-IP Routing table (**Setup** menu > **Signaling & Media** tab > **SBC** folder > **Routing** > **IP-to-IP Routing**):

- Name: * -> IP-DECT
- Destination Username Pattern: +457628119x
- Destination Type: All Users

Spectralink IP-DECT/DECT/Virtual IP-DECT Server

Below is a description of how to configure the Spectralink IP-DECT/DECT/Virtual IP-DECT Server and how to add users to the system.

Configuring the Spectralink IP-DECT/DECT/Virtual IP-DECT Server

SIP settings

The Spectralink IP-DECT/DECT/Virtual IP-DECT Server requires a few SIP settings to be adjusted in order to connect properly to the AudioCodes Mediant SBC.

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	Select **UDP**.
Default domain	Enter the IP address/hostname of the AudioCodes Mediant SBC. E.g.: audiocodes-mediant.spectralink.com
Send Hold before REFER	Disabled.

Adding Users

It is necessary to add users to the Spectralink IP-DECT/DECT/Virtual IP-DECT Server using E.164 numbers as the user name. E.g. +4576281191.

For more information about adding users, see either the IP-DECT Server 200/400/6500 and Virtual IP-DECT Server One Installation and Configuration Guide and/or Provisioning Guide.