Spectralink IP DECT Server 200/400/6500
Virtual IP-DECT Server One

Ribbon Sonus SBC 1000/2000

MS Teams Interoperability Guide

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Contact Information

US Location
+1 800-775-5330

Spectralink Corporation
2560 55th Street
Boulder, CO 80301
USA

info@spectralink.com

Denmark Location
+45 7560 2850

Spectralink Europe ApS
Bygholm Soepark 21 E Stuen
8700 Horsens
Denmark

infoemea@spectralink.com

UK Location
+44 (0) 20 3284 1536

Spectralink Europe UK
329 Bracknell, Doncastle Road
Bracknell, Berkshire, RG12 8PE
United Kingdom

infoemea@spectralink.com

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Chapter 1: About This Guide

This guide describes how to configure a Spectralink DECT handset for connecting to Microsoft Teams using a Ribbon Sonus SBC-1000/2000.

This guide is intended for qualified technicians and the reader is assumed to have a basic knowledge about the Spectralink DECT handsets, Microsoft Teams and Ribbon Sonus SBC-1000/2000. It is also assumed, that you have an installed and functioning Microsoft Teams, Ribbon Sonus SBC-1000/2000 and Spectralink DECT handset.

The guide is divided into two configuration chapters:

- Ribbon Sonus SBC-1000/2000
- Spectralink IP-DECT/Virtual IP-DECT Server One

Each chapter describes the general configuration and the user administration.

Admin Tip

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, Microsoft Teams hybrid environments etc. are possible, but not described here. For more information, see the Microsoft documentation site for the latest Microsoft documentation.

Related Documentation

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

Microsoft Teams	Navigate to the Microsoft documentation site for the latest Microsoft documentation.
Sonus SBC-1000/2000	Navigate to the Sonus Documentation Portal for the latest Sonus SBC-1000/2000 documentation.
Spectralink DECT Handsets	For more information about the handset, refer to the User Guide for the given model 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, bugfixes, 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.

Chapter 2: Introduction

Feature List

The following features are supported:

	Supported features
Telephony	Basic calling Call hold Call transfer Call waiting Call forward (all endpoints)
User experience	Centralized phone book via Active Directory and LDAP
Security	TLS SSRTP/SRTP/RTP STUN/TURN/ICE
Voice Quality	Codecs: G.711, G.722, G.729
Value added Spectralink features	Rich APIs for third-party solutions integration Multi-language (on feature phones) Real Time Location Services (RTLS) (required third party solution)

Prerequisites

The following must be configured/installed:

- Microsoft Office 365 Enterprise subscription with Phone System enabled.
  For more information, see MS Teams documentation.
- LDAP access to an Active Directory hosting the users and credentials for a user with read access.

Limitations

Admin Tip

This setup requires that all users present in the AD have logged in using the MS Team Client and configured simultaneous ringing to their DECT phone in order to do proper call routing.

Users not in the AD will have calls routed correctly without any configuration.

Integration Sequence

The basic DECT handset and Sonus SBC-1000/2000 integration consists of the following steps:

1. General configuration
   For more information, see General Setup.
2. Create Transformation Tables
   For more information, see Creating Transformation Tables.
3. Create Call Routing Tables for calls originating from MS Teams and DECT handsets.
   For more information, see Create Call Routing Tables
4. Create Signaling Groups for MS Teams and DECT handsets.
   For more information, see Create Signaling Groups.
5. Populate Call Routing Tables
   For more information, see Populate Call Routing Tables.

Integration Tips

Admin Tip

As MS Teams requires all phone numbers to be in E.164 format; any other phone number format must be transformed 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

To ensure that users with both a DECT handset and a MS Teams Client can receive calls on both endpoints, all MS Teams Clients must be configured for **Simultaneous Ringing** on the DECT handset. For more information about **Simultaneous Ringing**, see MS Teams Client documentation.

Admin Tip

Unfortunately, setting the user's own phone number as the destination of the Simultaneous Ringing will cause MS Teams to not route the call to the DECT handset. A possible solution is to enter the local number with a fake E.164 prefix and then transform to the correct prefix in the Sonus SBC-1000/2000.

Spectralink recommends using an unused E.164 prefix, e.g. +999.

When a call originates from a DECT handset, the Sonus SBC-1000/2000 will need to know if the call should be routed either:

- To a MS Team Client (and possibly also a DECT handset via Simultaneous Ringing)
- Directly to a DECT handset.

Therefore, the Sonus SBC-1000/2000 will be configured to do a LDAP look-up in the Active Directory of the user of the destination number to be able to decide where to route the call.

Example Environment

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

- All users are homed the MS Teams environment
- Azure AD Domain Services is configured and has Secure LDAP enabled
- Local extensions are in the1xxx range
- E.164 numbers are in the +14251001xxx range
- Fake E.164 routing prefix is +999

Chapter 3: Sonus SBC-1000/2000 Setup

Below is a description of how to perform a general setup of the Sonus SBC-1000/2000, create the transformation tables, call routing tables and signaling groups and populate the call routing tables to be able to make calls.

General Setup

Open the Sonus SBC-1000/2000 user interface, and then configure a Local Registrar named "DECT Endpoints" (see **SIP**> **LocalRegistrars** menu).

Creating Transformation Tables

The following three types of transformation tables must be created:

- TransformationTable "MS Teams to DECT"
- TransformationTable "DECT to MS Teams"
- TransformationTable "DECT to DECT"

Create a Transformation Table "MS Teams to DECT"

Add a transformation table "MS Teams to DECT" with rules to match local numbers in E.164 format:

- Description: Match local numbers
- Match type: Optional
- Input Field Type: Called Address/Number
- Input Field Value: ^(\+14251001\d{3})$
- Output Field Type: called address/Number
- Output Field Value: \1

Create a Transformation Table "DECT to MS Teams"

Add a transformation table "DECT to MS Teams" with rules convert to E.164 format:

- Description: Convert to E.164
- Match type: Optional
- Input Field Type: Called Address/Number
- Input Field Value: ^(1.[7-9]\d{1})
- Output Field Type: Called address/Number
- Output Field Value: +1425100\1

Create a Transformation Table "DECT to DECT"

Add a transformation table "DECT to DECT" with rules to convert to E.164 format:

- Description: Convert to E.164
- Match type: Optional
- Input Field Type: Called Address/Number
- Input Field Value: ^(1.[0-6]\d{1})
- Output Field Type: Called Address/Number
- Output Field Value: +1425100\1

Create Call Routing Tables

The following two types of call routing tables must be added:

- Call Routing Table entry named "From DECT"
- Call Routing Table entry named "From MS Teams"

Create Signaling Groups

The following signaling group must be added:

- SIP Signaling Group named "DECT"

Add SIP Signaling Group named "DECT"

- Description: "DECT"
- Call Routing Table: "From DECT"
- SIP Mode: Local Registrar
- Registrar: "DECT Endpoints"

Populate Call Routing Tables

Call Routing Table entry named "From DECT"

Add these entries to the Call Routing Table entry named "From DECT":

1. A route from DECT to MS Teams:

- Description:
  "To MS Teams"
- Transformation Table:
  "DECT to MS Teams"
- Destination Signaling Groups:
  “MS Teams”

2 A route from DECT to DECT:

- Description:
  "DECT to DECT"
- Transformation Table:
  "Spectralink: DECT to DECT"
- Destination Signaling Groups:
  Spectralink: DECT

Call Routing Table entry named "From MS Teams"

Add these entries to the Call Routing Table entry named "From MS Teams" with his entry:

1 A route from from MS Teams to DECT:

- Description: "To DECT"
- Transformation Table: "MS Teams to DECT”
- Destination Signaling Groups: “DECT”

Chapter 4: Spectralink IP-DECT/Virtual IP-DECT Server

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

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

SIP settings

The Spectralink IP-DECT/Virtual IP-DECT Server requires a few SIP settings to be adjusted in order to connect properly to the Sonus SBC-1000/2000.

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 as below.

Field	*Setting*
SIP Configuration General	
Transport	Select UDP
Default domain	Enter the IP address/hostname of the Sonus SBC-1000/2000 E.g. hor-rd-sonus.spectralink.com

Adding Users

Add users to the Spectralink IP-DECT/Virtual IP-DECT Server using E.164 numbers as the username in the +14251001xxx range (replacing the +4575602850 username shown in the figure below).

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

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