Spectralink 84-Series Feature Phones

anynode SBC

Interoperability Guide

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Chapter 1: About This Guide

This guide describes how to configure a Spectralink 84-Series feature phone for connecting to Microsoft Teams using an anynode SBC.

This guide is intended for qualified technicians and the reader is assumed to have a basic knowledge about the Spectralink 84-Series feature phones, Microsoft Teams and anynode SBC. It is also assumed, that you have an installed and functioning Microsoft Teams, anynode SBC and Spectralink 84-Series feature phone.

The guide is divided into two parts:

- anynode SBC
- Spectralink 84-Series

Each part 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.

Setup of the MS Team and basic setup of the anynode SBC are also not covered. For more information about these tasks, see the relevant Microsoft and AudioCodes 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.
anynode SBC	Navigate to the anynode SBC Documentation Portal for the latest anynode SBC documentation. (4.0.19 or later)
Spectralink 84-Series Feature phones	For more information about the feature phone, refer to the 84-Series User 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, bugfixes, outstanding issues, and hardware compatibility considerations for new software releases. Available online at http://support.spectralink.com/products.
Spectralink Training material	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 from 84 Series Call transfer--blind Call waiting Call forward on No Answer and Always
User experience	Centralized phone book via Active Directory and LDAP
Voice Quality	Codecs: G.711, G.722, G.729
Value added Spectralink features	Rich APIs for third-party solutions integration Instant Messaging / Personal Alarm Real Time Location Services (RTLS) (required third party solution)

Prerequisites

The following must be configured/installed:

- anynode SBC with the following licenses:
  - TEAMS (for Microsoft Teams only)
  - Far End Users (FEU)
- For Microsoft Teams tenants, a Direct Route has been setup and configured with the AudioCodes Mediant SBC set up as gateway
- LDAP access to an Active Directory hosting the users and credentials for a user with read access.
- Spectralink 84-Series Feature Phones installed with software 6.2.2.2238 or newer.

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 84-Series feature phone to do proper call routing.

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

Note

With the setup in this guide, it is not possible to assign the same telephone number to both a Microsoft Teams Client and an 84-Series feature phone simultaneously.

For routing purposes, it is recommended, that the telephone numbers assigned to 84-Series feature phone are kept in a separate range.

Integration Sequence

The basic 84-Series feature phone and anynode SBC integration consists of the following steps:

1. General configuration
   For more information, see General Setup.
2. Create Registrar for SIP phones
   For more information, see Creating a node as registrar for SIP phones.
3. Create Network Interface.
   For more information, see Creating a Network Controller.
4. Create Message Manipulation
   for more information, see Create Port Settings.
5. Add User information.
   For more information, see Creating a User Directory.
6. Add more users
   For more information, see Add more and modify users.

Admin Tip

As MS Teams 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

So that users with both an 84-Series feature phone and a MS Teams Client can receive calls on both endpoints, all MS Teams Clients must be configured for Simultaneous Ringing on the 84-Series feature phone. 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 84-Series feature phone. A possible solution is to enter the local number with a fake E.164 prefix and then transform to the correct prefix in the anynode SBC.

It is recommended to use an unused E.164prefix, e.g. +999.

When a call originates from an 84-Series feature phone, the anynode SBC will need to know if the call should be routed either:

- To a MS Team Client (and possibly also an 84-Series feature phone via Simultaneous Ringing)
- Directly to an 84-Series feature phone.

Therefore, the anynode 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
- E.164 numbers for Teams are in the +1425100109x range
- E.164 numbers for 84-Series feature phones are in the 1xxx local number range
- Anynode SBC with IP address 172.29.194.102
- 84-Series feature phones with the IP address 172.29.194.*
- Fake E.164 routing prefix is +999

Chapter 3: anynode SBC Setup

Below is a description of how to perform a general setup of the anynode SBC to be able to make calls.

For this example, the installation IP address is 172.29.194.102 using IPv4 protocol

General Setup

Open the anynode user interface and select **Configuration Mode> wizard**.

The wizard is a step-by-step guide to perform the necessary settings to perform the networks interface and a local SIP Registrar using a User Directory for SIP endpoints credentials.

Alternatively, the configuration can be set manually via the anynode **Configuration Mode> Objects.**

For further details please consult the anynode SBC documentation portal.

Creating a node as registrar for SIP phones

Select **Other Scenarios> Create a node as registrar for SIP phones.**

Creating a Network Controller

Select **Start> Configure**

In the Create new Node window select Create new network controller and set the following:

- **Name> SIP Phones**
- **Network> IP Wi-Fi SIP Phones**
- **IPv4** (IP version - for this example)
- **172.29.194.102** (IP address - for this installation)

Create Port Settings

Select **Next** to go to Ports setting:

- **UDP/TCP Port> 5060**
- **TLS Port> 5061**

And depending on the installation the port ranges can be selected.

For this example:

- **UDP> Unrestricted UDP port range**
- **TCP> Restrict TCP port range to 57000 – 65535**

Admin Requirement TLS

After finishing configuration wizard this setup requires to go and select **Configuration Mode> SIP Phones> SIP Transport> Open All +++> Transport Layer> Allow to use incoming transport flows for sending new requests**.

Creating a User Directory

Go **Next** to User Directory and select **Create new user directory**

- Enter the Directory name: **SIP Phones**

Add a User Record

Select **Add**:

This is to add the SIP user data:

- **SIP Username> wifi1197**

Next to authentication and for this example we use:

- **Do not store SIP authentication for this user**
- **Next** to select the SIP Node Registrar Dial Strings and enter: **1197**
- **Next** to select **Establish a call to all registered endpoints simultaneously**

Selecting **Finish** goes **to Routing.**

Routing

This uses the default setting, so select **Finish.**

Add more and modify users

More users can be added using wizard selecting **Other Scenarios> Create a node as registrar for SIP phones> add, edit or remove users of an existing User Directory**

Select **Start> Select an existing User Directory> SIP Phones> Next**

Here you can add a user record:

Select **Add**:

This is to add the SIP user data:

- **SIP Username> wifi1198**

Next to authentication and for this example we use

- **Do not store SIP authentication for this user**
- **Next** to select the SIP Node Registrar Dial Strings and enter: **1198**
- **Next** to select **Establish a call to all registered endpoints simultaneously**

Continue with more users e.g. wifi1199.

When a batch of users exist a .CSV list can be imported via selecting **Import**.

Admin Tip

Also Edit, Remove, Clone are possible.

Chapter 4: Spectralink 84-Series Config Files

Enable the interop features on the 84-Series provisioning server by updating each phone's configuration file(s).

Note

Settings not mentioned below should be left at their default values.

Below is a description of how to perform a setup of the 84-Series config files:

site.cfg

```
reg.1.server.1.address="172.29.198.102"
reg.1.server.1.port="5060"
dialplan.removeEndOfDial="1"
dialplan.digitmap="x.T"
```

[MAC]-ext.cfg

```
reg.1.address="="1197" (e.g. for handset with local no. 1197)
```

*These settings refer to SIP register without digest authentication. For other Spectralink 84-Series features, please refer to the *Spectralink 84-Series Wireless Telephone Administration Guide* available on the Spectralink support site at http://support.spectralink.com/products/wi-fi/spectralink-84-series-wireless-telephone.

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