Ribbon ATA EdgeMarc 300 R16.2 Interop with Zoom : Interoperability Guide

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Interoperable Vendors

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Document Overview

This document outlines the configuration best practices for the Ribbon solution covering the EdgeMarc 300 series ATA (Analog Telephone Adaptor) when deployed with Zoom.

The Ribbon EdgeMarc 300 is a low-density analog gateway or ATA device that gives small businesses, SOHOs and branch offices with analog voice infrastructures an easy, cost-effective way to capitalize on Voice over Internet Protocol (VoIP) services. The EdgeMarc 300 Series offers a solution, providing support for integrating analog endpoints and the Public Switched Telephone Network (PSTN) and support for all Session Initiation Protocol (SIP) calls. The EdgeMarc 300 supports any-to-any connectivity between analog and SIP devices, enabling branch offices to rapidly migrate analog phones onto SIP-based networks and communicate seamlessly.

The interoperability compliance testing focuses on verifying inbound and outbound call flows between Ribbon EdgeMarc ATA & Zoom Cloud.

This guide contains the following configuration sections:

- Section A: Ribbon EdgeMarc Configuration
  - Captures general EdgeMarc 300 configurations for provisioning with Zoom.
- Section B: Zoom Configuration
  - Captures the Zoom configuration.
- All basic calls, along with the supplementary features like call hold, call transfer, and conference can be tested with configurations from Section A and Section B.
- Advanced supplementary features can be configured on Zoom as mentioned in Supplementary Services Configuration on Zoom. These cover:
  - Auto Receptionist
  - Call Flip
  - Shared Line Appearance (SLA) or Call Delegation
  - Shared Line Group (SLG)

Non-Goals

It is not the goal of this guide to provide detailed configurations that will meet the requirements of every customer. Use this guide as a starting point and build the ATA configurations in consultation with network design and deployment engineers.

Audience

This is a technical document intended for telecommunications engineers with the purpose of configuring the Ribbon ATA.

To perform this interop, you need

- to use graphical user interface (GUI) or command line interface (CLI) of the Ribbon product.
- to understand the basic concepts of TCP/UDP/TLS and IP/Routing.

- to have SIP/RTP/SRTP to complete the configuration and for troubleshooting.

> **Note**
> This configuration guide is offered as a convenience to Ribbon customers. The specifications and information regarding the product in this guide are subject to change without notice. All statements, information, and recommendations in this guide are believed to be accurate but are presented without warranty of any kind, express or implied, and are provided “AS IS”. Users must take full responsibility for the application of the specifications and information in this guide.

Prerequisites

The following aspects are required before proceeding with the interop:

- Ribbon EdgeMarc 300 series
- Public IP Addresses
- Zoom Go account - a special type of Zoom account that has the option to provision the ATA device.
- TLS Certificates for Ribbon EdgeMarc 300 series
    - Refer to TLS Configuration between Ribbon EdgeMarc and Zoom

Product and Device Details

The sample configuration in this document uses the following equipment and software:

Table 1: Requirements

	Equipment	Software Version
Ribbon Communications	Ribbon EdgeMarc 304	V16.2.0.sm.EM-26519.1
Zoom	Zoom Desktop app	5.7.7 (1105)
	Zoom Mobile app	5.8.1 (2403)
Third-party Phones	Beetel Analog Phone	NA

> **Note**
>
> - The Ribbon EdgeMarc 300 portfolio includes EdgeMarc 302, EdgeMarc 304. Hence, this configuration guide is valid for all these devices.
> - Zoom Desktop app version is 5.7.7 (1105) or later.
> - Zoom Mobile app version is 5.8.1 (2403) or later.

Network Topology Diagram

This section covers the Ribbon EdgeMarc deployment topology and the Interoperability Test Lab Topology.

Ribbon EdgeMarc Deployment Topology

Figure 1: Ribbon EdgeMarc Deployment Topology

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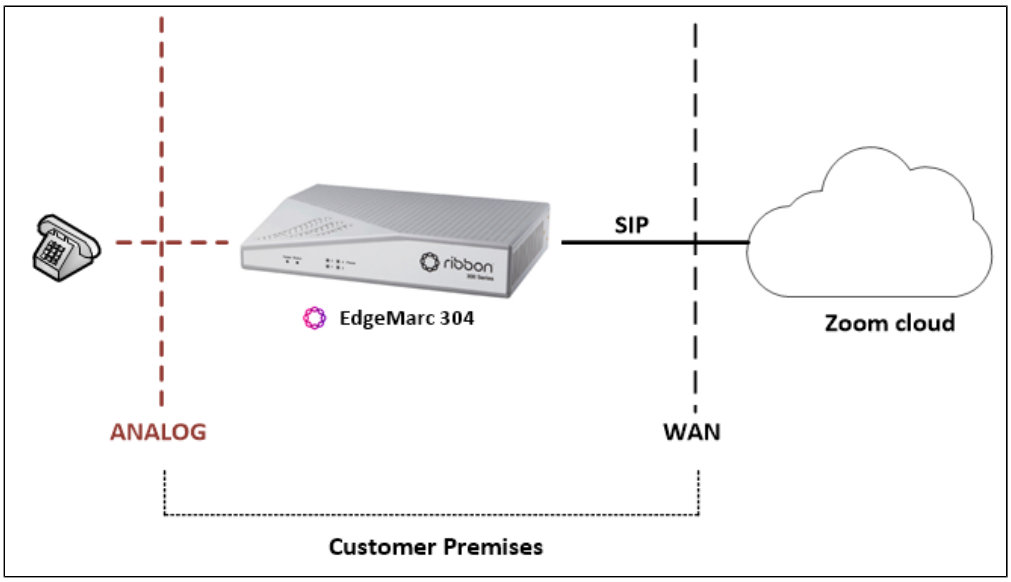
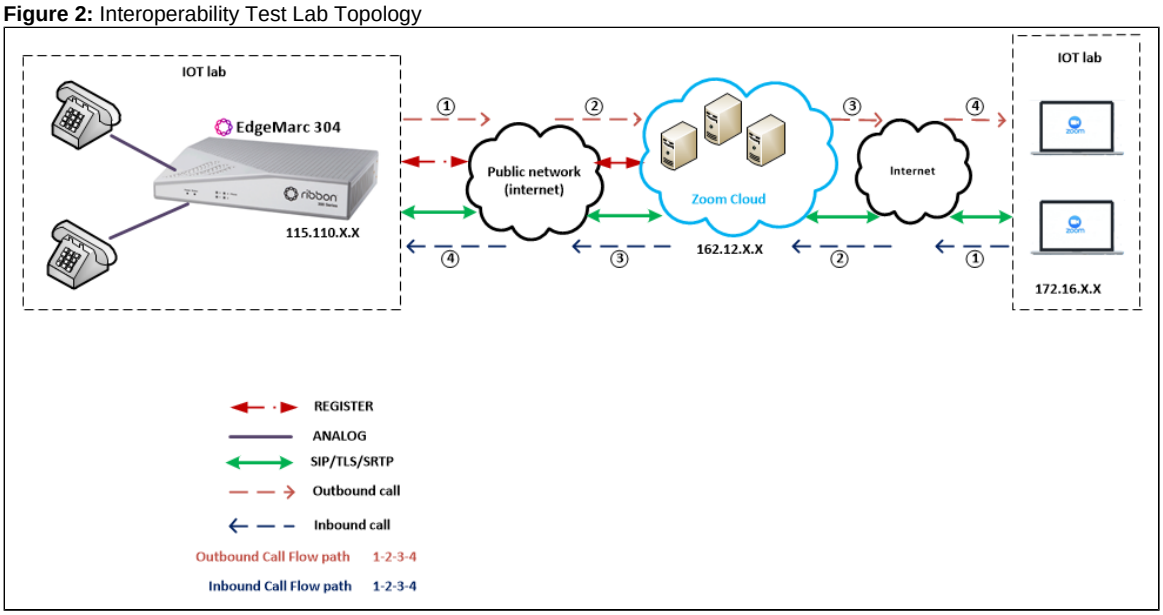


Interoperability Test Lab Topology

The following lab topology diagram shows connectivity between Zoom and Ribbon EdgeMarc ATA.

Figure 2: Interoperability Test Lab Topology



Section A: EdgeMarc Configuration

The following EdgeMarc configurations are included in this section:

1. Connectivity
2. Network
3. SIP UA

Connectivity

Below is an image of the EdgeMarc back panel:

Figure 3: EdgeMarc Back Panel

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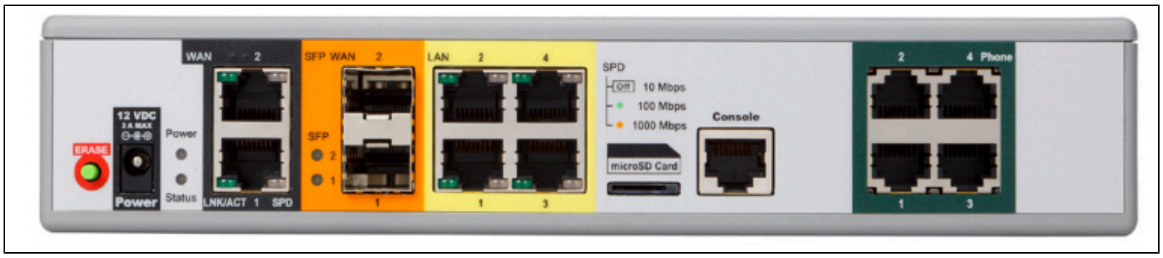

The following table provides details of the EdgeMarc 304 interface/port:

Figure 4: EdgeMarc 304 Interfaces

	EdgeMarc 304
Ports	
LAN 1 Gb/s Ethernet (RJ-45)	4
Phone/FXS (RJ-11)	4
Micro SD (SDXC) slot	1
Console (RJ-45)	1

The current test bed setup uses the following ports:

- **LAN Port** - RJ45 "LAN 1" port is connected to Public network.
- **Phone Port** - RJ11 "Phone 1" and "Phone 2" port connects to a PSTN (Analog) phones.

WAN and SFP WAN ports of EdgeMarc 304 are disabled in the ATA (Analog Telephone Adapter) mode.

Network

To configure the network interface, login to the EdgeMarc as root user and click *Network.*

Figure 5: EdgeMarc Network Interface

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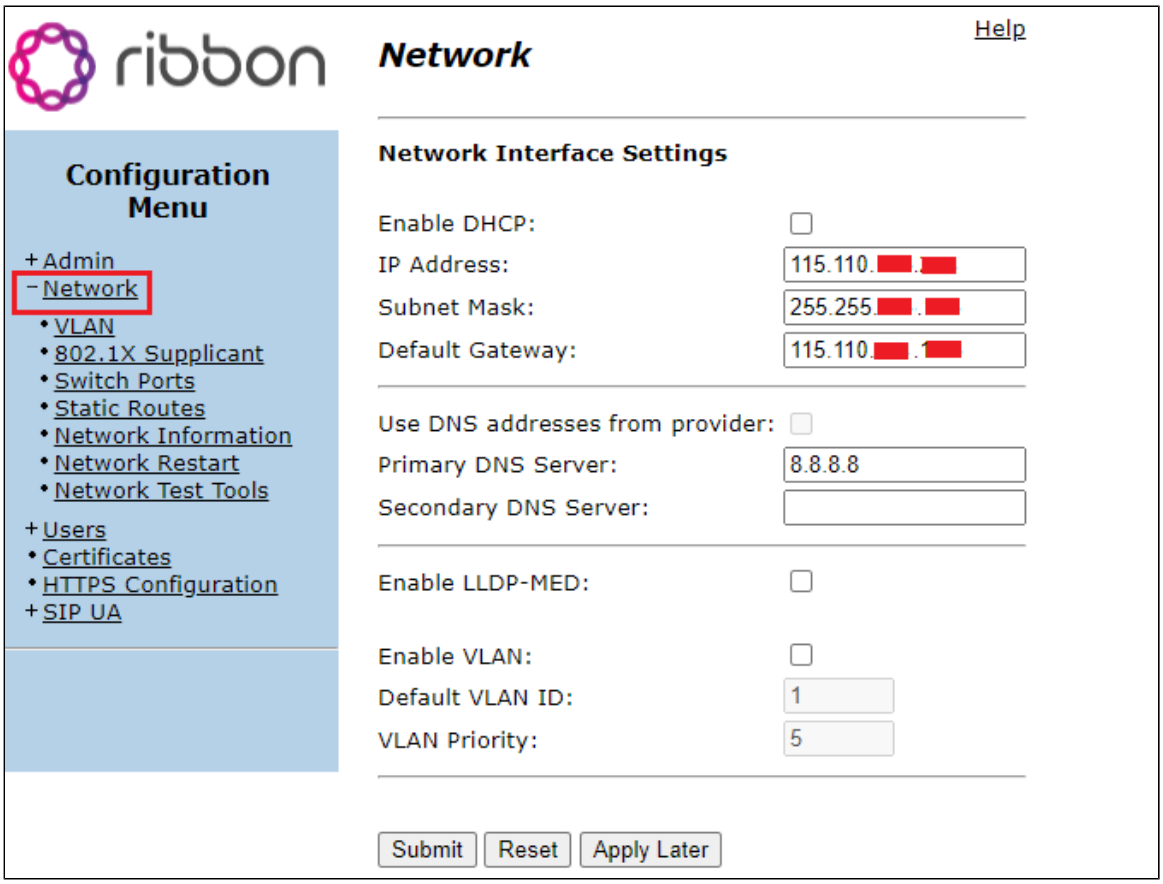
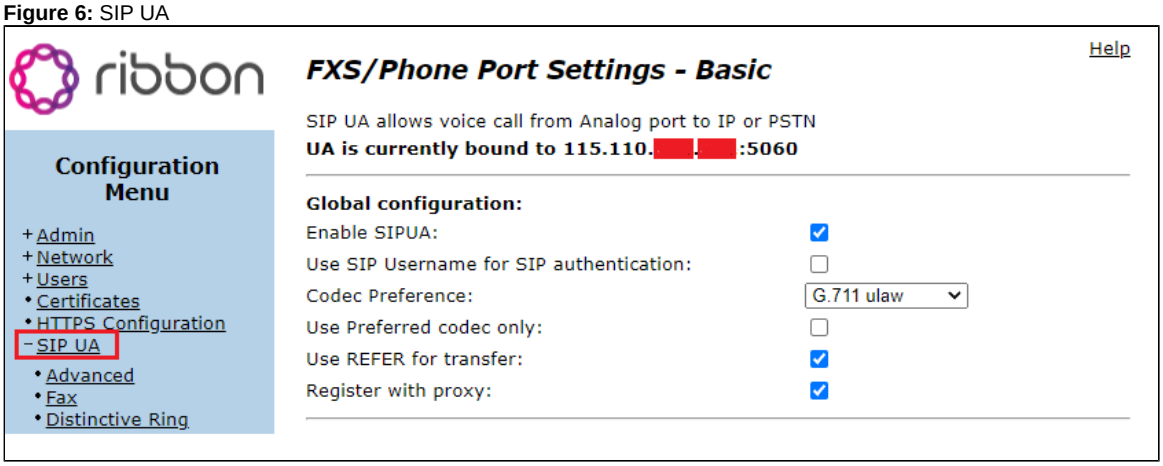


SIP UA

To configure SIP UA:

1. Navigate to **SIP UA**.

Figure 6: SIP UA



> Port 1 and Port 2 configuration details can be retrieved once the EM 300 ATA is added to the Zoom portal.
>
> To add EM 300 ATA to the Zoom portal, navigate to Adding MAC address.

2. Assign Port 1 and Port 2 with the PSTN number as follows:

Figure 7: Port Level Basic Config

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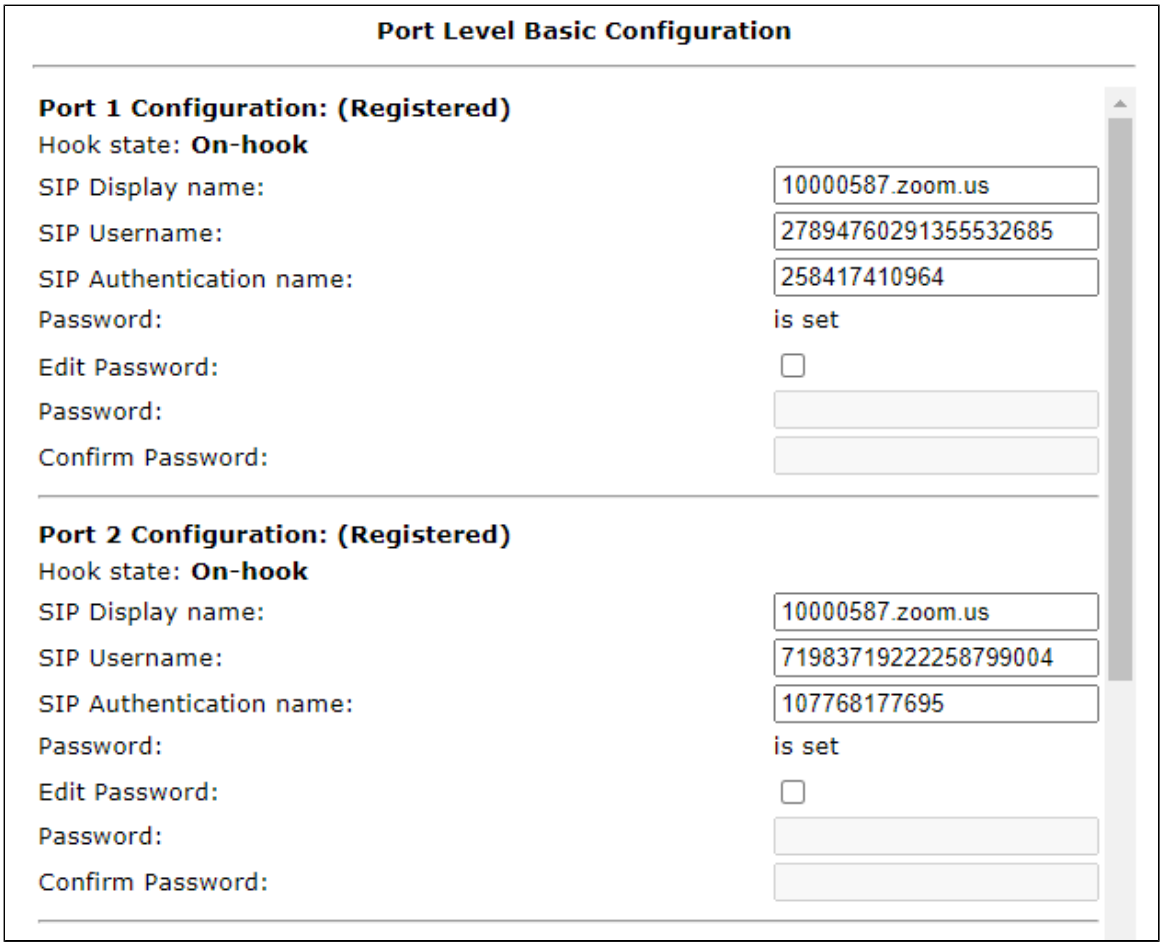
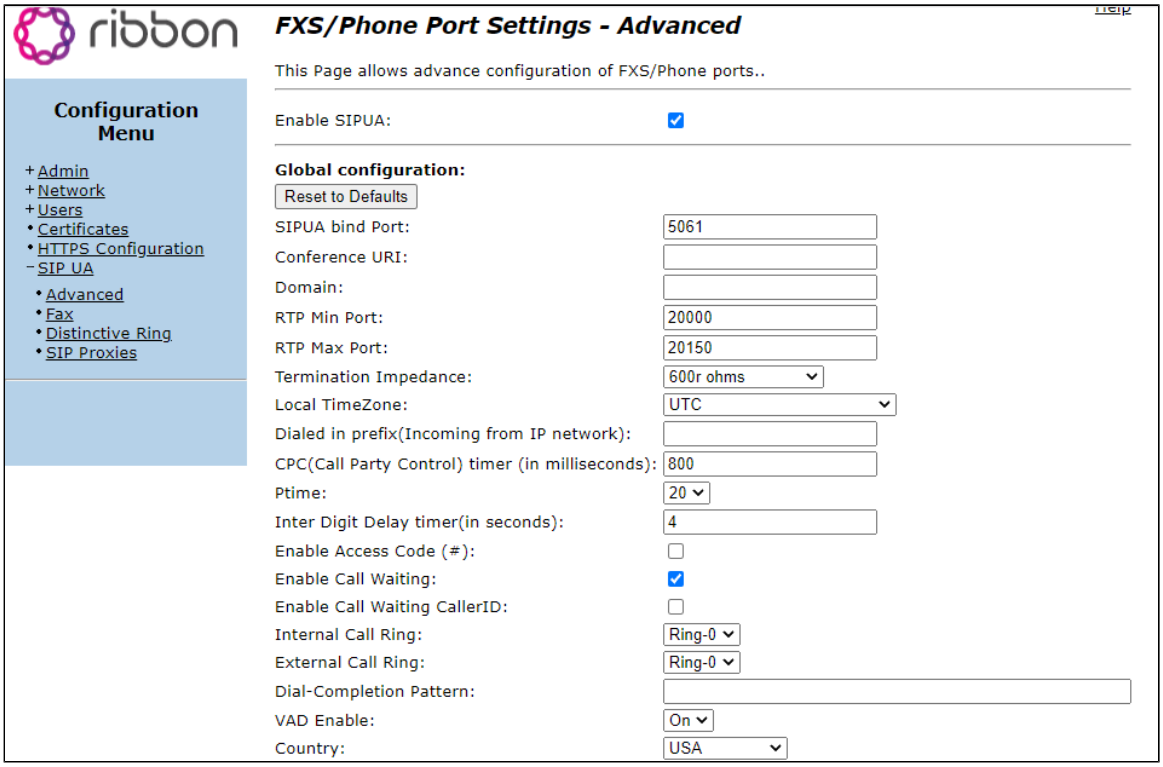


3. Navigate to **SIP UA Advanced** and configure as shown below:

Figure 8: Advanced Config



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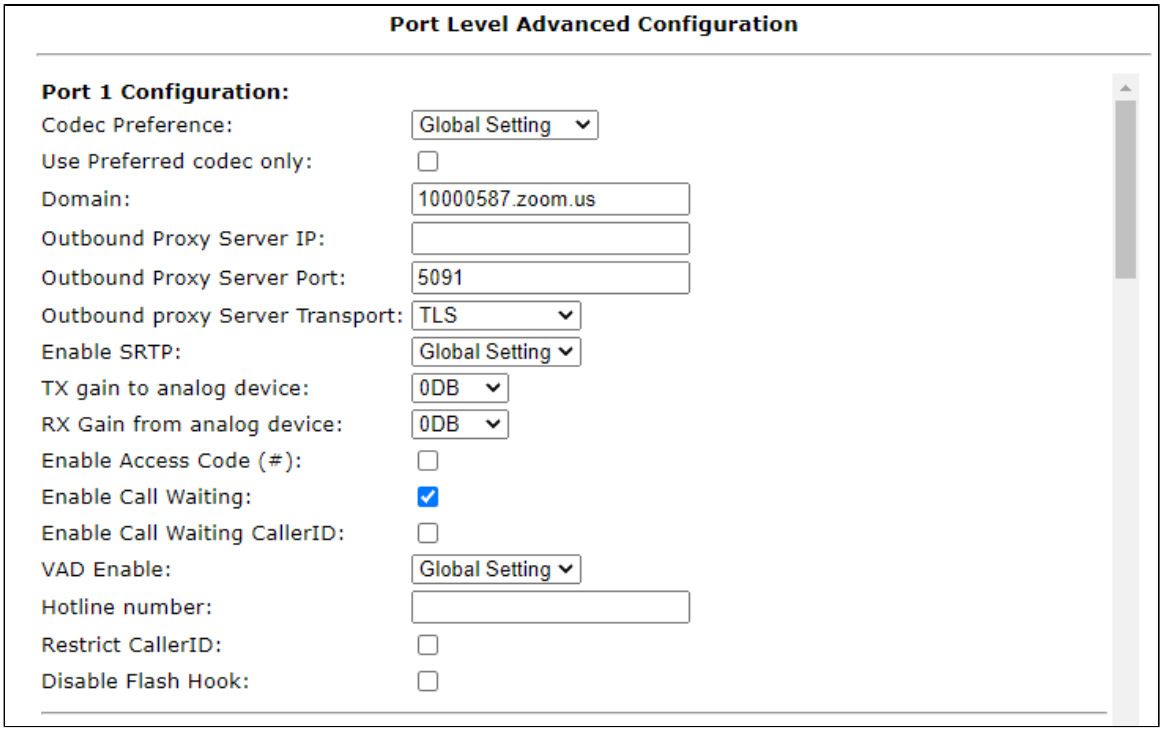

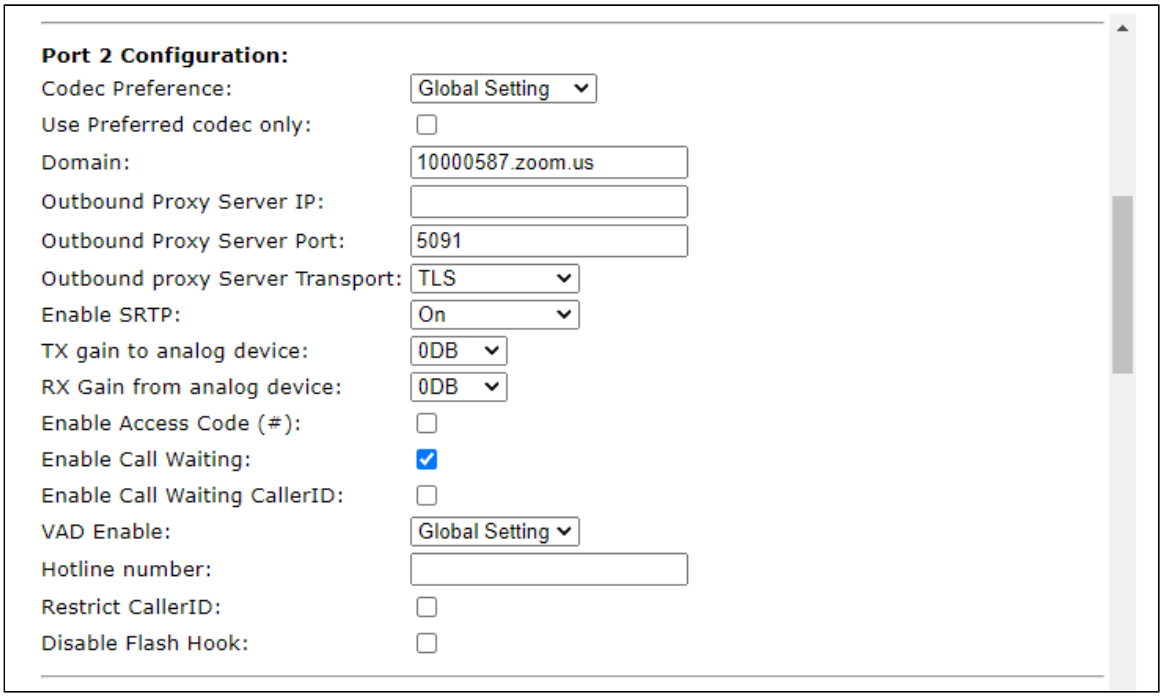

4. Navigate to **SIP UA SIP Proxies**.

Figure 9: SIP Proxies

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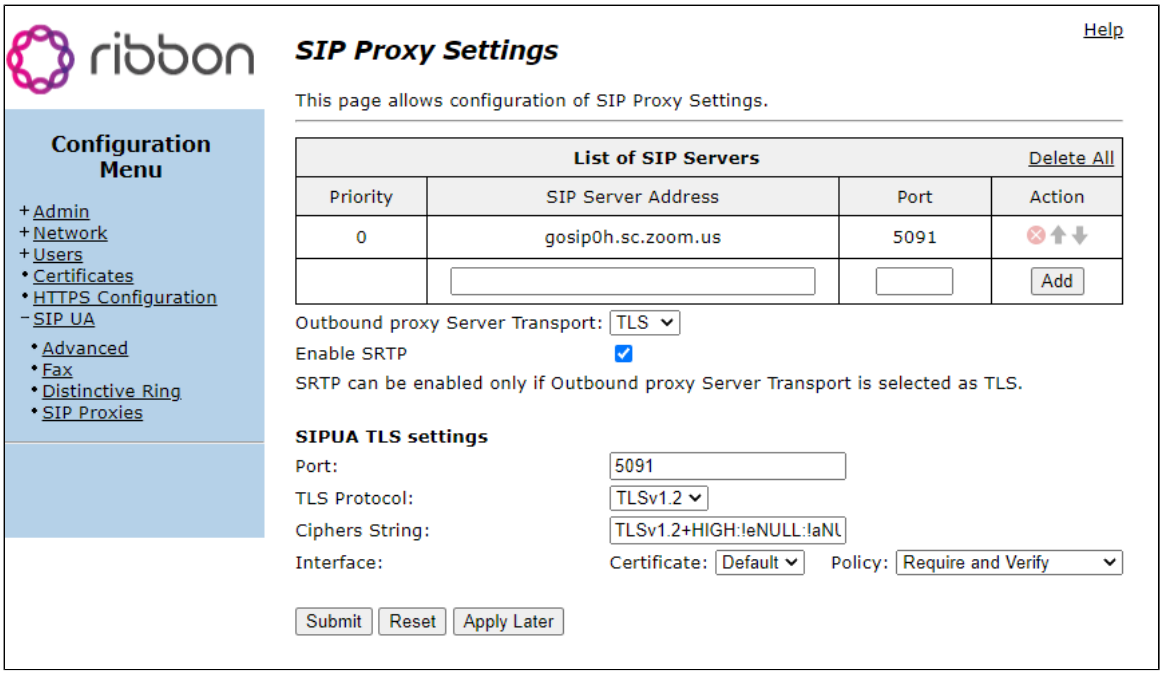

Section B: Zoom Configuration

Login to Zoom Go account Web portal at https://go.zoom.us/.

This section describes the following Zoom configurations:

1. Adding MAC address to Zoom.
2. TLS Configuration between Ribbon EdgeMarc and Zoom
3. Configuring supplementary services configuration on Zoom

Adding MAC Address to Zoom

1. Navigate to **Phone Systems Management > Phones & Devices > Deskphone**.
2. Select **Add Desk Phone** and add the MAC address of the Ribbon EdgeMarc 304.
3. Assign the Zoom Users as shown below and click **Save**.

Figure 10: Add MAC Address

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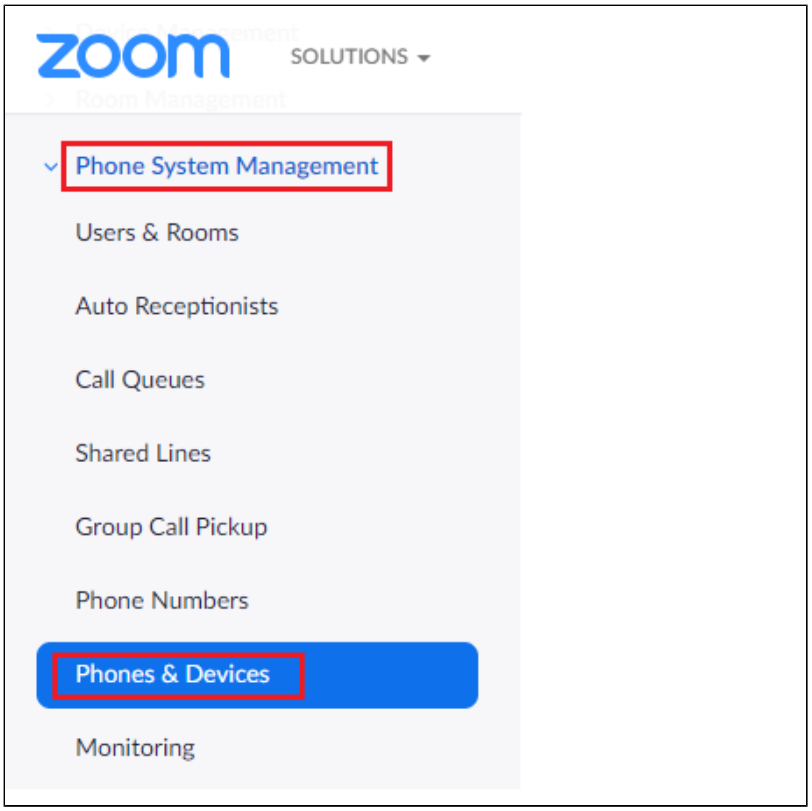
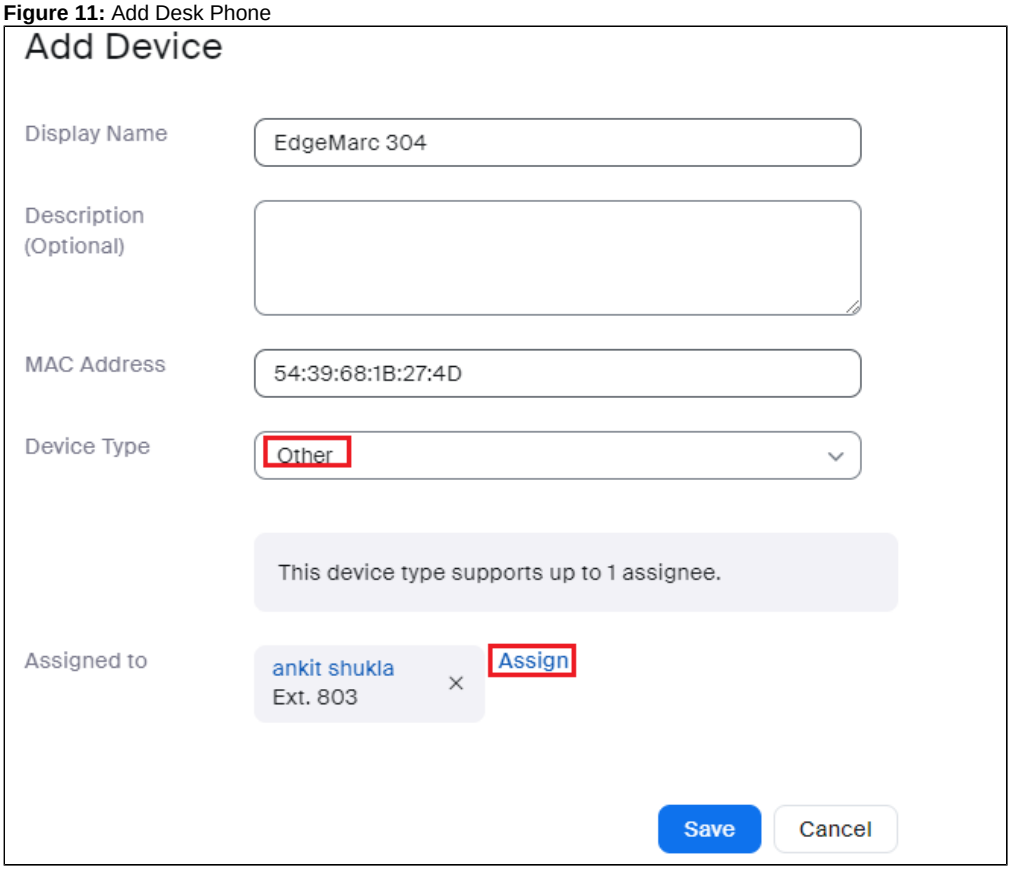


Figure 11: Add Desk Phone



4. Provision the User as follows:

Figure 12: Actions

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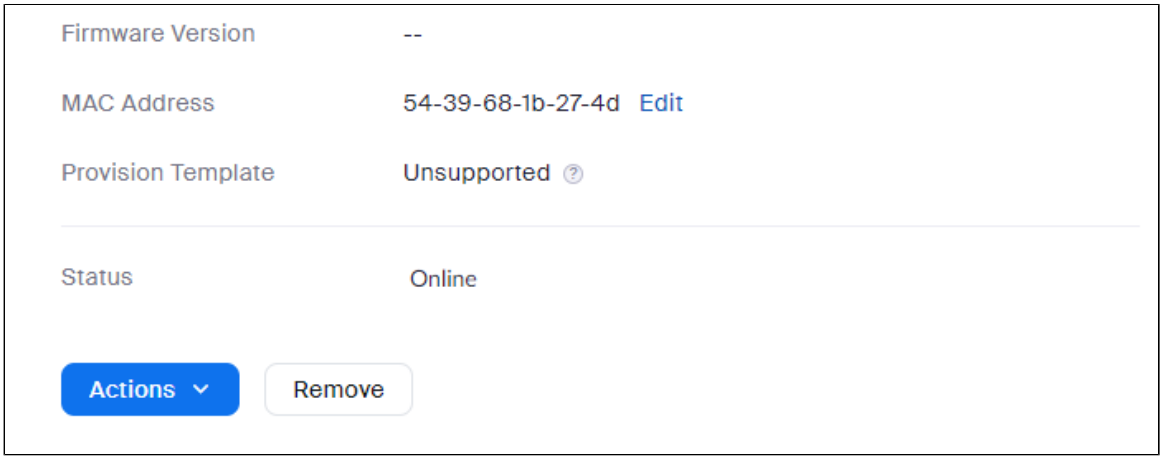

Click **Actions > Provision,** as shown above:

Figure 13: Provisioning

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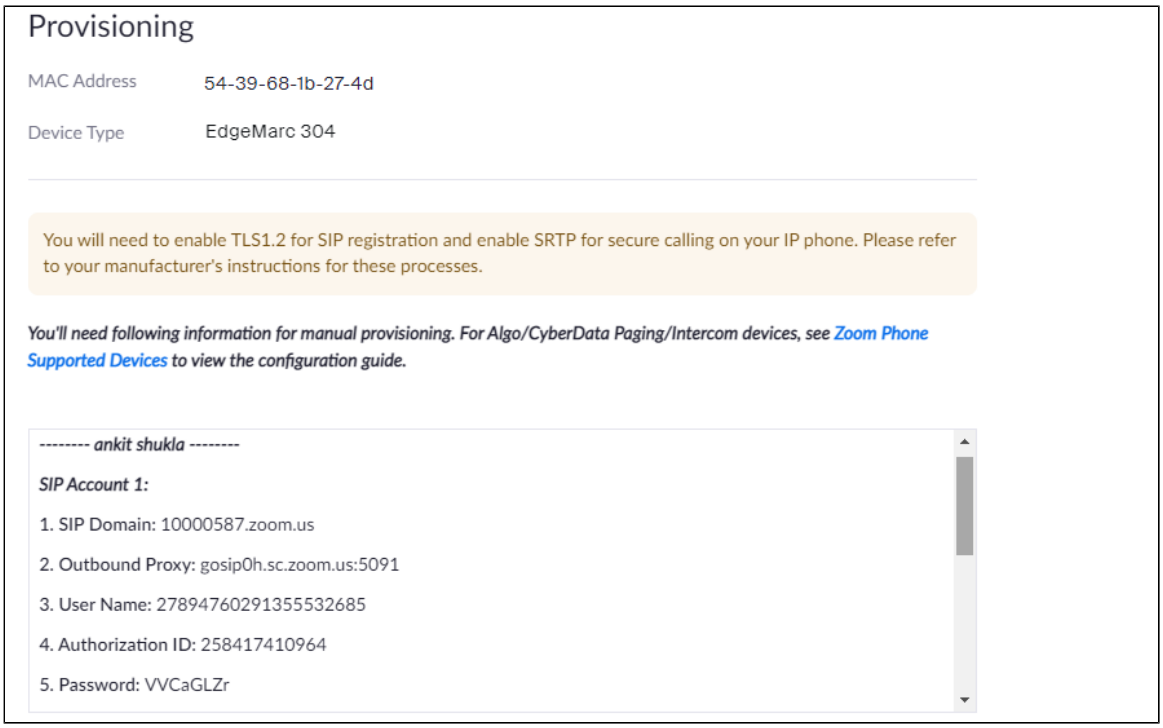

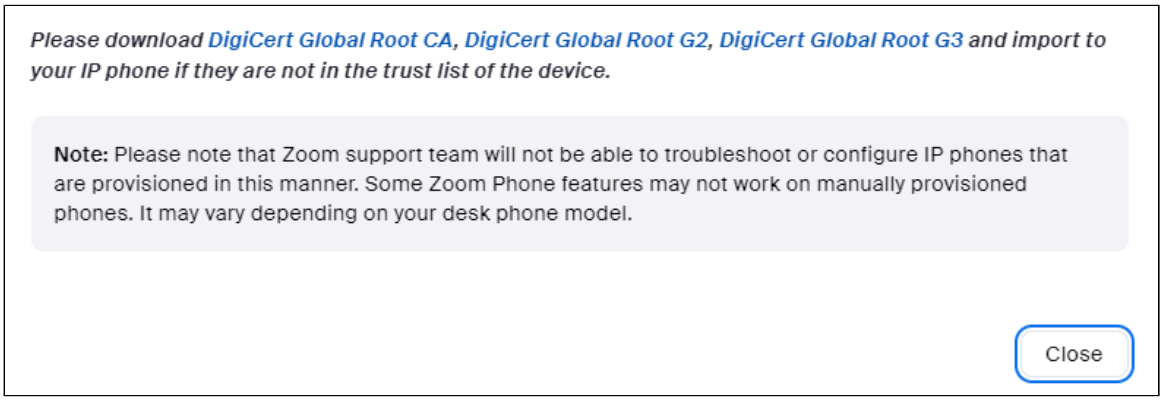

TLS Configuration between Ribbon EdgeMarc and Zoom

As mentioned in the Zoom Desk Phone Provisioning page:

> ***Please download DigiCert Global Root CA, DigiCert Global Root G2, DigiCert Global Root G3 and import to your IP phone if they are not in the trust list of the device.***

Upload the following certificates to the Ribbon EdgeMarc as follows:

Figure 14: Certificates

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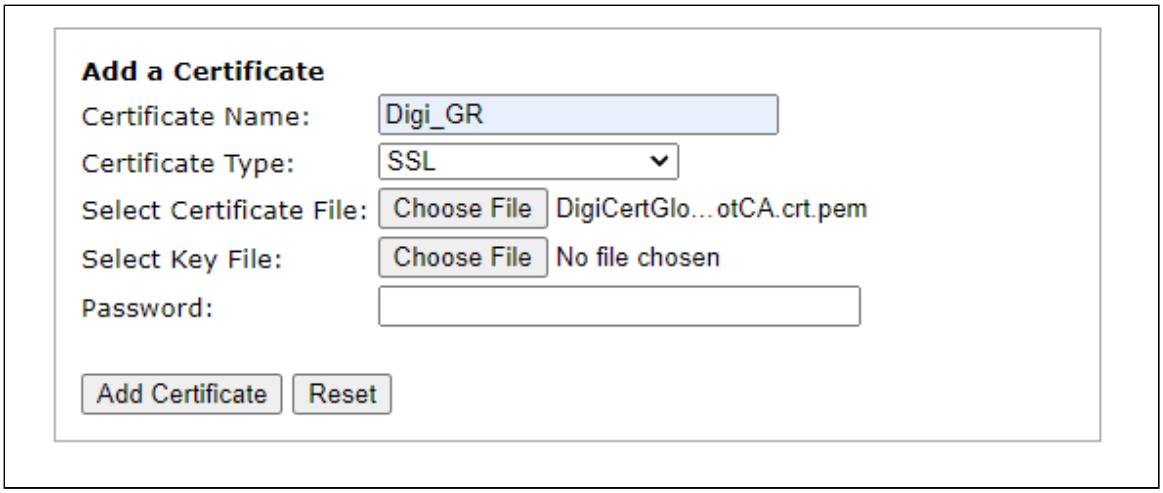
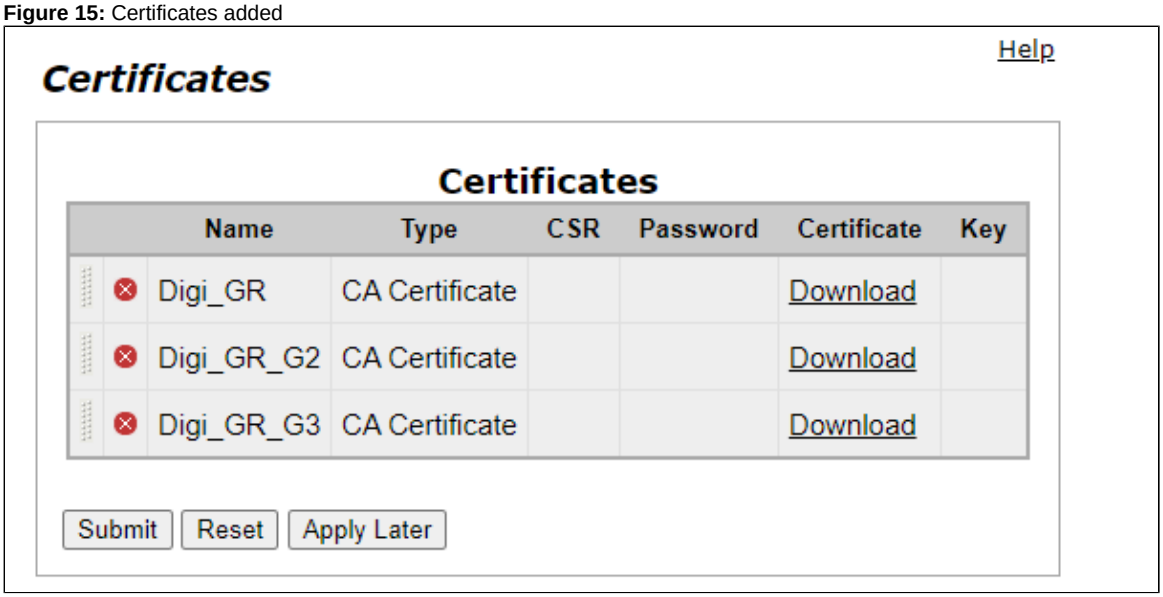


The uploaded certificates are as follows:

Figure 15: Certificates added



Configuring Supplementary Services Configuration on Zoom

Zoom supports multiple supplementary services. To configure different supplementary services in Zoom, refer to the following links:

- Auto Receptionist: https://support.zoom.us/hc/en-us/articles/360001297663-Getting-started-with-Zoom-Phone-admin-#h_a625f531-94c6-4291-909e-3d68ad685b68
- Call Flip: https://support.zoom.us/hc/en-us/articles/360034613311-Using-Call-Flip
- Shared Line Appearance (SLA) or Call Delegation: https://support.zoom.us/hc/en-us/articles/360032881731
- Shared Line Group (SLG): https://support.zoom.us/hc/en-us/articles/360038850792/

Supplementary Services and Features Coverage

The following checklist depicts the set of services/features covered through the configuration defined in this Interop Guide.

Sr. No.	Supplementary Features/Services	Coverage
1	Basic Registration over TLS	✓
2	Basic Call Setup	✓
3	Basic Call Termination	✓

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4	Auto Receptionist (Auto Attendant)	✓
5	Call Hold/Resume	✓
6	Call Transfer - Blind (Cold transfer)	✓
7	Call Transfer - Consult (Warm transfer)	✓
8	Conference	✓
9	Call Waiting	✓
10	Call Queue	✓
11	Shared Line Group (SLG)	✓
12	Shared Line Appearance (SLA) or Call Delegation	✓
13	Call Recording	✓
14	Call Flip	✓
15	Call Park	✓

Legend

✓	Supported
✗	Not Supported
N/A	Not Applicable

Caveats

The following issues were observed during recent interop testing:

- The Message Waiting Indicator (MWI) feature was not available for the Zoom Users behind EM 304 ATA.
- The EdgeMarc 300 was not responding to the INVITE received from Zoom, as it was receiving this INVITE in fragments.
    - This issue is only observed if the INVITE message is large.
    - The issue is resolved in the EM V16.3 release.
- Noise may occur in a conference scenario, when a PSTN (user behind the EM 300) is involved. The fix will be available in upcoming EM releases.

Support

For any support related queries about this guide, contact your local Ribbon representative, or use the details below:

- Sales and Support: 1-833-742-2661
- Other Queries: 1-877-412-8867
- Website: https://ribboncommunications.com/about-us

References

For detailed information about Ribbon products & solutions, go to :

https://ribboncommunications.com/products

For information about Zoom products & solutions, go to:

https://zoom.us/

Conclusion

This Interoperability Guide describes successful configuration covering Zoom interop with Ribbon EdgeMarc ATA.

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All features and capabilities tested are detailed within this document - any limitations, notes or observations are also recorded in order to provide the reader with an accurate understanding of what has been covered, and what has not.

Configuration guidance is provided to enable the reader to replicate the same base setup - there maybe additional configuration changes required to suit the exact deployment environment.

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