

Ribbon SBC Edge R11.0 Interop with Microsoft Survivable Branch Appliance using Poly Teams Phone : 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 Ribbon SBC Edge when deployed with Microsoft Teams vSBA (virtual Survivable Branch Appliance) and the Teams Phone (Poly CCX 600).

About Ribbon SBC Edge

A Session Border Controller (SBC) is a network element deployed to protect SIP-based Voice over Internet Protocol (VoIP) networks. Early deployments of SBCs were focused on the borders between two service provider networks in a peering environment. This role has now expanded to include significant deployments between a service provider's access network and a backbone network to provide service to residential and/or enterprise customers.

The SBC Edge (SBC 1000/2000) addresses the next-generation needs of SIP communications by delivering embedded media transcoding, robust security, and advanced call routing in a high-performance, small form-factor device enabling service providers and enterprises to quickly and securely enhance their network by implementing services like SIP Trunking, secure Unified Communications, and Voice over IP (VoIP).

The SBC Edge provides a reliable, scalable platform for IP interconnect to deliver security, session control, bandwidth management, advanced media services, and integrated billing/reporting tools in an SBC appliance. This versatile series of SBCs can be deployed as peering SBCs, access SBCs, or enterprise SBCs (eSBCs). The SBC product family is tested for interoperability and performance against a variety of third-party products and call flow configurations in the customer networks.



SBC 1000, SBC 2000 and SWe Edge are represented as SBC Edge in the subsequent sections.

About Microsoft Survivable Branch Appliance (SBA)

When a customer site using Direct Routing to connect to Microsoft Phone System experiences an internet outage, the intranet inside the branch is still fully functional. Users can connect to the Session Border Controller (SBC) that is providing the PSTN connectivity.

During an internet outage, the Teams Phone should switch to the SBA automatically. No action is required from the user. As soon as the Teams Phone detects that the internet service is restored and any outgoing calls are finished, the Teams Phone will fall back to normal operation mode and connect to other Teams services.

The interoperability compliance testing focuses on verifying inbound and outbound call flows between the Ribbon SBC Edge, Teams vSBA, and Teams Phone.

About Poly CCX 600 Business Media Phone, Teams Edition

Poly creates premium audio and video products so you can have your best Microsoft Teams meeting—anywhere, anytime, every time. Poly Teams certified headsets, video and audio-conferencing products, and desk phones are engineered to connect people seamlessly across the world.

Poly CCX 600 is a 7 inch multi-touch LCD display, with 2 USB ports (type A and type C), integrated Bluetooth, and Wi-Fi. It has a dedicated Microsoft Teams button, crystal clear sound with Poly HD Voice, Acoustic Fence, and NoiseBlockAI technologies.

The native Microsoft Teams experience on this CCX phone provides a consistent user experience. The dedicated Teams button is there for one-button access to the new features Microsoft delivers. The color touch screen puts contacts and meetings one tap away. The larger screen on the CCX 600 makes you more productive. Robust provisioning and management options make this phone easy for IT to support.



Poly CCX 600 desk-phone is used as a Teams Phone for verifying Ribbon SBC Edge interoperability with Microsoft SBA.

This guide contains the following configuration sections:

- [Section A: Ribbon SBC Edge Configuration](#)
 - Captures general SBC Edge configurations for deploying SBC with Teams vSBA.
- [Section B: Microsoft SBA Configuration](#)
 - Captures the Microsoft SBA configuration.
- [Section C: Poly CCX 600 Configuration](#)
 - Captures the Poly CCX 600 configuration.
- Basic Calls and Call Hold/Resume features can be tested with configurations from Section A, Section B and Section C.

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 SBC configurations in consultation with network design and deployment engineers.

Audience

This is a technical document intended for telecommunications engineers with the purpose of configuring both the Ribbon SBCs and the third-party product.

To perform this interop, you need to:

- use the graphical user interface (GUI) or command line interface (CLI) of the Ribbon product.
- understand the basic concepts of TCP/UDP/TLS and IP/Routing.
- 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 SBC Edge
- Poly CCX 600 (Teams Phone)
- Public IP Addresses
- Microsoft admin account - a special type of account where the Teams user can be configured for Direct Routing SBA (Survivable Branch Appliance).
- TLS Certificates for the Ribbon SBC Core signed by one of the Microsoft approved CA vendors.
- Certificates must have the FQDN or domain name that is configured on the Microsoft admin portal.

Product and Device Details

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

Table 1: Requirements

	Appliance/Application/Tool	Software Version
Ribbon Communications	SWe Edge	11.0.1 build 47
	SBC 2K	11.0.1 build 634
Microsoft	Survivable Branch Appliance (SBA)	v.2022.6.14.1
Poly	Poly CCX 600	8.0.1.4106
	Teams version on Poly CCX 600	1449/1.0.94.2022090705
PSTN Phone	Jitsi	2.10
Administration and Debugging Tools	Ribbon LX Tool	2.1.0.6

Note

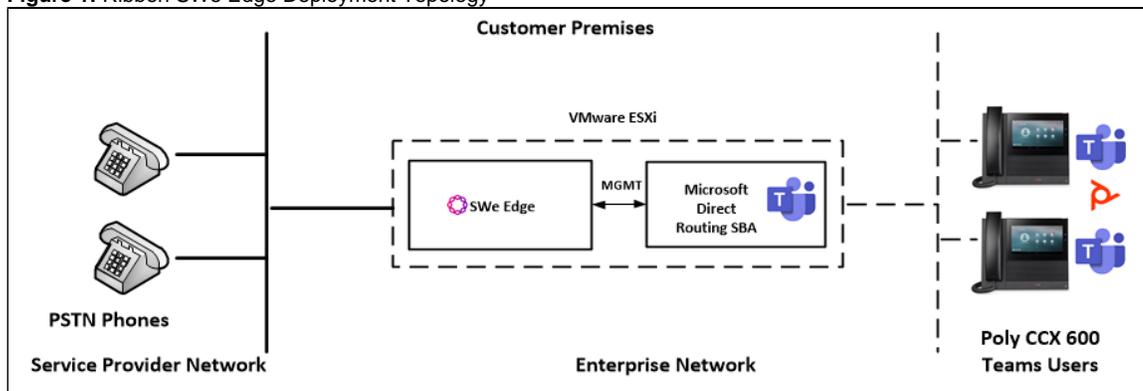
- Microsoft SBA version is v.2022.6.14.1 or later.
- Poly CCX firmware version is 8.0.1.4106 or later.
- Teams version on Poly CCX 600 is 1449/1.0.94.2022090705 or later.
- Jitsi version is 2.10 or later.

Network Topology Diagram

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

Deployment Topology - Ribbon SWe Edge

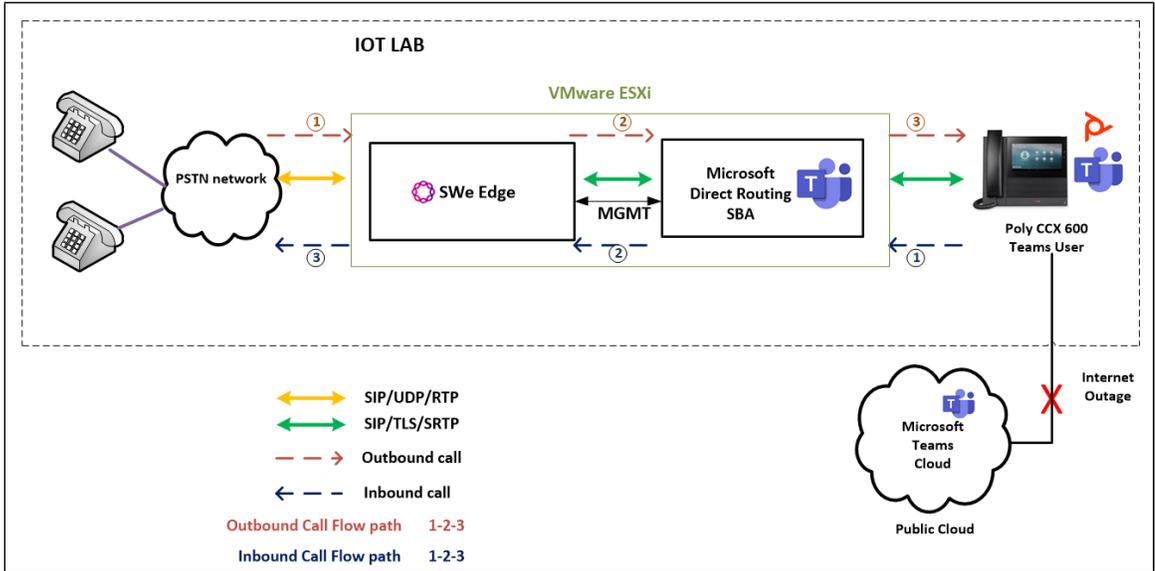
Figure 1: Ribbon SWe Edge Deployment Topology



Interoperability Test Lab Topology - Ribbon SWe Edge

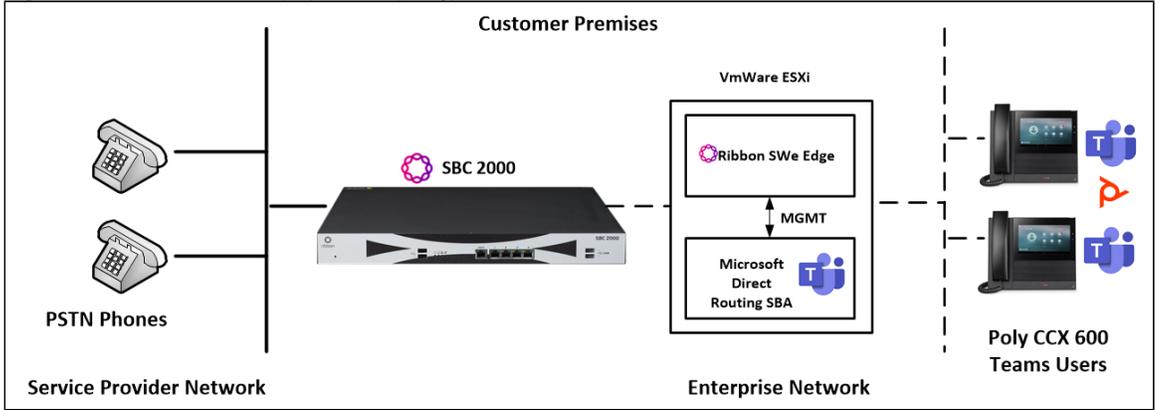
The following lab topology diagram shows connectivity between Ribbon SWe Edge on virtual platform, Microsoft SBA, and Teams Phone (Poly CCX 600).

Figure 2: SWe Edge and Microsoft SBA interoperability Test Lab Topology



Deployment Topology - Ribbon SBC 2K

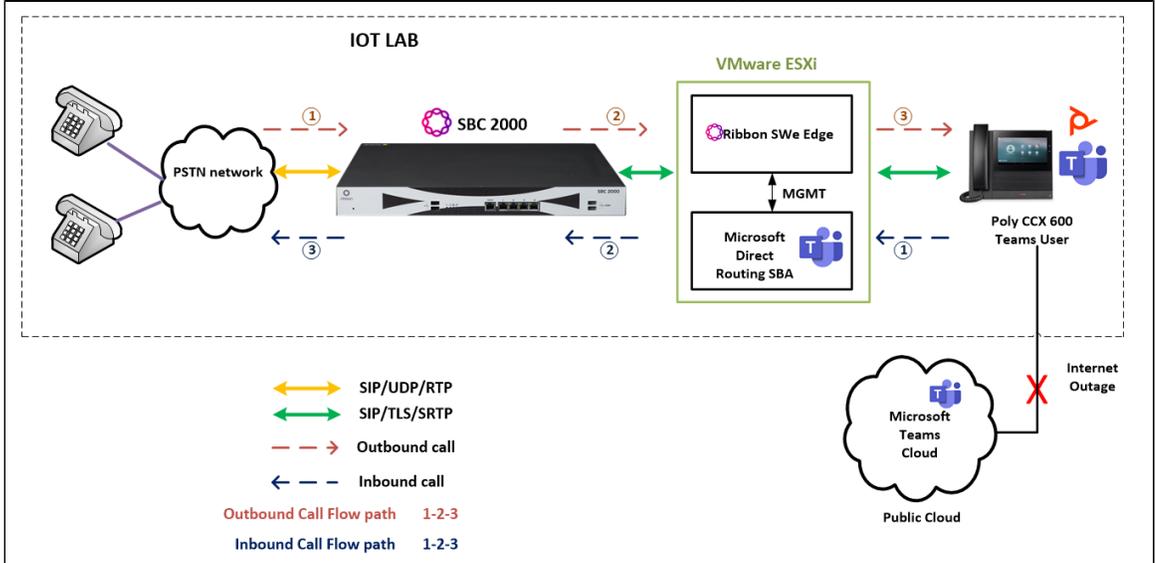
Figure 3: Ribbon SBC 2K Deployment Topology



Interoperability Test Lab Topology - Ribbon SBC 2K

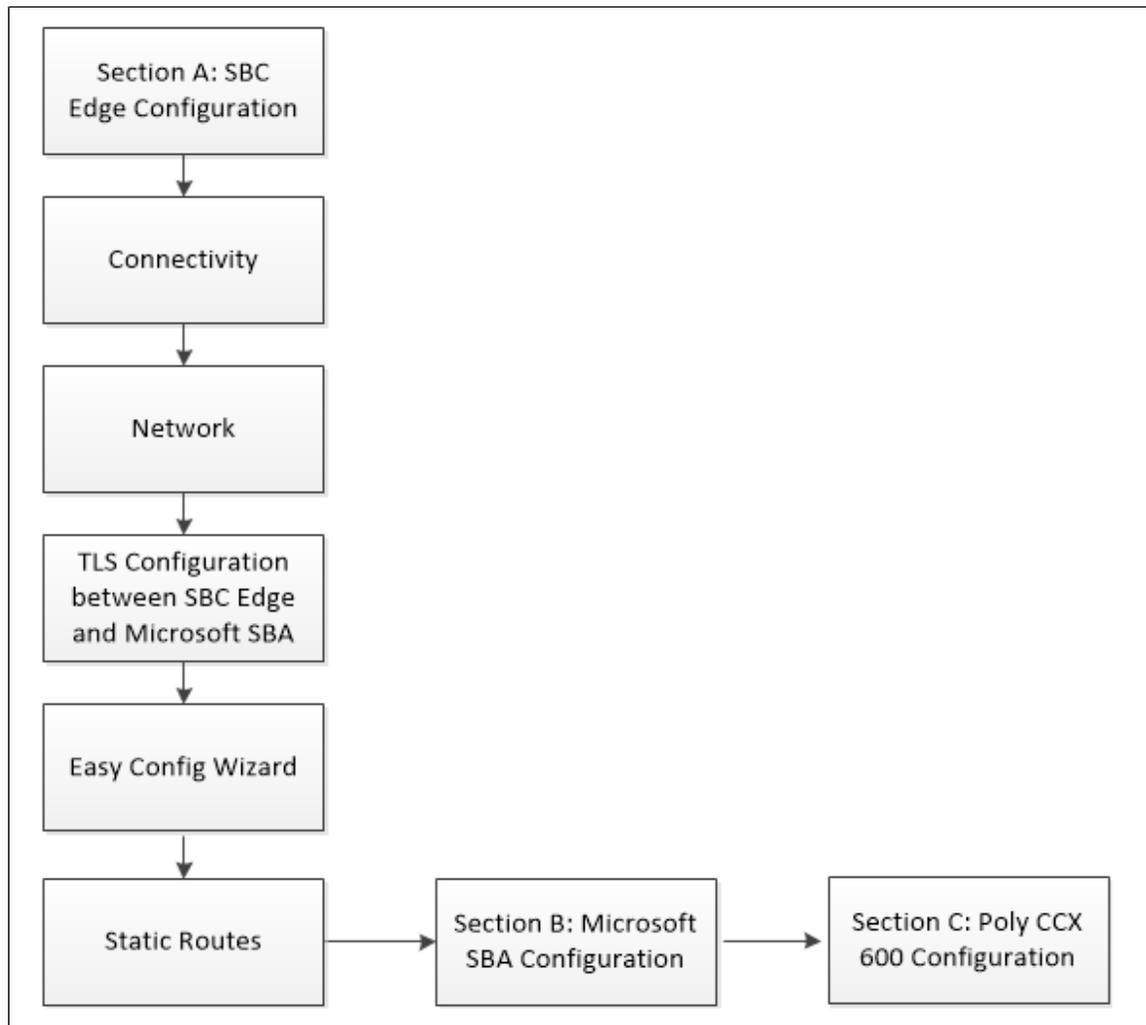
The following lab topology diagram shows connectivity between Ribbon SBC 2K, Microsoft SBA, and Teams Phone (Poly CCX 600).

Figure 4: Ribbon SBC 2K and Microsoft SBA interoperability Test Lab Topology



Document Workflow

The sections in this document follow the sequence below. The reader is advised to complete each section for successful configuration.



Section A: Ribbon SBC Edge Configuration

The following SBC Edge configurations are included in this section:

[Connectivity](#)

[Network](#)

[Static Routes](#)

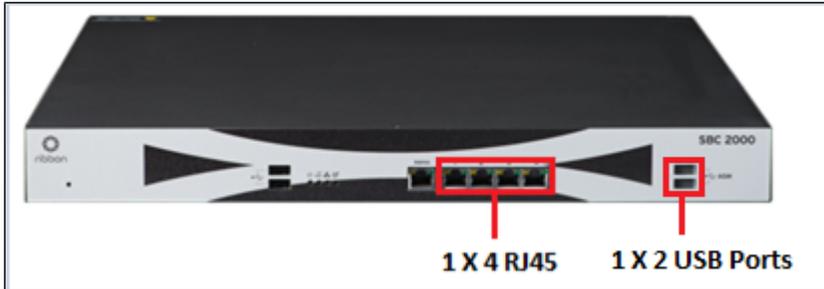
[TLS Configuration between SBC Edge and Microsoft SBA](#)

[Easy Config Wizard](#)

- SBC Edge can connect to the network as mentioned in [Connectivity](#) and [Network](#).
- Microsoft SBA prefers transport as TLS. Establishing a TLS connection between the SBC Edge and Microsoft SBA is covered under [TLS Configuration between Ribbon SBC Edge and Microsoft SBA](#).
- Configure the SBC Edge with PSTN, Teams Direct Routing, and Teams Direct Routing SBA using [Easy Config Wizard](#).

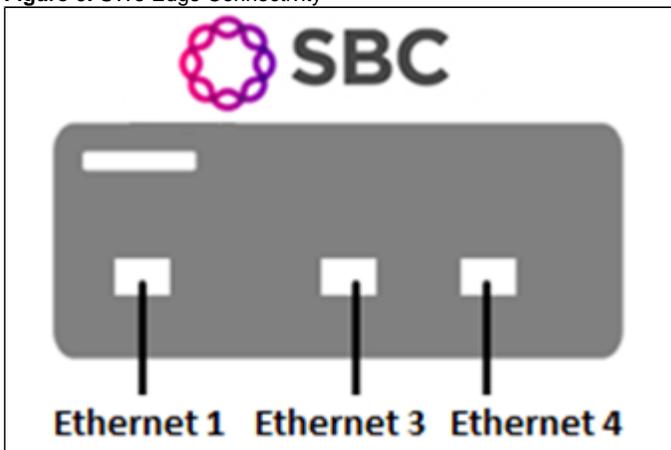
Connectivity

Figure 5: SBC 2000 Front Panel



- i** The SBC 2000 is connected to the network as follows:
- Ethernet 1:** RJ45 "1" is connected towards the PSTN leg.
 - Ethernet 3:** RJ45 "3" is connected towards the Teams Direct Routing leg.
 - Ethernet 4:** RJ45 "4" is connected towards the Teams Direct Routing SBA leg.
 - USB 1:** USB - LAN adapter used to connect ASM to network.
 - USB 2:** Connected to the keyboard.

Figure 6: SWe Edge Connectivity



- i** SBC SWe Edge would be on virtualized platform VMware and is connected to the network as follows:
- Ethernet 1:** RJ45 "1" is connected towards the PSTN leg.
 - Ethernet 3:** RJ45 "3" is connected towards the Teams Direct Routing leg.
 - Ethernet 4:** RJ45 "4" is connected towards the Teams Direct Routing SBA leg.

Network

Configure Ethernet 1, Ethernet 3, and Ethernet 4 of SBC SWe Edge with the IP as follows:

Navigate to **Networking Interfaces > Logical Interfaces**.

Figure 7: Logical Interfaces

ribbon Welcome: admin | Last Login: Oct 19, 2022 09:22:10 | Logout | Help
Device Name: iotaba
SBC SWE Edge

Monitor Tasks Settings Diagnostics System

Search...

Expand All | Collapse All | Reload

- Call Routing
- Signaling Groups
- Networking Interfaces
 - Logical Interfaces**
 - Admin IP
 - Ethernet 1 IP
 - Ethernet 2 IP
 - Ethernet 3 IP
 - Ethernet 4 IP

Logical Interfaces October 20, 2022 13:58:24

✓ | ✗ | Create VLAN I/F | ✗ Total 5 LogicalInterface Rows

Interface Name	IPv4 Address	IPv6 Address	Description	Admin State	Display	Primary Key
Admin IP	10.54.15.190			Enabled	Counters	35
Ethernet 1 IP	10.54. . .			Enabled	Counters	36
Ethernet 2 IP	20.20.20.20			Enabled	Counters	37
Ethernet 3 IP	115.110. . .			Enabled	Counters	38
Ethernet 4 IP	172.16. . .			Enabled	Counters	39

Figure 8: Ethernet 1

Logical Interfaces October 20, 2022 14:26:03

✓ | ✗ | Create VLAN I/F | ✗ Total 5 LogicalInterface Rows

Interface Name	IPv4 Address	IPv6 Address	Description	Admin State	Display	Primary Key
Admin IP	10.54.15.190			Enabled	Counters	35
Ethernet 1 IP	10.54. . .			Enabled	Counters	36

Identification/Status

Interface Name: Ethernet 1 IP
 I/F Index: 7
 Alias:
 Description:
 Admin State:

Networking

MAC Address: 00:0c:29:00:a0:3c
 IP Addressing Mode:

IPv4 Information

IP Assign Method:
 Primary Address: * .x.x.x.x
 Primary Netmask: * .x.x.x.x
 Media Next Hop IP: * .x.x.x.x

Apply

Figure 9: Ethernet 3

Ethernet 3 IP 115.110. [red] [red] Enabled Counters 38

Identification/Status

Interface Name Ethernet 3 IP
 I/F Index 9
 Alias
 Description Teams Direct Routing
 Admin State Enabled

Networking

MAC Address 00:0c:29:00:a0:28
 IP Addressing Mode IPv4

IPv4 Information

IP Assign Method Static
 Primary Address 115.110. [red] [red] *xxxxx
 Primary Netmask 255.255. [red] [red] *xxxxx
 Media Next Hop IP 115.110. [red] [red] *xxxxx

Apply

Figure 10: Ethernet 4

Ethernet 4 IP 172.16. [red] [red] Enabled Counters 39

Identification/Status

Interface Name Ethernet 4 IP
 I/F Index 10
 Alias
 Description Teams Direct Routing SBA
 Admin State Enabled

Networking

MAC Address 00:0c:29:00:a0:32
 IP Addressing Mode IPv4

IPv4 Information

IP Assign Method Static
 Primary Address 115.110. [red] [red] *xxxxx
 Primary Netmask 255.255. [red] [red] *xxxxx
 Media Next Hop IP 115.110. [red] [red] *xxxxx

Apply

- To configure Ethernet 1, Ethernet 2, and Ethernet 3 of an SBC 1000/2000, navigate to **Settings > Node Interfaces > Logical Interfaces**.
- SBC Edge can be configured with any of the available Ethernet ports. In the current testing Ethernet 1, 3, and 4 are used.

Static Routes

Static routes are used to create communication to remote networks. In a production environment, static routes are mainly configured for routing from a specific network to a network that can only be accessed through one point or one interface (single path access or default route).

 **Tip**

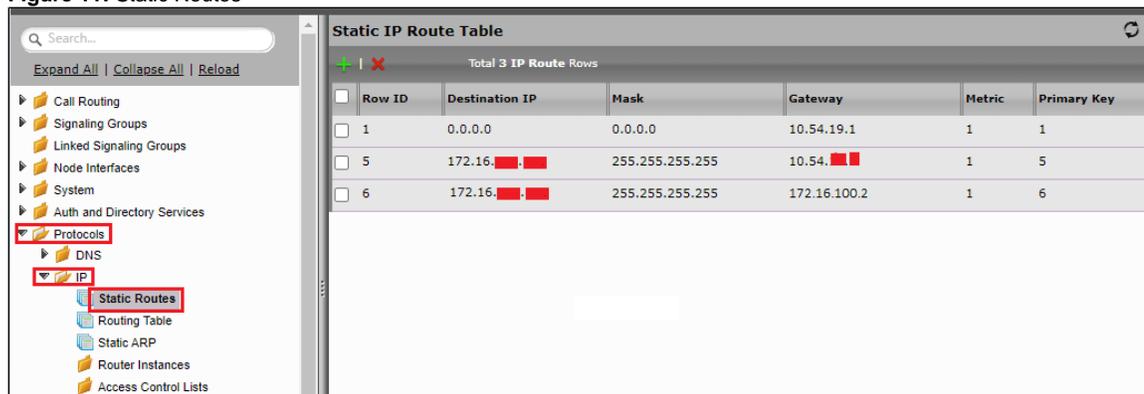
- For smaller networks with just one or two routes, configuring static routing is preferable. This is often more efficient since a link is not being wasted by exchanging dynamic routing information.
- For networks that have a LAN-side Gateway on Voice VLAN or Multi-Switch Edge Devices (MSEs) with Voice VLAN towards SBC Edge, static routing configurations are not required.

Static routes need to be added towards the Eth1 interface 172.16.X.X (PSTN) and the Eth2 interface 172.16.X.X (ZPLS).

The default static route is towards the Eth1, which is in a private network.

- Navigate to **Settings > Protocol > IP > Static Routes** to configure the routes.

Figure 11: Static Routes



Row ID	Destination IP	Mask	Gateway	Metric	Primary Key
1	0.0.0.0	0.0.0.0	10.54.19.1	1	1
5	172.16. [redacted]	255.255.255.255	10.54. [redacted]	1	5
6	172.16. [redacted]	255.255.255.255	172.16.100.2	1	6

TLS Configuration between SBC Edge and Microsoft SBA

Prerequisites:

- For TLS to work on the public side of the network, a trusted Certificate Authority (CA) is needed. In this scenario, Go Daddy is used as a trusted CA.
- Go Daddy Root Certificate Authority G2 and Go Daddy Secure Certificate Authority G2 is used as a trusted CA.
- Baltimore CyberTrust Root certificate is required.

Request a certificate for the SBC and configure it based on the example using Go Daddy as follows:

- Generate a Certificate Signing Request (CSR) and obtain the certificate from a Certificate Authority.
- Import the Public CA Root/Intermediate Certificate and the SBC Certificate on the SBC.

Step 1: Generate a Certificate Signing Request and obtain the certificate from a Certificate Authority (CA).

- Navigate to **Settings > Security > SBC Certificates**.
- Click **Generate SBC Edge CSR**.
- Enter data in the required fields. Click **OK**. After the Certificate Signing Request is generated, copy the result to the clipboard.
- Use the generated CSR text from the clipboard to obtain the certificate.

Figure 12: Generate Certificate Signing Request

Generate Certificate Signing Request

Subject Distinguished Name

Common Name: *.customers.interopdomain.com * Hostname or FQDN

Subject Alternative Name DNS: [] comma-separated FQDN list

Email Address: user1@rbbn.com

ISO Country Code: United States

State/Province: NJ

Locality: [] e.g.: City

Organization: Sonus e.g.: Company

Organizational Unit: IT e.g.: Department

Key Length: 2048 bits

Result

```

-----BEGIN CERTIFICATE REQUEST-----
MIIDCzCCAfmCAQAwwfjEmMCQGA1UEAxQdKi5jdXN0b21lcnMuaW50ZXJvcGRvbWVp
bi5jb20xHTAbBgkqhkiG9w0BCQEWDnVzZXlxdXN0b21lcnMuaW50ZXJvcGRvbWVp
UzELMAkGA1UECBMCTkoxDjAMBgNVBAoTBVNVbnVzMQswCQYDVQQLLEwJVDCCASlw
DQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAP1m1uHXRgBkKsGLGeOPwKFNOLuwi
FOgv0AugqrefvK5+Ru938w5OyrRsZZ5KN58vS/BI7tkqvZeqFZTEToUq23qvMADO
2OxJkZQzgheZ5dk39On1THemRYa7tdBtmyyD1F8XRFPEUaANOFtrLzyMPvFnJuls
sTNmjA76/i3Qg+80kY0X2266uoTzs2puNEOIKppqZ6yxWngEyp50BDgZUKx53U6Yy
OyJNILpXTUYeDMwDtsICM0j3YdV6KbcA/Z6ZMLHvis3B34q8c4gm0wEjwVLbknd4
t/gub6+ZQPXVphgg3W6E8GUFVyzC6b36oHhCS6NJVT6qkNMKnKxRhkflBUCAwEA
AaBIMEYGCSqGSib3DQEJDJE5MDcwCQYDVR0TBAlwADALBgNVHQ8EBAMCBaAwHQYD
VR0BBYwFAYIKwYBBQUHAWEGCCsGAQUFBwMCMAOGCSqGSib3DQEBCwUAA4IBAQD0
f0b+nhanA06rQxrjoGffcpPdjlCFt3SQQIAcxb7eR49BpSjzVINfO38IPmJgvYD8
w/h2JTLfExyzbkPKTIVdKaHb920ZgrGta5JYFaOyx9F9mHBrZhCIMZc6qhv+58H9T
1K1r3wUelyR5e2PwKPP03LyFNvP4PbNc3XA0zh53mhZEq9EEcRP+J3rxqVoaFUa

```

Copy CSR

Step 2: Deploy the Root/Intermediate and SBC certificates on the SBC.

After receiving the certificates from the certificate authority, install the SBC Certificate and the Root/Intermediate certificates as follows:

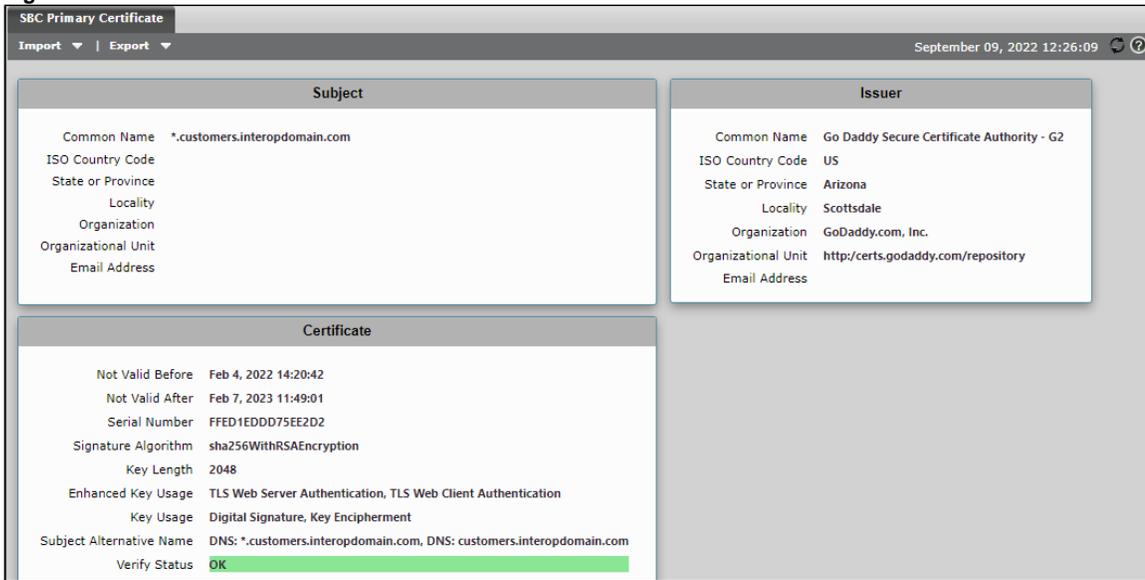
- Obtain the Trusted Root and Intermediary signing certificates from your Certificate Authority.
- To install the Trusted Root/Intermediate certificates, go to **Settings > Security > SBC Certificates > Trusted Root Certificates**.
- Click **Import** and select the trusted root certificates.
- To install the SBC certificate, open **Settings > Security > SBC Certificates > SBC Edge Certificate**.
- Validate the certificate is installed correctly.

Figure 13: Trusted CA Certificate Table

Trusted CA Certificate Table							October 20, 2022 07:22:36
Total 3 Certificate Rows							
<input type="checkbox"/>	Common Name	Issuer	Start Validity	Expiration	Key Length	Display	Primary Key
<input type="checkbox"/>	Baltimore CyberTrust...	Baltimore CyberTrust...	May 12, 2000	May 12, 2025	2048		2
<input type="checkbox"/>	Go Daddy Root Certif...	Go Daddy Root Certif...	Sep 1, 2009	Dec 31, 2037	2048		3
<input type="checkbox"/>	Go Daddy Secure Cert...	Go Daddy Root Certif...	May 3, 2011	May 3, 2031	2048		4

- Click **Import** and select **X.509 Signed Certificate**.
- Validate that the certificate is installed correctly.

Figure 14: Validate certificate

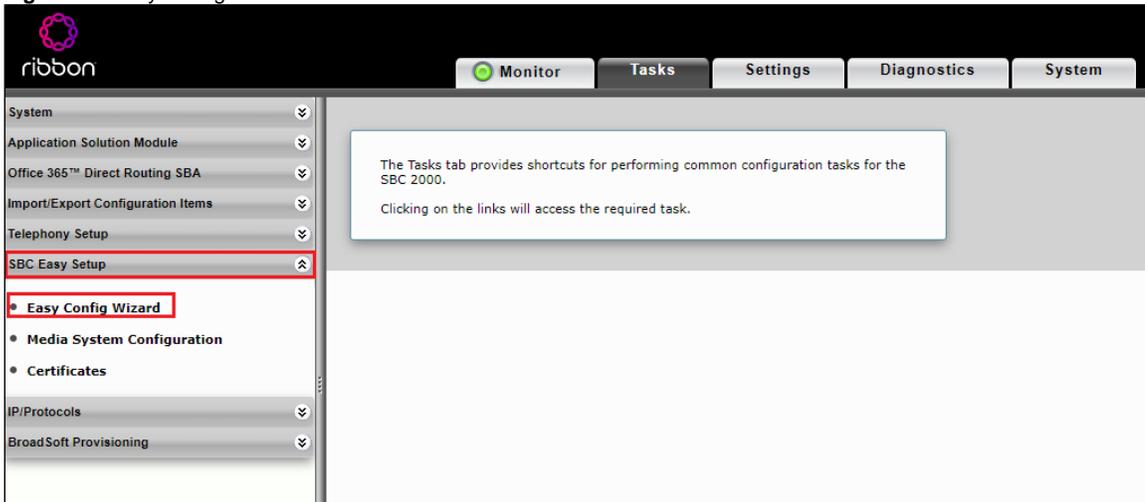


Easy Config Wizard

Configure the SBC Edge with Teams Direct Routing SBA using the Easy Config Wizard.

- Access the WebUI of SBC Edge.
- Click on the **Tasks** tab.
- From the left side menu, click **SBC Easy Setup > Easy Config Wizard**.

Figure 15: Easy Config Wizard



Fill in the details for Step 1 as follows:

- Application **SIP TrunkMicrosoft Teams**.
- Scenario Description as **Teams SBA**.
- SIP Sessions as **100**.



Enter a value for SIP sessions as per the requirement. The value can be up to 960.

Figure 16: Step 1

Easy Configuration

Step 1 Step 2 Step 3 This step takes input about the topology

Scenario Parameters

Application: SIP Trunk <-> Microsoft Teams *

Scenario Description: Teams SBA *

Telephone Country: United States

Emergency Services: None

SIP Properties

SIP Sessions: 100 * [1..960]

SIP Trunk

Name: Other SIP Trunk

Microsoft Teams

Teams Connection: Teams Direct Routing

Cancel Previous Next Finish

Fill in the details for Step 2 as follows:

- Border Element Server would be the PSTN IP.
- Use Secondary Border Element Server should be **Disabled**.
- Teams Connection Type would be **Standalone Direct Connection**.
- SBC Signaling/Media Source IP towards Teams Direct Routing (public IP).
- Configure Direct Routing SBA should be set to **True**.
- Direct Routing SBA FQDN as **iotteamsba.customers.interopdomain.com**.
- SBC Signaling /Media Source IP towards Teams Direct Routing SBA.

Figure 17: Step 2

Easy Configuration

Step 1 **Step 2** Step 3 This step takes input about the Provider and User side configuration

▼ SIP Trunk: Other SIP Trunk

Border Element Server: 172.16. . . * FQDN or IP

Protocol: UDP

Port Number: 5060 [1024..65535]

Use Secondary Border Element Server: Disabled

▼ Microsoft Teams: Teams Direct Routing

Teams Connection Type: Standalone Direct Connection

Signaling/Media Source IP: Ethernet 3 IP (115.110. . .) External I/F *

Outbound NAT Traversal: Disable

Apply ACL: ACL already applied

Protocol: TLS

Server Port Number: 5061

Listening Port Number: 5061 * Port Number

Configure Direct Routing SBA: True

Survivable Branch Appliance

Protocol: TLS

Server Port Number: 5061

Direct Routing SBA FQDN: iotteam.sba.customers.interopd * FQDN

SBA Signaling/Media Source IP: Ethernet 4 IP (172.16. . .) External I/F *

Review the configurations in Step1 and Step 2, and click on the **Finish** button.



The SBC 2000 would not have the option to choose the Signaling/Media Interface - "SBA Signaling/Media Source IP".

Figure 18: Step 3

Easy Configuration

Step 1 Step 2 **Step 3** This step is a summary of what will be configured

SBC Setup Configuration Summary

Scenario Parameters

Application	SIP Trunk <-> Microsoft Teams
Scenario Description	Teams SBA
Telephone Country	United States
Emergency Services	None
----- SIP Properties -----	
SIP Sessions	100

SIP Trunk: Other SIP Trunk	Microsoft Teams: Teams Direct Routing
Border Element Server	Teams Connection Type
172.16. [redacted]	Standalone Direct Connection
Protocol	Signaling/Media Source IP
UDP	Ethernet 3 IP (115.110. [redacted])
Port Number	Outbound NAT Traversal
5060	Disable
Use Secondary Border Element Server	Apply ACL
Disabled	ACL already applied
	Protocol
	TLS
	Server Port Number
	5061
	Listening Port Number
	5061
	Configure Direct Routing SBA
	True
	----- Survivable Branch Appliance -----
	Protocol
	TLS
	Server Port Number
	5061
	Direct Routing SBA FQDN
	iotteamsba.customers.interopdomain.com
	SBA Signaling/Media Source IP
	Ethernet 4 IP (172.16. [redacted])

Cancel Previous Next Finish

Section B: Microsoft SBA Configuration

For information on configuring the Survivable Branch Appliance (SBA) for Direct Routing, refer to following link:

<https://docs.microsoft.com/en-us/microsoftteams/direct-routing-survivable-branch-appliance>

For the Prerequisites, Installation, and Configuring the Direct Routing SBA, refer to following link:

<https://doc.rbbn.com/display/UXDOC110/Best+Practice+-+Configure+Direct+Routing+Virtual+Survivable+Branch+Appliance#>

Prerequisites

For Prerequisites on Direct routing SBA, refer to the following link:

<https://doc.rbbn.com/display/UXDOC110/Best+Practice+-+Configure+Direct+Routing+Virtual+Survivable+Branch+Appliance#BestPracticeConfigureDirectRoutingVirtualSurvivableBranchAppliance-Prerequisites>

Installation

For Installation on Direct routing SBA, refer to Step 1 in the following link:

<https://doc.rbbn.com/display/UXDOC110/Best+Practice+-+Configure+Direct+Routing+Virtual+Survivable+Branch+Appliance#BestPracticeConfigureDirectRoutingVirtualSurvivableBranchAppliance-Step1:InstallVirtualSBASoftware>

Configuration

For Configuring on Direct routing SBA, refer to Step 2 in the following link:

<https://doc.rbbn.com/display/UXDOC110/Best+Practice+-+Configure+Direct+Routing+Virtual+Survivable+Branch+Appliance#BestPracticeConfigureDirectRoutingVirtualSurvivableBranchAppliance-Step2:SetuptheOffice365DirectRoutingvSBA>

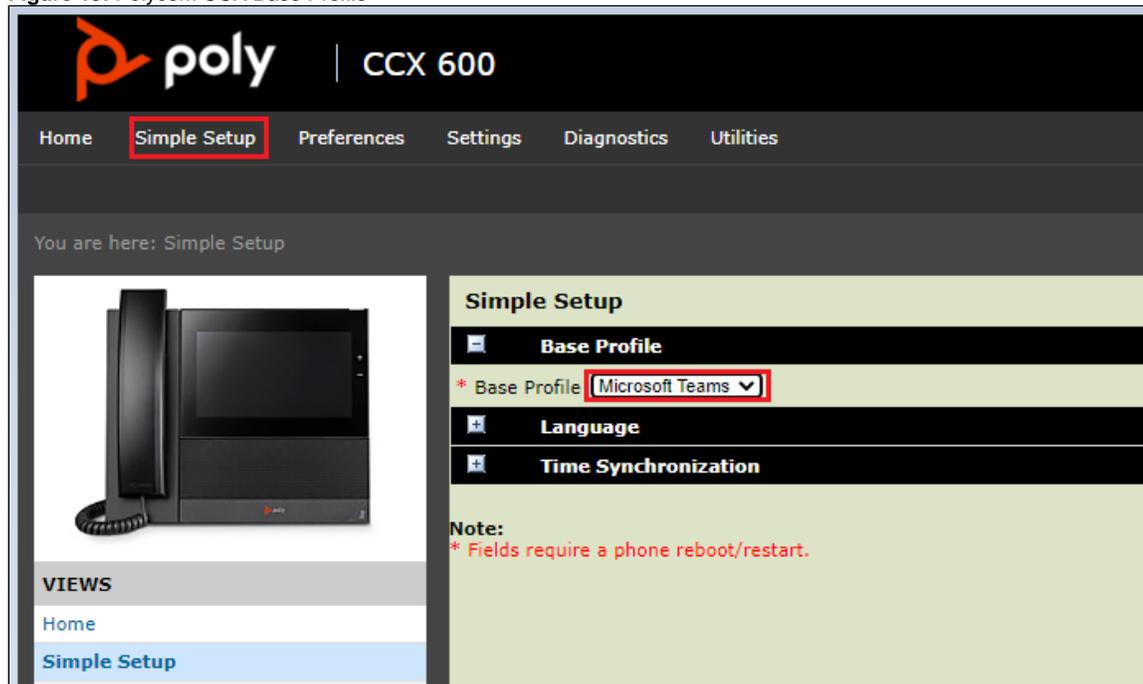


- Strictly follow [Prerequisite](#), [Installation](#) and [Configuration](#) of the SBA respectively.
- To configure a Ribbon SBC Edge for Microsoft SBA, follow the [Section A: Ribbon SBC Edge Configuration](#).

Section C: Poly CCX 600 Configuration

- Log into Web UI of the phone using the IP address.
- Provide the credentials to log into Web UI of the Polycom CCX 600.
- Navigate to **Simple Setup > Base Profile** and choose "**Microsoft Teams**".

Figure 19: Polycom CCX Base Profile



- Once the Base profile is selected, wait for the phone to reboot.
- Go to the Polycom CCX phone touch interface. Log into Microsoft Teams on phone, using Teams credentials created as mentioned in [Section B](#).

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	OPTIONS ping (SBC to SBA)	✓
2	OPTIONS ping (SBA to SBC)	✓
3	Basic Call from PSTN to Teams	✓

4	Basic Call from Teams to PSTN	✓
5	Call Hold & Call Resume	✓

Legend

✓	Supported
✗	Not Supported
N/A	Not Applicable

Caveats

The following items have been observed during this Interop - these are either limitations, untested elements, or useful information pertaining to the Interoperability:

- Poly CCX 600 Phones would switch to Survivable Mode when there is an internet outage. It would take around 5-8 mins for the Teams phone to switch to Survivable mode.
- Message on the Teams phone in Survivable Mode - "No internet connection. Calling, including emergency calls, is only available to and from phone numbers". This indicates that the Teams phone is now registered or connected with Microsoft SBA.
- Poly CCX 600 would reach to Microsoft SBA by resolving it's FQDN. Hence the Poly phone secondary DNS server IP needs to be configured, which would resolve the FQDN locally, when there is an internet outage.
- Teams User status would be "Offline" in Survivable mode.

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/services/ribbon-support-portal>

References

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

<https://ribboncommunications.com/products>

For information about Microsoft products & solutions, go to:

<https://docs.microsoft.com/en-us/microsoftteams/>

For information about Poly products & solutions, go to:

<https://www.poly.com/in/en/products/phones/ccx/ccx-600>

Conclusion

This Interoperability Guide describes a successful configuration of the Ribbon SBC Edge, Microsoft Survivable Branch Appliance, and Poly Teams .

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.